



RECENT FISHERY PUBLICATIONS

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

- | Number | Title |
|-------------------|---|
| CFS-3540 | - Frozen Fishery Products, June 1964, 8 pp. |
| CFS-3551 | - Massachusetts Landings, January 1964, 6 pp. |
| CFS-3552 | - Louisiana Landings, 1963 Annual Summary, 8 pp. |
| CFS-3553 | - Shrimp Landings, January 1964, 5 pp. |
| CFS-3555 | - Shrimp Landings, February 1964, 5 pp. |
| CFS-3557 | - New York Landings, May 1964, 5 pp. |
| CFS-3567 | - Virginia Landings, April 1964, 4 pp. |
| CFS-3568 | - California Landings, May 1964, 4 pp. |
| CFS-3572 | - Rhode Island Landings, March 1964, 3 pp. |
| CFS-3573 | - Fish Meal and Oil, June 1964, 2 pp. |
| CFS-3574 | - Middle Atlantic Fisheries, 1963 Annual Summary, 6 pp. |
| CFS-3576 | - New Jersey Landings, June 1964, 3 pp. |
| SL-16 | - Wholesale Dealers in Fishery Products, Florida, 1963, 16 pp. (revised). |
| Sep. No. 710 | - Comparison of Salmon Catches in Monofilament and Multifilament Gill Nets--Part II. |
| Sep. No. 711 | - Weights and Measures Activities in the USDI Fishery Products Standards and Inspection Programs. |
| FL-336 | - Commercial Fisheries Outlook, April-June 1964, 4 pp. |
| FL-567 | - Caviar and Other Fish Roe Products, by Norman D. Jarvis, 10 pp., May 1964. Covers the steps involved in processing grain caviar in barrels; salted and smoked cod roe; dry-salted, and air-dried and pressed mullet roe; salmon caviar; salted and air-dried tuna roe; and tuna caviar. |
| SSR-Fish. No. 464 | - Fish Schools and Bird Flocks in the Central Pacific Ocean, by Kenneth D. Waldron, 25 pp., illus., March 1964. |
| SSR-Fish. No. 476 | - Herring Fishery of the U. S. Pas-samaquoddy Region, by Leslie W. Scattergood and Lewis J. Lozier, 25 pp., illus., March 1964. |

SSR-Fish. No. 481 - Air and Water Temperatures and Stream Flow Data, Convict Creek, Mono County, California, 1950 to 1962, by Harry D. Kennedy, 50 pp., April 1964.

Extent of Acid Mine Pollution in the United States Affecting Fish and Wildlife, by Edward C. Kinney, Circular 191, 32 pp., illus., processed, June 1964.

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

Number	Title
MNL-II	- Fishing Industry in Spain, 1963, 8 pp.
MNL-26	- Taiwan Fisheries in 1963, 21 pp.,
MNL-40	- Moroccan Fishing Industry, 1962/63, 19 pp.

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

(Baltimore) Monthly Summary--Fishery Products, January, February, March, and April, 1964, 8 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 103 S. Gay St., Baltimore, Md. 21202.) Receipts of fresh- and salt-water fish and shellfish at Baltimore by species and by states and provinces; total receipts by species and comparisons with previous periods; and wholesale prices for fresh fishery products on the Baltimore market; for the months indicated.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, July 1964, 15 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.) California cannery receipts of tuna and tunalike fish and other species used for canning; pack of canned tuna, tunalike fish, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; prices for fish meal, oil, and solubles; for the month indicated.

Fishery and Oceanography Translations, no. 1, June 1964, 41 pp., processed. (Branch of Reports, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington, D. C. 20240.) The first of a new series established to provide information about translations of fishery and oceanography literature. Future issues of this periodical will include translated Russian current titles, journal tables of contents, and short translations. In July 1963 the Bureau of Commercial Fisheries, Branch of Reports, established a Translation Program to disseminate information about Russian scientific literature, to

produce Russian translations for scientists, and to act as a clearinghouse for information on translations from all languages. The Translation Program maintains a bibliographic file begun in 1959 and containing records of nearly 5,000 completed translations and more than 300 translations in progress. In addition, approximately 1,200 translations are available on interlibrary loan. This issue contains an article, "Russian serials of interest to aquatic biologists, fishery technologists, and oceanographers," by Kristian Fr. Wiborg and Paul T. Macy; and a list, "Translations of fishery and oceanography literature, authors A-F," compiled by Paul T. Macy.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, July 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, July 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.

North Pacific Oceanography, February-March 1963, by W. James Ingraham, Jr., Data Report No. 3, 1 microfiche card, October 24, 1963. (Branch of Reports, Bureau of Commercial Fisheries, U.S. Department of the Interior, Washington, D. C. 20240.)

Oceanographic Observations, 1961, East Coast of the United States, by Joseph Chase, Data Report No. 1, 6 microfiche cards, illus., September 25, 1963, distribution limited. (Branch of Reports, Bureau of Commercial Fisheries, U.S. Department of the Interior, Washington, D. C. 20240.) This is the first in the new Data Report Series, which comprises reports that include compilations of unanalyzed data collected during oceanographic, limnological, or biological investigations. Each report will be serially numbered, issued separately, and paged separately. The reports will be distributed on 3- by 5-inch microfiche cards. Hard (full-size) copy will be available for purchase; however, the microfiches will be free to a restricted mailing list of laboratories, libraries, state fishery agencies, research institutions, and research scientists. Reports in this new series can be issued more quickly and cheaply and will occupy less storage space than the Special Scientific Reports--Fisheries in which such data were previously published.

Preliminary Results of the Systematic Screening of 4,306 Compounds as "Red-Tide" Toxicants, by Kenneth T. Marvin and Raphael R. Proctor, Jr., Data Report No. 2, 3 microfiche cards, February 10, 1964. (Branch of Reports, Bureau of Commercial Fisheries, U.S. Department of the Interior, Washington, D. C. 20240.)

Production of Fishery Products in Selected Areas of Maryland, Virginia, and North Carolina, 1963, by William N. Kelly, 33 pp., June 1964. (Market News Service, U.S. Fish and Wildlife Service, P. O. Box 447, Hampton, Va. 23369.) A summary of commercial landings of fish and shellfish and the production of crab meat and shucked oysters as reported by producers and wholesalers from selected principal fishing localities of Virginia, Maryland, and North Carolina. Discusses landings in the Hampton Roads, Lower Northern Neck, Lower Eastern Shore, and Chincoteague areas of Virginia; Ocean City, Cambridge, and Crisfield, Maryland; and Morehead City, North Carolina. Also covers landings by major species of finfish--scup, alewife, sea bass, tuna, fluke, gray sea trout, striped bass, croaker, butterfish, spot, shad, swordfish, and menhaden. Includes statistical tables on catches of the major finfish species, shrimp, and other shellfish; and landings by localities. Swordfish was landed in the area for the first time, with 14 long-line vessels participating in this fishery.

Receipts and Prices of Fresh and Frozen Fishery Products at Chicago, 1963, by C. E. Cope, 58 pp., illus., September 1964. (Fishery Market News Service, U.S. Fish and Wildlife Service, Rm. 704, 610 S. Canal St., Chicago, Ill. 60607.) Summarizes fishery products receipts and prices at Chicago during 1963. Notable events were the establishment of shrimp futures trading on the Chicago Mercantile Exchange; initiation of air shipments of Alaskan fresh-water fish to Chicago; and the perfecting of a yellow perch filleting machine. Statistical tables include data on receipts of fish and shellfish at Chicago wholesale market by species, states, and provinces, and by months; and wholesale market price ranges by months for fresh-water fish, frozen fillets, and other frozen fish and shellfish.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, August 1964, 9 pp. (Market News Service, U.S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle 4, 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.

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Sea-Water Systems for Experimental Aquariums, edited by John R. Clark and Roberta L. Clark, Re-

search Report 63, 192 pp., printed, 1964, \$1.25. Includes 27 papers dealing with different sea-water systems in a number of Federal, state, and foreign marine laboratories. Should be of value to all who are concerned with fresh-water as well as sea-water aquarium systems.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILD-LIFE 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.

ACCLIMATIZATION:

"Aklimatizatsiya ryb vo vnutrennik vodoemakh Latviiskoi SSSR" (Acclimatization of fishes in the inland waters of the Latvian SSSR), by G. P. Andrushaitis, article, Aklimatizatsia Zhivotnykh v SSSR, pp. 212-213, printed in Russian, 1963, Akademiia Nauk Kazakhskoi SSSR, Alma-Ata, U.S.S.R.

"Biologicheskoe obosnovanie i perspektivy aklimatizatsii vesennenerestuyushchego siga v vazhneishikh vodokhranilishchakh SSSR" (Biological basis and prospects for the acclimatization of spring-spawning whitefish in the more important reservoirs of the USSR), by V. I. Anpilova, article, Aklimatizatsia Zhivotnykh v SSSR, pp. 214-216, printed in Russian, 1963, Akademiia Nauk Kazakhskoi SSSR, Alma-Ata, U.S.S.R.

ALGAE:

"Alginic acid," by Louis Lefur, article, Chemical Abstracts, vol. 58, March 18, 1963, 5458a, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Developing an unconventional food--algae--by continuous culture under high light intensity," by Robert O. Matthern and Robert B. Koch, article, Food Technology, vol. 18, May 1964, pp. 59-65, printed, The Garrard Press, 510 N. Hickory, Champaign, Ill.

AMINO ACIDS:

"Amino acid composition of defatted fish flour from oil sardine (*Clupea longiceps*)," by S. B. Kadkol and N. L. Lahiri, article, Chemical Abstracts, vol. 58, February 4, 1963, 2781a, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Seasonal influences on the free amino acids in fish muscle and their importance for quality," by F. Bramstedt, article, Zeitschrift fur Ernährungswissenschaft, supplement 3, 1963, p. 51, printed in German, Journal of Nutritional Science, Holzhofallee 35, Darmstadt, Germany.

ANCHOVY:

"The food and feeding habits of the anchoveta, *Cetergraulis mysticetus*," in the Gulf of Panama, by William H. Bayliff, article, Inter-American Tropical Tuna Commission Bulletin, vol. 7, no. 6, 1963, pp. 456-459, printed in Spanish and English, Inter-American Tropical Tuna Commission, La Jolla, Calif.

"Nekotorye sravnitel'nye dannye o razmnozhenii anchousa *Engraulis encrasicolus* L." (Some comparative data on the reproduction of the anchovy *Engraulis encrasicolus* L.), by T. V. Dekhnik, article, Voprosy Ikhtiologii, vol. 3, no. 1, 1963, pp. 144-151, illus., printed in Russian, Akademiia Nauk SSSR, Ikhtiologicheskaja Kommissaia, Moscow, U.S.S.R.

ANIMAL NUTRITION:

"Microbiological evaluation of protein quality with *Tetrahymena pyriformis* W. I--Characteristics of growth of the organisms and determination of relative nutritive values of intact proteins," by W. R. Fernell and G. D. Rosen, article, British Journal of Nutrition, vol. 10, 1956, pp. 143-155, illus., printed, Cambridge University Press, 32 E. 57th St., New York, N. Y. 10022.

ANTIBIOTICS:

"Test on the storage of white fish in ice with added aureomycin," by F. Soudan, J. R. Crepey, and M. Dubost, article, Revue des Travaux, Institut Scientifique et Technique des Pêches Maritimes, vol. 27, no. 2, June 1963, pp. 211-220, illus., printed in French, Institut Scientifique et Technique des Pêches Maritimes, 59 Avenue Raymond Poincaré, Paris XVI, France.

