



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-2007	Mississippi Landings, January 1959, 2 pp.
CFS-2008	New York Landings, January 1959, 4 pp.
CFS-2011	Massachusetts Landings, November 1958, 5 pp.
CFS-2012	New Jersey Landings, February 1959, 3 pp.
CFS-2017	South Carolina Landings, February 1959, 2 pp.
CFS-2018	Fish Meal and Oil, February 1959, 2 pp.
CFS-2019	Massachusetts Landings, December 1958, 5 pp.
CFS-2022	Maine Landings, February 1959, 3 pp.
CFS-2023	California Landings, November 1958, 4 pp.
CFS-2025	Shrimp Landings, November 1958, 6 pp.
CFS-2026	Florida Landings, February 1959, 7 pp.
CFS-2028	Texas Landings, January 1959, 3 pp.
CFS-2029	Georgia Landings, February 1959, 2 pp.
CFS-2030	Rhode Island Landings, November 1958, 3 pp.
CFS-2031	Maine Landings, 1958 Annual Summary, by County and Gear, 10 pp.
CFS-2032	Maine Landings, 1958 Annual Summary, by Months, 5 pp.
CFS-2033	New York Landings, February 1959, 4 pp.
CFS-2034	Frozen Fish Report, March 1959, 8 pp.
CFS-2039	Rhode Island Landings, December 1958, 3 pp.
CFS-2044	Alabama Landings, January 1959, 2 pp.
CFS-2048	Florida Landings, March 1959, 7 pp.
CFS-2055	Mississippi Landings, February 1959, 2 pp.

FL-451 - The Striped Bass, by Edward C. Raney, 6 pp., illus., revised May 1958. (Revision of FL-175, March 1946.)

FL-469 - Seaweeds and Their Uses, by F. Bruce Sanford, 25 pp., November 1958. "Seaweeds are misnamed," states the author, "for they are not weeds but highly useful plants that yield a number of products having many important uses. The products obtained from the seaweeds may be divided into two groups: natural and derived. The natural products are those in which the seaweed itself is used as the end product. These may be whole, ground, or dried. Such products are used primarily for human food, for animal food, and for fertilizer. The derived products are those manufactured from seaweeds by chemical processes. Historically these products have included a wide variety of materials, such as iodine, acetone, and decolorizing carbon. The major derived products, both in the present and in the recent past, are those that have the ability to form gels and colloidal suspensions. In the United States, the principal colloidal products made from seaweeds are agar, algin, and carrageenin. Commercially these derived products are vastly more important than are the natural ones." The author discusses the growth habits of the green and blue-green algae, brown algae, and red algae; methods of harvesting; major constituents in seaweeds; and natural and derived products obtained from seaweed.

Canned Fish Retail Prices:

FL-476e - February 1959, 27 pp.
 FL-476f - March 1959, 27 pp.

Canned Fish Consumer Purchases:

FL-478a - December 1958, 32 pp.
 FL-478b - January 1959, 34 pp.
 FL-478c - February 1959, 34 pp.
 FL-478d - March 1959, 34 pp.

FL-484 - United States Tuna Fishery, 1911-1958, by E. A. Power, 15 pp., illus. Presents a brief history and discussion of the development of the tuna fishery--one of the United States' leading fishery resources. Included are statistical data on catch by species; imports and supply of fresh, frozen, and canned tuna; and catch and supply of bonito and yellowtail.

SL-157 - Firms Manufacturing Liver and Viscera Oil, 1958 (Revised).

SL-160 - Firms Manufacturing Menhaden Products, 1958 (Revised).

SL-161 - Producers of Packaged Fish, 1958 (Revised).

SSR-Fish. No. 249 - Gulf of Mexico Physical and Chemical Data From Alaska Cruises, compiled by Albert Collier, with note on "Some Aspects of the Physical Oceanography of the Gulf of Mexico," by Kenneth H. Drummond

and George B. Austin, Jr., 422 pp., illus., October 1958.

SSR-Fish. No. 262 - Corrosion Resistance of Fish Tagging Pins, by Albert C. Jensen, 9 pp., illus., December 1958. Aquarium-held haddock were tagged with nickel and Type 304 stainless steel pins to compare the corrosion resistance of the two metals. The stainless steel pins proved to be superior.

SSR-Fish. No. 267 - Surface-Current Studies of Saginaw Bay and Lake Huron, 1956, by James H. Johnson, 89 pp., illus., December 1958.

SSR-Fish. No. 268 - Water Quality Studies in the Wenatchee River Basin, by Robert Wendell Seabloom, 39 pp., illus., October 1958.

SSR-Fish. No. 269 - Gulf of Mexico Plankton Investigations, 1951-53, by Edgar L. Arnold, Jr., 56 pp., illus., November 1958.

SSR-Fish. No. 270 - Large-Scale Experimental Test of Copper Sulfate as a Control for the Florida Red Tide, by George A. Rounsefell and John E. Evans, 62 pp., illus., December 1958.

SSR-Fish. No. 271 - A Laboratory for Fish Behavior Studies, by H. William Newman, 12 pp., illus., January 1959.

SSR-Fish. No. 273 - Background Information for Voluntary Grade Standards on Natural Sponges, by Robert B. Bennett, 60 pp., illus., May 1958. A report on background information for a grade standard on natural sponges. The author discusses types of important sponges; grading systems; major and minor faults; average demerits characteristic of each type and grade of sponge; grading standards and prices; quantitative tests; selling by weight; and recommendations for grading standards.

SSR-Fish. No. 275 - Spawning Escapement of Okanogan River Blueback Salmon (*Oncorhynchus nerka*), 1957, by Donovan R. Craddock, 12 pp., illus., December 1958.

SSR-Fish. No. 278 - Physical Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States, M/V *Theodore N. Gill* Cruise 7, by William W. Anderson and Jack W. Gehringer, 281 pp., illus., January 1959.

SSR-Fish. No. 279 - Physical, Chemical, and Biological Oceanographic Observations Obtained on Expedition Scope in the Eastern Tropical Pacific, November-December 1956, by Robert W. Holmes and other members of the Scripps Cooperative Oceanic Productivity Expedition, 123 pp., illus., November 1958.

SSR-Fish. No. 284 - Publications of the United States Bureau of Fisheries, 1871-1940, by Barbara B. Aller, 205 pp., December 1958. Discusses briefly the history of the Bureau of Fisheries and lists the publications of the Bureau from 1871 to 1940. More up-to-date publications of the Bureau of Fisheries and fishery publications of the Fish and Wildlife Service are also listed by series, authors, and subjects in Circular 36--Fishery Publication Index, 1920-54,

price \$1.50 (for sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.).

SSR-Wildlife No. 41 - The Pacific Walrus, compiled by John L. Buckley, 33 pp., illus., December 1958. A review of current knowledge and of the Pacific walrus and suggested management needs. Excessive killing has reduced the Pacific walrus population from an estimated 200,000 to approximately 45,000 in the last 100 years. The decline is continuing. Present hunting methods result in the loss of half of the walrus killed; and only half of those retrieved are fully used. Suggestions for further investigations are included.

Annual Report of the U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Bureau of Sport Fisheries and Wildlife, for the Fiscal Year 1958, 44 pp., illus., printed. (Reprinted from the Annual Report of the Secretary of the Interior, For the Fiscal Year Ended June 30, 1958.) Summarizes the various activities of the Service. Describes the activities of the Bureau of Commercial Fisheries, Industrial Research and Services; Alaska Commercial Fisheries; Columbia River Fisheries Program; Pribilof Islands fur-seal industry; and biological research (coastal, inland, and marine fisheries); Bureau of Sport Fisheries and Wildlife activities discussed include Federal aid to the states for the restoration of fish and wildlife; fish hatcheries; fishery management services; and river basin studies.

Sep. No. 551 - Shrimp Explorations off Southeastern Coast of the United States (1956-1958).

Sep. No. 552 - Research in Service Laboratories (June 1959): Contains these articles--"Flavor and Odor of Fish - Progress Report;" "Further Results on Use of Fish Oil for Ore Flotation;" and "Shark Repellent."

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

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

(Chicago) Brokers and Importers of Fishery Products and Byproducts, Chicago, Ill., 1959, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.)

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, March 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.

Gulf of Mexico Monthly Landings, Production, and Shipments of Fishery Products, March 1959; April 1959; 6 pp. each. (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; wholesale prices of fish and shellfish on the New Orleans French Market; and sponge sales; for the months indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, March 1959; April 1959; 4 pp. each. (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--Annual Summary, 1958, by John J. O'Brien, 50 pp., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Reviews the fish marketing trends and conditions at the principal New England fishery ports, and highlights of fisheries in other areas and in selected foreign countries. 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 by months 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 monthly landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange.

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

Seattle, Washington, Brokers and Importers of Fishery Products, 1959, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.)

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, April 1959, 8 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.

Morphology of the White Shrimp (PENAEUS SETIFERUS, Linnaeus 1758), by Joseph H. Young, Fishery Bulletin 145 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 59), 172 pp., illus., printed, \$1, 1959. The white shrimp of the Gulf of Mexico represents an important component of the commercial shrimp catch throughout the northern, western, and southern margins of that body of water. This study sets forth in detail the anatomy of the white shrimp.

"Observations Made From an Underwater Plastic Cage," article, The Progressive Fish-Culturist, vol. 20, no. 1, 1958, p. 48, processed, single copy 25 cents.

Study of Age Determination by Hard Parts of Albacore From Central North Pacific and Hawaiian Waters, by Tamio Otsu and Richard N. Uchida, Fishery Bulletin 150 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 59), pp. 353-363, illus., printed, 15 cents, 1959.

