

## 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-1595 | - Imports and Exports of Fishery Products, 1952-56 Annual Summaries, 10 pp.  |
| CFS-1599 | - Massachusetts Landings, February 1957, 4 pp.   |
| CFS-1604 | - Fish Meal and Oil, June 1957 (revised), 2 pp.  |
| CFS-1611 | - Fisheries of the United States and Alaska, 1955 Annual Summary, 11 pp.   |
| CFS-1612 | - Shrimp Landings, April 1957, 5 pp.   |
| CFS-1613 | - Frozen Fish Report, July 1957, 8 pp.   |
| CFS-1618 | - New York Landings, June 1957, 4 pp.  |
| CFS-1619 | - Maine Landings, June 1957, 4 pp.   |
| CFS-1620 | - Massachusetts Landings, 1956 Annual Summary, 16 pp.  |
| CFS-1621 | - Rhode Island Landings, June 1957, 3 pp.  |
| CFS-1622 | - Ohio Landings, July 1957, 2 pp.  |
| CFS-1623 | - Mississippi Landings, June 1957, 2 pp.   |
| CFS-1625 | - Florida Landings, June 1957, 7 pp.   |
| CFS-1626 | - North Carolina Landings, July 1957, 3 pp.  |
| CFS-1627 | - Alabama Landings, July 1957, 2 pp.   |
| CFS-1628 | - South Carolina Landings, July 1957, 2 pp.  |
| CFS-1631 | - California Landings, May 1957, 4 pp.   |
| CFS-1632 | - Frozen Fish Report, August 1957, 8 pp.   |
| CFS-1634 | - Maine Landings, July 1957, 4 pp.   |
| CFS-1635 | - Shrimp Landings, May 1957, 6 pp.   |
| CFS-1637 | - Louisiana Landings, January-June 1957, 2 pp.   |
| SL-12    | - Wholesale Dealers in Fishery Products, Virginia, August 1957 (revised), 10 pp.   |
| FL-336hh | - Commercial Fisheries Outlook, October-December 1957, 48 pp., October 1957.   |
| FL-444   | - Some Publications on Game-Fish and Sport Fishing, 10 pp., July 1957. A listing of the more recent and better known publications on fishes, fishing, and fishing equipment. |

SSR-Fish. No. 204 - Comparative Study of Populations of the Striped Bass, by Robert Minturn Lewis, 54 pp., June 1957.

SSR-Fish. No. 210 - Physical, Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States, Theodore N. Gill Cruise 3, by William W. Anderson and Jack W. Gehringer, 208 pp., illus., June 1957.

SSR-Fish. No. 216 - Morphometric Study of the Striped Bass, *Roccus saxatilis*, by William A. Lund, Jr., 24 pp., July 1957.

SSR-Fish. No. 225 - Studies on Tilapia as Skipjack Bait, by Joseph E. King and Peter T. Wilson, 8 pp., illus., July 1957. Describes experiments in the Hawaiian Islands with tilapia as skipjack bait. Results indicate that tilapia, while inferior in many respects to the native bait (nehu), possesses many desirable qualities. Conclusions indicate that if small tilapia can be produced in large volume at a reasonable price, the great need in the Hawaiian skipjack fishery for additional bait supplies might be alleviated.

SSR-Fish. No. 229 - History of Red Lakes Fishery, 1917-38, with Observations on Population Status, by John Van Oosten and Hilary J. Deason, 63 pp., August 1957. A report, covering research done in 1938 and completed just before World War II, that is now being published--particularly in view of the current investigations on the Red Lakes by the University of Minnesota in cooperation with the U. S. Fish and Wildlife Service. It traces the development of the commercial fisheries of the Red Lakes, Minnesota, from its inception in 1917 through 1938. Gives the trends of production and catch per unit of effort for the principal species with notes on statistics of the minor fishes. Presents life history data for the walleye and yellow perch and a historical account of the artificial propagation of the walleye and whitefish from 1918 through 1938.

Sep. No. 490 - Bone Detection in Fish by X-Ray Examination: Part 2 - Fluoroscopic Examination of Frozen Fried Fish Sticks.

Sep. No. 491 - Meat Content of Pavlof Bay King Crabs.

Sep. No. 492 - Research in Service Laboratories (November 1957): Contains these articles-- "Brine-Frozen Haddock Tests by Industry;" "New Vessel Fish-Icing Techniques Prove Value to New England Fisheries;" "Plans for Development of

Federal Specifications for Fishery Products;" "Scallop Meats Frozen in Glucose-Salt Solution Aboard Vessel;" and "Structure and Function of the Kidney in the Oyster."

