



## FISH AND WILDLIFE SERVICE PUBLICATIONS

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

Number	Title
CFS-3778	- Industrial Fishery Products, 1964 Annual Summary (Revised), 9 pp.
CFS-3897	- North Carolina Landings, July 1965, 4 pp.
CFS-3915	- South Carolina Landings, July 1965, 2 pp.
CFS-3919	- New England Fisheries, 1964 Annual Summary, 11 pp.
CFS-3922	- Georgia Landings, July 1965, 2 pp.
CFS-3926	- Maryland Landings, July 1965, 4 pp.
CFS-3929	- Gulf Fisheries, 1964 Annual Summary, 16 pp.
CFS-3930	- Fish Meal and Oil, August 1965, 2 pp.
CFS-3932	- Maine Landings, August 1965, 4 pp.
CFS-3933	- New Jersey Landings, July 1965, 3 pp.
CFS-3934	- New Jersey Landings, August 1965, 3 pp.
CFS-3935	- Rhode Island Landings, May 1965, 3 pp.
CFS-3936	- Texas Landings, May 1965, 2 pp.
CFS-3938	- South Carolina Landings, August 1965, 3 pp.
CFS-3939	- Frozen Fishery Products, September 1965, 7 pp.
CFS-3940	- Hawaii Fisheries, 1964 Annual Summary, 4 pp.
CFS-3941	- Michigan, Ohio & Wisconsin Landings, July 1965, 4 pp.
CFS-3943	- Alabama Landings, August 1965, 3 pp.
CFS-3944	- Maryland Landings, August 1965, 4 pp.
CFS-3945	- Massachusetts Landings, February 1965, 7 pp.
CFS-3947	- Rhode Island Landings, June 1965, 3 pp.
CFS-3948	- New York Landings, August 1965, 4 pp.
CFS-3949	- Louisiana Landings, August 1965, 3 pp.
CFS-3950	- Massachusetts Landings, March 1965, 7 pp.
CFS-3951	- Shrimp Landings, April 1965, 5 pp.
CFS-3952	- California Landings, July 1965, 4 pp.
CFS-3953	- North Carolina Landings, September 1965, 4 pp.
CFS-3955	- Florida Landings, September 1965, 8 pp.
CFS-3956	- Mississippi Landings, July 1965, 3 pp.

CFS-3957 - Fish Meal and Oil, September 1965, 2 pp.  
CFS-3958 - Mississippi Landings, August 1965, 3 pp.  
CFS-3959 - Gulf Coast Shrimp Data, April 1965, 19 pp.  
CFS-3963 - Michigan, Ohio & Wisconsin Landings, August 1965, 4 pp.  
CFS-3964 - Rhode Island Landings, July 1965, 3 pp.  
CFS-3965 - New Jersey Landings, September 1965, 3 pp.  
CFS-3968 - Texas Landings, June 1965, 3 pp.

SL-22 - Wholesale Dealers in Fishery Products, Oregon, 1964 (Revised), 4 pp.

Sep. No. 749 - New Approaches to Quality Changes in Fresh-Chilled Dressed Halibut.

Sep. No. 750 - Wade Seine Construction and Method of Use.

Sep. No. 751 - Technical Note No. 2 - An Inexpensive Scallop Cleaner Built from Spare Parts

SSR-Fish. No. 506 - Table of Sigma-t and Intervals of 0.1 for Temperature and Salinity, by Betty Ann L. Keala, 187 pp., April 1965.

SSR-Fish. No. 510 - Collections by the Exploratory Fishing Vessels Oregon, Silver Bay, Combat, and Pelican, Made During 1956-1960, in the Southwestern North Atlantic, by Harvey R. Bullis, Jr., and John R. Thompson, 133 pp., Aug. 1965.

SSR-Fish. No. 514 - Biological-Statistical Census of the Species Entering Fisheries in the Cape Canaveral Area, by William W. Anderson and Jack W. Gehring-er, 89 pp., illus., July 1965.

SSR-Fish. No. 516 - Distribution of Fishes in U. S. Streams Tributary to Lake Superior, by Harry H. Moore and Robert A. Braem, 65 pp., illus., July 1965.

Annual Report of the Bureau of Commercial Fisheries Technological Laboratory, Gloucester, Mass., for the Fiscal Year Ending June 30, 1963, by Joseph W. Slavin, Circular 231, 17 pp., processed. Provides summaries of research on the chemistry and biochemistry of fish; preservation and processing; standards and specifications research and development; radiation-pasteurization; and inspection and certification of fishery products. Also lists publications and papers presented at meetings.

Biological Laboratory, Galveston, Texas, Fishery Research for the Year Ending June 30, 1964, Circular 230, 113 pp., illus., processed, 1964. An annual progress report on some of the research highlights



for the year. Includes a section that discusses research on the distribution, abundance, and ecology of commercially important shrimp, and the shrimp dynamics program. The section on industrial fish discusses life histories of north-central Gulf bottomfish and western Gulf bottomfish resources. The estuarine program, experimental biology program, and operation and maintenance of salt-water laboratories are also reported upon.

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

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, October 1965, 16 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.

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

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, September and October 1965, 9 pp. each. (Market News Service, U. S. Fish and Wildlife Service, Rm. 608, 600 South St., New Orleans, La. 70130.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; Gulf menhaden landings and production of meal, oil, and solubles; fishery imports at Mobile, Ala., Morgan City and New Orleans, La., Miami, Fla., and Houston, Port Isabel, and Brownsville, Tex.; and sponge sales; for the months indicated.

Halibut and Troll Salmon Landings and Ex-Vessel Prices for Seattle, Alaska Ports and British Columbia, 1965-1964, 35 pp., 1965. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Bldg., Seattle, Wash. 98104.) Gives landings and ex-vessel prices of troll salmon and halibut at leading United States ports of the Pacific Coast; ex-vessel halibut prices and landings at leading British Columbia ports; United States and Canadian Pacific Coast halibut landings, 1936-1965, halibut landings at leading Pacific Coast ports, 1962-1965; and troll salmon landings and receipts at Seattle and Alaska ports, 1962-1965.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, October 1965, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, P. O. Box 447, 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 York City's Wholesale Fishery Trade--Monthly Summary -- August, September, and October 1965, 19 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 346 Broadway, New York, N. Y. 10013.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, including both the salt- and fresh-water sections; imports entered at New York customs district; primary wholesalers' selling prices for fresh, frozen, and selected canned fishery products; marketing trends; and landings at Fulton Fish Market docks and Stonington, Conn.; for the months indicated.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, October 1965, 9 pp. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Includes Seattle's landings by the halibut and salmon fleets reported through the exchanges; landings of halibut reported by the International Pacific Halibut Commission; landings of otter-trawl receipts reported by the Fishermen's Marketing Association of Washington; local landings by independent vessels; coastwise shipments from Alaska by scheduled and non-scheduled shipping lines and airways; imports from British Columbia via rail, motor truck, shipping lines, and ex-vessel landings; and imports from other countries through Washington customs district; for the month indicated.

New England Fisheries--Monthly Summary, October 1965, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.) Review of the principal New England fishery ports. Presents data on fishery landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, and Provincetown), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and Boston Fish Pier and Atlantic Avenue fishery landings and ex-vessel prices by species; for the month indicated.

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The Progressive Fish-Culturist, vol. 27, no. 4, October 1965, 74 pp., processed, single copy 25 cents. Some of the articles are: "The design, operation, and testing of a photoelectric fish egg counter," by Allen S. Davis and Gerald J. Paulik; "Observations on grass carp in Arkansas," by James H. Stevenson; "Preliminary studies with grass carp for aquatic weed control," by James W. Avault, Jr.; "Grass carp for weed control," by F. T. K. Pentelov and B. Scott; "Coho salmon smolts in ninety days," by Robert L. Garrison; "Tags for marking king crabs," by George W. Gray, Jr.; and "Tank facilities for tuna behavior studies," by John J. Magnuson.



## 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.

### ALASKA:

The following Statistical Leaflets available from Alaska Department of Fish and Game, Subport Bldg., Juneau, Alaska:

Alaska Commercial Fisheries Catch and Production Statistics, 1964, No. 9, 30 pp., processed, September 1965.

Alaska Commercial Fishery Operators, 1964, No. 8, 23 pp., processed.

### AMINO ACIDS:

"Free amino acids in the muscle of a few species of fish," by Shoji Konosu, Yoshiro Hashimoto, and Muzaffer Ozay, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 30, Nov. 1964, pp. 930-934, printed in Japanese and English. Japanese Society of Scientific Fisheries, Shiba-Kaigandori 6, Minato-ku, Tokyo, Japan.

### ARGENTINA:

"La industria pesquera Argentina" (The fishing industry of Argentina), article, Pesca y Marina, vol. 17, no. 5, Oct.-Nov. 1965, pp. 4, 6-8, 10, illus., printed in Spanish. Fernando Flores Ltda., 705 N. Windsor Blvd., Los Angeles 38, Calif.