"A Tag Holder for Use in the Field," by A. C. Jensen, article, Progressive Fish-Culturist, vol. 20, no. 2, 1958, p. 96, processed, single copy 25 cents.

THE FOLLOWING ENGLISH TRANSLATION OF A FOREIGN LANGUAGE ARTICLE IS NOT FOR GENERAL DISTRIBUTION. WRITE TO U. S. FISH AND WILDLIFE SERVICE, GULF FISHERY INVESTIGATIONS, GALVESTON, TEX., ABOUT IT SINCE THAT ORGANIZATION DID THE TRANSLATING.

The Shrimp Fishery in Panama I--Evaluation of Our Wealth in Shrimp, by M. D. Burkenroad, J. L. Obarrio, and C. A. Mendoza, translation no. 16, 15 pp., illus., processed. A report on some of the work and preliminary findings of the National Laboratory of Fisheries in Panama, dealing with the biological investigation of the Panama shrimp. The purpose of this investigation is to find out scientifically the potentialities of Panama's shrimp fishery. Some of the problems and methods of investigation are discussed. Density of fish populations and replacement problems of the large white shrimp are described in considerable detail.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE NOT FOR GENERAL DISTRIBUTION. WRITE TO U. S. FISH AND WILDLIFE SERVICE, PACIFIC SALMON INVESTIGATIONS, SEATTLE, WASH., ABOUT THEM SINCE THAT ORGANIZATION DID THE TRANSLATING.

Fishery Biology and International Regulation of Fisheries, by Hiroaki Aikawa, 19 pp., processed, Translation Series No. 19. (Reprinted from Suisan Kagaku (Fisheries Science), vol. 6, no. 3-4, December 1957, pp. 2-6).

A Consideration of International Fisheries, Mainly in Relation to the U. N. Draft of Resolution on Seas, by Nagamitsu Asano, 24 pp., processed, Translation Series No. 21. (Reprinted from *Suisan Kagaku* (Fisheries Science), vol. 6, no. 3-4, December 1957, pp. 6-12).

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.

ADEN COLONY AND PROTECTORATE:

Aden, 1955 and 1956, 136 pp., illus., printed, single copy 7s.6d. (about US\$1.05). Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1958. Contains a section on fisheries of Aden Colony and one covering those of Aden Protectorate. Each section on fisheries discusses areas and methods, organization of fishing industry and utilization of catches; marketing; events affecting production; fisheries department; and development. The fishing industry ranks second in the Colony but needs considerable development in the Protectorate. Catch statistics for the latter are included. Principal species caught are sardine, kingfish, and tuna.

ALGAE:

"Composition of the Nucleic Acids of Some Algae," by Eva M. Low, article, *Nature*, vol. 182, October 18, 1958, p. 1096, printed. St. Martins Press, Inc., 103 Park Ave., New York 17, N. Y.

ALGINATES:

"A Method for the Fractionation of Alginates," by R. H. McDowell, article, *Chemistry and Industry*, no. 43, October 25, 1958, pp. 1401-1402, printed. Society of Chemical Industry, 14 Belgrave Square, London S. W. 1, England.

ANTIBIOTICS:

"Fresh Fish. 1--Fish Preservation by Means of Antibiotics," by R. J. Nachenius and A. G. Pienaar, article, *Annual Report, Fishing Industry Research Institute for April 11-December 31, 1956*, vol. 10, p. 7, printed. Fishing Industry Research Institute, Cape Town, Union of So. Africa, 1957.

"Penetration of Chlorotetracycline into Fish Flesh and Its Heat Inactivation," by Tetsuo Tomiyama, Yasuo Yone, and Kazuo Mikajiro, article, *Nippon Suisan Gakkaishi*, vol. 22, 1956-57, pp. 778-783, printed. Japanese Society of Scientific Fisheries, Tokaiku Suisan Kenkyujo, no. 3, Tsukijima, Chuo-ku, Tokyo, Japan.

AUSTRALIA:

Statistical Bulletin: Fishing and Whaling, Australia, no. 3, 1956-57, 18 pp., illus., processed. Commonwealth Bureau of Census and Statistics, Canberra, Australia. This is the third of a series of annual bulletins dealing with the fish-

ing and whaling industry in Australia. The statistics cover quantity and value of catch and related data, for the year 1956-57 for fisheries and the 1957 season for whaling, with comparative data for the previous 4 years. The bulletin is divided into two parts; the first dealing with fisheries and the other with whaling. The part on fisheries is subdivided into a section on edible fishery products--finfish, crustaceans, and molluscs; and another on pearl and trochus shells.

CALIFORNIA:

Forty-Fifth Biennial Report, California Department of Fish and Game (July 1, 1956, through June 30, 1958), 93 pp., illus., printed. California Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif., October 1958. This report covers in detail the activities of the Department of Fish and Game from July 1, 1956, through June 30, 1958. Also included are reports of policy decisions by the Fish and Game Commission, accounts of the activities of the Wildlife Conservation and the Marine Research Committee. The section on marine resources discusses sportfisheries--party boat fishing, surf fishing, yellowtail, barracuda and white sea bass, and ocean habitat development (development of artificial reefs and new kelp beds); shellfisheries--abalone, market crab, ocean shrimp, and oysters. This section also discusses the tuna, sardine, mackerel, and anchovy fisheries; bottom fisheries; rockfish; northern California sportfish; kelp studies; special projects; and the Department's research vessels. The section on inland fisheries discusses trout hatcheries and the research program, Kokanee salmon warm-water fishes, striped bass, and sturgeon. The section on salmon and steelhead covers the spawner shortage, proposed investigations program, inland river studies, coastal streams studies, silver salmon, and other activities.

CANADA:

"Canada's Shellfish Resources," by J. C. Medcof, article, *Trade News*, vol. 11, no. 9, March 1959, pp. 5-7, 9, illus., processed. Department of Fisheries of Canada, Ottawa, Canada. The author discusses the seven species of shellfish--scallop, oysters, soft-shell clams, quahaugs, bar clams, blue mussels and periwinkles--which are marketed in Canada. Squid, a mollusk but not usually thought of as shellfish, are also marketed. In discussing what has been done for improvement of the shellfish fisheries of Canada, the author states that "Studies of shellfish have been conducted by scientists of the Federal Department of Fisheries and its Research Board with encouraging results in the search for ways of boosting the depressed or undeveloped state of the shellfish fisheries. New scallop beds have been discovered and industry has built large and small scallop boats, resulting in greatly increased landings. Methods have been devised for cleaning oysters, soft-shell clams, and quahaugs from beds that may be subject to contamination. Bait-worms were discovered in southwestern Nova Scotia which now bring C\$40,000 a year to former clam diggers. And efforts to reestablish disease-ravaged oyster populations are promising although they will not bear fruit for several years. . . . Efforts to boost the shellfish fish-

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eries are continuing. We are encouraging heavier harvesting of little-used species like bar clams, urging exploitation of known stocks of unused species like razor clams, and exploring for stocks of species like ocean quahaugs which might be valuable, although they are little known or used by industry. Besides this we are continuing efforts to improve and popularize efficient mechanized methods of fishing shellfish."

Journal of the Fisheries Research Board of Canada, vol. 16, no. 2, March 1959, pp. 147-246, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, the following articles: "The Incidence of Nematodes in the Fillets of Small Cod from Lockeport, Nova Scotia, and the Southwestern Gulf of St. Lawrence," by D. M. Scott and W. R. Martin; "Spoilage of Fish in the Vessels at Sea. 6--Variations in the Landed Quality of Trawler-Caught Atlantic Cod and Haddock During a Period of 13 Months," by C. H. Castell, Jacqueline Dale, and Maxine F. Greenough; "Biochemical Studies on Sockeye Salmon During Spawning Migration. V--Cholesterol, Fat, Protein, and Water in the Body of the Standard Fish," by D. R. Idler and I. Bitners; and "Proteins in Fish Muscle. 15--Note on the Preparation of Actin from Cod Muscle with Potassium Iodide," by J. R. Dingle.

Supplement to Hinks' "The Fishes of Manitoba," by J. J. Keleher and B. Kooyman, FRB 481, pp. 103-117, printed. Department of Mines and Natural Resources, Province of Manitoba, Winnipeg, Canada, 1957.

CANNED FOODS:

Technical Aspects of the Evaluation of Canned Foods, by H. Cheftel, Bulletin No. 13, 52 pp., printed. Laboratoire de Recherches, Billancourt, France, July 1957.

CATFISH:

"The Reproduction and Early Development of the Sea Catfish, *Galeichthys felis*, in the Biloxi (Mississippi) Bay," by J. W. Ward, article, Copeia, no. 4, 1957, pp. 295-298, printed. American Society of Ichthyologists and Herpetologists, 34th St. and Girard Ave., Philadelphia 4, Pa.

CHILLING AND FREEZING:

Hvor Langt er Forskningen Naet Vedrorende Kolling og Frysning af Fisk. (Research on Chilling and Freezing of Fish), by F. Bramsnaes, 8 pp., illus., printed in Danish with English summary. (Reprinted from Kulde, vol. 12, no. 6, 1958 pp. 61-64 and vol. 13, no. 1, 1959, pp. 5-9.) Fiskeriministeriets Forsogslaboratorium, Copenhagen, Denmark, 1959.