ARGENTINA:

"Numerosas adhesiones recibe el Primer Congreso de Promocion Pesquera Bonaerense a Realizarse en el mes de Mayo en la ciudad de Mar del Plata" (Many participants admitted to the First Congress for the Promotion of Fisheries in Buenos Aires Province, to take place in the month of May in the city of Mar del Plata), article, Asuntos Agrarios, vol. 11, no. 128, April 1964, p. 3, printed in Spanish, Departamento de Publicaciones, Avda. 51, No. 774, La Plata, Argentina.

"Piscicultura del pejerrey--Dependencias de la Estacion Hidrobiologica de Chascomus" (Pond culture of the pejerrey--Branch of the Hydrobiological Station at Chascomus), by Fernando C. Ramirez and Haydee A. Macioci, article, Asuntos Agrarios, vol. 11, no. 129, May 1964, p. 5, illus., printed in Spanish, Departamento de Publicaciones, Avda. 51, No. 774, La Plata, Argentina.

"Piscicultura del pejerrey. IV--Expedicion y siembra de alevinos" (Pond culture of the pejerrey. IV--Field trip and planting of fingerlings), by Fernando C. Ramirez and Haydee A. Macioci, article, Asuntos Agrarios, vol. 11, no. 128, April 1964, p. 5, illus., printed in Spanish, Departamento de Publicaciones, Avda. 51, No. 774, La Plata, Argentina.

"El Primer Congreso de Promocion Pesquera Bonaerense establecio las bases para el mejor aprovechamiento de nuestra riqueza icticola" (The First Congress for the Promotion of Fisheries in Buenos Aires Province established the necessary bases for the better development of our ichthyological riches), article, Asuntos Agrarios, vol. 11, no. 129, May 1964, pp. 1, 8-10, illus., printed in Spanish, Departamento de Publicaciones, Avda. 51, No. 774, La Plata, Argentina.

BELGIUM:

Officiele Lijst der Belgische Vissersvaartuigen, 1964 (Official List of Belgian Fishing Vessels, 1964), 75 pp., printed in Flemish, 1964, Ministerie van Verkeerswezn, en van Post, Telegraaf en Telfoon, Brussels, Belgium.

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BUFFALOFISH:

Wholesale Market Demand for Buffalofish, by Marsha A. Walters, 72 pp., processed, September 1961. University of Arkansas, College of Business Administration, Industrial Research and Extension Center, Fayetteville, Ark.

BYPRODUCTS:

"Fish for meal and oil. Part 2--South Africa," by J. A. Lovern, article, News Summary, no. 14, May 1964, pp. 14-16, processed in English with French, German, and Spanish summaries, limited distribution. International Association of Fish Meal Manufacturers, 70 Wigmore St., London W1, England. The main fish species used for meal and oil manufacture in South Africa are the pilchard (Sardinops ocellata) and the maasbanker or horse mackerel (Trachurus trachurus). The oil content shows a similar range, with commercial yields ranging from about 3 gallons to over 20 gallons per short ton, with an average of about 11. Pilchard oil is more unsaturated than maasbanker oil, the respective iodine values being 172-203 and 142-164.

CANADA:

Fisheries Statistics, Nova Scotia, 1962, 46 pp., illus., printed in French and English, July 1964, 75 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada. Consists of tables showing quantity and value of landings in Nova Scotia during 1950-1962 by species; value of fishery products, 1950-1962; classification of fishing vessels in Nova Scotia by weight, length, fisheries districts, and type of gear used, 1961/1962; new capital investment in the Nova Scotian fishery, 1962; number of fishermen and persons engaged in the major fisheries, 1961/1962.

CARP:

"Fish eat weeds to aid power plant operation," article, Science News Letter, vol. 86, no. 9, August 29, 1964, p. 139, printed, single copy 15 cents. Science Service, 1719 N St. NW., Washington, D. C. 20036.

CHARTS:

U. S. Lake Survey Catalog of Charts of the Great Lakes and Outflow Rivers (also Lake Champlain, New York State Barge Canal System, Minnesota-Ontario Border Lakes), Edition of 1964/1965, 25 pp., illus., printed, 1964. Technical Publications Branch, U. S. Army Engineer District, Lake Survey, Corps of Engineers, 630 Federal Bldg., Detroit 26, Mich. Charts listed in this catalog were prepared by the U. S. Lake Survey, whose mission is the preparation and publication of navigation charts and pilots covering the Great Lakes, Lake Champlain, New York State Barge Canal System, and the Minnesota-Ontario Border Lakes; the study of matters affecting the hydrology of the Great Lakes, including the necessary hydrographic and related surveys; and research pertinent to the development and improved utilization of the water resources of the Great Lakes System. Included for each chart listing is information on locality, scale, size, and price.

COLD STORAGE:

"The effect of temperature on the spoilage rate of wet white fish," by R. Spencer and C. R. Baines, article, Food Technology, vol. 18, May 1964, pp. 175-179, printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

"Nouveau procédé pour la conservation par le froid des crustacés à l'état frais" (A new process for the cold storage of fresh crustaceans), article, La Revue de la Conserve, vol. 18, no. 3, May-June 1963, p. 177, printed in French. Société d'Édition pour l'Alimentation, 1 Rue de la Réale, Paris 1, France.

"Vom trawler ins lagerhaus an der wasserstrasse" (From the trawler directly to the wharf cold store), article, Ties Kuhlketten, no. 91, July 1963, p. 16, printed in German. H. E. Albrecht Verlag KG., Freihamerstrasse No. 2, Munich, Germany.

COMPOSITION:

"Chemical composition of fish and fish products," by H. Houwing, article, Voeding, vol. 24, 1963, p. 170, printed. Netherlands Journal of Nutrition, Komingingengracht 42, The Hague, Netherlands.

"Trace elements in far-Eastern fish, crustaceans and mollusks," by K. M. Mershina, N. M. Khalina and A. I. Krasnitskaya, article, Chemical Abstracts, vol. 59, November 25, 1963, 13270f, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Variations in the chemical composition of three freshwater fishes of Bhavanisagar reservoir," by A. Srenivasan and M. V. Natarajan, article, Indian Journal of Fisheries, vol. 8, October 1961, pp. 436-439, printed. Ministry of Food and Agriculture of Government of India, New Delhi, India.

CONGO REPUBLIC:

Foreign Trade Regulations of the Republic of the Congo (Leopoldville), OBR 64-61, 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 the Congo Republic's trade policy, import tariff system, sales and other internal taxes, documentation and fees, and labeling and marking requirements. Also covers special customs provisions, non-tariff import controls, and Government representation between the Congo and the United States.

CONTAINERS:

Examen del Cierre de la Lata (Investigation of Can Seams), by Jose J. Franco Betancourt, Boletín de Divulgación Técnica, No. 1, 15 pp., illus., printed in Spanish with English abstract, October 1963. Centro de Investigaciones Pesqueras del Instituto Nacional de la Pesca, Playa Habana, Bauta, Cuba.

"Foam-lined cans for freeze-dried foods," article, Modern Packaging, vol. 36, January 1963, p. 70, printed. Diesel Publications Inc., 575 Madison Ave., New York 22, N. Y.

CRABS:

"Chemical control of the green crab, Carcinus maenas (L.)," by Robert W. Hanks, article, Proceedings of the National Shellfisheries Association, 1961, vol. 52, pp. 75-86, printed, 1963. National Shellfisheries Association, Virginia Institute of Marine Science, Gloucester Point, Va.

Crabs of Texas, by Sandra Pounds Leary, Bulletin No. 43, Series 7, Coastal Fisheries, 57 pp., illus., print-

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ed, revised 1964. Texas Parks and Wildlife Department, John H. Reagan State Office Bldg., Austin, Tex. Designed to aid the occasional visitor to the Texas Coast in identifying at least the general group to which a particular crab may belong and to answer some of the many questions which arise concerning those crustacea. Bulletin devoted primarily to the commercial blue crab and the stone crab.

"King crab tagging methods in Alaska," by Murray L. Hayes, article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 262-265, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N.S., Canada.

"Nutritive value of crab meat," article, Food Manufacture, vol. 39, April 1964, p. 60, printed, Leonard Hill, Ltd., Stratford House, 9 Eden St., London NW1, England.

"Progress on blue crab research in the South Atlantic," by George H. Rees, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 100-115, printed, April 1963. Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

"O sostoyanii zapasov Kamchatskogo kraba u zapadnogo poberezh'ya Kamchatki" (Condition of king crab--Paralithodes camtschatica--stocks on the western coast of Kamchatka), by M. M. Lavrent'ev, article, Rybnoe Khoziaistvo, vol. 39, no. 2, 1963, pp. 19-25, illus., printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

CRAYFISH:

Habitat of Crayfish in Poland (Rozsiedlenie Rakow w Polsce), by Jozef Kossakowski, OTS 63-11397, 5 pp., illus., processed, 1964, 50 cents. (Translated from the Polish Gospodarka Rybna, no. 5, 1956, pp. 9-10.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

CUBA:

Cuban Center of Fishery Research, by R. Buesa, JPRS 24664, 8 pp., processed, May 19, 1964, 50 cents. (Translated from the Russian, Okeanologiya, vol. 4, no. 2, 1964.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Las Pesquerias Cubanas (The Cuban Fisheries), by Rene J. Buesa, Contribution No. 20, 90 pp., illus., printed in Spanish with English abstract, February 1964. Centro de Investigaciones Pesqueras, Instituto Nacional de la Pesca, Playa Habana, Bauta, Cuba. Deals with the characteristics of Cuban fishery activities and developments, fishing grounds, fleet and gear, and number of fishermen. Establishes the yield rates for both cooperatives and government fishing organizations according to seasons, fishing gear, and fishing grounds. Also includes a list of marine species of major commercial value.

DECOMPOSITION:

"Significance of decomposition of adenosinetriphosphate in fish muscle at temperature around -2° C," by M. Bitto and K. Amano, article, Bulletin of Tokai Regional

Fisheries Research Laboratory, no. 32, 1962, pp. 149-153, illus., printed in Japanese with English summary. Tokai Regional Fisheries Research Laboratory, Tsukushima, Chuo-ku, Tokyo, Japan.

DOLPHIN:

"Sea intelligence: the dolphin," by Barbara Tufty, article, Science News Letter, vol. 86, no. 9, August 29, 1964, pp. 138-139, illus., printed, single copy 15 cents. Science Service, 1719 N St. NW., Washington, D. C. 20036. Describes the anatomy and "personality" of the dolphin, the history of man's interest in this mammal, and some of the research being conducted with it at the Communications Research Institute, Miami, Fla. The dolphin's intelligence and eagerness to learn may help in a first step towards man's communicating with animals and learning more about the sea.

ECUADOR:

"Apuntes e informaciones sobre las pesquerías en la Provincia de Manabí" (Memoranda and information on the fisheries in the Province of Manabí), article, Boletín Informativo, vol. 1, no. 2, 1964, pp. 1-66, illus., printed in Spanish, s/. 6.00 (US\$0.35). Instituto Nacional de Pesca del Ecuador, Guayaquil, Ecuador. Discusses in detail the coastal fishery for shrimp, spiny lobster, and finfish; and the offshore tuna fishery.

EUROPEAN FISHERIES CONFERENCE:

Final Act of the European Fisheries Conference, London, Dec. 3, 1963 to March 2, 1964. With Fisheries Convention, Protocol of Provisional Application and Agreements as to Transitional Rights. London, March 9 to April 10, 1964, Miscellaneous No. 11 (Cmd. 2355), printed, 1964, 2s. 7d. (50 U.S. cents). Sales Section, British Information Services, 845 3rd Ave., New York, N. Y. 10022.