### BONEFISH:

Bonefishing, by Stanley M. Babson, 128 pp., illus., printed, 1965, \$4.95. Harper and Row, Publishers, Inc., 49 East 33rd Street, New York 16, N. Y. The first complete book on catching bonefish. Tells where to find them, fishing techniques and tackle, selecting guides, and record catches. Offers solid advice and good reading for experienced fisherman and novice. Although bonefish are distributed in many parts of the world, at present Florida, the Caribbean, and the coastal waters off South America are the principal areas for fishing bonefish. The author describes studies at laboratories in Bimini (the Bahamas), the American Museum of Natural History, and the International Oceanographic Foundation at Miami. Presents the most up-to-date natural history of the bonefish. The book has an index.

### BOTULISM:

"The botulism problem in seafoods," by Harold B. Allen, article, Proceedings of the Gulf and Caribbean Fisheries Institute, Seventeenth Annual Session, Nov. 1964, pp. 32-36, printed. Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami, Fla. 33149.

### BRAZIL:

"Observações colhidas em nucleos pesqueiros de Alagoas, Sergipe e Bahia" (Observations on fishing centers in Alagoas, Sergipe and Bahia), by Bento F. Grangeiro, article, Boletim de Estudos de Pesca, vol. 3, no. 11/12, 1963, pp. 3-12, printed. Boletim de Estudos de Pesca, Rio de Janeiro, Brazil.

### CALIFORNIA:

Ocean Sportfish Catch and Effort from Oregon to Point Arguello, California, July 1, 1957-June 30,

1961, by Daniel J. Miller and Daniel Gotshall, Fish Bulletin 130, 135 pp., illus., printed, 1965. Department of Fish and Game, The Resources Agency, Sacramento, Calif. 95814. (Sold by Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807.)

### CANADA:

Fisheries Statistics, Quebec, 1963, 36 pp., illus., printed in French and English, October 1963, 75 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada.

### CASPIAN SEA:

On the Importance of the Herring-Gull in the Fishing of the Caspian Sea, by N. A. Gladkov and V. S. Zaletayev, 11 pp., processed. (Translated from the Russian Voprosy Ikhtologii, no. 4, 1955, pp. 180-187, printed.) Zoological Museum, Moscow University, Moscow, U.S.S.R.

### CEYLON:

The Marine and Fresh Water Fishes of Ceylon, by Ian S. R. Munro, 367 pp., 56 plates, illus., printed, 1955. Department of External Affairs, Canberra, Australia.

### CHESAPEAKE BAY:

Chesapeake Science, vol. 6, no. 3, September 1965, pp. 125-140, illus., printed, single copy 75 cents. Natural Resources Institute, University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. Includes, among others, these articles: "Sex Determination of Live Striped Bass Roccus saxatilis (Walbaum), by Biopsy Technique," by Douglas E. Ritchie; "Effect of Metallic Aluminum Particles on Oysters and Clams," by Robert W. Hanks; "Field Tests of Herbicide Toxicity to Certain Estuarine Animals," by Charles K. Rawls; "Larval Development of a Boring Clam, Barnea truncata," by Paul E. Chanley; and "Observations on Tag Loss and Comparative Mortality in Striped Bass," by Rupert R. Bonner, Jr.

### CLAMS:

"Frozen clams offer potential if intelligently exploited," by Duane D. Shelton, article, Quick Frozen Foods, vol. 27, Feb. 1965, pp. 293-294, 297-299, printed. E. W. Williams Publications, Inc. 1776 Broadway, New York, N. Y. 10019.

### COD:

"Effect of magnesium in salting of cod," by D. P. Sen and A. Aitken, article Journal of Food Science, vol. 30, Mar.-Apr. 1965, pp. 286-287, printed. Institute of Food Technologists, 510-522 No. Hickory St., Champaign, Ill. 61823.

"Polyphosphate treatment of frozen cod. 3--Taste panel evaluation, chemical assessment and thaw-drip in once-frozen Newfoundland trap-caught cod," by W. A. MacCallum, D. A. Chalker, and J. T. Lauder, article, Journal of the Fisheries Research Board of Canada, vol. 21, Nov. 1964, pp. 1397-1402, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

### DEMERSAL FISH:

"Demersal fishes and fisheries of the northeastern Pacific Ocean," by A. T. Pruter, article, Transactions of the North American Wildlife and Natural Resources Conference, vol. 29, 1964, pp. 382-392, printed. Wildlife Management Institute, Wire Bldg., Washington, D. C. 20005.



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## EELS:

"Export of eels big overseas earning potential," article, Commercial Fishing, vol. 4, no. 1, September 1965, pp. 7, 9, printed. Trade Publications Ltd., 26 Albert St., Auckland, New Zealand.

## EXOTIC FISH:

The Book of Exotic Fish, by R. and M. L. Bauchot, 95 pp., illus., printed, 1964. Stein and Day (Publishers), 7 East 48th St., New York, N. Y. 10017.

## EXPORTS:

Available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402:

"Exports by U. S. fisheries reach record, new data show," by J. M. Shea, article, International Commerce, vol. 71, no. 44, Nov. 1, 1965, p. 6, illus., printed, single copy 35 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C.

What You Should Know about Exporting--A How to Get Started Handbook, 46 pp., illus., printed, September 1965, 20 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. Informs the U. S. businessman on how to help himself and his Government expand exports to achieve a more favorable balance of payments position and to maintain high levels of employment and profits here at home while strengthening ties with friends and allies throughout the Free World. Discusses pinpointing markets, channels for trading, picking overseas partners, financing, insurance, regulations, handling orders, and promoting export sales. Presents a list of helpful pamphlets and articles on the subject.

## FISH CULTURE:

Nutrition of Fish and Feedstuffs for Fish Culture, by Yoshiro Hashimoto and Tomotoshi Okaichi, No. 9, Parts I and II, 70 and 43 pp., respectively, illus., printed in Japanese. Japan Fisheries Conservation Association, Zenkoku Choson Kaikan Bldg., 1-17, Nagata-Cho, Ciyoda-Ku, Tokyo, Japan.

## FISH FARMING:

"Britain's first sea fish farm," by Robert Barton, article, Australian Fisheries Newsletter, vol. 24, no. 11, November 1965, pp. 29, 31, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, Australia.

The Fish Farmer, vol. 1, no. 1, November 1965, 11 pp., illus., printed. American Fish Farmers Federation, Lonoke, Ark. (Available from The Fish Farmer, 1378 South Livermore Ave., Livermore, Calif. 94550.) The first issue of this periodical tells about the formation of the American Fish Farmers Federation, its functions and aims to help the fish farming business. A statement of aims and purposes tells what must be done in the future to build an industry. An article on legislation tells a little of what has been done in the past for the fish farmer. A list of fish dealers and haulers is included.

## FISH MEAL:

"To compare the differences in growth rate and feed efficiency in chicks by replacing antibiotics plus

fish meal with that of poultry litter," by G. P. Agarwala, article, Indian Poultry Gazette vol. 48, no. 4, Jan. 1965, pp. 106-109, printed. Indian Veterinary Research Institute, Izatnagar, Up. India.

## FISH PROTEIN CONCENTRATE:

"Supplementary value of a blend of cottonseed flour and fish flour on certain indigenous cereals," by S. S. M. Ali, A. Razzaq, and M. Jamil, article, Pakistan Journal of Scientific Research, vol. 16, no. 3/4, July-Oct. 1964, pp. 136-137, printed. Pakistan Association for the Advancement of Science, Lahore, Pakistan.

"Technological developments in the field of fish flour (Part VI), article, Balık ve Balıkçılık, vol. XIII, no. 9, September 1965, pp. 16-21, printed in Turkish. Balık ve Balıkçılık, Et ve Balık Kurumu G. M., Balıkçılık Mudurlugu, Besiktas, Istanbul, Turkey.

## FISH SOLUBLES:

"Studies on fish-solubles. II--Nutritive value of commercial fish-solubles in rats and mice," by Toshio Onishi, Shigeo Murayama, and Takashi Kaneda, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 31, Jan. 1965, pp. 51-59, printed. Japanese Society of Scientific Fisheries, Shiba Kai-gandori 6, Minato-ku, Tokyo, Japan.

## FLOUNDER:

"Growth studies of winter flounder, Pseudopleuronectes americanus (Walbaum), in Rhode Island," by Richard J. Berry, Saul B. Saila, and Donald B. Horton, article, Transactions of the American Fisheries Society, vol. 94, no. 3, 1965, pp. 259-264, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

## FOOD AND AGRICULTURE ORGANIZATION:

Publications available free from the Fishery Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy:

Bulletin of Fishery Statistics, No. 4--Tunas, Bonitos, Skipjacks, 1937-38, 1947-63; 34 pp., processed in French, Spanish, and English, 1964.

Bulletin of Fishery Statistics, No. 5--Summaries: Catches and Landings, 1963, 37 pp., processed in French, Spanish, and English, 1964.

Bulletin of Fishery Statistics, No. 6--Catches in the North Atlantic, 1963, 73 pp., processed in French, Spanish, and English, 1965.

## FRANCE:

"Nécessité d'une organisation valable des pêches européennes et extension des eaux réservées françaises à douze milles" (Need for a valid organization of European fisheries and extension of French territorial waters to twelve miles); "La productivité de la pêche française est inférieure à celle de la pêche allemande, mais l'écart est moins important qu'on le croit" (French fishery production is less than that of the German fishery, but the difference is less important than it is thought), by B. Albert Boyer, articles, La Pêche Maritime, vol. 44, no. 1050, Sept. 1965, pp. 657-658, 661-662, illus., printed in French, single copy 15 F. (about US\$3). Les Editions Maritimes, 190, Blvd. Haussmann, Paris, France.