COD:

Additions to Laboratory Leaflets 19 and 20 Concerning the Bear Island Cod Fishery, Laboratory Leaflet No. 22 (restricted distribution), 2 pp., processed. Ministry of Agriculture, Fisheries, and Food, Fisheries Laboratory, Lowestoft, England, June 1958. Further information

on prospects for the fishery and predictions on size of fish are presented. Information is given on water conditions and fish distribution; ice reports; and stock size and small fish. According to this report, much of the destruction of small cod could be avoided by using a cod-end mesh a little larger than the regulation 4½ inches in the Bear Island fishery. A 5-inch mesh is recommended.

La Peche Maritime, vol. 38, no. 972, March 1959, 84 pp., illus., printed in French. La Peche Maritime, 190, Boulevard Haussmann, Paris, France. Contains, among others, the following articles: "Vieille de Quatre Siecles, l'Industrie Francaise de la Morue Sera-t-Elle Contrainte a l'Abandon?" (Will the French Cod Fishing Industry, Four Centuries Old, Have to be Abandoned?), by Jean Le Touze; "L'Evolution du Marche de la Morue Amenera-Elle Prochainement une Nouvelle Orientation de la Flotte de Peche" (Will the Development of the Codfish Market Soon Bring About a New Orientation of the Fishing Fleet?), by Henri Quesney; "Difficultes Pour l'Armeement et le Negoce Bordelais de la Morue en 1958" (Difficulties for the Cod Canning and Barrel Trade in 1958), by J. Huret; "Premier Consommateur de Morue Seche du Monde, le Portugal Veut Developper la Production Nationale," (Portugal, World's First Consumer of Dried Codfish, Plans to Develop Its National Production), "La Production Espagnole de Morue Salee Atteint 40,000 T." (The Spanish Production of Salt Codfish reaches 40,000 Tons); and "L'Industrie de la Morue au Canada" (The Codfishing Industry in Canada).

"Two Poisoning Outbreaks in Puerto Rico From Salt Preserved Codfish," by Alfonso T. Masi, Rafael A. Timothee, Rolando Armijo, Darwin Alonso, and Luis E. Mainardi, article, Public Health Reports, vol. 74, no. 3, March 1959, pp. 265-270, illus., printed. U. S. Department of Health Education, and Welfare, Public Health Service, Washington 25, D. C.

COMMISSIONS:

Seventeenth Annual Report of the Atlantic States Marine Fisheries Commission (to the Congress of the United States and to the Governors and Legislators of the Fifteen Compacting States), 104 pp., printed. Atlantic States Marine Fisheries Commission, 22 West First St., Mount Vernon, N. Y., March 1959. Includes a report on the state of the Commission and the work of the three basic committees--scientific, legal, and executive. Also contains reports from the North Atlantic Section on studies dealing with Georges Bank scallops; salt water fishing licenses for anglers; starfish invasion of Long Island Sound; and Enfield Dam. The Middle Atlantic Section reports on the offshore fishery for shad; estuarine problems; proposed salt-water barrier in the Delaware River; social problems of fishery research; improvement of catch statistics; effects of inshore dragging; hard clam fishery in Nantucket Sound; and starfish invasion of Long Island Sound. The Chesapeake Bay Section discusses offshore seining for shad; the blue crab research project; improvement of

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catch statistics; waste disposal in Baltimore Harbor; and passage of fish over the Conowingo Dam. The South Atlantic Section reports on the blue crab project; estuarine research; dangers of insecticides; catch statistics; impact of weather (freezes and summer droughts) on marine fisheries; exploratory fishing in the South Atlantic Section; existing shrimp program and reciprocity of shrimp licenses; enforcement of conservation regulations; and development of artificial crab bait. Appendices include, among others, reports of the Scientific Committee's Biological and Technological Section; report of the Legal Committee; a plan for estuarine research; social problems of fisheries research; and a summary of action taken on the Commission's resolutions or recommendations to the Bureau of Commercial Fisheries, 1957-58.

COOPERATIVES:

Check List of Background Material on Fishery Cooperatives, FAO/57/11/8640, 14 pp., processed; Check List of Background Material on Fishery Cooperatives (Addendum), FAO/57/12/8733, 1 p., processed. Food and Agriculture Organization of the United Nations, Rome, Italy. Lists of publications dealing specifically with fishery cooperatives assembled in connection with the FAO Training Center on Fishery Cooperatives in the Indo-Pacific Region.

CURING:

"A New Method for the Production of Smoke," by H. Olsen, article, *Konserves*, vol. 15, June 1957, p. 61, printed in Danish. Vester Fari-magsgade, 31, Copenhagen V, Denmark.

DENMARK:

Arsberetning fra Fiskeriministeriets Forsøgs-laboratorium for 1958 (Annual Report to the Danish Fishing Industry for 1958), 39 pp., illus., printed in Danish with English translation of the main experimental results. Fiskeriministeriets Forsøgslaboratorium, Copenhagen, Denmark, 1959.

Publikationer fra Fiskeriministeriets Forsøgs-laboratorium, 1945-1958 (Publications from Technological Laboratory, Ministry of Fisheries), 15 pp., processed, in Danish and English. Fiskeriministeriets Forsøgslaboratorium, Copenhagen, Denmark, March 1959.

DISTRIBUTION OF FISHES:

Principles of the Distribution of Fishes and the Geological History of the Far-Eastern Seas, by G. U. Lindberg, Fisheries Research Board of Canada, Translation Series No. 141, 12 pp., processed. (Translated from *Ocherki po Obshchim Voprosam Ikhtiologii*, pp. 47-51, 1953.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1958.

Some Characteristics of the Distribution of Bottom and Demersal Fishes of Far-Eastern Seas, by P. A. Moiseev, Fisheries Research Board of Canada, Translation Series No. 94, 10 pp., processed. (Translated from *Izvestiia Tikhoookeanskovo Nauchno-Issledovatel'skovo In-*

stitutata Rybnovo Khoziaistva i Okeanografii, vol. 37, 1952, pp. 129-137, Vladivostok.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1957.

DUNGENESS CRAB:

The Fishery and Biology of the Dungeness Crab (CANCER MAGISTER Dana) in Oregon Waters, by Kenneth D. Waldron, Contribution No. 24, 43 pp., illus., printed. Fish Commission Research Laboratory, Rte. 1, Box 31A, Clackamas, Ore. Results of studies beginning in 1947 on the biology of the Dungeness crab in Oregon coastal waters. A review is made of the history of the fishery with regard to trend of the catch by magnitude, area, and season; the development and conduct of the fishery itself; and the regulations governing the fishery.

FILLETS:

"The Expressible Fluid of Fish Fillets," by R. M. Love and O. Karsti, article, *Journal of the Science of Food and Agriculture*, vol. 9, May 1958, pp. 249-268, printed. Society of Chemical Industry, 14 Belgrave Square, London, S. W. 1, England.

FISH BAIT:

Fish Bait Culture and Care, by S. Bradley Krochmal, 44 pp., illus., printed, \$1. S. Bradley Krochmal, Suncook, N. H., 1956.

FISH FLOUR:

Studies on the Use of Deodorized Fish Flour in Malnutrition (Preliminary Report), by Federico Gomex, Rafael Ramos-Galvan, Joaquin Cravioto, Silvestre Frenk, and Isabel Labardini, 9 pp., illus., printed in English. (Translated reprint from *Boletin Medico del Hospital Infantil*, vol. 15, no. 4, pp. 485-493.) Hospital Infantil, Mexico D. F., this project is part of a series of attempts in the search of an adequate supplement for ordinary diets in the Mexican population. For the past two years, the Nutrition Department of the Children's Hospital has been studying fish flour. Results indicate that fish flour can be added, in varying percentages, to corn meal, beans, and a number of other foods. Further studies are being carried out at clinical, laboratory, and community level to test more completely the potentialities of this protein supplement.

FISH MEAL:

Fish Flour and Fish Meal by Azeotropic Solvent Processing, by Ezra Levin, 4 pp., illus., printed. (Reprinted from *Food Technology*, vol. 13, no. 2, 1959, pp. 132-135.) The Garrard Press, 510 North Hickory, Champaign, Ill. There is now being manufactured at New Bedford, Mass., a standardized, uniform, stable whole fish meal, equal to the fish from which it is derived, in biological value of protein, in unidentified growth factors, at a competitive price with conventional fish meals. It is biologically assayed and is standardized to have values 20 percent higher than an isolated vegetable protein. The advantages of this process of manufacturing fish meal are presented.

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

"Fish Meal. 12--Temperature Differential Controller," by L. J. Besseling and A. M. Lewis, article, Annual Report, Fishing Industry Research Institute, 1955-56, vol. 9, p. 29, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa.

"Spontaneous Heating of Fish Meal," by G. M. Dreosti and A. N. Rowan, article, Annual Report, Fishing Industry Research Institute, 1957, vol. 11, pp. 39-45, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1958.

FLORIDA:

(Florida State Board of Conservation) 13th Biennial Report, 1957-1958 (Salt Water Fishing), 59 pp., illus., printed. Florida State Board of Conservation, Tallahassee, Fla., 1959. Describes the activities of the Florida State Board of Conservation during 1957-58, summarizing the goals attained and progress achieved in the betterment of salt-water conservation. Includes chapters on conservation, sports fishing, administration of the conservation Department, research, oyster culture and rehabilitation, enforcement, licensing, seafood promotion, information-education, commercial fish landings, and commercial fishing statistics. It was found necessary, during the first half of 1958, to temporarily close the Tortugas shrimp area in the interest of conservation. That this conservation measure was sound is shown by shrimp landing reports for 1958. Despite the closed season, Tortugas yielded 8 million pounds more shrimp than it did in 1957. A major outbreak of red tide during the fall of 1957 on Florida's west coast caused the loss of countless fish. An extensive attempt was made at control by spraying copper sulphate from crop-dusting airplanes and from the State Board of Conservation's research vessel Mayan. According to this report, "When the test was finally discontinued in December 1957, a thorough analysis of the effects of the control measure was begun. This evaluation is continuing but at present it appears that the cost of extensive application would be enormous, the effect is short-lived, and side-effects on other marine life are uncertain."

