



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 - BRANCH OF STATISTICS 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-2056	- Shrimp Landings, 1958 Annual Summary, 21 pp.
CFS-2073	- Alaska Fisheries, 1958 Annual Summary, 8 pp.
CFS-2074	- Shrimp Landings, February 1959, 6 pp.
CFS-2076	- Mississippi Landings, April 1959, 2 pp.
CFS-2077	- North Carolina Landings, May 1959, 3 pp.
CFS-2079	- Fish Meal and Oil, May 1959, 2 pp.
CFS-2080	- Ohio Landings, May 1959, 2 pp.
CFS-2081	- Rhode Island Landings, March 1959, 3 pp.
CFS-2083	- Georgia Landings, May 1959, 2 pp.
CFS-2084	- Florida Landings, May 1959, 7 pp.
CFS-2085	- Massachusetts Landings, March 1959, 5 pp.
CFS-2091	- New Jersey Landings, April 1959, 3 pp.
CFS-2092	- Maine Landings, May 1959, 3 pp.
CFS-2093	- California Landings, March 1959, 4 pp.
CFS-2095	- New York Landings, May 1959, 4 pp.
CFS-2096	- Massachusetts Landings, April 1959, 5 pp.
CFS-2097	- South Carolina Landings, May 1959, 2 pp.
CFS-2099	- New Jersey Landings, May 1959, 3 pp.
CFS-2110	- South Atlantic Fisheries, 1958 Annual Summary, 6 pp.

Canned Fish Retail Prices:

FL-476i - June 1959, 27 pp.

Canned Fish Consumer Purchases:

FL-478f - May 1959, 31 pp.

FL-478g - June 1959, 31 pp.

Wholesale Dealers in Fishery Products (Revised):

SL- 2 - New Hampshire, 1959.

SL- 5 - Connecticut, 1957.

SL- 8 - Pennsylvania, 1959.

SL- 10 - Maryland, 1959.

- SL- 16 - Florida, 1959.
 SL- 20 - Texas, 1957.
 SL- 26 - Illinois, 1958.
 SL- 31 - New York (Lakes Area), 1958.
 SL- 32 - Minnesota (Mississippi River and Tributaries), 1959.
 SL- 35 - Illinois (Mississippi River and Tributaries), 1959.
 SL- 37 - Kansas (Mississippi River and Tributaries), 1959.
 SL-161 - Producers of Packaged Fish, 1958 (Revised).

SSR-Fish. No. 282 - Oceanographic Observations, 1959, East Coast of the United States, by C. Godfrey Day, 131 pp. illus., January 1959.

SSR-Fish. No. 291 - Stomach Contents of the Ber-
 ington Sea King Crab, by Patsy A. McLaughlin and
 James F. Hebard, 8 pp., illus., April 1959.

SSR-Fish. No. 293 - Currents in Southeastern Ber-
 ington Sea and Possible Effects Upon King Crab
 Larvae, by James F. Hebard, 17 pp., illus.,
 April 1959.

SSR-Fish. No. 299 - Fishway Capacity Experiment,
 1956, by Carl H. Elling and Howard L. Raymond,
 31 pp., illus., May 1959.

Man, Dams, and Salmon, 6 pp., illus., processed.

This folder describes the Columbia River fishery development program and its history. Describes the work carried on under the Columbia River Fishery Development Program authorized by Congress in 1946. The program was designed to conserve the fishery resources of the Columbia through artificial propagation, investigations, surveys, stocking, and stream improvement. To date, more than \$10 million has been spent on the work and it is estimated that the total cost of the program may reach \$50 million.

Summary Report, Symposium for Nutritionists,

March 18, 1959, Technological Leaflet No. 20, 19 pp., illus., processed. Contains summaries of papers presented at the Symposium for Nutritionists sponsored by the Industrial Products Division, National Fisheries Institute. Issued by the U. S. Bureau of Commercial Fisheries as part of a program of nutritional advisory services in cooperation with the fishing industry. Summarizes papers on: biological value of fish meal in practical broiler rations; recent nutritional studies; fish meal as a source of unknown growth factor and of high-quality protein;

feed formulation utilizing a high-speed digital computer; and practical feed formulation with fish meal and condensed fish solubles.

Sep. No. 559 - Storage Life of Pink Shrimp Held in Commercial and Jacketed Cold-Storage Rooms.

Sep. No. 560 - Surinam Fishery Explorations, May 11-July 31, 1957.

Sep. No. 561 - Fishing Vessel and Gear Developments: Equipment Note No. 1--New All-Aluminum Salmon Gill-Net Boats Built for Alaska Fishery.

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

(Baltimore) Monthly Summary - Fishery Products, May 1959, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, 400 E. Lombard St., Baltimore 2, Md.) Reports receipts of fresh and frozen fishery products by original receivers on the Baltimore Wholesale Fish Market. Presents receipts of species by states and Canadian provinces; and states and provinces by species; for the month indicated.

California Fisheries, 1958, by V. J. Samson, 41 pp., processed. (Market News Service, Post Office Bldg., San Pedro, Calif.) This is a review of 1958 trends and conditions in the California fisheries, including a resume of American Tuna Boat Association tuna auction sales. Among the subjects discussed are the tuna fishery (cannery receipts; total pack for 1946-58; imports of frozen tuna and canned tuna in brine; ex-vessel prices; canned tuna market conditions, prices, and standards; modernization of California purse seiners; conversion of tuna clipper to purse seiners; and changes in the tuna fleets); California sardine (pilchard) fishery (landings, ex-vessel prices, canned pack, and canned sardine prices); mackerel fishery (cannery receipts, ex-vessel prices, and canned mackerel markets and wholesale prices); anchovy fishery; canned pet-food production; whaling industry; and fishing seasons in major fisheries. Included in the statistical tables are data on tuna and tunalike fish (canners' receipts by species and by months; domestic landings; cannery receipts of frozen imported tuna; and canned pack by type of pack and by months); sardines (landings, canned pack, and meal and oil produced); mackerel and jack mackerel (canners' receipts and canned pack); cannery receipts and production of miscellaneous fishery products (receipts and canned pack of anchovies, herring, and squid; pet-food pack; and meal and oil production); California canned tuna price ranges, 1958; freezings of fish and shellfish by months; cold-storage holdings of fish and shellfish by months; landings of market fish and shellfish at Eureka, San Pedro-Santa Monica, and San Diego by species and by months; and imports of fishery products into Arizona and California Customs District, 1957-58 by commodity and country of origin.

California Fishery Products Monthly Summary, June 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; pack of canned tuna, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, 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, June 1959. 13 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.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, July 1959, 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, 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 England Fisheries--Monthly Summary, May 1959; June 1959; 22 pp. each. (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 months indicated.

