

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. 20402. 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.
 SSR. - FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

Number	Title
CFS-3478	- Michigan Landings, January 1964, 2 pp.
CFS-3484	- New Jersey Landings, 1963 Annual Summary, 10 pp.
CFS-3490	- New York Landings, 1963 Annual Summary, 12 pp.
CFS-3509	- Massachusetts Landings (By Gear and Sub-area), 1963 Annual Summary, 14 pp.
CFS-3523	- Frozen Fishery Products, May 1964, 6 pp.
CFS-3534	- Louisiana Landings, April 1964, 3 pp.
CFS-3538	- Maine Landings, April 1964, 4 pp.
CFS-3539	- Texas Landings, September 1963, 3 pp.
CFS-3541	- Texas Landings, October 1963, 3 pp.
CFS-3542	- Maryland Landings, 1963 Annual Summary, 11 pp.
CFS-3543	- New Jersey Landings, May 1964, 3 pp.
CFS-3544	- Ohio Landings, March 1964, 2 pp.
CFS-3545	- Wisconsin Landings, April 1964, 2 pp.
CFS-3546	- Michigan Landings, April 1964, 3 pp.
CFS-3547	- Ohio Landings, April 1964, 3 pp.
CFS-3548	- Texas Landings, November 1963, 2 pp.
CFS-3549	- Texas Landings, December 1963, 2 pp.
CFS-3550	- Rhode Island Landings, February 1964, 3 pp.
CFS-3554	- Louisiana Landings, May 1964, 3 pp.
CFS-3556	- Maryland Landings, April 1964, 4 pp.
CFS-3558	- Maryland Landings, May 1964, 4 pp.
CFS-3560	- North Carolina Landings, June 1964, 4 pp.
CFS-3561	- Wisconsin Landings, May 1964, 2 pp.
CFS-3562	- Maine Landings, May 1964, 4 pp.

Wholesale Dealers in Fishery Products, 1963 (Revised):

- SL- 4 - Rhode Island, 2 pp.
 SL- 6 - New York Coastal Area, 11 pp.
 SL- 7 - New Jersey, 4 pp.
 SL- 8 - Pennsylvania (Coastal Area), 3 pp.
 SL-13 - North Carolina, 6 pp.
 SL-17 - Alabama (Coastal Area), 3 pp.
 SL-18 - Mississippi (Coastal Area), 3 pp.
 SL-19 - Louisiana (Coastal Area), 7 pp.

- SL-20 - Texas (Coastal Area); 7 pp.
 SL-22 - Oregon, 3 pp.
 SL-23 - Washington, 6 pp.
 SL-33 - North Dakota, 1 p.
 SL-46 - Texas (Mississippi River and Tributaries), 2 pp.

Sep. No. 709 - A Progress Report on the Development of International Food Standards.

FL-555 - The Lake Trout (*Salvelinus namaycush*), by Paul H. Eschmeyer, 8 pp., illus., February 1964. Discusses the lake trout's physical characteristics, geographic distribution, reproduction, young of the species, age and growth, food, movement, artificial propagation, and fisheries. Also discusses the depredations of the sea lamprey on lake trout in the Great Lakes.

FL-561 - List of Fish and Wildlife Service Papers on Physical and Chemical Oceanography, 1940-1962, Lola T. Dees, 15 pp., March 1964.

FL-566 - Bacterial Kidney Disease of Salmonid Fish by Ken Wolf, 4 pp., revised March 1964.

FL-570 - Basic List of Publications in English on Fish Diseases and Parasites, by S. F. Snieszko, Glenn Hoffman, and Ken Wolf, 4 pp., June 1964.

SSR-Fish. No. 459 - The Fishery for Scup with Special Reference to Fluctuations in Yield and Their Causes by William C. Neville and Gerald B. Talbot, 65 pp., illus., revised 1964.

SSR-Fish. No. 477 - North Pacific Oceanography, February-April 1962, by Felix Favorite and others, 10 pp., illus., February 1964.

SSR-Fish. No. 482 - Fish Population Studies, Lewis Clark Lake, Missouri, 1956-1962, by Charles H. Walburg, 27 pp., June 1964.

Report of the Bureau of Commercial Fisheries for the Year 1962, 101 pp., illus., printed, 1964. During the calendar year 1962, it became increasingly apparent that the worldwide population explosion had resulted in a rapid expansion of the fisheries on all of the world's oceans as many nations sought protein from the seas for their people. The efforts of the Bureau of Commercial Fisheries to utilize wisely the nation's fishery resources cover a wide range of activities, from basic research in fields such as fishery biology and fish oil technology to practical applications such as demonstrations of fish cookery schools and the dissemination of daily prices for fish landed in principal United States ports. The

rt touches briefly on developments during 1962 in domestic fisheries, Federal legislation pertaining to the industry, and international fishery matters. It also discusses principal Bureau accomplishments in fishery market promotion, products inspection, statistics collection, market news data, economic studies, vessel safety promotion, and other aids; financial assistance programs; shellfish genetics and fishery commodity studies; and cooperation with international, Federal, state, and other agencies. Included are discussions of the organization, employment, budget, and physical property of the Bureau; and publications written by its personnel. Appendixes contain statistics of United States fisheries; organizations with which the Bureau had contracts; and data on the Fisheries Loan Program.

THE FOLLOWING MARKET NEWS LEAFLETS ARE AVAILABLE FROM THE FISHERY MARKET NEWS SERVICE, U. S. BUREAU OF COMMERCIAL FISHERIES, 510, 1815 N. FORT MYER DR., ARLINGTON, VA. 22209.

Number	Title
MM 103	Portugal's Fishing Industry, 1963, 28 pp.
MM 103	Panama's Fishing Industry, 1963, 9 pp.
MM 107	Fisheries in the Federal Republic of Germany, 1963, 27 pp.

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

California Fishery Market News Monthly Summary, June 1964, 15 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.) California cannery receipts of tunalike fish and other species used for canning; pack of canned tuna, tunalike fish, mackerel, anchovies; market fish receipts at San Pedro, Monterey, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; vessel prices for cannery fish; for the month indicated.

California Fishery Market News Monthly Summary, July 1964, 9 pp., illus., (Market News Service, U. S. Fish and Wildlife Service, Biological Laboratory, P. O. Box 6121, Pt. Loma Station, San Diego, Calif. 92100.) Contains sea-surface temperature, fishing and research information of interest to the West Coast tuna-fishing industry and marine biologists; for the month indicated. Includes an article: "Tagged bluefin tuna recovered off Japan."

California Fishery Products and Byproducts Brokers, Importers, and Exporters, 1964, 8 pp., July 1964. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.)

Chicago's Wholesale Fishery Products Receipts, Prices, and Trends, June 1964, 18 pp. (Market News Service, U. S. Fish and Wildlife Service, Customs House, 610 S. Canal St., Rm. 1014, Chicago, Ill. 60607.) Receipts at Chicago by species and states and provinces for fresh- and salt-water fish and shellfish; and weekly wholesale prices for fresh and frozen fishery products; for the month indicated.

Mexico Monthly Landings, Production and Shipments of Fishery Products, June and July 1964, 8 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 70130.) Gulf States shrimp, oyster, fin-

fish, 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; fishery imports at Port Isabel and Brownsville, Texas, from Mexico; Gulf menhaden landings and production of meal, solubles, and oil; and sponge sales; for the months indicated.

List of Primary Receivers of Imported Fishery Products and Byproducts at Houston, Tex., 1964, 2 pp., July 28, 1964. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 70130.)

List of Primary Receivers of Imported Fishery Products at Miami, Fla., 1964, 3 pp., April 9, 1964. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 70130.)

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, June 1964, 4 pp. (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 month indicated.

New England Fisheries--Monthly Summary, June 1964, 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, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and Boston Fish Pier and Atlantic Avenue fishery landings and ex-vessel prices by species; for the month indicated.

New England Importers and Brokers of Imported Fishery Products, November 1963, 9 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.)

New York City's Wholesale Fishery Trade--Monthly Summary, May and June 1964, 19 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York, N. Y. 10038.) 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.

New York City's Wholesale Fishery Trade, 1963 (Including Statistics and Marketing Trends), 47 pp. (Fishery Market News Service, U. S. Bureau of Commercial Fisheries, 155 John St., New York, N. Y.)

10038.) The first part of this annual summary discusses fishery products receipts and marketing trends in the salt-water section of New York's wholesale Fulton Fish Market during 1963. The second section covers marketing trends and receipts in the fresh-water fish market (Peck Slip Area). The third part contains miscellaneous trends and developments: landings at Stonington, Conn., during 1963; monthly range of wholesale prices for fish meal, oil, and solubles at New York City, 1962/63. The fourth part presents a series of statistical tables giving receipts of fresh and frozen finfish and shellfish by species, states and provinces, and transport methods; imports at New York, 1962/63; receipts of finfish and shellfish by states; prices of fresh fishery products by months; and ex-vessel prices at Fulton Fish Market by species and months.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, July 1964, 9 pp. (Market News Service, U.S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Includes Seattle's landings by the halibut and salmon fleets reported through the exchanges; landings of halibut reported by the International Pacific Halibut Commission; landings of otter-trawl vessels as reported by the Fishermen's Marketing Association of Washington; local landings by independent vessels; coastwise shipments from Alaska by scheduled and non-scheduled shipping lines and airways; imports from British Columbia via rail, motor truck, shipping lines, and ex-vessel landings; and imports from other countries through Washington customs district; for the month indicated.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

ABALONE:

"Abalone. . . Where it's found, how to process it," article, Fisheries Newsletter, vol. 23, no. 6, June 1964, pp. 19, 27, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, Australia. Discusses distribution, harvesting, and processing of abalone. Designed to assist fishermen searching for the mollusc.

AFRICA:

A Note on the Fisheries of Africa, 14 pp., printed, 1964. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. A paper prepared for the 6th Session of the United Nations Economic Commission for Africa, Addis Ababa, held February 19-March 3, 1964.

AGAR-AGAR

"Preparation and properties of agar-agar from Indian seaweeds," by A. N. Kappanna and A. Visweswara Rao, article, Chemical Abstracts, vol. 59, August 19, 1963, 3717e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Soluble agar and carrageen gums," article, Food Manufacture, vol. 39, March 1964, p. 87, printed. Leonard Hill, Ltd., Stratford House, 9 Eden St., London NW1, England.

ALASKA:

1963 Alaska Commercial Fisheries Catch and Production Statistics, by Philip E. Chitwood, Statistical Leaflet No. 7, 28 pp., printed, July 1964. Alaska Department of Fish and Game, Subport Bldg., Juneau, Alaska.

ALGAE:

Chemistry of Blue-Green Algae (CYANOPHYCEAE) by G. K. Barashkov, OTS 62-32780, 10 pp., printed August 1, 1962, \$1.10. (Translated from the Russian Botanicheskii Zhurnal, Akademiia Nauk SSSR, vol. 47, no. 3, pp. 447-454.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Chlorophyllase and Formation of an Atypical Chlorophyllide in Marine Algae, by J. Barrett and S. W. Jeffrey, 4 pp., illus., printed. (Reprinted from Plant Physiology, vol. 39, no. 1, January 1964, pp. 44-47.) Laboratory of Comparative Biology, Kaiser Foundation Research Institute, S. 14th St. and Cutting Blvd., Richmond, Calif.