"Report on the Sport and Commercial Fisheries of the Braden and Manatee Rivers," by James F. Murdock, article, Report of the Marine Laboratory of the University of Miami, no. 57-23, 1957, 22 pp., printed. The Marine Laboratory, University of Miami, Virginia Key, Miami 49, Fla.

FOOD AND AGRICULTURE ORGANIZATION:

Catalogue of FAO Fisheries Publications, compiled by Patricia M. Andrews, FAO/58/9/6896, September 1958, 18 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Current Bibliography for Aquatic Sciences and Fisheries, vol. 2, no. 1, January 1959, 158 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. Formerly titled Current Bibliography for Fisheries Sciences.

FOREIGN TRADE:

Exporting to the United States, 86 pp., illus., printed, 50 cents. Bureau of Customs, U. S. Treasury Department, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.). This booklet was prepared primarily for the information and assistance of those who plan to export to the United States. The volume and complexity of imports into this country make it necessary that certain definite procedures be followed, and those who import into the United States must have the cooperation of the exporter in order to follow the necessary procedures. In addition, there are some requirements, such as those relating to marking and preparation of invoices, which must be met by the exporter himself. This booklet outlines the procedures.

FREEZING:

"Changes During Freezing and Thawing of Fish," by J. Freixo, article, Conservas de Peixe, vol. 13, no. 146, May 1958, pp. 27-28, printed in Portuguese. Conservas de Peixe, Sociedade Astoria, Lda., Requeirao dos Anjos, 68, Lisbon, Portugal.

FREEZING FISH AT SEA:

"La Congelation a Bord au Japon" (Freezing A-board Vessels in Japan), by R. Daval, article, La Pêche Maritime, vol. 37, no. 961, April 1958, pp. 215-216, illus., printed. La Pêche Maritime, 190 Boulevard Haussmann, Paris, France. Reviews the experimental work done in Japan on fish chilling and freezing. As regards chilling of fish (mostly tuna), the author believes that a chilling and storage temperature 1° C. above the freezing point is suitable. When freezing, the whole mass of the fish must be frozen. The duration of storage in good condition was from 1 to 6 weeks for the chilled fish and from 3 to 12 months for the frozen fish. Three types of vessels were selected to be equipped with refrigerating plants: fishing boats, motherships, and fish carriers. Most of the refrigerating units used ammonia as the refrigerant in direct expansion systems. Only the motherships used indirect systems with circulating brine. Three systems of refrigeration were used: air blast, circulating brine, and circulating refrigerated sea water. The Japanese recommend thawing the fish before cooking; in France, the frozen fish is cooked immediately after removal from storage.

FRESHNESS OF FISH:

"Fresh Fish. 3--The Assessment of the Freshness of Fish by Odor," by A. N. Rowan, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, pp. 8-11, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa, 1957.

GEAR:

"Instrument for Adjusting Equal Lengths of Warp Lines of Trawling Gear," by A. Bulmann, article, Die Fischereiwelt, vol. 9, September 1957, p. 57, printed in German. Die Fischereiwelt, Bundesministerium für Ernährung, Landwirtschaft

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

und Forsten, Bremerhaven, German Federal Republic.

Modern Fishing Gear of the World, edited by Hilmar Kristjónsson, 680 pp., illus., printed in English with abstracts in French and Spanish, £5.5s. (US\$14.75). Fishing News (Books) Ltd., Ludgate House, 110 Fleet St., London, E. C. 4, England, 1959. According to the Food and Agriculture Organization of the United Nations, "More progress in the methods of catching fish has been made in the last thirty years than in the preceding three thousand. Today the waters of the world provide 30,000 tons of edible fish annually and biologists estimate that that figure could be doubled without depleting stocks." To assist in that commercial expansion, the Food and Agriculture Organization has been steadily spreading knowledge of the most modern fish-catching techniques. In September 1957, a major Congress (International Fishing Gear Congress) attended by some 500 delegates from all fishing countries of the world, was held in Hamburg to hear and discuss over 100 papers on all types of fishing gear and equipment. On the foundation of those papers and discussions this book was issued by the Food and Agriculture Organization. A fine editorial job of compression and selection has been done. The papers contributed have been arranged in thirteen logical sections, amplified where necessary and supplemented as required to round out as full and authoritative a presentation as has ever been issued on all aspects of modern fish-catching equipment. The sections range from details and advantages of natural and artificial fibers as used in fishing lines and net making, methods of specifying gear, the operation of all types of gear, the attraction of fish by light, and the location of fish by electronic methods, and finally there is a chapter on electrical fishing and certain factory operations at sea. In a total of some 680 pages are packed nearly half a million words as well as over 800 illuminating specific diagrams and general illustrations, making the whole a quite remarkable compendium of solid information. The book contains a particularly comprehensive index making it invaluable for reference by practical fishermen, fishery technologists, and manufacturers of all types of fishing gear from nets and trawls to floats, trawl boards, and all types of electronic gear for fish finding.

GENERAL:

Development of Commercial Fish Stocks From Lake Kronotsk, by E. M. Krokhin and I. I. Kurenkov, Fisheries Research Board of Canada, Translation Series No. 97, 4 pp., processed. (Translated from *Akademiia Nauk SSSR, Ikhtiologicheskaiia Kommissiia, Trudy Soveshchaniï*, No. 4, 1954, pp. 156-159, Moscow.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1957.

Federal Aid in Fish and Wildlife Restoration (Annual Report on Dingell-Johnson and Pittman-Robertson Programs for the Fiscal Year Ending June 30, 1958), 66 pp., illus., printed, 1959. Wildlife Management Institute, Wire Bldg.,

Washington 5, D. C. This is the second annual report of the Federal Aid Programs to highlight one particular phase of the States' activities. For 1958 it is "stocking--one of the tools;" succeeding reports will highlight other activities of the fish and wildlife programs. This report contains a general program review, sport fish restoration activities, wildlife restoration activities, an extensive summary of stocking, and a summary of projects approved by the various states during fiscal year 1958. The total amount available to the States and Territories under the Federal Aid programs in 1958 was slightly more than \$28 million. Sport-fish restoration activities placed greater emphasis on investigational work than the previous year. The report was prepared by the Branch of Federal Aid of the Bureau of Sport Fisheries and Wildlife.

Laws Governing the Fluctuations in Abundance of Important Commercial Fishes, and Methods of Making Catch Predictions, by T. F. Dementeva, Fisheries Research Board of Canada, Translation Series No. 185, 22 pp., illus., processed. (Translated from *Trudy Soveshchaniï*, No. 1, 1953, pp. 19-36, Akad. Nauk SSSR, Ikhtiologicheskaiia Kommissiia, Moscow.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1958.

"Some Notes on Fisheries in the New Hebrides, Fiji, and Tokelaus," by H. van Pel, article, *SPC Quarterly Bulletin*, vol. 9, no. 1, January 1959, pp. 42-43, illus., printed, single copy 30 U. S. cents. South Pacific Commission, Box 5254, G. P. O., Sydney, Australia. The author discusses fisheries developments in the New Hebrides, stocking of rivers in the Fiji Islands, and shell introduction into the Tokelau Islands.

GERMANY:

"Die Deutschen Kohleranlandungen 1946/47-1956/57 aus Norwegischen und Islandischen Gewässern und ihre Abhängigkeit vom Fischbestand" (The German Coal-Burning Vessels Landings 1946/47-1956/57, and their significance on the Fish Stocks), by Ulrich Schmidt, article, *Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung, Neue Folge*, band XV, heft 2, 1958, pp. 145-158, illus., printed in German with English summary. E. Schweizerbart'sche Verlagsbuchhandlung (Nagele u. Obermiller), Stuttgart, Germany.

HADDOCK:

"Untersuchungen über die Vernichtung Untermaßiger Schellfische Durch die Deutsche Herings-Schleppnetzfisherei in der Nordsee" (Assessments on the Destruction of Undersized Haddock by German Herring Trawling in the North Sea), by Dietrich Sahrhage, article, *Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung, Neue Folge*, band XV, heft 2, 1958, pp. 105-131, illus., printed in German with English summary. E. Schweizerbart'sche Verlagsbuchhandlung (Nagele u. Obermiller), Stuttgart, Germany.

HERRING:

International Herring Tagging in the North Sea, 1958, Laboratory Leaflet 23, 3 pp., illus., printed.

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

Ministry of Agriculture, Fisheries and Food, Fisheries Laboratory, Lowestoft, England, July 1958.

Rapports et Proces-Verbaux des Reunions (Contributions to Special Herring Meetings, 1956--On Herring "Races"), vol. 143, part 2, 158 pp., illus., printed in English and French, Kr.30 (about US\$4.35): Conseil Permanent International pour l'Exploration de la Mer (International Council for Exploration of the Sea), Charlottenlund Slot, Denmark, March 1958.

The Stock of Herring and the Herring Fisheries on the West Coast of Sweden in the First Half of the Twentieth Century, by Karl A. Andersson, Series Biology, Report No. 8, 40 pp., illus., printed. Fishery Board of Sweden, Institute of Marine Research, Lysekil, Sweden, 1958.

