



# RECENT FISHERY PUBLICATIONS

## FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.  
 FL - FISHERY LEAFLETS.  
 SL - BRANCH OF STATISTICS LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
 SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-2260	- Massachusetts Landings, 1959 Annual Summary, 13 pp.
CFS-2291	- Shrimp Landings, 1959 Annual Summary, 22 pp.
CFS-2315	- Massachusetts Landings, February 1960, 5 pp.
CFS-2319	- Maryland Landings, April 1960, 3 pp.
CFS-2327	- New York Landings, April 1960, 4 pp.
CFS-2328	- Florida Landings, April 1960, 7 pp.
CFS-2329	- Maine Landings, April 1960, 3 pp.
CFS-2330	- Shrimp Landings, February 1960 6 pp.
CFS-2332	- Rhode Island Landings, April 1960, 3 pp.
CFS-2333	- Mississippi Landings, March 1960, 2 pp.
CFS-2334	- California Landings, February 1960, 4 pp.
CFS-2337	- California Landings, March 1960, 4 pp.
CFS-2335	- Texas Landings, April 1960, 3 pp.
CFS-2338	- Frozen Fish Report, May 1960, 8 pp.
CFS-2339	- Alaska Fisheries, 1959 Annual Summary, 8 pp.
CFS-2340	- Ohio Landings, April 1960, 2 pp.
CFS-2341	- New Jersey Landings, May 1960, 3 pp.
CFS-2342	- Massachusetts Landings, March 1960, 5 pp.
CFS-2343	- South Carolina Landings, May 1960, 2 pp.
CFS-2344	- Shrimp Landings, March 1960, 6 pp.
CFS-2345	- Virginia Landings, May 1960, 4 pp.
CFS-2346	- North Carolina Landings, May 1960, 3 pp.
CFS-2347	- Mississippi Landings, April 1960, 2 pp.
CFS-2349	- Florida Landings, May 1960, 7 pp.
CFS-2350	- Georgia Landings, May 1960, 2 pp.
FL-28 (Revised January 1960)	- Fish Baits, Their Collection, Care, Preparation, and Propagation, 27 pp., illus.

FL-46 (Revised March 1960)-Dealers in Trout and Pondfishes 33 pp.

FL-132 - Structure and Senses of Fishes, by Ralph Hile, 13 pp., illus., March 1960.

FL-191 - Wholesale Dealers and Producers of Bait Fish, 27 pp., March 1960.

FL-195 (Revised October 1959) - Partial List of Manufacturers of Fishing Gear and Accessories and Vessel Equipment, 27 pp.

FL-366 (Revised December 1958) - Recognizing Important Shrimp of the South, by William W. Anderson, 7 pp., illus.

FL-403 (Revised January 1960) - Fish and Wildlife Regulations for District of Columbia, 4 pp.

FL-489 - Haddock, by Albert C. Jensen, 9 pp., illus., March 1960. Describes the habits, growth, age determination, commercial fishery, utilization, and research on the haddock (*Melanogrammus aeglefinus*). The haddock is one of the most important food fishes in the North Atlantic, where they are caught principally by otter trawlers and long-liners. In 1958, haddock ranked second in volume and value in the New England fishery.

FL-490 - Sponges, by Paul S. Galtsoff, 18 pp., illus., March 1960. Discusses the widespread occurrence of sponges, their reproduction and regeneration, sponges of commerce, sponge cultivation, preparation for market, sale of sponges, fungus disease, and artificial sponges. A variety of photos and sketches add interest to the leaflet.

FL-491 - Sea Lamprey, by Lola T. Dees, 8 pp., illus., March 1960. Discusses the effects of lamprey attacks on the Great Lakes trout fishery; cooperative research on its control; natural history--spawning, larval and adult forms. Also discusses efforts to find commercial uses for the lampreys to compensate for the destruction they cause; mechanical, electrical, and chemical controls; and restoration of the lake trout resources.

FL-493 - The Bluefin Tuna-Trap Fishery of the Western Mediterranean Sea, by J. R. Thompson, 13 pp., illus., January 1960. Discusses the natural history of the bluefin tuna (*Thunnus*

thynnus); size and composition of trap catches; trap gear--placement, discription, and construction details; and trap operation. Included are a map of the area and diagrams of the trap.

FL-495 - Sea Horses, by Lola T. Dees, 9 pp., illus., April 1960. Describes the sea horse, the most unfishlike fish; its appearance, habits, reproduction, young, enemies, self-protection, culture, and value. The most unique characteristic of the sea horse is its manner of reproduction; the male bears the young. Of no commercial value as food, the sea horse is highly-prized as a curio.

Wholesale Dealers in Fishery Products (Revised):

SL- 2 - New Hampshire, 1959.  
 SL- 6 - New York Coastal Area, 1959.  
 SL- 9 - Delaware, 1959.  
 SL- 12 - Virginia, 1959.  
 SL- 16 - Florida, 1959.  
 SL- 19 - Louisiana (Coastal Area), 1959.  
 SL- 20 - Texas (Coastal Area), 1959.  
 SL- 22 - Oregon, 1959.  
 SL- 23 - Washington, 1959.  
 SL- 30 - Pennsylvania (Great Lakes Area), 1959.

Firms Canning, 1959 (Revised):

SL-103 - Tuna.  
 SL-103A- Tunalike Fishes.  
 SL-105 - Alewives.  
 SL-106 - Shad.  
 SL-109 - Caviar and Fish Roe.  
 SL-110 - Oysters.  
 SL-112 - Shrimp.  
 SL-113 - Crab Meat.  
 SL-119 - Squid.  
 SL-120 - Anchovies.

Firms Manufacturing, 1959 (Revised):

SL-151 - Fish Meal, Scrap, and Body Oil.  
 SL-151A-Fish Solubles and Homogenized Condensed Fish.  
 SL-153 - Fish Glue.  
 SL-156 - Pearl Essence.  
 SL-157 - Liver and Viscera Oil.  
 SL-159 - Fresh-Water Mussel-Shell Products.

SSR-Fish. No. 313 - Physical Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States, Gill Cruise 9, by William W. Anderson and Jack W. Gehringer, 231 pp., illus., September 1959.

SSR-Fish. No. 320 - Development and Operation of Television for Studying Fish Behavior in Otter Trawls, by John R. Clark, Robert Livingstone, Jr., and James M. Crossen, 25 pp., illus., December 1959.

SSR-Fish. No. 321 - Herring Spawning Surveys in Southeastern Alaska, by Bernard Einer Skud, 20 pp., illus., December 1959.

SSR-Fish. No. 323 - Indices of Mean Monthly Geostrophic Wind Over the North Pacific Ocean, by Laurence E. Eber and Oscar E. Sette, 112 pp., illus., September 1959.

SSR-Fish. No. 326 - Zooplankton Volumes off the Pacific Coast, 1957, by James R. Thrailkill, 60 pp., illus., November 1959.

SSR-Fish. No. 331 - The Eastern Hokkaido Land-Based Salmon Fishery of Japan, by Lorry M. Nakatsu, 13 pp., illus., March 1960.

SSR-Fish. No. 335 - Fish Marketing and Consumption in the Pacific Coast States, by S. Kent Christensen and Russell M. Boshell, 188 pp., December 1959. A comprehensive survey of the marketing and consumption of fresh, frozen packaged, and smoked fish and shellfish in California, Oregon, and Washington. Consumer purchases and preferences for salmon, halibut, sole, rockfish, and crab in these forms are examined in detail. For example, household purchases of fresh fish and shellfish of these species are analyzed by areas within the states, by income and factors associated with income such as occupation, and education, by region of prior residence and duration of residence on the Pacific coast, by religious groups, and by retail outlet where these products were last purchased. Similar analyses are made of the household purchases of frozen packaged and smoked fish and shellfish. The retail distribution of fresh fish and shellfish in the Pacific Coast States is examined with special emphasis on the major problems confronting the retailers handling these products. The selling practices of retailers who stock frozen packaged fish are presented in some detail because of the large percentage of retail stores involved. A limited analysis is made of the retail distribution of smoked fishery products. The examination of the wholesale distribution of the fishery products included in the study is concerned with the type of wholesalers and type of product, the services offered to retailers, the storage facilities used by wholesalers, and their suggestions and opinions in connection with product improvement and promotion. A series of recommendations based on the study are presented. The important areas covered include: consumer education; retailer and wholesaler education; service improvement; and products improvement.

SSR-Fish. No. 337 - The Application of Paper Chromatography in Identifying Tuna Larvae, by Walter M. Matsumoto, 13 pp., illus., January 1960.

SSR-Fish. No. 342 - A Census of the California Gray Whale, by Raymond M. Gilmore, edited by Dale W. Rice, 34 pp., illus., May 1960. There are two distinct populations of living gray whales: one known as the California population, in the eastern North Pacific; the other, known as the Korean population, in the western North Pacific. A third population, now extinct, occupied the eastern North Atlantic. The present study concerns only the California population. The main objectives of this study were to (1) estimate the size of the total population and its present rate of increase, (2) determine the extent of the breeding grounds and their relative importance,

(3) determine the time and nature of the southward migration past California, and (4) establish a basis for detecting, in the future, any unusual changes in population size.

Sep. No. 596 - Control of Iron Sulfide Discoloration in Canned Shrimp (*Xiphopenus* sp.) - Part I.

Sep. No. 597 - Construction and Operation of an Inexpensive Fish Smokehouse.

Frozen Processed Fish and Shellfish Consumption in Institutions and Public Eating Places. A series of reports on a survey of frozen processed fish and shellfish consumption in institutions and public eating places in ten cities, were issued in November 1959. This study was conducted in order to obtain information which could be used by the fishing industry to increase consumer demand for fishery products. The data collected should be useful in helping processors of frozen fish, shellfish, and portions to adjust their operations and services in order to reduce costs, provide better services, and develop new or expanded markets. Circular 66 explains the purpose of the study, survey methods and procedures, and reliability of study results. Circulars 67-76 contain data obtained for each city as a result of this survey. All of these circulars are available under the series title of "Frozen Processed Fish and Shellfish Consumption in Institutions and Eating Places."

Cir. 66 - Survey Methods and Procedures, 24 pp.

Cir. 67 - Atlanta, Georgia, 56 pp.

Cir. 68 - Chicago, Illinois, 64 pp.

Cir. 69 - Cleveland, Ohio, 52 pp.

Cir. 70 - Denver, Colorado, 54 pp.

Cir. 71 - Houston, Texas, 51 pp.

Cir. 72 - Los Angeles, California, 66 pp.

Cir. 73 - New York, New York, 61 pp.

Cir. 74 - Omaha, Nebraska, 52 pp.

Cir. 75 - Portland, Oregon, 53 pp.

Cir. 76 - Springfield, Massachusetts, 50 pp.

Bureau Of Sport Fisheries and Wildlife Pesticide-Wildlife Review, 1959, by James B. DeWitt and John L. George, Circular No. 84, 41 pp., illus., January 1960. Discusses the scope of the pesticide-wildlife problem; reviews the current activities and findings of the Bureau of Sport Fisheries and Wildlife, cooperators, and others in this field; summarizes the legislative developments of the past few years; and gives the Bureau's recommendations for use of pesticides with minimum harm to wildlife.