AMINO ACIDS:

"Fish and fish products. Part V--Quantitative estimation of essential amino acids in fish protein through ion-exchange resin columns and paper chromatograms," by N. A. Khan and Kh. M. Qudusur Rahman, article, Scientific Researches, vol. 1, no. 1, April 1964, pp. 88-95, illus., printed, single copy cents. East Regional Laboratories, P.C.S.I.R., P.O. Box 100, Pur Rd., Dhamondi, Dacca-2, East Pakistan.

AQUARIUMS:

A Continuous Flow, Seawater Aquarium Suitable for Experimental Work With Live Marine Animals, by James E. Stewart and H. E. Power, Circular No. 7, 7 pp., illus., printed, 1963. Technological Research Laboratory, Fisheries Research Board of Canada, Halifax, N. S., Canada.

ARGENTINA:

Foreign Trade Regulations of Argentina, by Walid Haidar, OBR 64-56, 8 pp., printed, June 1964, 10 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. 20404.) Discusses Argentina's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. Also covers special customs provisions, nontariff import controls, United States foreign trade controls, and Government representation between the two countries.

ATLANTIC OCEAN:

Scientific Conference on the Results of Oceanographic Investigations of the Atlantic Ocean, by K. A. S. OTS 63-21758, 16 pp., printed, May 7, 1963, 50 cents. (Translated from the Russian, Okeanologia, vol. 1, no. 1, 1963, pp. 175-177.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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

AUSTRALIA:

CSIRO co-operate to aid fisheries," article, Fisheries Newsletter, vol. 23, no. 5, May 1964, pp. 17, 19, illus., printed. Commonwealth Fisheries Office, Department of Primary Industry, Canberra, Australia. Describes the aims of Australian oceanographic and survey cruises to be made this year. Gives details of the work being undertaken.

Tasmania Inland Fisheries Commission Report for the Year Ended 30th June 1962, 16 pp., printed 1962. Tasmania Inland Fisheries Commission, Hobart, Tasmania, Australia.

AUSTRIA:

Foreign Trade Regulations of Austria, by Catherine Kelley, OBR 64-57, 8 pp., printed, June 1964, 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.) Discusses Austria's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. Also covers special customs provisions, nontariff export controls, United States foreign trade controls, and Government representation between the two countries.

BELGIUM:

Report Annuel sur l'Evolution de la Flotte de Peche en 1963 (Annual Report of the Status of the Fishing Fleet in 1963), 43 pp., processed in French. Administration de la Marine et de la Navigation Interieure, Ministere des Communications et des Postes, Telegraphes et Telephones, Brussels, Belgium.

BIBLIOGRAPHIES:

Preliminary Bibliography of Fish and Fisheries for the East China Sea and South China Sea, by A. Soulier, Oceanographic Paper 64/2, 13 pp., printed, 1964. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Bangkok, Thailand.

BLACK SEA:

Black Sea Scientific Research Institute of Marine Fishing and Oceanography, by I. O. Sakovets, OBR 63-21559, 28 pp., printed, April 10, 1963, 75 cents. (Translated from the Russian Rybnoe Khoz-vo, vol. 36, no. 7, 1960, pp. 35-39.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

FISH:

"The fish--It's not a total mystery," by James R. Estman, article, The Conservationist, vol. 18, no. 6, June-July 1964, pp. 18-20, illus., printed. The New York State Conservation Department, State Campus, Albany, N. Y.

CALIFORNIA:

California Fish and Game, vol. 50, no. 3, July 1964, pp., illus., printed, single copy 75 cents. Documents Section, P. O. Box 1612, Sacramento, Calif. 95833. Includes, among others, the following arti-

cles: "An ecological survey of a marine environment prior to installation of a submarine outfall," by Charles H. Turner, Earl E. Ebert, and Robert R. Given; "First records for the bigeye thresher (Alopias superciliosus) and slender tuna (Allothenus fallai) from California, with notes on Eastern Pacific scombrid otoliths," by John E. Fitch and William L. Craig; "California striped bass estimates for 1961," by Arnold B. Albrecht; "Weight-length relationship for bluefin tuna in the California fishery, 1963," by Robert R. Bell; and "1916, the pioneer year of tuna tagging on the Pacific Coast of North America," by Franklin G. Alverson and Bruce M. Chatwin.

CANADA:

The Canadian Fish Culturist, Issue 32, May 1964, 63 pp., illus., printed. Information and Consumer Service, Department of Fisheries of Canada, Ottawa, Canada. Includes articles on: "Flatworm problems in fish," by Reino S. Freeman; "Planting brook trout (Salvelinus fontinalis)--Mitchill in estuarial waters," by J. W. Saunders and M. W. Smith; "A retractable transducer for small boat echo sounding," by V. R. Taylor; "A false weir fishtrap," by K. H. Kupka; and "Return of pink salmon to Robertson Creek shows promise of success," by F. C. Boyd.

Fisheries Branch and Fishermen's Loan Board of New Brunswick Annual Report, 1963, 1 vol., printed, 1964. Fisheries Branch, Department of Industry and Development, N. B., Canada.

Fisheries Statistics, New Brunswick, 1962, 35 pp., illus., printed in French and English, July 1964, 75 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada. Consists of tables giving the quantity and value of landings by species and districts of New Brunswick, 1961/62; quantity and value of products by species from 1950-1962; classification of fishing craft by tonnage, length, and type of gear used; number of fishermen in New Brunswick; new capital investment in the commercial fishery, 1961/62; and persons engaged in the major fisheries, 1961/62.

CHESAPEAKE BAY:

Chesapeake Science, vol. 5, nos. 1-2, March-June 1964, 105 pp., illus., printed, single copy 75 cents. Natural Resources Institute, University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. Includes articles on: "Eggs, larvae and young of the white perch, Roccus americanus, with comments on its ecology in the estuary," by Romeo J. Mansueti; "Early development of the yellow perch, Perca flavescens, by Alice Jane Mansueti; "Spawning of the cobia, Rachycentron canadum, in the Chesapeake Bay, with observations of juvenile specimens," by Edwin B. Joseph, John J. Norcross, and William H. Massmann; and "Modification and operation of the Gulf I-A high speed plankton sampler," by Robert E. Smith, Donald P. deSylva, and Richard A. Livellara.

CHINA:

Numerous Aquatic Products Found in Gulf of Peichili, by Cheng-chich Li, OTS 63-13537, 4 pp., printed, December 13, 1962, \$6.60. (Translated from the Chinese, Kuang-ming Jih-pao, Peiping, October 5, 1962, 2 pp.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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

CLAMS:

The Bay Clams of Oregon, by Lowell D. Marriage, Educational Bulletin No. 2, 29 pp., printed, 1958. Fish Commission of Oregon, Portland, Oreg.

"Proteins of shellfish. XI--Hydration of muscle of clam," by R. Baba, article, Chemical Abstracts, vol. 57, October 29, 1962, 11613f, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

COD:

The Connection Between Hydrological Conditions and Fluctuations in the Abundance of Year Classes of Cod, by A. G. Kisliakov, 6 pp., processed, 1963. (Translated from the Russian, Akademiia Nauk SSSR, Ikhtiologicheskaiia Komissiiia, Trudy Soveshchanii, no. 19, 1961, pp. 260-264.) Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

Some Data on the Feeding of the Barents Sea Cod GADUS MORHUA MORHUA L. in Experimental Conditions, by M. I. Tarvardieva, Translations No. 116, 19 pp., printed, 1963. (Translated from the Russian, Voprosy Ikhtiologii, 1962.) Fisheries Laboratory, Department of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

COLD-STORAGE:

"Cold storage of retail-packed fillets of mackerel and herring," by Arne Liljemark, article, Food Technology, vol. 18, no. 3, 1964, pp. 122-124, printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

COMPOSITION:

Composition of Foods--Raw, Processed, Prepared, by Bernice K. Watt and Annabel L. Merrill, Agriculture Handbook No. 8, 192 pp., printed, revised December 1963, \$1.50. Consumer and Food Economics Research Division, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) In this edition, data previously published have been reexamined and values for some nutrients have been revised to take into account more recent findings. Many new foods have been added to the tables, bringing the total to about 2,500 items. New food products added include numerous kinds of nut, fish, and poultry items. In the section of notes on food is a short critical analysis of studies on the composition of fish.

CONFERENCES:

"Conferencia da pesca da Europa Ocidental" (Western European fishery conference), by Armando de Oliveira Hagatong, article, Conservas de Peixe, vol. 19, no. 219, June 1964, pp. 18-19, 28, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda., Regueirao dos Anjos, 68, Lisbon, Portugal.

CRABS:

How to Build--In Fifteen Easy Steps--a Crab Pot, 3 pp., illus., printed. Louisiana Wild Life and Fisheries Commission, Wild Life and Fisheries Bldg., 400 Royal St., New Orleans, La. 70130.

CRAWFISH:

"Geographic variation in the crawfish Faxonella clypeata (Hay) with the definition and defense of the

genus Faxonella creaser (Decapoda, Astacidae)," by J. Fitzpatrick, article, Tulane Studies in Zoology, vol. 10, no. 1, 1963, pp. 57-79, illus., printed. Tulane University, P. O. Station 20, New Orleans 18, La.

CROAKER:

Distribution and Abundance of Atlantic Croaker, M. CROPOGON UNDULATUS, in South Carolina, by Charles M. Bearden, Contribution No. 40, 21 pp., illus., printed, June 1964. Bears Bluff Laboratory, Wadmalaw Island, S. C.

CRUSTACEA:

"Moulting frequency of a deep-sea crustacean, Eucyathia pacifica," by Reuben Lasker, article, Nature, vol. 203, no. 4940, July 4, 1964, p. 96, printed, single copy 4s. (about 55 U. S. cents). St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

DOLPHIN:

The Directional Characteristics of Delphinid Sounds, by W. E. Evans, W. W. Sutherland, and R. G. Beil, pp., printed, 1963. (Reprinted from Marine Bio-Acoustics-Proceedings of a Symposium held at Birnie Bahamas, April 1963, pp. 353-372.) Lockheed Aircraft Corp., Burbank, Calif.

"Electronics goes after the dolphin," by John L. Russell, Jr., article, The Aquarium, vol. 33, no. 8, August 1964, pp. 6-7, illus., printed, single copy 40 cents. Aquarium Publishing Co., P. O. Box 832, Norristown, Pa. Discusses the work of the Communication Research Institute, first research facilities in the world devoted strictly to the study of dolphins. Deals particularly with speech capabilities of the dolphin.

DRIED FISH:

"Kusaya-no-himono (Rotten dried fish)," by Yasuko Terada and Takeo Kametania, article, Chemical Abstracts, vol. 58, April 1, 1963, 7298b, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

DRYING:

"The use of a pyrethrum dip as protection for dried fish in Uganda," by R. H. McCellan, article, Chemical Abstracts, vol. 60, March 16, 1964, 7363c, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

ECHO-SOUNDERS:

An Introduction to Echosounding, 144 pp., illus., printed, \$1. Brown & Ross, Inc., 17 Battery Pl., New York, N. Y. 10004. For more than a quarter century the echo-sounder has been an indispensable aid to navigators. Its ability to supply depth measurements in practically all weather without impeding the ship's activities gives it a distinct advantage over the older lead-line sounding technique. This feature has made it invaluable for finding the ship's position and has reduced the risk involved in maneuvering near coastal and shoal waters. With echo-sounders, fishermen can fish along shelving coasts and banks once considered too dangerous for their operation. This booklet discusses in detail the operation of a Geophysical echo-sounder. Includes chapters on sound--its physical characteristics; echos; effect of fish schools on an echo; reasons for using ultrasound; sounding technique and sounder principles; graph indication;

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

pretation of indications; indication of fish; and detecting with horizontal sounders. Also includes a number of photos showing recordings or "diagrams" made by the echo-sounder.