New York City's Wholesale Fishery Trade--Monthly Summary for April 1959, 18 pp. (Market News Service, 155 John St., New York 38, N. Y.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, imports entered at New York City, primary wholesaler prices for frozen products, and marketing trends; for the month indicated.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, June 1959, 9 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 SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Fluctuations in the Commercial Fisheries of Saginaw Bay, 1885-1956, by Ralph Hile and Howard J. Buettner, Research Report 51, 42 pp., illus., printed, 25 cents, 1959. This report presents, with the aid of many statistical tables and charts, the variations in abundance and in species composition of the catches during the years 1885-1956 in Saginaw Bay, Mich. Maximum and minimum catches in single years were 14.2 million pounds in 1902 and 2.8 million in 1956. Actual and percentage contributions of individual species to the total catch have varied widely, but the major change of species composition has occurred since 1943. By the early 1940's carp had taken over top position from the traditionally dominant lake herring. The interrelations of production, abundance (or availability), and fishing intensity in 1929-56 are described for the eight principal species. Of the species that command a generally good price in a strong market, only the catfish remains plentiful. Fishing pressures have been dwindling and the trend of total production has been strongly downward. The outlook for the fishery is poor. Profitable operation calls for restoration of some of the higher-priced species and this restoration in turn must await effective control of sea lampreys and a subsequent rehabilitation of fish stocks.

Fluctuation in the Population of Yellow Perch, PERCA FLAVESCENS (Mitchill), in Saginaw Bay Lake Huron, by Salah El-Din El-Zarka, Fishery Bulletin 151 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 59), 55 pp., illus., printed, 40 cents, 1959.

Young Jack Crevalles (CARANX Species) Off the Southeastern Atlantic Coast of the United States, by Frederick H. Berry, Fishery Bulletin 152 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 59), 123 pp. illus., printed, 65 cents, 1959.

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.

ANTIBIOTICS:

"Effect of Chlorotetracycline (Aureomycin) on the Keeping Quality of Freshwater Fish under Tropical Conditions," by K. Visweswariah, M. N. Moorjani, D. S. Bhatia, and V. Subrahmanyam, article, Journal of the Fisheries Research Board of Canada, vol. 16, pp. 1-5, January 1959, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

AUSTRALIA:

Second Annual Report on the Operation of the Fishing Industry Act 1956 During the Year

Ended 30th June, 1958, 5 pp., processed. Department of Primary Industry, Canberra, Australia. This report summarizes activities during the year ended June 30, 1958, carried out under provision of the Fishing Industry Act of 1956, which established the Fisheries Development Trust Account for the purpose of financing activities designed to foster the development of the Australian fishing industry. It presents sections on: interdepartmental advisory committee on fisheries development; operation of the trust account; survey of prawn resources; survey of pilchard resources; trawling; barracuda; tuna; participation at the International Fishing Gear Congress; and financial statement.

BIOCHEMISTRY:

"Contributions to the Study of Marine Products. XLVII--22-Dehydrocholesterol," by Werner Bergmann and John P. Dusza, article, The Journal of Organic Chemistry, vol. 23, September 1958, pp. 1245-1247, printed. The Journal of Organic Chemistry, American Chemical Society, 1801 K St., N. W., Washington 6, D. C.

"Extraction of Melanophore-Concentrating Hormone (MCH) from the Pituitary of Fishes," by Katsutoshi Imai, article, Endocrinologia Japonica, vol. 5, 1958, pp. 34-48, printed in Japanese. Endocrinological Society of Japan, Eastern Branch, Tokyo, Japan.

"On the Formation of Amine in Fish Muscle. IV--Rapid Method for the Estimation of Histamine in Fish Muscle," by Fuyuo Ota, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 1, 1958, pp. 41-44, illus., printed in Japanese with English abstract and tables. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

"Location of Cholinesterase in Fishes," by S. J. Lundin, article, Experientia, vol. 14, 1958, pp. 131-132, printed in English. Experientia, Revue Mensuelle des Sciences Pures et Appliquees, Birkhauser, Ltd., Elizabethenstr. 15, Basel 10, Switzerland.

"Mechanism of the Antibacterial Action of Spermine," by S. Razin and R. Rozansky, article, Archives of Biochemistry and Biophysics, vol. 81, March 1959, pp. 36-54, printed. Archives of Biochemistry and Biophysics, Academic Press, Inc., 125 East 23rd St., New York 10, N. Y.

"Preliminary Study of the Distribution of Non-protein Nitrogen in Some Marine Fishes and Invertebrates," by N. L. Velankar and T. K. Govindan, article, Proceedings of the Indian Academy of Sciences, vol. 47B, 1958, pp. 202-209, printed. Indian Academy of Sciences, Bangalore, India.

"Tetrazolium Reduction Test in Relation to Species of Fish, pH of the Media, and Incubation Period," by M. N. Moorjani and J. R. Iyengar, article, Food Science, vol. 6, 1957, pp. 203-205, printed. Central Food Technological Research Institute, Mysore City, India.

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

BIOLOGICAL RESEARCH:

(Beaudette Foundation for Biological Research) First Annual Progress Report June 20, 1958-May 12, 1959, 13 pp. illus., printed. Beaudette Foundation for Biological Research, Box 482, R. F. D. 1, Solvang, Calif.

BIVALVES:

Survival of Some Juvenile Bivalves in Water of Low Salinity, by Paul E. Chanley, 14 pp., illus., printed. (Reprinted from Proceedings of the National Shellfisheries Association, vol. 48, 1958, pp. 52-65.) John B. Glude, Secretary-Treasurer, National Shellfisheries Association, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington 25, D. C.

CALIFORNIA:

Offshore Fishes of California, by John E. Fitch, 80 pp., illus., printed, 35 cents, State of California, Department of Fish and Game, Sacramento, Calif., 1958. An interestingly-written and well-illustrated booklet slanted primarily toward the sports fishermen but also of considerable interest to commercial fishermen. Presents general information on California's offshore fish and discusses habits and habitats; classification and anatomy; locomotion; food and feeding; age and growth; reproduction--sex, maturity and fecundity, spawning, eggs, and larvae; dangerous fishes; diseases and parasites; management; fishing ports; and marine aquaria. Also contains illustrations, descriptions, and fishing information for the principal species of offshore fish.

CANADA:

Fisheries Statistics of Canada, 1957 (New Brunswick), 45 pp., illus., printed in French and English, 75 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1959. Consists of tables giving the value of the principal species of fish and shellfish in New Brunswick, 1939-1957; quantity and value of landings by species and fisheries districts, 1956-57; quantity and value of manufactured fishery products by species and fisheries districts, 1956-57; capital equipment in the primary fisheries operations, by fisheries districts, 1956-57; and the number of persons engaged in the primary fisheries operations, by fisheries districts, 1956-57.

