

## 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.  
 FL - FISHERY LEAFLETS.  
 MNL - REPRINTS OF REPORTS ON FOREIGN FISHERIES.  
 SL - BRANCH OF STATISTICS LIST OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
 SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-2557	- Florida Landings, 1960 Annual Summary, 13 pp.
CFS-2578	- Imports and Exports of Fishery Products, 1956-1960 Annual Summaries, 12 pp.
CFS-2582	- Michigan Landings, March 1961, 3 pp.
CFS-2583	- Florida Landings, March 1961, 9 pp.
CFS-2584	- Frozen Fish Report, April 1961, 8 pp.
CFS-2585	- Maine Landings, March 1961, 3 pp.
CFS-2586	- Fish Meal & Oil, 1960 Annual Summary, 4 pp.
CFS-2588	- Alabama Landings, 1960 Annual Summary, 5 pp.
CFS-2590	- Mississippi Landings, 1960 Annual Summary, 5 pp.
CFS-2592	- New York Landings, March 1961, 4 pp.
CFS-2593	- Minnesota Landings, March 1961, 2 pp.
CFS-2594	- Maryland Landings, 1960 Annual Summary, 9 pp.
CFS-2596	- California Landings, February 1961, 4 pp.
CFS-2597	- Alabama Landings, February 1961, 3 pp.
CFS-2600	- Massachusetts Landings, January 1961, 4 pp.
CFS-2601	- North Carolina Landings, April 1961, 4 pp.
CFS-2602	- Georgia Landings, April 1961, 2 pp.
CFS-2603	- Mississippi Landings, March 1961, 2 pp.
CFS-2608	- Florida Landings, April 1961, 8 pp.
CFS-2612	- Maryland Landings, March 1961, 3 pp.
FL-516	- Fur Seal Industry of the Pribilof Islands, 1786-1960, by Francis Riley, 19 pp., illus., May 1961. Discusses the discovery of the Pribilof Islands, the sole breeding grounds of the Alaska fur sea herd; the early exploitation and near-extinction of the seals; and evolution of international control--first by the North Pacific Fur Seal Convention of 1911 and later by the Convention of 1957, participated in by Canada, Japan, U. S. S. R., and the United States. Covers the history of production of byproducts from seal carcasses since 1910. Includes statistical tables showing harvest of fur seal skins, 1786-1950; production of fur seal meal and oil, 1919-1960; and shipment and sale of fur seal bones, 1917-1919. Also includes

graphs showing harvest of seals, 1820-1960; and production of fur seal meal, 1935-1960.

### Wholesale Dealers in Fishery Products (Revised):

- SL- 4 - Rhode Island, 1961.  
 SL- 7 - New Jersey, 1961.  
 SL-10 - Maryland, 1961.  
 SL-27 - Indiana (Great Lakes Area), 1960.  
 SL-28 - Michigan (Great Lakes Area), 1960.  
 SL-29 - Ohio (Great Lakes Area), 1960.  
 SL-31 - New York (Great Lakes Area), 1960.

Sep. No. 622 - Processing and Quality Studies of Shrimp Held in Refrigerated Sea Water and Ice: Part 5 - Interchange of Components in a Shrimp-Ice System.

Sep. No. 623 - A \$700 Million Food Buyer Offers Special Opportunities to Small Business Firms.

Operations of the Bureau of Commercial Fisheries under the Saltonstall-Kennedy Act, Fiscal Year 1959, 112 pp., illus., processed. The fifth annual report to the Congress of the activities of the U. S. Bureau of Commercial Fisheries during the fiscal year ending June 30, 1959, under the provisions of the Saltonstall-Kennedy Act of July 1, 1954. The Act makes available funds from import duties collected on foreign fishery products for the promotion of the free flow in commerce of domestic fishery products and provides for a wide range of research and services supporting the development and wise utilization of the nation's fishery resources and the stabilization of the domestic fishing industry. Among the important research programs of work during fiscal year 1959: (1) in New England, studies showed that oyster and clam enemies can be controlled by using heavy oils mixed with dry sand; (2) in the Gulf area, exploratory operations revealed commercial concentrations of royal-red shrimp southwest of the Dry Tortugas and east of the Mississippi Delta; (3) in the Pacific Northwest, relatively tasteless and odorless fish oil products were prepared by molecular distillation; and (4) experimental results show fish-oil derivatives may be effective in reducing blood cholesterol, a major contributing factor in heart ailments. In the industrial field, new or expanded emphasis in research was placed on: (1) improving the quality of fishery products, the development and promulgation of grade standards, and conducting voluntary continuous inspection in fish processing plants; (2) a study of the long-term outlook (to 1975) for production and consumption of fishery products. New or expanded service functions included: (1) sea-food merchandising clinics for retailers conducted

in three cities in Massachusetts; (2) expanded Market News and statistical coverage; (3) cooperation with industry on the "Fish 'n' Seafood Parade" and Lent promotion campaigns; (4) participation in trade agreement negotiations, the preparation of legislative positions concerned with tariffs and with trade matters, and work with industry on specific import-export trade problems; and (5) the production of films on fishery subjects, the distribution of fishery publications, and the presentation of fish-cookery demonstrations.

A Prospectus for Marine Game Fish Research, 14 pp., illus., processed, December 1959.

THE FOLLOWING MARKET NEWS LEAFLETS ARE AVAILABLE FROM THE BRANCH OF MARKET NEWS, BUREAU OF COMMERCIAL FISHERIES, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C.

Number	Title
MNL-52	Menhaden Fish Oil Prices at New York City, 1950-1961.
MNL-22	Union of South Africa's Fisheries, 1960.

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

(Baltimore) Monthly Summary--Fishery Products, March 1961, 8 pp. (Market News Service, U. S. Fish and Wildlife Service, 103 S. Gay St., Baltimore 2, Md.) Receipts of fresh- and salt-water fish and shellfish at Baltimore by species and by states and provinces; total receipts by species and comparisons with previous periods; and wholesale prices on the Baltimore market; for the month indicated.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, April 1961, 14 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 other species used for canning; pack of canned tuna, tunalike fish, 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; Oregon and Washington receipts (domestic and imports) of fresh and frozen tuna and tunalike fish; for the month indicated.

California Fishery Market News Monthly Summary, Part II - Fishing Information, May 1961, 10 pp., illus. (U. S. Bureau of Commercial Fisheries, Biological Laboratory, P. O. Box 6121, Pt. Loma Station, San Diego 6, Calif.) Contains albacore forecast, 1961; landings of albacore, 1945-59; tropical storm warnings; and sea-surface temperature charts, eastern Pacific Ocean; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, May 1961, 14 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 Monthly Landings, Production, and Shipments of Fishery Products, April 1961, 8 pp. (Market News

Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; fishery imports at Port Isabel and Brownsville, Texas, from Mexico; and sponge sales; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, May 1961, 4 pp. (Market News Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Chincoteague, Lower Northern Neck, and Lower 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, April 1961, 22 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; landings and ex-vessel prices for trips landed at Atlantic Ave., Boston; 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.

New York City's Wholesale Fishery Trade--Monthly Summary for April 1961, 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, landings at Fulton Market Docks and Stonington, Conn., imports entered at New York City, primary wholesaler prices for frozen products, cold storage movements and holdings and marketing trends; for the month indicated.

Production of Fishery Products in Selected Areas of Virginia, Maryland, and North Carolina, 1960, by William N. Kelly, 48 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) A summary of commercial landings of fish and shellfish and the production of crab meat and shucked oysters as reported by producers and wholesalers from selected principal fishing localities of Virginia, Maryland, and North Carolina. The statistics contained in this annual summary represent the approximate commercial fisheries production only and do not represent complete commercial landings or production for a given area, individual state, or the Chesapeake Bay area as a whole. However, the statistics give an indication as to the trend in fisheries production for the specific areas designated and reflect the over-all production trend by species, localities, and states.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, May 1961, 9 pp. (Market News Service, U. S. Fish and Wildlife Serv-

ice, 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 (Oreg.) wholesale dealers; shipments of fishery products; also Northwest Pacific halibut landings; and Washington shrimp landings; for the month indicated.

Glossary of Terms Used in Alaska Fur Seal Research and Management, 15 pp., processed, January 9, 1961. (U. S. Bureau of Commercial Fisheries, Marine Mammal Biological Laboratory, Sand Point Naval Air Station, Seattle 15, Wash.)

In the listing of three English translations of foreign language articles in Commercial Fisheries Review, vol. 23, no. 4, April 1961, pp. 105-106, the source where copies may be obtained is incorrectly shown. They are available, not from the U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, P. O. Box 3830, Honolulu, but from the U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, 2725 Montlake Blvd., Seattle, 2, Wash.

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Abundance and Life History of Shad, St. Johns River, Florida, by Charles Herman Walburg, Fishery Bulletin 177 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), 19 pp., illus., printed, 20 cents, 1960.

"Effect of Starvation and Feeding on the Chemical Composition of Brook Trout," by Arthur M. Phillips, Jr., and Donald L. Livingston, article, The Progressive Fish-Culturist, Vol. 22, October 1960, pp. 147-154, printed.

## 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.

### AIR BUBBLE CURTAIN:

"Study on the Fish-Gathering Effects of Air Curtain," by Yutaka Imamura and Michio Ogura, article, Journal of Tokyo University of Fisheries, vol. 45, no. 2, March 1959, pp. 173-177, printed. Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Minato-ku, Tokyo, Japan.

"Study on the Response of Trachurus japonicus to Air-Bubbles," by Yutaka Imamura and Michio Ogura, Journal of Tokyo University of Fisheries, vol. 45, no. 2, March 1959, pp. 196-203, printed. Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Minato-ku, Tokyo, Japan.

### ALBANIA:

"O Rybolovstve Albanii" (on the Albanian Fisheries), by K. E. Babaian, I. A. K. Gololobov, and A. S. Rievin,

article, Rybnoe Khoziaistvo, vol. 35, no. 11, 1959, pp. 74-82, illus., printed in Russian. VNIRO Glaviniiproekta pri Gosplanie, Moscow, U. S. S. R.

### ALGAE:

"Contributions to the Marine Algal Flora of Chile," by Tore Levring, Reports of the Lund University Chile Expedition 1948-49, No. 39, pp. 4-83, illus., printed. Lund University, Lund, Sweden, 1960.

The Ecology of Algae, by C. A. Tryon and R. T. Hartman, The Pymatuning Symposia in Ecology, Special Publication No. 2, printed. Pymatuning Laboratory of Field Biology, University of Pittsburgh, Pittsburgh, Pa., 1959.

The Marine Algae of East Greenland. Part I--Taxonomical; Part II--Geographic Distribution, by Søren Lund, Middelæser om Gronland, bd. 156, no. 1, illus., printed. Middelæser om Gronland, C. A. Reitzel, Copenhagen, Denmark, 1959.