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

Use of Electric Fish Diversion Weirs at Northwest Salmon-Cultural Stations, 35 pp., illus. (Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, Portland, Oreg.) A review and evaluation of electrical weirs used by the Fish and Wildlife Service salmon hatcheries in the Northwest. All of the electrical fish screen work in the Northwest has been directed toward producing a device, nonlethal and noninjurious to valuable species, yet effective in diverting fish from entering potentially dangerous channels. The history of the devices briefly summarized in this report shows that, to date, no single barrier has been developed that is universally acceptable, and none of the devices are completely free from justified criticisms or suspicion of deficiencies. According to the report, further study and development are needed before such installations can be recommended for universal use.

Fish Protection at the Tracy Pumping Plant, Central Valley Project, California (Development of a Fish Salvage Facility), 114 pp., plates, maps, diagrams, tables, illus., processed. U. S. Department of the Interior, Bureau of Reclamation, Region 2, Sacramento, Calif., and Fish and Wildlife Service, Region 1, Portland, Oreg.

Boston Fishery Products Monthly Summary, August 1957, 15 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Landings and ex-vessel prices by species for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; and Boston frozen fishery products prices to primary wholesalers; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, August 1957, 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, September 1957, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Ocean City, and Cambridge; 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 - April 1957 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, 16 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 month indicated.

(Seattle) Monthly Summary - Fishery Products, August 1957 and September 1957 Issues, 7 pp. each. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 1, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Oregon) wholesale dealers; also Northwest Pacific halibut landings; for the months indicated.

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Delicious Recipes for Fish and Shellfish, Circular 50, 10-panel folder, illus., printed, \$5 per 100. A promotional leaflet for distribution through food stores containing 18 ways of preparing fish and shellfish and suggestions for garnishes. In addition, it contains a purchasing guide showing how fresh and frozen fish are marketed.

Larval Forms of the Fresh-Water Mullet (AGONOSTOMUS MONTICOLA) from the Open Ocean off the Bahamas and South Atlantic Coast of the United States, by William W. Anderson, Fishery Bulletin 120 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 57), 13 pp., illus., printed, 15 cents, 1957.

## 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:

Marine Algae of the Northeastern Coast of North America, by William Randolph Taylor, illus., by Chin-Chih Jao, Scientific Ser. v. 13, 509 pp., illus., printed, \$12.50. University of Michigan Press, Ann Arbor, Mich., 1957.

### CANADA:

Fisheries Statistics of Canada, 1955 (New Brunswick), 59 pp., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1957. Consists of tables giving the production and value of the principal species of fish and shellfish in New Brunswick in 1952-55; quantity and value of landings by species and fisheries districts, 1954-55; quantity and value of manufactured fishery products by species and fisheries districts, 1954-55; capital equipment in the primary fisheries operations; and the number of persons engaged in the fisheries.

Fisheries Statistics of Canada (Nova Scotia), 1955, 93 pp., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1957. Consists of tables giving the quantity and value of fish and shellfish landed in Nova Scotia, 1952-55, by species and by fisheries districts; quantity and value

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of manufactured fishery products and byproducts for 1954-55; capital equipment in primary operations; and number of persons engaged in the primary operations.

Fisheries Statistics of Canada, 1955 (Ontario, Prairie Provinces and Northwest Territories), 67 pp., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1957. Consists of tables giving the quantity and value of the principal species of inland fish landed in Ontario in 1952-55; quantity and value of landings by species and fisheries districts, Ontario, 1954-55; capital equipment in the primary fisheries operations; and the number of persons engaged in the fisheries. Similar data are also given of the Prairie Provinces (Manitoba, Saskatchewan, and Alberta) and the Northwest Territories.

"Open House" at St. Andrews," by Mark Ronayne, article, Trade News, vol. 10, no. 2, August 1957, pp. 3-8, illus., printed. Director of Information and Educational Service, Department of Fisheries, Ottawa, Canada. Describes the third annual two-day forum conducted by scientists from the Fisheries Research Board of Canada attached to the Biological Station at St. Andrews, New Brunswick. This meeting served as a practical means of acquainting fishing industry representatives with scientific progress and developments in marine and fresh-water fisheries research. Informal lectures given by the Station's scientists covered vessel and gear research; marketing factors; expansion of the Station; geology and trout; controls on lobster fishery; redfish; (ocean perch) oceanography; herring research; and the needs of the fishing industry. The author presents the highlights of the above-mentioned lectures in this article.

Summary Statistics of Canada's Fisheries, 1936-1955, 32 pp., printed. (Reprinted from Canadian Fisheries Annual, 1957, pp. 67-98.) Department of Fisheries, Ottawa, Canada. Statistics are presented in eight sections on landings and value of Canadian fisheries and related data: (1) summary statistics for 1949-1956; (2) East-Coast fisheries covering (a) Newfoundland and (b) Maritimes and Quebec; (3) fresh-water fisheries; (4) West-Coast fisheries; (5) fillet production; and (6, 7 & 8) exports and imports. Also included is a directory of fishery products by type, such as fresh and frozen fish (whole or dressed), fresh and frozen fish (filleted), smoked fish (dressed or filleted), cured fish, canned fish (not including shellfish), shellfish (in shell or meat--not canned), canned shellfish, fish oils and fish livers, fish meal, and other fishery products. Listed under each classification are the companies which process that particular product.