FACTORYSHIP:

"Baza-przetwornia B 64 typu 'Pioniersk'" (Factory-mothership B 64 type "Pioniersk"), by Janusz Staszewski and Stanislaw Paszkowski, article, Budownictwo Okretowe, vol. 9, no. 6, June 1964, pp. 189-198, illus., printed in Polish with English summary. Wydawnictwa Czasopism Technicznych Not, Warsaw, Czackiego 3/5, Poland. On December 10, 1963, the factory-mothership Pioniersk, built by the Gdansk Shipyard for the Soviet fisheries, was commissioned. This article deals with the vessel's construction, its performance at sea, the part played by motherships in deep-sea fisheries, and accomplishments of those vessels. Topics covered include stability, hull construction, deck equipment, accommodation plan, fire fighting devices, holds, engine room, electric equipment, repair shop, pipelines, freezing and processing plant, and delivery trials. Included are plans, diagrams, and photographs of the vessel.

FATTY ACIDS:

"Origin of the characteristic fatty acid composition of aquatic organisms," by Tibor Farkas and Sandor Herodek, article, Chemical Abstracts, vol. 58, June 10, 1963, 12893g, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Quantitative analysis of fatty acid esters of marine animal oils by gas-liquid chromatography," by Su-

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ketaka Ito and Kazuo Fukuzumi, article, Chemical Abstracts, vol. 58, June 10, 1963, 12778e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

FISH FINDER:

"Telemetric estimation of set net catches by fish finder," by T. Koyama, article, Bulletin of Tokai Regional Fisheries Research Laboratory, no. 32, 1962, pp. 141-147, illus., printed in Japanese with English summary. Tokai Regional Fisheries Research Laboratory, Tsukushima, Chuo-ku, Tokyo, Japan.

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"Quality of fish meals and their evaluation by chemical methods," by H. Dohler, article, Nutrition Abstracts and Reviews, vol. 34, 1964, p. 45, printed. Commonwealth Bureau of Animal Nutrition, Rowett Institute, Aberdeen, Scotland.

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FLOUNDER:

Catches of Flounder PLEURONECTES FLESUS L. in the Bornholm Deep in 1951-1955 (Stornia--Pleuronectes flesus L.--w Potowach w Rejonie Bornholmskin w Latach 1951-1955), by Zbigniew Reimann, OTS 61-11365, 26 pp., illus., processed, 1964, 50 cents. (Translated from the Polish, Prace Morskiego Instytutu Rybackiego w Gdyni, no. 10/A, 1959, pp. 441-459.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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The Flying Fishes (EXOCOETIDAE) of the Northwest Pacific, by N. Parin, OTS 61-31031, 84 pp., illus., printed, 1963. (Translated from the Russian, Akademiya Nauk SSSR, Trudy Instituta Okeanologii, vol. 31, 1960, pp. 205-285.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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"Azeotropic freeze-drying," by H. E. Wistreich and J. A. Blake, article, Science, vol. 138, no. 3537, 1962, p. 138, printed. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

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"The freeze-drying of foodstuffs. Future trends," by K. Bird, article, Marketing Transport Situation, August 1963, pp. 26-32, illus., printed, Marketing Economics Division, U. S. Department of Agriculture, Washington, D. C. 20250.

"A practical guide for selection of freeze-drying equipment," article, Quick Frozen Foods, vol. 25, no. 12, July 1963, pp. 103-105, illus., printed, E. W. Williams Publications, Inc., 82 Wall St., New York, N. Y. 10005.

"Protein changes in freeze-dried muscle," by W. Partmann and G. Nemitz, article, Zeitschrift für Lebensmittel-Untersuchung und -Forschung, vol. 120, no. 3, pp. 190-192, printed in German, Springer Verlag, 3 Heidelberger Platz, Wilmersdorf, Berlin, Germany.

"Taste tests rate freeze-dried foods," article, Information Bulletin, T.R.R.F., no. 63, August 1963, p. 1, printed, The Refrigeration Research Foundation, 12 N. Meade Ave., Colorado Springs, Colo.

FREEZING ON BOARD:

"Das frieren von fisch auf see mit 'Jackstone-Plat-tengefrierapparaten' vertikaler bauart" (Freezing of fish on board with the Jackstone vertical plate freezer), article, Kalte, vol. 16, no. 5, May 1963, pp. 214-216, illus., printed in German, Hans A. Keune Verlag, Pressehaus, 1 Speersort, Hamburg 1, Germany.

"Gefrieranlagen auf hochseetrawlern" (Freezing plants on board high-sea trawlers), by E. Strohrmann, article, Kalte, vol. 16, no. 5, May 1963, pp. 211-213, illus., printed in German, Hans A. Keune Verlag, Pressehaus, 1 Speersort, Hamburg 1, Germany.

Progress in the Development of Freezing on Board the British Distant-Water Trawler Fleet, by G. C. Eddie, Torry Memoir No. 140, 13 pp., printed in English with French summary, Torry Research Station, Aberdeen, Scotland.

FRESH-WATER FISH:

Our Freshwater Fishes, Educational Series, Picture Nos. 1, 2, 3, and 4, 1964, \$1.50 a set. An educational series of four 6x9-inch plastic-coated cards showing 36 species of fresh-water fish in full-color photographs. In spite of the fact that color photographs are quite common today, there is still a lack of good color photographs of fish and other marine animals. The pictures shown on these cards show the color of living fish--something which is difficult to capture. Each card shows nine species of fish, and the back of the card has concise life history notes on each fish. The fish shown on the cards are: bluegill, smallmouth bass, black crappie, pumpkinseed, largemouth bass, green sunfish, northern longear sunfish, rock bass, warmouth, lake trout, sea lamprey, yellow perch, brown trout, brook trout, lake whitefish, rainbow trout, walleye or yellow pike, brown bullhead, black bullhead, and lake sturgeon. Also shown

are: longnose gar, bowfin, carp, white sucker, river herring, white bass, channel catfish, freshwater drum, northern pike, golden shiner, muskellunge, grass pickerel, common shiner, tiger muskie, creek chub, and river chub. Teachers, educators, students, biologists, researchers, restaurants, and dealers will find these color photograph cards ideal for differentiating between and identifying the most common fresh-water fish species. Others interested in fisheries will find that the cards would lend themselves to framing. The author-photographer also has completed 11 fish pictures for the Society for Visual Education's 13x18-inch cards for schools; he is also able to supply transparencies of about 50 species of fresh-water fish.

--Joseph Pileggi

"Razmnozhenie osnovnykh promyslovykh rby v Chermshanskom zalive Kuibyshevskogo vodokranilishcha v 1960 i 1961 gg." (Reproduction of the principal commercial fishes in the Chermshans inlet of Kuibyshev Reservoir in 1960 and 1961), by V. M. Chikova, article, Materialy Pobiologii i Gidrologii Volzhskikh Vodochranilishch, pp. 95-98, printed in Russian, 1963, Akademiia Nauk SSSR, Moscow, U.S.S.R.

FROZEN FISH:

"Zur frage des einflusses postmortaler veränderungen auf die qualität von gefrierfisch" (Effect of post-mortem changes on the quality of frozen fish), by W. Partmann and J. Gutschmidt, article, Kaltetechnik, vol. 15, no. 6, June 1963, pp. 170-177; no. 7, July 1963, pp. 200-204, illus., printed in German, Verlag C. F. Müller, Karlsruhe, Germany.

FUR SEALS:

"Evolution of fur seal management on the Pribilof Islands," by Alton Y. Roppel and Stuart P. Davey, article, Science in Alaska, Proceedings of the Fourteenth Alaskan Science Conference, Anchorage, Alaska, August 27-30, 1963, pp. 67-68, printed, Executive Secretary, Alaska Division, American Association for the Advancement of Science, College, Alaska.

GEAR:

"A modified Petersen grab," by J. Flury, article, Journal of the Fisheries Research Board of Canada, vol. 20, no. 6, 1963, pp. 1549-1550, illus., printed, Queen's Printer and Controller of Stationery, Ottawa, Canada.

"O rabote setevyborochnykh mashin razlichnykh tipov" (On working performance of net-hauling machines of different types), by R. T. Mikhailov, article, Rybnoe Khoziaistvo, vol. 38, no. 1, 1962, pp. 59-64, illus., printed in Russian, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

"Sinteticheskiye materialy dlya osnastki orudi lova" (Synthetics for fishing gear), by V. V. Borishchev, article, Rybnoe Khoziaistvo, vol. 39, no. 2, 1963, pp. 63-67, illus., printed in Russian, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

GENERAL:

Fish and Wildlife, Price List 21, 15 pp., printed, April 1964 (49th Edition), Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. A complete list of publications on fish and wildlife subjects for sale by the Government Printing

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

Office. Titles are compiled alphabetically according to subject, with catalog number, total pages, date of publication, and price included. An occasional descriptive sentence is shown.

GERMAN FEDERAL REPUBLIC:

"Republique Federale d'Allemagne: La modernisation de la flotte de grande peche et le programme d'aide gouvernementale" (Federal Republic of Germany: Modernization of the distant-water fishing fleet and the government's aid program), article, La Peche Maritime, vol. 43, no. 1035, June 20, 1964, pp. 443-446, illus., printed in French, single copy 20 francs (about US\$4.05). La Peche Maritime, 190, Boulevard Haussmann, Paris 8^e, France.

GLAZING:

"Experiment of protective effect of paste glazing made from methylcellulose, sodium carboxymethylcellulose and hydroxyethylcellulose," by K. Tanaka, article, Refrigeration (Reito), vol. 38, no. 427, May 1963, pp. 1-13, printed. Japanese Association of Refrigeration, Kenchiku Kaikan Bldg., 3-1 Ginza Nishi, Chuo-ku, Tokyo, Japan.

GREECE:

Foreign Trade Regulations of Greece, by A. Russell Romer, OBR 64-66, 8 pp., printed, June 1964, 15 cents. Bureau of Foreign 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 Greece'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, and Government representation between Greece and the United States.

HADDOCK:

"Further field experiments with tags for haddock," by Albert C. Jensen, article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 194-203, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

"Haddock tag returns in relation to fish condition," by John P. McDermott and Robert Livingstone, Jr., article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 216-217, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

"A study of the vertical distribution of larval haddock," by David Miller, John B. Colton, Jr., and Robert R. Marak, article, Journal du Conseil, vol. 28, no. 1, August 1963, pp. 3-49, printed. Conseil Permanent International pour l'Exploration de la Mer, Charlottelund Slot, Denmark.

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"An analysis of silver hake tag returns," by Raymond L. Fritz, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 214-215, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S. Canada.

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"Caught in a hail of herring," by Edgar P. Young, article, World Fishing, April 1964, pp. 60, 63-64, illus., printed. John Trundell & Partners Ltd., St. Richard's House, Eversholt St., London NW1, England. An account of six cruises by the Soviet research submarine Severyanka in the Barents Sea, January 1959-July 1963. Observations were made off the Murmansk coast of the way in which herring and other fish behave and distribute themselves during their winter migration, when they are usually in a somnolent condition. Observations of plankton concentrations, as well as conditions for best observing trawl operations, were carried out. These cruises, besides producing much interesting information which is of practical use for the fishing industry, have vindicated the great value of submarines as instruments for carrying out research in oceanography and gear utilization.

"Forecast for Scottish North Sea and west coast herring fisheries in 1964," by B. B. Parrish and A. Saville, article, Scottish Fisheries Bulletin, no. 21, June 1964, pp. 3-5, printed. Fisheries Division, Department of Agriculture and Fisheries for Scotland, Edinburgh, Scotland.

"New techniques in herring fishing," by Jakob Jakobsen, article, Iceland Review, vol. 2, no. 2, 1964, pp. 44-46, 49, illus., printed, single copy 50 Icelandic Kronur (about US\$1.16). Iceland Review, P. O. Box 1238, Reykjavik, Iceland.