### AMINO ACIDS:

"The Amino-Acid Sequence of Sperm Whale Myoglobin: Chemical Studies," by A. B. Edmondson and C. H. W. Hirs; "A Partial Determination by X-Ray Methods, and Its Correlation with Chemical Data," by J. C. Kendrew and others; "Comparison Between the Amino-Acid Sequences of Sperm Whale Myoglobin and of Human Haemoglobin," by H. C. Watson and J. C. Kendrew, articles, Nature, vol. 190, no 4777, May 20, 1961, pp. 663-672, illus., printed. Nature, St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

"Nutrition of Salmonoid Fishes. VIII--Indispensable Amino Acids for Sockeye Salmon," by John E. Halver and Warren E. Shanks, article, Journal of Nutrition, vol. 72, November 1960, pp. 340-346, printed. American Institute of Nutrition, 36th St. at Spruce, Philadelphia 4, Pa.

### ANTIBIOTICS:

"El Hielo-Antibiotica en la Conservacion de Algunos Productos Pesqueros" (Preservation of Some Fishery Products with Ice and Antibiotics), by C. Mateu and G. Varela, article, Anales de Bromatologia, vol. 12, no. 3, 1960, pp. 271-331, printed in Spanish. Sociedad Espanola de Bromatologia, Ciudad Universitaria (Edificio Facultad de Farmacia), Madrid, Spain.

### ATLANTIC OCEAN:

Atlantic Ocean Fisheries, edited jointly by Georg Borgstrom and Arthur J. Heighway, 344 pp., illus., printed, £3 7s. 6d. (US\$10). Fishing News (Books) Ltd., Ludgate House, 110 Fleet Street, London E. C. 4, England, March 1961.

With the world's population increasing steadily and the growing realization that there is a lack of protein in the diet of many nations today, the search for protein foods is becoming more intensive. The seas and waters of the world seem to promise a potential for protein foods that has not been fully exploited. The North Atlantic Ocean has from the days of the Vikings and Norsemen always been a rich storehouse of fish. But today both the North and South Atlantic, a well-stocked larder, is being explored for larger supplies of fish by the nations bordering this great body of water in order to find food for their growing populations.

The importance of the fishery resources in the Atlantic Ocean, as well as in the other seas of the



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world, is highlighted (1) by the far-flung fleets of Japan, Russia, Norway, the United States, and others exploring unfished areas of the Atlantic for new resources and (2) by the demands of some nations like Norway, Iceland, and South American Countries for extension of territorial fishing limits seaward.

Can the Atlantic be overfished? What is the status of the nations fishing this huge fish pond? This book marshalls an impressive array of facts to answer these questions and gives essential background information of value to administrators, politicians, fishermen, businessmen, and scientists.

The book is well illustrated with photographs and maps and presents numerous tables with detailed data on the fishery resources of the Atlantic and the fishing industries of the nations operating in that great sea which extends from the extremities of South Africa and South America to the Arctic Circle. No matter what your interest or how slight it is, this book is not only good reading but is an excellent book to have for ready reference. It is adequately indexed.

Divided into four main sections, the first of these deals with the fundamental factors necessary to understand the Atlantic Ocean, including physical character, deeps and currents, biology of the life that inhabit that ocean, the availability and commercial value of the fish, the necessary cooperation that is evolving between the nations concerned with the Atlantic as a vital source of food, the question of claims for extended territorial waters and fishing limits, and the practical development of new techniques and tactics for catching fish. Each chapter is written by an authority on the subject. For example, that dealing with the nature and currents of the Atlantic is by Dr. J. N. Carruthers of the National Institute of Oceanography. The biology and nature of fish life inhabiting the ocean are covered by Dr. Taivo Laevester, FAO Fisheries Division biologist, and he concludes with an estimate of the future potential yield which can be secured by maximum exploitation without destroying the stocks. A historical outline of the evolution of international accord on conservation and the fact that the present economic plight of the fishing fleets underlines this need is the subject of the chapter by Basil Engholm, Fisheries Secretary for England and Wales.

A factual account of the actual operations, fishing practices, present and future industrial developments and trends, and statistics of the fisheries of the 22 major nations fishing the Atlantic makes up the second section of the book. There is a chapter, written by an expert, on each of the major nations, starting with Norway and progressing down the western coast of Europe, Sweden, Poland, West Germany, Denmark (including Greenland and the Faroes), Netherlands, Great Britain, Belgium, France, Spain, Portugal, Italy, Angola and Morocco, and South Africa on the southern point of Africa. Crossing to the western Atlantic off the east coast of South America, a chapter reports on the fishery prospects on the Patagonian Continental Shelf. Working up the east coasts of the Americas, there are chapters on Argentina, Brazil, the Caribbean, Mexico, the United States, Canada, and Iceland in the North Atlantic.

There is some scattered information on the fisheries of Russia, but the third section ("Russia's Giant Effort") of this book presents a full and authoritative

picture of the Soviet's efforts and progress in both marine and inland fishing. The second of the two chapters in the section is devoted to the subject of the book and covers the Atlantic fisheries of the U. S. S. R., but it goes somewhat beyond that since included are historical data, catch pattern by species and areas, utilization, whaling, foreign trade, major fishery centers, combines, freezing and refrigeration, curing, canning factories, mechanization, research and education, research institutes, planning bodies, and nearly every phase of the fisheries of Soviet Russia. The first of the two chapters rounds out the picture of Russia's fisheries by discussing her development of some marine and inland fisheries, and fish utilization. The section on Russia outlines in considerable detail the Soviet Union's tremendous strides in the last ten years to become one of the top-ranking fishery nations of the world. Outlined in the section are the activities of the more than 9,000 fishery scientists and technologists recruited by Russia and trained to find new fishery resources, and new methods of catching and processing them.

Although almost all-inclusive, the book neglects Japan, the leading fishery nation of the world, which in the past few years has entered the Atlantic fisheries, principally fishing for tuna in the tropical Atlantic and trawling off the west coast of Africa. But possibly in a future reprint of this book or in the companion volume on the Pacific Ocean, which is now in preparation, Japan's role in the Atlantic fisheries may be covered.

The fourth and concluding section of the book lists the scientific and common names of some 500 species of fish, and a summary of the report of the British Committee of Inquiry into the British fishing industry.

--Joseph Pileggi

#### AUSTRALIA:

Additions to the Fish Fauna of Western Australia--2, by G. F. Mees, Fisheries Bulletin No. 9, pt. 2, 9 pp., printed. Director of Fisheries, Fisheries Department, Perth, Australia, 1960.

Division of Fisheries and Oceanography, Annual Report 1959-1960, 24 pp., processed. Commonwealth Scientific and Industrial Research Organization, Marine Laboratory, Cronulla, N.S.W., Australia.

#### BEHAVIOR OF FISH:

"Studies on Air Screen in Water. 1--Preliminary Observation of Behavior of a Fish School in Relation to an Air Screen," by Kiichiro Kobayashi and others, article, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 10, November 1959, pp. 222-228, printed in Japanese with English summaries. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

#### BIOCHEMISTRY:

The Chemistry of Fish Blood, A Bibliography, by Joseph B. Hunn, CWL Special Publication 2-22, 20 pp., processed. Physiology Division, Directorate of Medical Research, U. S. Army Chemical Warfare Laboratories, Army Chemical Center, Maryland, May 1959.

"Isolation and Properties of Fish Myosin," by G. Hamoir, H. A. McKenzie, and M. B. Smith, article, Biochimica et Biophysica Acta, vol. 40, 1960, pp. 141-149, printed. Biochimica et Biophysica Acta,



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Elsevier Publishing Co., 215 4th Avenue, New York 3, N. Y.

#### CALIFORNIA:

Statistical Report of Fresh, Canned, Cured, and Manufactured Fishery Products, Year 1960, Circular No. 35, 16 pp., printed. Department of Fish and Game, Biostatistical Section, Marine Resources Operations, Sacramento, Calif., 1961. This report, the latest in a series of annual reports on commercial fishery production in California, includes statistical tables on landings by species and area, tuna imports, fish processing plants, and packing of canned fish. Data also cover volume of other types of processed fish, canned sardines, sardine meal and oil production, and the annual pack of anchovies, tuna, bonito, and yellowtail.

#### CANADA:

"The Effects on Fisheries of Man-Made Changes in Fresh Water in the Maritime Provinces," by A. L. Pritchard, article, The Canadian Fish Culturist, Issue 25, October 1959, pp. 3-6, printed. The Canadian Fish Culturist, Dept. of Fisheries of Canada, Ottawa, Canada.

"The Effects on Fisheries of Man-Made Changes in Fresh Water in the Province of Quebec," by Vadim D. Vladykov, article, The Canadian Fish Culturist, Issue 25, October 1959, pp. 7-12, printed. The Canadian Fish Culturist, Dept. of Fisheries of Canada, Ottawa, Canada.

"The Effects on Fresh water Fisheries of Man-Made Activities in British Columbia," by P. A. Larkin, article, The Canadian Fish Culturist, Issue 25, October 1959, pp. 27-59, printed. The Canadian Fish Culturist, Dept. of Fisheries of Canada, Ottawa, Canada.

"The Effects of Power, Irrigation, and Stock Water Developments of the Fisheries of the South Saskatchewan River," by Richard B. Miller and Martin J. Paetz, article, The Canadian Fish Culturist, Issue 25, October 1959, pp. 13-26, printed. Canadian Fish Culturist, Dept. of Fisheries of Canada, Ottawa, Canada.

Fisheries Statistics of Canada, 1959 (Quebec), 57 pp., illus., printed in French and English, C\$1. Queen's Printer and Controller of Stationery, Ottawa, Canada, May 1961. Consists of tables giving the quantity and value of the principal species of fish and shellfish landed in Quebec in 1944-59; quantity and value of landings by species and fisheries districts, 1958-59; quantity and value of manufactured fishery products by species, 1958-59; capital equipment employed in the primary fisheries operations by fisheries districts, 1958-59; and number of persons engaged in primary operations by fisheries districts, 1958-59.

"Marine and Freshwater Fishes of the Miramichi River and Estuary, New Brunswick," by R. A. McKenzie, article, Journal of the Fisheries Research Board of Canada, vol. 16, no. 6, 1959, pp. 807-833, printed.

Trade of Canada--Imports--December 1960 and Twelve Months Ended December 1960, vol. 17, no. 12, 1961, 205 pp., printed, 75 Canadian cents. Dominion Bureau of Statistics, Ottawa, Canada. (For sale by Queen's Printer and Controller of Stationery, Ottawa, Canada.)

Includes details on fishery products, byproducts, and other commodities of interest to fisheries.

#### CANNING:

"Canning: Reduction of Free Liquor in Herring Packs," article, Torry Research 1958, pp. 19-20, printed. H. M. Stationery Office, York House, Kingsway, London WC2, England.