#### CEYLON:

Administration Report of the Director of Fisheries for 1956 (Part IV--Education, Science, and Art), by D. T. E. A. de Fonseka, 28 pp., printed. Government Publications Bureau, Colombo, Ceylon, July 1957. Progress reports for the year 1956 are presented by the Department of Fisheries' Administration and Socio Economic

Division, Development Division, Commercial Section, and Research Division. Among the subjects covered are: enforcement of fisheries regulations; cooperative development of the fisheries; mechanization of fishing craft; fresh-water fishery development; and fishery byproducts. Statistical data are also included on the production of fresh and cured fish, and imports and exports of fishery products and byproducts.

#### COELACANTH:

The Search Beneath the Sea--The Story of the Coelacanth, by J. L. B. Smith, 260 pp., illus., printed. Henry Holt and Company, Inc., New York, N. Y., 1956. An exciting, personal account of the discovery of the first coelacanth--a "living fossil" fish believed to have been extinct 50 million years ago. The author describes his years of work and searching that led to subsequent discoveries of coelacanths.

#### DIRECTORIES:

Directory of Members--National Food Brokers Association (Corrected to August 1957), 204 pp., illus., printed. National Food Brokers Association, 1916 M Street, N. W., Washington 6, D. C. A directory, by states and neighboring nations, of the leading food broker firms in every market area. Numerals in the directory indicate the commodities presently handled by each firm listed--including canned and frozen fish and luxury food items such as caviar.

Directory of Frozen Food Packers, 1957, 24 pp., printed. National Association of Frozen Food Packers, 1415 K Street, N. W., Washington 5, D. C. A directory containing a listing of every packer-member of the National Association of Frozen Food Packers and the products packed by each. It serves as a ready reference to producers of frozen products in the nation, including seafood and seafood dishes.

#### ECHO-SOUNDING:

The Interpretation of Echo Traces, by D. H. Cushing, Fishery Investigations, Series II, Vol. XXI, No. 3, 16 pp., illus., printed. Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1957. Reports on the four types of fish traces--spot, cone, plume, and layer--recorded on the paper records of echo sounders used in different depths. The form of fish traces can give useful biological information on the sizes and formations of fish shoals; however, the author indicates that more accurate methods of identifying fish traces are needed in order to increase the usefulness of echo-sounding in commercial fisheries.

#### FISH OILS:

"South African Pilchard Oil. 6. The Isolation and Structure of a Docosahexaenoic Acid from South African Pilchard Oil," by J. M. Whitcutt, article, The Biochemical Journal, vol. 67, no. 1, 1957, pp. 60-64, illus., printed, 25s. (US\$4.25) net per issue. Cambridge University Press, American Branch, 32 East 57th Street, New York 22, N. Y.

#### FREEZING FISH AT SEA:

Report on an Experiment into the Freezing of Fish at Sea, 79 pp., illus. with photographic plates and

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diagrammatic charts, printed. White Fish Authority, Tilbury House, Petty France, London, S. W. 1, England. Reports on a practical experiment to test the commercial possibilities of freezing whole fish at sea on an existing trawler suitably converted for that purpose. Part I of this report describes the circumstances in which the freezing-fish-at-sea experiment was undertaken, the course of the experiment, and the conclusions reached. Part II consists of a series of papers on the technical aspects and the lessons learned from the experiment. Part III contains detailed statistics of the fish caught and frozen and photographs and diagrams of some of the equipment used. The results of the experiment indicate that (1) it is technically practicable to freeze fish at sea under all weather conditions; (2) the quality of the fish caught is improved through a reduction of the period of time during which unfrozen fish is kept on ice; and (3) the productivity of the trawler can be increased considerably. The financial results of the experiment are less conclusive, but it is thought that if the frozen fish were held in storage for times of short supply, the higher prices received would compensate for the higher costs of production and storage.

#### GENERAL:

How to Clean Fishy Surfaces, by R. Spencer, D. S. I. R. Food Investigation Misc. Paper No. 4/57, 4 pp., illus., printed. (Supplement to Fishing News and Fish Selling.) Humber Laboratory, Food Investigation Organization, Department of Scientific and Industrial Research, Aberdeen, Scotland.

