



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.
 SSR.- FISH. - SPECIAL SCIENTIFIC REPORT--FISHERIES (LIMITED DISTRIBUTION).
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number | Title |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFS-1986 | - Alabama Landings, December 1958, 2 pp. |
| CFS-1987 | - New Jersey Landings, 1958 Annual Summary, 5 pp. |
| CFS-1989 | - Texas Landings, December 1958, 3 pp. |
| CFS-1995 | - California Landings, October 1958, 4 pp. |
| CFS-2002 | - Frozen Fish Report, February 1959, 8 pp. |
| CFS-2003 | - Georgia Landings, January 1959, 2 pp. |
| CFS-2005 | - Fish Meal and Oil, January 1959, 2 pp. |
| CFS-2014 | - Shrimp Landings, October 1958, 6 pp. |
| CFS-2016 | - Packaged Fish, 1958 Annual Summary, 5 pp. |
| CFS-2020 | - Rhode Island Landings, October 1958, 3 pp. |
| CFS-2021 | - Canned Fish and Byproducts, 1958 Annual Summary, 21 pp. |
| CFS-2024 | - North Carolina Landings, February 1959, 3 pp. |
| FL-393 | - Fisheries of the United States and Alaska, 1958 (A Preliminary Review), by E. A. Power, 61 pp., illus., revised March 1959. A preliminary review of commercial fishery activities in 1958, well illustrated with graphs and charts. In addition to data on production, consumption, prices, manufactured fishery products, and supplies of certain fishery products, this leaflet contains information on fishery imports and exports, and world fisheries. |
| FL-473 | - A Simple Marine Vivarium, by Philip A. Butler, 4 pp., illus., December 1958. The author describes the equipment necessary, the stocking, and maintenance of a marine vivarium. A living exhibit of marine shore animals is an excellent way to stimulate student interest in the interactions of animal and plant communities and to demonstrate many fundamental concepts of biology. |
| Canned Fish Consumer Purchases: | |
| FL-478a | - December 1958, 32 pp. |
| FL-478b | - January 1959, 34 pp. |
| FL-478c | - February 1959, 34 pp. |

FL-479 - Eels, by John P. Wise, 4 pp., illus., revised January 1959 (Supersedes FL-127). Describes the natural history of the American and European eels. Not many eels are eaten in the United States, but Europeans have large and profitable fisheries for them and know many ways to prepare delicious dishes from eels.

FL-482 - High-Seas Fisheries of the U. S. S. R. 21 pp., illus., 1959. In describing the status and trends of the U. S. S. R.'s fishing industry, the author states that "The recent expansion of the fishing industry has been directed mainly toward the high-seas fisheries. Traditional Soviet fisheries have been conducted on a large scale in almost all major inland and coastal-marine waters. These waters, however, are believed to be fully exploited; it has also been reported that, in some lake and river fisheries, catches have been declining because of pollution, hydroelectric projects, and other factors. With long coastlines providing access to the rich fishing grounds of the Arctic, Atlantic, and Pacific Oceans, the Soviets are in a most advantageous position for expanding their high-seas fisheries." Developments in the Arctic- and Baltic-based operations and Far Eastern-based operations and descriptions of fishing vessels and equipment, foreign trade, international activities and research, and whaling are presented. Statistics are also included on the catch of fish and shellfish, by selected species, 1948 and 1953-56; marine landings at Arctic and Baltic ports, by fishing areas, 1956; number and type of fishing craft, 1940, 1948, 1953-56; imports of fishery products by principal countries of origin, 1955-57; and whale production in the Antarctic, 1953-54 to 1956-57.

SSR-Fish. No. 252 - Oceanographic Observations in the Central North Pacific, September 1954-August 1955, by James W. McGary and Edward D. Stroup, 261 pp., illus., January 1958.

SSR-Fish. No. 274 - Observations of Moulting Female King Crabs (*Paralithodes camtschatica*), by Henry M. Sakuda, 9 pp., illus., December 1958.

Sep. No. 548 - The Role of Holding Pounds in the Maine Lobster Industry.

Sep. No. 549 - Research in Service Laboratories (May 1959): Contains these articles--"Technical Note No. 53 - Utilization of Sea Cucumbers (*Holothurians*) as Food," "Fifteen Months Frozen Storage Possible for Pink Shrimp Investigations in Freezing Gulf Oysters."

Sep. No. 550 - Practical Method of Preventing a Purse-Seine Net from Sinking to Its Full Depth.

Research Facilities of the United States Fishery Laboratory, Beaufort, N. C., by Gerald B. Talbot, Circular 54, 11 pp., illus., printed. In 1900 Congress authorized construction of a permanent biological station on Pivers Island, across the channel from the town of Beaufort. The fishery station was opened for research in its new quarters in 1902 and has been in operation since that time. The author tells of the construction program that was begun in 1949 to modernize this historic marine research center and of the facilities for research which have been added. At the present time, the U. S. Bureau of Commercial Fisheries is conducting research at the fishery laboratory on the cause of fluctuations in abundance of shad, menhaden, striped bass, blue crab, and the methods of controlling and predicting size of populations. These projects are carried out in cooperation with state agencies and extend over the entire Atlantic coast. The radiobiological laboratory is conducting research in cooperation with the Atomic Energy Commission on accumulations of fission products and other radionuclides by marine organisms and the effect of these substances on utilization of seafood resources. Also, the role of trace elements in sea water is being studied in relation to the physiology and metabolism of marine plankton, larger marine invertebrate animals, and fish.

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

California Fishery Products Monthly Summary, February 1959; 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of tuna and tunalike fish and sardines; pack of canned tuna, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, San Diego, and Eureka areas; California imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; American Tuna Boat Association auction sales; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, February 1959, 12 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 for fresh- and salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the month indicated.

New England Fisheries--Monthly Summary, February 1959, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Reviews the principal New England fishery ports, and presents food fish landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut

(Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; for the month indicated.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, March 1959, 7 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Ore.) wholesale dealers; also Northwest Pacific halibut landings; and Washington shrimp landings; for the month indicated.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE NOT FOR GENERAL DISTRIBUTION, WRITE TO U. S. FISH AND WILDLIFE SERVICE, GULF FISHERY INVESTIGATIONS LIBRARY, GALVESTON, TEX., ABOUT THEM SINCE THAT ORGANIZATION DID THE TRANSLATING.