"La Industria Noruega de Conservas de Pescado, en 1960" (The Norwegian Fish Canning Industry in 1960), article, Industria Conservera, vol. 27, no. 261, March 1961, pp. 67-68, printed in Spanish. Industria Conservera, Calle Marques de Valladares, 41, Vigo, Spain.

"Instant Check on Sterilized Cans with 'Scotch' Tape," article, Food Industries of South Africa, vol. 12, no. 10, 1960, p. 33, printed. Odhams Press, South Africa (Pty) Ltd., Trust House, Thibault Square, Cape Town, Union of South Africa. A new instant and economical check on industrial sterilization of canned foods operates by means of a small strip of adhesive tape on one can in each batch put through the autoclave. If sterilization has been complete, a series of dark brown stripes appear on the tape; if the stripes do not show, the batch is put through again. It is reported that this device cuts spoilage losses to 0.01 percent and accounted for substantial savings in one canning season.

#### CANS:

"Aluminum Fish Cans," article, Norwegian Fishing and Maritime News, no. 3, 1960, p. 35, printed. Norwegian Fishing and Maritime News, P. O. Box 740, Slottsgt. 3, Bergen, Norway.

"Is this the Can Food of the Future?" by N. Leinen, article, Food Processing, vol. 21, no. 3, 1960, pp. 36-37, illus., printed. Putman Publishing Co., 111 E. Delaware Pl., Chicago 11, Ill. Describes a new can featuring a lid that, upon opening, leaves no sharp edges to cut fingers, nor any occasional metal slug, shaving, or sliver to fall into can contents. The lid cannot fall or dip into contents, nor can the contents ooze over the lid. And, when replaced, the lid provides a friction-type reclosure. According to the author, the cans should find major use in hot-canned-food vending machines, and since the cans are opened in such a way as to eliminate can-opener contamination, the opened cans may safely be placed directly to the lips.

#### CARIBBEAN:

Index to the Vernacular Names of the Fishes of the Netherlands Antilles, by Jacques S. Zaneveld, "Collected Papers" Publication No. 16, 25 pp., processed. Caribbean Commission, San Juan, Puerto Rico.

The Sea Fisheries of the Netherlands Antilles, by Jacques S. Zaneveld, "Collected Papers" Publication No. 17, 29 pp., illus., processed. Caribbean Commission, San Juan, Puerto, Rico.

#### CARP:

"Glucose Metabolism in Carp," by W. Duane Brown, article, Journal of Cellular and Comparative Physiology, vol. 55, February 1960, pp. 81-85, printed. Wistar Institute of Anatomy and Biology, 36th St. and Woodland Ave., Philadelphia 4, Pa.

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#### CHEMICAL COMPOSITION:

"Water Content of Cod (*Gadus Callarias* L.) Muscle," R. M. Love, article, *Nature*, vol. 185, no. 4714, 1960, p. 692, illus., printed. MacMillan and Co. Ltd., St. Martin's St., London, WC2, England.

#### CHESAPEAKE BAY:

*Chesapeake Science*, vol. 1, nos. 3-4, December 1960, pp. 127-222, illus., printed. Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md. Includes, among others, the following articles: "Investigations of Inner Continental Shelf Waters off Lower Chesapeake Bay. Part I--General Introduction and Hydrography," by Edwin B. Joseph, William H. Massmann, and John J. Norcross; "Zoeal Stages of the Stone Crab, *Menippe mercenaria* Say," by Hugh J. Porter; "Some Observations on Rearing Blue Crab Larvae," by John D. Rust and Frank Carlson; "Homing Tendency of American Shad, *Alosa sapidissima*, in the York River, Virginia," by Paul R. Nichols; "Restriction of Very Young Red Drum, *Sciaenops ocellata*, to Shallow Estuarine Waters of Chesapeake Bay during Late Autumn," by Romeo J. Mansueti; and "A Notable Range Extension of the Southern Drill, *Thais haemastoma floridana*, into Chincoteague Bay," by Fred W. Sieling.

#### CHILE:

*Revista de Biología Marina*, vol. 10, nos. 1, 2, and 3, September 1960, 255 pp., illus., printed in Spanish. Estacion de Biología Marina, Universidad de Chile, Valparaiso, Chile. Includes, among others, these articles: "Tiburones, Rayas y Quimeras en la Estacion de Biología Marina de Montemar, Chile" (Sharks, Skates, and Chimaera, at the Montemar, Chile, Marine Biological Station), by Fernando de Buen; and "Estudio de las Expediciones Oceanografico-Pesqueras Realizadas en Tarapaca y Antofagasta, 1954-55" (Study of the Oceanographic-Fisheries Expeditions Carried Out at Tarapaca and Antofagasta, 1954-55), by Regina Cubillos M.

#### CHIMAERA:

"Havmusa (*Chimaera monstrosa*)" (*Chimaera, Chimaera monstrosa*), by Levy Carlson, article, *Fiskets Gang*, vol. 47, no. 13, March 30, 1961, pp. 284-286, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

#### COD:

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try, with English translations included. Addresses of the offices maintained in this country are also given. The specific types of activity in which they are engaged are sketched; names of any periodicals, publications, or other media used for publicizing trade and investment opportunities are cited.

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mental trawl nets of modified Northern European design in comparison with the conventional Mediterranean-type trawl gear. Observations indicate that under the prevailing fishing conditions along the Yugoslavian coast, midwater trawling is not likely to become a commercially feasible substitute for the present "lampara" fishing technique (purse seining with light attraction). The author states, however, that "further experience and observations will have to be accumulated, particularly in regard to special fishing conditions in certain limited areas and at certain seasons, before the comparative virtues of both methods can finally be established." As a separate project, demonstrations and tests with electric underwater lamps (incandescent and mercury vapor) for attracting fish were initiated, to establish the comparative advantages of the electric above-water lamps presently used in Yugoslavia. Recommendations on the use of larger trawl gear and future trawl studies are included.

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First, a food item--say cod steaks--is quick frozen. Next, it is placed on shelves in a vacuum chamber from which air is pumped until a high vacuum is induced. It is then dried at very low pressure by the controlled input of a small amount of thermal or microwave energy. Key to the process is that below a critical pressure level, water can exist only as a solid or a gas. When the pressure in the vacuum chamber is maintained below a critical level and heat is applied, the frozen moisture in the steaks flashes into vapor without melting. As a result, the structure of the steaks remains unchanged. The escaping vapor does not cause shrinkage, and dissolved salts are not carried to the surface. If vacuum-packed or packed in an inert gas such as nitrogen, either in metal containers or strong well-sealed flexible packages, the cod steaks will keep for months or even years at room temperature. The normal weight and texture are restored by soaking in water for a few minutes. According to one authority, "freeze-drying is the greatest breakthrough in food preservation since the invention of the tin can."

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## JAPAN:

*Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 11, no. 1, May 1960, 31 pp., illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Contains the following papers: "Studies on the Biology of the Sea Urchin. I--Superficial and Histological Gonadal Changes in Gametogenic Processes of Two Sea Urchins, *Strongylocentrotus nudus* and *S. intermedius*," by Akira Fuji; "Studies on Whale Lipase. I--Lipase of the Pancreas of Little Finner," by Yoshio Ishihara; "New Type Otter-Boards for Mid-Water Trawl," by Kiichiro Kobayashi and Naichi Inoue; and "Notes on the Blood of Masu Salmon during Inshore Migration with Special Reference to the Osmoconcentration."

*Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 11, no. 2, August 1960, 46 pp., illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Contains, among others, the following papers: "I--Acid-Soluble Nucleotides in Muscle of Marine Invertebrates. Effects of Storing Temperature upon the Content of Muscular Nucleotides of Some Seashells (1)," by Ken-ichi Arai; "Studies on the Biology of the Sea Urchin. II--Size at First Maturity and Sexuality of Two Sea Urchins, *Strongylocentrotus nudus* and *S. intermedius*," by Akira Fuji; "Studies on the Biology of the Sea Urchin. III--Reproductive Cycle of Two Sea Urchins, *Strongylocentrotus nudus* and *S. intermedius*, in Southern Hokkaido," by Akira Fuji; and "Chemical Studies on Marine Algae. XIV--On a New Amino Acid, 'chondrine', Isolated from the Red Alga *Chondria crassicauiis*," by Mitsuo Kuriyama, Mitsuzo Takagi, and Kiichi Murata.

*Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 11, no. 3, November 1960, 112 pp., illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Contains, among others, the following papers: "Studies on Fixed Nets in Funka Bay. 4--A Study on the Efficiency of the Secondary Bag Nets for Catching Yellowtail," by Hideo Nakamura, Sakuzo Nishiyama, and Giichi Kawasaki; and "Mechanical Properties of Marine Products. I--Tensile Strength and Elongation of Dried Squid," by Tetsuo Ohkawa.

*Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 11, no. 4, February 1961, 49 pp., illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan. Contains, among others, the following papers: "II. Acid-Soluble Nucleotides in Muscle of Marine Invertebrates. Effects of Storing Temperature upon

the Content of Muscular Nucleotides of Some Seashells (2)," by Ken-ichi Arai; "Studies on the Biology of the Sea Urchin. IV--Histological Observation of the Food Canal of *Strongylocentrotus intermedius*," by Akira Fuji; and "Hydrocarbons in Pollack Liver Oil," by Isami Tsujino.

*Memoirs of the Faculty of Fisheries, Kagoshima University*, vol. 9, December 1960, 114 pp., illus., printed in Japanese with English abstracts. Faculty of Fisheries, Kagoshima University, Kagoshima, Japan. Includes among others, these articles: "Improvement in Efficiency of Icing of the Catch in a Fishing Boat. I.--The Bacterial Contamination in a Fish Hold and the Sterilizing Effect of a Germicidal Lamp," by Muneo Sameshima and Kaname Saito; "Study on Vitamin B Content in Pyloric Caecum of Skipjack. III.--On Vitamin B<sub>6</sub>," by Daiichi Kakimoto; "Fishing-Ground Constitutional Studies on the White Marlin, *Marlina marlina* (Jordan & Hill), over the East China Sea. II.--On the Characteristics of Marine Environments of the White Marlin on the Fishing-Grounds," by Tomokazu Morita; "Studies on the Relation between the Fluctuation in Catch and the Environmental Factors of the Principal Fishes in Kagoshima Bay. IV.--On the Young Horse-Mackerel, *Trachurus japonicus*," by Toyotaka Tanoue; "Further Report on the Physical Analysis of the Fixed-Fishing-Net Resistance," by Masaji Kanamori; "Occurrences of Maxima Pearl Oyster in the Oshima Strait, Amami-Oshima, a Northern Limit of the Distribution," by Seija K. Wada, in English; and "Studies on Some Marine Algae from Southern Japan. III," by Takesi Tanaka, in English.