EMERSON:
"Hemoglobins from erythrocytes of eel, *Anguilla japonica*," by Kinzaburo Hamada and others, article, *Journal of Biochemistry*, vol 55, February 1964, pp. 155-162, printed. The Japanese Biochemical Society, c/o Dept. of Biochemistry, Faculty of Medicine, Tokyo University, Bunkyo-ku, Tokyo, Japan.

FINANCIAL:
Financial Procedures under Public Law 480--Emphasis on Titles I and IV of the Agricultural Trade Development and Assistance Act, by John P. Bogunoff and O. Halbert Goolsby, Foreign Agricultural Economic Report No. 17, 22 pp., illus., processed, February 1964. Economic Research Service, Development and Trade Analysis Division, U.S. Department of Agriculture, Washington, D. C. 20250. Explains unusual financial procedures used in transactions under Titles I and IV of the Agricultural Trade Development and Assistance Act of 1954 (P.L.-480). Emphasis is placed on the international financial procedures employed in these programs and on the movement and accounting of United States-owned foreign currencies in the U. S. Department of Treasury. Also presents a view of an entire P.L. 480 program, from the acquisition of surplus agricultural products to final sale of the products in a foreign country and the subsequent utilization of the currencies paid.

FISH BEHAVIOR:
Study of the Behaviour of Fishes in the Zone of Activity of Fishing Gear, by N. E. Aslanova, *Trudy VNIRO* No. 113, 26 pp., printed, 1963. (Translated from the Russian, VNIRO, 1958.) Fisheries Laboratory, Department of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

FISH DISEASES:
"Comments on the causes of disease in the carp *Cyprinus carpio* L. in the Volga delta," by V. G. Mikina, article, *Problems of Ichthyology*, 1963, vol. 1, no. 26; Selected Articles, OTS 63-21781, printed, 1963. (Translated from the Russian, *Voprosy Zoologii*, vol. 3, no. 1 (26), 1963, pp. 171-176.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

FISHERIES RESEARCH:
Progress Report on the Work of the Torry Research Station, Aberdeen, Scotland and of the Humber Laboratory, Hull, England, Torry Miscellaneous Paper No. 7, 7 pp., printed, 1959. Torry Research Station, Aberdeen, Scotland.

FISH CAREERS:
"Fishers in fish and game management," by W. Manly Lawrence, article, *The Conservationist*, vol. 18, June-July 1964, pp. 28-30, illus., printed. The New York State Conservation Department, State Capitol Building, Albany, N. Y.

FISH FILLETS:
Photoc Dips for Preserving Fish Fillets, by C. H. Bell and J. Dale, *Bulletin No. 138*, 70 pp., illus.,

printed, 1963. Fisheries Research Board of Canada, Sir Charles Tupper Bldg., Riverside Dr., Ottawa, Canada.

FISH MEAL:

"Method for extraction of herring meal for manufacture of meal, being particularly deficient in fat," article, *Norwegian Patent Claims in English Translation*, June 4, 1962, no. 99721, printed, \$1.85. A. Capelo, P. O. Box 46354, Hollywood 46, Calif.

FISH OILS:

"Fatty oils from shellfish," by Hisanao Igarashi, Koichi Zama and Kozo Takama, article, *Chemical Abstracts*, vol. 58, February 18, 1963, 3619d, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

FISH POPULATIONS:

"On the effect of feeding conditions on a fish population," by M. V. Zheltenkova, article, *Population Dynamics of Marine Fishes*, vol. 34, 1958, 37 pp., processed, 1959. (Translated from the Russian *Trudy Vsesoiuznyi, N.-I. Institut Morskogo Rybnogo Khoziaistva i Okeanografii*, vol. 34, 1958, pp. 102-126.) Biological Station, Fisheries Research Board of Canada, St. John's, N. B., Canada.

The Principles of Mathematical Representation of the Dynamics of Commercial Populations of Fish (*Printsip matematicheskogo modelirovaniia dinamike promyslovykh populiatsii ryb*), by V. S. Ivlev, 14 pp., processed, 1963. (Translated from the Russian, *Akademiia Nauk SSSR, Ikhtiologicheskaiia Komissia, Trudy Soveshchaniia*, no. 13, 1960, pp. 185-193.) Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

FISH SOUNDS:

Sonic Characteristics and Mechanisms in Marine Fishes, by W. N. Tavolga, 17 pp., printed, 1963. (Reprinted from *Marine Bio-Acoustics-Proceedings of a Symposium held at Bimini, Bahamas, April 1963*, pp. 195-211.) The American Museum of Natural History, Central Park W. at 79th St., New York 24, N. Y.

FOOD ADDITIVES:

"Carrageenan, a useful food additive," by Otto Christensen, article, *Food Manufacture*, vol. 39, March 1964, pp. 44-47, printed. Leonard Hill, Ltd., Stratford House, 9 Enden St., London NW1, England.

FOOD AND AGRICULTURE ORGANIZATION:

The Food and Agriculture Organization has published reports describing that Agency's activities under the Expanded Program for Technical Assistance for developing the fisheries of many countries. These reports have been processed only for limited distribution to governments, libraries, and universities. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

First Report to the Government of Pakistan on Trawling Operations in the Bay of Bengal, December 1962 to April 1963, by Kenneth H. Bain and G. Illugason, FAO Report No. 1767, 35 pp., printed, 1964.

FOOD POISONING:

"Effect of sodium alginate on *Staphylococcus aureus* during mild heating and freezing," by Lelia G. Scott

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

and Dorothy H. Strong, article, Applied Microbiology, vol. 12, March 1964, pp. 146-149, printed. Williams and Wilkins, Mt. Royal and Guilford Aves., Baltimore 2, Md.

FREEZE-DRYING:

"Lipid oxidation and protein denaturation in freeze-dehydrated fish," by M. Toyomizu, Y. Matsumura and Y. Tomiyasu, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 29, no. 9, 1963, pp. 854-859, illus., printed in Japanese. Japanese Society of Scientific Fisheries, Shiba-Kaigandori 6, Minato-ku, Tokyo, Japan.

FROZEN STORAGE:

Hranenie Zamorozennoj Ryby (Frozen Storage of Fish), by A. I. Piskarev and others, 56 pp., illus., printed in Russian, 1963. Gostorgizdat, Moscow, U.S.S.R.

GENETICS:

Bionics and Fishing, U.S.S.R., by V. I. Tsvetkov and V. R. Protasov, OTS 64-31057, 4 pp., printed, April 10, 1964, 50 cents. (Translated from the Russian, Priroda, vol. 53, no. 2, 1964.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

GERMAN FEDERAL REPUBLIC:

Foreign Trade Regulations of the Federal Republic of Germany, by Margot W. Zener, OBR 64-55, 12 pp., printed, June 1964, 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.) Discusses West Germany's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. The report also covers special customs provisions, nontariff import controls, the country's export controls, United States foreign trade controls, and Government representation between the two countries.

GREAT LAKES:

"Great Lakes research," by E. E. J. Fry and G. K. Rodgers, article, Science, vol. 145, no. 3631, July 31, 1964, p. 516, printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

GREENLAND SEA:

The Oceanographic Expedition to the Greenland Sea on the Diesel-Electric Ship "Lena" in 1958, by V. A. Shamont'ev, OTS 61-13977, 20 pp., printed, 1961, \$1.60. (Translated from the Russian, Problemy Arktiki, no. 6, 1959, pp. 124-127.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

GULF OF MEXICO:

The Gulf of Mexico Menhaden Fishery in Relation to the Sports Fisheries, by Gordon Gunter, ML 64202, 10 pp., printed, 1964. (Reprinted from Proceedings of the Gulf and Caribbean Fisheries Institute, Sixteenth Annual Session, November 1963, pp. 99-108.) Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans, La. 70112.

HAKE:

"Bacterial spoilage of hake," by E. Lamprecht and M. de Villiers, article, Annual Report 1962, Fishing Industry Research Institute, pp. 16-17, printed. Fishing Industry Research Institute, Cape Town, South Africa Republic.

"Discolouration of hake by moulded cartons," by A. Atkinson, article, Annual Report 1962, Fishing Industry Research Institute, pp. 17-18, printed. Fishing Industry Research Institute, Cape Town, South Africa Republic.

"Effect of delay in freezing hake," by A. G. Pienaar, article, Annual Report 1962, Fishing Industry Research Institute, p. 19, printed. Fishing Industry Research Institute, Cape Town, South Africa Republic.

"Rapid chilling of hake," by G. M. Dreosti and C. K. Simmons, article, Annual Report 1962, Fishing Industry Research Institute, pp. 14-16, illus., printed. Fishing Industry Research Institute, Cape Town, South Africa Republic. The Institute investigated effects of slow and delayed chilling on the quality of hake in order to estimate the benefits of more rapid chilling. It also investigated other means or rapid chilling in bulk of freshly-caught fish. Headed and gutted hake were laid down in crushed ice under controlled conditions on board a trawler at sea and three days later samples were transferred to the Fishing Industry Research Institute where they were kept in single layers of flake ice for storage tests. The quality of the fish was assessed by the F.I.R.I. standard odor test. The results showed that the total storage life from catching of hake could be extended for 8-10 days to 11 to 12 days by rapid chilling immediately after landing on deck providing the fish were not bruised. The Institute also tested a method of chilling headed and gutted hake in bulk by recirculating chilled brine through a vertical cylindrical container containing the fish. Circulating velocities were investigated and rapid cooling was obtained when the upward velocity through the container was such that the fish tended to float. The results showed that this method gave more rapid cooling than standard methods of icing in single layers.

HERRING:

The Distinction and Similarity in the Biological Characters of the White Sea and Baltic Herring, by N. Dmitriev, OTS 61-31039, 8 pp., printed, 1961, 50 cents. (Translated from the Russian, Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, vol. 34, 1958, pp. 177-184.) Office of Technical Service, U. S. Department of Commerce, Washington, D. C. 20230.

The First Cruise of the Research Exploratory Expedition of the Polar Institute of Marine Fisheries: Oceanography into the North-Western Atlantic (Summer 1960), in a Search for Herring (Pervyi reis nauchno-poiskovoi sel'dianoj ekspeditsii PINRO severno-zapadnuiu Atlantiku letom 1960g), by L. Iudanov, Translation 736, 2 pp., processed, February 1962. (Translated from the Russian, Okeanologiya, vol. 1, no. 4, 1961, pp. 756-757.) Marine Laboratory, Department of Agriculture and Fisheries for Scotland, Aberdeen, Scotland.

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

urrence of thiaminase in Baltic herring," by Ma Kuusi, article, Chemical Abstracts, vol. 59, October 28, 1963, 10504a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20036.

Stock of Spring Herring in Hokkaido, by Morihiro Tauchi, OTS 60-17430, 6 pp., printed, 1960, 10. (Translated from the Japanese, Bulletin of Japanese Society of Scientific Fisheries, vol. 13, pp. 207-209, 1948.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

ICELAND:

Fishing off Iceland," by John Jonsson, article, Iceland Review, vol. 2, no. 1, 1964, pp. 7, 9-10, illus., printed, single copy 40 Kr. (about 95 U.S. cents). Iceland Review, P.O. Box 1238, Reykjavik, Iceland.