On the Chalky Deposits in Oysters, by Kojiro Tanaka, Fishery Investigation, Supplementary Report No. 4, 31 pp., processed, translation no. 8. (Imperial Fisheries Experimental Station, Tokyo, Japan.)

The Commercial Shrimp of Cuba (Los Camarones Comerciales de Cuba), Part I, Contribución No. 1 del Centro de Investigaciones Pesqueras (Banco de Fomento Agrícola e Industrial de Cuba), by Isabel Perez Farfante, translation no. 15, 16 pp., processed.

The Commercial Shrimp of Cuba (Los Camarones Comerciales de Cuba), Part 2, Contribución No. 6 del Centro de Investigaciones Pesqueras (Banco de Fomento Agrícola e Industrial de Cuba), by Isabel Perez Farfante, translation no. 13, 31 pp., processed.

On the Effect of the Concentration of Salt on the Chalky Deposits in Oysters, by Kojiro Tanaka; 3 pp., processed, translation no. 9. (Reprinted from Suisan Kenkyu-shi, Journal of Fisheries, vol. 38, no. 12, 1943, pp. 222-224.)

On the Organic Matter in Oyster Shells (Itabo and Kurochime), by Kojiro Tanaka, 2 pp., processed, translation no. 10. (Reprinted from Suisan Kenkyu-shi, Journal of Fisheries, vol. 38, no. 10, 1943, pp. 186-187.)

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE NOT FOR GENERAL DISTRIBUTION, WRITE TO U. S. FISH AND WILDLIFE SERVICE, FISHERY BIOLOGICAL LABORATORY, HONOLULU, HAWAII, ABOUT THEM SINCE THAT LABORATORY DID THE TRANSLATING.

Introduction of New Fishing Equipment--A Luminous Bait, by Yoshiaki Ikeda, 2 pp., processed. (Translation of reprint from Tuna Fishing, vol. 50, June 10, 1958, p. 23, Miura City, Japan.)

Report of Investigation of Tuna Long-Line Fishing, 7th Voyage of the IWAKI-MARU, 18 pp., processed, translation. (Fukushima Prefecture Fisheries Experiment Laboratory, Japan.)

Result of Tuna Long-Line Fishing Experiment in the Middle Indian Ocean, by Akiyoshi Kataoka,

8 pp., processed. (Translation of reprint from Journal of the Shimonoseki College of Fisheries, Shimonoseki City, Japan, vol. 8, no. 2, 1957, pp. 241-248.)

Results of Landings Survey on the Tuna, April 1955-March 1956, 135 pp., processed, translation. (Investigative Society of Tuna Fishery, Miura City, Japan.)

Serological Studies of the Races of Tuna (Fundamental Investigations of the Blood Groups of Albacore), by Akimi Suzuki, Y. Shimizu, and T. Morio, 12 pp., processed. (Translation of reprint from Report of the Nankai Regional Fisheries Research Laboratory, Kochi City, Japan, vol. 8, 1958, pp. 105-116.)

Study on Bait for Tuna Long-Line. I. An Artificial Bait of Latex-Sponge Like a Squid, by T. Koyama, 6 pp., processed. (Translation of reprint from Bulletin of the Tokai Regional Fisheries Research Laboratory, Tokyo, Japan, vol. 15, January 1957, pp. 89-94.)

A Study on the Distribution Sea Areas of Yellowfin and Bigeye Tunas, Which Have Different Ovary Maturity, by Shoichi Enokida, 3 pp., processed. (Translation of reprint from Tuna Fishing, vol. 50, June 10, 1958, pp. 19-21, Miura City, Japan.)

MISCELLANEOUS PUBLICATIONS

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

ALGAE:

Selected Bibliography on Algae, Nova Scotia Research Foundation No. 4, 109 pp., printed. Nova Scotia Research Foundation, Halifax, Nova Scotia, Canada, 1958.

AQUATIC BIOLOGY:

"Aquatic Biology," by George W. Bennett, article, A Century of Biological Research, Illinois Natural History Survey Bulletin, vol. 27, article 2, December 1958, pp. 163-178, illus., printed. Natural History Survey Division, Urbana, Ill. The author describes the development of research trends and results in aquatic biology, and traces many of the present-day management precepts in Illinois directly to the early investigations. Intensive Illinois investigations since 1938 are chronologically outlined to show the concrete results of accumulative research. The author concludes: "It is probable that within the next few decades great advances will be made in the management of fish populations for sport and commercial uses."

ARMY ENGINEERS:

Bridge Regulations Manual Governing the Operation of Drawbridges Across Navigable Waters of

the United States in U. S. Army Engineer District, Los Angeles, L. A. District Manual 1145-2-2, 10 pp., processed; Danger Zone Regulations Manual for Navigable Waters of the United States in U. S. Army Engineer District, Los Angeles, L. A. District Manual 1145-2-3, 14 pp., illus., processed; Navigation Regulations Manual for Navigable Waters of the United States in U. S. Army Engineer District, Los Angeles, L. A. District Manual 1145-2-4, 18 pp., illus., processed; and Anchorage Regulations Manual for Navigable Waters of the United States in U. S. Army Engineer District, Los Angeles, L. A. District Manual 1145-2-5, 44 pp., illus., processed. U. S. Army Engineer District, Los Angeles, Corps of Engineers, 751 South Figueroa St., Los Angeles 17, Calif., January 1, 1959. Regulations prescribed by the Secretary of the Army to govern the navigable waters of the United States in the Los Angeles district.

AUSTRALIA:

"The Shark Fishery of the Bass Straits (Australia)," by J. Bown, World Fishing, vol. 7, July 1958, pp., 54-56, printed. John Trundell (Publishers) Ltd., St. Richard's House, Eversholt St., London, N. W. 1, England.

BIOCHEMISTRY:

Plant Production in the Northern North Sea, by J. H. Steele, Scottish Home Department Marine Research No. 7, 1958, 36 pp., illus., printed, 10s.6d (about US\$1.47). Her Majesty's Stationery Office, 13A Castel St., Edinburgh 2, Scotland. Sampling for temperature, salinity, phosphate, oxygen, chlorophyll, and dry weights formed part of the surveys carried out in the northern North Sea area in 1954-56. This study presents the development of the theoretical model, together with its detailed relevance to certain positions in the area. Then a general chart of the expected values of yearly production is given for the area. In the second part, the results of sampling are discussed and the observed value of production are compared with the theory.