## KENYA:

"A Study of a Small Basket-Trap River Fishery in Kenya," by Vernon D. Van Someren, article, *East African Agricultural Journal*, vol. 24, no. 4, 1959, pp. 257-267, printed. East African Agricultural Journal, Government Printer, Nairobi, Kenya.

## LAMPREY:

"Estimates of Length of Larval Life in Three Species of Lamprey Found in Britain," by T. H. MacDonald, article, *The Journal of Animal Ecology*, vol. 28, no. 2, 1959, pp. 293-298, printed. *The Journal of Animal Ecology*, Blackwell Scientific Publications, 24 Broad St., Oxford, England.

"Vred, Nanosimy Minogami Rybnyim Zapasam" (Damage to Fish Supply Caused by Lamprey), by V. A. Abakumov, article, *Rybnoe Khoziaistvo*, no. 4, April 1959, pp. 32-33, printed in Russian. *Rybnoe Khoziaistvo*, VNIRO Glavniproekta, pri Gosplanie SSSR, Moscow, U. S. S. R.

## LANGOSTINOS:

"Langostino: 'Sleeper' in the Seafood Market," article, *Quick Frozen Foods*, vol. 23, December 1961, pp. 129-131, 135, printed. E. W. Williams Publications, Inc., 82 Wall St., New York 5, N. Y.

## LIGHT FISHING:

"Study on the Disposition of Fish Towards Light. No. 4--The Strength of Illumination Comfortable to Mackerel and *Trachurus japonicus*," by Yutaka Imamura, article, *Journal of Tokyo University of Fisheries*, vol. 45, no. 2, March 1959, pp. 185-193, printed. Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Minato-ku, Tokyo, Japan.

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

## LINGCOD:

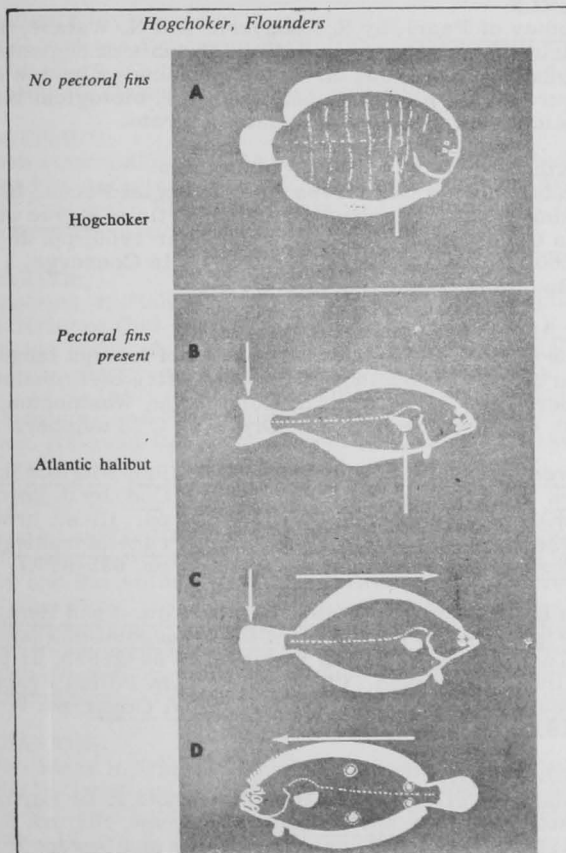
"Further Results from Tagging Experiments on Lingcod," by B. M. Chatwin, article, Progress Reports of the Pacific Coast Stations, no. 107, 1957, pp. 19-21, printed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, 898 Richards St., Vancouver B. C., Canada.

## MARINE BORERS:

Rasprostranenie Drevotochtsev v Moriakh, SSSR (Distribution of Marine Borers in the Seas of the U.S.S.R.), by P. I. Raibchikov, 266 pp., illus., processed. (Translated from Russian, Akademiia Nauk SSSR, Institut Okeanologii, Moscow, 1957, pp. 1-229). Technical Services Branch, Division of Oceanography, U. S. Navy Hydrographic Office, Washington, D. C., 1960.

## MARINE FISHES:

Guide to Marine Fishes, by Alfred Perlmutter, 431 pp., illus., printed, \$6.50. New York University Press, Washington Square, New York 3, N. Y., 1961. To our knowledge, this is the first complete guide to employ identifying silhouettes of all the marine fish



Type of identifying silhouettes used in book, "Guide to Marine Fishes."

and fish-like vertebrates that inhabit the coastal temperate-water zone from Cape Cod to Cape Hatteras, together with some of the more common stragglers from North of Cape Cod, south of Cape Hatteras, and from the deep waters offshore. It is written specifically for the fisherman and amateur biologist. In the first part of the book, 616 labeled

silhouettes enable the reader to identify the unknown fish through easily distinguishable characteristics. Identification of the various species is based primarily on easily seen external characters which are employed for rapid identification of fish in the field. The silhouettes of the fish show the identifying characters. This makes it possible for even the amateur to identify most species, not only in the adult sizes but also in the young, at least in those sizes most likely to be seen. The second part contains 260 species and gives a brief description of all of them, plus information on the distribution, color, life history, and economic importance of the fish identified in the first section. Also, both the most popular of the common names and the most generally accepted scientific name are given for each species. Bound with water-resistant cover, the book can be taken along on fishing trips to help identify the catch on the spot.

## MARINE MAMMALS:

O Povedenii i Zvukovoi Signalizatsii Kitoobraznykh (On the Behavior and Sound Communication of Cetaceans), by A. G. Tomilin, 44 pp., illus., processed. (Translated from Russian, Transactions of the Institute of Oceanology, Academy of Sciences U. S. S. R., vol. 18, pp. 28-47, Moscow, 1955.) Technical Services Branch, Division of Oceanography, U. S. Navy Hydrographic Office, Washington, D. C., 1960.

## MENHADEN:

"Lateral Lines and an Undescribed Sensory Area on the Head of the Gulf Menhaden, Brevoortia patronus," by Gordon Gunter and William J. Demoran, article, Copeia, no. 1, March 17, 1961, pp. 39-42, illus., printed. American Society of Ichthyologists and Herpetologists, 34th St. and Girard Ave., Philadelphia 4, Pa.

## NETS:

"Die Entwicklung der Deutschen Lachstreibnetzfischerei und die Erprobung neuer Treibnetze" (The Development of German Driftnets for Salmon and the Test of New Types of Nets), by F. Thürow, article, Das Fischerblatt, vol. 7, no. 9, 1959, pp. 197-201, illus., printed in German. Landesfischerei-Verband Schleswig-Holstein, 108 Holstenstrasse, Kiel, Germany.

"Mery po Predotvrashcheniiu Avarii Drifternykh Poriadkov" (Measures for Preventing Damages to Driftnets), by N. K. Piaterikin, article, Rybnoe Khoziaistvo, vol. 34, no. 11, 1958, pp. 30-38, illus., printed in Russian. VNIRO Glavniiproekta, pri Gosplanie, Moscow, U. S. S. R.

"Sokobikiamiyo Sho Sokuteiki o Shiyo Shite no Issobiki Kisenokobikiami no Sokutei Jikken" (Results of Measure Experiments by Several Meters on Net Shape of One-Boat Trawl Net--Danish Seine Net), by C. Hamuro, article, Technical Report of Fishing Boat, no. 13, 1959, pp. 55-59, illus., printed in Japanese with English abstracts. Fishing Boat Laboratory, Fisheries Agency, Chiyoda-ku, Tokyo, Japan.

Supplement to Relative Selectivity of Freshwater Commercial Fishing Devices Used in Louisiana, by James Davis and Lloyd Posey, Jr., 144 pp., printed. Louisiana Wildlife and Fisheries Commission, Wildlife and Fisheries Bldg., 400 Royal St., New Orleans 16, La.

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

## NORWAY:

"Beskatningen av Fiskebestandene i Vare Nordlige Farvann--Norsk og Internasjonalt Arbeid for a Motvirke Overfiske" (Harvest of Fish Population in Our Northern Waters--Norwegian and International Work to Prevent Overfishing), by A. Hysten and G. Saetersdal, article, Fiskets Gang, vol. 47, no. 7, February 16, 1961, pp. 151-157, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

"F/F Johan Hjort's Tokt til Vest-Afrika 1960" (F/F Johan Hjort Cruise to West Africa, 1960), by Finn Devold, article, Fiskets Gang, vol. 47, no. 11, March 16, 1961, pp. 236-241, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

"Fiskeflaten 1960" (The Fishery Fleet 1960), by Sverre Mollestad, article, Fiskets Gang, vol. 47, no. 8, February 23, 1961, pp. 171-176, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

"Forekomst av Egg og Yngel av Fisk i Vest-og Nord-Norske Kystog Bankfarvann Varen 1960" (Fish Eggs and Larvae in the Norwegian West and North Coastal Waters and Fishing Banks in Spring 1960), by Kr. Fr. Wiborg, article, Fiskets Gang, vol. 47, no. 9, March 2, 1961, pp. 190-195, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

## OCEANOGRAPHY:

Searchers of the Sea: Pioneers in Oceanography, by Charles Michael Daugherty, 160 pp., illus., by Don Miller, printed, \$3.- Viking Press, Inc., 18 E. 48th St., New York 17, N. Y. About famous explorers of the sea, from the Argonauts to the Piccards.

"The Seasonal Variation in Oceanic Production as a Problem in Population Dynamics," by D. H. Cushing, article, Journal du Conseil Permanent International pour l'Exploration de la Mer, no. 24, 1959, pp. 455-464, printed in French and English. Conseil Permanent International pour l'Exploration de la Mer, Charlottenlund-Slot, Denmark.

## ODORS:

"Fishy Problem," article, Industrial and Engineering Chemistry, vol. 32, December 1960, pp. 38A-39B printed. Industrial and Engineering Chemistry, The American Chemical Society, 1155 16th Street NW, Washington 6, D. C.

## OILS AND FATS:

"Further Studies of Cholesterol, Fats and Fatty Acids," article, Nutrition Review, vol. 18, 1960, pp. 146-147, printed. The Nutrition Foundation Inc., 99 Park Ave., New York 16, N. Y.

## OKLAHOMA:

"An Annotated List of the Fishes of Lake Texoma, Oklahoma and Texas," by Carl D. Riggs and Edward W. Bonn, article, The Southwestern Naturalist, vol. 4, no. 4, 1959, pp. 157-168, printed. Southwestern Naturalist Assn., Dallas, Tex.

## OYSTER SHELLS:

"Copper, Nickel, and Cobalt Content of Oyster Shells," by R. S. Young, article, Journal of Agriculture and Food Chemistry, vol. 8, November-December 1960,

pp. 485-486, printed. Journal of Agriculture and Food Chemistry, American Chemical Society, 1801 K St. NW, Washington 6, D. C.