"Prisposobitel'nye i izmeneniya rosta salaki Clupea harengus membras L. Rizhskogo zaliva v svyazi s obespechennost'yu pishchei" (Adaptive changes in the growth rates of herring, Clupea harengus membras L., of the Gulf of Riga in connection with the availability of food), by A. V. Chepurnov, article, Voprosy Ikhtiologii, vol. 3, no. 1, 1963, pp. 124-130, printed in Russian. Akademiia Nauk SSSR, Ikhtiologicheskaya Kommissiia, Moscow, U.S.S.R.

"A revision of the recent round herrings (Pisces: Dussumieriidae)," by P. J. P. Whitehead, article, British Museum (Natural History) Bulletin, vol. 10, no. 6, 1963, pp. 305-380, illus., printed. British Museum (Natural History), London, England.

"Scales and earstones reveal age of Atlantic herring," by H. C. Boyar, article, Maine Field Naturalist, vol. 19, no. 3, March 1963, 2 pp., printed. Maine Audubon Society, and Portland Society of Natural History, 22 Elm St., Portland, Maine.

"O sel'dyanom rybolovstve v zapadnoi Atlantike" (On herring fishing in the western Atlantic), by I. G. Yudanov, article, Rybnoe Khoziaistvo, vol. 39, no. 2, 1963, pp. 14-18, printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

ICHTHYOLOGY:

The Study of Fishes Made Simple, by Eugene V. Mohr, 159 pp., illus., printed, 1962. Doubleday & Co., Garden City, N. Y.

INDIAN OCEAN:

Indian Ocean Project. Measurements of Currents Along the Equator in the Indian Ocean, by John A. Knauss and Bruce A. Taft, 4 pp., illus., printed, 1963. (Reprinted from Nature, vol. 198, no. 4878, 1963.)

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Rhode Island University, Narragansett Marine Laboratory, Kingston, R. I.

INTERNATIONAL COMMISSIONS:

(International Pacific Salmon Fisheries Commission) Annual Report, 1963, 45 pp., illus., printed, 1964. International Pacific Salmon Fisheries Commission, P. O. Box 1120, New Westminster, B. C., Canada. Describes the adverse effects of interruption in fishing by strikes or lockouts on total racial production of Fraser River sockeye salmon populations; history of salmon runs in that area; and results of regulation of the catches. Discusses the 21 formal meetings of the Commission held in 1963; regulations for fishing in Canadian and United States Convention waters, and emergency amendments promulgated; the sockeye salmon fishery, escapement, and rehabilitation; the pink salmon fishery, origin of catch, and escapement; and watershed protection of salmon rivers by means of flood control, fishway construction, and other devices. Includes statistical data on sockeye salmon catch by gear; cyclic landings and packs of sockeye from Convention waters; daily catches of sockeye and pinks from United States and Canadian Convention waters; Indian catches of sockeye; and escapement of sockeye and pinks to Fraser River and other spawning areas.

North-East Atlantic Fisheries Commission, Report of the Second Meeting, May 1964, 28 pp., processed in French and English, 1964. North-East Atlantic Fisheries Commission, Rm. 617, East Block, Whitehall Pl., London SW1, England. Contains a report of the proceedings of the second meeting of the North-East Atlantic Fisheries Commission. The Hague, May 12-15, 1964. The 14 member Governments, all in Europe, were represented by delegations; the United States Government, the International Council for the Exploration of the Sea (ICES), and the International Commission for the Northwest Atlantic Fisheries (ICNAF) sent observers. The Commission ruled on the area for application of minimum mesh size regulations; extended permission for use of top-side chafers on vessels until January 1, 1966; and agreed to special arrangements for allowing small boats to fish for whiting with small mesh nets in the Skagerrak-Kattegat area of the North Sea. The Commission decided to request the ICES to conduct: an assessment of effects of top-side chafers on net selectivity; a reassessment of fish stocks in the north-eastern part of the Convention Area; a study of the spiny dogfish stock and the effect of possible conservation measures; and a continuing study of herring stocks. Agreement was reached on the need for a system of international control of fisheries on the high seas for enforcement of conservation measures. Therefore a resolution was passed that a special committee, on which all member Countries would be represented, should be established to study the practical problems involved and to make suggestions to the Commission at its next meeting. Plans were made to hold the third meeting in Moscow, May 11, 1965.

ITALY:

Bollettino di Pesca, Piscicoltura e Idrobiologia, vol. 18, no. 1, January-June 1963, 100 pp., illus., printed in Italian with English abstracts, single copy L. 1,200 (about US\$1.90). Laboratorio Centrale di Idrobiologia, Piazza Borghese, 91, Rome, Italy. Includes,

among others, articles on: "Sul problema igienico della conservazione degli alimenti: prove organolettiche e sperimentali per differenziare il pesce scongelato dal pesce fresco semplicemente refrigerato" (Some hygienic problems of food preservation: organoleptic inspection and laboratory tests for differentiating frozen fish from refrigerated fish), by Stefano Caracciolo; and "La pesca con la rete 'gangamella' nel golfo di Napoli" (Fishing with the "gangamella" trawl net in the Gulf of Naples), by Mario Santarelli and Giuseppe Micale.

JAPAN:

Data Record of Oceanographic Observations and Exploratory Fishing, No. 8, 311 pp., illus., printed in Japanese and English, March 1964. The Faculty of Fisheries, Hokkaido University, Hakodate, Hokkaido, Japan. Covers exploratory cruises to the Coral Sea, the Southern Kurile Waters, Okhotsk Sea, Indian Ocean, Bering Sea, and Northwestern North Pacific, 1962/1963.

Measures Planned for Implementation for the Coastal Fisheries in 1964, 29 pp., printed in Japanese. Japanese Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-Ku, Tokyo, Japan. "White paper" on Japan's fisheries prepared for submission to the 46th (Regular) Diet Session.

1963 Annual Report on Fisheries Trends (Part 1--Report on Fisheries Trends. Part 2--Report on Measures Implemented for the Coastal Fisheries.), 112 pp., illus., printed in Japanese. Japanese Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-Ku, Tokyo, Japan. "White Paper" on Japan's fisheries prepared for submission to the 46th (Regular) Diet Session.

JELLYFISH:

"Opredeleniye meduzy v tolshe vody" (Determination of the presence of jellyfish in midwater), by M. I. Spectorov, article, Rybnoe Khoziaistvo, vol. 37, no. 12, 1961, pp. 38-39, illus., printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

LIVESTOCK FEED:

"A comparison of Queensland whalemeals and fish meals as a protein supplement for grain-fed pigs," by A. C. E. Todd, article, Australian Journal of Experimental Agriculture and Animal Husbandry, vol. 3, no. 69, printed. Australian Journal of Experimental Agriculture and Animal Husbandry, 226 Clarendon St. East Melbourne C2, Victoria, Australia.

"Effect of the conditions of flame drying on the biological value of herring meals for pigs," by J. Delort-Laval and S. Z. Zelter, article, Annales Zootechnie, vol. 12, 1963, p. 193, printed in French. Institut National de la Recherche Agronomique, 149 Rue de Grenelle, Paris (7^e), France.

Fisheries Management and Fish Byproducts in Livestock Feeding, U.S.S.R., OTS 64-31383, 33 pp., illus., processed, June 1, 1964, \$1. (Translated from the Russian, Rybnoe Khoziaistvo, no. 2, 1964.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

"Herring meal, antioxidants and meat products - results of feeding trials," by H. Astrup, H. Hvidsten,

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and L. Aure, article, Zeitschrift für Tierphysiologie Tierernährung Futtermittelkunde, vol. 17, 1962, p. 325, printed in German with English summary. Verlag Paul Parey, Spitalerstrasse 12, Hamburg, Germany.

"Quality and quantity of protein in fattening rations for pigs. I--Soyabean meal, spray-dried skimmed milk and fish meal as protein supplements for rapid fattening of pigs," by F. Witzak, M. Kotarbinska, and F. Abgarowicz, article, Nutrition Abstracts and Reviews, vol. 34, 1964, pp. 262, printed. Commonwealth Bureau of Animal Nutrition, Rowett Institute, Aberdeen, Scotland.

LOBSTER:

"Artificial hatching and rearing of lobsters--a review," by H. J. Thomas, article, Scottish Fisheries Bulletin, no. 21, June 1964, pp. 6-9, printed. Fisheries Division, Department of Agriculture and Fisheries for Scotland, Edinburg, Scotland.

LUMPFISH:

Review of Genera and Species of Fishes of the Subfamily Cyclopterinae (Pisces) (Obzor Rodov i Vidov Ryb Podsemeistva Cyclopterinae (Pisces)), by G. U. Lindberg and M. I. Legeza, OTS 61-31032, 75 pp., illus., processed, 1964, 75 cents. (Translated from the Russian, Trudy Zoologicheskogo Instituta Akademii Nauk SSSR, vol. 18, 1955, pp. 389-458.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

MACKEREL:

"Tsitofiziologicheskii analiz raspredeleniya molodi 'krupnoi' stavridy (Trachurus mediterraneus ponticus) v severnom i vostochnom raionakh chernogo morya" (Cytophysiological analysis of distribution of the young of "large" horse mackerel--Trachurus mediterraneus ponticus--in the northern and eastern Black Sea regions), by Yu. P. Altukhov, article, Zoologicheskii Zhurnal, vol. 42, no. 4, 1963, pp. 589-595, illus., printed in Russian with English summary. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

MAINE:

22nd Biennial Report (for Period July 1, 1960 to June 30, 1962), 48 pp., illus., printed. Department of Sea and Shore Fisheries, State of Maine, State House, Augusta, Maine. Reviews the programs of the Department of Sea and Shore Fisheries, 1960/62, with details on enforcement, inspection, supervision of salt-water sport fishing, rivers and harbors projects, progress in the lobster industry, proposed lobster research, assistance to the sardine industry, and other topics. Also covers work of the Promotion and Marketing Division in providing publicity, quality control, and other assistance to Maine's commercial fisheries. Chapters on accomplishments of the Enforcement, Marine Research, and Statistics Divisions are included.

MARINE ALGAE:

The Marine Algae of Jamaica. Part 1--Myxophyceae and Chlorophyceae, Part 2--Phaeophyceae and Rhodophyceae, by V. J. Chapman, Bulletin of the Institute of Jamaica, Science Series, No. 12, 160 pp., and 201 pp., respectively, illus., printed, 1961 and 1963. The Institute of Jamaica, Kingston, Jamaica.

MENHADEN:

The Texas Menhaden Fishery, by Ernest G. Simmons and Joseph P. Breuer, Bulletin No. 45, Series No. 2, Coastal Fisheries, 16 pp., illus., printed revised 1964. Texas Parks and Wildlife Department, John H. Reagan State Office Bldg., Austin, Tex. Discusses the biology, fishing operations, products, and economic value of the menhaden, one of the Gulf of Mexico's most valuable fish. Includes photographs and explanatory diagrams.

MEXICO:

Anuario Estadístico de Actividades Pesqueras en Aguas Territoriales Mexicanas, 1958 (Annual Statistical Report of Fishery Activities in Mexican Territorial Waters, 1958), 347 pp., printed in Spanish, 1963. Dirección General de Pesca e Industrias Conexas, Secretaría de Industria y Comercio, Mexico, D. F. Contains statistical tables on quantity and value of landings in Mexico during 1958 by species, by states and territories, and by months; quantity of processed edible and industrial fishery products by types; production of fish and shellfish by cooperatives and by private industry; and other similar data.

MINK FEED:

"Increasing amounts of fish meal and whalemeat meal in feeds for young mink, and periodical feeding with 100 percent of the fresh animal feeds replaced by dried animal feeds," by G. Jørgensen, G. Hillemann, and H. Clausen, article, Dansk Pelsdyravl, vol. 26, 1963, p. 364, printed in Danish. Dansk Pelsdyravl, Sdeasy 8, Copenhagen, Denmark.