Window in the Sea, by Ralph Nading Hill, 208 pp., illus., printed. Rinehart & Company, Inc., New York, N. Y., 1956. A vivid and interesting account of the many difficulties and rewarding success undergone by the men that created the Marine Studios Oceanarium in Florida. In the many incidents related by the author, the outstanding fish and mammals of the oceanarium evolve as personalities--both humorous and sad. Many photographs are included, giving the reader fascinating glimpses of the little-known world in the sea.

The Wonderful World of the Sea, by James Fisher, 68 pp., illus. in color, printed, \$2.95. Garden City Books, New York, N. Y., 1957. A book of general interest dealing with the sea and its waters; life within the sea; the sea and its challenge to man; and man's challenge to the sea.

#### HERRING:

On the Herring of the Southern North Sea, by D. H. Cushing and A. C. Burd, Fishery Investigations, Series II, Vol. XX, No. 11, \$1.53. Her Majesty's Stationery Office, 13a Castle Street, Edinburgh 2, Scotland, December 19, 1956. Available from Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y.

#### JAPAN:

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 1, pp. 1-86, illus., printed

in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan, May 1957. Contains among others the following scientific papers: "Studies on crystalline Whale Insulin. II. Amino Acid Composition," by Tsuneyuki Saito, Yoshio Ishihara, Yasuzo Ito, and Masahiko Fujino; "The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Sea Foods. III. The Crystallizing State of Chemically Synthesized Crystals at Various Temperatures," by Eiichi Tanikawa, Yoshio Nagasawa, and Takashi Sugiyama; "The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Sea Foods. IV. Formation of the Crystal of  $MgNH_4PO_4 \cdot 6H_2O$  and its Minimum Ion Concentration," by Eiichi Tanikawa, Yoshio Nagasawa, and Takashi Sugiyama; and "The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Sea Foods. V. The Growth of the Crystals of  $MgNH_4PO_4 \cdot 6H_2O$  in Glass Vessel," by Eiichi Tanikawa, Yoshio Nagasawa, and Takashi Sugiyama.

Bulletin of Tokai Regional Fisheries Laboratory, no. 15, January 1957, 238 pp. text, 8 pp. photographs, illus., printed in Japanese and English. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-Ku, Tokyo, Japan. Contains, among others, the following articles: "On the Catch of O-Age Sardine in Matsu Bay," by S. Hayashi; "Growth of the Japanese Anchovy--III. Vertebral Counts of the Post Larvae," by S. Hayashi and H. Suzuki; "Behaviors of Fishes Entering Trap Nets," by H. Miyamoto; "Study on Bait for Tuna Long Line--I. An Artificial Bait of Latex Sponge Shaped Like a Squid," by T. Koyama; and "Studies on the Properties of Shark Skin as the Raw Material for Manufacturing Leather," by T. Takahashi, A. Ishino, T. Tanaka, M. Takei, and W. Yokoyama.

The Tohoku Journal of Agricultural Research, vol. VII, no. 3, January 1957, 105 pp., illus., printed. Faculty of Agriculture, Tohoku University, Kita-6-Bancho, Sendai, Japan. Contains, among others, the following articles: "A Rapid Method for the Determination of Moisture Content in Fish Meat--II. Relation Between Error of Estimation and Fat Content," by Y. Tsuchiya and Y. Sato; "Studies on the Conjugated Fatty Acids--Part II. The Thermal Polymerization of the Conjugated Fish Oil Contained by the Nickel-on-Carbon Catalyst Isomerization," by Y. Tsuchiya and M. Kayama; and "Comparative Biochemical Studies on Aquatic Animals--II. Phosphorus Turnover of the Freshwater Fish and Shellfish," by M. Asano and M. Ito.

#### LOBSTER:

Processing Lobster and Lobster Meat for Freezing and Storage, by John S. Getchell and Matthew E. Highlands, Bulletin 558, 15 pp., printed. Agricultural Experiment Station, Orono, Maine, 1957.

#### MANAGEMENT:

Managing Our Fish and Wildlife Resources (Institute), Mar. 21-22, 1957, Center for Continuation Study, 90 pp., printed. University of Minnesota, Minneapolis, Minn., 1957.

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#### MARINE ENGINEERING:

Marine Electrical Practice, by G. O. Watson, 334 pp., illus., printed, \$12. Philosophical Library, Inc., 15 E. 40th St., New York 16, N. Y., 1957. This is a practical guide to seagoing engineers or electricians, electrical draughtsmen, and engineers employed on the installation, maintenance, or operation of marine electrical equipment. The purpose of this book is to fill the gap which confronts the marine engineer when he has mastered fundamental formulae and elementary principles and begins to apply himself to practical problems. Among the subjects covered are generators, switchgear, motors and motor control, batteries, lighting, cables and distribution, and electrically-driven auxiliaries such as steering gear. Included is much practical information on such subjects as insulation testing. Comprehensive chapters are to be found on a. c. generators and switchgear. Typical connection diagrams and the behavior of machines and apparatus are presented. Although in general the descriptions are based on British practice, the underlying principles apply equally to practice in other countries even if the physical appearance of the apparatus may differ. Among others, the book is intended to help many seagoing engineers which are charged with the care of electrical installations without any previous knowledge. Besides the author, there are chapters by R. A. Harvey, R. V. Mills, and H. R. Ruff. Some of the other chapter headings are insulation and temperature ratings of machines, rotary amplifiers, methods of installing cables, control gear, graphical symbols, etc. The book with 182 illustrations is well illustrated.