## OYSTERS:

"New Glycolipide in the Oyster. V--The Nitrogenous Components and Structure of the Glycolipide," by Yasuo Nakazawa, article, Journal of Biochemistry (Tokyo), vol. 46, 1959, pp. 1579-1585, printed. Charles E. Tuttle Co., Rutland, Vt.

## PARASITES:

Parasites in Summer-Caught Pacific Rockfishes, by John Liston, John Peters, and Joseph A. Stern, Contribution No. 47, 10 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1958.

Some Aspects of the Zoogeography of the Digenetic Trematodes of Shallow-Water Fishes of the Gulf of Mexico, by Albert K. Sparks, Contribution No. 62, 13 pp., printed. College of Fisheries, University of Washington, Seattle, Wash., 1960.

## PEARLS:

Studies of Pearl, by S. Kobayashi and N. Watabe, illus., printed in Japanese with English table of contents. Gihodo, Tokyo, Japan. A comprehensive review of current knowledge on pearl culture, biological implications, and studies related thereto.

## PERU:

"Industrie des Conserve de Poisson au Perou" (Canning Industry for Fish in Peru), article, Revue de la Conserve, vol. 15, no. 6, October 1960, pp. 256-260, printed in French. Revue de la Conserve, 1 Rue de la Reale, Paris 1, France.

## POLAND:

The following English translations of foreign language articles are available from the Office of Technical Services, Department of Commerce, Washington, D. C., at 50 cents each. Order by OTS number.

Investigation on the Influence of Sodium Nitrited Ice on the Keeping Qualities of Baltic Cod, by J. Borowik and others, OTS 60-21534, 27 pp., illus., processed. (Translated from Polish Prace Morskiego Instytutu Rybackiego, no. 9, 1957, pp. 633-679.)

An Investigation of Polan, Ramie, Cotton and Hemp Fishing-Net Fabrics from the Standpoint of Fishing Technology, by Stefan Wojan, OTS 60-21373, 27 pp., illus., processed. (Translated from Polish Prace Morskiego Instytutu Rybackiego W. Gdyni, no. 9, 1957, pp. 597-632.)

## POLLUTION:

"Marine Pollution," by D. J. Reish and J. L. Barnard, article, Water and Sewage Works, vol. 106, no. 6, 1959, pp. 259-262, printed. Water and Sewage Works, Scranton Publishing Co., 185 North Wabash Ave., Chicago 1, Ill.

## POPULATION STUDIES:

"On the Confidence Limits Corresponding to the Estimate Obtained by DeLury's Logarithmic Catch-Effort Method," by Yukio Nose, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 12, 1959, pp. 953-956, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.



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

Symposium on Evaluation of Fish Populations in Warm-water Streams, 118 pp., printed. Iowa Cooperative Fisheries Research Unit, Iowa State College, Ames, Iowa, 1957.

#### PRESERVATION:

Some Applications of Okra in the Food Industries, by William Saenz, Contribution No. 299, 4 pp., illus., printed. (Reprinted from Proceedings of the Florida State Horticultural Society, vol. 73, 1960, pp. 297-300.) Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami 49, Fla. This article covers among other topics, a preliminary experiment to preserve fresh shrimp in okra ice. Okra solutions used as a glaze on shrimp protected the product against desiccation and discoloration twice as long as the plain water glaze. The experiment indicated that the treatment offered some protection against development of decomposition odors. Work is now in progress to verify the findings of the preliminary experiment, to find optimum concentrations for the okra ice, and to explore the antioxidant properties of okra for the preservation of fatty fish and the protection of colored fish against oxidative discoloration.

#### PRESERVATIVES:

Preservatives for Scrap Fish, by G. A. Carpenter and June Olley, Torry Technical Paper No. 2, 1960. Torry Research Station, Aberdeen, Scotland.

#### PROCESSING:

"Fish Processing in Poland," by W. G. Cass, article, Food Manufacture, vol. 35, June 1960, pp. 238-239, 261, printed. Food Manufacture, Leonard Hill Ltd., 9 Eden St., London NW1, England.

#### PROTEINS:

"Proteins in Fish Muscle, 16--Adenosinetriphosphatase Activity of Cod Myosin and Actomyosin," by J. R. Dingle and J. A. Hines, article, Canadian Journal of Biochemistry and Physiology, vol. 38, December 1960, pp. 1437-1447, printed. Canadian Journal of Biochemistry and Physiology, Division of Administration, National Research Council, Sussex St., Ottawa, Canada.

#### QUALITY:

"Quality of Flatfish from Hakodate. Part 3--Factors Deciding the Quality. 6--Relations between the Quality and the Amino Acid Composition of the Muscle Extractives," by Keiichi Oishi, article, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 10, February 1960, pp. 319-331, printed in Japanese with English summaries. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

#### RADIATION:

"The Ways in Which Radiation Damage Appears in Early Development of Fish," by A. A. Neifakh and N. N. Rott, article, Doklady Akademii Nauk, SSSR, vol. 119, no. 2, 1958, p. 261, printed. Doklady Akademii Nauk SSSR, Podsosenski per. 21, Moscow B-64, U. S. S. R.

#### RADIOACTIVE ISOTOPES:

Application of Radioactive Isotopes in the Food and Fishing Industries and in Agriculture (a portion of the Proceedings of the All-Union Scientific and Technical Conference on the Application of Radioactive Isotopes, Moscow, 1957), 94 pp., illus., printed, English translation, \$30.00 (single report \$12.50). Consultants Bureau, Inc., 227 W. 17th St., New York 11, N. Y., 1959. Of particular fishery interest are

the reports on: "Results and Prospects of Applying Radioactive Carbon ( $C^{14}$ ) to the Study of the Circulation of Organic Matter in Waters," by Iu. I. Sorokin; "Research on the Biological Productivity of Waters by Means of Radioisotopes," by V. I. Zhadin, A. G. Rodina, and A. S. Troshin; "On Methods of Tagging Fish with Radioactive Calcium," by N. P. Rudakov; and "The Application of  $P^{32}$  and  $Ca^{45}$  to the Study of Some Aspects of Phosphorus and Calcium Metabolism in Young Carp and Sturgeons," by M. P. Bogoiavlenskaja and I. A. Shekhanova.

#### RED TIDE:

"The Red Tide of 1958 at Ensenada, Baja California, Mexico," by Rudolf Stohler, article, Veliger, vol. 2, no. 1, 1959, pp. 32-35, printed. Veliger, Northern California Malacozoological Club, Berkeley, Calif.

#### RESEARCH VESSELS:

"Oceanographic Survey Ship Delivered," article, Marine Engineering, vol. 65, no. 6, 1960, pp. 70-76, illus., printed. Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y.

#### SALMON:

"Adrenocorticosteroids in Salmon Plasma (Oncorhynchus nerka)," by J. G. Phillips, W. N. Holmes, and Philip K. Bondy, article, Endocrinology, vol. 65, 1959, pp. 811-818, printed. Endocrinology, Charles C. Thomas, 301-27 E. Lawrence Ave., Springfield, Ill.

"Biochemical Studies on Sockeye Salmon During Spawning Migration. XIII--The Distribution of Phosphorus Compounds, Creatine and Inositol in the Major Tissues," by V. M. Chang, H. Tsuyuki, and D. R. Idler, article, Journal of the Fisheries Research Board of Canada, vol. 17, July 1960, pp. 565-582, printed. Journal of the Fisheries Research Board of Canada, Queen's Printer & Controller of Stationery, Ottawa, Canada.

"Growth of Marked Silver Salmon (Oncorhynchus kisutch) of the 1950 Brood in Puget Sound," by George H. Allen, article, Transactions of the American Fisheries Society, vol. 88, no. 4, 1959, pp. 310-318, printed. American Fisheries Society, P. O. Box 429, McLean, Va.

Main-Stem and Tributary Sampling of Red Salmon Scales for Population Studies, by Ted S. Y. Koo and Howard D. Smith, Contribution No. 58, 10 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1960.

"The 1955-1956 Silver Salmon Run into the Tenmile Lakes System," by Alfred R. Morgan and Kenneth A. Henry, article, Research Briefs, vol. 7, no. 1, 1959, pp. 57-77, printed. Fish Commission of Oregon, Portland, Oreg.

Pacific Salmon in International Waters, by Allan C. Hartt, Contribution No. 78, 7 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1960.

Predation of Young Coho Salmon on Sockeye Salmon Fry at Chignik, Alaska, Contribution No. 42, 2 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1960.

Use of Dynamite to Recover Tagged Salmon, by Richard W. Tyler, Contribution No. 75, 9 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1960.

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

#### SARDINES:

Fangmethoden in der Sardinenfischerei (Catching Methods in the Sardine Fisheries), by A. von Brandt, 92 pp., illus., processed in German. (Reprinted from Protokolle zur Fischereitechnik, Heft 26, Bd. 6, pp. 65-115.) Institut für Netz- und Materialforschung der Bundesforschungsanstalt für Fischerei, Hamburg, Germany. A paper submitted to the FAO World Scientific Meeting on the biology of sardines and related species, Rome, September 14-21, 1959. Covers the catching of pelagic shoal fish; useful equipment and catching methods for the sardine fishery; development of nets, trawls, and hooks; and sardine catching methods used throughout the world.

#### SCALED-FIN GRUNTS:

Western Atlantic Fishes of the Genus HAEMULON (Pomadasyidae): Systematic Status and Juvenile Pigmentation, by Walter R. Courtenay, Jr., 84 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 11, no. 1, March 1961, pp. 66-149.) The Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami 49, Fla. These fish, referred to as the scaled-fin grunts, include the nominal genera Bathystoma and Brachygenys which are here considered synonyms of Haemulon.

#### SEA CUCUMBERS:

"Studies on the Proteins of the Meat of Sea Cucumber (Stichopus japonicus Selenka)," by E. Tanikawa, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 3, no. 1, August 1955, printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

#### SEA TROUT:

"Distribution and Abundance of Gray Weakfish in the York River System, Virginia," by W. H. Massmann, J. P. Whitcomb, and A. L. Pacheco, article, Transactions of the Twenty-third North American Wildlife Conference, 1958, pp. 361-369, printed. Wildlife Management Institute, Wire Bldg., Washington 5, D. C.

#### SEAWEED:

"New Species of Gelidium and Pterocladia from the Pacific Coast of the United States and the Hawaiian Islands," by N. H. Loonis, article, All-Hancock Foundation Occasional Paper No. 24, pp. 1-10, illus., printed. The University of Southern California Press, Los Angeles, Calif., 1960.