"Trials with different amounts of fish meal in the feed of young mink," by G. Jørgensen, article, Dansk Pelsdyravl, vol. 26, 1963, pp. 104, 106, 109, 171, 177, printed in Danish. Dansk Pelsdyravl, Sdeasy 8, Copenhagen, Denmark.

MOROCCO:

"La industria de conservas de pescado marroqui y el Mercado Comun" (The Moroccan fish canning industry and the Common Market), article, Industria Conservera, vol. 30, no. 298, April 1964, pp. 93-94, printed in Spanish. Union de Fabricantes de Conservas de Galicia, Calle Marques de Valladares, 41, Vigo, Spain.

MULLET:

"The structure of polyenoic odd- and even-numbered fatty acids of mullet (Mugil cephalus)," by Nirmal Sen and Hermann Schlenk, article, Journal of the American Oil Chemists' Society, vol. 41, March 1964, pp. 241-247, printed. American Oil Chemists' Society, 35 E. Wacker Dr., Chicago 1, Ill.

NETS:

"Cook Inlet set-netters," by Dolores D. Roguszka, article, Alaska Sportsman, vol. 30, no. 8, August 1964, pp. 6-11, 54, illus., printed, single copy 50 cents. Alaska Sportsman, Suite 10, Box 1271, Juneau, Alaska. Adventure story of a Danish family of fishermen and its success with net fishing in Alaska. Readably written, the article contains numerous photographs.

"Probleme der messwertübertragung vom netz zum schiff" (Problems connected with the transmission of measured quantities from the net to the vessel), by L. Wolff, article, Fischereiforschung, vol. 5, no. 5,

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NORWAY:

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"Die Norwegische tiefkuhlindustrie" (The Norwegian industry of deep-frozen products), article, Ties Kuhlketten, no. 92, August 1963, p. 10, illus., printed in German. H. E. Albrecht Verlag K. G., Freihamerstrasse No. 2, Munich, Germany.

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CALCOFI Atlas of 10-Meter Temperatures and Salinities, 1949 through 1959, California Cooperative Oceanic Fisheries Investigations Atlas No. 1, 1 vol., illus., printed, 1963. Marine Research Committee, Department of Fish and Game, Sacramento, Calif.

"Developing tropical Atlantic fisheries through international research," by Vernon E. Brock, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 152-155, printed, April 1963. Gulf and Caribbean Fisheries Institute, Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

"Fishery oceanography in the tropical Atlantic," by Robert C. Wilson, article, Transactions of the Twenty-Seventh North American Wildlife and Natural Resources Conference, March 12, 13, and 14, 1962, pp. 351-361, printed, February 1963. Wildlife Management Institute, Wire Bldg., Washington, D. C. 20005.

The Global Sea, by Harris B. Stewart, Jr., Van Nostrand Searchlight Book No. 17, 126 pp., illus., printed, 1963, \$1.45. D. Van Nostrand Co., Inc., 120 Alexander St., Princeton, N. J. Knowledge of the seas and their resources is still limited as compared to man's knowledge of the land and even of space. But in the past 20 years a change has taken place and man has begun to realize the importance of the global sea. There have been many books written about the seas, and many more will follow. Whereas many are too detailed or too technical for the general reader, here is a small paperbound book which is a general and an adequate introduction to the seas--their buried landscapes, moving waters, marine plants and animals, and other resources and riches. Something about the more recent discoveries and research results in the study of the sea--oceanography--is presented in non-technical language. The last chapter deals with territorial waters (a controversial issue among nations today), and international cooperation in oceanography. For those who would like to delve deeper into the subject, there is a small bibliography. The book also has a small but adequate index. Covering more than 70 percent of our globe's surface, the oceans are man's last frontier on earth. The potential that the oceans hold for the betterment of mankind is just beginning to be fully realized. Any reader, no matter what his interests, will gain something of the fascination of the seas from this

short summary. Students and the general public as well as those interested in any aspect of the global sea will find this as the key that will unlock the door to man's last frontier on earth.

--Joseph Pileggi

"The International Cooperative Investigation of the Tropical Atlantic," by Vernon E. Brock, article, ICO Pamphlet No. 11, pp. 33-37, printed, April 1963. Interagency Committee on Oceanography, Office of Naval Research, Rm. 1818, 17th St., and Constitution Ave. NW., Washington, D. C. 20333.

Man and the Sea, by Joel W. Hedgpeth, 28 pp., printed, April 13, 1964, \$2.60. Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230. The topics covered in this series of three lectures are the general principles of marine biology and oceanography, the role of marine biological stations in marine research, and the natural resources of the sea.

Oceanological Principles as Related to the Fishery Productivity of the Seas, by G. K. Izhevskii, OTS 63-11120, 193 pp., illus., processed, 1964, \$2.00. (Translated by A. Birron and Z. S. Cole, from the Russian Pishchepromizdat, Moscow, 1961.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Opportunities in Oceanography, by E. John Long, Publication No. 4537, 34 pp., illus., printed, July 1964, 50 cents. The Smithsonian Institution, Washington, D. C. 20560. Discusses the need for young people in the various fields of oceanographic work, the challenges to be found in the seas, types of oceanographic research and qualities required to perform them, and other related sciences. Also covers various types of oceanographic cruises, the work of land-based laboratories, the Federal Government's part in this research work, and oceanography in industry. Information is given on how to become an oceanographer, the value of sea experience, obtaining financial assistance, how and where to study, qualifications for Federal employment, and the availability of scholarships and assistanceships. A final word is given on expected future accomplishments in oceanography and the hope of the late President John F. Kennedy that we may "drive back the frontiers of the unknown in the waters which encircle our globe."

"Overview of Government-Industry Oceanographic Instrumentation Symposium," by Julius Rockwell, Jr., article, Proceedings of the Navy Research and Development Clinic, Raton, New Mexico, September 1961, pp. C-1-C-6, printed, 1963. Office of Naval Research, Rm. 1818, 17th St. and Constitution Ave. NW., Washington, D. C. 20333.

OCEAN PERCH:

"Effect of tagging on redfish growth rate at Eastport, Maine," by George F. Kelly and Allan M. Barker, article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 210-213, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

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"Estimation of population size and mortality rates from tagged redbfish, *Sebastes marinus* L., at Eastport, Maine," by George F. Kelly and Allan M. Barker, article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 204-209, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

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Experiments in Oyster Culture, by Luis Castillo, Translation Series No. 367, 11 pp., printed, 1961. (Translated from the Spanish, Imprenta Cervantes, vol. 50, 1910.) Fisheries Research Board of Canada, Biological Station, St. Andrews, N. B., Canada.

"The Government-industry co-operative oyster research program. III--Processing studies; IV--Procedure for determining solids change," by A. Kramer and others, articles, Journal of the Association of Official Agricultural Chemists, vol. 45, 1962, pp. 1011-1050, printed. Association of Official Agricultural Chemists, P. O. Box 540, Benjamin Franklin Station, Washington, D. C. 20004.

"Index of condition and percent solids of raft-grown oysters in Massachusetts," article, Proceedings of the National Shellfisheries Association, vol. 52, pp. 47-52, printed, June 1963, National Shellfisheries Association, Virginia Institute of Marine Science, Gloucester Point, Va.

"El mercado inglés de la ostra" (The English market for oysters), article, Informacion Conservera, vol. 12, no. 123-124, March-April 1964, p. 112, printed in Spanish, single copy 30 pesetas (about 50 U. S. cents). Informacion Conservera, Colón, 62, Valencia, Spain.

"Progress in oyster mortality studies," by James B. Engle and Aaron Rosenfield, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 116-124, April 1963. Gulf and Caribbean Fisheries Institute, Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

PERU:

Estudio de la Fauna Ictiologica de los Esteros y Parte Baja de los Rios del Departamento de Tumbes (Peru) (Study of the Ichthyological Fauna of the Estuaries and Lower Reaches of the Rivers of the Department of Tumbes, Peru), by Norma Chirichigno F., Serie de Divulgacion Cientifica 22, 87 pp., illus., printed in Spanish, 1963. Servicio de Pesqueria, Ministerio de Agricultura, Lima, Peru.

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"Pesticides - a new factor in coastal environments," by Philip A. Butler and Paul F. Springer, article, Transactions of the Twenty-Eighth North American Wildlife and Natural Resources Conference, March 4, 5, and 6, pp. 380-390, printed. Wildlife Management Institute, Wire Bldg., Washington, D. C. 20005.

POLLUTION CONTROL:

"Aquatic life needs protection," by Clarence M. Tarzwell, article, Chemical Engineering Progress, vol. 59, no. 11, November 1963, pp. 27-28, illus., printed, single copy \$3. American Institute of Chemical En-

gineers, Editorial and Advertising Offices, 345 E. 47th St., New York, N. Y. 10017. Prime objective of aquatic biologists in the water pollution field is to set up water quality criteria essential for the protection and maintenance of aquatic life, according to the author. These standards must protect the most sensitive species; average conditions are a poor measure since extremes of environment can render streams unfit for fish the year round. It is suggested that tentative water quality criteria be established immediately and that research be conducted to devise methods by which organisms can be used in the transformation of waste matter into useful material.

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"Comparison of the nutritive value of fish meal and fermented fish meal in chick rations," by N. Reyntens and L. Keppens, article, Revue de l'Agriculture, Brussels, vol. 15, 1962, p. 1520, printed. Ministre de l'Agriculture, 14 Rue de la Limite, Brussels 3, Belgium.

POULTRY NUTRITION:

"The action of fish meal of different origins on the growth of chicks," by R. Fangauf, H. Vogt, and W. Penner, article, Archiv fur Geflugelkunde, vol. 27, part 2, 1963, p. 135, printed in German. Fritz Pfen-niustorff, Herworthstrasse 3, Berlin-Lichterfelde-1, Germany.

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Determinacao Quantitativa do Ranco por Auto-Oxidacao pelo Acido 2-Tiobarbutirico (Quantitative Determination of Rancidity through Autoxidation by Use of 2-Thiobarbutiric Acid), by Luis Torres, and Romano Granger, Notas Mimeografadas No. 31, 13 pp., illus., processed in Portuguese with French and Spanish summaries, 1962. Centro de Biologia Piscatoria, Lisbon, Portugal.

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The Sensory Assessment of Iced Whitefish by a Panel Technique, by J. M. Shewan and A.C.S. Ehrenberg, Torry Memoir No. 88, 7 pp., illus., printed in English with French and Spanish summaries, 1962. Torry Research Station, Aberdeen, Scotland.

"The significance of variations in the nucleotide, amino acid, and carbohydrate contents of fish muscle in relation to quality evaluation," by F. Bramstedt, article, Chemical Abstracts, vol. 58, March 4, 1963, 4972c, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

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999-5-3, pp. 35-50, printed, May 1963. Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201.

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"Kaltetechnische einrichtung von fischfang und -fabrikschiffen" (Refrigerating plants on board fishing-boats and factoryships), by W. Flechtenmacher, article, Kaltetechnik, vol. 15, no. 10, October 1963, pp. 314-320, illus., printed in German. Verlag C. F. Miller, Karlsruhe, Germany.

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Predictions of the Collapse Strength of Three HY-100 Steel Spherical Hulls Fabricated for the Oceanographic Research Vehicle "Alvin", by Thomas J. Kiernan, DTMB 1792, 41 pp., printed, March 1964, \$1.25. Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

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"Color changes on fish roe products dyed black," by J. Winziger, article, Chemical Abstracts, vol. 59, August 5, 1963, 9401e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

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"Atlantic salmon in the U.S.S.R.," by Nikolai I. Kozhin, article, The Atlantic Salmon Journal, no. 2, June 1964, pp. 3-4, 7, illus., printed. Atlantic Salmon Association, 1559 McGregor St., Montreal 25, Canada. Discusses the occurrence of the Atlantic salmon (Salmo salar L.) in the Baltic, Barents, and White Seas; fluctuations of the catch from year to

year; and average annual catch, 1954-56, of about 3.7 million pounds. Also covers the management of Atlantic salmon rivers; the rearing of smolt in 10 months with a special feed; Soviet research agencies concerned with artificial salmon breeding and other biological activities; efforts to acclimatize two Pacific salmon species (Oncorhynchus keta and O. gorbuscha) to Atlantic environments; and Soviet membership in international organizations concerned with salmon.