Progress in Sport Fishery Research, 1959, Fish and Wildlife Circular 81, 83 pp., illus., 1960.

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-6a	- Mexico's Fish and Shellfish Canning Industry, 1959.
MNL-7a	- Mexican Fisheries, 1959.
MNL-8a	- Portuguese Fishing Industry, 1959.

MNL-20 - Angola's Fishing Industry, 1959.

MNL-21 - South West Africa's Fisheries, 1959.

MNL-22 - Union of South Africa's Fisheries, 1959.

MNL-23 - Fisheries of Chile.

MNL-24 - Mexican Fish Meal Plants.

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

(Baltimore) Monthly Summary - Fishery Products, February 1960, 10 pp. (Market News Service, U. S. Fish and Wildlife Service, 400 E. Lombard St., Baltimore 2, Md.) Receipts at Baltimore by species and by states and provinces for fresh- and salt-water fish and shellfish; total receipts by species and comparisons with previous years; and wholesale prices on the Baltimore market; for the month indicated.

California Fishery Products Monthly Summary, May 1960; 13 pp. each. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg. San Pedro Calif.) California Cannery receipts of tuna and tunalike fish, mackerel, and anchovies; pack of canned tuna, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, May and June 1960, 13 pp. each. (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 months indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, May 1960, 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; sponge sales; and imports at Port Isabel and Brownsville, Tex., from Mexico; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, June 1960, 4 pp. (Market News Service, U.S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

New England Fisheries--Monthly Summary, May 1960, 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; 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 May 1960, 17 pp. (Market News Service, 155 John St., New York 38, N.Y.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, imports entered at New York City, primary wholesaler prices for frozen products, and marketing trends; for the month indicated.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, May and June 1960, 9 and 11 pp. respectively. (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 months indicated.

Effects of Turbidity-Producing Materials in Sea Water on Eggs and Larvae of the Clam, VENUS (MERCENARIA) MERCENARIA, by Harry C. Davis, 7 pp., illus., printed. (Reprinted from Biological Bulletin, vol. 118, no. 1, February 1960, pp. 48-54.) U.S. Bureau of Commercial Fisheries, Biological Laboratory, Milford, Conn.

Use of Chemicals to Control Shellfish Predators, 2 pp., printed. (Reprinted from Science, vol. 131, no. 3412, May 20, 1960, pp. 1522-1523.) U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Milford, Conn.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE AVAILABLE ONLY FROM MARINE MAMMAL RESEARCH, U.S. FISH AND WILDLIFE SERVICE, SAND POINT NAVAL AIR STATION, SEATTLE, WASH.

Aquarial Observations on Feeding of Kamchatka Crab, by D. N. Logvinovich, 19 pp. (Translated by Leda V. Sagan from Vladivostok, Izvestiia Tikhookeanskogo N.-I. Instituta Rybongo Khoz-iaistva i Okeanografii, vol. 19, 1945, pp. 79-97.)

Lipids of the Muscle of Tuna, THYNNUS ORIENTALIS. IV--Cephalins of the Dark-Colored and Ordinary Muscles, by Hisanao Igarashi, Koicha Zama, and Muneo Katada, 4 pp. (Translated by

George Kudo from the Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 5, 1957, pp. 278-281.)

Using Results of Calculating the Growth Rate of Atlantic and Scandinavian Herrings for Distinguishing Schools and for Studying Migration Routes, by N. P. Biriukov, 8 pp. (Translated by Leda V. Sagan from Voprosy Ikhtiologii, no. 6, 1956, pp. 47-54.)

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE AVAILABLE ONLY FROM U. S. FISH AND WILDLIFE SERVICE, BUREAU OF COMMERCIAL FISHERIES, BIOLOGICAL LABORATORY, SEATTLE, WASH.

Data on Salmon Predation:

- (1)-On Predation on Salmon by Fur Seals, by Hokuyo Bosen Kyogi Kai (North Pacific Mothership Association), 5 pp., in Japanese, March 15, 1959. (Complete Translation by Hack Chin Kim.)
- (2)-Predation on Salmon by Harbor Seal and Sea Lions, by Kozo Ikeyama, 7 pp. (Translated by Hack Chin Kim from Suisankai--Journal of the Fisheries Society of Japan--February 1935.)
- (3)-Predation on Salmon by Belugas, Dolly Varden and Mackerel Sharks, by Hokuyo Bosen Kyogi Kai (North Pacific Mothership Association), 25 pp., March 15, 1959. Consists of summary translations in Japanese of Russian articles: "The Belugas Whose Main Food is Salmon," by A. G. Tomilin; "Measures for Increasing Far Eastern Salmon Stocks," by K. I. Popov; and "Miscellaneous Information on Predation on Various Far Eastern Salmon Species," by G.V. Nikolsky. Also contains "Notes on the Salmon Shark as a Predator of Salmon (Oncorhynchus sp.) in the North Pacific Ocean," by Osamu Sano. (Summary translations in English by Hack Chin Kim.)
- (4)-On Predation on Salmon by Fur Seals and Harbor Seals, by Hokuyo Bosen Kyogi Kai (North Pacific Mothership Association), 6 pp., illus., (Summary translation by Hack Chin Kim.)

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D.C.

Definition of Haddock Stocks of the Northwestern Atlantic, by John R. Clark and Vadim D. Vlad-ykov, Fishery Bulletin 169 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 283-296, illus., printed, 20 cents, 1960. Vertebrae of haddock from 16 fishing grounds in the northwestern Atlantic were counted to determine whether such counts could be used to identify population units. Comparison of average numbers of vertebrae from the different areas showed significant differences, which could be related to surface water temperatures on the grounds during the spawning time. The relationship is consistent with that developed for northeastern Atlantic haddock from published European data. Age data which were available for the samples from Georges and Browns Banks demonstrated that the differences in average vertebral numbers among the individual year classes on each bank could be attributed



to differences in temperatures in the spawning period in different years. Consideration of average vertebral numbers of the various population units suggests the following as major haddock stocks of the northwestern Atlantic: Newfoundland; eastern, central, and western Nova Scotia, and New England.

"Techniques for Studying Herring Scales and Otoliths," by Charles M. Larsen and Bernard E. Skud, article, *Progressive Fish-Culturist*, vol. 22, no. 2, April 1960, pp. 85-86, illus., printed, 25 cents. This paper describes (1) a technique for mounting and photographing Atlantic herring (*Clupea harengus*) scales and (2) a technique for clearing and photographing herring otoliths. By using these methods of handling and mounting scales and otoliths, clear large prints may be obtained directly with a photographic enlarger. This provides a rapid, efficient, and inexpensive procedure for the examination of scales and otoliths for racial as well as age and growth studies.

## 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.

### ADVERTISING:

Advertising for Profit and Prestige, by D. Peter Bowles, *Small Marketers Aids* No. 56, 4 pp., printed. Small Business Administration, Washington 25, D.C., June 1960.

### ALASKA:

Regulations of the Alaska Board of Fish and Game for Commercial Fishing in Alaska, 95 pp., printed. Alaska Department of Fish and Game, 229 Alaska Office Bldg., Juneau, Alaska, 1960. Contains definitions of terms used in the regulations, and outlines provisions for commercial fishing in Alaska and international waters. The general provisions section discusses regulations such as license requirements for fishermen, vessels, and gear; reports from operators; inspection of fishery establishments; prohibition of explosives, chemicals, and poisons; salmon, bottom fish, smelt, herring, shellfish, whitefish, sheefish, and char fisheries requirements; subsistence fishery provisions; and emergency regulations.

### ALGAE:

"Chemical Studies on Marine Algae. XII--The Free Amino Acids in Several Species of Marine Algae," by Mitsuzo Takagi and Mitsuo Kuriyama, article, *Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 10, May 1959, pp. 72-76, printed in English. *Bulletin of the Faculty of Fisheries, Hokkaido University, Hokkaido University, Hokodate, Japan.*

"Pourquoi Garder le Silence sur les Algues Marines et Leurs Mille Emplois?" (Why Keep Silent About the Marine Algae and Its Thousand Uses?), article, *France Peche*, vol. 50, no. 40, May 1960, pp. 17-21, illus., printed in French. *France Peche*, 84 Rue Carnot, Lorient, France.

### ANTIBIOTICS:

Antioxidant for Fish, by Eitaro Tsuboi and Takayuki Tsuboi, Japanese Patent Number 2832, April 22, 1959, printed in Japanese. Japanese Patent Office, Tokyo, Japan.

"Antioxidant Treatment of Rainbow Trout," by F. Bramsnaes, H. Brennum, and H. Sorensen, article, *Bulletin de L'Institut International du Froid*, vol. 39, 1959, p. 894, printed. International Institute of Refrigeration, 177 Boulevard Malesherbes, Paris 17, France.

"Comparative Effectiveness of Various Chlortetracycline (CTC)-Treatments in Keeping Quality of Trawled Fish and CTC Residue on Treated Fish," by Yasuo Yone, Tetuo Tomiyama and Shichiro Hamada, article, *Bulletin of the Japanese Society of Scientific Fisheries*, vol. 25, June 1959, pp. 156-162, printed in Japanese with English abstracts. Japanese Society of Scientific Fisheries, c/o Tokai University Kenkyujo, Tsukishima, Koyobashi, Tokyo, Japan.

"Plant-Scale Applications of Chlortetracycline for Fish Preservation," by Lionel Farber and Peter Leke, article, *Proceedings of the Gulf and Caribbean Fisheries Institute*, vol. 10, 1957, pp. 72-79, printed. University of Miami, The Marine Laboratory, #1 Rickenbacker Causeway, Miami 49, Fla.

### ANTIOXIDANTS:

"The Application of Antioxidants to Fish Oils to Increase their Stability," by Yu S. Davydova and V. I. Treshcheva, article, *Rybnoe Khoziaistvo*, vol. 34, 1958, pp. 70-74, printed. *Souizpechat' Otdelu "Zhurnal-Pochtoi"*, Moscow Zh-240, U. S. S. R.

### BACTERIOLOGY:

"Nutrition and Metabolism of Marine Bacteria. VII--Growth Response of a Marine Flavobacterium to Surface Active Agents and Nucleotides," by Robert A. MacLeod, H. Hogenkamp, and E. Onofrey, article, *Journal of Bacteriology*, vol. 75, April 1958, pp. 460-466, printed. *Journal of Bacteriology, Williams & Wilkins Co.*, 428 E. Preston St., Baltimore 2, Md.

### BEHAVIOR OF FISH:

"Studies on the Shoaling Behavior of Fish. I--Responses of Two Species to Changes in Illumination and to Olfactory Stimuli," by D. M. Steven, article, *Journal of Experimental Biology*, vol. 36, 1959, pp. 261-280, printed. *Journal of Experimental Biology, Cambridge University Press*, 200 Euston Rd., London N.W. 1, England.

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#### BIOCHEMISTRY:

"Biochemistry of Fishes," by H. L. A. Tarr, article, Annual Review of Biochemistry, vol. 27, 1958, pp. 223-244, printed. Annual Review of Biochemistry, Stanford University, Stanford, Calif.

