



# 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-1340  | - Massachusetts Landings (By Gear and Subarea), 1955 Annual Summary, 16 pp.  |
| CFS-1369  | - Florida Landings, April 1956, 6 pp.  |
| CFS-1382  | - Fisheries of the United States and Alaska, 1954 Annual Summary, 12 pp.   |
| CFS-1385  | - Texas Landings, June 1956, 3 pp.   |
| CFS-1386  | - North Carolina Landings, June 1956, 3 pp.  |
| CFS-1387  | - Georgia Landings, June 1956, 2 pp.   |
| CFS-1388  | - Shrimp Landings, June 1956, 4 pp.  |
| CFS-1391  | - California Landings, April 1956, 4 pp.   |
| CFS-1393  | - New York Landings, June 1956, 4 pp.  |
| CFS-1394  | - New Jersey Landings, June 1956, 4 pp.  |
| CFS-1395  | - Rhode Island Landings, June 1956, 3 pp.  |
| CFS-1396  | - Maine Landings, June 1956, 4 pp.   |
| FL -336cc | - Commercial Fisheries Outlook, July-September (1956), 36 pp.  |
| FL - 427  | - Cold Storage Design and Refrigeration Equipment (Part I - Refrigeration of Fish), by Charles Butler, Joseph W. Slavin, Max Patashnik, and F. Bruce Sanford, 146 pp., illus., processed, June 1956. Part I in a series of five leaflets on the refrigeration of fish. The first section of this leaflet is concerned with design and construction of single and multi-story cold-storage warehouses, the economics governing the type of construction and design selected, and that amount of technical data required for guidance of the processor in his choice. The second section is concerned with refrigeration equipment. A resume of the equipment available and the respective advantages and disadvantages for specific tasks is given. The third section develops the refrigeration requirements as affected by the type of load; the various freezing methods presently in use are then described and evaluated. Information on particular illustrative systems of freez- |

ing and of their respective freezing rates is presented.

SL - 15 - Wholesale Dealers in Fishery Products, Georgia, 1956 (Revised), 2 pp.

SSR-Fish. No. 179 - Sonic Equipment for Tracking Individual Fish, by Parker S. Trefethen, 14 pp., illus., processed, June 1956. Special sonic devices are being developed for obtaining detailed information on individual fish behavior. A miniature underwater sonic tag is attached to an adult salmon and the movements of the fish are observed on calibrated sonic receiving equipment. The position of the fish can be pinpointed, and movements plotted for periods of time up to 100 hours. The equipment can be used in varied hydraulic conditions and in fresh or salt water to track the movements of adult fish and other aquatic animals. The transducer is attached behind the dorsal fin of adult salmon by a nickel-chromium "hog-ring" clamped into the back with special pliers. It is attached underwater without handling or immobilizing the fish. Visual observations indicate that the transducer does not affect the natural movements of an adult salmon.

SSR-Fish. No. 181 - Underwater Telemeter for Depth and Temperature, by F. H. Stephens, Jr., and F. J. Shea, 23 pp., illus., processed, June 1956. This report describes the construction of a telemetering depth-measuring instrument to be used with midwater trawling devices in exploratory fishing and gear research. The objective in developing an instrument of this type is to enable the research fishing vessel to lower the midwater trawl to the exact depth zone where concentrations of fish occur, as determined by echo-sounding equipment.

Sep. No. 447 - Development of the Pacific Coast Ocean Shrimp Fishery.

Sep. No. 448 - New Products from Fish Oils: Part II - Polyamino Fatty Acids Derived from Fish Oils.

Sep. No. 449 - Research in Service Laboratories (September 1956): Contains these short articles-- "Tentative Method for Determining Coating Content of Frozen Fried Fish Sticks;" "Federal Specification for Chilled and Frozen Crab Meat;" "Prospects of Utilizing Lithium Salts of Fatty Acids from Fish Oils in Lubricating Greases."

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

California Fishery Products Monthly Summary, July 1956, 10 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, and squid; pack of canned tuna, mackerel, herring, anchovies, and squid; market fish receipts at San Pedro.

(Chicago) June 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 month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, July 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 month indicated.

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

(New York) Monthly Summary - June 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 month indicated.

Landings and Prices of Fishery Products, Boston Fish Pier, 1955 (Includes "Trends in the Fishing Industry at Boston"), by John J. O'Brien, 22 pp., illus., processed, 1956. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Fish marketing trends and conditions in Boston for 1955 are discussed. Detailed data on landings and ex-vessel prices of fish and shellfish at the Boston Fish Pier during 1955 are presented. Statistics are given by months and species and by type of gear, together with comparative data for previous years.

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Growth, Migrations, Spawning and Size Distribution of Shrimp PENAEUS SETIFERUS, by Milton J. Lindner and William W. Anderson, Fishery Bulletin 106 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 56), 94 pp., illus., printed, 50 cents, 1956.