"Untersuchungen an der Heringslarvenbevölkerung der Innenjade" (Research on the Herring Larvae Populations of the Inner Jade Bay), by Von A. Buckmann and G. Hempel, article, Helgolander Wissenschaftliche Meeresuntersuchungen, band 6, heft 1, 1957, pp. 52-70, illus., printed in German. Forschungsinstitut der Bundesanstalt für Fischerei, List auf Sylt, Helgoland, Germany.

HONG KONG:

Hong Kong Annual Departmental Report by the Director of Agriculture, Fisheries & Forestry (for the Financial Year 1957/58), 131 pp., illus., printed, HK\$4.00 (about 70 U. S. cents). Government Printer, Java Road, Hong Kong. This publication contains the annual reports of the various divisions of the Department of Agriculture, Fisheries and Forestry. Included in the report of the Fisheries Division is a review of its activities during the year, which were directed mainly to the marine fisheries and the mechanization of the fishing fleet, fishery investigations, training of fishermen, fresh-water fisheries, oyster culture, and pearl culture. Charts in the appendix show distant-water and main fishing grounds utilized during 1957/58. Statistical data are also given on landings of the principal species of fish in 1957/58 and on fishing vessels.

IRELAND:

Report on the Sea and Inland Fisheries for the Year 1956 (Incorporating Statistics of the Capture of Salmon, Sea Trout and Eels), 104 pp., illus., printed, 4s (about 56 U. S. cents). Government Publications Sale Office, G. P. O. Arcade, Dublin, Ireland. This report covers the activities of the Fisheries Division of the Department of Lands, and includes statistics on the quantity and value of Ireland's sea and inland fish and shellfish for 1956, and related data. Also includes, among others, sections on shrimp and crab fishing, salmon on the River Moy, and fertilization of some acid or bog lakes in Ireland.

IRISH MOSS:

"The Stability of Carrageenin in Dried Irish Moss (*Chondrus crispus*)," by E. Gordon Young and D. A. I. Goring, article, Journal of the Science

of Food and Agriculture, vol. 9, September 1958, pp. 539-541, printed. Society of Chemical Industry, 14 Belgrave Square, London S. W. 1, England.

IRRADIATION:

"Microbiological Aspects of Radiation Preservation of Food," by C. F. Niven, Jr., article, Annual Review of Microbiology, vol. 12, 1958, pp. 507-524, printed. Stanford University, Palo Alto, Calif.

JAPAN:

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 9, no. 4, February 1959, pp. 259-364 and 4 pp. supplement, illus., printed in Japanese with English abstracts. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Contains, among others, the following articles: "Study on the Salmon Fishing Grounds in the North Pacific Ocean," by Tatsuaki Maeda; "Studies on Complete Utilization of Squid (*Octopus sloani pacificus*). XVIII--On the Manufacture of Salted Dried Squid Meat," by Terushige Motohiro, Seigo Fukushima, and Eiichi Tanikawa; "Quality of Edible Seaweeds Belonging to the Laminariaceae. 2--Studies on the Quality of *Laminaria japonica*," by Kiichi Murata, Keiichi Oishi, Yuko Tamura, Eiji Kanai, Yukiko Wada, Ichiro Shibata, and Takahisa Kimura; "Studies on the Decomposition of Alginic Acid (Preliminary Report)," by Miki Oguro; "Quality of Edible Seaweeds Belonging to the Laminariaceae. 1--Evaluation of the Quality," by Keiichi Oishi, Yuko Tamura, Kinji Sasaki, and Kiichi Murata; and "Chemical Studies on Herring Meat (2)," by Shigeo Sasa.

Bulletin of Tokai Regional Fisheries Research Laboratory, no. 20, May 1958, 120 pp., illus., printed in Japanese with English summaries. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-ku, Tokyo, Japan. Includes, among others, the following papers: "A Mathematical Consideration of the Effect of Mortality and Growth on a Fish Population," by S. Tanaka; "Some Aspects on the Water-Soluble Proteins of Squid Muscle," by J. J. Matsumoto; and "Histological and Histochemical Study of Processing the Squid Meat--I. Histological Properties of Squid Meat," by T. Tanaka.

Bulletin of Tokai Regional Fisheries Research Laboratory (Fisheries Agency) No. 21, August 1958, 62 pp., illus., printed in Japanese with summaries in English. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-ku, Tokyo, Japan. Contains these articles: "A Consideration on the Rational Exploitation of the Stock of Sardine, *Sardinops melanosticta* (T. & S.)," by S. Tanaka; "Efficiency of a Trawl Kite Compared with Ordinary Trawlers," by S. Takayama and T. Koyama; "Swelling, Elongation, Breaking Strength, and Elasticity of Synthetic Snell Lines," "Breaking Strength of Amilan Rope at Low Temperature," "Preserving Effect of Copper Naphthenate for Fishing Nets," and "Effect of Tar Acids on Synthetic Fiber Fishing Twine," by I. Hayashi; and "Action of Polyphosphates in Fish Sausage Products--I. Influence of Processing

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Conditions on the Effects of Phosphates," by M. Okada and A. Yamazaki.

Journal of the Tokyo University of Fisheries, vol. 44, nos. 1-2, March 1958, 152 pp., illus., printed. The Tokyo University of Fisheries, Shiba Kaigandori 6, Minato-ku, Tokyo, Japan. Contains, among others, these articles: "Influence of Change of Storage Temperature, Refreezing and Rethawing, and Defrosting Processes upon Drip from Frozen Whalemeat," by K. Tanaka, and T. Tanaka; "Effect of Bleeding Process Before Freezing upon Quality and Protective Effect of Glazing and Packaging Materials After Freezing Against Moisture Evaporation During Cold Storage of Frozen Whalemeat and Skipjack," and "Freezing, Cold Storage, and Defrosting of Whole Round Skipjack," by K. Tanaka; "Study on the Disposition of Fish Toward the Light. 2--The Strength of Illumination Preferred by Fish," by Y. Imamura; "Enrichment Pattern Resulting from Eddy Systems in Relation to Fishing Grounds," by M. Uda and M. Ishino; and "On the Bottom Character of the Submarine Oil Field in the Continental Shelf of Northeast Honsyu, Japan, and a Consideration on the Relation Between Submarine Oil Field and Insular-shelf or Fisheries Bank," by H. Niino.

"The Marine Algae of Southern Saghalien," by Jun Tokida, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 2, no. 1, December 1954, 298 pp., illus., printed. The Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

A Review of the Japanese Salmon Fishery, by Albert M. Day, and Milo Moore, 27 pp., illus., processed. Oregon Fish Commission, 307 State Office Bldg., 1400 S. W. 5th Ave., Portland 1, Ore., 1959. This report describes the authors' impressions of Japanese fisheries while serving as advisors to the North Pacific Fisheries Commission in Tokyo during November 2 to 16, 1958. The authors discuss the importance of the Japanese fisheries; the Tokyo fish market; the Hokkaido salmon hatchery system; rearing ponds; fry release; and natural spawning. Statistical tables are included which cover various aspects of the salmon fisheries. The authors state that the people of Japan are more dependent upon the fish resources of the open seas and their inland rivers than any other people on earth.

"The Species of Gracilaria and Gracilariopsis from Japan and Adjacent Waters," by Hikoei Ohmi, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 6, no. 1, December 1958, 87 pp., illus., printed. The Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

"Studies on the Manufacture of Algin From Brown Algae," by N. Suzuki; article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 3, no. 1, August 1955, printed. The Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

"Studies on the Technical Problems in the Processing of Canned Salmon," by Eiichi Tanikawa,

article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 6, no. 2, December 1958, pp. 67-138, illus., printed. The Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Results of studies dealing with decomposition of canned salmon. In clarifying the cause of decomposition, the author states that "According to the observations, the cans were under-sterilized. This may be due to the fact that even if unfresh raw salmon was prepared for the canning, the processing temperature and time used were the same as in case of fresh raw material." The author has made a scale which shows the adequate processing time corresponding to the various degrees of freshness of raw salmon used. He states that "By this scale, the freshness of raw salmon can be estimated, when the leaving time between catching and processing and storing temperature of the raw materials are already known. Next, when the degree of freshness is known, the adequate processing time will be determined at the certain definite processing temperature. The blackening of the canned salmon is affected by the freshness of the raw salmon, and the smell of the canned salmon packed in coated-cans is also affected by the freshness." The smell of the canned salmon prepared from frozen salmon was studied. This smell was clarified to be formed from the oxidation of raw salmon fat and oil during the freezing storage. "So," the author concludes, "frozen salmon should be prepared for canning within 50 days of storage. In order to prevent the oxidation of oil, 'Sustane 1-F' should be applied to raw salmon and the salmon should then be frozen. The freshness of the raw salmon plays the main part. Therefore, in salmon canning, the raw material should be always fresh, and the treatment should be performed rapidly."

KELP:

The Relationship Between Sportfishing in the Kelp Beds and the Harvesting of Kelp off the Coast of California, by David H. Davies, Kelp Investigations Program, IMR Reference 58-4, 65 pp., illus., processed. Institute of Marine Resources, University of California, La Jolla, Calif., January 10, 1958.

"A Test on Kelp Supplement," by Thomas F. Daly, article, American Fur Breeder, vol. 32, no. 2, February 1959, pp. 16-17, illus., printed, single copy 50 cents. Fur Farms Publications, Inc., 405 East Superior St., Duluth 2, Minn. This is a report of a controlled test using Norwegian seaweed as a supplement to mink feed. According to the researcher, the test showed that it reduced feed cost and at the same time helped to produce better pelts.