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"Ont inauguré la campagne de la 'marée du mardi'" ("Eat fish on Tuesday" promotion launched), by Jean Morin and Jacques Huret, article, *La Pêche Maritime*, vol. 44, no. 1051, October 1965, pp. 737-738, illus., printed in French, single copy 15 F. (US\$2.85). *La Pêche Maritime*, 190 Boulevard Haussmann, Paris 8e, France.

*Science et Pêche*, no. 139, July-Aug. 1965, 20 pp., illus., printed in French, single copy .50 F. (about 10 U.S. cents). L'Institut Scientifique et Technique des Pêches Maritimes, 59 Avenue Raymond-Poincaré, Paris (16<sup>e</sup>), France. Articles included are: "Étude des fonds de pêche des Iles Baléares, campagne de l' (Ichthys), Avril-Mai 1965" (Study of fishing depths off the Balearic Islands. Ichthys cruise--April-May 1965), by Cl. Maurin and H. Scoffoni; "Essais préliminaires de pêche des anchois a la lumière dans le Golfe de Gascogne" (Preliminary fishing tests with lights in the Gulf of Gascony), by Georges Kurc; and "La campagne harenguière 1964-65 dans le pas-de-calais et l'évolution récente du stock de harengs dans cette région" (The 1964/65 herring season in the Straits of Dover and the recent status of the stock of herring in that region), by Alain Maucorps.

*Selling in France*, by Alexander Dauman, OBR 65-73, 18 pp., printed, October 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

#### FRESHNESS TESTS:

*Testing the Freshness of Frozen Fish* (A review of biochemical indices of quality in fish, with special reference to frozen products), by Edith Gould, 51 pp., printed, 17s. 6d. (about US\$2.75). Fishing News (Books) Ltd., 110 Fleet Street, London, EC4, England. "Over the past quarter-century," states the author, "many attempts have been made to establish a reliable test for the degree of freshness in frozen fishery products. As yet, no objective test has been discovered that correlates satisfactorily with the subjective taste panel method." The author points out that papers commenting on one or more of the many existing tests are published each year. Because of the diversity in experimental conditions and specimens and because of differing reports in the literature, periodic reviews are almost mandatory, in order that the fishery scientist may avoid fruitless lines of experimentation and may determine the more promising directions for his own research. The primary purpose of this paper is to catalogue the objective tests in the literature, with an eye to their use for frozen fishery products. A secondary purpose is to indicate likely starting-places from which to proceed in the search for an index. Necessarily, occasional brief mention is made of the biochemical background, an indispensable adjunct to the research itself. In presenting the development of existing indices, the author groups existing tests into these arbitrary classifications: bases, acids, sugars, lipides, nucleotides, proteins, enzymes, and miscellaneous. The enzymes are considered separately from the other proteins. The analytical listing of past research in this book meets a long-felt need. Besides considering and cataloging the existing tests (principally for

fresh or iced fish), varying shades of informed opinion are reported and each test is weighed for possible use with frozen fish.

#### GEAR:

*Modern Fishing Gear of the World 2*, 619 pp., illus., printed in English and French with French, Spanish and English abstracts, June 1964, £ 6 15s. (about US\$18.85). Fishing News (Books) Ltd., Ludgate House, 110 Fleet St., London EC4, England. Contains papers presented at the World Congress on Fishing Gear organized by the Food and Agriculture Organization of the United Nations, held at London, May 25-30, 1963. The discussions arising from the papers were recorded, edited, and are also included. The more than 80 papers are grouped in three parts. Part I--materials for nets and ropes--comprises four sections in which are given 18 papers, including those on terminology and standardization of numbering systems; test methods for fishing gear materials, nets, and twines; new net materials and knotless nets and monofilaments. Part II deals with bulk fish catching, and its eight sections cover stern trawling, bottom trawling, midwater trawling, gill-netting, long-lining and traps, purse-seining, deck machinery, fish detection, and fleet operations. Part III--technical research in four sections, comprising 20 papers--deals with gear research, instruments for testing gear, fish behavior in relation to nets, trawls, and mechanical stimuli, electrical fishing, and science and the future. A detailed index completes the book. It will be a valuable addition to the library of the commercial fisherman, an excellent reference for those engaged in exploratory fishing and gear research, and good background for fishing vessel owners and others interested in fisheries.

#### GERMAN FEDERAL REPUBLIC:

*Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung*, new series, vol. 18, no. 1, 1965, 109 pp., illus., printed in German with summaries in English and Spanish. DM 44.60 (about US\$11.25). Verlag Paul Parey, Spitalerstrasse 12, 2 Hamburg 1, German Federal Republic. Contains, among others, these articles: "Der Beifang in den Fangen der deutschen Garnelenfischerei in den Jahren 1954-60" (Incidental catches in the German shrimp fishery 1954-60), by Von P. F. Meyer-Waarden and K. Tiewis; "Über die Verbreitung der Fischbrut in der Südlichen Nordsee und im östlichen Englischen Kanal im Winter" (On the diffusion of fish fry (spawn) in the southern North Sea and eastern English Channel in Winter), by Von I. K. Oray.

#### GROUND FISH:

*Serial Atlas of the Marine Environment--Autumn Distribution of Groundfish Species in the Gulf of Maine and Adjacent Waters, 1955-1961*, by Raymond L. Fritz, Folio 10, illus., printed, 1965, looseleaf \$5, bound \$8. Serial Atlas of the Marine Environment, American Geographical Society, Broadway at 156th St., New York, N. Y. 10032.

#### GULF OF MEXICO:

"Length-weight relationships of some Gulf of Mexico fishes," by C. E. Dawson, article, *Transactions of the American Fisheries Society*, vol. 94, no. 3, 1965, pp. 279-280, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.



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#### HADDOCK:

"Seasonal food habits of Highlands Ground haddock," by Roland L. Wigley, article, Transactions of the American Fisheries Society, vol. 94, no. 3, 1965, pp. 243-251, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

#### HAKE:

Conditioning of Hake Processing Effluents, by S. G. Wiechers, and others, Progress Report No. 83, 9 pp., processed, July 1965. Fishing Industry Research Institute, University of Cape Town, Rondebosch, Cape Province, South Africa Republic.

#### HANDLING AND PROCESSING:

The Technology of Fish Utilization (Contributions from Research), edited by Rudolf Kreuzer, 302 pp., illus., printed, 1965, E5 5s. (about US\$14.70). Fishing News (Books) Ltd., Ludgate House, 110 Fleet St., London EC4, England. A most comprehensive, stimulating, and valuable book for scientists and operators engaged in the handling and processing of fish. In May 1964 about 100 scientists and technologists held a symposium ("On the Significance of Fundamental Research in the Utilization of Fish") at Husum, Federal Republic of Germany, under the auspices of the Fisheries Division, FAO. This book is a collection of the 60 papers presented by scientists at that meeting under six principal subjects: rigor mortis in fish; problems related to the preservation of fresh fish; control of deteriorative changes in frozen fish; measuring the degree of freshness of fish; production and storage of fish protein concentrate; and dehydration and canning of fish. Also reported are the discussions that followed the presentation of the papers under a particular subject. This resulted in a survey of (1) what is required to solve the problems discussed and (2) what so far has been done about them. The book concludes with summaries from the viewpoint of (1) industry, (2) applied research, and (3) fundamental research. Contains an adequate index.

#### HERRING:

"A new genus and subgenus of clupeid fishes and notes on the genera Clupea, Sprattus and Clupeonella," by P.J.P. Whitehead, article, Annals and Magazine of Natural History, vol. 7, no. 78, 1964, pp. 321-330, illus., printed. Taylor & Francis Ltd., Red Lion Court, Fleet St., London EC4, England.

"A tag for young herring," by John E. Watson, article, Underwater Naturalist, vol. 2, no. 2, 1964, pp. 6-8, illus., printed. American Littoral Society, Sandy Hook Marine Laboratory, Highlands, N. J.

"A technique for mounting and storing herring otoliths," by John E. Watson, article, Transactions of the American Fisheries Society, vol. 94, no. 3, 1965, pp. 267-268, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

#### INDIA:

"A new element in the commercial fishery of Chilka Lake," by A. V. Natarajan and K. L. Shah, article, Science and Culture, vol. 29, no. 10, 1963, pp. 513-514, illus., printed. Indian Science News Association, 92 Upper Circular Rd., Calcutta 9, India.

Articles from Indian Fisheries Bulletin, vol. X, printed, Re. 1 (about 21 U.S. cents) per issue. Department of Food, Ministry of Food and Agriculture, New Delhi, India:

No. 1, January 1963--"Development of Indian fisheries during the year 1962-63"; "Progress of INP for the year 1961-62"; "Exploratory and experimental fishing"; and "From research laboratories"; pp. 1-14.

No. 2, April 1963--"A preliminary report on the exploratory fishing operations in the Gulf of Mannar (1959-1961)"; "Review of the progress of work of Indo-Norwegian Project during the year 1962-63"; "Mark-recovery experiments and techniques of marking shrimps"; "From research laboratories"; and "Exploratory and experimental fishing"; pp. 1-27, 32-38.