This is a Pondfish Hatchery (Rearing and Distributing Warm-Water Fish to Help Maintain Sport Fishing), Circular 40, 2 pp., illus., printed, 5 cents, 1956.

Wetlands of the United States (Their Extent and Their Value to Waterfowl and Other Wildlife), by Samuel P. Shaw and C. Gordon Fredine, Circular 39, 72 pp., illus., printed, \$1, 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 PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

"Animal Sounds in the Sea," by Marie Poland Fish, Scientific American, vol. 194, no. 4, April 1956, pp. 93-95, 97-98, 100, 102, illus., printed, single copy 50 cents. Scientific American, 415 Madison Ave., New York 17, N. Y. During World War II underwater-sound men were puzzled to hear weird noises that were not made by ships. Now it is known that many marine species emit, among other sounds, chirps, whistles, grunts, and groans. The author describes in this article a study of the different sounds made by some fish and shellfish and how the sounds are made.

"Behavior of Fishes, Especially Concurrence of Reflectorial and Psychological Reactions in Electric Fishing," by Friedrich Schiemenz, Zeitschrift F. Fischerei, No. 5/6, 1952, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

(California) Statistical Report of Fresh, Canned, Cured, and Manufactured Fishery Products--Year 1955, Circular No. 30, 15 pp., printed. Marine Fisheries Branch, Department of Fish and Game, Sacramento 14, Calif., 1956. This is the 30th consecutive statistical report of fresh and processed fishery products produced in California. Through the annual publication of these figures, the State Legislature, commissioners, members of industry, sportsmen and other interested individuals and groups can obtain a picture of trends and developments. The tables are basically the same as in previous years. Two changes are included in this report. One involves a table which shows quantities of fish caught by sport anglers and processed for their use. In addition, the sole catch has been divided into its various components. The added table on processed sport fish shows only reported figures. Some of the processors did not separate the processed sport fish on their reports. In these instances the pack could not be extracted. The processing of sport fish is a growing industry. It enables the sportsman to preserve his catch for his own future use and thus eliminate waste. Landings of each species of fish, mollusk, and crustacean by the commercial fishing fleet are recorded in pounds. These landings are separated into seven general regions

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and totaled Statewide. General origin of the commercial catch and the volume of shipments are recorded. Shipment figures represent fish received for canning and processing. Total case pack is listed for each variety of fish according to container size and type of pack. The pack is kept separate for the Los Angeles and San Diego districts and for Central California. The latter includes all the area from the San Luis Obispo-Santa Barbara County line to the State's northern boundary. Most of the canning reported in the Central California category, however, is from Monterey and the San Francisco Bay area. Other fishery products processed in California are recorded. The combined volume of canned and smoked sport-caught fish is listed. All the information on production used in these tables is obtained from monthly and annual reports submitted by the industry. Sardine landings and the products manufactured are recorded. Total annual case pack of anchovy, tuna, bonito, and yellowtail in various sizes of containers has been equated to the most common pack size for each variety.

(Canada) Journal of the Fisheries Research Board of Canada, vol. 13, no. 3, May 1956, pp. 273-448, illus., printed. Fisheries Research Board of Canada, Ottawa, Canada. Contains, among others, the following articles: "Spoilage of Fish in the Vessels at Sea: 4. Effect of Removal of Gills on Rate of Spoilage," by C. H. Castell and Maxine F. Greenough; "The Behaviour of Migrating Pink and Chum Salmon Fry," by William S. Hoar; "Interspecific Competition and Population Control in Freshwater Fish," by P. A. Larkin; "On the Specific Identity of the Larval *Porrocaecum* (Nematoda) in Atlantic Cod," by D. M. Scott; "Climatic Trends and Fluctuations in Yield of Marine Fisheries of the Northeast Pacific," by K. S. Ketchen; and "An Investigation of the Electrical 'Spike' Potentials Produced by the Sea Lamprey (*Petromyzon marinus*) in the Water Surrounding the Head Region," by H. Kleerekoper and Kira Sibakin.

(Connecticut) Report of the Shell-Fish Commissioners (July 1953-July 1955), 18 pp., printed. Connecticut Shell-Fish Commission, 185 Church St., New Haven, Conn., 1955.

"Contribution to Study of Size, Age and Growth of the Sardine (*Sardina pilchardus* Walbaum) from the Eastern Coasts of Spain," by B. Andreu, Roda J. Rodriguez, and M. Gomez Larranete, Publicaciones del Instituto de Biología Aplicada, Barcelona, 7, pp. 159-189, 1950, printed in Spanish. (Translated from Spanish and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

Cooking Frozen Meats, Poultry, Game, and Fish, by Faith Fenton, Cornell Extension Bulletin 906, 15 pp., illus., printed. New York State College of Agriculture, Extension Service, Cornell University, Ithaca, N. Y., revised January 1956.