"Fat Hydrolysis in Frozen Fish. 2--Relation to Protein Stability," by Doris I. Fraser and W. J. Dyer, article, Progress Reports of the Atlantic Coast Stations, no. 72, September 1959, pp. 37-39, printed. Fisheries Research Board of Canada, Atlantic Fisheries Experimental Station, Halifax, Nova Scotia, Canada.

"Protein Value and Amino-Acid Balance of Condensed Herring Solubles and Spontaneously Heated Herring Meal Chick Experiments," by B. Lakevela. Herring Oil and Meal Ind. Research Inst., Straumsgrend, Norway.

#### CALIFORNIA:

California Fish and Game, vol. 46, no. 3, July 1960, 140 pp., illus., printed. Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif. Includes, among others, these articles: "The Age and Growth of Striped Bass (Roccus saxatilis) in California," by John B. Robinson; "The Importance of the Ocean Sport Fishery to the Ocean Catch of Salmon in the States of Washington, Oregon and California," by Henry O. Wendler; and "Tuna Tagging in the Eastern Tropical Pacific, 1952-1959," by C. E. Blunt, Jr. and James D. Messersmith.

Fishing Among the Indians of Northwestern California, by A. L. Kroeber and S. A. Barrett, Anthropological Records, vol. 21, no. 1, 210 pp., illus., printed, \$4.50. University of California, Berkeley, Calif., 1960.

#### CANADA:

Fisheries Statistics of Canada, 1958 (British Columbia), 20 pp., illus., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, April 1960. Contains tables giving the quantity and value of fishery products landed in British Columbia in 1939-58, by species and by fisheries districts; quantity and value of manufactured fishery products for 1957-58; capital equipment in the primary fisheries operations, 1957-58; and number of persons engaged in primary fisheries operations, 1957-58.

Fisheries Statistics of Canada, 1958 (Newfoundland), 30 pp., illus., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, April 1960. This report consists of tables giving the value of fishery products by species, 1955-58; quantity and value of fishery products by species, fisheries areas, and major ports, 1957-58; capital equipment employed in primary operation by

areas, 1957-58; and number of persons engaged in the fisheries by areas, 1957-58.

"New Fisheries for Newfoundland," by Michael F. Harrington, article, C-I-L Oval, vol. 29, no 1 February 1960, pp. 2-6, illus., printed. C-I-L Oval, P. O. Box 10, Montreal, Canada. Describes the efforts of the Newfoundland provincial government at revitalizing the fishing industry in the La Scie section of the northeastern coast. Dependency on the time-honored dried cod has been discarded; modernization and centralization are the theme. Accomplishments include the use of larger, powered fishing vessels; increased exploratory fishing; new stations for biological and technical research; an educational program for fishermen; provision of marine railways; and facilities for holding and freezing bait. Fishing port facilities have been developed; a processing plant expected to handle 6 million pounds of fish annually, has been constructed; and a fish meal plant is in operation. All of these represent progress in area development and the economic rehabilitation of Newfoundland.

#### CANNING:

"Conservas, La Industria Noruega en el Ano Ultimo" (Canning, The Norwegian Industry During the Past Year), article, Industrias Pesqueras, vol. 34, no. 792, April 15, 1960, pp. 131-132, printed in Spanish, Industrias Pesqueras, Policarpo Sanz, 21-2, Vigo, Spain.

"Prevention of Adhesion of Canned Salmon Meat," by Toyo-o Takahashi, and Makoto Takei, article, Bulletin of Tokai Regional Fisheries Research Laboratory, no. 24, June 1959, pp. 57-65, printed in Japanese with English abstracts. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-ku, Tokyo, Japan.

#### COD:

"Browning Reactions and the Loss of Free Amino Acid and Sugar from Lyophilized Muscle Extractives of Fresh and Chill-Stored Codling (Gadus Callarias), by N. R. Jones, article, Food Research, vol. 24, November-December 1959, pp. 704-710, printed. Department of Food Technology, University of California, Davis, Calif.

"The Effect of Sodium Chloride on Proteolysis and on the Fate of Amino Acids Present in the Muscle of Codfish (Gadus Callarias)," by E. Bilinski and H. Fougere, article, Journal of the Fisheries Research Board of Canada, vol. 16, October 1959, pp. 747-753, printed. Journal of Fisheries Research Board of Canada, Queen's Printer & Controller of Stationery, Ottawa, Canada.

#### COMMON MARKET:

"Les Pays du Marche Commun" (The Common Market Countries and Their Fisheries), article, La Peche Maritime, vol. 39, no. 987, June 1960,

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

pp. 344-349, illus., printed in French. La Peche Maritime, 190 Blvd. Haussmann, Paris, France.

#### CRAB:

"The Pacific Crab Canning Industry of British Columbia," by Elliot B. Dewberry, article, Food Manufacture, part 1, vol. 34, November 1959, pp. 425-429; part 2, vol. 34, December 1959, pp. 474-477, printed. Food Manufacture, Leonard Hill, Ltd., Stratford House, 9 Eden St., London N.W. 1, England.

#### CUBA:

Gorgonias del Litoral de la Costa Norte de Cuba (Anthozoans of the Shores of Northern Cuba), no. 1, 24 pp., illus., printed in Spanish. Acuario Nacional Sibarimar, Centro Experimental, Ave. 1<sup>a</sup> #6002, Miramar, Marianao, Havana, Cuba, 1959.

Salinidad, Temperatura y Plancton de las Aguas Costeras de Isla de Pinos (Salinity, Temperature, and Plankton of the Waters of the Isle of Pines Area), by Jose A. Suarez-Caabro, Monograph 7, 26 pp., illus., printed in Spanish with English summary. Laboratorio de Biologia Marina, Universidad Catolica de Santo Tomas de Villanueva, Marianao, Cuba, May 1959.

#### DECOMPOSITION:

"Chemical Indices of Decomposition in Haddock," by Fred Hillig, L. R. Shelton, Jr., and J. H. Loughrey, article, Journal of the Association of Official Agricultural Chemists, vol. 42, November 1959, pp. 702-708, printed. Association of Official Agricultural Chemists, Inc., Box 540, Benjamin Franklin Station, Washington 4, D.C.

#### DEHYDRATION:

"Commercial Applications of the Freeze-Drying Process for Dehydration of Food Products," article, Le Revue de la Conserve, no 7, September 1957, p. 67, printed in French. Le Revue de la Conserve, 1 Rue de la Réale, Paris 1, France.

"Design of Freeze-Drying Equipment for the Dehydration of Foodstuffs," by W.R. Smithies and T. S. Blakley, article, Food Technology, vol. 13, November 1959, pp. 610-613, printed. Food Technology, The Garrard Press, 510 North Hickory, Champaign, Ill.

#### DENMARK:

GALATHEA Reports (Scientific Results of the Danish Deep-Sea Expedition Round the World, 1950-1952), vols. 1-3; vol. 1, 1957-59, 260 pp.; vol. 2, 1956, 253 pp.; and vol. 3, 1959, 88 pp. + plates, illus., printed. Danish Science Press, Copenhagen, Denmark.

#### ELECTRICAL FISHING:

"Experience in Measuring the Conductivity and Determining the Hardness of Water in Connection with Electrofishing and Evaluation of Wa-

ter," by G. Buhse, article, Der Fischwirt, vol. 8, no. 6, June 1958, p. 160, printed in German. Der Fischwirt, Deutscher Fischerei-Verband, Neuerwall 72, Hamburg 36, Germany.

"New Type of Tuna Hook in Electrofishing," by K. Schultz, Schiff und Hafen, vol. 10, no. 9, September 1958, p. 752, printed in German. Schiff und Hafen, Schiffbau-Technische Gesellschaft, Neuerwall 32, Hamburg 36, Germany.

#### FATTY ACIDS:

"The Origin of the Marine Polyunsaturated Fatty Acids Composition of Some Marine Plankton," by P. B. Kelly, R. Reiser, and D. W. Hood, article, Journal of the American Oil Chemists' Society, vol. 36, no. 3, March 1959, pp. 104-106, printed. Journal of the American Oil Chemists' Society, 35 E. Wacker Dr., Chicago 1, Ill.

"The Unsaturated Fatty Acids in Menhaden Body Oil: The C<sub>18</sub>, C<sub>20</sub>, and C<sub>22</sub> Series," by W. Stoffel and E. H. Ahrens, Jr., article, Journal of Lipid Research, vol. 1, January 1960, pp. 139-146, printed. Journal of Lipid Research, University Publishers, Inc., 59 East 54th St., New York 22, N. Y.

#### FATTY OILS:

"Fatty Oils of Aquatic Invertebrates, XIX--Non-conjugated Sterols and Other Unsaponifiable Components in the Fatty Oil from Tonna Luteostoma," by Tatsuo Tanaka and Toyama Yoshivuki article, Memoirs of the Faculty of Engineering, Nagoya University, vol. 10, 1958, pp. 77-83, printed. Nagoya University, Furo-Cho, Chikusa, Nagoya, Japan.

#### FISH FINDER:

"Electronic Sector-Scanning Asdic: An Improved Fish-Locator and Navigational Instrument," by D. G. Tucker and V. G. Welsby, article, Nature, vol. 185, January 30, 1960, pp. 277-279, printed. Nature, St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

#### FISH FLOUR:

"La Harina de Pescado como Alimento Humano" (Fish Flour for Human Consumption), by Fidel de Varona C., article, Mar y Pesca, vol. 3 nos. 7 and 8, April-May 1960, pp. 20-21, 41-42, illus., printed in Spanish. Mar y Pesca, Edificio I.N.R.A., Noveno Piso, Plaza Civica, Havana, Cuba.

#### FISH MEAL:

"Comparative Values of Different Fish Meals and Fish Factors in Broiler Feeds," by E. L. Stephenson and Lionel Barton, article, Arkansas Farm Research, vol. 8, no. 4, July-August 1959, printed. Arkansas Farm Research, Arkansas Agricultural Station, University of Arkansas, Fayetteville, Ark.

#### FISH OILS:

"Fish Oils in the Painting Industry. Part 1," by J. Huesa Lope, article, Grasas y Aceites, vol.



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8, no. 5, 1957, p. 226, printed in Spanish. Grasa y Aceites, Instituto Especial de la Grasa y Sus Derivados, Seville, Spain.

#### FISH SOLUBLES:

"The Effect of Dehydrated Alfalfa Meal, Dried Brewers Yeast, Condensed Fish Solubles and Fermentation Residue on the Reproductive Performance of Turkeys," by C. H. Whiteside and others, article, Poultry Science, vol. 39, January 1960, pp. 77-81, printed. Poultry Science Publishers, Kansas State College, Manhattan, Kans.

#### FISH STICKS:

"Permits Deep-Fat Browning Without Deep-Fat Methods," article, Food Processing, vol. 20, April 1959, p. 81, printed. Food Processing, Putnam Publishing Company, 111 E. Delaware Pl., Chicago, Ill. Infrared cooking of fish sticks permits deep-fat browning without deep-fat cooking methods. Only small amounts of oil are sprayed on fish sticks during cooking operation. A 7-foot long infrared oven is turning out approximately 400 pounds of processed fish sticks are properly browned and cooked before being frozen.