Comparative Analysis of the Desmoltification Process Among the Young of Different Ecological Forms of Atlantic Salmon, by N. V. Evropeytseva, Translation Series No. 431, 24 pp., illus., printed, 1963. (Translated from the Russian, Uchenye Zapiski Leningradskogo Gosudarstvennogo Universiteta, no. 311, 1962, pp. 46-73.) Biological Station, Fisheries Research Board of Canada, St. Andrews, N. B., Canada.

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"Scientists probe riddle of salmon's death," article, The Atlantic Salmon Journal, no. 2, June 1964, pp. 20-21, illus., printed. Atlantic Salmon Association, 1559 McGregor St., Montreal 25, Canada.

"Study of amino acids, free or as components of protein, and of some B-vitamins in the tissues of the Atlantic salmon, Salmo salar, during spawning migration," by C. B. Cowey, K. W. Daisley, and G. Parry,

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SALT FISH:

A Report to the Fishing Industry on a Method for the Accelerated Cooling of Green, Heavily Salted Fish, by A. L. Wood, New Series Circular No. 12, 2 pp., processed, 1962. Technological Station, Fisheries Research Board of Canada, P. O. Box 429, Halifax, N. S., Canada.

SAURY:

"Lov sairy nasosom s primeneniem sveta i eletrotoka" (Pacific sauries taken by pump with the help of light and electric current), by I. V. Nikonorov and A. Kh. Pateev, article, Rybnoe Khoziaistvo, vol. 39, no. 2, 1963, pp. 51-53, illus., printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R. Reviews the use of pumps and lights for catching sprat in the Caspian Sea. This method was used experimentally for catching other fish, particularly Pacific sauries, in other regions but did not give satisfactory results until 1962. A successful standard fish-pumping installation is illustrated in this article. Though research and experiments are not completed, the authors recommend that a few vessels be equipped with fish-pumping installations for commercial purposes.

SCALLOPS:

"Tagging as a technique in population studies of the sea scallop," by J. A. Posgay, article, North Atlantic Fish Marking Symposium, Special Publication No. 4, pp. 268-271, printed, 1963. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

SEA LAMPREY:

The Use of Alkalinity and Conductivity Measurements to Estimate Concentrations of 3-trifluoromethyl-4-nitrophenol Required for Treating Lamprey Streams, by Richard K. Kanayama, Technical Report no. 7, 10 pp., printed, November 1963. Great Lakes Fishery Commission, Natural Resources Bldg., University of Michigan, Ann Arbor, Mich.

SHRIMP:

"Abundance of postlarval shrimp--one index of future shrimping success," by Kenneth N. Baxter, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 79-87, printed, April 1963. Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

"Expanded research on Gulf of Mexico shrimp resources," by Joseph H. Kutkuhn, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 68-79, printed, April 1963. Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

The Recent Genera of the Caridean and Stenopodidean Shrimps (Class Crustacea, Order Decapoda, Supersection Natantia) with Keys for Their Determination, by Lipke B. Holthuis, 157 pp., illus., printed, 1955. E. J. Brill, Oude Rijn, 33a, Leiden, Netherlands.

"On some aspects of quality of cooked frozen prawns," by V. Krishna Pillai and A. Lekshmy, article, Indian Journal of Fisheries, vol. 8, October 1961, pp. 440-448, printed. Ministry of Food and Agriculture of Government of India, New Delhi, India.

SMALL BUSINESS MANAGEMENT:

Following issued by Small Business Administration, Washington, D. C. 20416:

How Do You Know What Your Business is Worth? by G. H. B. Gould and Dean C. Coddington, Management Aid for Small Manufacturers No. 166, 4 pp., processed, August 1964. Although small businessmen need to place a value on their businesses when negotiating for funds, when settling estates, or when selling out, there is no standard formula for determining value. Often value is subjective--what a person thinks the business is worth to him. This leaflet discusses three methods for estimating value: asset valuation, market worth, and capitalized earnings value. In this last method, two steps are used. First, you find a company's true earning power, based on both its past experience and future probabilities. Second, you capitalize these earnings at a rate which is realistic for the risks involved. The leaflet concludes that the capitalized earnings approach is the most valid because that method embodies all the factors in valuation.

Pricing, Production, and Marketing Policies of Small Manufacturers, by Robert F. Lanzillotti and Gordon O. Parrish, Management Research Summary, 2 pp., processed, 1964. The study discussed in this summary is based on an analysis of the pricing practices of 256 small manufacturers located in the State of Washington and having fewer than 250 workers. Typically, more than half the production of the firms consisted of standard products for inventory. Generally these firms did not make detailed analysis of production and distribution costs. They relied heavily on rules-of-thumb in their pricing. About three-fourths of them tried to set prices so as to realize a predetermined profit rate. Net profits on sales before taxes averaged only 5.9 percent for this group during the 1950-1959 period. However, since many of the unincorporated firms did not deduct owner-managers' salaries as a cost, they did not in fact realize any return at all on invested capital.

Problems in Small Business Management, by William Rotch, Management Research Summary, 2 pp., processed, 1963. The report summarized in this leaflet consists of a collection of case studies of small businesses and some readings related to various aspects of small-business management. Each case is a description of a real business--its people, products, and operations. Five groups of cases are presented: starting a business; developing a business; financing a firm; major expansion of a company; and special situations involving personnel or other types of problems. The purpose of the study was to develop material for a course or seminar in the management of small enterprises.

The Relation of Management Decision Making to Small Business Growth, by F. Parker Fowler, Jr. and E. W. Sandberg, Management Research Summary, 2 pp., processed, 1964. One approach to helping small businesses is based on the idea that they differ from large businesses in kind as well as in size. The study sum-

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marized in this leaflet (of 43 Colorado manufacturers with identical products) classifies the owner-managers as: the conservative operator, managing a relatively stable firm; the aggressive innovator, achieving a rapid growth pattern; and the industry stalwart, desiring status in the industry for his firm. Also shown is that the small business owner-manager differs from the hired manager in that the former specifies both his firm's goals and the means by which they are to be attained. The recommendation is made that assistance to individual firms should include the construction of internal information systems.

Value Analysis for Small Business, by Daniel D. Roman, Technical Aids for Small Manufacturers No. 87, 4 pp., processed, May-June 1964. Value analysis (sometimes called value engineering or value control) is a technique that aims to find new ways to get equal or superior performance from a product or method at lower costs, while retaining quality, function, and reliability. Its concept is that it is easier to increase profits by reducing costs than by increasing sales. Checking with experts, exchanging ideas, watching for unreasonable specifications, knowing where to get factual help, and using ingenuity instead of merely following custom and tradition--all these and more are the techniques used in value analysis. This leaflet explains the principles of value analysis and how they can be adapted to small business use; reports various instances of successful use of this technique; and makes certain suggestions for company acceptance.

SMALL CRAFT:

The following color-illustrated charts, each 23 by 37 inches, are available free from Touring Service, Mobil Oil Company, 150 E. 42nd St., New York, N. Y. 10017:

Cruising Guide 1--Eastport, Maine, to Barnegat Inlet, New Jersey, Including Long Island and New York City Waters.

Cruising Guide 2--Montreal, Canada to Key West, Florida, Including St. Lawrence River, Hudson River, Delaware Bay, and Chesapeake Bay.

Cruising Guide 3--Great Lakes, Thousand Islands, New York Waterways, Ohio River, Mississippi River, Gulf Coast from Mobile, Alabama, to Brownsville, Texas, Plus Selected Areas.

Cruising Guide 4--Pacific Coast from Puget Sound to San Diego and Colorado River.

SMOKING:

"Optimization of the electrostatic smoking process," by J. Tilgner and Z. E. Sikorski, article, Fleischwirtschaft, vol. 15, no. 5, 1963, pp. 391-395, illus., printed in German with English, French, Italian, and Spanish summaries. Verlagshaus Sponholz GmbH, Kockstrasse 60-61, Berlin SW 68, Germany.

SPINY LOBSTER:

Contribucion al Conocimiento de las Langostas del Pacifico Mexicano y su Pesqueria (Contribution to the Knowledge of the Spiny Lobster of the Mexican Pacific Coast and Its Fishery), by Hector Chapa Saldaña, 67 pp., illus., printed in Spanish with English summary, 1964. Instituto Nacional de Investi-

gaciones Biologico-Pesqueras, Secretaria de Industria y Comercio, Direccion General de Pesca e Industrias Conexas, Mexico, D. F.

Sobre los Estadios Larvales de la Langosta Comun PANULIRUS ARGUS (On the Larval Stages of the Spiny Lobster Panulirus argus), by Julio A. Baisre, Contribution No. 19, 37 pp., illus., printed in Spanish with English abstract, January 1964. Centro de Investigaciones Pesqueras, Instituto Nacional de la Pesca, Playa Habana, Bauta, Cuba. In this study, 121 phyllosoma larvae of the spiny lobster were found in the stomach contents of skipjack and blackfin tuna and in plankton samples collected from Cuban fishing grounds. All 11 stages, with the exception of stage III, were identified among the specimens examined.

"Lobster fishery off the southwest coast of India," by H. Miyamoto and A. T. Shariff, article, Indian Journal of Fisheries, vol. 8, no. 2, 1961, pp. 252-268, illus., printed. Indian Journal of Fisheries, Ministry of Food and Agriculture, New Delhi, India.

"Report on South African rock lobsters--Notes on the reproductive biology and size limit of S. A. rock lobsters. Part 2," by A.E.F. Heydorn, article, The South African Shipping News and Fishing Industry Review, vol. 19, no. 6, June 1964, pp. 93, 95, 97-99, 101, 103-105, 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. Deals with the attainment of sexual maturity and the reproductive potential of the South African spiny lobster Jasus lalandii (Milne Edwards), and the importance of these factors in relation to the determination of minimum size limits.

SPRAT:

"O podvodnykh nabliudeniakh za poviedeniem kilki" (On underwater observations of the behavior of sprats), by I. V. Nikonorov, article, Rybnoe Khoziaistvo, vol. 38, no. 1, 1962, pp. 32-36, illus., printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

SQUID:

"Studies on the relationship between current boundary zones in waters to the southeast of Hokkaido and migration of the squid, Ommastrephes sloani pacificus (Steenstrup)," by Tsuneyoshi Suzuki, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 2, no. 2, 1963, pp. 75-153, illus., printed. Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

STANDARDS:

State of California Standards and Specifications--Seafoods; Fresh, Frozen, and Processed Fish; Inspection, Testing, and Certification, T63-p-17, 87 pp., processed, August 1, 1963. Purchasing Division, Department of Finance, State of California, Sacramento, Calif. Contains the State of California specifications for fresh, frozen, and processed fish and shellfish, and inspection, testing, and certification procedures. Also incorporates all of the National Association of State Purchase Officials (NASPO) specifications for fishery products developed by the U. S. Bureau of Commercial Fisheries Gloucester Technological Laboratory. Those include specifications for frozen

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ocean-perch fillets and Pacific ocean-perch fillets; chilled and frozen cod or haddock fillets; scallops--frozen raw, frozen raw breaded and frozen fried breaded; fish portions--frozen raw, frozen raw breaded and frozen fried breaded; shrimp--raw or cooked--chilled or frozen; and shrimp--frozen raw breaded. In addition to adopting the NASPO specifications verbatim, the State requires USDI inspection and grading of all products. All standardized products purchased by the State must be U. S. Grade A quality.