Fisheries Statistics of Canada, 1957 (Ontario, Prairie Provinces, and Northwest Territories), 78 pp., illus., printed in French and English, C\$1. Queen's Printer and Controller of Stationery, Ottawa, Canada, June 1959. This report consists of tables giving the value of the principal species of inland fish landed, 1950-57; quantity and value of landings by species and fisheries districts, 1956-57; capital equipment used in the primary fisheries operations; and the number of persons engaged in the fisheries. This information is presented separately for the provinces of Ontario, Manitoba, Saskatchewan, and Alberta, and for the Northwest Territories.

Summary Statistics of Canada's Fisheries, 1938-1957, 32 pp., printed. (Reprinted from Canadian

Fisheries Annual, 1959, 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 1952-1958; (2) East Coast fisheries; (3) fresh-water fisheries; (4) West Coast fisheries; (5) fillet production; and (6), (7), and (8) export 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. Data are mostly for 1957, although some 1958 figures are given.

COD:

"A Comparison of Various Salt Cod Products," by F. W. Van Klaveren and R. Legendre, article, Progress Reports of the Atlantic Coast Stations, no. 71, December 1958, pp. 3-5, printed. Fisheries Research Board of Canada, Atlantic Fisheries Experimental Station, Halifax, Nova Scotia, Canada.

"Vitamins and the Reproductive Cycle of Ovaries in Cod (*Gadus morrhua*)," by Olaf R. Braekkan, article, Fiskeridirektoratets Skrifter Serie Teknologiske Undersokelser, vol. III, no. 7, 1958, pp. 1-19, illus., printed. Director of Fisheries, Bergen, Norway.

EAST AFRICA:

East African Fisheries Research Organization Annual Report 1958, 50 pp., printed. East African Fisheries Research Organization, P. O. Box 343, Jinja, Uganda. Describes scientific work accomplished in the fields of hydrology, plankton, invertebrates, fish, and vertebrates other than fish. Also contains appendices covering: the food of non-cichlid fishes in Lake Victoria; notes on the culture of *Tilapia nigra* (Gunther) in ponds; the effect of temperature on the growth rate of *T. zillii*; growth of *T. esculenta* after maturation; growth of *T. esculenta* from large and small eggs; a pot test study of the effect of lake mud as a fertilizer; and the growth of a lung-fish in captivity. Includes a bibliography of recent publications on East African Fisheries and related subjects.

EDUCATION:

Digest of Annual Reports of State Boards for Vocational Education to the Office of Education, Division of Vocational Education (fiscal year ended June 30, 1958), 64 pp., illus., processed. Division of Vocational Education, Office of Education, U. S. Department of Health, Education, and Welfare, Washington 25, D. C. Data in this report are taken from the annual financial and statistical reports made by the States for fiscal year ended June 30, 1958. For the first time funds were appropriated by the Congress for vocational education in the fishing industry (\$228,000). Enrollments and expenditures under this authorization are reported in 2 statistical tables. Some States have excellent pro-

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grams of training for the fishing industry at the present time, and among the most popular courses are navigation, radio operation, and Diesel engine mechanics. The promotion and successful operation of several adult programs for the fishing industry indicate an acceptance of this new emphasis which was added to the vocational program by recent Congressional action. These programs consist of courses dealing with seafood merchandising and include such topics as processing, quality control, pre-packaging, display, promotion, purchasing, preparation, and the serving of fishery products.

EUROPEAN COMMON MARKET:

"The United States and the European Common Market," by John A. Birch, article, The Department of State Bulletin, vol. XLI, no. 1047, Publication 6856, July 20, 1959, pp. 88-93, printed, single copy 25 cents. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) U. S. Department of State, Washington, D. C.

FATTY ACIDS:

"Analysis of Long-Chain Fatty Acids by Gas-Liquid Chromatography. Micromethod for Preparation of Methyl Esters," by Wilhelm Stoffel, Florence Chu, and Edward H. Ahrens, Jr., article, Analytical Chemistry, vol 31, February 1959, pp. 307-308, printed. American Chemical Society, 1801 K St., N.W., Washington 6, D. C.

"The Use of High Efficiency Capillary Columns for the Separation of Certain Cis-Trans Isomers of Long Chain Fatty Acid Esters by Gas Chromatography," by S. R. Lipsky, J. E. Lovelock, and R. A. Landowne, article, Journal of the American Chemical Society, vol. 81, February 20, 1959, p. 1010, printed. The American Chemical Society, 1801 K St., N. W., Washington 6, D. C.

FILLETS:

The Expressible Fluid of Fish Fillets. VII--Freezing Damage and Protein Denaturation under Pressure, by R. M. Love and O. Karsti, 9 pp., illus., printed. (Reprinted from the Journal of the Society of Food and Agriculture, no. 5, 1958, pp. 249-257.) Department of Scientific and Industrial Research, Torry Research Station, Aberdeen, Scotland. Fillets of cod were frozen at different speeds under various pressure. The effects of pressure on cell damage caused during the freezing and on denaturation of the proteins during subsequent cold storage were studied, and found to vary according to the experimental conditions. They were, however, less important than the effect of the rate of freezing, and in no cases were pressed fillets after storage inferior to unpressed in "eating" quality. It was concluded therefore that pressure during freezing was not harmful, but could be of benefit by accelerating the freezing through improved contact between the fillets and the cooling plates.

FISH FARMS:

"Fish Farming," article, Journal of Agriculture and Food Chemistry, vol. 7, February 1959,

pp. 75-76, printed. American Chemical Society, 1801 K St., N. W., Washington 6, D. C.

FISH FLOUR:

"Fish Flour. 2--Factors Influencing Rate of Extraction; 3--Hold-up Fat," by G. M. Dreosti and R. P. van der Merwe, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, pp. 34-37, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

FISH MEAL:

"Experimental Shipment of Fish Meal," by A. M. Lewis, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, p. 25, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

"Loss of 'Fat' During Storage of Fish Meal," by G. H. Stander, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, p. 23, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

FISH OILS:

"Influence of Dietary Cod-Liver Oil and Some Fractions of Cod-Liver Oil on Serum Cholesterol-Level of Rats," article, by A. P. de Groot, Nature, vol. 183, no. 4669, April 25, 1959, p. 1191, printed. MacMillan & Co., Ltd., St. Martin's Street, London, W. C. 2, England. Describes experiments in which the cholesterol-lowering properties of cod-liver oil were compared with vegetable oils. From the results of the experiments it was concluded that cod-liver oil has a higher cholesterol-lowering activity than corn oil and hydrogenated coconut oil.