ICHTHYOLOGY:

Sea Fishes, by O. N. Kiselev, OTS 63-21455, printed, March 29, 1963, 50 cents. (Translated from the Russian Priroda, no. 12, 1962, pp. 98.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Items of Ichthyology, 1961, vol. 3, no. 20, OTS 61-1612, 44 pp., printed, April 18, 1963, \$1.25. Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

IMPORTS:

Changes in Presentation of U. S. Import Statistics Effective (Notice to Users of the Census Report FT 110 - Formerly FT 110 and FT 120), 1964, 127 pp., processed, April 1964. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. 20233. Effective with the data for February 1964, significant changes have been inaugurated by the Bureau of the Census in the compilation and publication of import data which are of special interest to users of data formerly issued in report series FT 110 and FT 120. Those reports have been consolidated and redesigned and will be issued in report series FT 110. This brochure describes the scope and arrangement of the new report, furnishes a copy of Schedule A (Revised), and announces the availability of certain classes of data by special subscription.

States Imports of Merchandise for Consumption (Commodity by Country of Origin), 1963 Annual, report FT 110, 451 pp., processed, June 1964, \$1.00. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. 20230. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Import statistics include government as well as nongovernmental shipments of merchandise (including fish, shellfish, and fishery byproducts) from foreign countries.

Technology Newsletter, vol. 5, no. 1, April 1964, 10 pp., illus., processed. Central Institute of Fisheries Technology, Ernakulam, India. Includes, among others, the following articles: "Canning of fish"; "Freezing of frog legs"; "Fishery products of commerce. II--Fish ensilage;" and "Boat

building. I--Fastenings: typical fastenings for boat building."

INLAND WATERWAYS:

America's Waterways, 31 pp., illus., printed, 1964. Touring Service, Mobil Oil Company, 150 E. 42nd St., New York, N. Y. 10017. Boatmen want to know not only where to cruise, but where they may obtain charts of the selected areas, what the points of interest are, and where sailing ships and nautical museums may be found. The first part of this pamphlet lists the sources of most of the Government charts and publications. Part 2 contains the listing of some of America's better known waterways. Each state has its own and there are hundreds. Part 3 discusses each of 27 historical ships and museums. Part 4 is a listing of the states and Canadian provinces with their official sources of information on recreational areas.

INTERNATIONAL COMMISSIONS:

In the International Council on Investigation of the Sea, OTS 63-21280, printed, March 8, 1963, 50 cents. (Translated from the Russian, Rybnoe Khoziaistvo, vol. 38, no. 11, 1962, p. 93.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

IRELAND:

Foreign Trade Regulations of Ireland, by Edward A. Leslie, OBR 64-64, 8 pp., printed, June 1964, 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.) Discusses Ireland's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. The report also covers special customs provisions, non-tariff import controls, the country's export controls, United States foreign trade controls, and Government representation between the two countries. The import of some fishery products into Ireland is regulated by Government authorities.

ISLE OF MAN:

Marine Fauna of the Isle of Man and its Surrounding Seas, edited by J. R. Bruce, J. S. Colman, and N. S. Jones, L. M. B. C. Memoir no. 36, 316 pp., illus., printed, 1963, £3 3s. (about US\$8.82). Liverpool University Press, 123 Grove St., Liverpool 7, England.

ITALY:

"More stockfish for Italy," article, Iceland Review, vol. 2, no. 1, 1964, p. 15, illus., printed, single copy 40 Kr. (about 95 U.S. cents). Iceland Review, P.O. Box 1238, Reykjavik, Iceland.

JAPAN:

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 14, no. 4, February 1964, 83 pp., illus., printed in Japanese with English abstracts and tables. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Includes, among others, the following articles: "Freeze vacuum drying of marine products. (II) Test on salmon meat," by Kiichiro Kobayashi and Shuzo Igarashi; "Studies on the fluorescent color-lamp for attracting of fish. (II) Under-water distribution of color density and the fish-schools aggregating."

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

gated," by Toshiro Kuroki, Hiroshi Nakayama, and Kiyohisa Ueno; "Lipids of salmonoid fishes, (VII) Cephalin from liver of salmon, *Oncorhynchus masou*," by Koichi Zama, Mutsuo Hatano, and Hisanao Igarashi; "Studies on complete utilization of squid (*Ommastrephes sloani pacificus*). (XX) Manufacture of smoked squid meat (2)," by Eiichi Tanikawa, Minoru Akiba, and Terushige Motohiro; and "Studies on proteolytic enzymes of salmon pyloric caeca. (I) Partial purification and some properties." by Katsjui Yoshimura, Takeshi Shibata, and Hiroshi Ushiyama.

"Japan: An underwater research vessel," article, *New Scientist*, vol. 21, March 26, 1964, p. 819, printed. Cromwell House, Fulwood Pl., High Holborn, London WC1, England.

Suisan Jiho, nos. 11-12, 1963, 72 pp., illus., printed in Japanese. Agricultural and Fisheries Association, Tokyo, Japan. Contains these articles: "Fisheries policies in the North European countries," by Akira Arimatsu; "Abnormal conditions on fishes due to abnormal cold waves;" "Artificial hatching and stocking of salmon and trout in Sakhalin-Sano;" "Outline of port and harbor facilities;" and "Bottom fish resources in the Northeast Area of Hokkaido."

KOREA:

Investment Factors in the Republic of Korea, by Joyce C. Bachmann, OBR 64-58, 16 pp., printed, June 1964, 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.) A report of interest to businessmen considering an investment in the Republic of Korea. Korea offers a generally favorable Foreign Investment Encouragement Law, reinforced by the investment guaranty program of the U. S. Agency for International Development (AID). The report discusses prospects for and Government policy toward foreign investment; Government controls over industry; business organization; and taxation problems. Also covers capital availability and credit, labor conditions, basic economic facilities, and investment services. The text of the Foreign Investment Encouragement Law is included.

LAKE BAIKAL:

Lake Baikal and its Life, by M. Kozhov, *Monographiae Biologicae*, vol. 11, 351 pp., illus., printed, 1963, \$10. Dr. W. Junk, The Hague, Netherlands.

MACKEREL:

"Chemical composition of mackerel (*Rastrelliger canagurta*) and changes in the nutritive value during storage," by D. J. Nazir and N. G. Magar, article, *Indian Journal of Technology*, vol. 1, no. 6, 1963, pp. 247-249, printed. *Indian Journal of Technology*, Hillside Rd., 12, Delhi, India.

MARINE AIDS:

Light List, Vol. V--Mississippi River System, 293 pp., illus., printed, 1964, \$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, buoys, and daybeacons for the Mississippi River System of the United States, Second Coast Guard District.

MARINE ALGAE:

Excretion of Colored Ultraviolet-Absorbing Substances by Marine Algae, by J. S. Craigie and J. McLachlan, 11 pp., printed, 1964. (Reprinted from *Canadian Journal of Botany*, vol. 42, 1964, pp. 23-33.) Atlantic Regional Laboratory, Halifax, N. S., Canada.

Marine Red Algae of Pacific Mexico. Part 8--Ceramiales: Dasyaceae, Rhodomelaceae, by E. Yalton Dawson, 81 pp., printed, 1963. (Reprinted from *Hedwigia*, vol. 4, no. 3, 1963, pp. 401-481.) Biological Foundation for Biological Research, Solvang, California.

MARINE MAMMALS:

"Los danos que causan los animales marinos depredadores en el Mediterraneo" (The damage caused by the predaceous marine mammals of the Mediterranean), by M. Ravel, article, *Puntal*, vol. 11, no. 12, May 1964, pp. 2-5, illus., printed in Spanish, single copy 12 ptas. (about 20 U. S. cents). *Puntal*, Apartado Correos 316, Alicante, Spain.

MARYLAND:

"Several Maryland fishes are close to extinction," Frank Schwartz, article, *Maryland Conservationist*, vol. 41, no. 3, May-June 1964, pp. 8-12, illus., printed, single copy 25 cents. Department of Game and Inland Fish, State Office Bldg., Box 231, Annapolis, Md. An account of nine freshwater forms and eight marine fishes whose abundance and presence have been drastically altered or eliminated by the effects of pollution sedimentation and drainage in Maryland. Among the marine fish mentioned are: sturgeon, croaker, gray sea trout or weakfish, sheepshead, Spanish mackerel, and king whiting or kingfish.

MEETINGS AND PROCEEDINGS:

Proceedings of the Conference on Primary Productivity Measurement, Marine and Freshwater Helicopters, University of Hawaii, August 21-September 6, 1961, edited by Maxwell S. Doty, 237 pp., illus., printed, 1961. University of Hawaii, Honolulu, Hawaii.

MOLLUSCS:

Molluscs, by John Edward Morton, 232 pp., illus., printed, 1960. Harper and Bros., 49 E. 33rd St., New York, N. Y.

"Molluscs," by Alan J. Kohn, article, *Science*, vol. no. 3631, July 31, 1964, p. 518, printed, single copy 15 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005. Sensory, integrative, and effector aspects of the responses of marine gastropods, nautilus, halopods, and bivalves to significant aspects of their environment were emphasized in a symposium on molluscs. Discusses papers presented at the symposium.

MUSSELS:

Comparison of the growth of mussels (MYTILUS EDULIS) in the White Sea and Sea of Okhotsk, A. I. Savilov, OTS 62-25386, 13 pp., processed, \$1.60. (Translated from the Russian, *Akademiya Nauk SSSR, Trudy Instituta Okeanologii*, vol. 1, 1964, pp. 246-257.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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

improving fishing nets made from synthetic materials," by K. P. Grinevich and others, article, Soviet Fisheries, no. 11, 1960, pp. 16-17, printed. (Translated from the Russian Plasticheskie Massy, no. 11, 1960, pp. 18-19.) Palmerton Publishing Co., Inc., 100 W. 31st St., New York 1, N. Y.

Filament Gill Netting for Skipjack (Striped Mackerel), 7 pp., processed, 1963. Hakodate Fishing Net Mfg. Co. Ltd., 82, Seuhieo-cho, Hakodate, Japan.

Nicaragua:

Foreign Trade Regulations of Nicaragua, by Rodney Anderson, OBR 64-62, 8 pp., printed, June 1964, 50 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.) Discusses Nicaragua's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. The report also covers special customs provisions, stariff import controls, the country's export controls, United States foreign trade controls, and Government representation between the two countries.

Norway:

Norway Exports, no. 2, Summer 1964, 79 pp., illus., printed. Export Council of Norway, H. Heyerdahls gate, Oslo 1, Norway. Some aspects of Norway's fish processing industry, fishery byproducts, trawling building yards, and export of vessels are featured in this issue. Canned fish, frozen fillets, margarine and fish oil, edible oil processing and use in canning, and 100 years of Norwegian whaling are all discussed. The delivery of seven complete fish meal plants to Chile is highlighted, as well as the construction and delivery of fishing vessels to Ghana and Kuwait.

nutrition:

amino acid metabolizable energy values and coefficients of digestibility for protein and fat of starfish meal and fish meal combined with fish meal," by M. W. Metterson and L. D. Metterson, article, Poultry Science, 43, March 1964, pp. 474-478, printed. Poultry Science Association, Kansas State College, Manhattan, Kans.