#### SHARKS:

"Pigghaundersokelser i Omradet Krakenes--Sandnessjoen i Januar 1961" (Shark Research in the Area Krakenes--Sandnessjoen, January 1961), by Olav Aasen, article, Fiskets Gang, vol. 47, no. 14, April 6, 1961, pp. 296-297, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

#### SMALL BUSINESS MANAGEMENT:

Cost Control Problems of Small Manufacturers, by William C. Flewelling, Jr., Management Research Summary No. 3, 4 pp., processed. Small Business Administration, Washington 25, D. C., November 1960. A summary of a report, titled "An Analysis of Cost Control Problems of Small Manufacturers in Alabama." This study is directed at the cost control problems of the small manufacturing firm. It presents selected accounting control techniques and analyses which were found useful in the day-to-day

operations of 15 small manufacturing firms in 4 industrial groups. In conducting the research, attention was centered on three major areas: analysis of the balance sheet and income expense statement; budgeting, with emphasis on control of costs; and special problems faced by small businessmen. Investigation sought to disclose the adequacy or inadequacy of (1) bookkeeping systems and payroll procedures, (2) inventory and receivable controls, and (3) controls over waste and scrap. In addition, the uses of statement analysis and budgeting were investigated, as were the various reports made to management.

Expanding Distribution and Warehousing in Alaska, by Vernon R. Kiely, Management Research Summary No. 5, 4 pp., processed. Small Business Administration, Washington 25, D. C., January 1961. A summary of a report, titled "Economic and Business Situation in Alaska, with Special Reference to Wholesale and Retail Trade in Fairbanks and Anchorage." This research study found that retailing, wholesaling, and warehousing in Alaska are inseparably bound with its economic background. There is a definite need for an increase in wholesaling activities. Costs are an important factor in expansion and are influenced strongly by the labor force, the length of supply lines, climatic conditions, and transportation limits. The amount of loan capital available in Alaska has never met the demand.

Facts about Small Business Financing, by Olin S. Pugh, Management Research Summary No. 10, 4 pp., processed. Small Business Administration, Washington 25, D. C., February 1961. A summary of a report, titled "Financing 689 Small Business Firms in South Carolina, 1958-1959: A Study of the Sources, Availability, and Terms of Financing for Small Business Firms in South Carolina." The principal purpose of the survey was to analyze the sources and terms of credit extended to small businessmen. The small business must always rely heavily upon personal investment as a source of equity funds. Within the structure of small business, it was found that larger loans have lower rates. An educational program built around both requirements and capabilities of small business, designed for and reaching all borrowers and lenders, could go far in alleviating many of the conditions or problems of small business financing.

Problems of Small Retailers, by J. L. McKeever, Management Research Summary No. 9, 4 pp., processed. Small Business Administration, Washington 25, D. C., January 1961. A summary of a report, titled "A Study of the Problems of Small Retailers in Wyoming." The extension of credit, with slow payment by customers, was the financial problem most frequently mentioned by the businessmen cooperating in this study. A build-up of accounts receivable to the detriment of cash balances inevitably leads to a shortage of capital for the financing of other basic business functions. Most problems concerning labor dealt with competence, initiative, attitudes, and productivity of employees.

Small Plant Turnover and Failure, by William N. Kinard, Jr., and Zenon S. Malinowski, Management Research Summary No. 4, 4 pp., processed. Small Business Administration, Washington 25, D. C., January 1961. A summary of a report, titled "The Turnover and Mortality Experience of Manufacturing Firms in the Hartford, Connecticut, Economic Area, 1953-1958." This report is based primarily on an

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intensive study of manufacturing turnover and mortality in the Hartford, Connecticut, economic area. It was found that small manufacturing firms are not necessarily more liable to turnover and failure than large manufacturers. The small manufacturer can minimize his risk of failure or loss by paying close attention to the mortality pattern among industries in his area.

The Squeeze-Out in Small Business Ownership, by F. Hodge O'Neal and Jordan Derwin, Management Research Summary No. 7, 4 pp., processed. Small Business Administration, Washington 25, D. C., January 1961. A summary of a report, titled "Expulsion or Oppression of Business Associates: 'Squeeze-Outs' in Small Enterprises." A "squeeze-out" is the use of strategic position, management powers, or legal device by some owners in a business enterprise to eliminate other owners or to deprive them unfairly of income or advantages. The primary means through which small business managers can avoid squeeze plays is competent legal counsel who will foresee problems that might arise and provide methods to forestall them. Minority interests could be given greater protection through State legislative action.

#### SMELT:

"Variation in the Life History of the American Smelt in Inland Waters of Maine," by Robert S. Rupp, article, Transactions of the American Fisheries Society, vol. 88, no. 4, 1959, pp. 241-252, printed. American Fisheries Society, P. O. Box 429, McLean, Va.

#### SMOKED FOODS:

Determining the Depth of Penetration of Smoke Components in Smoking of Food, by V. I. Kurko, U.S.S.R. Patent No. 127,905, April 12, 1960, printed in Russian. Biuro Ekspertizy i Registratsii Izobretenii, Moscow, U. S. S. R.

#### SPILLWAYS:

"Iz Opyta Stroitel'stva i Ekspluatatsii Uproshchennykh Vodoslivov" (Building and Operational Experience with Simplified Spillways), By A. G. Savitskiy, article, Meteorologiya i Gidrologiya, no. 10, 1958, pp. 48-49, printed in Russian. Meteorologiya i Gidrologiya, Moscow, U. S. S. R.

#### SPOILAGE:

The Spoilage of Pacific Coast Rockfish. I--Spoilage in Ice Storage, by J. Liston, Julia G. Chapel, and J. A. Stern, Contribution No. 92, 4 pp., illus., printed. College of Fisheries, University of Washington, Seattle, Wash., 1961.

#### SQUID:

"The Purification and Properties of a Ribonuclease from Squid," by Mary Edmonds and Jay S. Roth, article, Archives of Biochemistry and Biophysics, vol. 89, August 1960, pp. 207-212, printed. Archives of Biochemistry and Biophysics, c/o Academic Press Inc., New York 3, N. Y.

"Studies on the Tropomyosin of Squid," by K. Yoshimura, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 3, no. 2, December 1955, printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

#### STRIPED BASS:

"Field Tests of Petersen, Streamer, and Spaghetti Tags on Striped Bass, Roccus saxatilis (Walbaum)," by

William S. Davis, article, Transactions of the American Fisheries Society, vol. 88, no. 4, 1959, pp. 319-329. American Fisheries Society, P. O. Box 429, McLean, Va.

"Problems Relative to the Atlantic Coast Striped Bass Fishery and Status of its Biological Research," by James E. Sykes, article, Transactions of the Twenty-third North American Wildlife Conference, 1958, pp. 370-377, printed. Wildlife Management Institute, Wire Bldg., Washington 5, D. C.

"The Striped Bass in Relation to the Multiple Use of the Roanoke River, North Carolina," by William W. Hassler, article, Transactions of the Twenty-third North American Wildlife Conference, 1958, pp. 378-391, printed. Wildlife Management Institute, Wire Bldg., Washington 5, D. C.

#### TAGGING:

A Technique for Mass-Marking Fish by Means of Compressed Air, by C. F. Jackson, Technical Circular No. 17, 8 pp., printed. New Hampshire Fish and Game Department, Concord, N. H., 1959.

#### TIDES:

Tide Tables--East Coast North and South America including Greenland, 1962, 283 pp., printed, \$1. U. S. Department of Commerce, Coast and Geodetic Survey, Washington 25, D. C., June 1961. High and low water predictions.

#### TRADE LIST:

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

Canneries and Frozen Foods--Producers and Exporters--Denmark, 9 pp. (April 1961). Lists the names and addresses, size of firms, and types of products handled by each firm. Includes canners and exporters of canned fish and shellfish. Also processors of frozen fishery products. The principal markets for canned fishery products are the United States, United Kingdom, Sweden, Austria, and France.

#### TRAWLERS:

"O Dal'neishem Sovershenstvovanii Bol'shikh Morozil'nykh Rybolovnykh Traulerov s Kormovym Traleniem" (On Further Improvement of Large Freezing-Fishing Stern Trawlers), by S. L. Fridman, article, Rybnoe Khoziaistvo, vol. 35, no. 6, 1959, pp. 38-51, printed in Russian, VNIRO Glavniiproekta pri Gosplanie, Moscow, U. S. S. R.

"The First Large Norwegian Stern Trawler Delivered," article, Norwegian Fishing and Maritime News, vol. 8, no. 1, 1961, pp. 9, 11, 13, illus., printed. Norwegian Fishing and Maritime News, P. O. Box 740, Slottsgt. 3, Bergen, Norway. Discusses the main characteristics and capacities of Norway's first stern trawler Hekktind, a 151-foot vessel designed for operation in Arctic and North Atlantic waters. The technical equipment and results of trips already taken by the Norwegian vessel are also discussed in detail.

#### TRAWLING:

"Kontrol Napolneniia Trala Ryboi" (Indication of Catches in Trawling), by N. V. Verzhinskii and



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others, article, Rybnoe Khoziaistvo, vol. 34, no. 7, 1958, pp. 34-40, illus., printed in Russian. VNIRO Glavniiproekta pri Gosplanie, Moscow, U. S. S. R.

"Trawling for Herring in the Bay of Fundy," by G. J. Gillespie, article, Trade News, vol. 13, no. 10, April 1961, pp. 3-7, illus., processed. Information and Educational Service, Department of Fisheries, Ottawa, Canada. Describes experimental trawling for herring in the Bay of Fundy sponsored by the Canadian Department of Fisheries and the New Brunswick Fisheries Division. The project was designed to determine if midwater and bottom trawling for herring could provide employment for inshore trawlers during the winter season when groundfish are scarce. In addition to the basic electronic instrument--a conventional white-line recorder--used in the experimental project, a new electronic device was added that removes any guesswork with respect to the depth of the trawl. The new device was a net-sounder which consisted of a transducer mounted in a kite on the trawl's headline. Along with the conventional transducer on the vessel's hull, the net-sounder was linked by cable to the electronic recorder. Employment of this new piece of sounding equipment in the Bay of Fundy marked the first time it has been used on the Atlantic seaboard. The net-sounder is a European development and has been used in those fishing waters with singular success.

#### TRAWLS:

"Pribory dlia Izmereniia Natiashenii v Otdel'nykh Detaliakh Trala" (Instruments for Measuring Tension in Various Parts of Trawl), by V. K. Savasov, article, Rybnoe Khoziaistvo, vol. 34, no. 8, 1958, pp. 47-50, illus., printed in Russian. VNIRO Glavniiproekta, pri Gosplanie, Moscow, U. S. S. R.

#### TROUT:

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"Cystoma Found in the Liver of Rainbow Trout, Salmo gairdnerii irideus Gibbons," by Yoshiharu Honma and Kaoru Shirai, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 12, 1959, pp. 966-970, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori, 6-chome, Minato-ku, Tokyo, Japan.