"Preparation of a Coating Material by Chlorination of Fish Oil. II--Separation of the Product from the Solution in Carbontetrachloride by Precipitation Method," by Kosaku Suzuki, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 5, 1958, pp. 381-385, illus., printed in Japanese with English abstract, tables, and figures. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

"Spectrophotometric Research on Sea-Fish Oils, by Giovanni D'Arrigo, article, Olii Minerali, Grassi e Saponi, Colori e Vernici, vol. 35, 1958, pp. 111-113, printed in Italian. Via G., Colombo 79, Milan 36, Italy.

FOOD AND AGRICULTURE ORGANIZATION:

Current Bibliography for Aquatic Sciences and Fisheries, vol. 2, no. 4, April 1959, 171 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Mediterranean Trawling, Second and Third Reports, General Fisheries Council for the Mediterranean, Studies and Reviews, No. 6, May 1959, 32 pp., illus., processed. GFCM Secretariat, Food and Agriculture Organization of

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the United Nations, Rome, Italy. Presents the text of a working paper entitled "Mediterranean Trawl Study," presented at the 5th meeting of the General Fisheries Council for the Mediterranean at Rome on October 13-18, 1958. It describes results of experiments carried out under the auspices of the Government of Israel. Details are given of recommendations concerning choice and proper adjustment of otter boards; simplification of net design; increased opening height of the net; and use of strong, non-rotting synthetic fibers.

FOREIGN TRADE:

Sources of Information on Foreign Trade Practice, 51 pp., printed, 25 cents. Bureau of Foreign Commerce, U. S. Department of Commerce, Washington 25, D. C., January 1959. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) This pamphlet is a revision of the bibliography, Foreign Trade Practice, issued by the U. S. Department of Commerce in June 1954. It presents sections on governmental sources, Department of Commerce publications, general sources, market analysis, statistics, regulations, preparing shipments, transportation, finance, standards, trade terms, arbitration, bibliographies and checklists, directories, and private trade journals.

FRANCE:

France Pêche, No. 30, June 1959, 68 pp. illus., printed in French. France Pêche, Tour Sud-Est, Rue de Guemene, Lorient, France. Contains, among others, the following articles: "Après le 2^e Congrès Mondial des Bateaux de Pêche" (After the Second World Fishing Boat Congress), by Robert Lenier; "Les Langoustiers Bretons en Mauritanie" (Breton Crayfish Fishermen in Mauretania); "Les Oiseaux et la Pêche" (Birds and Fishing), by Edouard Priol; and "Les Pêches Marocaines et la France" (Morocco's Fishing and France).

La Pêche Maritime (The Marine Fishery), vol. 38, no. 975, June 1959, 67 pp., illus., printed in French. Les Editions Maritimes, 190 Boulevard Haussmann, Paris, France. Contains among others, the following articles: "Le Marche de la Sardine dans le Monde" (The Sardine Market in the World), by Geep; "L'Evolution du Marche de la Sardine" (The Evolution of the Sardine Market), by L. Plouas; "Donnees Economiques du Marche Sardinier" (Economic Data on the Sardine Market), by Andre-Marie d'Avigneau; "L'avenie de la Pêche a la Sardine aux Sables-d'Olonne" (The Future of the Sardine Fishery at Sables-d'Olonne), by E. Anger; "L'aide Technique de l'Institut des Pêches aux Marins-Pêcheurs Sardiens" (Technical Aid from the Fish Institute to Sardine Fishermen), by M. Letoux; "Le 'Ring Net,' Facteur d'Equilibre sur le Marche Algerien de la Sardine" (The 'Ring Net,' the Balancing Factor in the Algerian Sardine Market), by R. Simonnet; "L'organisation de la Pêche a la Sardine au Portugal" (The Organization of the Sardine Fishery in Portugal).

FREEZING:

"Bibliography of Literature of Freezing Technology--January, 1958, to Date," article, Frosted Food Field, vol. 29, no. 6, July 1959, pp. 26-27, printed. Frosted Food Field, 111 No. Wabash, Chicago, Ill. This bibliography covers production and plant practice, product information, and research development and quality control.

"Fish Freezing Problems and Techniques," by M. B. F. Ranken, article, World Fishing, vol. 7, November 1958, pp. 63, 64, 69, and 70, printed. World Fishing, John Trundell (Publishers) Ltd., St. Richard's House, Eversholt St., London, N. W. 1, England.

"Studies on the Organic Phosphates in Muscle of Aquatic Animals. V--Changes in Muscular Nucleotides of Carp During Freezing and Storage," by Tsuneyuki Saito and Ken-ichi Arai, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 5, 1957, pp. 265-268, illus., printed in Japanese with English abstract, figure, and tables. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

FROZEN FISH:

"Fat Hydrolysis in Frozen Fish. 1--Free Fatty Acid Formation," by W. J. Dyer, Doris I. Fraser, and E. G. Bligh, article, Progress Reports of the Atlantic Coast Stations, no. 71, December 1958, pp. 17-19, printed. Fisheries Research Board of Canada, Atlantic Fisheries Experimental Station, Halifax, Nova Scotia, Canada.

GERMANY:

Allgemeine Grundlagen der Fischereipolitik (Basic Policies for Fisheries), by Dr. Wilhelm Blanke, 110 pp., illus., processed, in German. Forschungsstelle für Fischereiwirtschaft, Parkstrasse 50, Bremen, Germany, 1959.

HADDOCK:

Rapid Determination of the Quality of Whole Eviscerated Haddock, by B. E. Proctor, J. T. R. Nickerson, T. L. Fazzina, L. Ronsivalli, R. K. Smith, and J. Stern, 5 pp., illus., printed. (Reprinted from Food Technology, vol. 13, no. 4, April 1959, pp. 224-228.) Department of Food Technology, Massachusetts Institute of Technology, Cambridge 39, Mass. A test based on the refractive index of the eye fluids of haddock has been developed as a criterion of quality. The refractive index of haddock eye fluids was shown to be correlated with organoleptic scores made on cooked meat from the same fish and with the time of storage at refrigerator temperatures above freezing. Changes in the physical properties of haddock eye fluids during storage at refrigerator temperatures above freezing are, according to this report, probably due to enzyme action, since there was no evidence that bacterial composition is involved in such changes.