#### FISH TRANSPORTATION:

The Control of pH by Buffers in Fish Transport, by William N. McFarland and Kenneth S. Norris, 20 pp., illus., printed. (Reprinted from California Fish and Game, October 1958, pp. 291-310). California Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif. The heavy fishing pressure on our Nation's streams and lakes requires large-scale propagation and planting of fish, and has led to the development of the complex modern fish tanks. One of the major problems confronting the fisheries biologist has been the development of better means of transporting live fish. This study has been separated into two parts: first, the practical aspects of buffer application to live fish transport in water; and second, the theoretical and experimental background underlying the practical methods. In summary, the authors state that "Chemical buffers are of importance in the control of acidity changes during fish transport, resulting from respiration and accumulation of waste products. A biochemical buffer, tris-hydroxymethyl-aminomethane, has been found valuable for pH control, both in closed and open-system fish transport. Inorganic buffers either caused heavy precipitation of salts in sea water or buffered outside the optimum pH range for marine fish." Methods of application in transport are discussed.

#### FISHING TECHNIQUES:

"Les Developpements des Techniques de Peche de Differents Pays dont l'U. R. S. S." (The Developments of Fishing Techniques in Different Countries Including the U. S. S. R.), article, France Peche, vol. 50, no. 40, May 1960, pp.

23-24, illus., printed in French. France Peche, 84 Rue Carnot, Lorient, France.

#### FLORIDA:

Hydrographic Data from the Inshore Bays and Estuaries of Everglades National Park, Florida, 1957-1959, by Durbin Tabb, David Dubrow, and Raymond Manning, 26 pp., illus., processed. Florida State Board of Conservation, W. V. Knott Bldg., Tallahassee, Fla.

Report on the Marine Plants, Bottom Types and Hydrography of the St. Lucie Estuary and Adjacent Indian River, Florida, by Ronald C. Phillips and Robert M. Ingle, Special Scientific Report No. 4, 79 pp., processed. Florida State Board of Conservation, Marine Laboratory, Maritime Base, Bayboro Harbor, St. Petersburg, Fla., March 1960.

#### FOOD AND AGRICULTURE ORGANIZATION:

Financial Assistance Schemes for the Acquisition of Improvement of Fishing Craft, by C. Beever and K. Ruud, FAO Fisheries Studies No. 9, 121 pp., printed, US\$ 1. Food and Agriculture Organization of the United Nations, Rome, Italy, 1960.

General Fisheries Council for the Mediterranean, Proceedings and Technical Papers, No. 5, 539 pp., illus., printed in French and English, \$5. Food and Agriculture Organization of the United Nations, Rome, Italy, 1959. (For Sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) This volume is divided into two parts. The first part covers the proceedings of the fifth meeting held at FAO headquarters, Rome, October 13-18, 1958--including a list of participants, a summary record of the plenary sessions, and a general report on the Council's activities in marine resources, fishery production, utilization of fishery products, inland waters, and economics and statistics. The second part contains the 75 technical papers presented at the meeting.

#### FRANCE:

"La Conserve du Maquereau a Boulogne" (Mackerel Canning at Boulogne), article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 266-267, illus., printed in French. La Peche Maritime, 190 Blvd. Haussman, Paris, France.

"L'Evolution de Notre Industrie Thoniere" (The Development of Our Tuna Industry), by L. Plo-uas, article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 268-269, printed in French. La Peche Maritime, 190 Blvd. Haussman, Paris, France.

"Rapport sur la Production de l'Industrie des Peches Maritimes en 1959" (Report on the Production of the Fishing Industry in 1959), article, France Peche, vol. 50, no. 40, May 1960, pp. 37-

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

39, 41, 43, 45-47, 49-54, illus., printed in French. France Peche, 84 Rue Carnot, Lorient, France.

#### FREEZING:

"Congelacion del Pescado Entero--Las Experiencias Americanas a Bordo del 'Delaware'" (Freezing Whole Fish--American Methods Aboard the Delaware), article, Industrias Pesqueras, vol. 34, no. 792, April 15, 1960, pp. 128-130, printed in Spanish. Industrias Pesqueras, Policarpo Sanz, 21-2, Vigo, Spain.

"Freezing of Meat and Fish in Liquid Nitrogen," by N. Moiseeva and A. Piskareva, article, Kholodil'haia Tekhnika, no. 1, 1959, pp. 52-55, printed in Russian. Kholodil'naia Tekhnika, c/o Four Continent Book Corporation, 822, Broadway, New York 3, N. Y.

"Handling, Chilling and Freezing Fish. Part 2--Freezing Fish," by C. H. Castell, J. S. M. Harrison, and O. C. Young, article, Canadian Fisherman, vol. 47, February 1960, pp. 19-25, printed. Canadian Fisherman, Gardenvale, Quebec, Canada.

"Some Experiments on the Freezing and Thawing of Live Fish," by W. H. Martin, article, Contributions to Canadian Biology (Supplement to the 47th Annual Report of the Department of Marine and Fisheries, Fisheries Branch), Sessional Paper no. 39b, 1915, pp. 73-75, printed. Fisheries Research Board of Canada, Ontario, Canada.

#### FRESH-WATER INVERTEBRATES:

A Guide to Fresh-Water Invertebrate Animals, by T. T. Macan, 128 pp., illus., printed, 11s. 6d. (US\$1.61). Longmans, Green and Co., Ltd., London, England, 1959.

#### FROZEN FISH:

"Thawing of Frozen Fish," article, Food Manufacture, vol. 34, September 1, 1959, p. 364, printed. Food Manufacture, Leonard Hill, Ltd., Stratford House, 9 Eden St., London N.W. 1, England.

#### FROZEN STORAGE:

"Studies on Muscle of Aquatic Animals, XXXVIII--The Influence of Frozen Storage on Muscle Protein of Yellowtail (Seriola quinqueradiata)," by Wataru Simidu, Usio Simidu and Hiroyoshi Terasima, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 11, 1958, pp. 700-703, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

#### GENERAL:

Fisheries (Fish Farming, Fisheries Management), vol. III--Conservation-Propagation-Regulation, by Milo Moore, Ken McLeod, and Don Reed,

345 pp., illus., printed. Washington State Department of Fisheries, Seattle, Wash., February 1960. Comprises revised editions of volumes I and II, plus several new chapters. An excellent text for fisheries students, this volume is also of vital interest to members of the fisheries and allied industries. Covers, with the aid of many fine photos, charts, and drawings, every aspect of development and conservation of fish and shellfish resources in the State of Washington. Its 22 chapters include material on fisheries of the Columbia River Basin, oyster and clam farming, pollution and predator control, the salmon fisheries, international fisheries, and many other pertinent topics.

#### GERMAN FEDERAL REPUBLIC:

Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung, Neue Folge, Band XV, Heft 3, 1959, 117 pp., illus., printed in German with English summaries. Contains these articles: "Biologisch-Statistische Untersuchungen über die Deutsche Hochseefischerei. IV--Die Entwicklung der Hochseefischerei in Fangtechnischer, Raumlicher und Biologischer Hinsicht. 4--Leistungsfähigkeit und Fangerträge der Deutschen Fischdampferflotte 1885-1955" (Biological-Statistical Investigations of the German High Seas Fishery in Catching, Exploratory, and Biological Aspects. 4--Effort and Catch of German Trawlers 1885-1955), by Johannes Lundbeck; "Die Trubungsverhältnisse in der Irminger See im Juni 1955 und Ihre Hydrographischen Ursachen" (Turbidity Conditions in the Irminger Sea (Ice-land-Greenland) in June 1955 and their Hydrographic Consequences), by Joachim Joseph; and "Die Planktonverteilung in der Irminger See im Juni 1955" (Plankton Distribution in the Irminger Sea in June 1955), by Max Gillbricht.

#### GULF OF MEXICO:

"A Deep-Water Coral Reef in the Gulf of Mexico," by Donald R. Moore and Harvey R. Bullis, Jr., article, Bulletin of Marine Science of the Gulf and Caribbean, vol. 10, no. 1, 1960, pp. 125-128, printed. Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami 49, Fla.

Fishing on the Gulf Coast, by Howard Mitcham, 103 pp., illus., printed, \$2.00. Hermit Crab Press, 3333 Elysian Fields Ave., New Orleans 22, La., 1959.

#### HARPOONS:

"A Proposito di un Arpione Rinvenuto su un Tonno Pescato in Tunisia e Descritto de Heldt nel 1932--Arpioni in Uso Nello Stretto di Messina" About a Harpoon Found in a Tuna Caught in Tunisia and Described by Heldt in 1932--Harpoons Used in the Messina Strait), by Pasquale Arena, article, Bollettino di Pesca, Piscicoltura e Idrobiologia, vol. 35, no. 14, January-June 1959, pp. 95-99, illus., printed in Italian with English summary. Istituto Poligrafico Dello Stato,

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

Rome, Italy. About a Harpoon found in a tuna caught in Tunisia and described by Heldt in 1932. In comparison with this recovery, the author describes the harpoons used in the Messina Strait in Swordfish and tuna fishing, in order to establish the tuna's identity and place of origin.

#### IRRADIATION PRESERVATION:

#### IRRADIATION PRESERVATION:

Food Preservation by Irradiation (Supplement to CTR-357), OTS Selective Bibliography, 5 pp., processed, 10 cents. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., March 1960. A bibliography of reports listed in the two OTS monthly abstract journals: U. S. Government Research Reports and Technical Translations. Includes publications on various aspects of irradiation preservation of food by the Atomic Energy Commission, other research organizations, and various foreign agencies.

**IRRERRING:**  
"L'Avenir de la Peche du Hareng" (The Future of the Herring Fishery), article, La Peche Maritime, vol. 39, no. 987, June 1960, pp. 335-336, illus., printed in French. La Peche Maritime, 190 Blvd. Haussmann, Paris 8<sup>e</sup>, France.

"Chemical Studies on the Herring (Clupea harengus), II--The Free Amino-Acids of Herring Flesh and Their Behavior During Post-Mortem Spoilage," by R. B. Hughes, article, Journal of the Science of Food and Agriculture, vol. 10, October 1959, pp. 558-564, printed. Journal of the Science of Food and Agriculture, Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1, England.

#### ITALY:

Statistica della Pesca e della Caccia, 1959 (Fishing and Hunting Statistics, 1959), 160 pp., illus., printed in Italian. Istituto Centrale di Statistica, Rome Italy, 1959.

"Chemical Studies on the Herring (Clupea harengus). III--The Lower Fatty Acids," by R. B. Hughes, article, Journal of the Science of Food and Agriculture, vol. 11, January 1960, pp. 47-53, printed. Journal of the Science of Food and Agriculture, Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1, England.

#### LATIN AMERICA COMMON MARKET:

Progress Report by the Secretariat on the Common Market Programme, E/CN. 12/AC. 45/3, 45 pp., processed. Distribution and Sales Section, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, March 15, 1960, limited distribution. A report presented at the Seventh Session, Committee of the Whole, Economic Commission for Latin America, at Santiago, Chile, March 28, 1960. Discusses plans and accomplishments of this UNESCO Commission to establish the Latin American Common Market and the Latin American Free-Trade Association. Reports on the Montevideo Treaty February 18, 1960, establishing the Latin American Free-Trade Association, signed by Argentina, Brazil, Chile, Mexico, Paraguay, Peru, and Uruguay. The text of the Treaty is included as an annex to the report.