#### INDUSTRIAL PRODUCTS:

"El dosaje de calcio y de fosforo en harinas y solubles de pescado" (The amount of calcium and phosphorous in fish meals and fish solubles), by Johann Firbas and Giulio Vaccari, article, Boletim de la Sociedad Quimica del Peru, vol. 30, no. 3, 1964, pp. 93-97, printed. Sociedad Quimica del Peru, Casilla 891, Lima, Peru.

Fisheries By-Products, 1950-1963, by R. G. Ackman and P. M. Jangaard, New Series Circular No. 19, Sept. 3, 1964, 7 pp., printed. Fisheries Research Board of Canada, Technological Research Laboratory, Halifax, Nova Scotia, Canada.

#### INTERNATIONAL COMMISSIONS:

International Commission for the Northwest Atlantic Fisheries, Research Bulletin 2, 82 pp., illus., printed, 1965. International Commission for the Northwest Atlantic Fisheries, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, N. S., Canada.

#### IRRADIATION PRESERVATION:

"Acceptability of irradiated fish and shellfish," by Nancy Stoll and David Miyauchi, article, Journal of the American Dietetic Association, vol. 46, Feb. 1965, pp. 111-115, printed. American Dietetic Association (Nutrition), 620 N. Michigan Ave., Chicago 11, Ill.

#### ITALY:

Bollettino di Pesca, Piscicoltura e Idrobiologia, vol. 40, no. 19, July-December 1964, pp. 199-298, illus., printed in Italian with French and English summaries, single copy L. 800 (about US\$1.30). Laboratorio Centrale di Idrobiologia, Piazza Borghese, 91, Rome, Italy. Some of the articles are: "Su alcuni caratteri chimici dei mitili (Mytilus galloprovincialis Lamarck) coltivati nel Mar Piccolo e nel Mar Grande (Golfo di Taranto) (On some chemical characteristics of the mussel (Mytilus galloprovincialis Lamarck) cultivated in the Small Sea and Big Sea (Gulf of Taranto), by Angelo Strusi; "Contributo allo studio della morfologia e della biologia della Sardina della Manica" (Contribution on the study of morphology and biology of the English Channel sardine), by Francesco Matta; "Marine electrical fishing," by Sergiu Schapira; "Studi sulla biologia e pesca di Xiphias gladius L." (Study on the biology of the swordfish (Xiphias gladius L.), by Antonino Cavaliere; and "La mitilicoltura nello Stagno di Thau" (Mussel culture of the Thau estuary), by Francesco Matta.



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#### IVORY COAST:

"La Côte d'Ivoire, qui a reçu en 1964 53,000 t de poisson de pêche locale, a d'importants projets de développement de son industrie de la pêche" (The Ivory Coast, which has landed 53,000 metric tons of fish from the domestic fishery in 1964, has some important development projects in its fishing industry), article, *La Pêche Maritime*, vol. 44, no. 1050, Sept. 1965, pp. 666-668, illus., printed in French, single copy 15 F. (about US\$3). Les Editions Maritimes, 190, Blvd. Haussmann, Paris, France.

#### JAPAN:

On the Reclamation Work and the Countermeasures for Occupational Change of Fishermen in Oita Sea-side Industrial Area, by Hajimu Tanaka, No. 5, 38 pp., illus., printed in Japanese. Japan Fisheries Conservation Association, Zenkoku Choson Kaikan Bldg., 1-17, Nagata-Cho, Ciyoda-ku, Tokyo, Japan.

#### KENYA:

Basic Data on the Economy of Kenya, by Robert L. Ware, Jr., OBR 65-75, 16 pp., printed, November 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

#### LOUISIANA:

"Effects of hurricane 'Betsy' on Louisiana's seafood industry," by Lyle S. St. Amant, article, *Louisiana Conservationist*, vol. 17, nos. 11 & 12, Nov.-Dec. 1965, pp. 5-7, 21, illus., printed. Louisiana Conservationist, Wild Life & Fisheries Bldg., 400 Royal St., New Orleans, La. 70130.

#### MARINE MAMMALS:

Marine Mammals of California, by Anita E. Daugherty, 87 pp., illus., printed, 1965. Department of Fish and Game, Resources Bldg., 1416 9th St., Sacramento, Calif. 95814. The introduction discusses the economic worth of marine mammals and their value to biologists. Succeeding chapters cover modification of marine mammals; whales and dolphins (Cetacea); sea lions, fur seals, hair seals, and walrus (Pinipedia); the sea lion controversy; Cetacean; tooth counts; meanings of scientific names, and marine mammal checklist. The species described, with accompanying drawings and photos, include the Pacific right, little piked, sei, blue, finback, humpback, gray, pilot, killer, sperm, pygmy sperm, Baird's beaked, and Cuvier's beaked whales; common, Risso's, striped, right whale, spotted, long-beaked, rough-toothed, and bottlenose dolphins; the harbor and Dall porpoises; Guadalupe fur, northern fur, ribbon, elephant, and harbor seals; stellar and California sea lions; and the sea otter.

#### MARINE OIL:

"Spectrophotometric studies on shark liver oil from the Red Sea," by M. K. Salah and M. M. Abdallah, article, *Chemical Abstracts*, vol. 62, April 12, 1965, Abstract No. 9363d, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

#### MARINE RESOURCES:

Marine Resources of the Atlantic Coast (a new series of leaflets designed to present up-to-date research findings and scientific knowledge of marine species

taken in commercial and sport fisheries along the Atlantic Coast), 4 pp. each, illus., printed, October 1965. Atlantic States Marine Fisheries Commission, 336 East College Ave., Tallahassee, Fla. 32301:

Leaflet No. 1--Introducing a Marine Resources Leaflet Series.

Leaflet No. 2--Atlantic Menhaden--A Most Abundant Fish.

Leaflet No. 3--The Soft-Shell Clam--A Resource with Great Potential.

Leaflet No. 4--Southern Shrimp--A Valuable Regional Resource.

#### MARKETING:

"A better way of marketing fish," by E. A. Ruthford, article, *Quick Frozen Foods*, vol. 27, Feb. 1965, pp. 148-149, printed. E. W. Williams Publications, Inc., 1776 Broadway, New York, N. Y. 10019.

#### MEXICO:

Establishing a Business in Mexico, by Katherine E. Rice, OBR 65-71, 20 pp., printed. October 1965, 15 cents. U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) A report to assist businessmen interested in establishing an enterprise in Mexico. A generally accepted principle is that foreigners have the right to invest in Mexico and to withdraw the profits and proceeds provided they do so in accordance with Mexican laws. In addition to investment policy, the report discusses entrance and rights of aliens, business organization law, and taxation regulations. It also covers licensing agreements; patents, trademarks, and copyrights; labor legislation; and United States taxation of income earned in Mexico.

#### MISSISSIPPI RIVER:

"Movement of walleye and sauger in the upper Mississippi River," by Roger Schoumacker, article, *Transactions of the American Fisheries Society*, vol. 94, no. 3, 1965, pp. 270-271, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

#### NORWAY:

"Forsøksfiske etter blåkveite utenfor Lofoten of Helgeland" (Exploratory fishing for Greenland halibut off Lofoten and Helgeland), by O. Chr. Jenssen, article, *Fiskets Gang*, vol. 51, no. 39, Sept. 30, 1965, pp. 584-585, illus., printed. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

Articles from *Fiskets Gang*, vol. 51, 1965, printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway:

"Fiskeflåten 1963 og 1964" (Fishing Fleet, 1963 and 1964), no. 41, Oct. 14, 1965, pp. 609-613.

"Tokt med G. O. Sars til Nord-Norge, 22 Juli-14 August 1965" (G. O. Sars cruise to North Norway, July 21 to August 14, 1965), by Finn Devold, no. 41, Oct. 14, 1965, pp. 614-616, illus. Purpose of cruise was to learn more about distribution of herring and oceanographic materials.



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"Fiskeforsøk etter sjøkreps 1964" (Exploratory fishing for Norway lobsters 1964), by Birger Rasmussen, no. 42, Oct. 14, 1965, pp. 629-631, illus. Pertains to *Nephrops norvegicus*, also known as scampi and Dublin prawn.

Articles from *Norsk Fiskerinaering*, vol. 5, no. 3, 1965, printed in Norwegian. Norsk Fiskerinaering, Maltrostveien 16B, Oslo, Norway:

"Sentralisert eller fri eksport av fisk og fiskevarer?" (Centralized or free export of fish and fish commodities?), pp. 35, 37, 39, 41-42.

"Foran en forhopentlig lysere tid i fiskerinaeringen haster det med a fa en hensiktsmessig skatteordning!" (Before a hoped for brighter time in the fishery business we must hasten to acquire an appropriate tax adjustment!), pp. 45, 47.

"Utviklingen pa arbeidsmarkedet i arene 1956 til 1964" (Development in the labor market in the years 1956 to 1964), pp. 61, 63.

#### OCEANOGRAPHY:

*Deep-Sea Research*, vol. 12, no. 1, Feb. 1965, 114 pp., illus., printed. Pergamon Press Ltd., 122 E. 55th St., New York, N. Y. 10022. Two of the articles are: "Synthetic-fiber deep-sea mooring cables: Their life expectancy and susceptibility to biological attack," by P. B. Stimson; and "A mass fish mortality on the Somali Coast," by P. Foxton.