INDUSTRIAL FOOD SERVICES:

Buying Practices and Food Use of Employee Food Services in Manufacturing Plants, by Rosalind C. Lifquist, Marketing Research Report No. 326,

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

139 pp., illus., processed, 75 cents. Marketing Research Division, Agricultural Marketing Service, United States Department of Agriculture, Washington 25, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.). This report presents data collected during a nationwide survey of inplant facilities conducted in January-February 1956. Nearly 6,000 manufacturing plants with 250 or more employees--about one-half the plants of this size in the United States--provided some type of regular on-premise, food-serving facility for use of plant personnel. The report discusses, among others, these aspects of the survey: collection of data, characteristics of plants with food services; characteristics of food services; purchasing practices; stocks of food on hand; and expenditures for and use of various types of food. A large section of the report contains statistical tables showing results of the survey. The section on fish and shellfish mentions that proportionally over 8 out of 10 inplant food services used some kind of fishery product during the survey period with about three-fourths of the facilities making purchases at least once a week.

Employee Food Services in Manufacturing Plants, Marketing Research Report No. 325, 102 pp., illus., processed, 50 cents. Marketing Research Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C., June 1959. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Expenditures for food represent a large part, in some cases the single most important part, of the purchases of American families. Recent years have witnessed marked changes in consumption patterns, one of these being the greatly increased practice of eating away from home. This report presents the results of a study of one segment of the "away from home" food market: the food facilities which manufacturing plants provide for their employees. Data on the utilization of fish and shellfish products are included.

INSTITUTIONAL FOOD SERVICES:

Policies and Practices of Some Leading Institutional Wholesale Grocers, Marketing Research Report No. 335, 43 pp., illus., processed, 25 cents. Marketing Research Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C., June 1959. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) An increasing share of the Nation's food is being marketed by food service establishments such as restaurants, cafeterias, hotels, schools, and other away-from-home eating places, according to this report. One fourth of consumer's food dollar on average is spent for food served away from home. In this survey, case studies were made of nine selected wholesaling firms whose annual sales to food service operators ranged from slightly less than \$1 million to almost \$5 million.

IRRADIATION PRESERVATION:

'Storage Characteristics of Some Irradiated Foods Held at Various Temperatures Above

Freezing. I--Studies with Chicken Meat and Sweet Potatoes," by J. L. Licciardello, J. T. R. Nickerson, B. E. Proctor, and C. L. Campbell, article, Food Technology, vol. 13, no. 7, July 1959, pp. 398-404, illus., printed. Food Technology, The Garrard Press, 510 No. Hickory, Champaign, Ill.

'Storage Characteristics of Some Irradiated Foods Held at Various Temperatures Above Freezing. II--Studies with Pork Sausage and Scallops," by J. J. Licciardello, J. T. R. Nickerson, B. E. Proctor, and C. L. Campbell, article, Food Technology, vol. 13, no. 7, July 1959, pp. 405-409, illus., printed. Food Technology, The Garrard Press, 510 No. Hickory, Champaign, Ill. Storage studies were carried out with irradiated pork sausage and scallops held for 8 to 10 months at temperatures ranging from 50° F. to 125° F. Even after 8 months' storage at 50° F., irradiated pork sausage was considered acceptable in flavor. At storage temperatures of 68° F. or above, irradiated samples became unacceptable within 2 months. Irradiated scallops were considered to be acceptable after 10 months' storage at 50° F. or 68° F.; however, a marked deterioration in quality occurred within one month in samples held at 125° F. Non-enzymatic browning, which caused off-flavor and color degradation, played the principal role in deterioration of irradiated scallops during storage, but texture losses also occurred. In regard to irradiated pork sausage, texture change and associated off-flavors due to proteolytic enzyme action chiefly contributed to loss of quality. Color changes and fat oxidation also occurred.

JAPAN:

Export Inspection System of Japan, World Trade Information Service, Part 2, No. 59-45, 8 pp., printed, 10 cents. U. S. Department of Commerce, Bureau of Foreign Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., and by U. S. Department of Commerce Field Offices.) Describes the structure of Japan's export inspection system as established on February 1, 1958, by a new Export Inspection Law which makes export inspection mandatory for 145 major categories of goods including frozen marine products, dried aquatic products, salted aquatic products, fish-liver oil, agar-agar, fish meal and fish scrap, seed oyster, and canned foods. Published as an aid to the United States importer, this report covers: the role of inspection, improvement in inspection, inspection organizations, designated commodities, inspection procedures, using the system, trade disputes arising over quality, and protecting the buyer. An appendix lists designated export inspection commodities.

LIGHT FISHING:

'La Pêche a la Lumiere--Les Essais de l'Institut Scientifique des Pêches" (Light Fishing--Experiments of the Scientific Fisheries Institute), by G. Kurc and A. Percier, article, France Pêche, no. 31, July-August 1959, pp. 34-42, illus., printed in French. France Pêche, B. P. 179, Lorient, France.

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

MARINE ALGAE:

"Paper Chromatographic Study on Sugar Component of Red Algae," by Takehiko Nakamura, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, nos. 7 and 8, 1957, illus., printed in Japanese with English abstract, table, and figure. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

"Some Algae from Clipperton Island and the Danger Islands," by E. Yale Dawson, article, Pacific Naturalist, vol. 1, no. 7, June 30, 1959, 7 pp., illus., printed, Beaudette Foundation for Biological Research, Box 482, R. F. D. 1, Solvang, Calif.

"William H. Harvey's Report on the Marine Algae of the United States North Pacific Expedition of 1853-1856," by E. Yale Dawson, article Pacific Naturalist, vol. 1, no. 5, March 19, 1959, 39 pp., illus., printed, Beaudette Foundation for Biological Research, Box 227, R. F. D. 1, Solvang, Calif.

NEW ENGLAND:

The New England Fisheries Industry, by Harvey R. Sherman, 56 pp., processed, very limited distribution. Legislative Reference Service, U. S. Library of Congress, Washington 25, D. C. A brief survey of its economic state, its problems, and some possible measures for its improvement.

NORWAY:

Arsmelding 1957 fra Fiskeridirektoratets Kjemisk-Tekniske Forskningsinstitutt (1957 Annual Report from the Fisheries Directorate of the Chemi-Technological Research Institute), no. 3, 54 pp., illus., printed in Norwegian with English summary. Kjemisk-Tekniske Forskningsinstitutt, Bergen, Norway, 1958.

"Lofotfiskets Iønnsumhet 1958" (Value of Lofoten Fisheries, 1958), by Georg Oppendal, article, Fiskets Gang, vol. 45, no. 21, May 21, 1959, pp. 302-312, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

Naeringsverdi og Vitaminer i Norsk Fisk og Fiskevarer (Nutritional Values and Vitamins of Norwegian Fish and Fish Products), by Torleiv Taarland, Erling Mathiesen, Øydis Øvsthus, and Olaf R. Broekkan, 8 pp., illus., printed. (Reprinted from Tidsskrift for Hermetikkindustri, no. 11, 1958, pp. 405-412.) Trykt I, Aktietrykkeriet I, Stavanger, Norway.