STERN-TRAWLERS:

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"Réflexions sur les chalutiers a pêche par l'arrière et estimation des temps de manoeuvre" (Thoughts on the stern trawler and estimates of operating time), by M. Birkhoff, article, La Pêche Maritime, vol. 43, no. 1035, June 20, 1964, pp. 409-413, illus., printed in French, single copy 20 francs (about US\$4.05). La Pêche Maritime, 190, Boulevard Haussmann, Paris 8^e, France.

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"Employment of submarines for scientific research," by Donald W. Strasburg, article, Proceedings of the Hawaiian Academy of Science, 38th Annual Meeting, 1962/1963, p. 13, printed, 1963. University of Hawaii, Honolulu, Hawaii.

SWEDEN:

"Aktuella ekonomiska problem inom fisket" (Present economic problem in the fishery), by Ingemar Gerhard, Svenska Vastkustfiskaren, vol. 34, no. 13-14, July 15, 1964, pp. 274-275, printed in Swedish. Svenska Vastkustfiskarnas, Centralforbund, Ekonomiuetskoffet Postbox 1014, Goteborg 4, Sweden.

HAWAII:

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viewed which show similarities between the toxin found in a barracuda from Guam and red snappers from the Line Islands.

"Japanese puffer fish," article, Science News Letter, vol. 86, no. 9, August 29, 1964, p. 139, printed, single copy 15 cents. Science Service, 1719 N. St. NW., Washington, D. C. 20036.

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"Za tralenia na povyshennykh skorostai kh" (Trawling at increased speeds), by V. I. Kaplan, A. B. Lishin, and E. I. Zaitsev, article, Rybnoe Khoziaistvo, vol. 38, no. 5, 1962, pp. 30-44, printed in Russian. V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

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"Will tuna research change direction?" by Vernon E. Brock, article, Proceedings of the Gulf and Caribbean Fisheries Institute, 15th Annual Session, November 1962, pp. 50-52, printed, April 1963. Gulf and Caribbean Fisheries Institute, Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

TUNA AND MACKEREL:

Preliminary Field Guide to the Mackerel- and Tuna-Like Fishes of the Indian Ocean (Scombridae), by Bruce B. Collette and Robert H. Gibbs, 48 pp., printed, 1963, Smithsonian Institution, Washington, D. C. 20560.

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TUNA AND TUNALIKE:

The following articles appeared in Proceedings of the World Scientific Meeting on the Biology of Tunas and Related Species, La Jolla, California, 1962, FAO Fisheries Report No. 6, vol. 3, 1963. Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Processed in English with French and Spanish summaries:

- "Albacore scouting in the eastern North Pacific Ocean," by Leo Pinkas, pp. 1343-1353.
- "The California albacore fishery logbook system," by William Craig, pp. 1217-1255, illus.
- "California's tuna record gathering system," by Edward C. Greenwood, pp. 1367-1379, illus.
- "Changes in availability of albacore in the eastern Pacific Ocean 1952 and 1958," by James H. Johnson, pp. 1227-1235, illus.
- "Climatic parameters and the Hawaiian skipjack fishery," by Gunter R. Seckel, pp. 1201-1208, illus.
- "Comparative distribution of eggs, larvae and adults in relation to biotic and abiotic environmental factors," by Hiroshi Yabe, Yoichi Yabuta, and Shoji Ueyanagi, pp. 979-1009, illus.
- "A contribution to the biology of Philippine tunas," by Inocencio A. Ronquillo, pp. 1683-1752, illus.
- "Distribution and abundance of tuna related to wind and ocean conditions in the Gulf of Tehuantepec, Mexico," by Maurice Blackburn, pp. 1557-1582, illus.
- "Distribution and relative abundance of tunas in relation to their environment," by Taivo Laevastu, pp. 1835-1851, illus.
- "Distribution of the yellowfin tuna Neothunnus macropterus (Temminck and Schlegel) in the tuna long-line fishing grounds of the Pacific Ocean," by Tadao Kamimura and Misao Honma, pp. 1299-1328, illus.
- "Effects of water temperature on the distribution of some scombrid fishes along the Pacific coast of North America," by John Radovich, pp. 1459-1475, illus.
- "A first examination of the abundance and distribution of yellowfin and albacore tuna in the western tropical Atlantic, 1957 to 1961," by Flavio Rodrigues Lima and John P. Wise, pp. 1515-1521, illus.
- "Fishing techniques for tunas and skipjack," by Shigene Takayama, pp. 1067-1076.
- "Food of Indian tunas," by P. T. Thomas and M. Kumaran, pp. 1659-1667, illus.
- "Food of Pacific albacore in the California fishery (1955-1961)," by Harold B. Clemens and Robert A. Iselin, pp. 1523-1535, illus.
- "Food of skipjack in the central Pacific," by Kenneth D. Waldron and Joseph E. King, pp. 1431-1457, illus.
- "Future lines of tuna research, mainly in relation to fisheries oceanography," by Michitaka Uda, pp. 1087-1095.
- "Growth and sexual dimorphism in growth of bigeye tuna (Thunnus obesus). A preliminary report," by Richard S. Shomura and Betty Ann Keala, pp. 1409-1417, illus.
- "Investigation of tuna behavior by fish finder," by Minoru Nishimura, pp. 1113-1123, illus.
- "The matter of availability and the harvest of tunas," by Gerald V. Howard, pp. 1041-1055, illus.
- "Measurement of the shape of the tuna long-line and an analysis of its efficiency," by Chikamasa Hamuro, pp. 1133-1142, illus.
- "A method for computing estimates and variances of relative log fishing powers of California albacore vessels," by Norman J. Abramson, pp. 1209-1215, illus.
- "A method of sampling the Pacific albacore (Thunnus germo) catch for relative age composition," by David J. Mackett, pp. 1355-1366.
- "A model of albacore migration in the north Pacific Ocean," by Harold B. Clemens, pp. 1537-1548, illus.
- "Monofilament gill net fishing for skipjack tuna in Hawaiian waters. A progress report," by Richard S. Shomura, pp. 1177-1199, illus.
- "An outline of the tuna longline grounds in the Indo-Pacific. Preliminary report," by Akira Suda, Tsutomu Koto, and Susumu Kume, pp. 1163-1176, illus.
- "The past, present and future status of the tuna resources of the Trust Territory of the Pacific Islands," by Peter T. Wilson, pp. 1633-1638.
- "Preliminary experiments with Tilapia as bait in the tuna fishery off the coast of Brazil," by Jose Bonifacio Gomes da Fonseca, pp. 1109-1112.
- "Schooling behavior within aggregations composed of yellowfin and skipjack tuna," by Heeny S. H. Yuen, pp. 1419-1429, illus.
- "Seasonal and annual variation of the hooking-rate and annual variation of the catch-quantity of tuna and marlin in the tropical Atlantic Ocean," by J. Nakagome and S. Suzuki, pp. 1279-1297, illus.
- "Size and composition of tuna stocks," by John Hamre, pp. 1023-1039, illus.
- "Spawning of the oceanic skipjack, Katsuwonus pelamis (Linnaeus), in the Laccadive Sea," by G. Raju, pp. 1669-1682, illus.
- "Statistics of catch and effort required for scientific research on the tuna fisheries," by Milner B. Schaefer, pp. 1077-1086.
- "Structure of the albacore stock and fluctuation in the catch in the North Pacific areas," by Akira Suda, pp. 1237-1277, illus.

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"Studies of oceanic fronts in the mouth on the Gulf of California, an area of tuna migrations," by Raymond C. Griffiths, pp. 1583-1605, illus.

"Subpopulation identification," by John C. Marr, pp. 1011-1021.

"Thermal relationships of tuna in the oceanic Northwest Atlantic," by James L. Squire Jr., pp. 1639-1657, illus.

"Tuna landings and production 1916-1961," by Edward C. Greenwood and Sterling P. Davis, pp. 1395-1407, illus. California tuna catch and production are compared with those of the United States and the world.

"Tuna tagging experiments in Norwegian waters," by Johs Hamre, pp. 1125-1132, illus.

"Tunas (genus *Thunnus*) of the western North Atlantic. III--Distribution and behavior of *Thunnus* species," by Frank J. Mather III, pp. 1159-1161.

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"Description des stades post-larvaires et juveniles de *Neothunnus albacora* (Lowe de l'Atlantique tropico-oriental)" (Description of post-larval and juvenile stages of *Neothunnus albacora* (Lowe) of the eastern tropical Atlantic), by E. Marchal, pp. 1792-1811, illus.

Processed in Spanish with English and French summaries:

"Especies del genero *Sarda* en el Pacifico Oriental," (Species of the genus *Sarda* in the Eastern Pacific), by Aurora Chirinos de Vildosa, pp. 1549-1556, illus.

"La pesqueria del bonito en el Peru," (The bonito fisheries in Peru), by Felipe Ancieta, pp. 1607-1819, illus.

"Resultados del programa de marcado de atun en aguas espanolas" (Results of tuna-tagging plan in Spanish waters), by Julio Rodriguez-Roda, pp. 1813-1822, illus.

"Talla, peso, edad y crecimiento del atun del Golfo de Cadiz, Espana" (Length, weight, age and growth of tuna from Gulf of Cadiz, Spain), by Julio Rodriguez-Roda, pp. 1823-1834, illus.

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UNITED STATES GOVERNMENT:

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perintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) The official organization handbook of the Federal Government. Contains the Constitution of the United States and sections describing the agencies in the legislative, judicial, and executive branches of the Government as well as executive departments and independent agencies. Supplemental information includes brief discussions of quasi-official agencies, selected multi-lateral international organizations, selected bilateral organizations, charts of the principal Federal agencies, and appendices relating to abolished and transferred agencies and to Government publications. Also includes descriptions of agencies working in fisheries and related fields; Interagency Committee on Oceanography, U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, and Bureau of Sport Fisheries and Wildlife.

U.S.S.R.:

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Hydroacoustical Station Paltus, U.S.S.R., by V. P. Averkiyev, OTS 64-31276, 32 pp., illus., processed, May 18, 1964, 75 cents. (Translated from the Russian, Sudovyye Ryboposkovyye i Elektronavigatsionnyye Pribory, 1963.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230.

Materialy Rybokhoziastvennykh Issledovaniy Severnogo Basseina--Vypusk II (Fishery Research in the Northern Basin. Part 2), 170 pp., printed in Russian, 1964. Gosudarstvennyi Komitet po Rybnomu Khoziaistvu pri SNKH SSSR; Poliarnii Nauchno-Issledovatel'skii i Proiektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knopovicha PINRO), Murmansk, U.S.S.R. Includes, among others, articles on: "Forecasting of the natural basis for the trawl fishery in the central elevation area of the Barents Sea," by K. G. Konstantinov; "Assessment of abundance of single year-classes of Atlantic Scandinavian herring," by I. G. Judanov; "Sizes of mature cod in the Arcto-Norwegian stock in 1959, 1960 and 1961," by A. S. Baranenkova and N. S. Khokhlina; "Some peculiarities in menhaden morphology," by E. E. Gusev; "Dynamics of age composition, maturation and spawning of cod on the Flemish Cap Bank," by A. I. Postolaky; "Results of estimation of the abundance of young cod and haddock in the Barents Sea in Winter 1962/63," by Z. P. Baranova and G. P. Nizovtsev; "Influence of transportation conditions on the future state of eggs and larvae of the Far East salmon," by L. A. Galikina; "Distribution of seals in the Jan-Mayer area and hydrometeorological conditions in the fishing period of 1963," by V. A. Potelov and F. L. Seleznev; "On the distribution of shrimps in the Labrador and Newfoundland areas," by V. I. Mikhalkovich; "Influence of the trawling speed upon the catchability of the bottom trawl," by E. I. Zaitsev; "On the use of fish finders," by O. I. Chatoba and M. N. Shcherbino; "The use of echo sounder when fishing under ice," by A. A. Ganjkov and O. N. Kiselev; and "To the

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problem of increase in profitableness of the trawl fishery in the Barents Sea," by V. I. Zakurdaev.