"Difficulties Involved in Echo-Sounding Over a Sloping Bottom," by J. Scharfe, article, Fis-

chereiwelt, vol. 4, no. 7, July 1952, pp. 99-101, printed in German. (Translated from the German by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Effect of Aureomycin Chlorotetracycline on Fish Freshness," by M. C. Firman, A. Abbey, M. A. Darken, A. R. Kohler, and S. D. Upham, article, Food Technology, vol. 10, no. 8, August 1956, pp. 381-384, printed, single copies of periodical: domestic US\$1.50, foreign US\$1.75. The Garrard Press, 119 West Park Ave., Champaign, Ill. (Published by the Institute of Food Technologists.) The fresh quality of fish has been successfully prolonged by the antibiotic chlorotetracycline applied as an ice, a dip, or a freezing brine. Antibiotic activity has been detected in the raw treated fish, and microbial counts and organoleptic observations have substantiated the effectiveness of chlorotetracycline in extending the storage life of freshly-caught fish. The fish investigated include sea bass, sea trout, croaker, butterfish, haddock, scup, salmon, and halibut.

Federal Statistical Directory, Seventeenth Edition, 162 pp., processed, 75 cents. Office of Statistical Standards, Bureau of the Budget, Washington, D. C., June 1956. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) This directory lists the professional and technical personnel of Federal agencies (including the Fish and Wildlife Service) engaged in statistical activities, including reporting, planning, research, data collection, and analysis in economics and other social sciences.

Fish for Hospital Catering, 24 pp., illus., printed. White Fish Authority, London, England. Provides general hints on the preparation of fish and fish cookery, written primarily for use in hospitals. Includes an article by a physician on the therapeutic value of fish, who also contributes a table of food values of white fish. Also includes items on choosing fish for normal and special diets; buying fish; the preparation and storage of fish; hygiene; cooking, serving, and garnishing fish; keeping fish hot; fish for normal diets, and for the staff; and fish for special diets.

(FAO) Report to the Government of Pakistan on a New Fish Harbour for Karachi (Part One--Text; Part Two--Plans), by A. Van den Berg and H. van Pel, FAO Report No. 26, illus., processed, limited distribution. Food and Agriculture Organization of the United Nations, Rome, Italy, March 1952. This report is divided into two parts. Part I contains a summary of the findings of a survey made in 1951 by FAO experts and their recommendations for a new fish harbor at Karachi. It discusses the existing system of landing and transport of fish in the Karachi area; necessity and location of a new fish harbor; principal factors affecting the plan of a new fish harbor; plans of the new fish harbor--general arrangement and accommodation; administration and management of the new fish harbor; economic and financial aspects;

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and harbor works in other fishing centers. Part II contains a map of the fishing villages in the Karachi area; drawings of aluminum fish boxes and rattan baskets; and general plans and details of a new fish harbor, fish market, ice-making and cold-storage plant, etc.

Field and Laboratory Tests to Develop the Design of a Fish Screen Structure, Delta-Mendota Canal Headworks, Central Valley Project, California, by Dale M. Lancaster and T. J. Rhone, Hydraulic Laboratory Report No. Hyd-401, 90 pp., illus., processed. Division of Engineering Laboratories, Bureau of Reclamation, Denver, Colo., March 21, 1955.

"Fishes of the Northern Seas of Russia," by A. P. Andriiashev, article, Guides to the Fauna of the USSR, vol. 53, 566 pp., printed in Russian. Zoological Institute of the Academy of Sciences of the USSR. (Excerpts translated by C. Richard Robins from Ryby Severnykh Morei SSSR. Opredeliteli po Faune SSR, Ispavaemye Zoologicheskim Institutom Akademii Nauk SSSR.)

"Fisket ved Vest-Gronland, 1955" (Fisheries of West Greenland, 1955), by Knut Friis, article, Fiskets Gang, no. 24, June 14, 1956, pp. 342-348, illus., printed in Norwegian with brief summary in English. Fiskeridirektoren, Postgiro Nr. 691 81, Bergen, Norway. Statistics are given on the catch of cod and halibut off West Greenland during 1955. The number of vessels participating in these fisheries are also given as well as the average yield per day. The landings amounted to 14,325 metric tons of salted cod and almost 881 tons of fresh or frozen halibut.

"Fluctuations in Catch of the South Sakhalin Herring and Their Causes," by A. N. Svetovidov, article, Zoologicheskii Zhurnal, vol. 31, no. 6, 1952, pp. 831-842, printed in Russian. (Translated from Russian by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Form and Size of the 'Zone of Detection' in Echo-Sounding," by J. Scharfe, article, Fischerei-welt, vol. 4, no. 2, February 1952, pp. 6-8, printed in German. (Translated from German by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Forecasts of Catch and Overfishing of Herring," by Schubert, article Die Fischwirtschaft, vol. 5, no. 9, pp. 218-219, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Hydrobiology and Fisheries Management," by P. L. Pirozhnikov, article, Zoologicheskii Zhurnal, vol. 31, no. 1, 1952, pp. 99-109, printed in Russian. (Translated from Russian and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C.)