CANADA:

Annual Research Progress Report, 1956-57. Ontario Department of Lands and Forests, Division Research, Toronto, Ontario, Canada, 1958. The section of this book devoted to fisheries was prepared by N. S. Baldwin. Fisheries research projects, he reports, were largely confined to the Great Lakes and inland waters of Algonquin Park. In Lake Ontario the commercial catch sampling was expanded. Records of age, food, and maturity of fish taken were maintained.

The Biology of the Ringed Seal (PHOCA HISPIDA Schreber) in the Eastern Canadian Arctic, by I. McLaren, Bulletin No. 118, 97 pp., illus., printed, C\$1. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1958.

British Columbia Catch Statistics, 1958 (By Area and Type of Gear), 155 pp., illus., processed. Department of Fisheries of Canada, 1110 West Georgia St., Vancouver 5, B. C., Canada, February 6, 1959. The eighth annual report of fish-catch statistics for British Columbia based on Departmental copies of sales slips that are

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completed by all commercial fish buyers operating within the Province. The following information is contained in this report: summary of landings by district and total landed value of all fish; highlights of catch statistics--a general review of fishing by species, gear, and area; and detailed district and area monthly statistics by type of gear. The report is intended as a factual statement of catch and no attempt is made except in a general way to explain the success or failure of fishing operations. However, certain economic, weather and conservation factors that have a bearing on the catch are reviewed.

Commercial Fishing Licenses, British Columbia, 1958 (An Analysis of License Holders), 5 pp., processed. Department of Fisheries of Canada, 1110 West Georgia St., Vancouver 5, B. C., February 27, 1959. Statistics indicate that all types of commercial fishing licenses increased over 1957. This is attributed primarily to the fact that expectations for the 1958 salmon runs were high and actual returns reached record proportions.

The Commercial Salmon Fisheries of British Columbia, Statistical Basebook Series No. 3. Economics Service, Department of Fisheries of Canada, Ottawa, Canada. This is the third volume in a series of special publications designed to provide abstracts of basic statistical data on the Canadian fisheries in forms most convenient for ordinary reference. It contains the principal historical statistics of the salmon fisheries of British Columbia. The contents are divided into three main groups: catches or landings--quantities and values; products--output and distribution; and prices.

Eleventh Annual Report of the Fisheries Prices Support Board for the Year 1957-58, 9 pp., printed, 10 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, June 1958. Describes the Fisheries Price Support Act of 1957; operations of the Board; the Canadian fisheries and fisheries markets in 1957; and Board activities including fisheries salt assistance, fishermen's indemnity plan, and research.

Journal of the Fisheries Research Board of Canada, vol. 15, no. 6, November 1958, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. This issue, the second of two Fiftieth Anniversary issues, is devoted exclusively to the Biological Station, St. Andrews, New Brunswick. It consists of contributions from present or former members of the staff of that station and their collaborators. The first article in this issue also is an illustrated account of the history and present activities of the Station prepared by its Director. The first commemorative issue (see Commercial Fisheries Review, vol. 21, no. 2, February 1959) was devoted to the Biological Station, Nanaimo, British Columbia.

"Round Haddock Landings in Newfoundland: Quantity and Quality Relative to Gutted Haddock," by Wilfred Templeman and A. M. Fleming, article, Journal of the Fisheries Research Board

of Canada, vol. 15, July 1958, pp. 517-527, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

COD:

"The Effect of Various Lighting Conditions on the Efficiency of 'Candling' Cod Fillets for Detection of Parasites," by H. E. Power, article, Journal of the Fisheries Research Board of Canada, vol. 15, July 1958, pp. 537-542, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada.

"Researches on the Possibility of Obtaining Gelatine from Inedible Parts of Cod," by K. Czapke, article, Prace Morskiego Instytutu Rybackiego w Gdynia (Bulletin of the Marine Fisheries Institute of Gdynia), no. 7, 1954, pp. 241-244, printed in Polish. Morskiego Instytutu Rybackiego w Gdynia, Alejazjednoczenia 1, Gdynia, Poland.

CRAYFISH:

The Crayfishes of Maryland, by W. G. Meredith and F. J. Schwartz, 2 pp., illus., printed. (Reprinted from Maryland Tidewater News, vol. 15, no. 1, supplement no. 12, January-February 1959.) Maryland Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md. The authors discuss crayfish food, molting, regeneration, reproduction, economic importance, species in Maryland, and distribution of species.

"The Systematics and Distribution of Crayfishes in California," by J. A. Riegel, article, California Fish and Game, vol. 45, no. 1, January 1959, pp. 29-50, illus., printed. California Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif.

CURED FISH:

"Bacteria of Public Health Significance on White Fish Prior to Brining," by R. Spencer and D. L. Georgala, article, The Microbiology of Fish and Meat Curing Brines (Proceedings of the Second International Symposium of Food Microbiology, 1957), pp. 299-302, printed. Department of Scientific and Industrial Research, P. O. Box 569, London, S. E. 1, England, 1957.

DISINFECTANTS:

"Quaternary Ammonium Salts as Disinfectants in Mollusk Processing," by J. A. Romagosa, article, Anales de Bromatologia, vol. 9, 1957, pp. 405-407, in Spanish. Sociedad Espanola de Bromatologia, Ciudad Universitaria, Edificio Facultad de Farmacia, Madrid, Spain.

ECHO-SOUNDING:

Ultrasonic Reflection Loss of Fish--Shoal and Characteristics of the Reflected Wave, by T. Hashimoto and Y. Maniwa, pp. 113-139, processed. (Reprinted from Technical Report of Fishing Boat, March 1955.) Ministry of Agriculture, Fisheries and Food, Fisheries Laboratory, Lowestoft, England, 1957.

EELS:

Eels--A Biological Study, by Leon Bertin, 198 pp., illus., printed, 25s. (US\$3.50). Cleaver-Hume Press, Ltd., London, England, 1956.

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ELECTRICAL FISHING:

La Peche Electrique en Eau Douce (Electrical Fishing in Fresh Water), by J. A. Timmermans, Groenendaal Research Station Bulletin, Series D, no. 15, 42 pp., illus., printed in French with Dutch summary. Ministry of Agriculture Research Station, Groenendaal, Belgium, 1954.

"Behaviour of Refrigerated Fish Fillets After Irradiation With Ultraviolet Light," by A. Monzini and G. Botalla, article, Annali della Sperimentazione Agraria, vol. 10, 1956, pp. 1447-1455, in Italian. Ministero dell' Agricoltura e della Foreste, Rome, Italy.