"Drift-Netting for Herring Along the South Coast of Newfoundland," by S. N. Tibbo, article, Progress Reports of the Atlantic Coast Stations, no. 72, September 1959, pp. 27-31, printed. Fisheries Research Board of Canada, Atlantic Fisheries Experimental Station, Halifax, Nova Scotia, Canada.

"A Specific Gravity Method for Determining Fitness (Condition) in Herring (Clupea pallasii)," by Albert Tester, article, Journal of the Fisheries Research Board of Canada, vol. 4, February 1940, pp. 461-471, printed. Fisheries Research Board of Canada, Ottawa, Canada.

#### LEMON SOLE:

"The Relation of Stock Density to 'Milkinese' of Lemon Sole in Union Bay, B. C.," by C. R. Forrester, article, Progress Reports of the Pacific Coast Stations, no. 105, February 1956, p. 11, printed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, 898 Richards St., Vancouver, B. C., Canada.

#### ICE:

Fish Needs Plenty of Ice, 6 pp., illus., printed. Department of Scientific and Industrial Research, Charles House, 5-11 Regent St., London, S.W. 1, England. A practical booklet for wholesalers and dealers in fresh fish explaining the causes of deterioration, the length of storage life, maintaining freshness between landing and selling, and the need for using ice at all times.

#### MARINE ALGAE:

"New Records of Marine Algae from Pacific Mexico and Central America," by E. Yale Dawson, article, Pacific Naturalist, vol. 1, no. 20, June 6, 1960, pp. 31-52, illus., printed. Beaudette Foundation for Biological Research, Box 482, R.F.D. 1, Solvang, Calif.

#### INDONESIA:

"Indonesia," by Soepanto Koesoemowinoto, article, Pacific Fisherman, vol. 58, January 25, 1960, pp. 153-154, printed. Pacific Fisherman, 500 Howard St., San Francisco 5, Calif. Building the industry, providing credit for fishermen, improving marketing, and carrying out research are the topics discussed.

"Potential Productivity of the Sea," by John H. Ryther, article, Science, vol. 130, September 11, 1959, pp. 602-608, printed. American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D. C.



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#### MARINE PLANTS:

"New Records of Sublittoral Marine Plants from Pacific Baja California," by E. Yale Dawson, Michael Neushul, and Robert D. Wildman, article, *Pacific Naturalist*, vol. 1, no. 19, June 6, 1960, pp. 3-30, illus., printed. Beaudette Foundation for Biological Research, Box 482, R.F.D. 1, Solvang, Calif.

#### MARKETING:

Economic Inquiry into Food Marketing. Part 1-- Concentration and Integration in Retailing, 354 pp., printed, \$1.25. Federal Trade Commission, Washington, D. C., January 1960. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.). A staff report on economic concentration and integration in the retail sale of food, which completes the first phase of the Commission's economic study of food marketing. The report emphasizes the growing influence of the corporate chains and the decline of the independent grocer. It concludes, however, that retailer-owned cooperatives and wholesaler-sponsored "voluntary groups" of retailers "have shown a capacity for effective competition with the corporate chains." Almost 70,000 food retailers were members of either cooperatives or voluntary groups in 1958, and their combined share of total national food sales was estimated at about 33 percent, compared with 38 percent for corporate chains. The chains increased their share of total food sales in 15 metropolitan areas from 29 percent in 1948 to 44 percent in 1958. Retailer-owned cooperative member stores increased their share from 8 to 19 percent; the voluntary group stores from 5 to 12 percent; but the unaffiliated retailers dropped from 58 to 25 percent during this period. The report also deals with other important changes which have occurred in food retailing and distribution. These changes include (1) a higher degree of processing by food manufactures, which has materially lightened the homemaker's job; (2) improvements in transportation, handling, food preserving, and distribution methods generally; (3) a continuing shift from separate meat, produce, and grocery stores to one-stop food stores; (4) replacement of smaller stores by supermarkets, expansion in size, equipment, and number of items carried by supermarkets, and location of supermarkets in new shopping centers; and (5) the spread of self-service throughout food retailing. Included are a number of statistical tables showing various aspects of retail store operation.

#### NAVIGATION:

United States Coast Pilot 4--Atlantic Coast, Cape Henry to Key West, Sixth (1959) Edition, 181 pp., printed, \$2.50. U. S. Department of Commerce, Coast and Geodetic Survey, Washington 25, D. C., 1960. This edition contains chart, diagrams, describing charts available for various areas;

general information; and Federal navigation regulations of most importance to these areas. Also included are chapters describing the geographical features, aids to navigation, and other information pertaining to the coast from Cape Henry to Key West; the charts pertaining to eight areas in this region; and features and facilities of the Atlantic Intracoastal Waterway.

#### NUTRITION:

"The Effect on Human Serum-Lipids of a Dietary Fat Highly Unsaturated But Poor in Essential Fatty Acids," by E. H. Ahrens, Jr., and others, article, *The Lancet*, January 17, 1958, pp. 115-119, printed. *The Lancet*, 7 Adams St., Adelphi, London W.C. 2, England

"Nährwerttabelle für Fische und Fischwaren" (Table of Nutritive Values of Fish and Fisheries Products), article, *Allgemeine Fischwirtschaftszeitung*, no. 10, March 7, 1959, p. 12, printed in German. Verlag Carl Th. Gorg, Postfach 269, Bremerhaven-F, W. Germany.

"Studies on the Distribution of Lipides in Hypercholesteremic Rats. 1--The Effect of Feeding Palmitate, Oleate, Linoleate, Linolenate, Menhaden and Tuna Oils," by James J. Peifer and others, article, *Archives of Biochemistry and Biophysics*, vol. 86, February 1960, pp. 302-308, printed. *Archives of Biochemistry and Biophysics*, Academic Press, Inc., 125 East 23rd St., New York 10, N. Y.

#### OCEANOGRAPHY:

"El Congreso Internacional de Oceanografía" (The International Oceanographic Congress), article, *El Agricultor Venezolano*, vol. 23, no. 216, January-February 1960, pp. 18-19, illus., printed. Ministerio de Agricultura y Cria, Caracas, Venezuela.

Frontiers of the Sea: The Story of Oceanographic Exploration, by Robert C. Cowen, 307 pp., illus., printed, \$4.95. Doubleday & Co., 575 Madison Ave., New York 22, N. Y., 1960. About past, present, and future of oceans and oceanographic research.

A Plastic Envelope Substitute for Drift Bottles, by F. C. W. Olson, contribution no 44, 4 pp., printed. (Reprinted from *Sears Foundation Journal of Marine Research*, vol. 10, no. 2, 1951, pp. 190-193.) Oceanographic Institute, Florida State University, Gainesville, Fla.

#### OVERFISHING:

"La Huitieme Session Pleniére de la Commission Permanente de l'Overfishing" (The Eighth Complete Session of the Permanent Commission on Overfishing), article, *La Peche Maritime*, vol. 39, no. 987, June 1960, pp. 337-338, printed in French. *La Peche Maritime*, 190 Blvd. Hausmann, Paris, France.

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

## OYSTERS:

"An Evaluation of the Indole and Trimethylamine Tests for Oyster Quality," by Donald Lartigue, Arthur F. Novak and Ernest A. Fieger, article, Food Technology, vol. 22, February 1960, pp. 109-112, printed. Institute of Food Technologists, The Garrard Press, 510 North Hickory, Champaign, Ill.

On Oysters and Sulfite Waste Liquor, by Gordon Gunter and Jack McKee, 99 pp., illus., processed. Pollution Control Commission, 224 Old Capitol Bldg., Olympia, Wash., February 25, 1960. The purpose of this report is to recommend a course of action and appropriate water quality standards to protect oysters from any probable adverse and unreasonable effects of sulfite waste liquor in the estuarial environment. It covers the two principal species of oysters commercially important in the State of Washington, viz. Ostrea lurida, the Olympia oyster, and Crassostrea gigas, the Japanese or Pacific oyster. Other oysters, such as the varieties found on the East and Gulf Coast are covered by reference only. The report also embraces ecological factors that may influence oyster productivity and quality, with special attention to the microorganisms believed to constitute the principal food of oysters. The impacts of natural forces, as well as man-made influences are considered in relation to oyster culture. Toxicity data, both acute and long-term, are evaluated with respect to oysters and other organisms. The nature of sulfite waste liquors is described and their occurrence in the tidal estuaries of Washington is analyzed. Finally, historical background and trends in oyster production are reviewed.

## PACIFIC ISLANDS:

Trust Territory of the Pacific Islands--12th Annual Report, July 1, 1958-June 30, 1959, Department of State Publication 6945, 272 pp., printed, \$1.00. Department of State, Washington 25, D.C., April 1960. (For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Includes a chapter on fisheries.

## PERU:

Estadística Económica de la Industria Pesquera (Economic Statistics of the Fishing Industry), 161 pp., printed in Spanish. Ministerio de Agricultura, Dirección de Pesquería y Caza, Lima, Peru, 1959.

## PLAICE:

"Jellied Condition in the American Plaice Hippoglossoides platessoides (Fabricius)," by Wilfred Templeman and Gertrude L. Andrews, article, Journal of the Fisheries Research Board of Canada, vol. 13, March 1956, pp. 149-182, printed. Queen's Printer & Controller of Stationery, Ottawa, Canada.

## POLLUTION:

Pulp Mill Pollution in British Columbia, by Michael Waldichuk, Circular No. 57, 18 pp., illus., processed. Fisheries Research Board of Canada, Biological Station, Nanaimo, B. C., Canada, June 1960.

## PORTUGAL:

Gremio dos Armadores de Navios da Pesca do Bacalhau, Relatório e Contas do Exercício de 1959 e Orcamento para 1960 (Cod Fishing Vessel Owners' Guild, Statement of Operations for 1959 and Budget for 1960), 32 pp., printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal, February 17, 1960.

Gremio dos Armadores da Pesca de Arrasto, Relatório e Contas do Exercício de 1959 e Orcamento para 1960 (Trawler Owners' Guild, Statement of Operations for 1959 and Budget for 1960), 52 pp., printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal, March 7, 1960.

Gremio dos Armadores da Pesca da Baleia, Relatório e Contas do Exercício de 1959 e Orcamento para 1960 (Whaling Vessel Owners' Guild, Report of Operations in 1959 and Budget for 1960), 35 pp., illus., printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal, February 15, 1960.

## POULTRY NUTRITION:

"A Bioassay for Determining the Nutritional Adequacy of Protein Supplements for Chick Growth," by Scott W. Hinner and H. M. Scott, article, Poultry Science, vol. 39, January 1960 pp. 176-183, printed. Poultry Science Publishers, Kansas State College, Manhattan, Kans.

"Interrelationships Among Dietary Energy, Protein, and Amino Acids for Chickens," by K. C. Leong and others, article, Poultry Science, vol. 38, November 1959, pp. 1267-1285, printed. Poultry Science Publishers, Kansas State College, Manhattan, Kans.

## PRESERVATION:

"Preservation of Shrimps," by R. T. Roskam, Conserva, vol. 6, no. 11, May 1958, p. 278, parts 1 and 2, printed in Dutch. Conserva, Maanbald voor de Voedings-en Genotmiddelen-Industrie, Moormans Periodiek, Pers N. V., The Hague, Netherlands.