(ICA) Operations Report, Data as of March 31, 1956, FY 1956, Issue No. 3, 71 pp., illus., processed.

Office of Statistics and Reports, International Cooperation Administration, Washington 25, D. C.

(International Law Commission) Comments by Governments on the 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 Seventh Session, A/CN.4/99, 49 pp., processed. United Nations--General Assembly, International Law Commission, New York, N.Y., March 12, 1956.

(International Law Commission) Comments by Inter-Governmental Organizations on Articles Regarding Fishing Embodied in the Provisional Articles Concerning the Regime of the High Seas Adopted by the International Law Commission at its 7th Session, A/Cn.4/100, 4 pp., processed. United Nations--General Assembly, International Law Commission, New York, N. Y., March 13, 1956.

(International Law Commission) Regime of the High Seas and Regime of the Territorial Sea (Report), by J. P. A. Francois, Special Rapporteur, A/CN.4/97, 32 pp., processed. United Nations--General Assembly, International Law Commission, New York, N. Y., January 27, 1956.

(International Law Commission) Regime of the High Seas and Regime of the Territorial Sea (Addendum to the Report), by J. P. A. Francois, Special Rapporteur, A/CN.4/97/Add.1, 24 pp., processed. United Nations--General Assembly. International Law Commission, New York, N. Y., May 1, 1956. Summary of replies from Governments and conclusions of the Special Rapporteur.

(International Law Commission) Regime of the High Seas and Regime of the Territorial Sea (Addendum to the Report), by J. P. A. Francois, Special Rapporteur, A/CN.4/97/Add.2, 23 pp., processed. United Nations--General Assembly, International Law Commission, New York, N.Y., May 4, 1956. Summary of replies from Governments and a continuation of the conclusions of the Special Rapporteur.

(International Law Commission) Regime of the High Seas (The Right of International Organizations to Sail Vessels under their Flags), by J. P. A. Francois, Special Rapporteur, Supplementary Report, A/CN.4/103, 4 pp., processed. United Nations--General Assembly, International Law Commission, New York, N. Y., May 8, 1956.

Is the Shrimp Trawl Net Destructive to Marine Life? (A Survey of the Literature), by Francis B. Taylor, 52 pp., processed. Bears Bluff Laboratories, Wadmalaw Island, S. C., June 1956. It has been charged that otter trawling is the cause of depletion in the supply of fish, crab, and shrimp in the waters of South Carolina. The availability or unavailability of these fish and shellfish may depend upon a variety of factors, but in the public mind, or a segment of it at any rate, the shrimp trawl fishery is held solely responsible. It is precisely because the supply

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of these fish for sports fishing, at least, seems to have declined (not remained the same) in the face of expanded and intensified commercial trawling for shrimp and crab, that the complaints have become so bitter against the otter trawls' destructiveness. The purpose of this paper is to report upon a survey of the scientific literature on the subject, rather than to argue the point. A broad field of marine biological and oceanographic literature was reviewed for facts that bear upon the complaints, and appropriate data were extracted. Whatever was found to be pertinent, pro or con, is presented in this paper. Comment is offered simply to tie the parts together. The evidence presented treats only with the complaints about damage done by bottom trawling in the waters of South Carolina. It does not concern itself either with the fate of the prime reason for this trawling--the Peneid shrimp of commerce, nor the possibility that noncommercial fishing has any bearing on the stocks of sports fishes.

Journal du Conseil, vol. XXI, no. 2, 121 pp., illus., printed, single copy Kr. 12 (US\$1.74). Messrs. Andr. Fred. Høst & Søn, Bredgade, Copenhagen, Denmark, April 1956. Among the articles presented in this journal are the following: "The Determination and Occurrence of Nickel in Sea Water, Marine Organisms, and Sediments," by Taivo Laevastu and Thomas G. Thompson; "Time and Duration of the Spawning Season in Some Marine Teleosts in Relation to Their Distribution," by S. Z. Qasim; "Chemical Composition of the Zones in Cod Otoliths," by Eva Henly Danevig; "The 'Critical Period' in the Early Life History of Marine Fishes," by John C. Marr; and "Some Experiments on Factors Influencing Mesh Selection in Trawls," by L. K. Boerema.

"The Lipids of Fish. 8. The Triglycerides and Cholesterol Esters of Haddock Flesh," by J. A. Lovren, article, The Biochemical Journal, vol. 63, no. 3, July 1956, pp. 373-380, illus., printed, 20 s. (US\$3.25) net per issue. Cambridge University Press, American Branch, 32 East 57th St., New York 22, N. Y.