FISH LIVER OILS:

"Utilization of the Liver Oil of Deep-Sea Sharks. XII--Preparation of Polymerized Product from Squalene. 1-Polymerization of Squalene with Acid Clay as the Catalyst," by Hideo Higashi, Shigeo Izeki, and Motoaki Asano, article, Nippon Suisangaku Kaishi, vol. 22, 1956-57, pp. 378-382, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

FISH MEAL:

"Fish Meal. 14--Drying of Seaweed," by G. M. Dreosti and A. M. Lewis, paper, Annual Report of the Fishing Industry Research Institute, vol. 9, no. 30, 1955-1956, printed. Fishing Industry Research Institute, Cape Town, South Africa, 1957.

FISH OILS:

"Bureau of Commercial Fisheries Oil Research Program," by Maurice E. Stansby and Charles Butler, article, Journal of the American Oil Chemists' Society, vol. 35, July 1958, pp. 8, 10, 11, 12, illus., printed. American Oil Chemists' Society, 35 E. Wacker Drive, Chicago 1, Ill.

"Deodorization of Fish Oil," by Takumi Shizuo, et al, Japan patent no. 284, January 20, 1956, printed in Japanese.

FISH POPULATIONS:

Handbook of Computations for Biological Statistics of Fish Populations, by William E. Ricker, 300 pp., printed, \$5.00. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1959. This book is a greatly expanded elaboration of the author's 1948 work, Methods of Estimating Vital Statistics of Fish Populations (Indiana University Science Series). It presents a review of the major contributions to date, excluding Russian and Japanese work. Topics covered include, among others, the following: estimation of survival rate from age composition; vital statistics from marking--one or more seasons, survival constant or variable; survival and rate of fishing estimation from relation of fishing success to catch or effort; stock and mortality estimation from catch statistics and qualitative composition; growth in length and weight; yield computation from given recruitment; relation of recruitment to adult stock size; and direct estimation of relation of equilibrium yield to size of stock and rate of fishing.

FISH SCALES:

"Fish Scales as Industrial Raw Material," by A. Michniewicz, article, Przemysl Spozywczy, vol. 9, 1955, pp. 326-327, printed in Polish. Przemysl Spozywczy, al. Niepodleglosci 188, Warsaw 12, Poland.

FISH SOLUBLES:

"Purchasing Guides Established for Two Ingredients," article, Feedstuffs, vol. 30, August 9, 1958, p. 40, printed. Miller Publishing Co., 118 S. 6th St., Minneapolis 2, Minn.

FOOD AND AGRICULTURE ORGANIZATION:

The Food and Agriculture Organization has published reports describing that Agency's activities under the Expanded Technical Assistance Program for developing the fisheries of many countries. These reports have not been published on a sales basis, but have been processed only for limited distribution to governments, libraries, and universities. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

Report on the Fisheries Industry in the Countries Served by the Caribbean Commission, FAO Report No. 781, 87 pp., processed, March 1958. This report discusses the increase of fish production; the development of local fish-marketing, including preservation; Government fishery administration; and the need for additional specialized technical assistance in these fields. The countries served by the Caribbean Commission include the French West Indies, the Dutch Windward Islands, the British Windward and Leeward Islands, Barbados, Trinidad, the Guianas, Puerto Rico, and the Virgin Islands. Topics covered are, among others, the following: analysis of the fisheries in the Caribbean area; methods of fish capture; inland fisheries and fish breeding; government departments and private undertakings; fish processing industries; fish marketing; and conclusions and recommendations.

Current Bibliography for Fisheries Sciences, vol. 1, no. 10, December 1958, 152 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

The Potential Contribution of Atomic Energy to Development in Agriculture and Related Industries, by R. A. Silow, 24 pp., printed. (Reprinted from The International Journal of Applied Radiation and Isotopes, vol. 3, 1958, pp. 257-280.) Atomic Energy Branch, Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy, August 1958. This survey includes, among others, sections on the use of radiation in food preservation and processing; and the significance of research in the development of agriculture and related industries. There are still many problems to be solved before this method of food preservation can become a commercial reality. The author concludes that, "research in agriculture, forestry, and fisheries must, because of the diffuse nature

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of these industries, be the responsibility of government, and only if governments recognize and assume that responsibility will those industries derive the benefits that atomic energy can undoubtedly bring to them."

FRANCE:

"Le Pays et la Peche Face au Marche Commun" (The Nation and the Fishing Industry Look at the Common Market), by Jules Molard, article, France Peche, vol. 4, no. 25, January 25, 1959, pp. 15-18, 50 illus., printed in French. France Peche, 84, Rue Carnot, Lorient, France.

Le Poisson, Aliment Naturel (The Fish, a Natural Food), 31 pp., illus., printed in French. Maquette de Claude Bourgeois, Dyna-Publicite et Pro-
gande, 50, rue Saint-Lazare, Paris (IX^e), France.

FREEZING:

"The Freezing of Fish--Failure and Success," by F. Slater Jackson, article, Contributions to Canadian Biology, vol. 1, no. 10-18, 1923, pp. 299-302, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada.

"Origen de los Procesos Industriales, Aplicados a la Produccion del Mar" (The Origin of Industrial Processes Applied to Fishery Products), by Valentin Paz Andrade, article, Revista del Frio (Refrigeration Review), vol. 3, February 1959, special issue, pp. 37-42, printed in Spanish. Centro Experimental del Frio, Serrano, 150, Madrid, Spain.

FREEZING FISH AT SEA:

"Continuous Freezing of Fish on Board Ship," by M. Sadorge, article, Proceedings of the Ninth International Congress on Refrigeration, pp. 4111-4115, printed. International Institute of Refrigeration, 177 Boulevard Malesherbes, Paris 17, France, 1955.

FRESH FISH:

"Fresh Fish. 2--Changes in Weight of Iced Hake During Dipping and Bulk Storage," by C. E. B. Cooper, article, Annual Report Fishing Industry Research Institute for April 11, 1956-December 31, 1956, vol. 10, p. 8, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

FROZEN FISH:

"Assessment of Storage Period of Frozen Fish," article, Report of the Food Investigation Board (Great Britain) for 1956, p. 12. British Information Services, 30 Rockefeller Plaza, New York 20, N. Y., 1957.