## PROTEINS:

"Biological Value of Herring-Meal Protein. Urinary Nitrogen Excretion in Relation to Protein Content of Diet and Food Intake," by L. R. Njaa. Norwegian Fisheries Research Inst., Bergen, Norway.

"Studies on the Muscle Proteins of the Squid," by Juichiro J. Matsumoto, article, Bulletin of the

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Tokai Regional Fisheries Research Laboratory, no. 23, February 1960, pp. 51-63, printed. Tokai Regional Fisheries Research Laboratory, Tsukushima, Chuo-ku, Tokyo, Japan.

"Studies on Protein Concentrates for Animal Feeding," by J. Bunyan and S. A. Price, article, Journal of the Science of Food and Agriculture, vol. 11, January 1960, pp. 25-37, printed. Journal of the Science of Food and Agriculture, Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1, England.

#### RESEARCH:

Research in Fisheries--1959, edited by Ted S. Y. Koo, Contribution no. 77, 45 pp., illus., printed. Fisheries Research Institute, College of Fisheries, University of Washington, Seattle 5, Wash., March 1960. Research projects of the Fisheries Research Institute and the teaching faculty of the College of Fisheries are described. The author states that "While the Institute's research is primarily concerned with Pacific salmon in Alaska, the research effort of the College faculty is directed into a multitude of facets--from bacteria to oysters, from fish behavior to radiation biology. Some problems are entirely within the realm of basic research; others have immediate applied value."

#### RHODE ISLAND:

The Marine Fishes of Rhode Island, by Bernard L. Gordon, 135 pp., illus. with 80 photographs, printed, \$4. Book and Tackle Shop, 7 Bay St., Watch Hill, R. I., 1960. To my knowledge this is the first comprehensive list of the 215 salt-water fish species in Rhode Island coastal waters--salt marshes, estuaries salt-water ponds, rocky shoals, and open sea. The black-and-white photographs by the author are excellent and add to the book's attraction and interest. It is the result of a five-year survey of Rhode Island coastal waters. Fishermen, fishery businessmen, vessel owners, researchers, biologists, and many others will be interested and find much valuable information in the book. According to the author, "Rhode Island has more than 400 miles of shoreline, and its waters contain many species of fish." Since colonial times, fish and shellfish have played an important part in the Rhode Island economy. After discussing the history of Rhode Island ichthyology, the author describes the survey made from 1954 to 1959 while he was a student at the University of Rhode Island and biology instructor at Rhode Island College. Also covered by the author are abundance, distribution, seasonal importance, and economic importance of the Rhode Island fish. Three major classes of fish are covered--Agnatha (jawless fishes), Chondrichthyes (cartilaginous fishes), and Osteichthyes (bony fishes). Described are some of the unusual types like barn door skate, cow-nosed ray, mermaids purse, John Dory, snipefish, pipefish, orange filefish, burrfish, etc. but also the more commonly-known

such as sharks, herring, shad, smelts, haddock, cod, pollock, hake, flounder, mackerel, etc. One chapter dwells on trends in fish populations. The book has an extensive and up-to-date bibliography as well as an index and map showing the area covered by the author's survey.

--J. Pileggi

#### ROUGH FISH:

Rough Fish Control, by Nicholas J. Miller, Clifford L. Brynildson, and C. W. Threinen, Publication No. 229, 13 pp., illus., printed. Wisconsin Conservation Department, Madison 1, Wis., 1959. An informative handbook covering the history of and need for rough fish control in Wisconsin, the species included in the definition, their habits, methods of control, disposition of rough fish after capture, effects of their removal on the fishery, and the future of the rough-fish control program.

#### SALMON:

Salmon of the Pacific Northwest (Fish vs. Dams), by Anthony Netboy, 135 pp. illus., \$3.00. Bin-fords & Mort, Publishers, 124 N.W. 9th Ave., Portland 9, Ore., 1958. A great North American fishery resource--the salmon--is the subject of this book. A readable and fairly comprehensive discussion of the Pacific Northwest salmon, the fishery, and the problems. This is a book for the commercial fisherman, the businessman interested in the fishing industry, the researcher, the conservationist, the economist, and even the sportsman. Not a big book, but packed with a great deal of useful information. It presents the struggle of the salmon of the Pacific Northwest to live side by side with the inroads of civilization. After successfully living in its natural habitat for thousands of years, there is the danger that civilization will completely destroy the salmon. The author in his preface points out: "In short, one cannot live in the Pacific Northwest very long before becoming aware that salmon, prince of Pacific game fishes, is an exceedingly valuable animal not only to the consumers who enjoy its succulent meat but sport and commercial fishermen and thousands of people who make their living in canneries, gear manufacture, etc." But I feel sure that members of the fishing industry will not agree with the author that, "Now, we can say that the fish are blocking the dams." The author does say: "In writing this book I have endeavored to place the complex issues in focus and in terms the layman can understand, to set down the facts without bias, and to appraise the fish vs. dams problem without prejudice."

Senator Richard L. Neuberger, in his forward to the book, sums up the question of fish versus dams quite succinctly when he states: "I think the Pacific Northwest needs low-cost power--compellingly so. But I feel this energy should first be obtained at those sites where little or no damage will be done to our fisheries resources."



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The book describes the life history and migrations of the salmon, the Indian fishery, and the commercial fisheries. Then it goes on to discuss the encroachment of civilization, the Federal dams, the Lower Columbia River fishery program, and controversial dams (McNary, Ice Harbor, Cowlitz, Pelton, Middle Snake, Nez Perce). The next to the last chapter asks: "Can the salmon be saved?" In the last chapter the author discusses "Fish--and Power Too." This book provides a quick look at the problem of fish versus dams. It also contains a selected bibliography and an index.

--J. Pileggi

The Atlantic Salmon, by Lee Wulff, 217 pp., illus., printed. A. S. Barnes and Company, Inc., 232 Madison Ave., New York 16, N. Y., 1958. A fascinating book about the "paradoxical fish," written by a man obviously bewitched by his subject. With single-hearted devotion, he describes this fish without appetite which can still be lured by a fly; past and present salmon fishing methods; the behavior of salmon during the spawning season; types of tackle, types of wet and dry flies; where to fish for salmon; casting; where to go for salmon; and miscellaneous notes on salmon fishing. The many excellent photos, both black-and-white and in color, add to the interest of this book for both commercial and sports fishermen.

"British Columbia Salmon Reports," article, Trade News, vol. 12, no. 10, April 1960, pp. 3-4, illus., printed. Department of Fisheries of Canada, Ottawa, Canada. Discusses two recent reports released by the Canadian Department of Fisheries in the Pacific Area. These deal with the 1959 salmon catch and spawning encampment and the significance of the sharply increasing catch of salmon by sport fishermen. For the past seven years the Department has compiled estimates of the catch of salmon by sport fishermen in tidal waters of British Columbia. During this period the anglers' catches have grown steadily larger. Spawning escapements were good for chum, coho, and spring salmon during 1959.

"Two Haemoglobins in Chum Salmon," by K. Hashimoto and F. Matsuura, article, Nature, vol. 184, October 31, 1959, p. 1418, printed. Nature, St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

#### SARDINES:

"Aspects Biologiques et Biométriques de la Sardine (Sardina pilchardus Walb.) des Environs de Lisbonne, Pendant Les Années, 1952-1957" (Biological and Biometric Aspects of the Sardine (Sardina pilchardus Walb.) in the Lisbon Area, 1952-1957), by Jaime Dos Santos Pinto and Ivone Ferreira Barraca, article, Notas e Estudos do Instituto de Bio-

logia Maritima; no. 19, September 1958, 97 pp., illus., printed in French. Instituto de Biologia Maritima, Cais do Sodré, Lisboa, Portugal.

"Biochemical Studies on the Fat of the Sardine Body. I--Seasonal Variation in the Fat, Unsaponifiable Matter, and Cholesterol Contents of Several Tissues of the Sardine Body," by Masahuto Wada, article, Nippon Nogei-Kagaku Kaishi, vol. 29, 1955, pp. 339-342, printed. Agricultural Chemical Society, Faculty of Agriculture, University of Tokyo, Bunkyo-ku, Tokyo, Japan.

"Experimental Study on Frozen Sardines," by M. Boury, article, Revue Generale de Froid, vol. 35, September 1958, pp. 845-849, printed in French. Revue Generale de Froid, Association Francaise du Froid, 29 Boulevard Saint Germain, Paris France.

"Regards sur Notre Production Sardiniere" (Regarding Our Sardine Production), by L. Plouas; "A Quiberon, Premier Port Sardinier Français se Pose le Probleme de l'Equipement" (At Quiberon, the Leading French Sardine Port, There is an Equipment Problem; and "Perspectives Actuelles de la Peche a la Sardine en Espagne" (Actual Expectations for the Sardine Fishery in Spain, by V. Paz-Andrade, article, La Peche Maritime, vol. 39, no. 987, June 1960, pp. 338-343, illus., printed in French. La Peche Maritime, 190 Blvd. Haussmann, Paris 8, France.

#### SCHOOL LUNCH PROGRAM:

The Market for Food in Public Schools, by Kenneth E. Anderson and William S. Hoofnagle, Marketing Research Report No. 377, 62 pp., printed, 40 cents. U. S. Department of Agriculture, Agricultural Marketing Service, Marketing Research Division, Washington D. C., January 1960. (For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) This study was undertaken as part of a broad program of research to expand markets for farm products. Results of the study indicated that the school market is primarily a local one; and that the role of Government is relatively small in supplying most commodities to the school outlet. About \$505 million or 85 percent of the total value of food used in schools was acquired through commercial channels in nearby markets. Findings showed that during the period July 1957 through June 1958, the total wholesale value of food, both purchased and donated, delivered to approximately 60,000 public schools having a food service, amounted to \$597 million or \$28 per capita based on an average daily attendance of slightly over 21 million pupils. Meat, poultry, and fish which moved into the school outlet during this period, had a value of almost \$108 million or \$5 per capita. Of this amount, \$12.8 million was the value

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of fish and shellfish consumed, accounting for 2.1 percent of the total value of food. There were 28 million pounds of fish delivered to the school lunch outlet during the period under study. The quantity of fresh and frozen fish utilized in public schools was only slightly larger than that of canned fish items. Tuna was by far the most important canned fish item, accounting for almost 8 million pounds, followed by salmon which represented slightly over 4 million pounds. Extensive and detailed statistical tables showing results of the survey are included.

#### SEAWEED:

Annual Report for 1959, 20 pp., printed. Institute of Seaweed Research, Inveresk, Midlothian, Scotland. Discusses development in the Scottish and foreign seaweed byproducts industry during 1959, the development of pharmaceutical products from seaweed, work of the Institute, its technical assistance services, sponsorship of seaweed research by other organizations, and a list of publications on seaweed.

"Seaweed for Food--South Wales Laverbread Industry," article, Food Manufacture, vol. 34, November 1, 1959, pp. 443-444, printed. Food Manufacture, Leonard Hill, Ltd., Stratford House, 9, Eden St., London N.W. 1, England.