*Instrumented Telemetering Deep Sea Buoys*, by H. W. Straub and others, Technical Bulletin No. 26, 26 pp., printed, June 1965, 25 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

*New Worlds of Oceanography* (Man's New Explorations into the Mysterious, Living Sea), by Captain E. John Long, USNR (ret.), preface by Senator Warren G. Magnuson, 221 pp., illus., printed, 1965, \$0.75. Pyramid Publications, Inc., 444 Madison Ave., New York, N. Y. 10022. Man knows more about space than he does about the sea, but in order to increase man's knowledge of the ocean depths, more and more books are being issued. A summary of man's knowledge of the sea and a fascinating exploration into tomorrow's knowledge of the wealth of the sea is contained in this little book. It documents America's billion-dollar development of the ocean's treasure and its limitless supply of natural resources in the years to come. It points out how a cubic mile of sea water containing 18 million tons of magnesium and 25 tons of gold can be mined; the existence of a new deep underwater treasure worth countless billions of dollars; how enough drinking water from the sea can be desalted to serve the needs of every person in the world a thousand times over; and the use of "oceanic engineering" to obtain more of the fishery resources of the sea. The chapters deal with the realm of "living fossils"; man and the sea; currents, waves, and the like; the living waters--fishes and mammals; the bottom--and lower; most precious mineral--and others; poisoning the sea; birthplace of storms; making fisheries pay; gadgets and hardware; oceanic defense problems;

and a glimpse into the future. Senator Magnuson in his preface states: ". . . This is where Captain Long's book has particular value. His Chapter headings. . . should stimulate many to greater interest in the oceans." The book is adequately indexed.

--Joseph Pileggi

*Oceanographic Observations in the Indian Ocean in 1963*, H. M. A. S. GASCOYNE (Cruise G1763), Oceanographical Cruise Report No. 21, 136 pp., illus., processed, 1965. Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.

*Ocean Science and Ocean Engineering, 1965*, vol. 1, pp. 1-656 + xiv; and vol. 2, pp. 657-1349 + xiv; illus., printed, 1965, \$4.00 each. Marine Technology Society, Executive Building No. 828, Washington, D. C. 20005. These two volumes contain papers presented at the Ocean Science and Ocean Engineering Conference held under the joint sponsorship of the Marine Technology Society and the American Society of Limnology and Oceanography, in Washington, D. C., June 14-17, 1965. Their purpose is to disseminate knowledge of the marine sciences to the membership of sponsoring societies and to the scientific community at large. Papers of each conference session are grouped together and are arranged in the chronological order of the several conference sessions. A new order of cooperation between government (both national and state), industry, science, and labor will be required if the oceans of the world are to be understood and intelligently used for the benefit of mankind. The world has been working for the past few years on a concentrated program in oceanography to study the dynamics of ocean behavior on and beneath the surface, to map the depths and shorelines with much greater accuracy and to assess the vast storehouse of food, minerals, and chemicals for future exploitation by mankind. The papers range from "Petroleum's Pandora" to "The Vertical Distribution of Phytoplankton in Tropical Waters." A few of the papers of particular interest to fisheries include: "Ocean Engineering and Oceanography--From the Businessman's Viewpoint"; "Ocean Engineering--Its Application to the Harvest of Living Resources"; "A Submarine for Research in Fisheries and Oceanography"; "An Improved Depth Telemetry System for Fishing Gear Experiments"; "An Unmanned Research Vehicle for Use Down to Mid-Ocean Depths"; "Oceanic Information--Its Collection and Dissemination." The numerous papers cover a wide gamut of interest and serve to review the present status of ocean science and engineering.

*Ocean Sciences*, edited by E. John Long, 302 pp., illus., printed, 1964, \$10. United States Naval Institute, Annapolis, Md. The sea and man's centuries of work and warfare on it have resulted in many books, but it is only in recent years that books on the resources of the sea have been issued. One of the most promising ways of meeting the needs of our exploding world population is to extend our range to include the three-quarters of the earth which is covered by water, and tap the riches which lie in and under it. Here is a round-table discussion of the highly individual but closely related sciences which contribute to the overall knowledge of the oceans, their physical properties,



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and how to utilize them. This book fills the gap between popular literature and technical writing on the subject of oceanography. The book is a series of articles by scientists and naval officers discussing in nontechnical language the major disciplines and fields of interest of oceanography today. Chapters cover the history of oceanography, physical properties, military oceanography, meteorology and climatology, charts and maps, polar oceanography, marine biology, atomic and other wastes in the sea, instrumentation and underwater vehicles, marine geology, National Academy of Sciences-National Research Council Committee on Oceanography, oceanography and government, fisheries and oceanography, and oceanography's future. A desirable feature are the appendices which list and describe the oceanographic research institutions around the world; present data on oceanographic ships of the world by institute and country; and include some conversion tables. Also included is a glossary of oceanographic terms, a bibliography, and an index. This will be a valuable addition to any fishery or marine library, and a desirable desk reference for the marine scientist. The layman will find many tidbits of information about our watery world.

--Joseph Pileggi

Processing Oceanographic Station Data Using Rapid Data-Handling Equipment, TM No. 284, 40 pp., illus., processed, August 1962. U. S. Naval Underwater Ordnance Station, Newport, R. I.

Serial Atlas of the Marine Environment--Inorganic Nutrients in the North Sea, by Robert Johnston and Peter G. W. Jones, Folio 11, illus., printed, 1965, looseleaf \$4.50, bound \$7.50. Serial Atlas of the Marine Environment, American Geographical Society, Broadway at 156th St., New York, N. Y. 10032.

#### PAKISTAN:

Establishing a Business in Pakistan, by Larry A. Nicksch, OBR 65-72, 13 pp., printed, October 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.) A report summarizing the major legal requirements for establishing a business and investing in Pakistan. It outlines the pertinent sections of Pakistan's laws, regulations, and policies affecting the establishment and operation of business enterprises in Pakistan by foreign nationals. Attention also has been given to the factors governing foreign participation in joint ventures with Pakistan nationals.

#### PEARLS:

"Pearl expert sees rich future for Pacific's 'white gold'," article, Pacific Islands Monthly, vol. 36, no. 9, Sept. 1965, p. 61, illus., printed, single copy 60 U. S. cents. Pacific Publications Pty. Ltd., 29 Alberta St. (Box 3408, G.P.O.), Sydney, Australia. Refers to the cultured pearl industry.

#### POISONOUS FISH:

Poisoning by Barracuda and Other Fishes, by Donald De Sylva, Special Service Bulletin No. 13, 8 pp., Aug. 1956, printed. The Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami Fla. 33149.

#### POLAND:

Faculty of Fisheries, Agricultural University of Warmia and Mazury in Olsztyn, 19 pp., printed, 1965. Wydział Rybacki, Warmińsko-Mazurskie Akademii Rolnicze (The Faculty of Fisheries, Agricultural University of Warmia and Mazury), Olsztyn, Poland. A prospectus of the Faculty of Fisheries which outlines in detail its educational and research aims in the study of oceanography, marine biology, limnology, ichthyology, and fish culture. It also describes the Faculty's work on technology of fish processing, fishery microbiology, and fishery economics.

#### POND FISH:

"Demand growing for pond-raised commercially-fed fish says biologist," article, Feedstuffs, vol. 37, Mar. 13, 1965, p. 8, printed. Miller Publishing Co., 2501 Wayzata Blvd., Minneapolis, Minn.

#### PUERTO RICO:

Institute of Marine Biology, University of Puerto Rico, Contributions, vol. 4, Oct. 1962-Dec. 1963, 64 reprints of articles, printed. Institute of Marine Biology, University of Puerto Rico, Mayaguez, Puerto Rico. Some of the reprints are: "Methods of collecting small fishes," by John E. Randall, contribution no. 45 (reprinted from Underwater Naturalist, vol. 1, no. 2, Feb. 1963, pp. 6-11, 32-36); "Institute of Marine Biology, University of Puerto Rico," by John E. Randall, contribution no. 57 (reprinted from American Zoologist, vol. 3, no. 3, Aug. 1963, pp. 303-304); "Dangerous sharks of the Western Atlantic," by John E. Randall, contribution no. 62, (reprinted from Sharks and Survival, chapter 11, pp. 339-361, 1963); "Report of the West African Fisheries Survey. . . Gulf of Guinea," by Gilbert W. Bane, Jr., contribution no. 64, (reprinted from Starkist Foods, Inc. Special Report, Aug. 1960, 63 pp.).

#### RED SEA:

"A Review of the Elopoid and Clupeoid Fishes of the Red Sea and Adjacent Regions," by P. J. P. Whitehead, Bulletin of the British Museum of Zoology, vol. 12, no. 7, 1965, 57 pp., illus., printed, 19s. (about US\$2.70). British Museum (Natural History), Cromwell Rd., London SW7, England.