"Measurement of Toughness in Cold-Stored Fish," by R. M. Love, article, Nature, no. 182, July 12, 1958, pp. 108-109, printed. St. Martin's Press, Inc., 103 Park Avenue, New York 17, N. Y.

"Packaging Effects on Frozen Fish Palatability are Studied by Minnesota Researchers," by J. D. Winter and Shirley Trantanello, article, Quick Frozen Foods, vol. 20, July 1958, pp. 81-83, 159, printed. E. W. Williams Publications, Inc., 82 Wall St., New York 5, N. Y.

"Use of Antioxidants in the Storage of Frozen Fish," by R. R. Perepletchik, article, Rybnoe Khoziastvo, vol. 32, no. 10, 1956, pp. 80-86, printed in Russian. Rybnoe Khoziastvo, B 140 B Krasnosel'skaia, 17, Moscow, Russia.

FROZEN FOODS:

"Bacteriological Content of Marketed Precooked Frozen Foods in Relation to Public Health," by A. Doreen Ross and F. A. Thatcher, article, Food Technology, vol. 12, July 1958, pp. 369-371, printed. The Garrard Press, 510 North Hickory, Champaign, Ill.

FUR SEALS:

The Romance of the Alaska Fur Seal, 48 pp., illus., printed. Fouke Fur Co., 1328 So. Kings-highway, St. Louis 10, Mo., 1958. An attractive booklet, illustrated with drawings, describing the history of Alaska, the natural history of the fur seal, and life on the Pribilof Islands. The story of the fur seal is, "a story of success in the conservation of a renewable resource which was once threatened with extinction but today returns a substantial income, both to the fur industry and to our Government."

GEAR:

"Description of the Fishery with Large Traps," by E. Schlieker, article, Deutsche Fischerei Zeitung, vol. 4, no. 5, May 1957, p. 129, printed in German. Deutsche Fischerei Zeitung, Friedrichshagen, Müggelseedamm 310, East Berlin, Germany.

"Lath-Spacing in Lobster Traps," by W. Templeman, article, Progress Reports of the Atlantic Coast Stations, no. 69, pp. 22-27, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada, May 1958.

"Study on the Fishing Capacities of Purse Seines. III--On the Difference Between Cotton and Kyokurin Purse Seines," by Yunosuke Itaka, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, nos. 7 & 8, 1957, pp. 344-347, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-Kaigandori 6-chome, Tokyo, Japan.

GHANA:

Report of the Fisheries Department, 1957, by F. R. Johnson, 22 pp., illus., printed, 2s. 6d. (58 U. S. cents). Government Printer, Accra, Ghana, 1958. This report, which covers calendar year 1957, describes the activities of the Fisheries Department as follows: (1) sea fisheries, including among others, sections on motor fishing vessels, fishing centers, the trawl catch, line fishing, and set nets; and (2) river fisheries, including among others sections on Northern Ghana, stocking and fish culture, and the oyster fishery. Included in this year's report are tables and graphs pertaining to trawl and line catches.

HERRING:

Herring (CLUPEA HARENGUS L.) in Aquaria. I--Establishment, by B. B. Parrish, J. H. S. Blaxter, and F. G. T. Holliday, Scottish Home

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

Department Marine Research No. 5, 1958, 11 pp., illus., printed, 5s. (70 U. S. cents). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland. The main stages in the establishment of individuals of a species in an aquarium are: (1) capture; (2) transport to the aquarium; (3) initial establishment; and (4) maintenance and feeding after establishment. The authors describe, with the aid of diagrams and photographs, the best methods of capture, tank construction, and means of feeding. Most of the fish used for these experiments were caught by beach seine. Terramycin was used in the tanks to prevent infection.

Herring (CLUPEA HARENGUS L.) in Aquaria.

II--Feeding, by J. H. S. Blaxter and F. G. T. Holliday, Scottish Home Department Marine Research No. 6, 1958, 22 pp., illus., printed, 6s. (84 U. S. cents). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland. One of the difficulties in establishing herring in aquaria is to induce the fish to feed. Those foods used most successfully were chopped squid, mussel, and limpet. The authors describe the behavior during feeding; quantity consumed; selection of food; effect of low temperature; rate of passage of food through the gut; and the effects of light, noise, and tagging on feeding.

ICE:

"The Washing of Used Ice with Sea Water," by D. L. Georgala, article, Annual Report, Fishing Industry Research Institute 1957, vol. 11, p. 12, illus., printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1958.

ICELAND:

Frequency and Distribution of Post-Larval Stages of Herring (CLUPEA HARENGUS L.) in Icelandic Waters, by Hermann Einarsson, 38 pp., illus., printed in English. (Reprinted from Rit Fiskideildar, vol. 2, no. 4.) The University Research Institute, Department of Fisheries, Borgartún 7, Reykjavik, Iceland, 1956.

Skarkolinn (PLEURONECTES PLATESSA L.) i Hamarsfirdi (The Plaice in Hamarsfjord), by Hermann Einarsson, 20 pp., illus., printed in Icelandic with English summary. (Reprinted from Rit Fiskideildar, vol. 2, no. 3. The University Research Institute, Department of Fisheries, Borgartun 7, Reykjavik, Iceland, 1956.

ICING:

"Effect of Sodium Nitrite-Containing Ice on Storage Life and Quality of Baltic Haddock," by Jozef Borowik, Ewa Fischer, Stanislaw Ostrowski, and Piotr Trzesinski, article, Przemysl Spozywczy, vol. 10, 1956, pp. 282-283, printed. Przemysl Spozywczy, al. Niepodleglosci 188, Warsaw 12, Poland.

INTERNATIONAL COMMISSIONS:

(International North Pacific Fisheries Commission) Proceedings of the Fifth Annual Meeting, 1958 (Tokyo, Japan, November 4-10, 1958), 143 pp., processed. International North Pacific Fisheries Commission, 209 Wesbrook Bldg.,

University of British Columbia, Vancouver 8, B. C., Canada. Contains the agenda, list of participants, minutes of sessions, and committee reports for the fifth annual meeting of the Commission. The appendixes present, among others, papers on distribution of chum, pink, and sockeye salmon; results of deep-sea salmon tagging by the United States; review by Japan of the data obtained from high-seas tagging carried out by the United States and Japan; offshore distribution and experimental fishing; plans for oceanographic work in 1959; and future plans for king crab research.

