



RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

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

- | Number | Title |
|---|--|
| CFS-1357 | - Manufactured Fishery Products, 1954 Annual Summary, 7 pp. |
| CFS-1389 | - Frozen Fish Report, July 1956, 8 pp. |
| CFS-1390 | - Massachusetts Landings, April 1956, 5 pp. |
| CFS-1397 | - Fish Meal and Oil, July 1956, 2 pp. |
| CFS-1398 | - Ohio Landings, July 1956, 3 pp. |
| CFS-1399 | - Texas Landings, July 1956, 3 pp. |
| CFS-1400 | - Florida Landings, May 1956, 6 pp. |
| CFS-1401 | - North Carolina Landings, July 1956, 2 pp. |
| CFS-1402 | - Georgia Landings, July 1956, 2 pp. |
| CFS-1403 | - Frozen Fish Report, August 1956, 8 pp. |
| CFS-1404 | - Alabama Landings, June 1956, 4 pp. |
| CFS-1405 | - California Landings, May 1956, 4 pp. |
| CFS-1406 | - Mississippi Landings, June 1956, 2 pp. |
| CFS-1407 | - Florida Landings, June 1956, 6 pp. |
| CFS-1408 | - Maine Landings, July 1956, 3 pp. |
| CFS-1409 | - New York Landings, July 1956, 4 pp. |
| CFS-1410 | - Mass. Landings, May 1956, 5 pp. |
| CFS-1411 | - Shrimp Landings, July 1956, 4 pp. |
| CFS-1412 | - Fish Meal and Oil, August 1956, 2 pp. |
| CFS-1414 | - Ohio Landings, August 1956, 2 pp. |
| CFS-1415 | - Alabama Landings, July 1956, 3 pp. |
| CFS-1417 | - New Jersey Landings, July 1956, 4 pp. |
| CFS-1418 | - Georgia Landings, August 1956, 2 pp. |
| CFS-1419 | - California Landings, June 1956, 4 pp. |
| CFS-1420 | - Texas Landings, August 1956, 3 pp. |
| CFS-1423 | - Maine Landings, August 1956, 3 pp. |
| CFS-1424 | - New Jersey Landings, August 1956, 4 pp. |
| <u>Wholesale Dealers in Fishery Products (Revised):</u> | |
| SL-27 | - Indiana (Lake Michigan Area), 1956, 1 p. |
| SL-30 | - Pennsylvania (Lake Erie), 1956, 1 p. |
| SL-31 | - New York (Lakes Area), 1956, 2 pp. |
| SL-37 | - Kansas (Missouri River Area), 1956, 1 p. |
| SL-38 | - Missouri (Mississippi River and Tributaries Area), 1956, 2 pp. |
| SL-42 | - Kentucky, 1956, 1 p. |
| SL-44 | - Nebraska (Missouri River Area), 1956, 1 p. |

FL - 232 - Fishery Technology Abstract Card System, by M. E. Stansby, K. L. Osterhaug, and F. Bruce Sanford, 39 pp., processed, revised July 1956. Since 1943 the Service has maintained a comprehensive card file of abstracts from articles appearing in current literature pertaining to fishery technology. Sources of information being abstracted consist of about 70 periodicals dealing with fishery, food, general scientific, and technical subjects, and include Chemical Abstracts from January 1943 to the present. In addition to the material accumulated during this period, a miscellaneous group of abstract cards covering a portion of this field, from 1930 to 1943, is included. About 19,000 cards are on file at present. Since January 1948, the abstracts have been published in the monthly periodical Commercial Fisheries Abstracts. This leaflet describes the system used for classifying these cards according to the subject matter. It is similar to the Dewey Decimal system in principal, but the entire range of values 0-9 was adapted to fishery technology and related subjects.

SSR-Fish. No. 176 - English Translations of Fishery Literature, Further Listings, compiled by Leslie W. Scattergood, 33 pp., processed, July 1956. This report is a continuation of a series which was initiated to provide fishery investigators with information on the amount and availability of English translations of fishery literature. The first two sections of this series were issued by the Washington Department of Fisheries, Smith Tower Bldg., Seattle 4, Wash. The third and fourth reports were published by the Service as "Special Scientific Report--Fisheries Nos. 35 and 72."

SSR-Fish. No. 177 - Zooplankton Volumes off the Pacific Coast, 1955, 35 pp., processed, August 1956.

SSR-Fish. No. 180 - Mid-Pacific Oceanography, Part VIII, Middle Latitude Waters, January-March 1954, by James W. McGary and E. D. Stroup, 178 pp., processed, June 1956.

This is Cortland (Fish-Cultural Station, Experimental Hatchery, Trout-Nutrition Laboratory, In-Service Training School), Circular 42, 2 pp., folder, illus., printed.

Glossary of Marine Conservation Terms in English and Russian, compiled by Paul S. Galtsoff, Circular 43, 130 pp., processed, June 1956. This glossary was prepared primarily to facilitate the work of interpreters and translators assigned to international conferences dealing with the

problems of utilization and conservation of living resources of the sea. It is not a dictionary in the ordinary sense of the word, for it comprises primarily the terms and expressions which have special meaning to conservationists, biologists, statisticians, and oceanographers. A few parliamentary and legal expressions which usually appear in international treaties are also included.

(Alaska) Commercial Fisheries Regulations Amendments, Amendments Nos. 1 to 18 to Regulatory Announcement No. 48, 8 pp., processed, 1956.

Sep. No. 450 - Georges Bank Haddock Fishery-- Changes in Scrod Abundance in Recent Years.

Sep. No. 451 - Bleeding and Heat Death in the Southern Oyster.

Sep. No. 452 - New Diving Sled.

Sep. No. 453 - Research in Service Laboratories (October 1956): Contains these short articles-- "Experimental Fish Meal Dryer;" "Experimental Bulk Ocean Shipments of Alaska Herring Meal;" "Processing Studies on Menhaden Meal;" "Converting Fish Scales into Animal Food;" "Salmon Waste as Bait;" "Breaded Shrimp Interim Federal Specification."

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED IN THE REVIEW.

Production of Fishery Products in Selected Areas of Virginia, Maryland, and North Carolina (As Reported to Hampton Fishery Market News Office), 1955, by William N. Kelly, 40 pp., processed, 1956. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 18 South King St., Hampton, Va.) An analysis of the production of fish and shellfish in selected areas of Virginia, Maryland, and North Carolina during 1955 is presented in the first part of this report. The author discusses landings in the areas covered, production of the principal species: scup or porgy, croaker, sea bass, sea trout, fluke, spot, shad, crab meat, and shrimp. Information on the menhaden fishery is also presented--includes receipts reported by Virginia and North Carolina fish meal and oil plants by months for 1955 and 1954. Statistical tables make up the second part of the report, showing production of fish and shellfish for each area by months, production by localities for 1955 and 1954, and shrimp landings in selected North Carolina ports by months. The areas covered in this report include: Atlantic, Beaufort, and Morehead City, N. C.; Norfolk, Portsmouth, Messick, Seaford, Yorktown, Gloucester Point, Newport News, Hampton, Lancaster County, Cape Charles, Oyster, Willis Wharf, and Wachapreague, Va.; Ocean City, Cambridge, and Crisfield, Md. In addition, shrimp landings are reported for Atlantic, Beaufort, Morehead City, Pamlico County, Englehard, and Southport, N. C.