"Luring Fish with Pork," article, The Crown, vol. 45, no. 8, August 1956, pp. 14, 22, illus., printed. The Crown, P. O. Box 1837, Baltimore 3, Md. A brief description of the commercial preparation of pork-rind lures for bait casting, spinning, fly rods, and salt-water fishing. Long strips of pig back, with the hide intact, are treated in brine, cut to shape, and then sent to the freezer for more treatment. After the allotted time, they are removed from the freezer and are stamped, dyed, and bottled.

Marine Products in Japan, 30 pp., illus., printed. Ministry of Agriculture and Forestry, Tokyo, Japan, December 1955. This beautifully illustrated pamphlet discusses the position Japan's marine products occupy in its economy; canning marine products; whale oil industry; agar-agar and its uses; frozen fishery products; dry-salted marine products; and pearl culture. Also includes a list of the names and addresses of Japanese exporters of these products.

"Marking Experiment of the Young Herring (Clupea pallasii) in the Pacific Coast of Hokkaido, 1949-52," by H. Kondo and H. Kitahama, article, Bulletin of Hokkaido Regional Fisheries Research Laboratory, No. 9, November 1953, printed in Japanese. (Translated from Japanese by S. Tabata, Pacific Biological Station, Nanaimo, B.C., Canada.)

"Microbiological Assay of Vitamin B<sub>12</sub> in Marine Solids," by Paul R. Burkholder and Lillian M. Burkholder, article, Science, vol. 123, no. 3207, June 15, 1956, pp. 1071-1073, illus., printed, single copy 25 cents. Science, 1515 Massachusetts Ave. NW., Washington 5, D. C.

"Microbiological Hazards of Precooked Frozen Foods," by R. P. Straka and J. L. Stokes, article, Quick Frozen Foods, February 1956, pp. 182-186, printed, single copy 50 cents. E. W. Williams Publications, Inc., 82 Wall St., New York 5, N. Y.

Migration of the Deep Sea Scallop (PECTEN MAGELANICUS), by Frederick T. Baird, Jr., Fisheries Circular No. 14, 8 pp., illus., printed. Maine Department of Sea and Shore Fisheries, Vickery-Hill Bldg., Augusta, Me., January 1954.

"The New Fishery Act in Czechoslovakia," by J. Hanzal, article, Ceskoslovensky Rybar, vol. 7, no. 9, 1952, printed. (Translated from Czechoslovak and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B.C., Canada.)

A New Species of Sea Perch in the Barents Sea (SEBASTES MENTELLA TRAVIN, sp. nov.), by V. I. Travin, 5 pp., processed. (Translated from Russian by C. R. Robins, 1955.)

(Norway) Fiskeriene og Folkerettsreglene pa Havet (The Fisheries and International Law), by Olav Lund, Fiskeridirektoratets Smaskrifter Nr. 9 (Fishery Directorate Pamphlet No. 9), 19 pp., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.

(Norway) Handsaming av Størje (Treatment of Tuna-fish), by Hans J. Fjórtoft, Fiskeridirektoratets Smaskrifter Nr. 5 (Fishery Directorate Pamphlet No. 5), 19 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.

(Norway) Hvor Meget Blir der Fisket opp av Lofot-Skreien? (How Much Lofot Cod is Being Caught?), by Gunnar Dannevig, Fiskeridirektoratets Smaskrifter Nr. 10 (Fishery Directorate Pamphlet No. 10), 18 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.

(Norway) Hvordan Utnytter vi Vare Torskforekomster? (How Do We Utilize Our Cod Occurrences?), by Gunnar Saetersdal, Fiskeridirektoratets Smaskrifter Nr. 3 (Fishery Directorate Pamphlet No. 3), 10 pp., illus., printed. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.