ITALY:

Statistica della Pesca e della Caccia, 1958 (Fishing and Hunting Statistics, 1958), 130 pp., illus., printed, in Italian. Istituto Centrale di Statistica, Rome, Italy, 1958. This report presents data on 1957 landings of fish and shellfish, markets and wholesale prices, and number and types of fishing vessels.

JAPAN:

Annual Report of Catch Statistics on Fishery and Aquiculture, 1957, Agriculture, Forestry, and Fishery Statistics Bulletin 33-23, 498 pp., illus., printed in Japanese and English. Association of Agriculture-Forestry Statistics, No. 4, 1-chome, Onden, Shibuya-ku, Tokyo, Japan, December 1958. Contains statistical information on the 1956 production of marine fisheries--whaling, factoryship type of pelagic fisheries on high seas, and domestic marine fisheries; culture in shallow seas; inland water fisheries and fish culture; and processing. Also presents market prices of fishery commodities, estimated value of catch, and consumption of petroleum products for fisheries.

Forecast of Spring Sardine Fishery in Northern Japan Sea, translated by I. Yamanaka, 14 pp. Japan Sea Regional Fisheries Research Laboratory, Niigata, Japan, April 3, 1958.

LAMPREY:

Lampreys of West Virginia, by Frank J. Schwartz, miscellaneous publication, 2 pp., illus., printed, (Reprinted from West Virginia Conservation, February 1958, pp. 8-9.) Department of Research & Education, Solomons, Md.;

LAW OF THE SEA:

"Le Situation Juridique des Pecheries Sedentaires en Haute-Mer" (The Juridical Position of the Non-Migratory Fisheries on the High Seas), by Alexandre Papandreou, article, Revue Hellenique de Droit International, 1958, vol. 153, 12 pp., printed in French. Greek Review of International Law, Athens, Greece. This work, written as a doctoral thesis at the University of Geneva, brings together and analyzes the views of writers on the subject of international fishery law. It also presents some leading examples of state practice. The author observes that "the possession of special rights by a single state over a sedentary fishery in the high seas necessarily derogates from the general freedom of the seas"

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

LINGCOD:

"A Review of the Lingcod, *Ophiodon elongatus*," by J. B. Phillips, article, California Fish and Game, vol. 45, no. 1, January 1959, pp. 19-27, illus., printed. California Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif.

LOBSTERS:

The Occurrence of *NICOTHOE ASTACI* Audouin and Milne Edwards on Scottish Lobsters, by James Mason, Scottish Home Department Marine Research No. 9, 1958, 8 pp., illus., printed, 3s. 4d. (about 47 U. S. cents). Her Majesty's Stationery Office, 13 A Castle St., Edinburgh 2, Scotland.

"Studies on the Black Discoloration of Lobster. III--On the Control of Blackening," by Daiichi Kakimoto and Akio Kanazawa, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, nos. 7 & 8, 1957, pp. 454-457, printed in Japanese with English summary. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-Kaigandori 6-chome, Tokyo, Japan.

MACKEREL:

The Comparative Osteology of the Scombroid Fishes of the Genus *SCOMBEROMORUS* from Florida, by Francisco Mago Leccia, Contribution No. 219, 43 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 8, no. 4, December 1958, pp. 229-341.) The Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Virginia Key, Miami, Fla.

MARINE ALGAE:

"Studies of the Savor of Marine Algae. III--Contents of Free Amino Acids in the Laver, *Porphyra Tenera*," by Yasuhiko Tsuchiya and Takashi Sasaki, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 4, 1957, pp. 230-233, printed in Japanese with English synopsis. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori, 6-chome, Tokyo, Japan.

MARINE SCIENCE:

Studies on the Radioactive Marine Organisms (especially *KATSUWONUS VAGANS*) caused by Nuclear Detonation, by Tsu Otanimachi, illus., reprinted in Japanese with English summary. (Reprinted from Journal of the Faculty of Fisheries, vol. 2, no. 2, July 20, 1956, pp. 43-96.) Prefectural University of Mie, Mie Prefecture, Japan.

MARYLAND:

(Maryland Department of Research and Education) Annual Report, 1957, by L. Eugene Cronin, 38 pp., illus., printed. (Reprinted from Fourteenth Annual Report, Maryland Board of Natural Resources.) Chesapeake Biological Laboratory, Solomons, Md., August 1958. Brief summaries of most of the current activities and accomplishments of the Department are presented. The sections of this report concerned with fisheries contain summaries of work deal-

ing with the Chesapeake Bay studies, hydrography, Chincoteague Bay studies, and Inland Resources Division. Details are presented on oysters, clams, crabs, white perch, fish egg studies, fresh-water fish distributional study, yellow-perch studies, Patuxent River fishes, striped bass studies, and commercial catch program.

MIDWATER TRAWLING:

"An Experiment on a Midwater Trawl. IV--On its Mechanism and a Trial Practice," by Kii-chiro Kobayashi, article, Bulletin of the Faculty of Fisheries Hokkaido University, vol. 7, no. 1, May 1956, pp. 21-30, printed in Japanese with English abstract. Faculty of Fisheries (Hakodate) Hokkaido University, Hokkaido, Japan.

NIGERIA:

Annual Report of the Fisheries Department of the Eastern Region of Nigeria for the Year 1956-57, 8 pp., printed, 1s. (14 U. S. cents). The Government Printer, Enugu, Eastern Region of Nigeria, 1959. This report covers reorganization of the Fisheries Department, Gold Coast canoes, fish ponds, the fish farm at Umuna, the fishing stations at Finitasingi and Mpanak, and investigation of bases for powered sea-fishing boats.

NUTRITION:

"The In Vitro Digestibility and Nutritional Quality of Dehydrated Beef, Fish, and Beans," by Richard R. Adachi, Leonard Sheffner, and Harry Spector, article, Food Research, vol. 23, July-August 1958, pp. 401-406, printed. Department of Food Technology, University of California, Davis, Calif.

OCEANOGRAPHY:

The Gulf Stream (A Physical and Dynamical Description), by Henry Stommel, 202 pp., illus., printed, \$6. University of California Press, Berkeley, Calif., 1959.

Oceanography and Marine Biology (A Book of Techniques), by H. Barnes, 218 pp., illus., printed, \$7. The Macmillan Co., 60 - 5th Ave., New York 11, N. Y., 1959.