Receipts of Fresh and Frozen Fishery Products at New York City's Fulton Fish Market, 1955, by T. J. Risoli, 18 pp., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N. Y.) Contains an analysis of fishery products receipts for 1955 and marketing trends at New York City. The author discusses in the first part of this report the salt-water market

receipts; marketing trends; trends in method of transportation; receipts by shipping areas; selling prices of selected species; containers; methods for expanding markets; imports of fishery products through the New York customs district; fresh-water fish receipts; and nutritive value of fishery products. The tables, in the second part of this report, present data on receipts of fish and shellfish in the salt-water section of Fulton Market by months and method of transportation, by species and method of transportation, and by states and provinces of origin.

Boston Fishery Products Monthly Summary, July 1956, 15 pp.; Boston Fishery Products Monthly Summary, August 1956, 15 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Landings and ex-vessel prices by species for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; and Boston frozen fishery products prices to primary wholesalers; for the months indicated.

California Fishery Products Monthly Summary, August 1956, 10 pp.; California Fishery Products Monthly Summary, September 1956, 9 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of raw tuna and tunalike fish, herring, mackerel, anchovies and squid; pack of canned tuna, mackerel, herring, anchovies, and squid; market fish receipts at San Pedro, Santa Monica, San Diego, and Eureka areas; California imports; canned fish and frozen shrimp prices.

(Chicago) July 1956 Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Prices, 10 pp.; (Chicago) August 1956 Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Prices, 10 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces; fresh-water fish, shrimp, and frozen fillet wholesale market prices; for the months indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, August 1956, 5 pp.; Gulf Monthly Landings, Production, and Shipments of Fishery Products, September 1956, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; and wholesale prices of fish and shellfish on the New Orleans French Market; for the months indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, August 1956, 4 pp.; Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, September 1956, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 S. King St., Hampton, Va.) Fishery production for the Virginia areas of Hampton Roads, Lower Northern Neck, and 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; for the months indicated.

(New York) Monthly Summary - July 1956 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, 4 pp.; (New York) Monthly Summary - August 1956 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N. Y.). Receipts in the salt-water section of the Fulton Fish Market by species and by states and provinces for the months indicated.

(Seattle) Monthly Summary - Fishery Products, July 1956, 5 pp.; (Seattle) Monthly Summary - Fishery Products, August 1956, 6 pp.; (Seattle) Monthly Summary - Fishery Products, September 1956, 6 pp., (Market News Service, U. S. Fish & Wildlife Service, 421 Bell St. Terminal, Seattle 1, Wash.). Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Oregon) wholesale dealers; also Northwest Pacific halibut landings.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Alaska Fishery and Fur-Seal Industries, 1954, by Seton H. Thompson, Statistical Digest No. 37, 73 pp., illus., printed, 35 cents, 1956. Detailed reports and statistical tables concerning the operation and yield of the various fishery industries are presented, with added data on certain related matters, particularly the condition of the fishery resources. Under the section on fishery industries, the following subjects are covered: court decisions; Alaska Department of Fisheries; research; exploratory fishing investigations; administration; management; and general statistics on salmon, herring, halibut, shellfish, and miscellaneous fishery products. The second section on the Pribilof Islands fur-seal industry covers administration, fur-seal population studies, and general statistics on the fur seals taken in 1954. A statement is also included on sealing privileges accorded aborigines.

Biology of the Sea Lamprey in Its Parasitic Phase, by Phillip S. Parker and Robert E. Lennon, Research Report 44, 35 pp., illus., printed, 20 cents, 1956.

Biology of Young Lake Trout (SALVELINUS NAMA-YCUSH) in Lake Michigan, by John Van Oosten and Paul H. Eschmeyer, Research Report 42, 91 pp., illus., printed, 40 cents, 1956.

Effect of Pulse Frequency and Duration in Guiding Salmon Fingerlings by Electricity, by Howard L. Raymond, Research Report 43, 22 pp., illus., printed, 15 cents, 1956.

How to Cook Halibut, by Kathryn L. Osterhaug and Rose G. Kerr, Test Kitchen Series No. 9, 12 pp., illus., printed, 20 cents, 1956. A new fishery publication of interest to housewives, home economists, and food editors. Contains 25 choice recipes which have been developed and kitchen-tested by the Service's staff of home economists. The halibut, as the booklet explains, is the largest of the flatfishes and is found in the cold waters of the north Pacific, the Arctic, and the north

Atlantic Oceans. Its delicious white, translucent meat is known and appreciated by fish gourmets the country over.

Frozen steaks or fillets may be cooked without thawing if additional cooking time is allowed. When steaks or fillets are to be breaded or stuffed, they are more easily handled if they have been previously thawed. The preferred method for thawing frozen fish is to leave the fish in the refrigerator overnight. If room-temperature thawing is necessary, great care must be taken so that the fish remains chilled at all times. Halibut may be prepared by any of the basic cooking methods such as frying, baking, broiling, boiling, and steaming. Some of the easy-to-make yet out-of-the-ordinary recipes included are: halibut avocado cocktail, halibut and onion soup, curried halibut casserole, broiled halibut steaks with anchovy butter, halibut Hawaiian, halibut steaks with piquant meringue, and halibut in herb sauce. In addition to the recipes for cooking halibut, the authors describe briefly the halibut fishery.

Preparation of a Dry Product from Condensed Menhaden Solubles, by C. F. Lee, Research Report 45, 35 pp., illus., printed, 20 cents, 1956. Deals with the methods of preparation and with factors determining the characteristics of a dried fish-solubles product. The first portion of the report deals with the preparation and study of the drying characteristics of different samples of menhaden solubles. A Suitability Factor, designed to rate on a comparative scale the drying behavior and properties of the various dried products, was developed but is not the sole criterion of the value of a specific sample. The second portion deals with the chemical analysis of the samples. The ammonia, dry solids, fat, ash, crude and corrected protein content as well as the pH, specific gravity, viscosity and thixotropy of the samples were determined. The effect of additives on the properties of the dried products was investigated. Results are summarized, and conclusions as to the present commercial feasibility of such a product are made.

Validity of Age Determination from Scales, and Growth of Marked Lake Michigan Lake Trout, by Louella E. Cable, Fishery Bulletin 107 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 57), 62 pp., illus., printed 45 cents, 1956.

MISCELLANEOUS PUBLICATIONS

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

"Agriculture, Food Supplies, and Atomic Radiation." article, Science, vol. 124, no. 3211, July 13, 1956,

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pp. 63-66, printed, single copy 25 cents. Science, 1515 Massachusetts Ave., Washington 5, D.C. This article is the text of the summary report of the Committee on the Effects of Atomic Radiation on Agriculture and Food Supplies. The report is one part of a study of the biological effects of atomic radiations conducted by the National Academy of Sciences with the support of the Rockefeller Foundation. It discusses tracer studies in agriculture, crop production, animal production, radioisotopes in agricultural products and foods, environmental changes and ecological studies, and the use of radiation as a means of preserving certain foodstuffs.

Appraising the Market for the Services You Offer, by Edward L. Anthony, Small Marketers Aids no. 15, 4 pp., printed. Small Business Administration, Washington 25, D.C., August 1956.

"Are Fish Disturbed by the Echo-Sounder?" by J. Scharfe, article, Fischereiwelt, vol. 2, no. 2, February 1951, pp. 30-31, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B.C., Canada.)