KENYA:

Lake Victoria Fisheries Service, Annual Report 1957/58, 45 pp., illus., printed. East African High Commission, Nairobi, Kenya, 1958. Reports on the general activities of the Lake Victoria Fisheries Service, including studies on motor fishing vessels, radio equipment, random-sample recording, improved fishing boats, deep-water fishing survey, fish meal, experimental fishing, use of gill nets, tilapia fish ponds.

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fish marking, legal enforcement, and fish culture. Also presents statistical summaries of annual catches in 1957 at recording stations in Uganda, Tanganyika, and Kenya.

LOUISIANA:

"Freshwater Commercial Fishing in Louisiana," by Lloyd Posey, article, Louisiana Conservationist, vol. 11, no. 3, March 1959, pp. 2-4, illus., printed. Louisiana Conservationist, Wild Life and Fisheries Bldg., 400 Royal St., New Orleans, La. Louisiana has approximately 2,000 square miles of fresh-water areas, many of which are utilized in the commercial fishing industry. A variety of gear is used in the fresh-water fisheries. State law requires that each unit of fishing gear be licensed. Catfish, buffalofish, silver carp, gar, and spoonbill are some of the primary commercial fish caught and sold in that State. For the last three years the State of Louisiana has conducted a research project to determine, among other things, the effect of commercial fishing on game fish populations. According to the author, many species of commercial fish, especially members of the sucker family, are notorious for their ability to rapidly overpopulate a body of water. "In areas of high concentration, they muddy the water and root up the bottom like a herd of hogs." When commercial fish are removed from an area this allows the game fish to take advantage of the additional food and space.

MARINE BORERS:

Marine Borers, a Preliminary Bibliography, by William F. Clapp and Roman Kenk, no. PB 131481, 355 pp., processed, \$5.00. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., February 1956.

Marine Borers, a Preliminary Bibliography, Part II, by William F. Clapp and Roman Kenk, no. PB 131058, 358 pp., processed, \$4.75. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., June 1957.

MARINE RESEARCH:

Recent Advances in Marine Fishery Research Along the Atlantic Coast (A Report of the Biological Section of the Scientific Committee to the Atlantic States Marine Fisheries Commission), 36 pp., processed. Atlantic States Marine Fisheries Commission, 22 W. First St., Mount Vernon, N. Y., August 1958. At meetings of sectional units of the Biological Section of the Scientific Committee it was agreed to prepare for the Commissioners, as informational background for the 1958 Annual Meeting, summaries of progress in research on some of the major Atlantic Coast fish and shellfish. These progress reports form the main body of this volume. A table is included showing the important Atlantic fisheries in order of value.

MARLIN:

"Preliminary Analysis of the Distribution of White Marlin, *Makaira albida* (Poey), in the Gulf of Mexico," by Robert H. Gibbs, Jr., article, Bulletin of Marine Science of the Gulf and Caribbean, vol. 7, no. 4, 1957, pp. 360-369,

printed. The Marine Laboratory, University of Miami, Virginia Key, Miami 49, Fla.

MEDITERRANEAN FRESH-WATER FISHERIES:

Inland Water Fisheries in the GFCM Member Countries, Studies and Reviews No. 5, 20 pp., illus., processed. GFCM Secretariat, Food and Agriculture Organization of the United Nations, Rome, Italy, February 1959. Presents the results of a study utilizing a questionnaire answered by the GFCM (General Fisheries Council for the Mediterranean) member countries. The information assembled was summed up in table form, and circulated to the participants of the fifth meeting of the GFCM (1958) as working document No. D-2. The member countries are Egypt, France, Greece, Italy, Israel, Morocco, Spain, Tunisia, Turkey, United Kingdom (Malta), and Yugoslavia. Statistical tables are included showing: population and fish production; inland-water fish production; imports-exports; present situation of fish culture; per capita yearly consumption; population habits concerning fish consumption; government policy concerning fish culture; fish species used for cultivation; proportion of fresh-water fisheries in total fish production.

MIDWATER TRAWL:

"The Midwater Trawl with Four Otter Boards," by J. Von Eitzen, article, Die Fischereiwelt, vol. 9, August 1957, p. 61, printed. Bundesministerium für Ernährung, Landwirtschaft und Forsten, Bremerhaven, German Federal Republic.

MINK FEED:

"The Recent Rise in Landings of Whole Fish for Mink Feed in British Columbia," by C. R. Forrester, article, Progress Reports of the Pacific Coast Stations, no. 111, August 1958, pp. 20-21, printed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, 898 Richards St., Vancouver, B. C., Canada.

MULLET:

"Offshore Spawning of the Striped Mullet, *Mugil cephalus*, in the Gulf of Mexico," by Edgar L. Arnold, Jr. and John R. Thompson, article, Copeia, no. 2, 1958, pp. 130-132, printed. American Society of Ichthyologists and Herpetologists, 34 St. and Girard Ave., Philadelphia 4, Pa.

NETS:

"Synthetic Drift Nets--Some Preliminary Observations," by I. D. Richardson, article, World Fishing, vol. 8, no. 4, April 1959, pp. 76-78, illus., printed. John Trundell, Ltd., St. Richards House, Eversholt St., London, N. W. 1, England. Interest has been shown by the English herring industry in the possible use of the new synthetic fibers as a replacement for the cotton drift net. The author describes some tests that were made to compare the two materials, and in summary he states that "The main point of interest is that the fishing size of the cotton net is considerably smaller than the dry mesh size; whereas in the case of the synthetic net tested, the wet mesh size is similar to its

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dry mesh size. Thus a mesh of the same dry size in each material will not fish at the same size in the water, and due allowance must be made." Only one type of synthetic material was used for comparison, so the results do not necessarily apply to herring drift nets made of any other synthetic material.

NEW JERSEY:

Annual Report, New Jersey Department of Conservation and Economic Development, Division of Fish and Game (For the Fiscal Year Commencing July 1, 1955 and Ending June 30, 1956), 44 pp., illus., printed. Department of Conservation and Economic Development, Trenton, N. J., June 30, 1956. Reports on the activities of the Division of Fish and Game during the fiscal year 1955/56; lists the regulations for 1956 (Fish and Game Code); and includes sections on law enforcement and conservation education and public relations. A section of the report discusses the fisheries management program, fisheries field operations, federal aid to fisheries, 1955/56 salvage operations and values, Federal distribution of fish, New Jersey landings for the calendar year 1955, and stocking of inland waters by the State Division of Fish and Game. A section is also included on wildlife management.

NIGERIA:

Annual Report of the Fisheries Department of the Eastern Region of Nigeria for the Year, 1957-58, 5 pp., printed, 1s. (14 U. S. cents). The Government Printer, Enugu, Nigeria, November 1958. This report covers activities of the Fisheries Department, including procurement of surf boats, recruitment of trainee fishermen at two fishing stations, stocking of fish ponds, the fish farm at Umuna, and choice of a site for a base for powered sea-fishing boats at James-town.

NORWAY:

"Fiskerne og Farkostene i Vintersildfisket, 1958" (Fishermen and Craft in the Winter Herring Fishery, 1958), by Sverre Mollestad, article, Fiskets Gang, vol. 45, no. 11, March 12, 1959, pp. 166-174, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

NUTRITION:

Food Facts Talk Back (Food Information - Fallacies and Facts), 32 pp., illus., printed, 50 cents. The American Dietetic Association, 620 No. Michigan Ave., Chicago 11, Ill., June 1957. An attractive booklet which describes a dietetically-sound daily food plan, fallacies about foods and nutrition, misconceptions about weight reduction, food myths--pregnancy and lactation, and reliable sources of information. Contains reference to the food fallacies pertaining to fish and shellfish. The authors assert that: "The statement that the combination of fish and milk is poisonous no doubt originated in days before refrigeration, when, by coincidence, people who were eating fish that was not strictly fresh also happened to be drinking milk at the same meal. People who refuse to eat fish and drink milk today probably never think of it as inconsistent when they eat fish chowder or oyster stew made with milk, or fish with cream

sauce. If two foods can be eaten separately, they can also be used in combination without harm."

OCEANOGRAPHY:

"Effect of Water Clarity on Albacore Catches," by G. I. Murphy, article, Limnology and Oceanography, vol. 4, no. 1, January 1959, pp. 86-93, printed. Limnology and Oceanography, Woods Hole Oceanographic Institution, Woods Hole, Mass.

Oceanographic Papers in Japan--1873-1938 (annotated Bibliography), 239 pp., printed. Japanese National Commission for Unesco, Tokyo, Japan, March 1957.

Oceanographic Papers in Japan--1939-1957 (annotated Bibliography), 223 pp., printed. Japanese National Commission for UNESCO, Tokyo, Japan, March 1958.

OYSTERS:

The Rise and Decline of the Olympia Oyster, by Earl N. Steele, 142 pp., illus., printed. Fulco Publications, Box 37, Elma, Wash., 1957. This book covers more than 50 years of the lives of the pioneer oystermen of Puget Sound, and the part they took in the development of the native oyster found in the waters of southern Puget Sound. It also describes how, after perfecting a superior system of oyster culture, which yielded abundant crops, they developed a market which readily utilized the supply. The causes of the decline of the industry are discussed in some detail.

PACKAGING:

Food Packaging Materials, Their Composition and Uses, Publication 645, 53 pp., printed. National Academy of Sciences--National Research Council, Washington 25, D. C., 1958. The objective of this study is to aid in evaluating the importance of current practices in the food trades from the standpoint of public health and developing principles for selection of components for use in food packaging. The report discusses characteristics and uses of different types of food packaging and of materials used in food packaging. Also among the subjects covered are plasticizers, stabilizers, antioxidants, release agents, adhesives, printing inks, etc. Included in the booklet is a list of chemicals used in making packaging materials.