Managing Farm Ponds for Trout Production, by Alfred W. Eipper, Cornell Extension Bulletin no. 1036, 31 pp., printed. New York State College of Agriculture, Cornell University, Ithaca, N. Y., 1960.

"Trout Growth in Hatcheries," by David C. Haskell, New York Fish and Game Journal, vol. 6, no. 2, 1959, pp. 204-239, printed. New York Fish and Game Journal, N. Y. Conservation Dept., Albany, N. Y.

#### TUNA:

"El Bonito del Norte, o Albacora y Los Mercados Exteriores" (The Northern Bonito, or Albacore, and the Foreign Market), article, Industria Conservera, vol. 27, no. 261, March 1961, pp. 64-66, printed in Spanish. Industria Conservera, Calle Marques de Valladares, 41, Vigo, Spain.

"On the Cause of Annual Variation of Fishing Condition of Bigeyed Tuna in the Area from Marshall Islands to Palmyra Island. I--On the Annual Variation of Fishing Condition; II--Comparison between 1956 and 1958 in Regard to Fishing Period and Fishing Ground and Relation between Fishing Condition and Fishing Effort; III--Relation between Monthly and Annual Variations of Fishing Condition and Those of Surface Water Temperature of the Fishing Ground; and IV--Relation between Annual Variation of Rate-of-Catch and that of Body-Length or of Age Frequency," by Jun Nakagome, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 26, April 1960, pp. 401-410, printed in Japanese with English summaries. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori, 6-chome, Tokyo, Japan.

"Chemical Composition of Raw, Precooked, and Canned Tuna. I--Core Sampling Methods," by Clarence J. Carlson, Claude E. Thurston, and Maurice E. Stansby, article, Food Technology, vol. 14, October 1960, pp. 477-479, printed. Food Technology, The Garrard Press, 510 North Hickory, Champaign, Ill.

Fabrication des Conserves de Thon du Maroc (Canning of Tuna in Morocco), by R. Meesemaeker and Y. Sohier, 27 pp., illus., printed in French. (Reprinted from Revue de la Conserve, December 1960 and January 1961.) Laboratoire du Froid et de la Conserve, 70, Allee des Jardins, Ain-Sebaa, Morocco.

"Hermaphroditic Skipjack," by Richard N. Uchida, article, Pacific Science, vol. 15, no. 2, 1961, pp. 294-296, printed. Pacific Science, University of Hawaii, Honolulu 14, Hawaii.

"Lipids of the Muscle of Tuna, Thunnus orientalis. III--Lecithins of the Dark-Colored and Ordinary Muscles," by Hisanao Igarashi, Koichi Zama, and Muneo Katada, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, 1957, pp. 273-277, printed. (Translated by George Kudo, U. S. Bureau of Commercial Fisheries, Technological Laboratory, Seattle, Wash.) Japanese Society of Scientific Fisheries c/o Tokyo University of Fisheries, Shiba-kaigandori, 6-chome, Tokyo, Japan.

"Lipids of the Muscle of Tuna, Thynnus orientalis. VI--Sphingolipids of Dark-Colored and Ordinary Muscles," by Muneo Katada, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 26, April 1960, pp. 421-424, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, 6-chome, Shiba-kaigandori, Minato-Ku, Tokyo, Japan.

Scripps Tuna Oceanography Research (STOR) Program (Final Report, June 21, 1957-June 30, 1960), by Maurice Blackburn, 88 pp., illus., processed. University of California, Scripps Institution of Oceanography, La Jolla, Calif., August 5, 1960.

"The Tuna Season in N. S. Wales," by Pat Warren, article, Fisheries Newsletter, vol. 20, no. 4, April 1961, pp. 9, 27, printed. Commonwealth Director of Fisheries, Department of Primary Industry, Canberra, Australia. Discusses the tuna season in New South Wales beginning July 1960. Covers the location of the main body of fish in the Bermagui and northeast Eden areas and the heartening results

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obtained, quota fishing, the accomplishments of the Eden cannery, and the activities of the Tuna Boat Owners' Association.

#### UNION OF SOUTH AFRICA:

The South African Fishing Industry, by Peter Hjul, 12 pp., illus., printed. Standard Bank of South Africa Limited, Johannesburg, Union of South Africa, 1961. This booklet, well illustrated in color, describes the development of South Africa's fisheries. It discusses ocean currents abounding in nutrients, industrialization of the fisheries, establishment of large fishing companies, and record landings of the past three years. Also discussed are the growth of the pelagic shoal fishery, operation of canneries and reduction plants, Cape West coast fishery production, and marketing organizations. Covered briefly are the spiny lobster fishery, trawling industry, line fishing, and possible future landings.

#### U.S.S.R.

"The All-Union Conference on Agricultural Fishing," article, Vestnik Vysshei Shkoly Sovetskaya Nauka, no. 5, 1957, p. 95, printed in Russian. Vestnik Vysshei Shkoly Sovetskaya Nauka, Moscow, U. S. S. R.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE AVAILABLE FROM THE OFFICE OF TECHNICAL SERVICES, DEPARTMENT OF COMMERCE, WASHINGTON, D. C., AT 50 CENTS EACH. ORDER BY OTS NUMBER.

Contribution to the Study of Pacific Ocean Moridae (Pisces, Gadiformes), by T. S. Rass, OTS 60-51040, 6 pp., illus., processed. (Translated from Russian Akademiya Nauk SSSR, Trudy Instituta Okeanologii, vol. 11, 1954, pp. 56-61.)

Increasing the Effectiveness of Trawlboards by a Slotted Design which Produces the Necessary Moments of Force, by I. R. Matrosov, 10 pp., illus., processed. (Translated from Russian Rybnoe Khozyaistvo, vol. 34, no. 9, 1958, pp. 40-49.)

Means of Restoring and Increasing the Schools of Kamchatka Salmon, by F. V. Krogius and E. M. Krokhin, OTS 60-51039, 12 pp., processed. (Translated from Russian Akademiya Nauk SSSR, Ikhtologicheskaya Komissiya, Trudy Soveshchaniy, no. 4, 1954, pp. 10-21.)

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#### VENEZUELA:

Estudio de un Plan General de Puertos Pesqueros (Master Plan for Fishing Ports), by Gustavo Oramas, 248 pp., illus., processed in Spanish. Ministerio de Obras Publicas, Division de Puertos y Aeropuertos, Caracas, Venezuela, April 1961.

#### VESSELS:

"Deux Navires Congelateurs" (Two Freezerships), by A. Andre, article, Revue Pratique du Froid, vol. 13, no. 175, October 1960, pp. 26-27, illus., printed in French. Revue Pratique du Froid, 254 Rue de Vaugirard, Paris 15, France. Describes a tuna fishing vessel and a lobster fishing vessel. The tuna fishing vessel is equipped for fishing with live bait. Its hull is constructed of welded steel; its gross tonnage is 266 tons, and it has a capacity of 200 tons of frozen

tuna. The lobster fishing vessel has a gross tonnage of 933 tons. The holds are cooled by direct expansion of ammonia and can be maintained at 28°C. (-18° F.). On the fishing grounds, the lobsters are beheaded live and the tails are frozen immediately.

"Fischereifahrzeuge mit Auswechselbaren Fischraumen im Zusammenwirken mit Einem Mutterschiff" (Fishing Vessels, with Removable Fishrooms in Operation with a Mothership), by W. von Sangerlaub, article, Schiffbautechnik, vol. 10, no. 3, 1960, pp. 129-133, printed in German. VEB Verlag Technik, 13/14 Oranienburgerstrasse, Berlin C2, Germany.

"Plastic Sheathing of Wooden Hulls" article, Ship and Boat Builder, vol. 13, no. 2, 1960, 50 pp., printed. John Trundell Ltd., St. Richards House, Eversholt St., London NW1, England.

#### VIRGINIA:

Drainage, Evolution and Distribution Problems of the Fishes of the New (Upper Kanawha) River System in Virginia. Part III--Records of Fishes of the New River, by Robert D. Ross and Benjamin D. Perkins, Technical Bulletin 145, 35 pp., printed. Virginia Agricultural Experiment Station, Virginia Polytechnic Institute, Blacksburg, Va., 1959.

A Key to the Fishes of the Shenandoah River System in Virginia, by Robert D. Ross, Technical Bulletin 142, 14 pp., printed. Virginia Agricultural Experimental Station, Virginia Polytechnic Institute, Blacksburg, Va., 1959.

#### VITAMINS:

"Effect of Gamma-Radiation on Vitamin A and Influence of Antioxidants on It," by Mitsuo Hata and Toshio Onishi, article, Tohoku Journal of Agricultural Research, vol. 11, no. 4, December 1960, pp. 371-375, printed. Faculty of Agriculture, Tohoku University, Sendai, Japan.

#### WATER POLLUTION:

Impacts of Pollution on Fish and Wildlife, Recreation and Esthetic Values, by Seth Gordon, 14 pp., processed. U. S. Department of Health, Education, and Welfare, Public Health Service, Washington 25, D.C., 1960.

#### WHALE MEAT:

"Automatically Operating Plants for the Freezing of Whale-Meat on Board a Modern Whaler," by A. Zimmer, article, Bulletin de L'Institut du Froid, vol. 60, 1960, pp. 1014-1016, printed. Institut du Froid, Paris, France.

"Whale Meat Freezing, Transportation in the USSR," by A. Kan and E. Pavlov, article, Quick Frozen Foods, vol. 23, October 1960, pp. 288-289, printed. Quick Frozen Foods, E. W. Williams Publications, Inc., 82 Wall Street, New York 5, N. Y.

#### WHALES:

"Studies on Crystalline Whale Pepsin," by Yoshio Ishihara, article, Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 1, November 1960, pp. 1-81, illus., printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

#### WORLD TRADE:

The following World Trade Information Service Economic and Operations Reports, published by the

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Bureau of Foreign Commerce, U. S. Department of Commerce, Washington, D. C., are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Food Regulations of Federal Republic of Germany and West Berlin, Operations Report No. 61-12, 20 pp., printed, 10 cents, March 1961.

Establishing A Business in the Union of South Africa, Economic Report No. 61-13, 12 pp., printed, 10 cents, March 1961.

Economic Developments in Peru, 1960, Economic Report No. 61-20, 8 pp., printed, 10 cents, April 1961.

Establishing a Business in Egypt (UAR), Economic Report No. 61-24, 4 pp., printed 10 cents, April 1961.

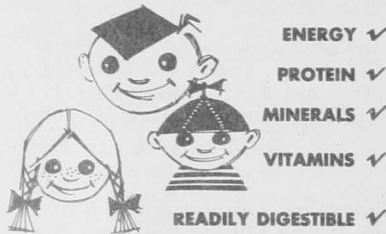
Certificate and Other Requirements on Imports into Canada, Operations Report No. 61-28, 8 pp., printed, 10 cents, April 1961.