Amount of Herring Spawn Deposited in British Columbia Coastal Waters in 1956, by D. N. Outram, Circular no. 42, 13 pp., illus., processed. Pacific Biological Station, Fisheries Research Board of Canada, Nanaimo, B.C., Canada, August 1956. Pacific herring, Clupea pallasii, spawn in shallow water along the shoreline of British Columbia. The majority of eggs are deposited on vegetation, in or just below the intertidal zone, i.e., between the high and low tide levels. Spawning grounds may vary in size from a few yards to several miles, the length and width being largely determined by the distribution of the vegetation and the stage of the tide at time of spawning. The spawning grounds are not randomly distributed along the coastline but are found in certain preferred regions year after year. The measurement of the extent and intensity of herring spawnings along the British Columbia coast is carried out annually by the Canadian Department of Fisheries. This paper discusses the purpose of the spawn surveys, survey methods, and the results of the 1956 spawn survey.

Arsberetning fra Fiskeriministeriets Forsøgslaboratorium for 1955 (Annual Report to the Danish Fishing Industry), 55 pp., illus., printed in Danish with English translation of the main experimental results. Fiskeriministeriets Forsøgslaboratorium, København, Danmark, 1956. Describes the results of the following experiments: fat determination in herring and sand eels; determination of the nutritional value of fish for fur-animal feed; chilling of fish; combination of icing and chemical preservation of fish; washing and painting fish boxes to improve hygienic conditions; light-salted salmon substitute; freezing shrimp; freezing gar-pike; freezing breaded fish products; freezing in jelly; freezing fish fillets; installations for infra-red cooking of sardines; Norway lobster; fish balls; research on cans; fish meal; and fish silage.

"Average Lunar Month Catch of Sardine Fishermen in Southern California, 1932-33 through 1954-55," by Frances N. Clark, article, California Fish and Game, vol. 42, no. 4, October 1956, pp. 309-322, illus., printed. California Department of Fish and Game, Sacramento, Calif. The summary of this report states that "By developing new rules for determining which boats were fishing for sardines each season, the return to the southern California fishermen per lunar month has been carried through 1954/55. After almost complete collapse in 1952/53 and 1953/54, fishing in 1954/55 was more successful. In this season, however, the average monthly catch was still less than in any previous season except 1947/48 and the two mentioned above. Based on the total boat months calculated to be required to make each season's catch, the relative strength was measured for 22 year-classes occurring in the fishery between 1932/33 and 1954/55. In the 1930's only two year-classes were of less than average strength, while in the 1940's and 1950's nine were below average and only four were above. During 18 seasons the within-season average monthly catch in southern California showed an increasing decline year by year. In the 1930's fishing success held up through February, in the early 1940's only through January, in the late 1940's only through December, and in the early 1950's only through November."

Balık ve Balıkçılık (Fish and Fishery), vol. IV, no. 9, September 1956, 190 pp., illus., printed in Turkish and English. Et ve Balık Kurumu, Istanbul, Turkey. A special issue of a monthly publication of the Meat and Fish Office which contains, among others, the following articles: "Fisheries Administration in Turkey;" "Development of Refrigeration in the Fishing Industry in Turkey;" "A Brief Review of the Turkish Canning Industry;" "Fisheries Research in Turkey;" "Recent Developments in Fishing;" and "Report on the Improvement of Gir-Gir Seines."

The Biological Effects of Atomic Radiation, Summary Reports, 120 pp., printed. National Academy of Science, Washington, D.C., 1956. Contains, among others, a summary report on effects of atomic radiation on oceanography and fisheries. An attempt has been made to summarize what is known about the actual and potential effects of radioactive materials in the oceanic realm and the interest of marine scientists in these substances. Answers are given to the following questions: (1) how does the atomic energy program affect the oceans; (2) is there naturally occurring radioactivity in the sea; (3) have weapons tests added measurable amounts of radioactivity to the sea; (4) in what other ways will radioactive materials be added to the oceans; (5) has the atomic energy program as yet resulted in serious damage to marine life; (6) do living things take up radioactive materials into their bodies; (7) are all the radioactive elements equally harmful; (8) how much radioactive waste will be produced by nuclear power reactors in the future;

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(9) what means are being considered for disposing of radioactive wastes; (10) will it be safe to introduce very large quantities of radioactive wastes from atomic power indiscriminately into the sea; (11) does this mean that large quantities of radioactive wastes should never be dumped in the sea; and (12) from what is known, where would be the safest place to dump radioactive wastes in the sea?

Boletim da Pesca (Fishery Bulletin), vol. X, no. 52, September 1956, 134 pp., illus., printed in Portuguese. Gabinete de Estudos das Pescas, 211 Avenida da Liberdade, Lisbon, Portugal. Contains, among others, the following articles: "O Aproveitamento das Lagostas do Noroeste Africano (Utilization of Lobsters of North Africa)," by Dr. C. Fernando Costa; and "Alguns Aspectos Significativos da Industria da Pesca em Portugal" (Some Significant Aspects of the Fisheries of Portugal), by Dr. Richard J. Houk.

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 6, no. 3, pp. 191-233, illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hokodate, Japan, November 1955. Contains among others the following scientific papers: "Mechanical Studies of Fishing Net Materials. IV. A Method of Measuring the Diameter of a Netting Cord," by Tetsuo Miura; and "Studies on the Organic Phosphates in Muscle of the Aquatic Animals. I. On the Determination of Adenosine-polyposphates in Muscle of Carp," by Tsuneyuki Saito and Ken-ichi Arai.

Bulletin of the International Oceanographic Foundation, vol. 2, no. 2, July 1956, pp. 66-127, illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla. Includes, among others, the following articles: "More to Fishing than Fish," by F. G. Walton Smith; "Saltwater Gamefish," "Floating Fish Factories," by Robert W. Ellis; "Rivers in the Sea," "Treaders of the Sea," by J. L. McHugh and Hilary B. Moore; "The Amazing Angel Shark," by Bernard L. Gordon; and "Ups and Downs at Sea," by Hilary B. Moore.

(California) Abstract of Commercial Fisheries Laws of California, 1955-1957, folder, illus., printed. Department of Fish and Game, 926 Jay St., Sacramento 14, Calif., 1955.

(Canada) Journal of the Fisheries Research Board of Canada, vol. 13, no. 4, July 1956, pp. 449-598, illus., printed. Fisheries Research Board of Canada, Ottawa, Canada. Contains, among others, the following articles: "Populations of Herring (*Clupea harengus* L.) in Newfoundland Waters," by S. N. Tibbo; "Diet-Induced Differences in the Weight-Length Relationship of Aquarium Fed Sardines (*Sardinops caerulea*)," by David A. Farris; "The Effect of Fry Plantings on Whitefish Production in Eastern Lake Ontario," by E. D. Lapworth; "Chemical Changes in Nitrite-Treated Atlantic Cod Fillets in Relation to Spoilage Assessment," by E. B. Vaisey; and "Storage of Frozen Rosefish Fillets," by W. J. Dyer, Margaret L. Morton, Doris I. Fraser, and E. G. Bligh.

(Ceylon) Administration Report of the Acting Director of Fisheries for 1955 (Part IV-- Education, Science, and Art), by H. C. Goonewardena, 29 pp., printed. Government Publications Bureau, Colombo, Ceylon, July 1956. Progress reports for the year 1955 are presented by the Department of Fisheries' Administration and Socio Economic Division, Development Division, Commercial Section, and Research Division. Among the subjects covered are: enforcement of fisheries regulations; cooperative development of the fisheries; mechanization of fishing craft; fresh-water fishery development; and fishery byproducts. Statistical data are also included on the production of fresh and cured fish, and imports and exports of fishery products and byproducts.

(Coast and Geodetic Survey) Tide Tables, Current Tables, and Tidal Current Charts, 1956 and 1957, 50 cents each. U.S. Coast and Geodetic Survey, Washington 25, D.C. The tide tables cover the East Coast, North and South America; and West Coast, North and South America. The current tables cover the Atlantic Coast and the Pacific Coast. The tidal current charts include the Boston Harbor, Long Island Sound and Block Island Sound, Narragansett Bay to Nantucket Sound, New York Harbor, Delaware Bay and River, Tampa Bay, San Francisco Bay, Puget Sound--northern part, and Puget Sound--southern part.