#### MEETINGS AND PROCEEDINGS:

Proceedings of the Gulf and Caribbean Fisheries Institute, Ninth Annual Session, Nassau, Bahamas, November 1956, 197 pp., illus., printed, \$1. The Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, Coral Gables, Fla., September 1957. Contains all of the papers presented at the ninth session (Nassau, Bahamas, 1956) of the Institute. The opening address on the Federal Government's role in the development of new fishery resources was delivered by Arnie J. Suomela. At the Shrimp Session the following papers were presented: "Aims and Progress in Gulf Investigations' Shrimp Research," by Thomas J. Costello; "Intermittent Shrimp Sampling in Apalachicola Bay with Biological Notes and Regulatory Applications," by Robert M. Ingle; "Mesh Size Regulations as a Possible Method of Managing the Tortugas Shrimp Fishery," by James Regan, C. P. Idyll, and Edwin S. Iversen; "Biochemical and Bacteriological Methods for Determining Shrimp Quality," by C. R. Fellers, M. Gagnon, and R. Khatchikian; "The Effects of Chlorotetracycline on Shrimp Spoilage at Various Temperatures," by Lionel Farber and Peter A. Lerke; "The Effects of the Antibiotic Chlorotetracycline on Shrimp Freshness," abstract by C. Isaac Camber, James E. Alexander, and Mary H. Vance; and "International Law of Fisheries," by S. A. Baylitch. Papers for the Exploratory Fishing and Technology Session discussed "A New Federal Fishing Laboratory on

the Gulf," by Charles Butler; "Progress in Technological Studies on Menhaden Products Under the Saltonstall-Kennedy Program," by Theodore M. Miller; "Oxidative Deterioration in Fish and Fishery Products," by Harold S. Olcott; and "Royal Red Shrimp--A New South Atlantic Resource," by Harvey R. Bullis, Jr. Subjects of the papers presented at the Economic Session included: "Some Findings on Insurance Experience of Commercial Fishing Vessels in the Gulf of Mexico," by Warner C. Danforth and Chris A. Theodore; "Ways and Means of Stabilizing the Shrimp Market," by Richard A. Kahn; "A Summary of Studies on the Marketing of Florida Fish," abstract by Barton A. Westerlund, James Murdock, Jack T. Brawner, C. P. Idyll, and Albert Rosen; "Fish Consumption--Where is it Headed?" by A. W. Anderson; and "The New Place of Commercial Fisheries in the United States Government," by John L. Farley. The Biological Session presented papers on: "The Status of Scientific Knowledge About the Snapper (*Lutjanus aya* Bloch) and the Economic Importance of this Fishery," abstract by Jerome E. Stein; "Biological Investigation of Atlantic Coast Menhaden," by Fred C. June; "Studies on the Life History of the Spotted Sea Trout, *Cynoscion nebulosus* (C. & V.)," abstract by Durbin Tabb; "Field and Laboratory Observations on the Growth of Some Bermuda Reef Fisheries," by John E. Barloch and David W. Menzel; "A Survey of Spearfishing in the Florida Keys," by James Murdock; and "Progress of Recovery of the Commercial Sponge Beds of Florida," by John F. Storr. At the Caribbean and General Session the following papers were presented: "The Present Situation in the Fishing Industry of Cuba," by Jose A. Suarez Casbro; "The National Institute of Fisheries of Cuba"; "Marine Fisheries of the Yucatan Peninsula, Mexico," by Jorge Carranza; "Developing a Caribbean Fishery," by D. W. Wiles; "The Survey of Living Aquatic Resources," by H. Rosa, Jr.; "Activities of the Corps of Engineers Related to Florida Coastal Fisheries," by Oscar Rawls; and "The Activities of the U. S. Fish and Wildlife Service, Water-Use Projects and the Marine Fishery Resources of Florida," by Arthur R. Marshall.

#### MISSISSIPPI RIVER:

"Commercial Fishing on the Mississippi," by Leroy W. Small, article, Wisconsin Conservation Bulletin, vol. 22, no. 9, September 1957, pp. 29-31, illus., printed. Wisconsin Conservation Department, State Office Bldg., Madison 1, Wis. The commercial fishermen on the upper Mississippi River are permitted to catch catfish, shovelnose sturgeon, sheepshead, mooneye, and other rough fish with a variety of gear. This article describes the gear and methods used, giving special emphasis to seine and gill net fishing--which are the most effective.