#### SHARKS:

"The Nurse Shark and the Nurse Shark Fishery," by Levy Carlson, article, Fiskeridirekt. Skrifter Ser. Fisk., vol. 4, no. 1, 1958, pp. 1-35, printed in Norwegian. Fiskeridirekt. Skrifter Ser. Fisk., Director of Fisheries, Bergen, Norway.

"La Pesca del Tiburon en Cuba" (The Shark Fishery in Cuba), by Armando Perez Gattini, article, Mar y Pesca, vol. 3, nos. 7 and 8, April-May 1960, pp. 31, 36, illus., printed in Spanish. Mar y Pesca, Edificio L.N.R.A., Noveno Piso, Plaza Civica, Havana, Cuba.

#### SMELT:

"Smelt Fishing in Wisconsin, by Donald Euers, article, Wisconsin Conservation Bulletin, vol. 25, no. 4, April 1960, pp. 24-27, illus., printed. Wisconsin Conservation Dept., Box 450, Madison 1, Wis. Describes the abundant harvests of smelt in Lakes Michigan and Superior, particularly during the spring. Smelt may be landed legally by dip nets or seines and residents of Wisconsin are permitted to market them commercially.

#### SMOKING:

"A New Smoke Producer Makes Its Bow," article, Seafood Merchandising, vol. 19, no. 1, January 1959, p. 27, printed. Seafood Merchandising, 624 Gravier St., New Orleans 12, La.

#### SOUTH AFRICA:

The South African Pilchard (SARDINOPS OCELLATA) and Maasbanker (TRACHURUS TRACH-

URUS)--The Chaetognatha off the West Coast of the Union of South Africa, July 1954-June 1955, by A. E. F. Heydorn, Investigational Report No. 36, 55 pp., illus., printed. (Reprinted from "Commerce & Industry," February 1959.) Division of Fisheries, Beach Road, Sea Point, Cape Town, Union of South Africa, 1959.

#### SPAIN:

Maquinaria para Conservas de Pescado Aparecida Ultimamente en Espana (Fish Canning Machinery Recently Introduced in Spain), by F. Lopez Capont, 9 pp., illus., printed in Spanish. (Reprinted from Informacion Conservera, vol. 7, no. 66, June 1959, pp. 4-12.) Informacion Conservera, Colon, no. 62, Valencia, Spain.

"La Produccion Conservera Espanola en 1958" (Spanish Canning Production in 1958), article Boletin de Informacion del Sindicato Nacional de la Pesca, no. 17, February 1960, pp. 11-13, printed in Spanish. Sindicato Nacional de la pesca, Paseo del Prado, 18-20, 6<sup>a</sup> Planta, Madrid, Spain.

#### SPOILAGE:

"Bacteria Concerned in the Spoilage of Haddock: Preliminary Paper," by A. H. Gee, article, Contributions to Canadian Biology and Fisheries (new series) vol. 3, no. 14, 1927, pp. 347-364, printed. Fisheries Research Board of Canada, Ottawa, Canada.

"Studies of Fish Spoilage. II--The Origin of Trimethylamine Produced During the Spoilage of Cod Muscle Press Juice," by S. A. Beatty, article, Journal of the Fisheries Research Board of Canada, vol. 4, no. 2, May-July 1938, pp. 63-68, printed. Fisheries Research Board of Canada, Ottawa, Canada.

"Studies of Fish Spoilage, VIII--Volatile Acid of Cod Muscle Press Juice," by V. K. Collins, article, Journal of the Fisheries Research Board of Canada, vol. 5, no. 3, July 1941, pp. 197-202, printed. Fisheries Research Board of Canada, Ottawa, Canada.

#### STANDARDS:

Microscopic-Analytical Methods in Food and Drug Control, Food and Drug Technical Bulletin No. 1, 255 pp., illus., printed, \$2. U. S. Food and Drug Administration, Washington 25, D. C., May 1960. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Discusses the latest methods for microscopic identification of contaminants in foods and drugs and is designed to help analysts trace adulterants to their sources. Covers product control and sanitation; sources and types of contamination; isolation and detection of contamination; microscopes, photomicrography, and exhibits; fungi associated with food decomposition; and entomology in food and drug analysis. Also covers parasites and related forms; rodent and other animal filth in foods

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and drugs; applied histology of food and drug materials; crystallography and chemical microcopy; and identification of drug tablets and capsules. This bulletin will be particularly helpful to the control departments of food processing plants. It replaces and enlarges the earlier Microanalysis of Food and Drug Products, first published in 1944 as Food and Drug Circular No. 1. It was prepared by the Administration's Division of Microbiology to show the scope of microscopic-analytical work, the approach used, and the application of such techniques to industry and regulatory problems.

#### STATISTICS:

Report on the Expert Meeting on Fishery Statistics in the North Atlantic Area (Edinburgh, Scotland, September 22-30, 1959), 68 pp., processed. Food and Agriculture Organization of the United Nations Viale delle Terme di Caracalla, Rome, Italy, February 4, 1960. Includes proceedings, papers presented, and discussions held under three of the agenda items covered during the meeting of experts in fishery statistics. The items included fishery statistics requirements, difficulties in meeting high priority requirements and their solution, and further improvement in fishery statistics. Topics discussed at the meeting included definitions and classifications of statistical items; simplification of statistical reporting to international organizations; conversion factors and allied topics; statistics on fish discarded at sea; statistical treatment of direct foreign landings; subsistence and sports fisheries; statistics of fishing effort; statistics on disposition, processing, distribution, and consumption; and price and value statistics. Recommendations included the establishment of a continuous Working Party on Fishery Statistics in the North Atlantic Area. Annexes contain the texts of papers presented and other pertinent information.

#### STORAGE:

"Keeping Quality of Pacific Coast Dogfish," by R. H. Moyer and others, article, Journal of the Fisheries Research Board of Canada, vol. 16, December 1959, pp. 791-794, printed. Fisheries Research Board of Canada, Ottawa, Canada.

#### SURINAM:

"Hoe Vissen We Met Een Bank-Net" (How do We Fish with a Bank-Net?) by F. F. van Dijk, article, Landbouwnieuws, vol. 12, no. 3, March 1960, p. 36, illus., printed in Dutch. Department L.V.V., Paramaribo, Surinam.

#### TERRITORIAL WATERS:

"La Deuxieme Conference sur le Droit de la Mer" (The Second Conference on the Law of the Sea), by Robert Lenier, article, France Pêche, vol. 5, no. 39, April 1960, p. 13, printed in French. France Pêche, Tour Sud-Est, Rue de Guemene, Lorient, France.

"La Question des Eaux Territoriales et Ses Conséquences" (The Question of Territorial Waters and Its Consequences), by Jules Molard, article, France Pêche, vol. 5, no. 38, March 1960, pp. 13-14, printed in French. France Pêche, Tour Sud-Est, Rue de Guemene, Lorient, France.

#### TEXAS:

Population Studies of the Shallow Water Fishes of an Outer Beach in South Texas, by Gordon Gunter, 8 pp., illus., printed. (Reprinted from Institute of Marine Science, vol. 5, December 1958.) Gulf Coast Research Laboratory, Ocean Springs, Miss.

#### TIDES:

Tide Tables--East Coast, North and South America (Including Greenland), 1961, 279 pp., printed, \$1. U. S. Department of Commerce, Coast and Geodetic Survey, Washington 25, D. C., January 1960. This handbook contains tables on daily tide predictions for 46 reference stations and differences for about 1,600 stations in North and South America, approximate height of tide at any time, local mean time of sunrise and sunset, reduction of local mean time to standard time, moonrise and moonset for eight places, and astronomical data. Explanatory notes to facilitate usage of each table are included. Also contains a list of Coast and Geodetic Survey publications relating to tides and tidal currents.

Tide Tables--West Coast, North and South America (Including the Hawaiian Islands), 1961, 223 pp., printed, \$1. U. S. Department of Commerce, Coast and Geodetic Survey, Washington 25, D. C., November 1959. This handbook contains tables on daily tide predictions for 38 reference ports, tidal differences and other constants for about 1,000 stations, approximate height of tide at any time, local mean time of sunrise and sunset, reduction of local mean time to standard time, moonrise and moonset, and astronomical data. Explanatory notes to facilitate usage of each table are included. Also, contains a list of Coast and Geodetic Survey publications relating to tides and tidal currents.

#### TRANSPORTATION:

A Survey of Fish Transportation Methods and Equipment, by Kenneth S. Norris and others, Contribution no. 5, 31 pp., illus., printed. (Reprinted from California Fish and Game, vol. 46, no. 1, January 1960, pp. 6-33). California Department of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif. Because of the need for large-scale propagation and planting of fish in streams and rivers, the transport of live fish is becoming an increasingly important problem. This article reviews available information on present live-fish transportation practices. Ninety-six state, Federal Government, and private agencies, and individuals have been polled for



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transport data. This review has been limited primarily to principles and methods. Construction methods are not reviewed in detail, except where they have a direct bearing upon the welfare of the fish being transported. Discussions are included on tank construction and materials, use of drugs in the transportation of fish, osmotic problems, loads and distances, pretreatment of fish, and history of live-fish transportation.

#### TRANSPORTING FISH:

"From Milk Cans to Plastic Bags," by Ludwig Frankenger, article, Wisconsin Conservation Bulletin, vol. 25, no. 4, April 1960, pp. 17-19, illus., printed. Wisconsin Conservation Dept., Box 450, Madison 1, Wis. Discusses new methods of transporting fish from hatcheries to lakes and streams. The handy plastic bags and cardboard boxes are economical for moving fry and fingerlings; when larger fish are transported, tank trucks are most satisfactory.

#### TRAWLERS:

"Construction of Aluminum Fish Rooms: Stanchions, Pound Boards and Light Alloy Fittings," article, The Shipping World and World Shipbuilding, vol. 140, no. 3436, May 1959, pp. 449-450, printed. The Shipping World and World Shipbuilding, 1 Arundel St., London W.C. 2, England.

"The Universal Star--Her Practicability Demonstrated," article, World Fishing, vol. 9, no. 6, June 1960, pp. 26-29, illus., printed. World Fishing, John Trundell (Publishers) Ltd., St. Richard's House, Eversholt St., London, N.W. 1, England. Describes the construction and operation of a new 104-foot experimental stern trawler, powered by Diesel engines and equipped with hydraulic gear. Details of the technique employed in the "Unigan" system of Trawling and the reasons for this revolutionary type of design are included.

#### TRAWLING:

"Prediction of Selection Factors in a Tropical Trawl Fishery," by Alan R. Longhurst, article, Nature, vol. 184, p. 1170, printed. Nature, St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y. October 10, 1959,

#### TROPICAL FISH:

All about Tropical Fish, by Derek McNerny and Geoffrey Gerard, 480 pp., illus., printed. The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1958.

#### TROUT:

"Keeping Rainbows in Cold Storage," by Richard W. Nelson, article, U.S. Trout News, vol. 4, November-December 1959, pp. 11-12, printed. U.S. Trout News, Sport Fishery Institute, Bond Bldg., Washington, D. C.

#### TUNA:

"La Cloture de la Campagne a Dakar" (The Closing of the Tuna Season at Dakar), article, La Peche Maritime, vol. 39, no. 986, May 1960, p. 276, printed in French. La Peche Maritime, 190 Haussman Blvd., Paris, France.