"Vitaminer i Norsk Fisk III--Vitaminer i Forskjellige Organer fra de Viktigste Torskefisker (Gadidae) Fanget Langs Norskekysten" (Vitamins in Norwegian Fishes. III--Vitamins in Different Organs from the Most important Gadus-Fishes (Gadidae) Caught off the Coast of Norway), by Olaf R. Braekkan, article, Fiskeridirektoratets Skrifter, Serie Teknologiske Undersøkelser, vol. III, no. 6, pp. 1-32, illus., printed in Norwegian with English summary. The Director of Fisheries, Bergen, Norway, 1958.

OYSTER DRILL:

Burial as a Method for Control of the Common Oyster Drill, UROSALPINX CINEREA, of Long Island Sound, by V. L. Loosanoff and C. A. Nomejko, 7 pp., illus., printed. (Reprinted from Proceedings of the National Shellfisheries Association, vol. 48, 1958, pp. 83-89.) John B. Glude, Secretary-Treasurer, National Shellfisheries Association, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington 25, D. C.

PARASITES:

Studies on Helminth Parasites from the Coast of Florida. IV. Digenetic Trematodes of Marine Fisheries of Tampa, Boca Ciega Bays, and the Gulf of Mexico, by Franklin Sogandares-Bernal and Robert F. Hutton, Contribution Number 18, 15 pp., illus., printed. The Florida State Board of Conservation Marine Laboratory Maritime Base, Bayboro Harbor, St. Petersburg, Fla.

POLLOCK:

"Nitrite Preservation of Pollock," by G. A. Dolbish and M. G. Syromyatnikova, article, Rybnoe Khoziaistvo, vol. 34, no. 6, 1958, pp. 55-58, printed in Russian. Kotel 'nicheskaiia Naberezhiaia D 1/15, Souizpechatii Otdelu 'Zhurnal-Pochtoi," Moscow, Zh-240, U. S. S. R.

PROTEINS:

"Protein in Fish Muscle. 12--Ultracentrifuge Studies on Post-Rigor Extracts of Structural Protein," by D. G. Ellis and P. M. Winchester, article, Journal of the Fisheries Research Board of Canada, vol. 16, January 1959, pp. 33-41, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Proteins in Fish Muscle. 13--Lipid Hydrolysis," by W. J. Dyer, and Doris I. Fraser, article, Journal of the Fisheries Research Board of Canada, vol. 16, January 1959, pp. 43-52, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

PURSE SEINES:

"Model Experiments on the Sardine Purse Seine Operating in Hyuganada, V.," by Yunosuke Itaka, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 9, 1958, pp. 511-513, illus., printed in Japanese with English abstract, figures, and table. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

QUALITY:

"Chromatic Reaction for Deciding Fish Freshness II," by Elvira Cavallone, article, Atti Societa Italiana delle Scienze Veterinarie, vol. 11, 1957, pp. 635-638, printed in Italian. Societa Italiana delle Scienze Veterinarie, Stabilimento Grafico, F. Lli. Lega, Faenza, Italy.

"The Determination of Volatile, Permanganate-Reducing Substances in Sea Fish, a Useful Method for the Objective Estimation of Quality.

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

by H. Wittfogel, article, Fischwaren und Feinkost-Industrie, vol. 30, 1958, pp. 4-8, printed in German. Fachblatt für Alle Betriebszweige der Fischverwertungstechnik, Verlag Elbe-Weser, Dr. Seyfarth & Co., Fernsprecher 4101, Bremerhaven F., Germany.

"Improvement in Quality of Iced White Fish Preservative Ices," article, Food Investigation 1957, Report of the Food Investigation Board (Great Britain), 1958, pp. 4-5, printed. Her Majesty's Stationery Office, York House, Kingsway, London E. C. 2, England.

SALMON:

The Acid-Soluble Nucleotides of Salmon Liver, by H. Tsuyuki, Violet M. Chang, and D. R. Idler, Studies 1957 from the Stations of the Fisheries Research Board of Canada, FRB No. 522, 9 pp., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

SALT FISH:

"Mold Contamination in Salt Fish and Method of Control," by H. P. Dussault, article, Progress Reports of the Atlantic Coast Stations, No. 71, December 1958, pp. 13-15, printed. Fisheries Research Board of Canada, Atlantic Fisheries Experimental Station, Halifax, Nova Scotia, Canada.

SANITATION:

"Chlorinated Sea Water Cleans and Sanitizes Fish Holds," by Joseph W. Slavin, article, Fishing Gazette, vol. 76, January 1959, pp. 21-26, printed. Fishing Gazette Publishing Corp., 461 Eighth Ave., New York 1, N. Y.

SARDINES:

"Integration of Organized Food Technology into a System for Maine Sardine Production Control," by Berton S. Clark, article, Food Technology, vol. 13, no. 6, June 1959, pp. 289-293, illus., printed, single copy--domestic \$1.50, foreign \$1.75. (Published by the Institute of Food Technologists.) The Garrard Press, 510 North Hickory, Champaign, Ill. The relatively new research and quality control program of the Maine sardine industry is presented. The author describes the research phase of the program which was inaugurated early in 1954. Immediate action was taken to develop basic information concerning the technology of production operations and to devise a grading procedure to measure the quality of the product. The quality grading phase of the program was maintained on a voluntary basis throughout the 1955, 1956, and 1957 seasons and numerous quality improvements were made by commercial application of the technological principles disclosed by the investigations, coupled with analysis of a mounting volume of quality grade data. The author states that, "The State of Maine and all associated with this enterprise can take pride in having upgraded not only a product but also an industry."

SEA NETTLES:

"Nettles of the Sea," by Romeo Mansueti, article, Nature Magazine, vol. 52, no. 6, June-July 1959,

pp. 293-295, illus., printed, single copy 50 cents. American Nature Association, 1214 16th St., NW., Washington 6, D. C. Discusses the life history, which is still much of a mystery, and habits of two varieties of the sea nettle, Dactylo-metra quinquecirrha. Throughout its range from southern New England to Brazil, the sea nettle prefers the quiet brackish waters of shallow bays, estuaries, and other inland Atlantic waterways; rarely is it encountered in large numbers in the open ocean.

SEAWEED:

(Institute of Seaweed Research) Annual Report for 1958, 23 pp., printed. Institute of Seaweed Research, Inveresk, Midlothian, Scotland. This report covers the activities of the Institute during 1958, its information and technical assistance services, and ecological research studies. It also gives a summary of the work carried out under extramural contract and on a collaborative basis during 1958 covering algal chemistry, plant physiology, microbiology, and other applications of seaweed and algal chemicals.