#### RESOURCE MANAGEMENT:

The Fisheries Problems in Resource Management, edited by James A. Crutchfield, 152 pp., illus., printed, 1965, \$5.00. University of Washington Press, Seattle, Wash. 98105. The first volume of studies on Public Policy Issues in Resource Management based on a series of seminars sponsored by the Graduate School of Public Affairs of the University of Washington. With the increasing interest in the resources of the seas, the question of the proper management of those resources becomes important. All of the key issues of natural resources public policy are found in the fisheries resource: the concept of the public interest, including both economic and social values; the conservation issue; the question of technical expertise versus lay judgment; the problem of competing governmental jurisdictions. The interdisciplinary approach in dealing with such problems is brought out in the three parts that make up this book. The physical setting of the fishing industry and the complex dynamics of the regulation of fishery populations are covered in "Part I: Conservation of the Resource." The relation of the economic motiva-



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tions of the commercial fisheries to the physical characteristics, and the resulting administrative problems are examined in "Part II: Economics and Administration." The various objectives and techniques of fishery conservation from the point of view of constitutional and international law are brought out in "Part III: Fishery Law." The whole presentation is a series of papers and commentary on public policy issues involved in the management of fishery resources and presented at the inaugural series of Natural Resources Public Policy Seminar sponsored by the Graduate School of Public Affairs. Selected references are included. This book should be of value to administrators and social scientists, commercial and sport fishermen, dealers in fishery products, biologists, consultants, researchers, and others interested in the resources of the seas.

--Joseph Pileggi

#### ALMON:

Atlantic Salmon Journal, Fall 1965, 38 pp., illus., printed. Atlantic Salmon Association, 1559 McGreggor St., Montreal 25, Canada. Contains, among others, articles on: "Salmon and sea trout hybrids," by D. J. Piggins; "Quebec's research on a new type of fishway for salmon"; "The survival of Pacific Salmon in the Atlantic"; "The Greenland salmon fishery"; "Preliminary report on recaptures in Greenland waters of salmon tagged in rivers of America and Europe," by Paul M. Hansen; "The Sea and Salmo salar," by T. B. Fraser; "Canadian Atlantic salmon recaptured near Greenland"; and "Greenland fishing of Atlantic salmon."

Salmon of the North Pacific Ocean, Part V, Offshore Distribution of Salmon, by J. I. Manzer and others, Bulletin No. 14, 455 pp., illus., printed, 1965. International North Pacific Fisheries Commission, 6640 NW. Marine Dr., Vancouver 8, B. C., Canada. A description of the offshore distribution of salmon as determined from information obtained from research vessel operations and records of commercial fishing vessels.

Articles from Pacific Marine Fisheries Commission Bulletin, No. 6, 1963, printed. Pacific Fisheries Commission, 741 State Office Bldg., 1400 S.W. 5th Ave., Portland 1, Oreg.:

"Availability of small salmon off the Columbia River," by H. Heyamoto, pp. 81-88.

"Statistical methods for estimating California salmon landings," by Norman J. Abramson and Paul T. Jensen, pp. 61-2.

#### SARDINES:

"O fabrico das conservas de sardinha do Mediterraneo em Tunes" (Canning of Mediterranean sardines in Tunisia), article, Conservas de Peixe, vol. 20, no. 234, September 1965, pp. 15, 17, 19-20, 32, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda., Requeirao dos Anjos, 68, Lisbon, Portugal.

#### SEAWEED:

"Estudios sobre algas realizados en las costas españolas" (Studies on seaweeds from the Spanish

coasts), by Manuel Lopez Benito, article, Industria Conservera, vol. 31, no. 312, June 1965, pp. 157-158, illus., printed in Spanish. Industria Conservera, Calle Marques de Valladarea, 41, Vigo, Spain.

#### SHARKS:

About Sharks and Shark Attack, by David H. Davies, 237 pp., illus., printed, 1964. Shuter & Shooter, Pietermaritzburg, Natal, South Africa Republic.

Sharks and Survival, edited by Perry W. Gilbert, 582 pp., illus., printed, 1963, \$9.95. D. C. Heath & Co., 285 Columbus Ave., Boston 16, Mass. "Man eaters" and sharks are synonymous to many people. Some of the larger and more active species have earned this reputation. But of 250 species of sharks widely distributed throughout the oceans of the world, only a few are dangerous to man. The great majority either are so small, so sluggish, and so weakly armed, or normally feed on such small prey that they are no menace to man. Yet those few that are dangerous to man have created a real hazard to men of the sea. There are a number of species that are a menace to man in amphibious operations, under conditions of emergency survival at sea, to divers, or to bathers on the beaches. Although there have been extensive studies on the sharks of the western North Atlantic, there are still wide gaps in our knowledge on their distribution, seasonal migrations, feeding habits, physiology of even the better known species, and the relationships between the species. This book concentrates on the known habits and regional distribution of the sharks that are known to be especially dangerous in different parts of the world, but it also reviews the sensory equipment of sharks that influences and directs their predatory activities. A substantial portion of the book is devoted to the shark-hazard problem and to a review of the various precautions man may take to increase his chances of survival in shark-infested waters. The book is an outgrowth of a Conference on the Basic Research Approaches to the Development of Shark Repellents, sponsored by the AIBS and Tulane University and supported by the Office of Naval Research and the Navy Bureau of Aeronautics. Consisting of six sections, the book is made up of chapters by contributors who are experts in their field. Section I on taxonomy and distribution is a guide to the kinds of potentially dangerous sharks. Section II on behavior of sharks presents field notes and field observations, sharks in captivity, and facilities for experimental investigation of sharks. Section III on the nervous system and sense organs of sharks discusses the central nervous system, hearing, olfaction, gustation, and visual apparatus. Section IV concentrates on dangerous sharks and devotes chapters to shark attacks in Australia, dangerous species of the Western Atlantic, shark attacks in South African seas, and open-ocean shark attacks. Section V presents patterns of shark attack for the world. Section VI concentrates on the shark-hazard problem and there are chapters on attacks by sharks as related to the activities of man; specifications for a shark repellent; development of the U. S. Navy "Shark Chaser" chemical shark repellent; anti-shark measures; testing shark repellents; first-aid treatment of shark bites; advice to those who frequent or find themselves in shark-infested waters; and the AIBS shark research panel. The appendix is a most complete resume of



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shark attacks ever assembled, together with an analysis of environmental factors that may provoke sharks to attack man. Besides a good general index, the book has an index to scientific names of sharks. This book will answer many questions about sharks and will be of interest to researchers, fishermen, vessel owners, and all those interested in the sea.

--Joseph Pileggi

#### SHELLFISH:

National Shellfish Sanitation Program Manual of Operations. Part II--Sanitation of the Harvesting and Processing of Shellfish, Public Health Service Publication No. 33, 62 pp., illus., processed, 1965 revision, 55 cents. Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

#### SHRIMP:

"On the introduction of an edible oriental shrimp (Caridea, Palaemonidae) to San Francisco Bay," by W. A. Newman, article, Crustaceana, vol. 5, no. 2, 1963, pp. 119-132, printed. Florida Board of Conservation, Marine Laboratory, St. Petersburg, Fla.

"Prawn resources of Southern Maharashtra (Ratnagiri)--an outlook for a new industry," by M. R. Ranade and S. M. Wanknis, article, Current Affairs Bulletin, no. 43, August 1965, pp. 6-10, processed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Bangkok, Thailand. A brief review of the origin and growth of the shrimp fishery of Southern Maharashtra, together with some observations on the catches as a result of the exploratory survey. Discusses the potential as a fishery.

"Shrimp nursery--Science explores new ways to farm the sea," by Clarence P. Idyll, article, National Geographic, vol. 127, no. 5, May 1965, pp. 636-659, illus., printed. National Geographic Society, 17th and M Sts. NW., Washington, D. C. 20036.

#### SMALL BUSINESS:

A Survey of Federal Government Publications of Interest to Small Business--2nd Edition, compiled by Elizabeth G. Janezeck, 126 pp., printed, 1965, 45 cents. Small Business Administration, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

#### SMOKING:

Controlled Smoking of Hake, by G. M. Dreosti and A. Empedocles, Progress Report No. 84, 3 pp., processed, July 1965. Fishing Industry Research Institute, University of Cape Town, Rondebosch, Cape Province, South Africa Republic.

#### SOUNDS IN THE SEA:

Review of Marine Bio-Acoustics (State of the Art: 1964), AD 619 283N, by William N. Tavolga, 55 pp., illus., photostat, February 1965, \$4. Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. The available information and literature on marine animal sounds is surveyed, reviewed, and evaluated. A brief historical review

lists some of the major contributions to the field from the early 19th century to date, and a general non-technical survey covers the contribution of marine animals to ambient sea noise and the sounds of marine invertebrates, fishes, and cetaceans. A detailed technical review summarizes and evaluates the literature on: mechanisms of sound production in marine animals, including a discussion on the physics of swim bladders as acoustic transducers; the acoustical characteristics of marine animal sounds; auditory capacities of marine animals; and the biological and behavioral significance of marine animal sounds. The problems of identification and classification of unknown sound sources are discussed. Examples of sonic mechanisms and spectrograms of the sounds are illustrated.

#### SOUTH AFRICA:

S. A.'s Sea Wealth (Cape Times Annual Review of the Fishing Industry), by Clive Algar, 20 pp., illus., printed, Oct. 28, 1965. Central News Agency Limited, 130 Bree St., Cape Town, South Africa Republic. (Available from The Cape Times Limited, Burg St., Cape Town, South Africa Republic.) Articles included are: "Anchovies help inshore fishing"; "Shrimp and prawn possibilities"; "Cape catches 1,500 whales"; "Boost to rock lobster industry"; "S. A. fish meal is world's choice"; "R5m. spent on new trawlers"; "SWA's big share of shoal catch"; "Plans for harbour development"; "Big-game fishing is popular"; and "All pilchard boats built locally."