Oceanography:

Biological Observations of the Pacific, 1951, 635 pp., printed, 1963, University of California Press, Berkeley, Calif.

Biological Observations of the Pacific, 1956, 502 pp., printed, 1963, University of California Press, Berkeley, Calif.

Biogeographic Work of the Pacific Marine Fisheries (Oceanography Institute's Soviet-Viet Nam Scientific Explorative Expedition (Razlichie i skhodstvo biologicheskikh priznakov Belomorskikh sel'dei i morskoi salaki), by P. I. Dolgikh and N. A. Shurunov, OBR 63-21438, 36 pp., printed, March 20, 1963, \$1.00. (Translated from the Russian, Okeanologia, vol. 2, 1962, pp. 368-371.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Pacific Ocean Scientific Research Institute of Marine Fishing and Oceanography (Tikhookeanskii nauchno-issledovatel'skii institut morskogo rybnogo khoziaistva i okeanografii-- TINRO), by A. G. Kaganovskii, OTS 63-21559, 28 pp., printed, April 10, 1963, 75 cents. (Translated from the Russian Rybnoe Khoziaistvo, vol. 36, no. 7, 1960, pp. 23-26.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

OREGON:

Natural Resources of Oregon, 71 pp., illus., printed, 1964, 50 cents. Office of the Secretary, Division of Information, U. S. Department of the Interior, Washington, D. C. (For sale by the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.) Chapters in this booklet describe Oregon's history, physical characteristics, fish and wildlife, water and power, forests, agriculture, minerals, parks and recreation opportunities, Indians, and programs of Federal natural resource agencies in the State. The publication also profiles the industries, scenic beauty, and population which contribute to the State's resource potential. In reference to fisheries, mentions in particular salmon, trout, and spiny-rayed fish. Discusses the cooperative programs of the State of Oregon and the U. S. Fish and Wildlife Service for enhancing the quality and abundance of the State's fish. Illustrative photographs accompany each article.

OYSTERS:

Notes on the Biology and Commercial Use of the Chilean Oyster, by Luis Castillo and Zacarias Vergara, Translation Series No. 360, 29 pp., processed, 1961. (Translated from the Spanish, Apuntes Biologicos e Industrias sobre la Ostra de Chile, Ministerio de Industria, Santiago, Chile, 1962, 59 pp.) Fisheries Research Board of Canada, Biological Station, St. Andrews, N. B., Canada.

PACIFIC OCEAN:

Certain Laws Governing the Dynamics of the Abundance of Commercial Fish in the North-Western Part of the Pacific Ocean, by P. A. Moiseev, Translations No. 108, 2 pp., printed, 1963. (Translated from the Russian, Trudy Soveshchaniia, 1961.) Fisheries Laboratory, Department of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

PENNSYLVANIA:

Pennsylvania Fishes, 35 pp., illus., printed, 1964. Pennsylvania Fish Commission, South Office Bldg., Harrisburg, Pa. Contains 17 color photos and brief descriptions of fish found in Pennsylvania waters. Describes for each fish its range, characteristics, habits, and food. In addition, six species are illustrated with drawings. Discusses the trout, pike, catfish, perch, and sunfish families; and distinguishing Pennsylvania fishes.

PHYSIOLOGY:

"Behavior of dehydrogenase, erythrocytes, marrow and the crystalline lens of fish frozen at -80°," by Stefano Caracciolo and Constantino Petris, article, Chemical Abstracts, vol. 60, February 3, 1964, 3309e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

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

"Behavior of dehydrogenases in fish products frozen at -30° ," by Stefano Caracciolo and Guglielmo Pepe, article, *Chemical Abstracts*, vol. 60, February 3, 1964, 3421d, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

PLANKTON:

Marine Plankton--A Practical Guide, by G. E. Newell and R. C. Newell, 207 pp., illus., printed, 1964. Hutchinson's Biological Monographs, 178-202 Great Portland St., London W1, England.

POISONOUS FISH:

"Poison fish projects report," article, *South Pacific Bulletin*, vol. 14, no. 2, April 1964, pp. 51-54, illus., printed, single copy 30 cents. South Pacific Commission Publications Bureau, C.P.O. 5254, Sydney, Australia. Discusses investigations of ciguatera (toxic fish poisoning) in the Pacific since 1958. Covers the biology of the red snapper, considered to be the most consistently toxic fish in the tropical Pacific; food chain transmission of the toxin; toxins of other species of fish; chemical analyses of various toxins; pharmacology; native remedies; and epidemiology of ciguatera.

"Poisons from shellfish and puffer fish," by Edmund F. Murtha, article, *Chemical Abstracts*, vol. 60, February 17, 1964, 4501f, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

POLAND:

"Statki rybackie dla malych portow polskiego wybrzeza" (Fishing vessels for Poland's small fishing harbors), by Bohdan Pradzynski, article, *Budownictwo Okretowe*, vol. 9, no. 5, May 1964, pp. 163-165, printed in Polish with English abstract. *Budownictwo Okretowe*, Wydawnictwa Czasopism Technicznych NOT, Warsaw, Czackiego 3/5, Poland. Discusses the fishing vessels to be operated in the future from Poland's small fishing harbors, the trends of the investment policies, and the characteristics of the fishing vessels needed.

POPULATION DYNAMICS:

Breeding, Population, Dynamics, and Health of Fish, U.S.S.R., OTS 64-31188, 59 pp., illus., printed, April 30, 1964, \$1.50. (Translated from the Russian, *Voprosy Ikhtiologii*, vol. 4, no. 1 (30), 1964.) Office of Technical Services, U.S. Department of Commerce, Washington, D. C. 20230.

PROCESSING:

"Lunenburg's dream-plant comes true," by Allan T. Muir, article, *Canadian Fisherman*, vol. 51, no. 7, July 1964, pp. 10-16, illus., printed, single copy C\$1. National Business Publications Ltd., Gardenvale, Que., Canada. The fish processing plant at Lunenburg, Nova Scotia, opened on June 24th, is discussed in this article. The new plant has a capacity of 80 million pounds of processed products annually. It also features push-botton systems for remote control of some operations in distant areas of the plant. The article covers the layout of the plant, the freezers, a pan-washing machine, the cooking and breading kitchen, and smoked fish operation. Also discusses a unique system for separating lean from oily fish offal, the fish meal plant, ice-handling operation,

power plant, sea-water pumping station, employee facilities, and other features of this new plant.

PROTEIN CONCENTRATE:

"Evaluation of the protein quality of some fish flour by determination of 'available' lysine and by bacteriological examination," by H. N. De, article, *Scientific Researches*, vol. 1, no. 2, April 1964, pp. 123-128, printed, single copy 65 cents. East Regional Laboratories, P.C.S.I.R., Mirpur Rd., Dhamondi, Dacca-East Pakistan.

QUALITY:

A New Quick Electronic Method of Determining the Freshness of Sea Fish, by C. Hennings, 44 pp., printed, 1963. (Translated from the German, *Zeitschrift der Lebensmittel-Untersuchung und Forschung*, vol. 119, April 1963, pp. 461-477.) Fisheries Research Board of Canada, Sir Charles Tupper Bldg., River side Dr., Ottawa, Canada.

"Texture change in fish and its measurement," by R. M. Love, article, *Texture in Foods*, Torry Memo. no. 39, pp. 109-118, printed, Torry Research Station, Aberdeen, Scotland.

RADIATION PRESERVATION:

Application of Radiation-Pasteurization Process to Pacific Crab and Flounder--Final Summary for the period November 1962 to November 1963, by D. M. Miyauchi and others, Report No. TID-19585, 152 pp., printed, November 1963, \$3.50. Division of Isotope Development, U.S. Atomic Energy Commission. (Available from Office of Technical Services, U.S. Department of Commerce, Washington, D. C. 20230.)

"Enzyme-inactivation studies on irradiation-sterilized cod filets," by R. O. Sinnhuber and M. K. Landrum, article, *Journal of Food Science*, vol. 29, no. 2, pp. 190-191, printed, Institute of Food Technology, 510-522 N. Hickory St., Champaign, Ill.

"Irradiation helps fish industry," by R. Seiden, article, *Food Manufacture*, vol. 39, March 1964, p. 51, printed, Leonard Hill, Ltd., Stratford House, 9 Edean London NW1, England.

"Packaging radiation-sterilized foods," article, *Food Processing*, vol. 25, March 1964, pp. 86-87, 98, printed, Putnam Publishing Co., 111 East Delaware Pl., Chicago 11, Ill.

Study Report Shipboard Cobalt-60 Radiopasteurization of Marine Products, 61 pp., illus., printed, 1963. Naval Submarine Research Station, Naval Research and Development Command, Naval Research Laboratory, Associated Universities Inc., Upton, Long Island, N. Y.

RADIOACTIVITY:

"Radioactivity and its relationship to oceanic food chains," by Charles Osterberg, William G. Pearson and Herbert Curl, Jr., article, *Journal of Marine Research*, vol. 22, no. 1, January 15, 1964, pp. 2-11, illus., printed, \$3.50. Sears Foundation for Marine Research, Bingham Oceanographic Laboratory, University, New Haven, Conn.

ROCKFISH:

Life History Studies on Ten Species of Rockfish (SEBASTODES), by Julius B. Phillips, *Fish Bulletin*

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

69 pp., illus., printed, 1964. Documents Section, P. O. Box 1612, Sacramento, Calif. 95807. Discusses importance of the fishery, materials and methods used in this study, weight-length relationships, age changes, reproduction, feeding habits, and special studies. Also describes in detail the 10 species studied: the bocaccio; the chilipepper; and the flowtail, canary, vermilion, widow, dark-blotched, nitnose, stripetail, and shortbelly rockfish.

SECTION:

Feeding of Young Salmon, SALMO SALAR L., Raised in Ponds in Early Developmental Stages, by J. B. Gdanova, JPRS 19772, 7 pp., printed, 1962. (Translated from the Russian, *Voprosy Ikhtiologii*, vol. 2, no. 1 (22), pp. 169-173.) Office of Technical Services, U.S. Department of Commerce, Washington, D. C. 20230.

Seas Salmon Fishing and Tagging by Canadian Vessels in 1963, by F. Neave and others, Manuscript Report Series No. 766, 23 pp., illus., printed, 1964. Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada.

Preliminary Study of Scale Characteristics to Identify the Origin of Sockeye Taken by Long-Lining in the Gulf of Alaska during April and May, 1962, by H. T. Bilton and M. P. Shepard, Manuscript Report Series No. 757, 31 pp., illus., printed, 1963. Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada.

Motornye dannye po vozvratu semgi ot izvestnogo proizvoditelei" (Some data on return of salmon stemming from known numbers of brood fish), by V. V. Azbelev, article, *Biological Abstracts*, vol. 43, no. 3, 1963, 9238, printed. *Biological Abstracts*, 3815 Walnut St., Philadelphia 4, Pa.

Spawning migratsiya gorbushi v 1961" (Spawning migration of pink salmon--*Oncorhynchus gorbuscha* L., 1961), by V. V. Azbelev, article, *Biological Abstracts*, vol. 43, no. 3, 1963, 8641, printed. *Biological Abstracts*, 3815 Walnut St., Philadelphia 4, Pa.