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- (Norway) Internasjonale Fiskeriavtaler som Norge er Med i (International Fishery Conventions to which Norway is a Party), Fiskeridirektoratets Smaskrifter Nr. 5 (Fishery Directorate Pamphlet No. 5), 50 pp., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
- (Norway) Lagring av Levende Fisk i Kummer pa Land (Storage of Live Fish in Basins on Land), by Gunnar Sundnes, Fiskeridirektoratets Smaskrifter Nr. 8 (Fishery Directorate Pamphlet No. 8), 6 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
- (Norway) Lofotfiskets Lønnsomhet 1953 (Profitability of Lofot Fishery 1953), by Kare Ruud, Fiskeridirektoratets Smaskrifter Nr. 7 (Fishery Directorate Pamphlet No. 7), 23 pp., printed in Norwegian. (Reprinted from Fiskets Gang, no. 42, 1953.) A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
- (Norway) Maskeviddeforsøk med Tral i 1954 (Mesh Width Experiments with Trawl in 1954), by Gunnar Saetersdal, Fiskeridirektoratets Smaskrifter Nr. 4 (Fishery Directorate Pamphlet No. 4), 11 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.
- (Norway) Merkeforsøk som Viser Skreiens Oppførsel i Lofoten (Marking Experiments Showing the Behavior of the Cod in Lofoten), by Gunnar Dannevig, Fiskeridirektoratets Smaskrifter Nr. 2 (Fishery Directorate Pamphlet No. 2), 27 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.
- (Norway) Plan for Statens Fiskarfagskoler (Prospectus for State Fishery School), Fiskeridirektoratets Smaskrifter Nr. 3 (Fishery Directorate Pamphlet No. 3), 20 pp., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
- (Norway) Plan for Statens Fiskarfagskular (Prospectus for State Fishery Schools), Fiskeridirektoratets Smaskrifter Nr. 6 (Fishery Directorate Pamphlet No. 6), 20 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.
- (Norway) Plan for Statens Fiskarfagskoler (Prospectus for State Fishery Schools), Fiskeridirektoratets Smaskrifter Nr. 8 (Fishery Directorate Pamphlet No. 8), 20 pp., illus., printed in Norwegian. A/S John Griegs Boktrykkeri, Bergen, Norway, 1955.
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- (Norway) Tokter Med "G. O. Sars" i Norskehavet Vinteren 1952/53 (Expeditions with "G. O. Sars" in the Norwegian Sea-Winter 1952/53), by Finn Devold, Fiskeridirektoratets Smaskrifter Nr. 6 (Fishery Directorate Pamphlet No. 6), 19 pp., illus., printed in Norwegian. (Reprinted from Fiskets Gang, no. 19, 1953.) A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
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- (Norway) Vintersildfiskets Lønnsomhet 1953 (Profitability of Winter Herring Fishery 1953), by Arthur Holm, Fiskeridirektoratets Smaskrifter Nr. 9 (Fishery Directorate Pamphlet No. 9), 33 pp., illus., printed in Norwegian. (Reprinted from Fiskets Gang, no. 43, 1953.) A/S John Griegs Boktrykkeri, Bergen, Norway, 1953.
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- "On the Biology of Reproduction of the White Sea Wolf-Fish (*Anarhichas lupus* L.)," by V. V. Barsukov, article, Zoologicheskii Zhurnal, vol. 32, no. 6, 1953, pp. 1211-1216, printed

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- "Productivity of Fishing Waters and Fluctuations in the Abundance of Stocks of Commercial Fishes," by E. A. Berval, article *Zoologicheskii Zhurnal*, vol. 31, no. 1, 1952, pp. 82-91, printed in Russian. (Abstract translated from Russian by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C.)
- Quarterly Report on Fisheries Research, June 1956, No. 56-19, 12 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla.
- "Queen of the Muddy Waters," article, *Georgia Game and Fish*, vol. 5, no. 10, Spring Edition, pp. 8-9, 21, illus., printed. Georgia Game and Fish Commission, 412 State Capitol, Atlanta, Ga. A brief description of the carp which can be found in nearly every state in the United States. Muddy, luke-warm streams in Georgia make ideal feeding grounds and spawning grounds for these fish.
- Rail Freight Rates and the Fish and Sea Food Industry, 37 pp., processed. Freight Rate Service Branch, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C., revised July 1956. A study of the current rail transportation rates on fish, shellfish, and other fishery products for purposes of analysis and comparison, and includes a comparison with rates on other food products. The rates and charges shown in this study are those prevailing on March 7, 1956.
- Rapport Annuel sur l'Evolution de la Flotte de Peche en 1955 ("Annual Report on the Development of the Fishing Fleet in 1955"), 41 pp., processed in French. Ministere des Communications, Brussels, Belgium. Presents detailed statistics on the Belgian fishing fleet.
- Rapports et Proces-Verbaux des Reunions (Reports and Verbal Proceedings of Meetings), vol. 141, 113 pp., printed in French and English, Kr. 18 (US\$2.60). Conseil Permanent International pour L'Exploration de la Mer (International Council for Exploration of the Sea), Charlottenlund Slot, Denmark, June 1956. This report is divided into two parts: Part I--Proces-Verbaux, Novembre-Octobre 1955 (Verbal Proceedings, November-October 1955); and Part II--Rapport Administratif, 1954 (Administrative Report, 1954). Part I contains a report of the forty-third meeting of the International Council for the Exploration of the Sea at Copenhagen, October 24-November 1, 1955; approved budget for the financial year, 1955-1956, resolutions passed by the 43rd Statutory Meeting, 1955; list of members of committees; experts engaged in fisheries research in the Council's area; report and recommendations of the Consultative Committee; and reports and programs of the various committees. Part II contains an administrative report for the year ending October 31, 1955; and area and other committee reports on scientific research.
- "Recorded and Visual Indications in Echo-Sounding for Fish in Proximity of the Bottom," by J. Scharfe, article, *Die Fishwirtschaft*, no. 3, 1953, printed in German. (Translated from German by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)
- "The Relationship Between Fish-Length and Scale-Length in the Pilchard (*Sardina pilchardus* Wal.) in the Area of Castellon," by J. Rodriguez-Roda, M. G. Larraneta, and M. Duran, *Publicacions del Instituto de Biologia Aplicada, Barcelona*, X, pp. 53-65, 1952, printed in Spanish. (Translated from Spanish and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)
- Report on the Fisheries Industries of Fiji, by H. van Pel, Council Paper No. 1, 11 pp., illus., printed. South Pacific Commission, Noumea, New Caledonia. Describes a brief survey of the fishery resources of Fiji and the existing fishing methods and extent of their utilization. Past surveys and experiments are discussed; an assessment of the problems existing in the fisheries is made; and recommendations for the development of the marine and inland fisheries are given. Various ways of increasing the fish supply of Fiji, both by larger fish catches and by fish culture, have been indicated. "From the point of view of fisheries prospects," states the author, "Fiji is one of the most favoured territories in the South Pacific. There need never be a shortage of fish in this Colony."
- Report of the International Technical Conference on the Conservation of the Living Resources of the Sea (18 April to 10 May 1955, Rome), A/Conf. 10/6, United Nations Publication Sales No.: 1955. II. B. 2, 21 pp., printed, 25 cents. United Nations, New York, N. Y., 1955. (For sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.)