"A New Gigartinoid Grateloupia (Red Algal) from Hawaii," by E. Yale Dawson, article, Pacific Naturalist, vol. 1, no. 1, December 17, 1958, 4 pp., illus., printed. Beaudette Foundation for Biological Research, Box 227, R. F. D. 1, Solvang, Calif.

SHARKS:

The Florida Shark Story, by Robert F. Hutton, Educational Series No. 13, 35 pp., illus., printed. Florida State Board of Conservation Marine Laboratory, Maritime Base, Bayboro Harbor, St. Petersburg, Fla., March 30, 1959. Presents the results of a survey to determine as many facts as possible about sharks in Florida waters, their danger to swimmers, and precautionary measures against the sharks. Records of shark attacks, kept since about 1919, indicate an average of less than one unprovoked shark attack per year. The attacks are most likely to occur during the months of June and July. Hungry, vicious, injured or trapped sharks are most likely to attack man. According to current information, only 11 species of sharks in Florida waters are considered to be dangerous or potentially dangerous. Swimmers are advised to avoid areas where fish have recently been cleaned and to swim in groups rather than alone.

SHRIMP:

Investigations on the Parasites and Diseases of Saltwater Shrimps (Penaeidae) of Sports and Commercial Importance to Florida (Preliminary Report), by Robert F. Hutton, Franklin Sogandares-Bernal, Bonnie Eldred, Robert M. Ingle, and Kenneth D. Woodburn, Technical Series No. 26, May 5, 1959, 36 pp., illus., printed. Director, State Board of Conservation, Tallahassee, Fla. This investigation was supported in part by a U. S. Public Health Service grant. A historical review of published works dealing with the parasites and diseases of penaeid shrimps from the Gulf of Mexico is presented. A brief description of several parasites is given. Geographical localities of the hosts, as well as

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locations of the parasites in the hosts, are included. Evidence indicating incidence of infection by the various parasites and the possible use of certain shrimp-parasites as migratory "tags" are discussed.

A Report on the Shrimps (Penaeidae) Collected from the Tortugas Controlled Area, by Bonnie Eldred, Special Scientific Report No. 2, 8 pp., processed. Florida State Board of Conservation Marine Laboratory Maritime Base, Bayboro Harbor, St. Petersburg, Fla., May 1959. Concern that the taking of small shrimp from the Tortugas shrimping grounds might possibly jeopardize the production from this area prompted the Florida legislature in 1957 to enact a law which designated a portion of the grounds which was associated with small shrimp and possibly a nursery area, to be controlled and investigated. In accordance with this law, the State Board of Conservation was directed to carry out periodic shrimp sampling in this Tortugas controlled area to obtain information on the frequency and abundance of undersized shrimp. The investigation was started during November 1957. This report presents details of findings on the pink shrimp and seven additional species of this family in the Tortugas controlled area, in the subsequent 12 months period.

The Shrimp Fishery of the Gulf of Mexico (Rio Grande River to St. Marks, Florida), Informational Series No. 2, 5 pp., printed. Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans 16, La., March 1959. Presents biological notes on the brown shrimp and the white shrimp; recommendations on closed seasons--nursery areas, offshore waters, and size limit; and recommendations on night fishing, gear, and bait shrimp.

SMOKED FISH:

"Technology of Smoked Foods," by W. W. Foster, article, Food Manufacture, vol. 34, February 1, 1959, pp. 56-61, printed. Food Manufacture, Leonard Hill, Ltd., Stratford House, 9 Eden Street, London N. W. 1, England.

SPERM OIL:

"Sperm Oil, Some Possible Uses," by Enrico Wahnon, article, Ingegneria Chimica, vol. 38, 1956, pp. 107-118, printed in Italian. Ingegneria Chimica, Negrolì 51, Milan, Italy.

SQUID:

"Preservation of the Squid (Loligo vulgaris) Topographical Distribution of its Enzymes," by Enrique Castella Bertran, T. Perez Garcia, A. Alvaro Pascual, and R. Ballesteros, Anales del Instituto de Investigaciones Veterinarias, vol. 7, 1955-56, pp. 83-91, printed in Spanish with English and German summaries. Instituto de Investigaciones Veterinarias, Universidad de Madrid, Madrid, Spain.

TARIFFS AND TRADE:

Operation of the Trade Agreements Program, 11th Report, July 1957-June 1958, 361 pp., processed. Secretary, U. S. Tariff Commis-

sion, Washington 25, D. C., 1959. During the period covered by the report, the Contracting Parties to the General Agreement on Tariffs and Trade did not sponsor any multilateral tariff negotiations of the Geneva-Annecy-Torquay type. Shortly before the close of the period, however, they commenced negotiations with Switzerland looking toward its provisional accession to the General Agreement. The United States engaged in limited trade-agreement negotiations with Brazil, Austria, Canada, Ceylon, Greece, and the Union of South Africa. Other developments include the new legislation relating to the extension of the President's authority to conclude trade agreements; the proposed legislation concerning United States participation in the Organization for Trade Cooperation; the establishment by Executive Order of the Cabinet-level Trade Policy Committee; the major developments relating to the general provisions and administration of the General Agreement; the actions of the United States relating to its trade agreements program; and the changes made in tariffs, exchange controls, and quantitative trade restrictions by countries with which the United States has trade agreements.

United States Import Duties, 1958, Miscellaneous Series, TC 1.10:Im7/4/958, 364 pp., processed, \$3. United States Tariff Commission, Washington 25, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Presents schedules of articles subject to duty and of articles free of duty as of July 1, 1958. Contains a section on fish and shellfish products under Schedule 7--Agricultural Products and Provisions.

TERRITORIAL SEA:

"Measurement of the U. S. Territorial Sea," by G. Etzel Percy, article, The Department of State Bulletin, vol. 40, no. 1044, June 29, 1959, pp. 963-971, illus., printed. Public Services Division, Bureau of Public Affairs, U. S. Department of State, Washington 25, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.). Discusses the methods for and significance of careful delineation of the United States territorial seas. The United States traditionally recognizes a zone of 3 nautical miles in breadth, giving it a territorial sea slightly larger than the combined areas of Massachusetts, Connecticut, Rhode Island, and New Jersey. Definite knowledge as to whether any given offshore point lies in or beyond the territorial sea may be of the utmost consequence. In order to have the territorial sea charted as exactly 3 miles in breadth at any point along the coast, the following rule must be observed: every point on the outer limit of the territorial sea must be plotted precisely 3 nautical miles from the nearest point on the coast along which it is measured. Fishing rights within the territorial sea are restricted to the coastal state, but beyond it the general principle of freedom of fishing pertains. There is much discussion throughout the world relative to a territorial sea with a breadth greater than 3 miles. In March or April 1960 a United Nations conference is sched-

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uled to convene at Geneva in an effort to settle, among other issues, a territorial sea with a breadth acceptable to all states.