OYSTER SHELL:

Unused Oyster Shell in South Carolina Suitable for Seed Oyster Production, by G. Robert Lunz, 8 pp., illus., printed. (Reprinted from Proceedings of the National Shellfisheries Association, vol. 48, 1958, pp. 44-51.) Bears Bluff Laboratories, Wadmalaw Island, S. C., March 1959. Although South Carolina now has a surplus of cultch from the steam canneries, this may dwindle as an export seed oyster industry develops. A possible substitute is to be found in old oyster shell thrown up on the banks of many South Carolina creeks and rivers by wave action and storms. In view of the increased interest in seed oyster production for out-of-State markets, and the possible shortage of steamed shell as the seed oyster industry develops, the author has presented some comparative data on the spatfall on washed and steamed shell.

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

OYSTERS:

"Le Commerce des Huîtres en France" (The French Oyster Market), by Charles Hervé, article, *La Pêche Maritime*, vol. 38, no. 971, February 1959, p. 78, printed in French. *La Pêche Maritime*, 190, Boulevard Haussmann, Paris, France.

"L'Ostréiculture dans le Bassin d'Arcachon" (Oyster Culture in the Arcachon Basin), by I. G. Antoune, article, *La Pêche Maritime*, vol. 38, no. 971, February 1959, pp. 79-86, illus., printed in French. *La Pêche Maritime*, 190 Boulevard Haussmann, Paris, France.

PACKAGED FOODS:

"Enzymatic Oxygen Removal from Packaged Foods," by Don Scott, article, *Food Technology*, vol. 12, July 1958, pp. 7-8, 11, 13-17, printed. The Garrard Press, 510 North Hickory, Champaign, Ill.

PUERTO RICO:

Recent Fish Records from Puerto Rico, by Donald S. Erdman, 26 pp., printed. (Reprinted from *Bulletin of Marine Science of the Gulf and Caribbean*, vol. 6, no. 4, December 1956, pp. 315-340.) Department of Agriculture and Commerce, San Juan, Puerto Rico.

QUALITY:

"Chemical Examination of Freshness of Fish," by J. Wierzchowski, article, *Food*, vol. 26, no. 305, February 1957, p. 85, printed, translated. Tothill Press, Ltd., 33 Tothill St., Westminster, London, S. W. 1, England.

"Grading Fish for Quality. 3--Grading of Recently Cut Fillets," by C. H. Castell and Maxine F. Greenough, article, *Journal of the Fisheries Research Board of Canada*, vol. 15, July 1958, pp. 729-748, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Objective Spoilage Tests for Fish Stored under Conditions Other than Normal Chilling in Ice," by A. F. M. G. Luijpen, article, *Journal of the Science of Food and Agriculture*, vol. 9, July 1958, pp. 410-417, printed. Society of Chemical Industry, 14 Gelgrave Square, London, S. W. 1, England.

REFRIGERATION:

Directory of Public Refrigerated Warehouses, 1959 (Perishable Food Industry's Guide), 144 pp., printed. National Association of Refrigerated Warehouses, Tower Bldg., Washington 5, D. C. Contains complete up-to-date listings of the organization, services, and facilities of all NARW member companies (specializing in the safe storage of perishable commodities requiring freezer or cooler service) operating throughout the United States, its possessions, and various foreign countries.

REFRIGERATION AND FREEZING:

Un Demi-Siècle d'Activités Frigorifiques Internationales, 1908-1958 (Half a Century of International Refrigeration Activity), 91 pp., illus., printed in French and English. International

Institute of Refrigeration, 177, Boulevard Malesherbes, Paris (17^e), France. This report outlines the creation and activity of the first International Congress of Refrigeration, the International Association of Refrigeration, and the present International Institute of Refrigeration. The results of 50 years of activity in the organization are presented with plans for the future. It also presents the Agreement Concerning the International Institute of Refrigeration.

SALMON:

Wealth of the River, second edition, revised, 18 pp., printed. Columbia Basin Fisheries Development Association, Astoria, Ore. This pamphlet presents facts concerning the Columbia River salmon industry and petitions for the conservation of this industry. It is submitted with reference to proposals to construct various high dams on the Columbia River and its tributaries.

SALT HERRING:

"The Effect of Ascorbic Acid on the Autoxidation of Fats. Experiments with Salt Herring," by R. Marcuse, article, *Fette, Seifen, Anstrichmittel*, vol. 58, 1956, pp. 1063-1066, printed in German. Deutsche Gesellschaft für Fettwissenschaft, Industrieverlag von Herhausen K. G., 24 Rödingsmarkt, Hamburg 11, Germany.

SCOTLAND:

Lobster and Crab Fisheries in Scotland, by H. J. Thomas, Scottish Home Department Marine Research No. 8, 1958, 107 pp., illus., printed, £ 1 12s. 6d. (about US\$4.56). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland. The catching of shellfish is an important element in the economy of the inshore fishing industry of Scotland. The author discusses materials and methods used in this investigation, fishing equipment and practices, landings and effort in the 22 fishery districts, storage and marketing, costs and profits, and biometrics. He concludes that landings of lobsters in Scotland are at a high level, being above the average for the last 60 years. Landings of crabs are currently at their highest level for the past 56 years. This is largely attributable to the recent establishment of processing plants.

SEAWEEDS:

"The Water and Iodine Contents of Some Pacific Coast Kelps," by A. T. Cameron, article, *Contributions to Canadian Biology* (Supplement to the 5th Annual Report of the Department of Naval Service, Fisheries Branch), Sessional Paper No. 38a, 1916, pp. 169-173, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada.

SHELLFISH ENEMIES:

"Condylostoma--An Enemy of Bivalve Larvae," by V. L. Loosanoff, article, *Science*, vol. 129, no. 3342, January 16, 1959, p. 147, illus., printed. American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D. C.

SHRIMP:

"The Effect of Washing on the Darkening of Cold-Stored Shrimp," by S. Asakawa, article,

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

Refrigeration, vol. 31, no. 350, December 1956, p. 23, printed in Japanese. Nihon Reito Kyokai (Japanese Society of Refrigeration), No. 3, 1-chome, Ginza Nishi, Chuo-Ku, Tokyo, Japan.

"A Material of Many Uses That Can Be Obtained from Shrimp Shells," article, Chemical Processing, vol. 19, p. 53, August 1956, printed. Putnam Publishing Company, 111 E. Delaware Place, Chicago, Ill.