"Pouch Packaging on Upswing," article, Frosted Food Field, vol. 27, October 1958, pp. 34-36, printed. Frosted Food Field, Inc., 321 Broadway, New York 7, N. Y.

PAKISTAN:

Annual Report of the Directorate of Fisheries, East Pakistan, for the Year Ending March 31, 1957, 151 pp., illus., printed. East Pakistan Government Press, Dacca, East Pakistan, 1958. Describes the work of the Directorate of Fisheries during 1956/57. Contains, among others, sections on Administration of the Protection and Conservation of Fish Act, 1950; production and development of fish farms, reclamation of derelict water areas, nursery fish farms, introduction of exotic fish, and

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research on control of aquatic vegetation; and shrimp culture. Short-term projects were approved for transport of fish in the district of Sylhet, mechanization of fishing vessels, expansion of net factory, "grow more fish" campaign, and procurement of fishing supplies for needy fishermen. The activities of the Technology Section fall under two major heads--laboratory research and investigations, and operation of pilot projects. The report also presents statistical tables covering quantities of fish exported, processed, and transported by species and districts; average wholesale and retail prices for various species and types of fish; and number of fishermen and vessels in relation to quantity of fish landed in various districts.

PEARL FISHERY:

"La Aventura de las Perlas" (The Pearl Adventure), by Carlos Agüero Gomez, article, El Agricultor Venezolano, vol. 22, no. 204, November-December 1958, pp. 6-9, illus., printed in Spanish. El Agricultor Venezolano, Information Section, Ministry of Agriculture and Breeding, Caracas, Venezuela.

PEARL SHELL:

"Pearl Shell Investigation in the Cook Islands," by J. L. Noakes, article, South Pacific Commission Quarterly Bulletin, vol. 9, no. 1, January 1959, pp. 22-24, illus., printed, single copy 30 U. S. cents. South Pacific Commission, Box 5254, G. P. O., Sydney, Australia.

PILCHARDS:

The Biology of the South African Pilchard (SARDINOPS OCELLATA), by D. H. Davies, Investigational Report No. 32, 10 pp., illus., printed. (Reprinted from Commerce and Industry, December 1957.) Division of Fisheries, Beach Road, Sea Point, Cape Town, Union of South Africa, 1957.

PLAICE:

"Zur Beziehung Zwischen Bestandsdichte und Wachstum in der Schollenbevölkerung der Deutschen Bucht" (With Reference to the Consistency and Growth of the Plaice Populations of the German Bight), by Gotthilf Hempel, article, Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung, Neue Folge, band XV, heft 2, 1958, pp. 132-144, illus., printed in German with English summary. E. Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), Stuttgart, Germany.

PLANKTON:

Measurements of Primary Production in the Sea (Contributions to Plankton Symposium, 1957), articles, Rapport et Proces-Verbaux des Reunions, vol. 144, 158 pp., illus., printed in English and French, Kr. 30 (about US\$4.35). Conseil Permanent International pour l'Exploration de la Mer, Charlottenlund Slot, Denmark, April 1958.

PORTUGAL:

Gremio dos Armadores da Pesca da Sardinha, Relatorio e Contas do Exercício de 1958 e Orçamento para 1959 (Sardine Vessel Owners'

Guild, Statement of Operations for 1957 and Budget for 1958), 22 pp., illus., printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal.

PRESERVATION:

"Preservation (by Acidification) of Fish Waste Products and Poor-Quality Fish," by L. L. Lagunov, L. N. Egorova, N. I. Rekhina, and M. N. Eremeeva, article, Rybnoe Khoziaistvo, vol. 32, no. 9, 1956, pp. 78-83, printed. Ministerstvo Rybnoi Promyshlennosti SSSR, Kotel'nicheskaiia Naberezhiaia D 1/15, Moscow, Zh-240, U. S. S. R.

"Preservation of Fresh Fish," by H. L. A. Tarr, article, Archiv für Fischereiwissenschaft, vol. 8, 1957, pp. 9-21, printed. Gustav Wenzel & Sohn, Braunschweig, Germany.

PROMOTION:

"Development of National and International Co-operative Campaigns for Consumer Education on Fish," by O. Hanssen, article, Norsk Fryserinaering, vol. 10, no. 7-8, 1958, pp. 1-15, printed in Norwegian. Norsk Fryserinaering, Primsemgate no. 6, Oslo, Norway.

RED TIDE:

"Some Biochemical Aspects of Red Tides and Related Oceanographic Problems," by Albert Collier, article, Limnology and Oceanography, vol. 3, no. 1, 1958, pp. 33-39, printed. Woods Hole Oceanographic Institution, Woods Hole, Mass.

REFRIGERATED SEA WATER:

"Transport and Storage of Fish in Refrigerated Sea Water," by H. L. A. Tarr and J. S. M. Harrison, article, Annual Review and Program, Fisheries Council of Canada, April 1957, pp. 35, 37, 39, 41, printed. Fisheries Council of Canada, Ottawa, Canada.

REFRIGERATION:

"International Survey on Refrigeration Equipment and Activities, 1957," section, Bulletin de l'Institut International du Froid, vol. 39, no. 1, 1959, pp. 213-312, printed in French and English. Institut International du Froid, 177 Boulevard Maiesherbes, Paris (17^e), France. The first part of the results of a general survey of refrigeration activities in various countries made in 1958.

"Preserving the Catch with Refrigerated Sea Water," by S. W. Roach and J. S. M. Harrison, article, World Fishing, vol. 8, no. 4, April 1959, pp. 88-89, illus., printed. John Trundell, Ltd., St. Richards House, Eversholt St., London N. W. 1, England. The authors describe a 45-ft. steel vessel, launched in British Columbia in 1958, which was designed to utilize the refrigerated sea-water method of fish preservation but which can also hold fish in the conventional manner. The vessel is primarily a salmon troller but is easily adaptable to halibut long-lining, trawling, or crabbing. Refrigeration is supplied by a high-speed automotive-type compressor, belt-driven by the main engine.

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

SALMON:

On the Dynamics of Abundance of the Sockeye Salmon (ONCORHYNCHUS NERKA Walb.), by F. V. Krogius, Fisheries Research Board of Canada, Translation Series No. 101, 16 pp., illus., processed. (Translated from *Izvestiia Tikhookeanskovo Nauchno-Issledovatel'skovo Instituta Rybnovo Khoziaistva i Okeanografii*, vol. 35, 1951, pp. 1-16, Vladivostok.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1957.

"The Future of the Atlantic Salmon," article, *Trade News*, vol. 11, no. 8, February 1959, pp. 3-6, illus., processed. Department of Fisheries, Ottawa, Canada. The Atlantic salmon, in its fight for survival in Canada, has caught the imagination of many people in recent years. Concern for its well-being extends beyond the ranks of Canadian federal and provincial fisheries administrators and biologists and commercial and sport fishermen. This was made evident by interest shown in two recent speeches given by Canadian officials at annual meetings of associations of sport fishermen--one in Boston and the other in Montreal. It was pointed out, in the first speech, that the Canadian Fisheries Department recognizes that the number of sport fishermen is increasing but that the salmon stocks could be managed to provide both a commercial and sport fishery, with certain regulatory restrictions. The salmon can still be found, in varying numbers, in about 300 eastern Canadian rivers and streams but in many of them the runs are small. The evidence still shows that the decline in salmon stocks is continuing. However, the Fish Culture Development Branch of the Canadian Department of Fisheries and the Fisheries Research Board's biological stations, at St. Andrews, New Brunswick, and St. John's, Newfoundland, have for some time given a high priority to all matters pertaining to the Atlantic salmon fisheries. So has the Marine Biological Station of the Quebec Department of Fisheries.

On the Production of Young Sockeye Salmon (ONCORHYNCHUS NERKA Walb.), by F. V. Krogius and E. M. Krokhin, Fisheries Research Board of Canada, Translation Series No. 109, 30 pp., illus., processed. (Translated from *Izvestiia Tikhookeanskovo Nauchno-Issledovatel'skovo Instituta Rybnovo Khoziaistva i Okeanografii*, vol. 28, pp. 3-27.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1958.

Qualitative Characteristics of the Stocks and the Dynamics of Abundance of the Autumn Chum Salmon of the Amur River, by I. B. Birman, Fisheries Research Board of Canada, Translation Series No. 103, 16 pp., illus., processed. (Translated from *Izvestiia Tikhookeanskovo Nauchno-Issledovatel'skovo Instituta Rybnovo Khoziaistva i Okeanografii*, vol. 35, 1951, pp. 17-31, Vladivostok.) Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, 1957.

"Rapid Learning of a Constant Course by Travelling Schools of Juvenile Pacific Salmon," by William S. Hoar, article, *Journal of the Fisheries Research Board of Canada*, vol. 15, no. 2, 1958, pp. 251-274, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Return of Silver Salmon, *Oncorhynchus kisutch* (Walbaum), to Point of Release," by Lauren R. Donaldson and George H. Allen, paper, *Transactions of the American Fisheries Society (Eighty-Seventh Annual Meeting, 1957)*, pp. 13-22, printed. Librarian, American Fisheries Society, Colorado A and M College, Fort Collins, Colo., 1958.

Salmon of the Pacific Northwest: Fish vs. Dams, by Anthony Netboy, 134 pp., illus., printed. Binsfords & Mort, Portland, Ore., 1958.