Transactions of the Murmansk Marine Biological Institute, FTD TT-63-663, 396 pp., printed, January 27, 1964, \$5. (Translated from the Russian, Akademiya Nauk SSSR, Murmanskii Morskoi Biologicheskii Institut, vol. 3, no. 7, 1961, pp. 1-220.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230. Contents: procedure for the collection of phytoplankton; ways in which crustaceans adapt to changes in the chemical nature of the external environment; the survival rate of humpbacked salmon (Oncorhynchus gorbuscha Walb.) fry in relation to the mode of transfer from fresh to sea water; active selective reaction of humpbacked salmon fry in relation to sea water; pigment reaction of the cod to uniform and nonuniform backgrounds; the migrations of sexually immature cod and the reasons for variations in them; and other studies.

Trudy PINRO, Vypusk 15, 1963--Akklimatizatsiia Tikhookeanskikh Lososei v Basseine Barentseva i Belogo Morei; Materialy po Biologii Treski i Morskikh Mlekopitajushchikh Severa (Acclimatization of Pacific Salmon in Barents and White Sea Basins; Biology of Cod and Marine Mammals of the Soviet North), 286 pp., printed in Russian. Poliarnii Nauchno-Issledovatel'skii i Proiktnyi Institut Morskogo Khoziaistva in Okeanografii im. N. M. Knipovicha, Moscow, U.S.S.R. Includes, among others, these articles: "Data on the acclimatization of pink salmon in the basin of the Barents and White Seas," by V. V. Azbelev and A. A. Jakovenko; "Experiments on regulation of the maturing of pink salmon," by O. B. Sakun, and G. M. Persov; "Observations on seaward migration of young pink and chum salmon in the European north," by E. L. Bakshtansky; "Rearing of young pink and chum salmon in sea water," by E. L. Bakshtansky; "On the variability of the pink salmon selective reaction to sea water," by G. D. Bocharov; "Cod of the Murman Coast," by T. I. Glebov; "Observations on the feeding of cod and haddock in the Barents Sea," by N. S. Novikova and V. I. Nihalkovich; "Some features of the capelin ecology (Mollotus villosus villosus Muller) in the Barents Sea," by V. S. Prokhorov; "The autumn-winter distribution of prespawning and spawning concentrations of polar cod (Boreogadus saida, Lepechin) in the Barents Sea," by V. P. Ponomarenko; "Materials on the biology and fishery of the Newfoundland harp seal," by R. Sh Khuzin; "On the distribution and biology of the Greenland hooded seal," by R. Sh. Ghuzin and M. Ja. Jakovenko; and "Age determination and data on the breeding whale," by R. Sh. Khuzin.

VENEZUELA:

Foreign Trade Regulations of Venezuela, OBR 64-73, 8 pp., printed, June 1964, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. 20402. To encourage domestic industry, tariff and nontariff controls are utilized to protect domestic manufacturers from foreign competition by restricting imports of competing commodities, and to stimulate investment and expansion by permitting the relatively unrestricted entry of capital goods and primary materials required for production. All exports of Venezuelan

origin are free of duties. This report discusses, besides trade policy, Venezuela's import tariff system, sales and other internal taxes, documentation and fees, labeling and marking requirements, and special customs provisions. Also covers her nontariff trade controls, export regulations, United States import and export controls, and diplomatic representation between the two countries.

VITAMIN A:

"On the factors of isomerization of vitamin A in fish liver oil," by H. Baba, article, Japanese Journal of Nutrition, vol. 21, 1963, p. 3, printed. Daiichi Shuppan K.K., 39, 1-chome, Kanda Jimbo-cho, Chiyoda-ku, Tokyo, Japan.

"Growth effect of vitamin A in fish liver oil on chicks," by H. Baba, article, Japanese Journal of Nutrition, vol. 21, 1963, p. 8, printed. Daiichi Shuppan K.K., 39, 1-chome, Kanda Jimbo-cho, Chiyoda-ku, Tokyo, Japan.

WEATHER CHARTS:

The following processed weather charts, 2 pp. each, 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, whole gale, and hurricane warnings, explanations of warning displays, and schedules of AM and FM radio and TV stations that broadcast weather forecasts and warnings.

Coastal Warning Facilities Chart, Cape Hatteras, N. C. to Brunswick, Ga., 1964.

Coastal Warning Facilities Chart, Eastport, Me., to Montauk Point, N. Y., 1964.

Coastal Warning Facilities Chart, Manasquan, N. J., to Cape Hatteras, N. C., and Chesapeake Bay, 1964.

Coastal Warning Facilities Chart, Montauk Point, N. Y. to Manasquan, N. J., 1964.

Coastal Warning Facilities Chart, Puerto Rico and Virgin Islands, 1964.

Small Craft, Gale, and Whole Gale Warning Facilities Chart, Great Lakes: Huron, Erie, and Ontario, 1964.

Small Craft, Gale, and Whole Gale Warning Facilities Chart, Great Lakes: Superior and Michigan, 1964.

WEST AFRICA:

Foreign Trade Regulations of the West African Customs Union (Dahomey, Ivory Coast, Mali, Mauritania, Niger, Senegal, Upper Volta) and Togo, by G. Michael Bache, OBR 64-60, 12 pp., printed, June 1964, 15 cents. Bureau of Foreign 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.) Each member of the Union (Dahomey, Ivory Coast, Mali, Mauritania, Niger, Senegal, and Upper Volta) has a commercial agreement with France which provides that France will furnish economic assistance in certain specified forms. In return, the member of the Union undertake to buy certain commodities from France and the franc zone either exclusively or in a

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specified percentage. Togo has entered into a similar agreement with France. This leaflet presents information on the import tariff system, sales and other internal taxes, documentation and fees, mail shipments, and labeling and marking requirements of those African countries. Also covers special customs provisions, nontariff import controls, export controls, United States foreign trade controls, and diplomatic representation between those countries and the United States.

"Résultats préliminaires de la campagne Thalassa au large du Rio de Oro et de la Mauritanie" (Preliminary results of the fishing expedition of *Thalassa* off the coasts of Rio de Oro and Mauritania), by Cl. Maurin, article, *Science et Peche*, no. 112, 1963, 12 pp., illus., printed in French, L'Institut Scientifique et Technique des Peches Maritimes, 59 Ave. Raymond-Poincare, Paris 16^e, France.

WHALE OIL:

"Composition of spermaceti," by M. Wellendorf, article, *Nature*, vol. 198, no. 4885, 1963, pp. 1086-1087, printed, St Martin's Press, Inc., 175 Fifth Ave., New York, N. Y. 10010.

WHALES:

"Progress report on biological studies of the larger cetacea in the waters off California," by Dale W.

Rice, article, *Norsk Hvalfangst-Tidende*, no. 7, 1963, pp. 181-187, printed. Hvalfangerforeningen, Sandefjord, Norway.

WHALING:

"Pacific Coast whaling and whale research," by Dale W. Rice, article, *Transactions of the Twenty-Eighth North American Wildlife and Natural Resources Conference*, March 4, 5, and 6, 1963, pp. 327-335, printed. Wildlife Management Institute, Wire Bldg., Washington, D. C. 20005.

WHITING:

"Effect of chilled storage on the frozen storage life of whiting," by J. A. Peters, E. H. Cohen, and F. J. King, article, *Food Technology*, vol. 17, no. 6, June 1963, pp. 109-110, printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

YELLOW PIKE:

"The movement, heterogeneity, and rate of exploitation of walleyes in northern Green Bay, Lake Michigan, as determined by tagging," by Walter R. Crowe, Earnest Karvelis, and Leonard S. Joeris, article, *Conseil Permanent International pour l'Exploration de la Mer, Rapports et Proceedings-Verbaux des Reunion*, vol. 370, 1963, pp. 38-41, printed. Conseil International pour l'Exploration de la Mer, Charlottenlund Slot, Charlottenlund, Denmark.



RUSSIAN THEORIES ON THE INFERIOR QUALITY OF HATCHERY-REARED CHUM SALMON FRY

A Russian fishery scientist has proposed some interesting theories concerning the often discussed inferior quality of hatchery-reared fry. His conclusions were based on observations of the chum salmon (*Oncorhynchus keta*), but might also apply to other salmonids.

According to N. N. Disler, hatchery fry emergent on the flat surface of trays or troughs occur in a head-down position. This causes the oil droplet of the yolk sac to occupy an unnatural posterior position where it causes temporary deformation of the intestine and prevents the passage of food. Disler further contends that, because of the nature of the artificial environment, hatchery fry begin to swim at an earlier age than wild fry. As a result of the exhausting movements of the hatchery fry, the fat content of their bodies--after all the yolk material has been absorbed--is only one-fourth that of wild fry.

In order to avoid defects in the structure and behavior of hatchery fry, Disler recommends that the facilities for holding young chum salmon should more nearly approximate the natural environment. He suggests that several layers of large pebbles should be spread on the bottom of the holding containers, and water should be introduced from the bottom through the pebbles.

A translation of Disler's paper entitled "Development of Autumn Chum Salmon in the Amur River" can be obtained for 50 cents from the Office of Technical Services, U. S. Department of Commerce, Washington, D. C. (*The Progressive Fish-Culturist*, July 1964.)

14,000-FOOT MOUNTAIN DISCOVERED IN PACIFIC

The discovery of an undersea mountain in the Pacific Ocean comparable to Mt. Whitney, the tallest in the United States outside Alaska, was disclosed on August 25, 1964, by the Coast and Geodetic Survey, U. S. Department of Commerce.

The new discovery was made July 23, by the C&GS Ship *Pioneer* while on a six-months international scientific expedition to the Indian Ocean. The 30,000-mile cruise of the 312-foot "floating laboratory" ended August 11 when the ship returned to its home port of Oakland, Calif. Its findings will take years for scientists to evaluate.

The undersea mountain showed up on the vessel's depth-sounding equipment about 175 miles south of Wake Island, between Hawaii and Guam, where the ocean is almost $3\frac{1}{2}$ miles deep. Although it was 3,800 feet below the surface of the sea, it rose at least 14,130 feet above the ocean floor. California's Mt. Whitney, in the Sierra Nevada Mountains, is 14,495 feet high.

The commanding officer of the *Pioneer* said the undersea mountain (termed a seamount by oceanographers) could be taller than the height recorded. "We sailed over it only once," he explained, "and the site where we recorded 14,130 feet may not have been the highest point."

A C&GS oceanographer (who participated in the Indian Ocean expedition) said the seamount was formerly an island which probably sank beneath the ocean about 50,000,000 years ago. He said, "The seamount is similar to any one of the Hawaiian Islands, but this one sank beneath the ocean over a great period of time because of its enormous size. The crust of the ocean bottom is just not sufficiently strong to withstand a load of such dimensions. The new seamount is probably an extinct volcano like so many others in the Pacific Basin. They seem to form in groups on long linear rises or swells of the sea floor crust. Lava is spewed out above hot spots in the earth's mantle, that part of the earth's interior which surrounds the central core." He further stated that the seamount was "a new mountain, geologically speaking," adding that "the great mystery of Pacific seamounts is why we can not find any really old ones. Unlike mountains on land, seamounts are shielded from erosion," explained the oceanographer, "so, like mountains on the moon, they should last virtually forever."

Seamounts have a practical importance aside from their interest to scientists. For ships, most of which are now equipped with sounding devices, they furnish a method for establishing a fixed position on the often trackless sea. The location of seamounts, especially those which are not too far below the surface of the ocean, is also of strategic importance to submarines.

The new seamount will probably be named and its position will subsequently appear on nautical charts.