TRADE AGREEMENTS:

Third Annual Report of the President of the United States on the Trade Agreements Program, 77 pp., printed. The White House, Washington, D. C., June 1959. The third annual report on the operation of the Trade Agreements Program. The following subjects are discussed: (1) 1958 trade developments; (2) the trade agreements program and the GATT; (3) regional integration; (4) U. S. tariff negotiations; (5) the safeguarding procedures of the trade agreements program; (6) restrictions against U. S. exports; and (7) the 1958 extension of U. S. trade agreements legislation. Also includes a report to the Secretary of State by the Chairman of the United States Delegation to the Thirteenth Session of the Contracting Parties to the General Agreement on Tariffs and Trade held at Geneva, Switzerland, October 16-November 22, 1958; and a report on relaxation of quantitative restrictions against United States exports.

TRADE LISTS:

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

Oils (Animal, Fish, and Vegetable)--Importers, Dealers, Producers, Refiners, and Exporters, Costa Rica, 6 pp. (June 1959). Lists the names and addresses, size of firms, and types of products handled by each firm. Includes firms dealing in fish oils.

Oils (Animal, Fish, and Vegetable)--Importers, Dealers, Producers, Refiners, and Exporters--Mexico, 26 pp. (July 1959). Lists the names and addresses, size of firms, and types of products handled by each firm. Includes firms dealing in fish oils.

Oils (Animal, Fish, and Vegetable)--Importers, Dealers, Producers, Refiners, and Exporters--United Kingdom, 17 pp. (June 1959). Lists the names and addresses, size of firms, and types of products handled by each firm. Includes firms dealing in fish oils.

TUNA:

"La Campagne 1959 de l'Albacore en Afrique Occidentale" (The 1959 West African Campaign for Tuna), by Alain de Torquat, article, La Pêche Maritime, vol. 38, no. 974, May 1959, pp. 261-262, illus., printed in French. La Pêche Maritime, 190 Boulevard Haussmann, Paris, France.

"Canned Tuna. I--Determination of Various Components in Canned Tuna; II--pH Determination of Canned Tuna Liquids," by Masayuki Kochi and Shitoku Era, article, Norinsho Suisan Koshusho Kenkyu-Hokoku (Journal of the Shimonoseki Col-

lege of Fisheries), vol. 7, 1957, pp. 33-43, printed in Japanese with English titles and abstracts. Ministry of Agriculture and Forestry, Marine Products Training Center, Shimonoseki, Japan.

"Quatrieme Port Thonier de France, les Sables d'Olonne Preparent la Prochaine Campagne Avec Optimisme" (Sables--d'Olonne, the Fourth Tuna Port of France, Makes Optimistic Preparations for the Next Season), article, La Pêche Maritime, vol. 38, no. 974, May 1959, pp. 263-264, illus., printed in French. La Pêche Maritime, 190 Boulevard Haussmann, Paris, France.

"Que nous Reserve l'Avenir de Notre Pêche Thoniere?" (What does the Future Hold for Our Tuna Fishery?), by Andre Dhellemmes, article, La Pêche Maritime, vol. 38, no. 974, May 1959, pp. 257-260, illus., printed in French. La Pêche Maritime, 190 Boulevard Haussmann, Paris, France.

"Regards sur la Campagne Thoniere en Cote Basque" (A Look at the Tuna Campaign along the Basque Coast), by G. Pommereau, article, La Pêche Maritime, vol. 38, no. 974, May 1959, p. 265, illus., printed in French. La Pêche Maritime, 190 Boulevard Haussmann, Paris, France.

VITAMINS:

"A Comparative Study of Vitamins in the Trunk Muscles of Fishes," by Olaf R. Braekkan, article, Fiskeridirektoratets Skrifter, Serie Teknologiske Undersøkelser, vol. III, no. 8, 1959, pp. 1-42 and 4 plates, illus., printed. The Director of Fisheries, Bergen, Norway.

WAGE LAWS:

State Minimum-Wage Laws and Orders, Women's Bureau Bulletin 267: Part 1--"Historical Development and Statutory Provisions," 31 pp. plus charts, printed, 75 cents; Part 2--"Analysis of Rates and Coverage," 142 pp., printed, 60 cents. An analysis of the Puerto Rico law has been issued as an addendum to Part 2, 18 pp., printed, 20 cents. U. S. Department of Labor Women's Bureau, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) This three-section report, covering the 16-year period, 1942 to 1958, is the latest in the Women's Bureau series on state minimum wage laws and orders.

WHALE OIL:

"Studies on the Whale Oil. XIII--The Composition of Fatty Alcohols in the Pacific Beaked Whale Blubber Oil," by Masamichi Saiki, Shinchen Gang, and Takajiro Mori, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, nos. 6 and 7, 1958, pp. 578-580, illus., printed in Japanese with English abstract and tables. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

WHALING:

Whaling--Amendments to the Schedule to the International Whaling Convention Signed at Wash-

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ington on December 2, 1946, Treaties and Other International Acts Series 4193, 4 pp., printed, 5 cents. Department of State, Washington 25, D. C., 1959. (For sale by the Superintendent of Docu-

ments, U. S. Government Printing Office, Washington 25, D. C.). Presents the amendments adopted at the Tenth Meeting of the International Whaling Commission, London, June 23-27, 1958.



HELICOPTER USED TO TAKE SEAL CENSUS

The census of 14,000 seals and sea lions was taken by two scientists of the University of California, Los Angeles, in the spring of 1959. The U. S. Air Force and Navy cooperated in the project.

A majority of the census population was made up of California sea lions, which numbered 13,000, a 13-fold increase since the '30's.

The elephant seal which was once brought to the brink of extinction by commercial hunters is making a strong comeback and now numbers in excess of 400, possibly as high as 683. Steller sea lions which numbered 2,000 in 1938 are now down to about 50. The population of harbor seals appears to be about 100.

Two other seals, the Guadalupe fur seal and the Alaska fur seal are known to occur in southern California waters, but none were seen during the census.

It is thought that the rapid increase of the California sea lion and decrease of the Steller sea lion may be due to a warming of the water, resulting in distribution changes of critical food species of fish and invertebrates which are relatively sensitive to such temperature changes. The two varieties of seals are known to have somewhat different food preferences.

The census was taken using aerial photographs in the channel islands of San Nicolas, Anacapa, Santa Barbara, Santa Cruz, Santa Rosa, and San Miguel.

The largest single population observed was on San Miguel, where 8,009 California sea lions, 34 Steller sea lions, 15 harbor seals, and 320 elephant seals were photographed during one observation. (Science News Letter, June 13, 1959.)

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