#### MOTHER-OF-PEARL:

"Mother-of-Pearl Industry in French Oceania," by Michel Gug, article, The SPC Quarterly Bulletin, vol. 7, no. 3, July 1957, pp. 19-21, illus., printed, single copy 30 U. S. cents. South Pacific Commission, Box 5254, G. P. O. Sydney, Australia.

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Discusses briefly the life history of the pearl oyster, *Pinctada margaritifera*, from which mother-of-pearl is obtained. Also tells where these pearl oysters are found, how they are taken, the importance of the mother-of-pearl industry in French Oceania, and the measures taken for conservation of this resource.

#### NEW YORK:

"Around Long Island Underwater--A Guided Tour of New York's Marine Treasure House," by Erwin J. Ernst, article, *The New York State Conservationist*, vol. 12, no. 1, August-September 1957, pp. 23-26, 38, 39, illus., printed, single copy 50 cents. New York State Conservation Department, Arcade Bldg., Albany, N. Y. Describes the marine life in the shallow oceanic shorelines of Long Island, N. Y., as observed by "free" divers equipped with self-contained underwater breathing apparatus. A two-page colored plate showing the various species mentioned in the article adds vividness to the realistic text.

#### OCEANOGRAPHY:

Primary Production, Chlorophyll, and Zooplankton Volumes in the Tropical Eastern Pacific Ocean, by Robert W. Holmes, Milner B. Schaefer, and Bell M. Shimada, *Bulletin* vol. II, no. 4, pp. 129-169, illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1957.

#### OYSTERS:

Oyster Production in the Rivers Crouch and Roach, Essex, from 1950 to 1954, by G. Duncan Waugh, *Fishery Investigations, Series II*, Vol. XXI, No. 1, 47 pp., illus., printed. Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1957.

#### PORTUGAL:

Gremio dos Armadores da Pesca da Sardinha, Relatório e Contas do Exercício de 1956 e Orcamento para 1957 (Sardine Vessel Owners' Guild, Statement of Operations for 1956 and Budget for 1957), 12 pp. text, 7 pp. charts, printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal.

#### REFRIGERATION:

Journal of the Fisheries Research Board of Canada, vol. 14, no. 4, 181 pp., illus., printed. Fisheries Research Board of Canada, Ottawa, Canada, July 1957. Contains, among others, the following articles: "The Action of *Pseudomonas* on Fish Muscle: I. Organisms Responsible for Odours Produced during Incipient Spoilage of Chilled Fish Muscle," by C. H. Castell and Maxine F. Greenough; "Influence of Intermittent Short Storage Periods at 15° F., as Encountered during Refrigerator Car Transportation, on the Quality of Frozen Cod Stored at 0° F.," by W. J. Dyer, Doris I. Fraser, D. G. Ellis, and W. A. MacCallum; and "Yellow Discoloration and Deterioration in Frozen Lobster Meat," by E. G. Bligh, W. J. Dyer, and D. C. Horne.

#### SALMON:

Collection and Interpretation of Sockeye Salmon Scales, by R. I. Clutter and L. E. Whitsel, Bul-

letin IX, 163 pp., illus., printed. International Pacific Salmon Fisheries Commission, New Westminster, B. C., Canada, 1956.

Sockeye and Pink Salmon Fisheries, TIAS 3867, 6 pp., printed, 5 cents. Public Services Division, Department of State, Washington 25, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) The protocol between the United States and Canada amending the convention of May 26, 1930.

#### SHAD:

Shad Catches and Water Temperatures in Virginia, by William H. Massmann and Anthony L. Pacheco, 2 pp., illus., printed. (Reprinted from the *Journal of Wildlife Management*, vol. 21, no. 3, July 1957, pp. 351-352.) Virginia Fisheries Laboratory, Gloucester Point, Va.

#### SHRIMP:

"Shrimp Potpourri," by Percy Viosca, Jr., article, *Louisiana Conservationist*, vol. 9, no. 7, July-August 1957, pp. 10-13, 20-21, illus., printed. Louisiana Wild Life and Fisheries Commission, 126 Civil Courts Bldg., New Orleans, La. Presents a brief history of Louisiana's shrimp industry--its leading seafood industry--and summarizes the technological developments and advances in gear. Discusses separately each of the commercially-important species of (1) the free-spawning type of shrimp: the white shrimp (*Penaeus setiferus*), the brown shrimp (*Penaeus aztecus*), the pink shrimp (*Penaeus duorarum*), and the seabob (*Xiphopenaeus kroyeri*); and (2) the egg-bearing shrimp: the river shrimp (*Macrobrachium ohione*) and the delta shrimp (*Macrobrachium acanthurus*). The article concludes with a section entitled "How to Distinguish the Edible Shrimp," which provides a guide for identifying the various species mentioned above. Photographs of all the species discussed, except the river shrimp, are included in the article.