The Conservation Directory (A Listing of Organizations and Officials Concerned with the Protection of Wildlife and Other Natural Resources), compiled by Stewart M. Brandborg, 103 pp., printed, 40 cents. National Wildlife Federation, 232 Carroll St., NW., Washington 12, D.C., July 1, 1956. This, the forty-eighth Conservation Directory, is larger and more complete than any earlier edition. As in previous years, the public agencies of national, state, and territorial governments of the United States concerned with the protection of wildlife and other resources (including fisheries) are listed, as well as those of neighboring nations in North and South America. Most of the nongovernment organizations within the United States which have a national or statewide scope of interest are also included.

The Deep-Sea Fisherman, by Captain I. E. Allison, 90 pp., illus., printed. The Educational Supply Association, Limited, Esavian House, 181 High Holborn, London, W. C. 1, England, 1956. Although this booklet has been designed primarily for children between the ages of 8 and 12, adults will be interested in reading the straightforward description of the various methods of fishing used today, the parts of a modern trawler and its equipment, the duties of the various crew members, fish and their habits, a typical fishing voyage, the marketing of the catch, and the use of fishery byproducts. The author is the principal of The Nautical College, Hull, England. Considerable detail is covered in this small booklet, including what goes on aboard a fishing trawler and how the crew spend their time at sea. The booklet is well illustrated with photographs and line drawings. Divided into seven chapters, the

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booklet is very interesting and will be of value to the novice as well as to the one more familiar with fishing and fisheries.

"Developments in Mid-Water Trawling (Electronic Aids to Depth Regulation)," article, World Fishing, vol. 5, no. 9, September 1956, pp. 50-52, illus., printed. John Trundell Ltd., Temple Chambers, Temple Ave., London, E.C. 4, England. This is an abstract of a paper by W. Lochridge, given at a meeting of the Institution of Engineers and Shipbuilders in Scotland. The paper was under the title "Mechanization in Fishing Vessels," and deals largely with development in fish factoryships. This article discusses the development of otter trawls suitable for the small North Sea trawler and the larger ships of the Hull distant-water fleet. Trawling tests are described as well as a new stern design.

Die Seefischerei Nordwest-Europas (Struktur und Probleme), The Sea Fisheries of North-West Europe (Structure and Problems), by Dr. Wilhelm Blanke, 626 pp., illus., printed in German with the tables in both German and English, DM78 (about US\$19.00), 1956. Krogers Buchdruckerei Abt. Fachbuchverlag, Bahnhofstrasse 17, Hamburg-Blankenese, West Germany, 1956. An exhaustive and very comprehensive treatise on the sea fisheries of North-West Europe. This book brings economic research work on fisheries to a new point, particularly with regard to inter-regional comparisons and to fisheries politics. For practical purposes it is an excellent work of reference. According to the publishers, the study was sponsored by many German and foreign organizations, administrative boards and authorities, including the Association of the German Deep Sea Fisheries and the Bremerhaven Chamber of Commerce and Industry. The work was completed by the Research Division for Fisheries Economics of the Bremen Committee for Economic Research. The detailed data contained in this book are well organized and presented. Chapter 1 deals first with the sea fisheries in the world and in North-West Europe and includes information on total catch and utilization, fishing fleets and fishermen, and exports of fish and fishery products. For North-West Europe, data on national income and landings by domestic fishing craft are also covered. The development and structure of the sea fisheries in each of the North-West European countries makes up the second part of chapter 1. The countries included are Norway, Sweden, Denmark, Faroes, West Germany, Netherlands, Belgium, France, England and Wales, Scotland, North-Ireland, Eire, and Iceland. Problems of the North-West European sea fisheries are discussed in the second chapter, with the first part concentrating on inter-regional problems and the second part with regional problems for each of the countries mentioned above. Half of the book consists of an appendix the major part of which is statistical tables giving data on landings of sea fish by species, by country, by type of fleet, as well as data on number of fishermen, number of vessels, external trade, national fisheries income, and details on other phases of the fisheries. The textual part of the tables is presented in both German and English which makes them very

useful for those who cannot read German. Most of the statistics are for the years 1950-1954. Also included in the appendix is a list giving the scientific, German, Norwegian, English, and French names of principal sea fish and shellfish; and principal technical terms in German, English and French. In my opinion, this book should be of considerable value to businessmen, researchers, students, and others interested in the European fisheries, in particular, or fisheries in general.

--J. Pileggi

Economic Marine Algae of Tropical South and East Asia and Their Utilization, by J. S. Zanefeld, Special Publications No. 3. Indo-Pacific Fisheries Council, Maliwan Mansion, Phra Atit Road, Bangkok, Thailand, 1955.

Exploring the Deep Pacific, by Helen Raitt, introduction by Roger Revelle, 272 pp., illus., printed, \$3.75. W. W. Norton & Co., 55 Fifth Ave., New York 3, N. Y. Unofficial account of an oceanographic expedition in the South Pacific.

Fisheries Statistics of the Philippines, 1955, by Jose R. Montilla and Justo R. Montemayor, 64 pp., processed. Department of Agriculture and Natural Resources, Bureau of Fisheries, Manila, Philippines. This report is devoted to fishery production in the Philippines. The tables are grouped together under the headings (1) production, consumption, and requirements; (2) commercial fishing vessels; (3) fish ponds; (4) foreign trade; and (5) other data. The tables are subdivided according to gear used, kind of fish caught, monthly production, and fishing grounds. There are also statistics on fish pond production, and imports and exports of fishery products (including canned and processed fish). Statistics also cover reptile skins, seaweeds, sharkfins, shells, sponges, trepang, turtle eggs, and turtle shells. The appendices contain information on the fishery districts, the forms used in collecting fishery statistics, and an inventory of fishing gear used in the Philippines for the year 1953. Except for Table 1 which presents fish production data since 1946, most of the information covers the five-year period 1951-55.

"Fishermen's Organizations and the Regulation of Fish Prices in Sweden," by Christian Hessel and Sigmund Verstandig, article, FAO Fisheries Bulletin, vol. IX, no. 3, July-September 1956, pp. 130-143, printed. Food and Agriculture Organization of the United Nations, Rome, Italy. This article is a summary of Parts 2-5 of the monograph of the same title. Part I, a general survey of Swedish fisheries, the fishing population, trade and government administration, has been excluded from this summary. Part 2 discusses the early development of the fishermen's organizations in Sweden; Part 3, the fishermen's professional organizations; Part 4, the fishermen's trading organizations; and Part 5, price regulations.

"Fishing with Electricity," by B. Hnatevic, Bulletin of the Czechoslovak Academy of Agricultural Sciences, No. 1-2, 1953, pp. 101-109, printed in Czechoslovak. (Translated from Czechoslovak

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and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B.C., Canada.)

Fiskeri-Beretning for Arët 1955, 198 pp., illus., printed in Danish with resume in English. I Kommission Hos G. E. C. Gad, København, Denmark. This report contains detailed statistics on the Danish fisheries for the calendar year 1955. Included in the report are data on number of fishermen, number of fishing craft, value of fishing vessels, catch by species, landed value of the catch, resumes by fisheries, and imports and exports of fishery products.