#### SPAIN:

Export Market Guide to Spain, 4 pp., printed, 1965, 10 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C., 20230.

"Tecnica conservera--sardina diagrama del proceso del recorrido S-5" (Canning technique--sardine flow-chart S-5), article, Industria Conservera, vol. 31, no. 312, June 1965, pp. 160-161, printed in Spanish. Industria Conservera, Calle Marques del Valladarea, 41, Vigo, Spain.

#### SPINY LOBSTER:

"Economy of Western Australian crayfishery--prosperity depends on U. S. A. market," by D. J. Barker and T. H. McClelland, article, Australian Fisheries Newsletter, vol. 24, no. 11, November 1965, pp. 24-26, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, Australia.

Articles from Boletim de Estudos de Pesca, vol. 3, 1963, illus., printed. Boletim de Estudos de Pesca, Rio de Janeiro, Brazil:

"Contribuicao ao estudo sobre as variacoes de produtividade das pescarias de lagosta na costa oriental do nordeste Brasileiro e flutuacoes na composicao dos desembarques na praia do Pina (Pe)" (Studies of the variation in productivity of the spiny lobster fisheries of the east coast of Northeast Brazil and fluctuations in the composition of landings on Pina beach--Pernambuco), by Soloncy J. C. de Moura, no. 9/10, pp. 7-19.

"Variacoes sazonais na composicao biologica dos desembarques de lagostas" (Seasonal variation in the biological composition of the landings of spiny lobsters), by Petrônio Alves Coêlho, no. 11/12, pp. 21-32.



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**GUID:**  
The Structure, Development, Food Relations, Reproduction, and Life History of the Squid LOLIGO OPALESCENS Berry, by W. Gordon Fields, Fish Bulletin 131, 108 pp., illus., printed, 1965. Department of Fish and Game, The Resources Agency, Sacramento, Calif. 95814. (Sold by Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807.)

**STRIPED BASS:**  
Migrations of the Atlantic striped bass," by John R. Clark, Michael Westerfield, and Herbert Austin, article, Underwater Naturalist, vol. 2, no. 2, 1964, pp. 5-6, printed. American Littoral Society, Sandy Hook Marine Laboratory, Highlands, N. J.

**SWEDEN:**  
Forutsagelser rörande skarpsillforekomsten pa Vastkusten" (Predictions concerning occurrence of sprat on the west coast), by Armin Lindquist, article, Svenska Vastkustfiskaren, vol. 35, no. 18, September 25, 1965, pp. 322-323, printed in Swedish. Svenska Vastkustfiskarnas Centralforbund, Ekonomisktottet Postbox 1014, Goteborg 4, Sweden.

**TARIFFS:**  
Tariff Schedules of the United States, Annotated, 1965, TC Publication 163, 653 pp., printed, \$6; plus \$1.50 for foreign mailing. United States Tariff Commission, Washington, D. C., November 4, 1965. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) This volume supersedes the Tariff Schedules of the United States Annotated (1963). It contains the legal text of the Tariff Schedules of the United States, as amended and modified, together with annotations prescribing statistical information to be supplied on customs entry and withdrawal forms with respect to articles imported into the customs territory of the United States. It is designed to enable importers, customs brokers, customs officers and other interested persons to determine (1) the rates of duty applicable to imported articles (includes fishery products), and (2) the requirements for reporting statistical data with respect to such imports. Also includes amendments and modifications made on or after August 31, 1963, and before October 22, 1965.

**TARIFF AND TRADE:**  
Operation of the Trade Agreements Program, 16th Report, July 1963-June 1964, TC Publication 164, 146 pp., processed, 1965. United States Tariff Commission, Washington, D. C. 20436. This report discovers events from July 1963 to June 1964. It describes U. S. preparations for participation in the sixth round of multilateral trade agreement negotiations (known as "the Kennedy round") and the status of negotiations at the close of the period. The 21st Session of the Contracting Parties to the General Agreement was held in the spring of 1964. GATT activities of interest to the less-developed countries were among the major topics explored at the session. The Commission's report describes these and other major developments respecting the trade agreements program.

**TERRITORIAL WATERS:**  
An Act, To prohibit fishing in the territorial waters of the United States and in certain other areas by

vessels other than vessels of the United States and by persons in charge of such vessels), by Kenji Itano, No. 9, 38 pp., printed in Japanese. Japan Fisheries Conservation Association, Zenkoku Choson Kaikan Bldg., 1-17, Nagata-Cho, Ciyoda-ku, Tokyo, Japan.

#### THAILAND:

An Analysis of Demersal Catches Taken from the Experimental Trawling Operations in the Gulf of Thailand, by Sanan Ruamragsa and Andhi P. Isarankura, Contribution No. 3, 72 pp., illus., printed in English, May 1965. Department of Fisheries, Bangkok, Thailand. Main objectives of this analysis were to study catch per unit of effort for demersal fish in relation to the depth of water by area as well as by season; catch composition by species of economical value in relation to the depth of water and to area; and catch ratios of species of economical value to other fish in relation to the depth of water. The analysis also compares the night and day catches; morning and afternoon catches; and presents a tabulation of structures of the sea bottom in various locations throughout the Gulf, including an indication of the places where grounds were found to be unsuitable for trawl fishing.

Export Market Guide to Thailand, 10 pp., printed, 1965, 10 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. 20230.

#### TRADE LISTS:

The U. S. Department of Commerce has published the following mimeographed trade lists. Copies may be purchased by firms in the United States from the Commercial Intelligence Division, Office of International Trade Promotion, Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. 20230, or from Department of Commerce field offices at \$1 a copy:

Oils (Animal, Fish and Vegetable)--Importers, Dealers, Producers, Refiners and Exporters--Spain, 23 pp., September 1965. Lists names and addresses, size of firms, and types of product (including fish oil) handled by each firm. Also contains trade and industry data (including fish oil).

Canneries and Frozen Foods--Producers and Exporters--Honduras, 4 pp., September 1965. Lists names and addresses, size of firms, and types of products (including fish and shellfish) handled by each firm. Also contains trade and industry data (including fishery products) on production, exports, imports, and export control of canned and frozen foods.

Canneries and Frozen Foods--Producers and Exporters--Hong Kong, 8 pp., October 1965. Lists names and addresses, size of firms, and types of products (including fish and shellfish) handled by each firm. Also contains trade and industry data on production and exports of canned and frozen fish and shellfish.

#### TRAWLERS:

"Essais d'un nouveau type de chalut équipé d'un dispositif de sélectivité pour la pêche des crevettes," (New type of selective trawl tested for the shrimp fishery), by G. Kurc, L. Faure, and T. Laurent, article, La Pêche Maritime, vol. 44, no. 1051, October 1965, pp. 754-757, illus., printed in French, single copy 15 F. (US\$2.85). La Pêche Maritime, 190 Boulevard Haussman, Paris 8e, France.



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#### TRAWLING:

Articles from Current Affairs Bulletin, no. 43, August 1965, processed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Bangkok, Thailand:

"Coastal trawling for prawns and fish," by A. C. J. Weerekoon, pp. 4-5. Some results of recent trials carried out in Ceylon on trawling.

"Trawling in tropical waters (India)," by K. Chidambaram, pp. 1-3. An account of the trials in Indian coastal waters with trawling from small craft. Discusses research to develop suitable types of gear and presents some catch data.

#### TUNA:

"Conteúdo estomacal e evolução sexual dos atuns e espécies affins" (Stomach contents and sexual development of tunas and related species), by José Bon G. Fonsêca and Silvio B. Maraes, article, Boletim de Estudos de Pesca, vol. 3, no. 9/10, 1963, pp. 3-6, illus., printed. Boletim de Estudos de Pesca, Rio de Janeiro, Brazil.

Ecology and Dynamics of the Skipjack Population, by Tsuyoshi Kawasaki, No. 8, Parts I and II, 108 pp., illus., printed in Japanese. Japan Fisheries Conservation Association, Zenkoku Choson Kaikan, Bldg., 1-17, Nagata-Cho, Ciyoda-ku, Tokyo, Japan.

"Food and feeding habits of skipjack tuna (Katsuwonus pelamis) from the Marquesas and Tuamotu Islands," by Eugene L. Nakamura, article, Transactions of the American Fisheries Society, vol. 94, no. 3, 1965, pp. 236-242, printed. American Fisheries Society, 1404 New York Ave. NW., Washington, D. C. 20005.

#### UNDERWATER EXPLORATION:

Something Rich and Strange, by Robert E. Schroeder, 191 pp., plus 32 pp. of photographs (some in color), printed, 1965, \$5.50. Harper & Row, Publishers, Inc., 49 East 33rd St., New York 16, N. Y. While seated in your favorite armchair, you can join a marine biologist, who is also a skin-diving enthusiast, in exploring the marvelous life of the sea at night. The remarkable changes between day and night in the waters around coral reefs are revealed in this book. In direct and simple style the author paints word pictures of day and nighttime marine creatures feeding, fighting, and reproducing. Bovine parrotfish crunch coral to obtain algae; shrimp swim in and out of the mouths of predatory fish to remove tiny parasites; spidery arrow crabs fish for worms with long ice-blue claws. Fish-watching and the author's day-to-day adventures in the Caribbean are described vividly. Consisting of two parts, Part I deals with the Virgin Islands and includes these chapters: St. John; Salt Pond Bay; Love Life of the Redfin; Diadema (spiny black urchin of the coral reefs) and Other Monsters; Cosmos of the Lantern; Buck Island; and Of Birds and Jellies. Part II deals with the Florida Keys and includes these chapters: Alligator Reef; Night Creatures of Alligator Reef; Little People of the Reefs; Those Worms in Fish; The Deep Reefs; Matecumbe; Beyond the Reefs. The author also describes the opportunity underwater research offers to man in understanding the underwater environment, and in mining its resources. Scientifically sound and informative,

this book should be of interest to all those who would like to learn more about the mysterious world under the sea. The book has a good index.