#### SMALL BUSINESS:

Public Relations for Small Business Owners, by Raymond W. Miller and Robert W. Miller, *Small Marketers Aids*, No. 27, 4 pp., printed. Available free from the Small Business Administration, Washington 25, D. C.

#### TERRITORIAL WATERS:

Addendum to Comments by Governments of 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 7th Session, A/CN.4/99/Add.9, 8 pp., processed. United Nations, International Law Commission, New York, N. Y., July 3, 1956. For sale by International Documents Service, Columbia University Press, New York 27, N. Y.

Regime of the High Seas and Regimes of the Territorial Sea (Addendum to the Report), by J. P. A. Francois, Special Rapporteur, A/CN.4/97/Add.3, 17 pp., processed. United Nations, International Law Commission, New York, N. Y., May 9, 1956.

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

For sale by International Documents Service, Columbia University Press, New York 27, N. Y. Summary of replies from Governments and a continuation of the conclusions of the Special Rapporteur.

Yearbook of the International Law Commission, Vol. I. Summary Records of the 8th Session, 23 Apr. -4 Jul. 1956, A/CN.4 SER.A/1956, 293 pp., printed (Sales No.: 1956.V.3, Vol. I) \$3. United Nations, International Law Commission, New York, N. Y., November 1956. For sale by the International Documents Service, Columbia University Press, New York 27, N. Y.

Yearbook of the International Law Commission 1956. Vol. II. Documents of the 8th Session, including the Report of the Commission to the General Assembly, A/CN.4/SER.A/1956/Add.1, 303 pp., printed (Sales No.: 1956.V.3, Vol. II) \$3. United Nations, International Law Commission, New York, N. Y., November 1956. For sale by International Documents Service, Columbia University Press, New York 27, N. Y.

#### TUNA:

An Analysis of Methods of Sampling to Determine the Size Composition of Commercial Landings of Yellowfin Tuna (NEOTHUNNUS MACROPTERUS) and Skipjack (RATSUWONUS PELAMIS), by Richard C. Hennemuth, Bulletin vol. II, no. 5, pp. 174-243, illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1957. Catch statistics of the Eastern Pacific fishery for yellowfin tuna and skipjack are being collected and analyzed in order to provide the factual information required for maintaining the catch of these species at maximum sustainable levels. To provide the necessary basic data, a program of collecting length-frequency samples from the commercial catch was started in July 1954. Initially, the design of sampling was arbitrary because of the lack of necessary estimates of variability. Several methods of drawing fish for measurement were employed to furnish a basis for subsequent establishment of adequate, routine sampling procedures. The purpose of this paper is to compare estimates obtained from the different methods of sampling, and to determine the most efficient plan for future sampling.

#### TURTLES:

"Breeding Turtles for Profit," by Ronald Powell, article, The SPC Quarterly Bulletin, vol. 7, no. 3, July 1957, pp. 41-42, illus., printed, single copy 30 U. S. cents. South Pacific Commission, Box 5254, G.P.O., Sydney, Australia. A very brief article on the green turtles and their eggs which are taken on Palmerton Atoll in the Cook Islands. Following successful initial experiments, the author suggests that breeding turtles in captivity might well prove a worthwhile commercial venture.

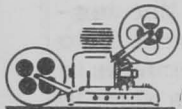
#### UNITED KINGDOM:

White Fish Authority, Sixth Annual Report and Accounts for the Year Ended 31st March, 1957, 51 pp., printed, 2s. (28 U. S. cents). Her Majesty's Stationery Office, London, England. Presents a general description of the White Fish Authority, its functions, income, and expenditures. Sections on production of fishery products, marketing and distribution, research and experiments, training courses, and investigations are also presented.

#### WHALING:

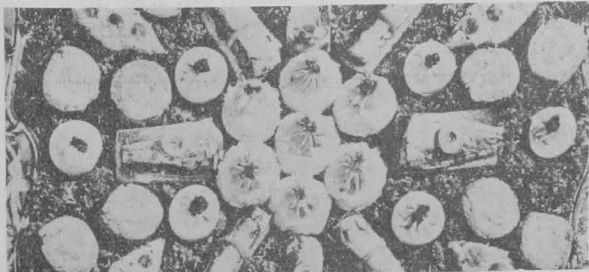
Antarctic Hazard, by W. Ross Cockrill, 230 pp., illus., printed, \$4.75. The Philosophical Library, Inc., 15 East 40th St., New York 16, N. Y., 1957. A thrilling and amusing first-hand account of a modern Antarctic whaling expedition. The author describes every phase of the whaling industry from the hunt and kill in the far whaling grounds of the Ross Sea and Weddell Sea, to the landing in Britain of the valuable cargo of oil, dried meal, and frozen blocks of whale steaks.