(FAO) General Fisheries Council for the Mediterranean, Proceedings and Technical Papers no. 3, 527 pp., illus., printed in French and English, \$5. Food and Agriculture Organization of the United Nations, Rome, Italy, 1955. (Available from Columbia University Press, International Documents Service, New York 27, N. Y.) This document is divided into two parts. The first part includes the proceedings of the third meeting of the General Fisheries Council for the Mediterranean held in Monaco (Principality), October 14-19, 1954. The second part comprises the technical papers presented during this meeting. Among the subjects covered are various aspects of sardine biology; freezing of sardines; fisheries of certain French ports; transportation and preservation of fish in Spain; organization of fish trade in Italy; carp culture in rice fields; water pollution; fisheries administration in Yugoslavia; "The Mediterranean Spiny Lobsters" (description of Palinurus vulgaris, P. mauritanicus and P. rissoni); vocational training of fishermen; fish meal; economic fishery statistics in Yugoslavia; sea fry for stocking inland waters; safety measures for divers; fish curing in Yugoslavia; cold storage and canning of mackerel; "Improvement of Large Marine Crustacean Fishing Technique in Yugoslavia" (describes use of collapsible pots for fishing lobsters and spiny lobsters); Salmonidae breeding in Mediterranean countries; short-finned tuna (Sarda sarda in Turkish waters); Black Sea coast fisheries; Norway lobster in Adriatic; natural bait for marine fishing; Mediterranean tunas (little tuna, Euthynnus alliteratus Raf.; and striped-bellied bonito, Katsuwonus pelamis L.); French River fisheries.

(FAO) The State of Food and Agriculture, 1956, 151 pp., illus., printed, \$1.50. Food and Agriculture Organization of the United Nations, Rome, Italy, 1956. (Also available from Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y.) The foreword points out that, "The world food and agricultural situation has recently tended to change less rapidly than during the years of postwar recovery. It has therefore seemed fitting to modify the form of the annual report on the state of food and agriculture, giving less emphasis to the current situation and short-term outlook and more to longer-term problems and to other special subjects which in the past it has not been possible to treat in detail. Last year's report consisted of a review of the developments of the whole postwar decade. This year the food and agricultural situation in 1955/56 and the out-

look for 1956/57 are reviewed in a single chapter. The two following chapters, the first of the new series of special studies, deal respectively with some factors influencing the development of international trade in agricultural products, and with general trends and outlook in the world's fisheries. The report is introduced by the customary summary." The chapter on "World Fisheries: General Trends and Outlook with Examples from Selected Countries" discusses the characteristics of world production and trade; government policies in relation to the fishery industries; and typical cases of fishery development under different economic influences in Japan, Norway, Iceland, United Kingdom, Germany, United States, Canada, and the Union of South Africa and South-West Africa. Also presents current fishery development programs and outlook.

Food Expenditures of Households in the United States, Preliminary Report, 16 pp., processed. U. S. Department of Agriculture, Washington 25, D. C., August 1956. This report presents some preliminary results on food expenditures from a nationwide survey of household food consumption made in April-June 1955. Although food products are not broken down by specific categories, the general information may be of value to fisheries processors.

The Food and Feeding Habits of the Lemon Sole, by Bennet B. Rae, Scottish Home Department Marine Research No. 3, 35 pp., illus., printed, 6s. 8d. (92 U.S. cents). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland, 1956.

"Growing Culture Pearls in Australia," article, Fisheries Newsletter, vol. 15, no. 7, July 1956, pp. 5, 7, illus., printed. Commonwealth Director of Fisheries, Department of Primary Industry, Canberra, Australia. Culture pearls will soon be produced for the first time in Australia, according to this article. If pilot scale operations are successful, it should mean the establishment of a new industry where development is badly needed, in northwest Australia--an industry which could become a substantial dollar earner along with spiny lobster tails, shrimp, and pearl shell.

How to Use Sodium Bisulfite to Control "Black Spot" on Shrimp, Special Service Bulletin No. 12, 4 pp., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla., August 1956. Research has shown that shrimp dipped in a dilute solution of the harmless chemical, sodium bisulfite, develop much less black spot than untreated shrimp. This report quotes the Food and Drug Administration's approval of this technique, and describes in detail the method of using sodium bisulfite on shrimp.

The Importance of Chilling Fish, by C. L. Cutting and J. Liston, D.S.I.R. Food Investigation Misc. Paper No. 7A/56, 2 pp., illus., printed. (Reprinted from Fish Trades Gazette, April 14, 1956.) White Fish Authority, Torrey Research

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Station, Aberdeen, Scotland. Describes briefly the importance of chilling fish and the effect of temperature on bacterial growth. The authors state that, "For practical purposes the quickest, safest and easiest way to cool fish to about 32° F. and keep them at this temperature is to surround them and mix with them liberal amounts of crushed ice. Simply putting fish without ice into a chill room at 32° F. will cool them down very much more slowly even if the fish are laid out singly. Fish contained in wooden boxes put into a chill room without ice will cool down even more slowly since wood is a good heat insulator. Direct and intimate icing, therefore, because of its superior cooling action, ensures that spoilage of the fish during the cooling down period is reduced to a minimum."

Index Oyster Ground Franchises and Leases (Licenses, Vessels, and Individuals), July 1953-July 1955, 18 pp., printed. Shell Fish Commission, 185 Church St., New Haven, Conn. Contains excerpts from the shellfish laws; leasing of shellfish grounds; alphabetical lists of individuals and vessels licensed to work on the natural beds; list of owners and acreages by lot number as of July 1, 1955; leased grounds as of July 15, 1955; and general oyster statistics.

(India) Progress of Fisheries Development in India, 96 pp., figs., illus., printed. Central Inland Fisheries Research Station, Orissa, India, 1956. Contains the following papers: "Fisheries and Fishing Industry in India," by B. N. Chopra; "The Second Five-Year Plan of Fisheries Development," by D. Bhatia; "Marine Fisheries Research in India," by N. K. Panikkar; "Inland Fisheries Research and Extension in India," by B. S. Bhimachar; "Deep Sea Fishing in Indian Waters," by K. Chidambaram; "Mechanisation of Indian Fishing Craft," by P. B. Ziener; "Reclamation of Swamps for Fishery Development in Orissa," by G. N. Mitra; "Fish Culture Techniques in India," by K. H. Alikunhi; "Fish Preservation and Processing," by R. Venkataraman; "Fish Oil Industry in India," by Sundar Kini; "Fisheries By-Product Industry in India," by G. B. Mohanty; and "Socio-Economic Development of Fishermen Communities in India," by T. V. R. Pillay.

"Injuries Done to Trouts by Electric Fishing," by Fr. Volf, article, Bulletin of the Czechoslovak Academy of Agricultural Sciences, No. 1-2, 1953, pp. 104-109, printed in Czechoslovak. (Translated from Czechoslovak and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

(Institute of Freshwater Research) Annual Report for the Year 1954 (and short papers), Report No. 36. Institute of Freshwater Research, Drottningholm, Sweden, 1956.

(Institute of Seaweed Research) Annual Report for 1955 and Review of Institute's Activities, 1945-1955, 52 pp., illus., printed. Institute of Seaweed Research, Inveresk, Midlothian, Scotland. This report reviews not only the work of the Institute of Seaweed Research during 1955 but also the achievements of the last ten years;

that is, since the work began. It indicates the successes achieved in elucidating many of the scientific problems associated with the biochemistry, plant physiology, and ecology of the marine algae and the fundamental chemistry of their constituents; the development of techniques for the manufacture of algal chemicals and seaweed harvesting, and the assessment of their value in agriculture and medicine. This work has aided the development in this country of a new industry based on seaweed and has stimulated great interest in practically every maritime country in the world. As indicated in the report, the Institute, having fulfilled its original mandate, has reduced the scope of its activities. Its main concern will now be the support of fundamental seaweed studies at the universities, the maintenance of an information service, the supply of algal chemicals at cost and the provision of technical assistance and advice to those interested in seaweed utilization in the crofting communities in Scotland.