Notes on scales of the chum salmon and allied species, by Keiichi Kondo and Mitsuru Kitahara, article, *Bulletin of Tokai Regional Fisheries Research Laboratory*, vol. 33, 1962, pp. 1-10, printed. Tokai Regional Fisheries Research Laboratory, Tsukubana, Chuo-ku, Tokyo, Japan.

Observations on the Movements of Atlantic Salmon (SALMO SALAR L.) in the River Conon and the River Meig, Ross-shire, I, by K. A. Pyefinch, *Freshwater and Salmon Fisheries Research* 31, 24 pp., printed, 1963. Department of Agriculture and Fisheries for Scotland, Edinburgh, Scotland.

Feeding Perception in Juvenile Salmon. II--Conditioned Response of Juvenile Sockeye Salmon (ONCORHYNCHUS NERKA) to Lake Waters, by J. R. McBride, and others, Reprint No. 762, 4 pp., printed. (Reprinted from *Canadian Journal of Zoology*, vol. 42, no. 4, pp. 245-248.) Division of Administration, National Research Council, Sussex St., Ottawa, Canada.

Progress Report on Canadian Studies on Chum Salmon (Salmo gairdneri Richardson) for 1962, by H. T. Bilton, Manuscript Report

Series (Biological) No. 758, 4 pp., illus., printed, 1963. Biological Station, Fisheries Research Board of Canada, Nanaimo, B. C., Canada.

"Quality of the spawning bed as it relates to survival and growth of pink salmon embryos and alevins and time of fry emergence," by William J. McNeal, article, *Proceedings of the XVI International Congress of Zoology*, vol. 1, 1963, p. 242, printed. Permanent Committee of International Zoological Congresses, Secretary (Pierre Grasse), 105 Blvd. Raspail, Paris 6, France.

The Rational Decision Process in Salmon Migration, by Bernard C. Patten, 8 pp., printed. (Reprinted from *Journal du Conseil International pour l'Exploration de la Mer*, vol. 28, no. 3, 1964, pp. 410-417.) Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, Va.

Report of Limited Salmon Tagging Operations, North Side Alaska Peninsula, 1961, by Daniel P. Hennick, Informational Leaflet No. 42, 8 pp., illus., processed, June 1, 1964. Alaska Department of Fish and Game, Support Bldg., Juneau, Alaska.

Salmon of the North Pacific Ocean. Part I--Catch Statistics for North Pacific Salmon, by Hiroshi Kasahara, article, *Bulletin No. 12*, 84 pp., illus., printed, 1963. International North Pacific Fisheries Commission, 6640 NW. Marine Dr., Vancouver 8, B. C., Canada. This is an annotated compilation of catch statistics for salmon (genus *Oncorhynchus*) in the North Pacific. The principal purpose of the compilation is to present information on the amounts of various species of salmon that have been taken in that area during the past 50 years.

"Some aspects of the retinal physiology of salmon (*Salmo salar*)," by M. A. Ali, article, *Proceedings of the XVI International Congress of Zoology*, vol. 2, 1963, p. 70, printed. Permanent Committee of International Zoological Congresses, Secretary (Pierre Grasse), 105 Blvd. Raspail, Paris 6, France.

"'Ustoichivost' molodi semgi k razlichnoi solenosti vody" (Tolerance of young salmon (*Salmo salar*) to various degrees of water salinity), by N. V. Koroleva, article, *Biological Abstracts*, vol. 43, no. 5, 1963, 17592, printed. *Biological Abstracts*, 3815 Walnut St., Philadelphia 4, Pa.

Utilization of Lipids by Fish. II--Fatty Acid Oxidation by a Particulate Fraction from Lateral Line Muscle, by E. Bilinski and R. E. E. Jones, Collected Reprint 832, 8 pp., illus., printed. (Reprinted from *Canadian Journal of Biochemistry*, vol. 42, 1964, pp. 345-352.) National Research Council, Sussex St., Ottawa 52, Canada.

Utilization of Lipids by Fish. III--Fatty Acid Oxidation by Various Tissues from Sockeye Salmon (ONCORHYNCHUS NERKA), by R. E. E. Jones and E. Bilinski, Reprint No. 766, 4 pp., printed. (Reprinted from *Journal of the Fisheries Research Board of Canada*, vol. 21, no. 3, 1964, pp. 653-656.) Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Viajes de los salmones y regreso al rio natal" Migrations of salmon and their return to their native river), by

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

R. Vibert, article, Montes, vol. 18, no. 107, 1962, pp. 385-395, printed. Publicacion de los Ingenieros de Montes, Luchana 17, Madrid, Spain.

SARDINES:

Existing Regulations of Sardine Fishing, GFCM Studies and Reviews No. 20, 27 pp., illus., printed, 1963. Legislation Research Branch, Food and Agriculture Organization of the United Nations, Viale della Terme di Caracalla, Rome, Italy.

SEAL:

"Diving depths of the Weddell seal," by Arthur L. DeVries and Donald E. Wohlschlag, article, Science, vol. 145, no. 3629, July 17, 1964, p. 292, printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

SEA LAMPREY:

Paper Electrophoretic Patterns of Land-Locked Sea Lamprey (PETROMYZON MARINUS L.) Serum, by M. L. H. Thomas, Manuscript Report Series, Biological, no. 726, 41 pp., printed, 1962. Fisheries Research Board of Canada, Sir Charles Tupper Bldg., Riverside Dr., Ottawa, Canada.

SEAWEED:

"Tasmanian seaweed," article, Food Technology, vol. 18, April 1964, p. 119, printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

SENSORY ORGANS:

Sound Detection in Teleost Fishes, by J. Wodinsky and W. N. Tavolga, 12 pp., printed, 1964. (Reprinted from Marine Bio-Acoustics-Proceedings of a Symposium held at Bimini, Bahamas, April 1963, pp. 269-280.) The American Museum of Natural History, Central Park W. at 79th St., New York 24, N. Y.

SHAD:

Summer Food of Juvenile American Shad in Virginia Waters, by William H. Massmann, 5 pp., illus., printed. (Reprinted from Chesapeake Science, vol. 4, no. 4, December 1963, pp. 167-171.) Sport Fishing Institute, Bond Bldg., Washington, D. C. 20005.

SOUTH AFRICA:

"Ships, scientists in a broad study of S. A. fish resource," article, The South African Shipping News and Fishing Industry Review, vol. 19, no. 5, May 1964, pp. 97, 99, 101, 103, illus., printed, single copy 30 cents (about 42 U. S. cents). Thomson Newspapers, South Africa (Pty.) Ltd., P. O. Box 80, Cape Town, South Africa Republic. Discusses the research program of the Division of Sea Fisheries and its substantial changes in the last year in order to ensure the best possible use of its vessels in studying South Africa's commercial fish and their ocean environment.

SPINY LOBSTERS:

"Report on South African rock lobsters. Part I--Notes on the reproductive biology and size limit of S. A. rock lobsters," by A. E. F. Heydorn, article, The South African Shipping News and Fishing Industry Review, vol. 19, no. 5, May 1964, pp. 89, 91, 93, 95, illus., printed, single copy 30 cents (about 42 U. S. cents). Thomson Newspapers, South African (Pty.)

Ltd., P. O. Box 80, Cape Town, South Africa Republic. This article deals with the determination of size at which the South African rock lobster Jasus lalandii attains sexual maturity and with the reproductive potential of this species at various stages of its growth. The biological implications of a reduction in the minimum legal size limit are discussed.

"Temperatures in cartons of live rock lobsters," R. A. Harvey, article, Annual Report 1962, Fishing Industry Research Institute, p. 18, illus., printed. Fishing Industry Research Institute, Cape Town, South Africa Republic.

SQUID:

ENOPLOTEUTHIS ANAPSIS, a New Species of Euplateuthid Squid (Cephalopoda: Oegopsida) from the Atlantic Ocean, by Clyde F. E. Roper, Contributions No. 521, 9 pp., illus., printed, 1964. (Reprinted in Bulletin of Marine Science of the Gulf and Caribbean, vol. 14, no. 1, March 1964, pp. 140-148.) The Marine Laboratory, Institute of Marine Science, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

SUBMARINES FOR OCEANOGRAPHY:

Underwater Observations During the Fifth Voyage of the Submarine SEVERYANKA, by O. A. Sokolov, 62-19789, 28 pp., printed, February 19, 1962, \$1. (Translated from the Russian Okeanologiya, vol. no. 4, 1961, pp. 757-761.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

TAIWAN:

Fishing Sampans in Taiwan, by Han-po Lui, 82 pp., illus., printed in Chinese with English summary, 1963. Taiwan Fisheries Bureau, Department of Agriculture and Forestry, Provincial Government, Taiwan, Taipei, Taiwan.

"Tuna industry of Taiwan," by C. C. Yang, article, Industry of Free China, vol. 21, no. 2, February 1964, pp. 2-21, printed. Industry of Free China, Huai Ning St., Taipei, Taiwan. The first part of the article discusses the outlook of the world tuna fishery--characteristics of tuna fishing, background, current situation, international trade, features of Japanese tuna trade, and resource and market problems affecting future fishery development. Part 2 gives a brief history of Taiwan tuna fishing--expansion of the fleet after 1955; part 3 covers the present situation in Taiwan and some economic problems of the fishery, Singapore and Penang-based operations, and future fishing plans off Madagascar, Malaysia; part 4 presents conclusions and recommendations. "It is generally agreed that future expansion should not be planned exclusively on the basis of export but should be supported by a high level of consumption at home in view of the world market situation," states the author.

TARIFFS AND TRADE:

GATT--What It is...What It Does...How It Works, 22 pp., printed, 1964. The Information and Liaison Services, GATT Secretariat, Villa Le Bocage, Palais des Nations, Geneva 10, Switzerland.

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

THAILAND:

Design Trade Regulations of Thailand, by Dawn A. Chitel, OBR 64-54, 8 pp., printed, June 1964, 15 pp. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Discusses Thailand's trade policy, import tariff system, and other internal taxes, documentation and labeling and marking requirements. The report also covers special customs provisions, non-import controls, the country's export controls, United States foreign trade controls, and Government representation between the two countries. Import of some fishery products into Thailand regulated by Government authorities.

TUNING:

Practical Resistance Thawing of Fish, by H. R. Sand-Torry Memoir No. 143, 5 pp., printed, 1963. Fishery Research Station, Aberdeen, Scotland.

TUNING:

Guide for Apprentice Fishermen, edited and compiled by "World Fishing," 92 pp., illus., printed, 8s. (about US\$1.20). Grampian Press Ltd., The Tower, 229-243 Shepherd's Bush Rd., Hammersmith, London W6, England. Contains a series of articles previously published individually in the periodical World Fishing. In addition, there is a chapter on trawling. Subjects covered include, among others, the trawler's basic points; how the trawl works; danger on deck; first steps in net mending; hooks and tackles; and the net store. Also covered are gutting, stowing, and icing; handling a ship; the compass; understanding charts; courses and bearings; radio navigation aids; rules of the road; and safety and survival.

TUNING:

Refrigerated Fishing Trawler TROPIK (Rybolobno-vozil'nyi trawler "Tropik"), by N. I. Borisov, Navy Order No. 425 ONI 939, 11 pp., printed, 1962. (Translated from the Russian, Rybnoe Khoziaistvo, vol. 38, no. 8, 1962-41.) Department of Navy, Office of Naval Intelligence, Washington, D. C. 20360.