"Whaling Operations in the Antarctic, Season 1956/57," article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 46, no. 8, August 1957, pp. 438-446, 449-454, 457-462, illus., printed in English and Norwegian. Norsk Hvalfangst-Tidende, Sandefjord, Norway. An extract of the material submitted at the meeting of the International Whaling Commission in London from June 24-28, 1957, on whaling operations in the Antarctic in the season 1956/57. It presents the chief regulations governing pelagic whaling, catch material and results, whaling period, oil yield per blue-whale unit, average size of the whales captured, percentage of immature blue and fin whales in pelagic catch, and ratio of blue and fin whales in the catch.



#### FISHERY MOTION PICTURE

The following motion picture is available only from the source given in the listing.



SARDINE SPREAD (HORS D'OEUVRES)

Sardines from Maine--Down-East Style, a 14-minute, 16 mm. sound and color film, produced and distributed by the Bureau of Commercial Fisheries, United States Fish and Wildlife Service, for the Maine Sardine Council which financed the film. This film is the Pine Tree State's proof of its assertion that the Maine sardine is a four-season food that can be served in sundry and unique ways. It is another in the growing list of educational films made possible by the cooperation of units of the Department of the Interior and industry. Distribution prints have been made available to the Bureau of Commercial Fisheries by the Council for

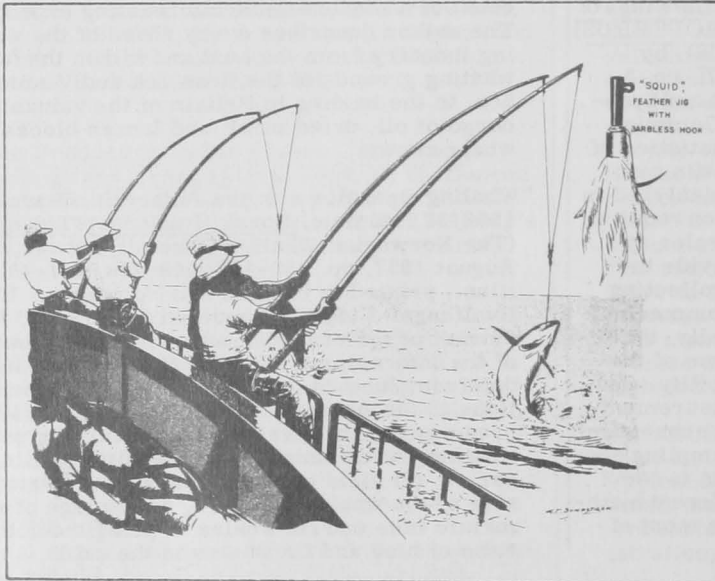
free public distribution through a film library system made up approximately of 150 libraries which distribute Bureau films. This new film will supplement *It's the Maine Sardine*, which was produced nine years ago. The original was awarded first prize in the public relations category at the Venice International Exhibition of Cinematographic Art in 1951 and still heads the list of requests for Bureau pictures. The new film is "down-east" in every detail, from the brief scenes showing the taking of the fish from the cool Maine waters right through a whole series of tried-and-true Maine recipes

being prepared and served against a colorful Maine background. But though this motion picture is so typical of the Pine Tree State, its theme and the presentation of that theme will whet appetites in any part of the country. The picture is primarily directed toward the housewife, showing her the many ways the sardine--whether packed in oil, mustard, or tomato sauce--can be used as a budget and appetite-satisfying principal dish, in sandwiches or salads, as appetizers for family or party menus, or for such extensive programs as school lunches.



### TUNA FISHERY

Over 75 percent of the United States annual catch of tuna is taken by Pacific coast bait boats or tuna clippers, which are the most expensive fishing



TWO-POLE TUNA FISHING

boats afloat. Ranging from 65 to 150 feet, these craft are distinctive and picturesque, with a raking stem and raised decks forward. The majority have the hold divided into watertight compartments to hold the frozen tuna during the return trip.

Hook-and-line fishing is the order aboard the clippers, using live bait, a feather lure, or even a bright metal bare hook. On locating a school of tuna, live bait is thrown overboard to attract the tuna to the vessel. As they come in to

take the bait, the fishermen cast their barbless hooks. In their eagerness to eat the live bait, the tuna take the lure. If the fish average less than 30 pounds, one man can land an individual fish. If they range between 30 and 50 pounds, two men are required, and for fish over 50 pounds three men team together to land them.