Licensing and Exchange Controls--Ceylon, Operations Report No. 61-29, 4 pp., printed, 10 cents, April 1961.

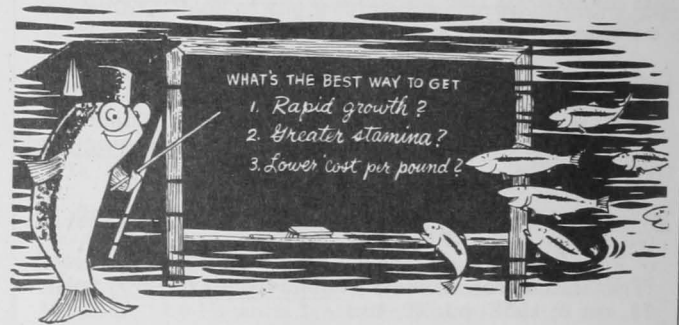
Import Tariff System of Gambia, Operations Report No. 61-33, 2 pp., printed, 10 cents, April 1961.



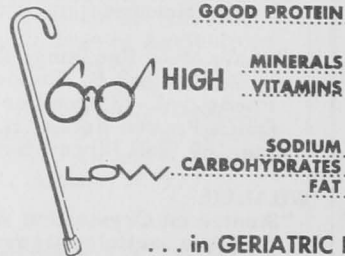
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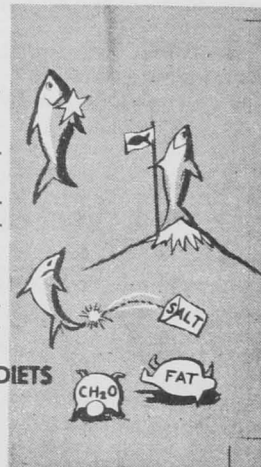
. . . in CHILDREN'S DIETS



THE PLACE OF FISH . . .



. . . in GERIATRIC DIETS





### CHINOOK SALMON EGGS FOR NATIONAL FISH HATCHERY PROGRAM

Fall chinook salmon returning to the Columbia River for spawning in the fall of 1960 yielded approximately 44 million eggs for the season's National Fish Hatchery program.



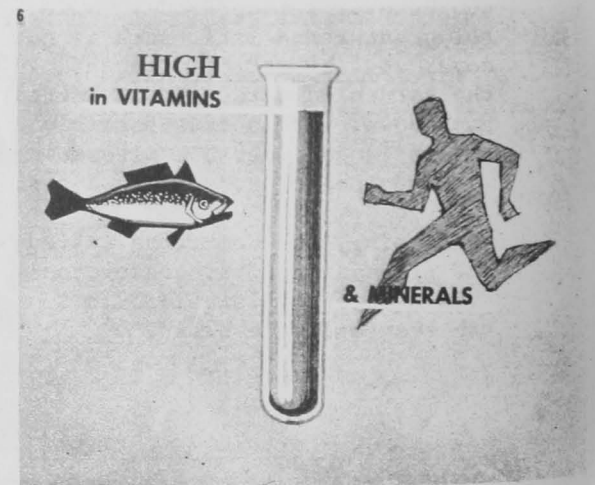
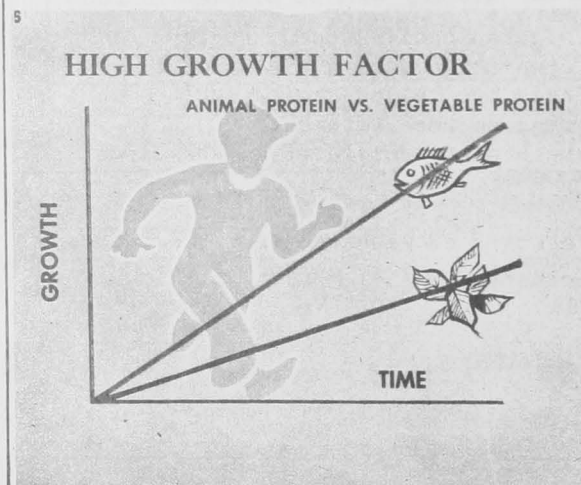
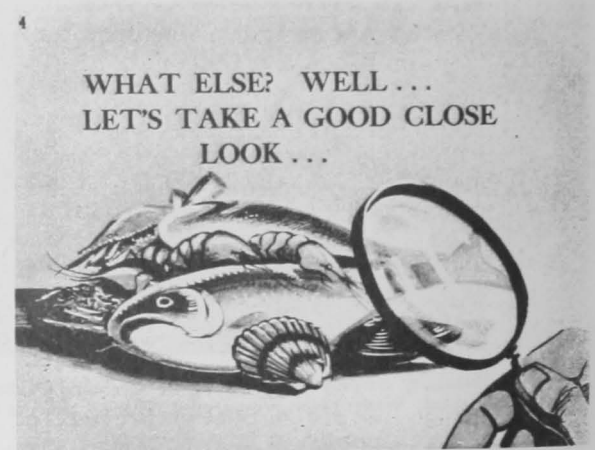
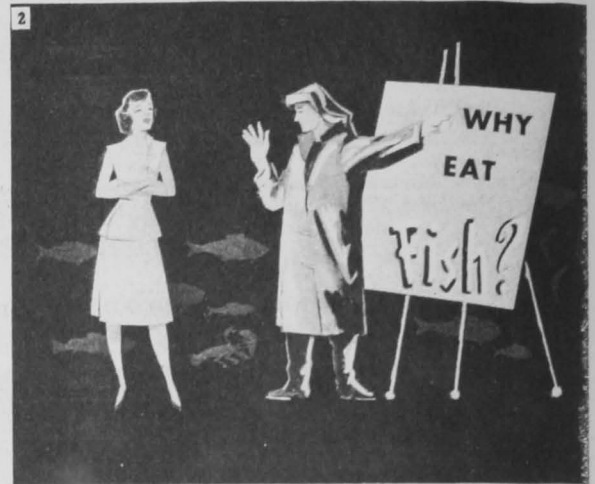
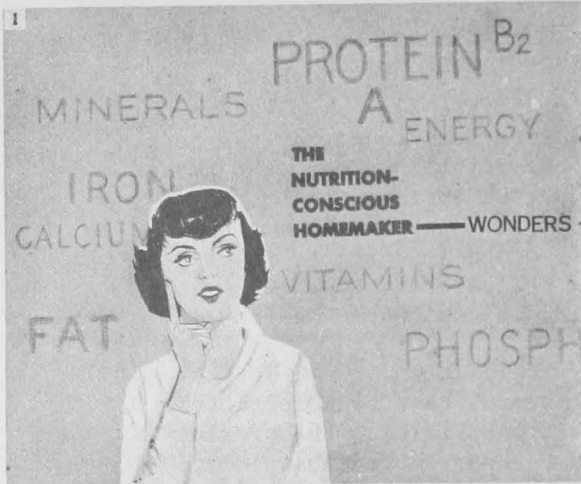
Hatchery employees at Spring Creek Fish Cultural Station (near Underwood, Wash.) removing and fertilizing salmon eggs.

Twenty-six percent of the adult fall salmon that passed Bonneville Dam on the trip from the sea to the Columbia River for spawning returned to National Fish Hatcheries.

Some of the eggs taken early in the season had started hatching by the end of 1960. All of the fall chinook salmon produced at National Fish Hatcheries are held in rearing ponds for at least 90 days and then released. No fry will be planted in 1960 since survival rate among the fish held for 90 days is much higher than among fry.

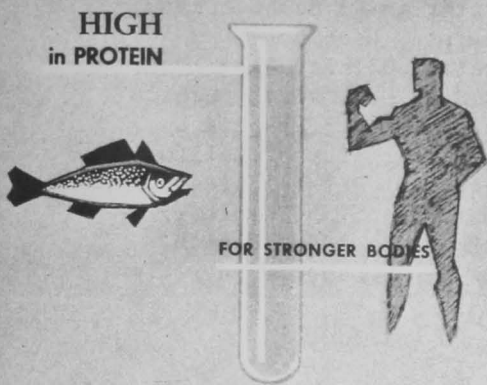
The taking of eggs--approximately 35 million at the Spring Creek hatchery and 8.5 million at the Little White Salmon hatchery--was not far from average.

# BALANCE FAT-INTAKE WITH FISH

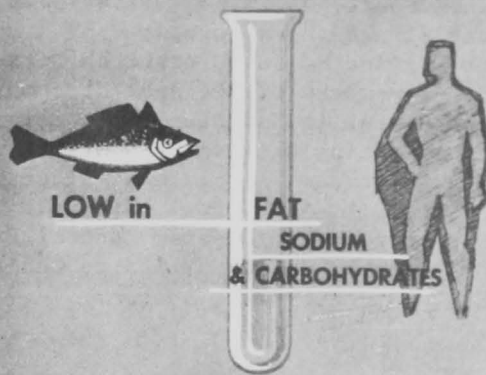


# FOR BETTER HEALTH

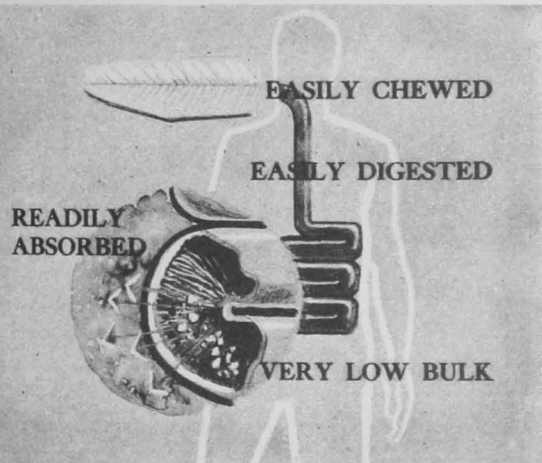
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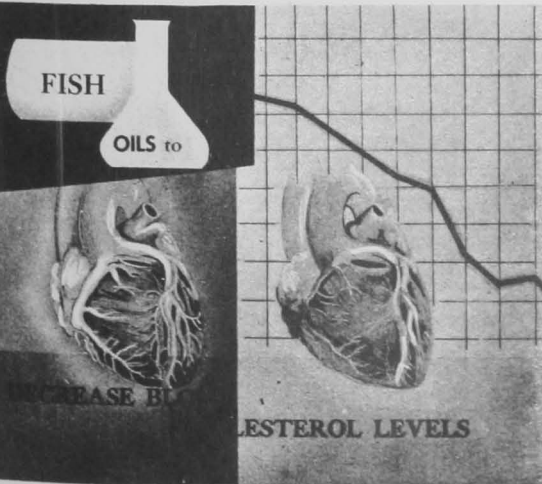


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## SPECIAL DIETETIC VALUES



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## YOUNG & OLD ALIKE...