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A Review of the Cephalopods of the Gulf of Mexico, by Gilbert L. Voss, Contribution No. 155, 93 pp., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 6, no. 2, June 1956, pp. 85-178.) Three hundred and three specimens of cephalopods are reported upon, mostly captured by the U. S. Fish and Wildlife Service vessel Oregon in the Gulf of Mexico from 1950 to 1956. Thirty-five genera and 42 species are described and illustrated, of which 1 genus and 4 species are described as new.

Sea Moss (CHONDRUS CRISPUS), Survey, Washington County, by Walter S. Foster, General Bulletin No. 3, 12 pp., illus., printed. Department of Sea and Shore Fisheries, Augusta, Me., 1953.

Seaweeds at Ebb Tide, by Muriel Lewin Guberlet, 182 pp., illus., with drawings by Elizabeth L. Curtis, printed, \$3.50. University of Washington Press, Seattle, Wash. Gives the names, habits, structures, and economic uses of the seaweeds found on the beach.

"Solving Life Secrets of the Sailfish," by Gilbert Voss, article, The National Geographic Magazine, vol. CIX, no. 6, June 1956, pp. 859-872, illus., printed, single copy 75 cents. The National Geographic Society, Washington, D. C. A study of the life history of the sailfish. Florida sailfish spawn in late spring and early summer in shallow water along the Florida sands. At this period the females, heavy with roe, are sluggish fighters. After spawning, the eggs, scattered about in the plankton, float northward in the Gulf Stream. The number of young sailfish in the oceans would be fantastically large if all the larvae survived, for investigations show that a single female may spawn as many as 4,675,000 eggs. However, countless predators feed on eggs and young as they float helplessly in the sea. As they grow increasingly able to fend for themselves, the sailfish work inshore; juveniles five to eight inches long are found along the Carolina coast during summer. Cold weather and northerly winds head them south. Within a year they have grown to five or six feet and soon are the fighting heavyweights sought by sport fishermen. Three or four years seem to be old age for them.

"Some New or Little Known Parasitic Nematodes of Sea Fish," by U. I. Poljanski, article, Trudy Zoologicheskow Instituta Akademii Nauk SSSR 12, pp. 133-147, 1952, printed in Russian. (Translated from Russian and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"South African Pilchard Oil. 5. The Isolation and Structure of an Eicosapentaenoic Acid from South African Pilchard Oil," by J. M. Whitcutt and D. A. Sutton, article, The Biochemical Journal, vol. 63, no. 3, July 1956, pp. 469-475, illus., printed, 20 s. (US\$3.25) net per issue. Cambridge University Press, American Branch, 32 East 57th St., New York 22, N. Y.

Tarpon Cooperative Research Program, Progress Report, by Robert W. Ellis, No. 56-20, 13 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., July 1956.

"Territorial Waters and Related Matters," article, The Department of State Bulletin, vol. XXXIV, no. 869, Publication 6292, February 20, 1956, pp. 296-299, printed, single copy 20 cents. The Department of State, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) A discussion of the action taken on the subject of territorial waters and related matters by the third meeting of the Inter-American Council of Jurists at Mexico City, January 17-February 4, 1956; the situation confronting the Council of Jurists; general debate; nine-country resolution; United States declaration and reservation; and the Cuban proposal.

Tide Tables, East Coast, North and South America (including Greenland), for the Year 1957, Serial No. 789, 277 pp., illus., printed, 50 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C.