--Joseph Pileggi

#### U. S. S. R.:

Articles from Rybnoe Khoziaistvo, No. 8, August 1965 printed in Russian, single copy 50 Kopecks (about 56 U. S. cents). Rybnoe Khoziaistvo, V. Krasnosel'skaia 17, Moscow B-140, U. S. S. R.: "New progressive methods in fisheries," pp. 1-3; "The sword-fish," by V. V. Ovchinnikov, pp. 8-11; "Fishery resources of the continental shelf of the Northern Pacific Ocean," by N. P. Novikov, pp. 11-16; "Squids--a potential resource," by G. V. Zuev, pp. 16-19; "The method of control of mixed diseases of carp yearlings," by A. M. Aligadzhev, pp. 30-36; "Continued development of fisheries on the high-seas and oceans," by N. M. Saburenkov, pp. 34-36; "A new method of search in commercial exploratory fishing," by A. A. Degtiarev, pp. 36-39; "Electric light fishing for her- ring and sardines," by I. I. Bagautdinov, pp. 41-44; "Let us pay more attention to the shore-based fish- ery for marine mammals," by Iu. I. Nazarenko, pp. 49-50; "Efficient utilization of the Pacific halibut," by A. A. Kirillova and P. L. Kantemirova, pp. 53-55; "Commercial and chemical characteristics of the Atlantic scup and its utilization," by V. P. Alexandrovskiy and others, pp. 55-58; "High temperature and multi-stage sterilization of canned fish," by M. S. Aminov and L. I. Skorokhodova, pp. 58-62; "Analysis of the productivity of refrigerated fish carriers," by Iu. L. Korotkov, pp. 72-76; "Determining the net cost of the fishery production must be improved," by I. Anukhin, pp. 76-78; "Methods of determining the standards for simultaneous unloading of fishing boats and the traffic capacity of a fishing port," by A. V. Sorokin, pp. 78-80; "Plant distribution problems in the Caspian fish-processing industry," by V. K. Kiselev, pp. 80-82; "Model vessels of the Azov and Black Sea fishing industry," by N. Ziuz'ko and V. Boichenko, pp. 82084; "Present trends in the world production of fish meal," by V. M. Shparlinskii, pp. 84-87; "Defrosting of fish in moist air current (Survey of foreign sources)," by V. P. Bykov, pp. 89-91; and "The development of marine fishing in Poland," by Menrikh Tetslaf, pp. 91-93.

Research Vessels of Academy of Sciences, USSR, by Ye. M. Suzyumov, Technical Translation No. 65-32342, 21 pp., illus., printed, September 2, 1965, \$1.00 (Translated from the Russian, Vestnik Akademii Nauk SSSR, no. 7, July 1963.) Clearinghouse for Federal Scientific and Technical Information U. S. Department of Commerce, Port Royal and Braddock Roads, Springfield, Va. 22151.

#### UNITED KINGDOM:

"British fisheries changing fast," by H. G. Garland, article, Foreign Trade, vol. 124, no. 9, October 30, 1965, pp. 14-15, illus., printed, 25 Canadian cents. Department of Trade and Commerce, Ottawa. (Sold by Queen's Printer, Government Printing Bureau, Ottawa, Canada.) Reviews changes and experiments in the catching, processing, storage, and marketing of fish in Great Britain.

#### VESSELS:

"Islands norskbygde havfiskefartoy topper fangststatistikken" (Iceland's Norwegian-built sea fishing



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boats top the catch statistics), by Mats Wibe Lund, Jr., article, Norges Handels og Sjøfartstidende, March 1965, illus., printed. Norges Handels og Sjøfartstidende, Kogensgate 6, Oslo, Norway.

#### VITAMINS:

Content of vitamin A in Liver and intestines of fish from the Bering Sea, and methods for the procurement of raw materials for the manufacture of vitamin A," by G. A. Dolbish, article, Chemical Abstracts, vol. 63, Aug. 16, 1965, Abstract No. 4093g, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

#### WHALES:

Whale's Way, by Johanna Johnston, illustrated by Leonard Weisgard, 45 pp., illus., printed, 1965, \$2.95. Doubleday & Company, Inc., 277 Park Avenue, New York, N. Y. 10017. Young readers up to six in this book will find an outline of a year in the

life of a humpback whale. They will learn that whales are not fish, but warm-blooded animals; although humpbacks are only medium-sized whales, each weighs five times as much as an elephant; whales' tails are called "flukes"; some whales have teeth and others do not; whales feed on plankton. The book traces a year in the life cycle of the whale--its long migrations to warmer seas, the birth and care of its young; and its play. Also, the distinguishing characteristics of the different types of whales are examined. Children naturally are interested in the sea and the creatures of the sea. To them the watery world is mysterious and conjures pictures of adventure and fantasy. This book will answer any child's questions about whales in simple language but with important details that are of interest as well as of educational value. The illustrations alone will arouse his interest and lead to questions.

--Joseph Pileggi



### ALGAE PRODUCED FROM COMBINATION OF SALT WATER AND SEWAGE

A process for producing red algae continuously from a combination of salty water and sewage has been patented by two faculty members of the University of California.

The inventors of the process recommend a lagoon with hard bottom, in which the mixture of sewage and salty water can be contained for several days. Ocean water alone will not produce the algae, the scientists found. However, the addition of sewage or other nitrogen-containing chemicals makes the algae growth "highly successful." The scientists assigned patent rights to the Regents of the University of California. (Science News Letter, August 7, 1965.)

### CORRECTIONS

Table 1 - Positions of Bureau of Commercial Fisheries - Atomic Energy Trawling Stations off the Columbia River, Oregon, which appeared on page 2 of the December 1965 issue, should be deleted--it does not pertain to the article, "A Japanese Gill-Net Fishery for Bottomfish in the Gulf of Alaska."

In the October 1965 issue, the article "Pasteurization of Fishery Products with Gamma Rays from a Cobalt-60 Source," page 5 - figure 2 cited in lines 27 and 38 should be figure 2; page 7 - figure 2 cited in lines 13 and 14 should be figure 4.



FISHERY EXPERTS STILL NEEDED FOR TECHNICAL  
ASSISTANCE IN MANY COUNTRIES

There are many FAO technical assistance projects in nearly all of the developing countries. The following is a December 1, 1965, list of vacancies for which FAO is recruiting. Write (on a confidential basis if desired) to: Roy I. Jackson, Director, Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

The following list shows the country in which the vacancy exists, the types of fishery experts needed (in parentheses the duration of the assignment in months for the fiscal year 1965/66):

Aden: Biologist (24), 2 Masterfishermen (28 & 26).

Argentina: Marine Biologist (60), Oceanographer (42), 2 Trawl & Purse Seine Technologists (60 & 36), Acoustics Technologist (24), Economist (54).

Brazil: Fishery Training Expert (24), Planning and Statistics Expert (24), Policy and Institutions Expert (24).

Ceylon: Fishing Gear Technologist (12).

Congo (Brazzaville): Marine Resources Survey Project Manager (36).

Cuba: Fishing Gear Technologist (5).

Ghana: 3 Pelagic Biologists (53, 48, & 42), Demersal Biologist (46), Gear Technologist (48), Masterfisherman (54).

India: Fish Processing Technologist (6), Fishing Harbor Survey Project Manager (36).

Iran: Inland Fisheries Biologist (6).

Malaysia: Fishery Development Adviser (12).

Mexico: Fishery Development Adviser (12), Marketing Economist (12), Masterfisherman (18).

Nigeria: Masterfisherman (12), Fishing Gear Technologist (17), Lake Kainji Economic Dev. Project Manager (72).

Pakistan (East): Biologist (60), Fish Processing Technologist (36), Marketing Economist (48), Statistician (36), Marine Engineer (12).

Peru: Marine Resources Survey Project Manager (48).

Philippines: Fish Processing Technologist (24), 2 Marketing Economists (48), Naval Architect Technologist (30), Statistician (12), Masterfisherman (27).

Senegal: Fishing Gear Technologist (9), Marine Resources Survey Project Manager (60).

Sierra Leone: Marine Resources Survey Project Manager (60), Marine Biologist (12).

U.A.R.: Lake Nasser Economic Dev. Project Manager (60).

Uganda: (Lake Victoria): Limnologist (48), Statistician (24), Masterfisherman (36), Costing Economist (24).

Caribbean: 3 Masterfishermen (36).

Central Africa: Inland Fisheries Project Project Manager (60).

Central America: Marine Biologist (33), Economist (48), Masterfisherman/Fishing Gear (47), Technologist and Methods Expert (47), Technologist (48), 2 Fish Processing Technologists (30).