Notes on the Biology of the Common Prawn, PALAEON SERRATUS (Pennant), by H. A. Cole, Fishery Investigations, series 2, vol. 22, no. 5, 22 pp., illus., printed, 6s. (84 U. S. cents). Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1958. Growth and breeding of Palaemon serratus (Pennant) in North Wales is described from the examination of about 12,000 specimens. Growth patterns in the third and subsequent summers were not so clear but it seems probable that many prawns live for 4 full years with some reaching or exceeding 5 years. There was a correlation between size and age of females and earliness of spawning and hatching of eggs.

"Shrimp Comeback," by Percy Viosca, Jr., article, Louisiana Conservationist, vol. 11, no. 2, February 1959, pp. 2-4, illus., printed. Louisiana Wild Life and Fisheries Commission, 126 Civil Courts Bldg., New Orleans 16, La. The author discusses the decline in the white shrimp fishery of Louisiana and its comeback in 1958. Considering the white and brown shrimp combined, he states that "approximately twice the tonnage was produced with about half the effort and expense in 1958, immediately after the season opened, as compared with 1957. The result was about 4 times the tonnage and 5 times the value for the same unit of effort." Graphs showing the comparative landings for 1956, 1957, and 1958 for both brown and white shrimp are included.

SPINY LOBSTERS:

"Rock Lobster. 1--Pasteurized Rock Lobster Tails," by G. M. Dreosti, and R. P. van der Merwe, article, Annual Report Fishing Industry Research Institute for April-December 1956, vol. 10, p. 15. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

SPOILAGE:

"Studies on Putrefaction of Aquatic Products. XXIV--On Spoilage of Some Shellfishes," by Wataru Simidu and Sigeyuki Hibiki, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 5, 1957, pp. 255-259, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-Kaigandori 6-chome, Tokyo, Japan.

TRADE LIST:

The Bureau of Foreign Commerce, U. S. Department of Commerce, Washington 25, D. C., has published the following mimeographed trade list. Copies may be obtained by firms in the United States from that office or from Department of Commerce field offices at \$2 each.

Canneries--New Zealand, 3 pp., (December 1958). Lists the names of canneries and addresses and types of products handled. Includes fish and shellfish canneries.

TUNA:

"Lipids of the Muscle of Tuna, Thynnus orientalis, Lecithins of the Dark-Colored and Ordinary Muscles," by Hisanao Igarashi, Koichi Zama, and Muneo Katada, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 5, 1957, in Japanese with English summaries. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-Kaigandori 6-chome, Tokyo, Japan.

TURKEY:

"About the Technical Problems of our Fish Canning Industry (Part II)," by A. Baki Uğur, article, Balik ve Balıkçılık (Fish and Fishery), vol. 7, no. 3, March 1959, pp. 12-15, printed in Turkish. Balik ve Balıkçılık, Kat 5, Yeni Valde Han, Sirkeci, Istanbul, Turkey.

"The Activities of the Hydrobiological Research Institute in 1958 (Part I)," by Recai Ermin, article, Balik ve Balıkçılık (Fish and Fishery), vol. 7, no. 3, March 1959, pp. 8-9, illus., printed in Turkish. Balik ve Balıkçılık, Kat 5, Yeni Valde Han, Sirkeci, Istanbul, Turkey. The author describes, with the aid of photographs, research on sardines, mackerel, and Spanish mackerel.

Balik ve Balıkçılık (Fish and Fishery), vol. 7 no. 2, February 1959, 32 pp., illus., printed in Turkish, Balik ve Balıkçılık, Kat 5, Yeni Valde Han, Sirkeci, Istanbul, Turkey. Contains, among others, the following articles: "About the Middle-Sea Trawls" (discusses trials made in Turkey and the advantages of this type of net), by M. İham Artüz; "Delicatessen made from Fish" (explains the methods of preparing hamburgers from bonito), O. N. Koçtürk; "The Proteins and Its Denaturation in Fishes," by Bedia Taneri; "About the Technical Problems of Our Fish Canning Industry" (analyzes the problems met in the Turkish fish-canning industry), by A. Baki Uğur; and "About the Tuna Catch."

TWINE:

A Comparison Between Canadian, British and Japanese Nylon Gill-Net Twines, by P. J. G. Carrothers; Circular No. 51, 14 pp., illus., processed. Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada. Describes the qualitative and quantitative properties of several Canadian, British, and Japanese nylon twines. Details are presented on twine construction, twist angle, diameter, equivalent yarn area, runnage, equivalent yarn runnage, strength, coefficient of strength variation, breaking length, strength decrease on wetting, knot strength efficiency, extension at rupture, and toughness index. Physical properties of the twines tested are shown in six tables. The author believes that, "Generally speaking, the new Japanese twines are not appreciably different from their Canadian and British counterparts."

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UNION OF SOUTH AFRICA:

The South African Fishing Handbook and Buyers' Guide 1958/59, 210 pp., illus., printed, £2 2s. (US\$5.90). Odhams Press, South Africa (Pty.) Ltd., P. O. Box 4245, Cape Town, Union of South Africa. This book contains a wealth of detail on the Union of South Africa and South-West Africa fisheries and fishing industry. Included are landings of trawler fish; fish catch; fish processing plants; technical progress in the industry; South Africa's place in the world's fish trade; fishing companies; fish products; details of fishing vessels; list of fish species; legal minimum

size limits of fish; organizations serving the industry; Who's Who in the industry; classified buyer's guide; list of vessels; suppliers of fuel.

The South African Pilchard (SARDINOPS OCEL-LATA) and Maasbanker (TRACHURUS TRACHURUS). The Predation of Sea Birds in the Commercial Fishery, by D. H. Davies, Investigational Report No. 31, 16 pp., illus., printed. (Reprinted from Commerce and Industry, June 1958.) Department of Commerce and Industries, Division of Fisheries, Pretoria, Union of South Africa.



SYNTHETIC FABRIC CLOTHING TO REPLACE OILSKINS

Application for patent rights on a new type of fabric to be made into protective clothing for fishermen has been filed in the United Kingdom. The new fabric made of synthetic materials is stated to eliminate the need to wear oilskins, and life jackets which are bulky and restrict the freedom of movement to work. The new material is buoyant, retains body warmth, keeps a man afloat if he is washed overboard, and increases the chances of survival in cold seas. It is stated to cost 30 percent more than a first-class oilskin. (The Fishing News, May 17, 1957.)

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