TUNING:

Japan-United States-Canada Fisheries Treaty and Japan-Soviet Fisheries Treaty, by Kenzo Kawakura, 13 pp., printed. (Translated from the Japanese, Kokusai Mondai, no. 5, 1963.) Department of State, Division of Library and Reference Service, State Annex 1, Washington, D. C.

TUNING:

The tolerance of rainbow trout, *Salmo gairdneri* irideus Gibbons, to salt water, by T. Awakura, article, Suisan Fukajo Kenkyu Hokoku, vol. 17, December 1962, pp. 41-48, printed in Japanese. Hokkaido Fish Hatchery, Fisheries Agency, Nakanoshima, Outskirt of Sapporo, Hokkaido, Japan.

Observations on the breeding of rainbow trout, *Salmo gairdneri* irideus Gibbons, in salt water, by T. Awakura and others, article, Suisan Fukajo Kenkyu Hokoku, vol. 17, December 1962, pp. 49-57, printed in Japanese. Hokkaido Fish Hatchery, Fisheries Agency, Nakanoshima, Outskirt of Sapporo, Hokkaido, Japan.

Utilization of lipids by fish. I--Fatty acid oxidation by tissue slices from dark and white muscle of rainbow trout (*Salmo gairdneri*), by E. Bilinski, article, Canadian Journal of Biochemistry and Physiology, vol. 41, January 1963, pp. 107-112, printed. Division of Administration and Awards, The National Research Council, Sussex St., Ottawa 2, Canada.

TUNA:

Body temperature of yellowfin and skipjack tunas in relation to sea surface temperature, by Izadore Barrett and Frank J. Hester, article, Nature, vol. 203, no. 4940, July 4, 1964, pp. 96-97, illus., printed, single copy 4s. (about 55 U. S. cents). St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

Considerações práticas sobre o enverdecimento do atum tropical (1) (Practical considerations on development of green meat in tropical tuna), by J. F. Aldrin, article, Conservas de Peixe, vol. 19, no. 219, June 1964, pp. 15-17, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda., Regueirao dos Angos, 68, Lisbon, Portugal.

Migration of a tagged bluefin tuna across the Pacific Ocean, by Craig J. Orange and Bernard D. Fink, article, California Fish and Game, vol. 49, no. 4, 1963, pp. 307-309, printed. Printing Division, Documents Section, No. Seventh St. at Richards Blvd., Sacramento, Calif. 95814.

Preliminary age determination of bluefin tuna, *Thunnus thynnus*, by Robert R. Bell, article, California Fish and Game, vol. 49, no. 4, 1963, p. 307, printed. Printing Division, Documents Section, No. Seventh St. at Richards Blvd., Sacramento, Calif. 95814.

UNDERWATER PHOTOGRAPHY:

Combination camera and bottom-grab, by K. O. Emery and A. S. Merrill, article, Oceanus, vol. 10, no. 4, June 1964, pp. 2-7, illus., printed. The Woods Hole Oceanographic Institution, Woods Hole, Mass. The identification of animals shown on bottom photographs has been a problem. This difficulty has been solved by combining a bottom sampler as a source of specimens and a camera to view ecological relationships at the same site.

A wide-angle attachment for underwater photography with 16 mm. motion-picture camera, by A. S. Lodkin, article, USSR Industrial Development: Soviet Precision Equipment, No. 50, OTS 63-13642, 38 pp., printed, December 26, 1962, \$3.60. (Translated from the Russian, Tekhnika Kino i Televideniia, vol. 6, no. 9, 1962, pp. 3-19.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

UNITED KINGDOM:

Government Publications--Department of Agriculture and Fisheries for Scotland, Sectional List No. 52, 23 pp., printed, revised to March 31, 1963. Her Majesty's Stationery Office, London, England. (For sale by British Information Services, 845 Third Ave., New York, N. Y. 10022.)

Government Publications--Fisheries, Sectional List No. 23, 11 pp., printed, revised to March 13, 1962. Her Majesty's Stationery Office, London, England. (For sale by British Information Services, 845 Third Ave., New York, N. Y. 10022.)

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

Journal of the Marine Biological Association of the United Kingdom, vol. 44, no. 2, June 1964, 278 pp., illus., printed, \$13.50. Cambridge University Press, 32 E. 57th St., New York 22, N. Y. Includes, among others, the following articles: "Line-fishing of the continental slope," by G. R. Forster; "Observations on the fertility of the oyster (*Ostrea edulis*)," by P. R. Walne; "The feeding of plaice and sand-eel larvae in the southern North Sea," by J. S. Ryland; and "A revised check-list of British marine algae," by Mary Parke and P. S. Dixon.

Sea Fisheries Statistical Tables, 1963, 46 pp., printed, 1964, 5s. (about 70 U. S. cents). Ministry of Agriculture, Fisheries and Food, London, England. (Available from Sales Section, British Information Services, 845 Third Ave., New York, N. Y. 10022.) Includes statistics on fish of British taking, imports and exports, and demersal and pelagic landings.

U.S.S.R.:

The Effect of the Fishing Industry on the Biological Characteristics of Fish (from Archeological Records), by V. D. Lebedev, Translations No. 114, 10 pp., printed, 1963. (Translated from the Russian, *Trudy Soveshchan.*) Fisheries Laboratory, Department of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

Fishes of the Northern Seas of the U.S.S.R. (Ryby severnykh morei SSSR), by A. P. Andriyashev, OTS 63-11160, 621 pp., illus., processed, 1964, \$6.25. (Translated from the Russian, Keys to the Fauna of the U.S.S.R., No. 53, Zoological Institute of the U.S.S.R. Academy of Sciences, Moscow, U.S.S.R., 1954.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Fishing Economy, 1960, OTS 63-21559, 28 pp., printed, April 10, 1963, 75 cents. (Translated from Russian.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Rybnoe Khoziaistvo, vol. 40, no. 6, June 1964, 96 pp., illus., printed in Russian, single copy 50 Kopecks (about 56 U. S. cents). Rybnoe Khoziaistvo, B-140, V. Krasnosel'skaia 17, Moscow, U.S.S.R. Includes, among others, these articles: "From the speech of the Chairman of the Federal Fisheries Committees at the Conference of Young Far East Fishermen;" "The formation of cod stocks in the waters off western Greenland," by M. A. Pavlov; "The effect of transport conditions on the survival rate of mussels," by A. I. Ivanov; "Our experience with large-scale sturgeon farms in Azerbaidzhan," by M. Ramazanov; "The fish caught by our vessel is the cheapest of all fish caught by the Murmansk trawler fleet," by L. N. Gruzdev; "The rules of signaling and movement for fishing vessels when engaged in joint operations (with vessels of other countries)," by N. S. Goriunov; "How to decrease the time needed to repair vessels and increase the quality of work," by L. G. Glazkov and others; "Improved trawl used in herring fishery by medium fishing trawlers (SRT) with 300 and 400 hp.," by A. V. Chentsov; "Develop and perfect the midwater pair trawling (Georges Bank)," by S. E. Shevtsov; "Herring fishing with purse seines from refrigerated medium trawlers (SRTR-400)," by A. I. Kostin; "Fishing without nets for Black Sea anchovy,"

by E. G. Sharapov; "New successes of Sakhalin fishery kolkhozes," by A. A. Taranov; "Dietetic canned fish with vegetables," by G. S. Korobkina and M. Bogoslovskaja; "Rational exploitation of natural sources of vitamin A," by G. A. Dolbish; "Economic efficiency of Baltic herring processing," by L. I. Ilin; "Party and economic meeting of Black Sea and the Sea of Azov fishery workers;" and "Device for fishing (which regulates various depths of drift net)" by V. P. Ivashov and others.

--M. A. K...

Rybnoe Khoziaistvo, vol. 40, no. 7, July 1964, 96 pp., illus., printed in Russian, single copy 50 Kopecks (about 56 U. S. cents). Rybnoe Khoziaistvo, B-140, V. Krasnosel'skaia 17, Moscow, U.S.S.R. Includes, among others, these articles: "Present status and future prospects for the construction of fishing vessels," by G. B. Terent'ev; "The fishing industry of the Far East in the new stage of development," by S. H. Nadibaidze; "We must better exploit the resources of the Northern fishing basin," by A. I. Pippov; "Butterfish (*Poronotus*)," by A. A. Dubova; "Biological basis of the ichthyofauna reconstruction of the Riga Gulf," by V. S. Tanasiichuk; "Smooth-spined grenadier (*Macrourus berglax*); its chemical composition and utilization," by E. F. Kleie; "Manufacturing of sausages from frozen yellowfin tuna," by Z. A. Iakovleva and G. S. Khristoferzen; "The effect of angle parameters of the knife on the cutting force during slicing of (tuna) fish," by M. A. Iakubov; "Utilization of Bering Sea shrimp," by V. S. Gordievskii; "Distribution of pelagic larvae of the Kamchatka in the waters of western Kamchatka," by R. R. Markarov; "Our experiences with the tagging of the Pacific navaga (*Eleginus gracilis*) in the Tauskaiaialet," by B. A. Gritsenko; "Commercial testing of automated trawl boards," by V. Novofastovskii; "Efficiency of fishing for Azov (Sea) anchovy," by I. L. Luzanov; "Economic efficiency of the utilization of product refrigerators in the trawling operation in the Barents Sea," by V. I. Zakurdaev; "Problems in calculating costs in the fishing industry," by L. M. Gavhina; and "Evaporating plant on the whaling ships Vladivostok and Dalnii Vostok," by B. M. Galev.

--M. A. K...

WEATHER CHARTS:

The following processed weather charts are published by the Weather Bureau, U. S. Department of Commerce, Washington, D. C., and are for 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, gale, and hurricane warnings; explanations of weather displays; and schedules of AM and FM radio, TV, and radiophone stations that broadcast weather forecasts and warnings.

Canadian Border to Eureka, Calif., and Alaska, Eureka to Point Conception, Calif., 1964.
Hawaiian Islands, 1964.
Morgan City, La., to Apalachicola, Fla., 1964.

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

WHALE MEAT:

"Economic value of whale meat," by Takashi Kaneda, Tetsuo Sakai and Seinosuke Ishii, article, Chemical Abstracts, vol. 59, November 11, 1963, 11965g, published by American Chemical Society, 1155 16th St., Washington, D. C. 20006.

WHALES:

"Caza de cachalotes en el Peru: estadísticas de caza para los años 1947-1961 y un intento de explicar las condiciones de la población en el periodo 1947-1961" (The catch of sperm whales in Peru: statistics of capture for the years 1947-1961 and an analysis of the conditions of the population in the period 1947-1961), by G. Saetersdal, J. Mejia, and J. Ramirez, article, Boletín, vol. 1, no. 3, 1963, pp. 1-4, printed in Spanish. Instituto de Investigación de Recursos Marinos, La Punta, Callao, Peru.

"Efficacy of Humpback Whale Feeding in the South Atlantic Ocean, by M. V. Ivashin, OTS 63-21443, 8 pp., printed, March 28, 1963, 50 cents. (Translated from the Russian, Biulleten' Moskovskoe Obshchestvo Ispytatelei Prirody, Otdel Biologicheskii, vol. 36, no. 6, 1961, pp. 110-115.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

"Scientific Reports of the Whales Research Institute, no. 18, 189 pp., illus., printed, March 1964.