Tide Tables: West Coast, North and South America (including the Hawaiian Islands), for the Year 1957, Serial No. 791, 227 pp., illus., printed, 50 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C.

"Tilapia--The Brooding Father," by Lester R. Aronson, article, Natural History, vol. LXV, no. 3, March 1956, pp. 146-151, illus., printed, single copy 50 cents. American Museum of Natural History, Central Park West at 79th St., New York 24, N. Y. The name Tilapia is not applied to a single kind of fish but rather to a group of related African species which now number almost a hundred. This is an interesting article about the unusual spawning habits of the Tilapia macrocephala (also called T. heudeloti). This species of Tilapia is the predominant fish of the group along the coast of West Africa from Senegal south to Gabon. While it does not grow as large as some of the others and is therefore of less interest to fishery workers, it does form a staple in the diet in many coastal villages.

Trust Territory of the Pacific Islands, 1955, Department of State Publication 6243, International Organization and Conference Series III, 111; 210 pp., illus., printed, 70 cents. Department of State, Washington, D. C., April 16, 1956. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) This report, covering fiscal year 1955, is the eighth annual report by the United States to the United Nations, pursuant to article 88 of the United Nations Charter, on the administration of the Trust Territory of the Pacific Islands. Some data on fisheries are included.

"Two Weeks in Father's Mouth," by Evelyn Shaw, article, Natural History, vol. LXV, no. 3,



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March 1956, pp. 152-153, illus., printed, single copy 50 cents. American Museum of Natural History, Central Park West at 79th St., New York 24, N. Y. A brief description with accompanying photographs of the changes that occur in *Tilapia* eggs during the two weeks the embryos spend in the mouth of the male.

"Under-Water Observation of Fishing Gear by Means of an Immersion (Plunge) Kettle," by Ulrich Bodo, article, *Fischerewelt*, vol. 4, no. 2, February 1952, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

United States Government Organization Manual, 1956-57, 792 pp., printed, \$1. Federal Register Division, National Archives and Records Service, General Services Administration, Washington, D. C., 1956. (For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.)

"The Use of Echo-Sounders in Drift-Fisheries," Schuler and G. Kreft, article, *Fischerewelt*, vol. 3, no. 4, April 1951, pp. 63-65, printed in German. (Translated from German and summarized by Dr. G. Mares, Pacific Biological Station, Nanaimo, B. C., Canada.)

"Volatile Reducing Substances (VRS) and Volatile Nitrogen Compounds in Relation to Spoilage in Canned Fish," by Lionel Farber and Michael Ferro, article, *Food Technology* (Published by the Institute of Food Technologists), vol. 10, no. 7, July 1956, pp. 303-304, illus., printed, single copies of periodical: domestic US\$1.50, foreign US\$1.75. The Garrard Press, 119 West Park Ave., Champaign, Ill. Describes a

study in which cans of fish were examined for their content of total volatile (TVN) and trimethylamine nitrogen (TMN) so that these could be compared with that of volatile-reducing substances (VRS). In this report are presented some representative data on the content of these substances in a number of species of fish, canned and varying in freshness or acceptability as human food, as judged organoleptically. The content of volatile-reducing substances (VRS), total volatile and trimethylamine nitrogen (TVN, TMN) in canned California anchovies, California and Atlantic herring, California mackerel, California sardines in brine and in tomato sauce and tuna was determined for material judged organoleptically to be passable and not passable. The content of VRS correlated quite closely with the organoleptic judgment, whereas the content of TVN and TMN did not show any definite correlation. The content of trimethylamine nitrogen apparently varies with the species of fish canned and is the same in fish of different states of freshness for any single species.

Whaling--Amendments to the Schedule to the International Whaling Convention Signed at Washington on December 2, 1946, Treaties and Other International Acts Series 3198, Department of State Publication 5899, 11 pp., printed, 10 cents. Department of State, Washington, D. C., 1956. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Presents the amendments adopted at the Sixth Meeting of the International Whaling Commission, Tokyo, Japan, July 19-23, 1954, and which entered into force November 8, 1954, and February 17 and 24, 1955.



### SPECIES OF FISH FIRST USED IN THE HOT-FISH SHOPS OF THE MIDDLE WEST

In the early days of fish-frying operations, the local species such as catfish, buffalofish, perch, sunfish, and blue pike were used. One enterprising wholesale fish firm in St. Louis introduced the whiting to this trade in the 1920's and its acceptance was comparatively rapid. At the time the annual production of whiting from the Northeastern States was about 17 million pounds. Much of this was frozen near fishing centers and shipped to the St. Louis market by the carload. As late as 1932 it was considered remarkable that the ambition and industry of a few individuals could make possible the distribution of more than one-fourth of the supply of this fish in a single city, some 600 or 700 miles from the source of supply.

--Sea Secrets, The Marine Laboratory, University of Miami, Coral Gables, Fla.