(International Law Commission) Addendum to Comments by Governments on Provisional Articles Concerning the Regime of the High Seas and the Draft Articles on the Regime of the Territorial Sea Adopted by the International Law Commission at its 7th Session, A/CN.4/99/Add. 1, 103 pp., processed, April 5, 1956. United Nations, International Law Commission, New York, N. Y. The following addenda also have been issued: A/CN.4/99/Add. 2, 11 pp., April 17, 1956; A/CN.4/99/Add. 3, 2 pp., April 24, 1956; A/CN.4/99/Add. 4, 2 pp., April 25, 1956; A/CN.4/99/Add. 5, 9 pp., April 30, 1956; A/CN.4/99/Add. 6, 2 pp., May 7, 1956; A/CN.4/99/Add. 7, 4 pp., May 22, 1956; and A/CN.4/99/Add. 8, 6 pp., June 25, 1956.

(International Law Commission) Co-operation with Inter-American Bodies. Report of the Secretary on the Proceedings of the 3rd Meeting of the Inter-American Council of Jurists Held at Mexico City, Jan.-Feb. 1956, A/CN.4/102, 45 pp., processed. United Nations, International Law Commission, New York, N. Y., April 12, 1956. The following correction and addendum also have been issued: A/CN.4/102/Corr. 3, 1 p., May 18, 1956; and A/CN.4/102/Add. 1, 1 p., May 7, 1956.

(International Fisheries Convention, 1946) Report of the AD HOC Committee Established at the Fourth Meeting of the Permanent Commission, September 1955, 45 pp., illus., processed. Office of the Commission, International Fisheries Convention, London, England, September 1956. At the meeting in London in 1955 the Permanent Commission decided to try to establish a satisfactory scientific basis for the conservation of the various fisheries within the Permanent Commission area by asking a working group of specialists some basic questions. This is a report on most of the questions put to the Committee. The subject matter is considered under six headings, as follows: (1) selectivity of meshes; (2) assessment of long-term effects of applying various cod-end mesh sizes; (3) assessment of immediate effects of applying various

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cod-end mesh sizes; (4) report on size limits in relation to the above results; (5) alterations or additions to Annex II or Article 6 of the Convention, proposed by member countries; and (6) recommendations for further research. The results presented in this report refer only to species and fisheries within the Convention area where the 80-mm. mesh size is in effect, and are based on the latest information available to the Committee at the time of their last meeting (May 1956).

(International Law Commission) Report of the International Law Commission Covering the Work of Its Eighth Session, 23 April - 4 July 1956, A/CN.4/104, 137 pp., processed. United Nations--General Assembly, International Law Commission, New York, N. Y., July 7, 1956. The International Law Commission held its eighth session at the European Office of the United Nations, Geneva, Switzerland from April 23 to July 4, 1956. The work of the Commission during the session is related in the present report. Chapter I covers the organization of the session. Chapter II contains the Commission's final report on the law of the sea; Chapter III consists of progress reports of work on the subjects of law of treaties, state responsibility, and consular intercourse and immunities; while Chapter IV deals with questions relating to the statute of the Commission and with administrative matters.

International Technical Conference on the Conservation of the Living Resources of the Sea, Rome, 1955, United Nations Document A/Conf.10/6, 20 pp., printed. United Nations, New York, N. Y., 1955.

The Investigations of Demersal Fish Resources in the East China and the Yellow Seas (3), 140 pp., illus., printed in Japanese with summaries in English. Seikai Regional Fisheries Research Laboratory, Maruo-Machi, Nagasaki City, Japan, March 1956. Contains the following articles: "A Statistical Account of the Japanese Trawl Fishery in the East China and the Yellow Seas after War II," by Shigeaki Shindo; and "Geographical Distributions of the Fishing Effort in the Fishing Grounds for Trawl Fishery in the East China and the Yellow Seas," by Osamu Kibesaki.

Iowa Fish and Fishing, by James R. Harlan and Everett B. Speaker, 377 pp., illus., printed, \$2.50. State Conservation Commission, East 7th and Court, Des Moines 9, Iowa. This is the third edition of an interesting book on fish and fishing in Iowa. Text changes are made throughout and nomenclature brought up to date. It presents new chapters on natural baits and baiting, fishing tackle, and fish distribution; a major revision and extension of text on angling; and a new section on state-owned access to fishing waters.

Jaarcijfers Over de Visserij Gedurende Het Jaar 1955 (Annual Fisheries Statistics, 1955), Verslagen en Mededelingen van de Directie van de Netherlands with titles in English. Directie van de Visserijen, 's-Gravenhage, Netherlands, 1956. This report not only contains complete statistics on all fishing activities in the Nether-

lands but it also gives considerable descriptive information on the sea fisheries, inshore fisheries, river and inland fisheries, government regulations, whale fisheries, herring exports, fisheries research, and the fishing fleet.

(Jamaica) Report on Jamaica for the Year 1955, 386 pp., illus., printed, 7s. 6d. (US\$1.05). The Government Printer, Duke Street, Kingston, Jamaica, 1956. An annual report on developments in Jamaica during 1955. Contains, among many others, a chapter on the Jamaican fishing industry which states that "the natural evolution of the industry has been limited by the geography of the Island. The surrounding shallow-water shelf is not extensive--on the north coast it extends only a few hundred yards in some areas--and beyond this the seabed slopes sharply into water too deep to permit bottom fishing to be carried out efficiently without the use of power equipment. In consequence, the industry has not risen above a peasant-level operation, and even the extension of fishing onto the offshore Pedro Cays has done little to change this, the fishing being carried out by traditional canoes with large powered craft providing servicing facilities only." Descriptions of the fishing areas of Jamaica, methods of capture, development of the fresh-water fisheries and the marine fisheries are presented.

(Japan) Statistic Tables of Fishing Vessels (as of the End of 1955), General Report No. 8, 240 pp., printed in Japanese and English. Japanese Fisheries Agency, Tokyo, Japan. This annual report lists data on the various types of Japanese fishing craft as obtained by a fishing-vessel registration system. Statistics are given by types of gear, fishery, craft, and principal prefectures, together with comparisons for former years.

"The Larsen Mid-Water Trawl," by Alan Glanville, article, FAO Fisheries Bulletin, vol. IX, no. 3, July-September 1956, pp. 113-129, illus., printed. Food and Agriculture Organization of the United Nations, Rome, Italy. According to the author, the Larsen mid-water trawl has proved so effective that it is now in regular use in Scandinavia and other parts of Europe. Herring, sprat, anchovies, mackerel, and other pelagic fish are commonly caught with this gear which, owing to its low initial cost and simple operation by relatively small crews, may in some cases supplant the much more expensive ring nets and purse seines. This article discusses the method of operating the Larsen mid-water trawl, its advantages and disadvantages, conditions necessary for successful operation, and installation and operation of the gear.

"Measurement of Denaturation of Fish Protein," by J. I. M. Ironside and R. M. Love, article, Nature, vol. 178, no. 4530, August 25, 1956, pp. 418-419, printed. MacMillan & Co., Ltd., St. Martin's St., London, W. C. 2, England.