Whales Research Institute, 12-4 Tsukishima Higashidori, Chuo-ku, Tokyo, Japan. Includes, among others, the following article: "Fin whale subpopulations in the Antarctic whaling areas II, III, and IV," by K. Fujino; "Examination on age determination of the fin whale," by S. Ohsumi; and "Squids as food of sperm whales in the Bering Sea and Alaskan Gulf," by T. Okutani and T. Nemoto.

"100-Cycle Signals and Balaenoptera (Fin Whales), by E. Schevill, W. A. Watkins, and R. H. Backus, Contribution No. 1393, 6 pp., printed, 1963. (Reprinted from Marine Bio-Acoustics - Proceedings of a Symposium held at Bimini, Bahamas, April 1963, pp. 147-152.) Woods Hole Oceanographic Institution, Woods Hole, Mass.

WHALING:

"A hundred years of Norwegian whaling--The start in the first year," by Asbjorn Bakken, article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 3, no. 5, May 1964, pp. 122, 124-128, 130-132, 137, illus., printed in Norwegian and English. Hvalfangstforeningen, Sandefjord, Norway.

"Whales and whaling," article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 53, no. 4, April 1964, pp. 85-88, printed. Hvalfangst-

foreningen, Sandefjord, Norway. An excerpt from the Annual Report of the National Oceanographic Council for the period April 1, 1962-March 31, 1963. "Broadly the findings are that blue and humpback whales have been reduced to so small a remnant of the original stocks that only total protection for an indefinite period will allow them to recover, and that although there is a much larger surviving stock of fin whales, that too is declining and a drastic reduction of catching, to about a quarter of the present level, is needed for the stock to begin its recovery," states the article.

"Whales and whaling in the Western Pacific," by R. J. A. W. Lever, article, South Pacific Bulletin, vol. 14, no. 2, April 1964, pp. 33-36, illus., printed, single copy 30 cents. South Pacific Commission Publications Bureau, G. P. O. 5254, Sydney, Australia. Gives an account of whaling activities in Melanesia and Polynesia from 1789 to 1860. Discusses the early history of whaling in the area, types of whales hunted, main whaling grounds and island bases, the spouting of whales, use of whale teeth (ivory) for making jewelry, and decline of the industry in the Pacific.

"Whaling in the Antarctic in season 1962/63," article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 52, no. 9, September 1963, pp. 249-252, 255-256, 259-262, 265-274, illus., printed. Hvalfangstforeningen, Sandefjord, Norway.

WHITEFISH:

"Age and growth of the round white fish in Lake Michigan," by Donald Mraz, article, Transactions of the American Fisheries Society, vol. 93, no. 1, 1963, pp. 46-52, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

"On the competition between whitefish species," by Thorolf Lindstrom and Nils-Arvid Nilsson, article, The Exploitation of Natural Animal Populations. A Symposium, 1960, pp. 326-340, printed, 1962. John Wiley and Sons, Inc., 605 3rd Ave., New York, N. Y.

White Fish Authority, Annual Report and Accounts for the Year Ended 31st March 1964, 54 pp., illus., printed, June 1964, 4s. (about 55 U.S. cents). Her Majesty's Stationery Office, York House, Kingsway, London WC2, England. Covers production, distribution and marketing, research and development, and administration of white fish fisheries.

WORLD PRODUCTION:

"Marine fish production: A world-wide view," by C. P. Idyll, article, Proceedings of the International Congress of Zoology, vol. 16, no. 4, 1963, pp. 330-335, printed. Secretary, Permanent Committee of International Zoological Congresses, 105 Blvd. Raspail, Paris 6, France.



FISH 'N SEAFOOD PARADE



The new emblem for "Fish 'n Seafood" promotions. Reproduction proofs for use in promotion pieces, food store newspaper ads, etc., are available from the National Fisheries Institute.

A month-long campaign to promote the sale of fishery products got under way October 1, 1964. Theme of the promotion: "Fish 'n Seafood Parade." Its sponsor: the National Fisheries Institute, 1614 20th Street NW., Washington, D. C.

Many food stores and chain stores, dealers, retailers, etc., tied in their advertising into the "Fish 'n Seafood Parade" promotion.

The Shrimp Association of the Americas also featured October as the time for "Shrimp Fiesta."

OCTOBER
SHRIMP FIESTA
 can put shrimp glamour into your menu... *extra profits into your till*

Here are five tempting ways to take advantage of the high customer-preference for shrimp. And, in addition, you get natural portion control with low preparation cost and high mark-up.

Radio, TV and newspapers will be telling your customers that October is Shrimp Fiesta Month. It's easy to tie in with this extra-profit promotion. Serve shrimp throughout October... and all year long.

Start extra profits marching your way with the FISH 'N SEAFOOD PARADE throughout October

SHRIMP
 America's Popular Seafood
 Serve It Everyday

SHRIMP ASSOCIATION OF THE AMERICAS

Advertisement used by Shrimp Association of the Americas to promote shrimp during "Fish 'n Seafood" month in October

USE OF MANATEES TO CONTROL AQUATIC WEEDS

A three-year study of manatees or sea cows and their usefulness in controlling aquatic weeds has been launched by the Central and Southern Florida Flood Control District (FCD), according to a June 23, 1964, press release issued by that agency.



At the test site, manatee is lowered carefully into canal which has been blocked with an earthen dam, foreground. A quarter-mile section has been fenced off for the initial tests to see how fast the mammals will eat the vegetation in this waterway. Later they'll be put to work in other sections of canals.

Scientists have been gleaming all the information available. Oddly, scientists know very little about manatees, except that they are strict vegetarians, and they apparently consume vast quantities of weeds. Most authorities consulted by the FCD strongly urged sponsorship of the study which is now under way.

The Executive Director of the 18-county FCD notes that present chemical and mechanical methods of weed control are costly. The FCD is spending \$140,000 a year to keep its canals clear of obnoxious vegetation. But the FCD system, which now includes more than 100 miles of canals, is only 40 percent completed. The Director predicts that ultimately the FCD will have to spend \$500,000 a year on weed control--unless some new method is discovered to cut costs or do a better job.

The water hyacinth (with its lovely purple blooms) is only one of a number of weeds that, if left uncontrolled, would soon multiply, spread, and choke the arteries that carry waters in rainy seasons, irrigation and municipal supplies in dry times.

FCD boat crews operating throughout the 15,000 square miles of the District are now using chemical sprays to control the hyacinth and the large-leaved water lettuce. But those types of "floating" aquatics don't really pose as serious problems as do the submerged types. Four principal types of underwater weeds--elodea, coontail, southern naiad, andigator weed--are infinitely more troublesome, because there is no practical or economical way to control them with chemicals.

The District uses a mechanical plow (actually a large steel A-frame) to uproot the underwater weeds. The "plow" is dragged along canal bottoms by an amphibious "duck," plus military vehicle. Draglines are used to remove the uprooted weeds from canals. The FCD has to do the job over and over again, about once every 4 months.

(continued on next page)

Five of the cumbersome mammals (which can grow to more than 12 feet in length and weigh more than a ton) were netted in the Miami River and placed (on May 7) in a sturdily fenced sector of a canal where weed growth is typical.

Scientists from Florida Atlantic University at Boca Raton are directing the study, under contract from the Flood Control District. The FCD will pay \$34,000 to the University to find out just how many weeds manatees can eat, to study their rate of reproduction, and to learn whether or not the mammals can be used practically and economically as a means of biological weed control.

For more than two years FCD officials have been investigating the possible use of the mammals. They

Since some authorities are concerned about the long-range possible side-effects continued use of chemical herbicides, a means of biological weed control might well be preferred, if practical.

Loaded into wooden boxes, filled with water, the manatees were transferred by trucks from the Seaquarium to the selected FCD canal. They are now busily at work eating weeds. And watching them from the canal banks is an assistant professor of Florida Atlantic University, who is directing the study program. Also watching from the banks are officers of the Florida Board of Conservation. The manatee is protected under Florida law, and a stiff fine and jail term await anyone who molests or kills one.

A July 16 letter from the FCD points out: "It became obvious earlier this month that they are doing an excellent job of clearing the canal and we expect to move them or release them to another reach of the canal. . . ."

It's hoped that the new study will help in preservation of the manatee--now threatened with possible extinction--as well as providing a new answer to weed control problems in Florida. (News Release, June 23, 1964, Central and Southern Florida Flood Control District, West Palm Beach, Fla.)

Note: See Commercial Fisheries Review, April 1960 p. 5.



Fig. 2 - Close-up of a manatee or sea cow in a cargo net, transferred from a tank at the Miami seaquarium to a truck for transfer to the test sector of the canal.



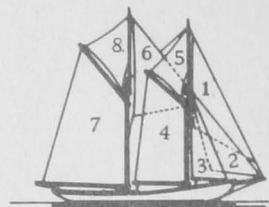
SHARKS CAN DETECT PREY BY VIBRATION

"Sharks can sense their prey by vibration at a distance of a quarter of a mile. After this they rely on their sense of smell, and at 50 feet, they begin to use their eyes. At 10 feet, vision is their primary sense." This statement was made by a Professor of Zoology at Cornell University, at the ANZAAS Conference in Canberra, Australia, on the technique of operating on living sharks and current investigations of their heart and sense organs. Considerable work on sharks is done at the Lerner Marine Laboratory of the American Museum of Natural History at Bimini, in the Bahamas. Sharks measuring up to 17 feet long are maintained there for experimental and behavioral study in three pens constructed of stainless steel chain-link fencing. (Fisheries News-letter, Canberra, Australia, April 1964.)

BLUENOSE--CANADA'S MOST FAMOUS SAILING VESSEL

Bluenose, Canada's most famous sailing vessel, was built in 1921 to challenge for International Fishermen's Trophy--won the previous year by the United States schooner Esperanto. Bluenose regained the Cup for Canada in the first Series she sailed. She has since once relinquished it throughout a keenly contended career, spanning two decades. She

SAIL PLAN



- | | |
|--|-------------------------|
| | 1. Jib topsail |
| | 2. Jib |
| | 3. Jumbo |
| | 4. Foresail |
| | 5. Fore gaff-topsail |
| | 6. Fisherman's staysail |
| | 7. Mainsail |
| | 8. Main gaff-topsail |

DIMENSIONS

Overall Length	143'
Beam	27'
Waterline	112'
Depth Main Hatch	11'6"
Draught	15'10"
Mainmast, above Deck	81'
Foremast, above Deck	73'
Main-topmast, overall	53'6"
Fore-topmast, overall	48'6"
Sail area, including Fisherman's Staysail, approximately	10,900 sq. ft.
Mainboom	81'
Maingaff	51'
Foreboom	32'6"
Foregaff	32'6"
Displacement	285 tons



The schooner Bluenose II under full sail.

ly had to be sold, and ended her days as a freighter among the islands of the West Indies. She struck a Haitian reef and sank in 1946. Bluenose II was launched on July 24, 1963, from the same shipyard at Lunenburg that had constructed her predecessor. Bluenose II was created with two purposes in mind: (1) as the most fitting of memorials to a great ship; (2) as a goodwill ambassador and symbol of Nova Scotian hospitality. She is in all details of sail-plan and hull identical to the original Bluenose.



IMPORTANT NOTICE

Due to an unexpected mix-up in the mailing of the June 1964 issue of the magazine, there are probably a number of subscribers who did not receive that issue. If you are one of those who did not receive that issue, write us for a copy.