"Some Effects of Artificial Light on Salmon Eggs Larvae," by Ronald Eisler, Paper, *Transactions of the American Fisheries Society (Eighty-seventh Annual Meeting, 1957)*, pp. 151-162, printed. Librarian, American Fisheries Society, Colorado A and M College, Fort Collins, Colo., 1958.

SARDINES:

Etude Intensive d'une Aire de la Ponte de la Sardine (SARDINA PILCHARDUS Walb.) en Adriatique Moyenne en 1950/1951 (Intensive Study of a Sardine Spawning Area in the open waters of the Adriatic Sea in 1950/1951), by T. Gamulin and J. Karlovac, *Acta Adriatica*, vol. 8, no. 3, 1956, 46 pp., illus., printed in French. Institute of Oceanography and Fisheries, Split, Yugoslavia.

"Frozen Sardines," by M. Boury, *Revue des Travaux de l'Institut des Peches Maritimes*, vol. 22, no. 3, September 1958, pp. 255-289, illus., printed in French. Institut Scientifique et Technique des Peche Maritime, 59 Avenue Raymond-Poincare, Paris 16, France. A detailed account of tests on the freezing of sardines and on the processing of frozen sardines.

Investigations on the Larvae and Postlarvae of the Sardine (SARDINA PILCHARDUS Walb.) in the Open Waters of the Adriatic Sea (M. V. Hvar Cruises, Researches into Fisheries Biology, 1948/1949), by J. Karlovac, Reports, vol. 4, no. 4D, 23 pp., illus., printed in English. Institute of Oceanography and Fisheries, Split, Yugoslavia.

Preliminarna Opazanja o Srdeli (SARDINA PILCHARDUS Walb.) Sa Zapadne Obale Istre (Preliminary Observations on Sardine from the West Coast of Istria), by R. Muzinic, *Acta Adriatica*, vol. 8, no. 11, 5 pp., illus., printed in Serbo-Croatian with English summary. Institute of Oceanography and Fisheries, Split, Yugoslavia, 1958.

Prilog Izucavanju Odnosa Srdele (SARDINA PILCHARDUS Walb.) i Njezine Sredine (A Contribution to the Investigation of Relations of Sardine

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

to the Environment), by R. Muzinic, Acta Adriatica, vol. 8, no. 10, 18 pp., illus., printed in Serbo-Croatian with English summary. Institute of Oceanography and Fisheries, Split, Yugoslavia, 1958.

SCALLOPS:

Scallop Recipes, 5 cards, printed. New Bedford Seafood Council, 60 No. Water St., New Bedford, Mass. Recipes for large quantities--45-50 servings.

SHAD:

"Age and Growth of the American Shad, from three Atlantic Coast Rivers," by Donald F. LaPointe, paper, Transactions of The American Fisheries Society (Eighty-Seventh Annual Meeting, 1957), pp. 139-150, printed. Librarian, American Fisheries Society, Colorado A and M College, Fort Collins, Colo., 1958.

SHELLFISH:

Sanitary Criteria for Shellfish by Species and by Area, by Robert L. Dow, 7 pp., processed. (Reprinted from Proceedings of the National Shellfisheries Association, vol. 48, 1958, pp. 23-29.) Department of Sea and Shore Fisheries, Augusta, Me. Recommendations to establish shellfish sanitary criteria by species and areas were approved by the National Shellfish Sanitation Conference in 1954 on the basis of laboratory and field observations and experiments reported by the author. To implement these recommendations (1) further studies were conducted in Maine to evaluate the relative importance of hydrographic, geological, and biological factors having actual or potential influence on the sanitary qualities of shellfish growing areas, and (2) cooperative experiments among the several northeastern states (Maine, Massachusetts, Rhode Island, Connecticut, and New York) have been carried on to establish standards for blue mussel (Mytilus edulis) and soft clam (Mya arenaria) shell stock.

SHRIMP:

"Australian Prawn Trawling Industry's Promising Future," article, World Fishing, vol. 7, no. 30, October 1958, p. 31, printed. John Trundell, Ltd., St. Richard's House, Eversholt Street, London, N. W. 1, England.

"Convention With Cuba for Conservation of Shrimp," article, The Department of State Bulletin, vol. 50, no. 1034 (Publication 6807), pp. 566-569, printed, single copy 25 cents. Public Services Division, Bureau of Public Affairs, U. S. Department of State, Washington 25, D. C. (For sale by the Superintendent of Documents, Washington 25, D. C.) Contains the text of the convention between the United States of America and Cuba for the conservation of shrimp, signed at Havana on August 15, 1958; the report of the Acting Secretary of State; and a message of transmittal by the President to the United States Senate.

TAGGING:

"An Inexpensive Easily Constructed Fish-Marking Tag," by Fergus J. O'Rourke, article, Nature,

vol. 181, no. 4608, 1958, p. 577, printed. St. Martin's Press, Inc., 103 Park Ave., New York 17, N. Y.

A Preliminary Review of Pertinent Past Tagging Investigations on Pink Salmon and Proposal for a Co-ordinated Research Program for 1959, Report No. 1, 47 pp., illus., processed. International Pacific Salmon Fisheries Commission, P. O. Box 30, New Westminster, B. C., Canada, June 1958.

THAWING:

"The Thawing of Blocks of Small Fish," by S. Gakicko, K. Penskaja, V. Borodin, and A. Boronvalova, article, Kholodil'naiia Tekhnika, no. 3, 1958, pp. 39-44, illus., printed in Russian. (For sale at Four Continent Book Corp., 38 W. 58th St., New York 19, N. Y.)

TRADE LIST:

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

Oils (Animal, Fish, and Vegetable)--Importers, Dealers, Producers, Refiners, and Exporters, Paraguay (April 1959). Lists the name and address, size of firm, and type of product handled by each firm. Includes firms dealing in fish oils.

TUNA:

"Keeping Quality and Cold Storage of Albacore Caught off French Western Africa," by J. R. Crepey, article, Revue des Travaux de l'Institut des Peches Maritimes, vol. 22, no. 3, September 1958, pp. 291-301, illus., printed in French. Institut Scientific et Technique des Peche Maritime, 59 Avenue Raymond-Poincare, Paris 16, France.

"Tuna Meat Pigment Studies," by J. J. Naughton, M. M. Frodyma, and H. Zeitlin, article, Agricultural and Food Chemistry, vol. 6, no. 12, December 1958, pp. 933-938, printed. American Chemical Society, 1801 K St., NW., Washington, D. C.

TURKEY:

Balik ve Balikcilik (Fish and Fishery), vol. 7, no. 4, April 1959, illus., printed in Turkish with English table of contents. Yeni Valde Han, Kat 5, Yeni Postane Karsisi, Istanbul, Turkey. Contains among others, the following articles: "The Activities of the Hydrobiological Research Institute" (Part II), by Recai Ermin--reports on studies of mullets (Mugil), bluefish (Pomatomus saltator), horse mackerel (Trachurus), shrimp, lobster, hydrography, the causes of the red tide in Izmir, and the pollution of the Golden Horn; "Tuna in Turkish Sea Waters and Its Catch" (Part I), by Ilham Artuz; "Sarda sarda and its Catch" (Part II), by Sitki Uner; and "About the Technical Problems of our Fish Canning Industry" (Part III), by A. Baki Ugur.

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UNION OF SOUTH AFRICA:

Fourteenth Annual Report, Fisheries Development Corporation of South Africa Limited (Covering Period 1st October, 1957, to 30th September, 1958), 20 pp., illus., printed in English and Afrikaans. Fisheries Development Corporation of South Africa, Ltd., Sea-Fare House, 68 Orange St., Cape Town, Union of South Africa. Presents brief reports on the state of South Africa's fisheries; and research and general activities of the Corporation, including the rendering of assistance to the Department of Fisheries, Thailand.

WASHINGTON:

Report of Operations, 1958 (Fisheries Research Institute, University of Washington), 29 pp.,

illus., printed. College of Fisheries, Seattle 5, Wash., March 1959. Contains sections on the history of the Fisheries Research Institute, the fisheries of Alaska, Alaska salmon industry projects, and summary of Federal contract projects. Details are presented on red salmon studies at Nushagak and Chignik; pink salmon studies at Kodiak and in southeastern Alaska; high seas salmon tagging; salmon tagging in Cook Inlet and Prince William Sound; salmon tagging off the west coast of Prince of Wales Island; Kvichak red salmon studies; effects of logging on the productivity of pink salmon streams in Alaska; sea lion studies; stream catalog of southeastern Alaska; and king crab studies.



JAPANESE OYSTER ON UNITED STATES PACIFIC COAST

The Japanese oyster, Ostrea gigas, was originally imported to the United States Pacific Coast from Japan during the 1920's. It now supports a sizable industry in British Columbia and the state of Washington. The Japanese oyster is one of the largest in the world; it can attain a length of more than a foot, although the average length is less than this. The waters of the Northwest, while similar to its native waters, are somewhat colder. For this reason, the animal does not spawn every year, and seed (young oysters) must be imported from Japan.

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

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P. 16--Elliot A. Macklow, Branch of Market Development; pp. 60 & 62--Canada, Information Services, Dept. of Fisheries, Ottawa, Canada; p. 62--Ceylon, S. Bunnag, FAO; p. 39--Fig. 2 - J. P. Cating; p. 41--Branch of Exploratory Fishing and Gear Research, Seattle, Wash.; p. 71--FAO; p. 78--Pat Moren, FAO; p. 79--FAO; p. 90--J. O. Traung, FAO.