(Malaya) Annual Report of the Fisheries Division, Department of Commerce and Industry, Singapore 1953, by Tham Ah Kow, pp. 205-250,

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illus., printed. Department of Commerce and Industry, Singapore, Malaya. Includes a general review of the fishing industry of Singapore, inventory of the fishing industry, availability of fresh fish, the fresh fish trade, prices of fresh fish, prices of producer goods, and trade in salt fish and certain marine products.

(Malaya) Annual Report of the Fisheries Division, Department of Commerce and Industry, Singapore 1954, 15 pp., printed. Department of Commerce and Industry, Singapore, Malaya. This report gives a general review of Singapore's fishing industry, availability of fresh fish, marketing, prices of fresh fish, and trade in salt fish and certain marine products.

Maryland Board of Natural Resources, Twelfth Annual Report, 1955, 215 pp., illus., printed. Board of Natural Resources, Annapolis, Md. A report for the fiscal year beginning July 1, 1954, and ending June 30, 1955, covering the activities, accomplishments, and recommendations of the several departments represented on the Board, including the Department of Tidewater Fisheries, the Department of Game and Inland Fish, and the Department of Research and Education. Under the Department of Tidewater Fisheries are discussed oysters, clams, blue crabs, fishing gear, fish abundance, striped bass investigations, and fishery statistics. Also contains an appendix which describes a survey of unlicensed commercial fish nets.

Nature's Guardians (Your Career in Conservation), by Harry Edward Neal, 192 pp., illus., printed, \$3.50. Julian Messner, Inc., 8 West 40 Street New York 18, N. Y., 1956. This book will be a welcome and valuable addition to every high school and college library. As a vocational guidance aid that is written in popular style, it provides timely and practical information for persons interested in both the professional and nonprofessional employment opportunities in the important field of fisheries, forestry, soil and wildlife conservation. Probably no decision has a greater bearing on a person's outlook on life than the successful choice of a career. It is a decision that can lead to years of happiness and satisfaction or, which is too frequently the unfortunate case, frustration and disappointment. In his review of the opportunities that exist in the conservation field, the author presents the type of interesting information that will lead to further investigation by those interested in conservation careers, as well as provide enjoyable reading for those not so interested. To the further credit of the author, he not only covers the attractive phases of conservation management, but makes practical comment on many of the disadvantages of various federal and state employments. In his very realistic approach to the opportunities existing in the field, the author appropriately lists the opportunities and compensations that can be expected. While it was undoubtedly the decision of the author to confine his coverage to conservation activities, this reviewer has the feeling that the value of the book could have been considerably enhanced by including some coverage of employment opportunities in the allied fields of commercial ex-

ploitation of our natural resources. Such coverage might have stimulated additional interest on the part of many young persons who wish to look beyond early careers in Federal and state conservation activities to later service in private industry. As a supplement to the information on employment opportunities and references to governmental and nongovernmental conservation organizations and conservation magazines, the author provides a carefully selected bibliography of publications dealing with fishery, forestry, soil, and wildlife, conservation subjects. It is the opinion of this reviewer that Nature's Guardians will be similarly referred to as recommended reading in future books relating to conservation management.

--D. Y. Aska

(Norway) Lofotfiskets Lønnsomhet 1954 (Lofot Fishery Profitability 1954), by Kare Ruud, Fiskeridirektoratets Smaskrifter Nr. 5 (Fishery Directorate Pamphlet No. 5), 20 pp., printed in Norwegian. (Reprinted from Fiskets Gang, no. 38, 1954.) A/S John Griegs Boktrykkeri, Bergen, Norway, 1954.

Observations on the Spawning Runs of Brown Trout in the South Queich, Loch Leven, by W. R. Munro and K. H. Balmain, Scottish Home Department Freshwater and Salmon Fisheries Research no. 13, 16 pp., illus., printed, 4s. 6d. (65 U.S. cents). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland, 1956.

Observations on the Taxonomy, Biology, and Ecology of the Engraulid and Clupeid Fishes in the Gulf of Nicoya, Costa Rica, by Clifford L. Peterson, Bulletin vol. 1, no. 5, pp. 139-280, illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1956.

"Oceanography, Fisheries, and Atomic Radiation," article, Science, vol. 124, no. 3210, July 6, 1956, pp. 13-16, printed, single copy 25 cents. Science, 1515 Massachusetts Ave. NW., Washington 5, D.C. This article is the text of the summary report of the Committee on the Effects of Atomic Radiation on Oceanography and Fisheries. The report is part of a continuing study on the biological effects of atomic radiation conducted by the National Academy of Sciences with the support of the Rockefeller Foundation. It discusses how the atomic energy program affects the oceans, radioactivity in the sea, damage to marine life, radioactive waste, and the use of radioactive materials to study the ocean and fisheries.

Old Fourlegs: The Story of the Coelacanth, by J. L. B. Smith, 270 pp., printed, 21s. (US\$2.94). Longmans, Green & Co., 55 Fifth Avenue, New York 3, N. Y. The story of the author's hunt for this "prehistoric fish," the coelacanth.

Our Vanishing Shoreline, 36 pp., illus., printed. National Park Service, U.S. Department of the Interior, Washington 25, D. C. A report of a survey made in 1954 of the seashore recreation area along the Atlantic and Gulf coasts, from Calais, Maine to Brownsville, Texas. The survey was made to learn how much of this area

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has already been developed or spoiled, how much is left, and how much is suitable for public use.

"Oyster Farming," by H. Van Pel, article, SPC (South Pacific Commission) Quarterly Bulletin, vol. 6, no. 3, July 1956, pp. 19-20, illus., printed. South Pacific Commission, Noumea, New Caledonia. According to the author, "Edible oysters are not cultivated in the South Pacific Commission area, although they are gathered in many places from the rocks or the mangrove roots on which they grow naturally. In most cases these oysters are misshapen or even stunted, often because they were too crowded on their supports, in other cases because the food supply is not adequate, sometimes because they have grown at an unsuitable level. Whenever it finds itself in a naturally suitable environment, the oyster grows well." This article describes the simple technique used by oyster farmers in the Philippines, where conditions for oyster cultivation are similar to those found in many parts of the South Pacific.

Poisoning by Barracuda and Other Fishes, by Donald de Sylva, Special Service Bulletin #13, 10 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., August 1956.

Populations of the Black Mullet (MUGIL CEPHALUS L.) in Florida, by Donald P. de Sylva, Howard B. Stearns, and Durbin C. Tabb, Technical Series No. 19, 45 pp., illus., printed. Marine Laboratory, University of Miami, Coral Gables, Fla., June 1956.

"Presence of Fish and Echo-Indications," by A. Meyer, article, Die Fischwirtschaft, vol. 5, no. 2, February 1953, pp. 45-47, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Procedimientos de Conservacion del Pescado por el Frio" (Methods of Conserving Fish by Freezing), by Pedro Perez Adsuar, article, Revista del Frio, vol. 1, no. 2, April-June 1956, pp. 111-120, printed in Spanish. Centro Experimental del Frio, Madrid, Spain.

Produccion Pesquera de la Republica Argentina Anos 1946-53 (Fish Production in the Argentine Republic, 1946-53). Ministerio de Agricultura y Ganaderia, Departamento de Investigaciones Pesqueras, Buenos Aires, Argentina, 1955.

Protokolle zur Fischereitechnik (Journal of Fishery Technology), Heft 17, Bd. 4 (Vol. 4, no. 17), pp. 32-83, illus., processed in German, Institut für Netz- und Materialforschung, Hamburg 36, Neuer Wall 72, Germany, May 1956. Contains the following articles: "Fangmethoden und Fanggeräte beim Rochenfang in Deutschland" (Methods of and Gear for the Catching of Rays in Germany), by J. Scharfe; "Deutsche und Französische Bezeichnungen von Fanggeräten" (German Schleppnetzen" (How to Measure Net Meshes in Trawl Nets), by A. v. Brandt; and "Langenveränderungen von Netzgarnen durch Wasserung"

(Changes in the Length of Net Mesh and Net Thread by the Influence of Water), by G. Klust.

Report to Congress on the Mutual Security Program (For the Six Months Ended June 30, 1956), 36 pp., illus., printed. Mutual Security Agency, Washington 25, D. C.

Rio Parana, sus Peces mas Comunes, Pesca Comercial (The Most Important Fishes and the Commercial Fishery of the Parana River), by Juan Manuel Cordini, Publicacion Miscelanea No. 410, 86 pp., illus., printed in Spanish. Ministerio de Agricultura y Ganaderia, Buenos Aires, Argentina, 1955.

Salt-Water Aquarium Fish, by Herbert R. Axelrod and William Vorderwinkler, 160 pp., illus., printed, \$3.95. Sterling Publishing Co., Inc., 122 East 25th St., New York 16, N. Y.

Sampling Methods Used in Japanese Fisheries Catch Statistics, Occasional Paper No. 55/2. Indo-Pacific Fisheries Council, Maliwan Mansion, Phra Atit Road, Bangkok, Thailand, 1955.

Sbornik Ceskoslovenske Akademie Zemedelskych Ved, Zivocisna Vyroba (Annals of the Czechoslovak Academy of Agricultural Sciences, Animal Production), Rocnik XXIX, Cislo 4 (vol. XXIX, no. 4), 1956, pp. 239-318, printed in Czechoslovak with summaries in Russian and English. The Czechoslovak Academy of Agricultural Sciences, Praha XII, Slezska, Czechoslovakia. Contains summaries in English of the following articles: "Purifying and Utilization of Waste Waters from Slaughterhouses and Factories of the Meat Industry in Fish Assimilation Ponds;" "Better Exploitation of the Natural Productivity of the Fish Ponds through Increase in Stocks of Fish;" "New Discoveries Concerning the Artificial Breeding of Pike;" "Investigation of the Reasons for Losses in Hatching of Trout Roe in Hatcheries;" and "Strange Life of the Eel (*Anguilla anguilla* L.)."

Seamanship, by T. F. Wickham, 192 pp., illus., printed, \$3.75. Philosophical Library, Inc., 15 East 40th St., New York 16, N. Y., 1956. The author, who is the Seamanship Instructor at The National Nautical School, Portishead, Somerset, England, presents the basic aspects of the art of good seamanship in a simple and straightforward manner. The novice as well as the experienced seaman will find valuable information in this small book. However, basically it is a factual manual for the novice. Among the subjects covered by the book are ship routine and ships, rope work, compass and steering, rule of the road at sea, tides and buoyage, flags and signals, anchors and cables, mooring and berthing, cargo work, speed and soundings, and lifeboats.

--J. Pileggi

"Shell Disease in Portuguese Oysters," by H. A. Cole and G. D. Waugh, article, Nature, vol. 178, no. 4530, August 25, 1956, p. 422, printed. MacMillan & Co., Ltd., St. Martin's St., London, W.C. 2, England.

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Some Deaths Due to Fish Poisoning (Ichthyosarcotoxism) in India, by S. Jones, 8 pp., illus., printed. (Reprinted from Ind. Jour. Med. Res., vol. 44, no. 2, April 1956, pp. 353-360.) Central Marine Fisheries Research Sub-Station, Calicut, Malabar, India.

Some Notes on the Ovary of Albacore, GERMO GERMO, Taken from the Coral Sea, by Kazumi Isii and Motoo Inoue, 6 pp., printed in Japanese with summaries in English. (Reprinted from Bulletin of the Japanese Society of Scientific Fisheries, vol. 22, no. 2, June 1956, pp. 89-93.) Japanese Society of Scientific Fisheries, Tokyo, Japan.

Statistical Abstract of the United States, 1956, issued by the U. S. Department of Commerce, printed, \$3.75. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Studies of the Sexual Development and Spawning of Yellowfin Tuna (NEOTHUNNUS MACROPTERUS) and Skipjack (KATSUWONUS PELAMIS) in Three Areas of the Eastern Pacific Ocean, by Examination of Gonads, by Milner B. Schaefer and Craig J. Orange, Bulletin vol. 1, no. 6, pp. 283-349, illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1956.

"Studies on Deep Mass Culture of Algae in Israel," by A. M. Mayer, A. Eisenberg, and M. Evenari, article, The Scientific Monthly, vol. 83, no. 4, October 1956, pp. 198-203, illus., printed. The Scientific Monthly, 1515 Massachusetts Ave., NW., Washington 5, D. C. A deep unit for the mass culture of algae is described. A cheap method of agitation has been developed. Yields as high as 21 grams (dry weight) per square meter of illuminated area per day have been obtained. A yearly average for three algae species gave 16 grams per square meter of illuminated area per day. Yields calculated theoretically from the actual yield are as high as 32 grams. The suitability of Israel for mass culture is pointed out. It is considered that the present results bring the mass culture of algae toward the borderline of economic feasibility. Its practical feasibility may be taken as established.

Trade News, vol. 9, no. 1, July 1956, 21 pp., illus., printed. Department of Fisheries of Canada, Ottawa, Canada. Contains among others the following articles: "Artificial Stream Produces Salmon," "Some Factors Affecting the Shelf Life of Frozen Fish," by O. C. Young; and "The Fisheries of Turkey," by I. S. McArthur.

(Union of South Africa) Department of Nature Conservation, P. O. Box 152, Stellenbosch, Union of South Africa, 1955. Contains, among others, a section by the Division of Inland Fisheries which includes articles on the fresh-water fisheries of the Cape Province, Johkershoek Hatchery--Stellenbosch, Pirie Trout Hatchery--King William's Town, and stocking of public waters. A section on research and field surveys discusses the establishment of an eel fishery in the Cape Province and the production of fish for food under the Transkei fish farming project. A report of the Provincial Inland Fisheries Officer at Cape Town is also presented.

United States Standards for Grades of Frozen Fish Sticks (Effective August 21, 1956), 6 pp., processed. Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C., July 18, 1956. Includes product description and grades of frozen fried fish sticks, recommended weights and dimensions, factors of quality, definitions and methods of analysis, tolerances for certification of officially drawn samples, and score sheet for frozen fried fish sticks. The standards are designed to serve as a convenient basis for sales, for establishing quality control programs, and for determining loan values. They will also serve as a basis for the inspection of this commodity by the Federal inspection service.

Vitamin A₂ in Indian Fresh-Water Fish-Liver Oils, by S. Balasundaram, H. R. Cama, P. R. Sundaresan, and T. N. R. Varma, article, The Biochemical Journal, vol. 64, no. 1, September 1956, pp. 150-154, printed. Cambridge University Press, American Branch, 32 East 57th St., New York 22, N. Y.

(White Fish Authority) Report of the Advisory Panel on the Improvement of Retail Fish Sales, 43 pp., illus., printed, 1s. (14 U.S. cents). White Fish Authority, Tilbury House, Petty France, London, S.W. 1, England. The Panel's first report and accompanying appendices deal with the best methods of improving the appearance and selling efficiency of fishmongers' and fish friers' shops. The recommendations of this report are given in two sections. The first deals with general aspects of shop improvement, applicable to all types of fishmongers' shops. The second provides actual examples of progressive shop designs in the form of plans, drawings, and photographs. These designs illustrate the application of general principles to specific types of shop, for which three broad classifications are given.