"A Concarneau, les Pecheurs et Conserveurs Font le Point" (At Concarneau, the Tuna Fishermen and Cannerymen give their Status), article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 271-272, printed in French. La Peche Maritime, 190 Blvd. Haussman, Paris, France.

"Aux Etats-Unis, la Conversion des Thoniers-Clippers en Senneurs S'Etend" (In the United States, Conversion of Tuna Clippers to Purse-Seiners Expands), article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 293-295, illus., printed. La Peche Maritime, 190 Haussman Blvd., Paris, France.

"Les Pecheurs Luziens Dressent le Bilan de la Campagne 1959-1960" (The Luzien Fishermen Review the 1959-1960 Tuna Season), article, La Peche Maritime, vol. 39, no. 986, May 1960, p. 270, printed in French. La Peche Maritime, 190 Blvd. Haussman, Paris, France.

"Le Programme du Senegal en Matiere d'Armeement Thonier" (The Program of Senegal Regarding Tuna Vessels and Gear), article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 273-275, illus., printed in French. La Peche Maritime, 190 Blvd. Haussman, Paris, France.

"Quelques Personnalites Nous Parlent de la Peche au Thon en Afrique Occidentale" (Several People Tell Us About the Tuna Fishery in West Africa), article, La Peche Maritime, vol. 39, no. 986, May 1960, pp. 269-270, printed in French. La Peche Maritime, Blvd. Haussman, Paris, France.

"Treatment and Use of Albacore Caught off French Western Africa Coasts," by J. R. Crepey, article, Bulletin de L'Institut International du Froid, vol. 39, 1959, pp. 1524, 1526, printed. Institute of Refrigeration, 177 Blvd. Malesherbes, Paris 17, France.

#### TURKEY:

"Balikcilik Kooperatiflerimizizin Kredi Finansmani ve Organizasyon" (Financing and Organization of Our Fishing Cooperatives), by Suleyman Arisoy, article, Karinca, Kooperatif Postasi, vol. 25, no. 269, May 1959, pp. 7-9, printed in Turkish. Turk Kooperatifcilik Kurumu, Mithat Pasa Cad. 36, Ankara, Turkey.

"T. C. Ziraat Bankasinin Balikcilik Kooperatiflerine Kredi Tatbikati" (Credit Applications of

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the Turkish Fishing Cooperatives of Agricultural Bank of the Turkish Republic), by Suleyman Arisoy, article, T. C. Ziraat Bankasinin Haber ve Fikir Dergisi, vol. 5, no. 2, March 1959, pp. 14-16, printed in Turkish. T. C. Ziraat Bankasi Matbaasi, Ankara, Turkey.

"Turkiye Su Mahsullerinin Kredilendirilmesi" (Turkish Water Products), by Suleyman Arisoy, article, Karinca, Kooperatif Postasi, vol. 22, no. 224, August 1959, pp. 22-24, printed in Turkish. Turk Kooperatifcilik Kurumu, Mithat Pasa Cad. 36, Ankara, Turkey.

"Turkiyedeki Balikci Kooperatifleri" (Fishing Cooperatives in Turkey), by Suleyman Arisoy, article, Deniz, vol. 5, no. 59, February 1960, pp. 22-23, printed in Turkish. Yuksek Denizcilik Okulu Mezunlari Cemiyeti, Ankara, Turkey.

"Turkiye Balikcilik Kooperatifleri Hukukuna Bakis" (A Brief Look at the Law of Fishing Cooperatives), by Suleyman Arisoy, article, Turkiye Cumhuriyeti Ziraat Bankasi, Kooperatifler Teftis Dergisi, vol. 1, no. 2, March 1959, pp. 6-10, printed in Turkish. T. C. Ziraat Bankasi, Genel Mudurluk, Musavir Mudur Muavini, Ankara, Turkey.

--Listings under Turkey supplied by Suleyman Arisoy, Fisheries Advisor Agricultural Bank of the Turkish Republic, Ankara, Turkey.

#### UNION OF SOUTH AFRICA:

Fisheries Development Corporation of South Africa--Fifteenth Annual Report (Covering Period 1st October, 1958 to 30th September 1959), 16 pp., printed in English and Dutch. 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 the fisheries industry; pilchard-maas-banker research program and general activities of the Corporation.

#### UNITED KINGDOM:

"The Torry Research Station, Aberdeen," by G. H. O. Burgess, article, Nature, vol. 184, September 19, 1959, pp. 863-865, printed. Nature, St. Martin's Press, Inc., 175 Fifth Ave., New York 10, N. Y.

White Fish Authority, Ninth Annual Report and Accounts for the Year Ended 31st March, 1960, 52 pp., printed, 3s. (about 42 U. S. cents). Her Majesty's Stationery Office, York House, Kingsway, London W.C. 2, England. Covers the activities and functions of the White Fish Authority for the fiscal year ending March 31, 1960, its income, expenditures, and fishery loans. Also includes sections on production of fishery products, marketing and distribution, research and experiments, training courses, and investigations.

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

Poliarnyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanologii, Trudy, no. 10, 1957, printed in Russian. Poliarnyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanologii, Trudy, Murmansk, U.S.S.R. Contains, among others, these articles: "Prognosis of Fish Stocks and Trawling Conditions," by N. A. Maslov; "Improving the Method Used in Long Range Forecasts of the State of Cod and Haddock Stocks," by N. A. Maslov; "Quantitative Relation Between Year Classes of Cod and Haddock in the Barents Sea Based on Numerical Estimates of Young Fish and Fishery Data," by A. S. Baranenkova; "Results of Tagging Fishes in the Barents Sea during 1946-1955," by K. G. Konstantinov; "Annual Variations in the Feeding of Cod in the Barents Sea," by N. S. Grinkevich; "Distribution and Growth of Larvae and the Young of Coalfish (Pollachius Virens (L.)), by A. S. Baranenkova; "Rosefish Fisheries in the Southern Part of the Barents Sea and the Kopytov Area," by V. I. Travin; "Sex and Age Groups of the Rosefish Sebastes mentella Travin in the Kopytov Area," by E. I. Surkova; and "Chart of Fishing Grounds of the Barents Sea."

Rybnoe Khoziaistvo, vol. 35, no. 7, 1959, printed in Russian. Rybnoe Khoziaistvo, Kotel 'nicheskaia Naberezhiaia D 1/15, Souizpechati Otdelu "Zhurnal-Pochtoi," Moscow Zh-240, U.S.S.R. Includes, among others, these articles; "Improve the Quality and Assortment of Fishery Products;" "Scientific Expeditions of the Submarine Boat Severianka," by V. P. Zaitsev and V. G. Azhazha; "First Experiment in Observing the Behavior of Herring from a Submarine Boat," by D. V. Radakov and B. S. Solov'ev; "Types of Pond Carp Culture with Reference to Its Prospective Development," by K. A. Sadlaev; "Prospective Tuna Fisheries off the Western Coast of Africa," by V. K. Korotkov; "Measures for Increasing the Effectiveness of a Trawler Fleet," by I. R. Matrosov; "Catching Sprats with Fish Pumps Under Conditions of Underwater Lighting and the Use of Impulse Current," by I. V. Nikonorov and A. Kh. Pateev; "Results of Electric Fishing in Rybinsk Reservoir," by V. A. Shentiakov and V. A. Strakhov; "Development of the Fishing Industry in Latvia," by M. A. Kozokov; and "Third Session of the Soviet-Japanese Fishery Commission," by P. A. Moiseev.

Rybovodstvo i Rybolovstvo, vol. 2, no. 4, 1959, printed in Russian. Rybovodstvo i Rybolovstvo, Ministerstvo Sel'skogo Khoziaistva SSR, Moscow, U.S.S.R. Includes, among others, these articles: "Utilizing the Lesser Rivers of the Ukraine for Commercial Fishing," by V. Movchan; "Marketable Carp on the Fish Spawning and Rearing Farm," by G. Zhukovskii, and "Fish Catching and Sorting Device," by T. Kondrat'ev.

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

#### VENEZUELA:

"La Pesca de Arrastre, Esperanza de Venezuela" (The Trawl Fishery, Venezuela's Hope), by C. R. Chavez, article, El Agricultor Venezolano, vol. 23, no. 216, January-February 1960, pp. 29-31, illus., printed. Ministerio de Agricultura y Cria, Caracas, Venezuela.

#### VESSELS:

Atlantic Merchant Vessel Report System (SMVER) 4 pp., illus., printed. United States Coast Guard, Treasury Department, Washington 25, D. C., revised January 1960. The Atlantic Merchant Vessel Report System was established to improve search and rescue coordination efforts at sea.

Fishing Boats of the World: 2, edited by Jan-Olov Traung, 831 pp., illus., printed in English with French and Spanish summaries, £7 7s. (about US\$20.65). Fishing News (Books) Ltd., Ludgate House, 110 Fleet St., London, E.C. 4, England, 1960. A report which will be highly valuable to world fishing interests, based on papers and discussions at the Second FAO World Fishing Boat Congress held at Rome, April 1959. Includes also a contribution on purse seining, information on stern trawling with designs of recent applications, and other supplementary contributions from fishery experts. Contains, in its 170 contributions, 800 illustrations, and 200 tables, the most up-to-date, valid information available on fishing boat design and operation. The book is divided into four major parts; Part I--tactics, deals with the use of varying fishing methods, deck arrangements and other features for different types of boats; Part II--deals with materials, new and old assessments, fish holds, installation of machinery, and costs; Part III--covers sea behavior and gives model tests and actual experiences--is particularly valuable to the naval architect, owner, and skipper; and Part IV--productivity, gives a symposium on types of boats suitable for various classes of fishing. This book is highly technical, but at the same time intensely practical in its aim of improving the worldwide standard of fishing boat design and thus contributing to larger and more economical catches. The function of the FAO is to increase the world's food supply; some success is being achieved in fishery products. Since 1953, when the first Congress was held, the world catch has grown from 25 to 33 million tons in 1958. Scientists believe it can be raised to 60 million tons without detriment to stocks. For Fishery administrators, technicians, naval architects, boat builders, and fishing craft operators, this book will prove invaluable not only for its basic knowledge but for the inspiration it gives for the future development.

#### VITAMINS:

"The Constituents of Cod Liver with Vitamin B<sub>12</sub> Activity for Lactobacillus Leichmannii," by Beryl Truscott and P. L. Hoogland, article, Ca-

nadian Journal of Biochemistry and Physiology, vol. 34, 1956, pp. 191-196, printed. Canadian Journal of Biochemistry and Physiology, Division of Administration, The National Research Council, Sussex St., Ottawa, Canada.

"Biochemical Studies on the Vitamin A in Fish Viscera. III--The oxidation of Vitamin A in Fish Liver Oils," by Toyoki Ono and Fumio Nagayama, article, Journal of the Tokyo University of Fisheries, vol. 41, 1955, pp. 153-162, printed in Japanese. Tokyo University of Fisheries, Shiba-Kaigandori 6-chome, Minato-ku Tokyo, Japan.

"Marine Edible Fishes. I--Distribution of Oil and Vitamin A in the Skin, Flesh, and Liver of Edible Fishes of Karachi Waters," by A. Hameed Khan and S. Abdul Haq, article Pakistan Journal of Scientific and Industrial Research, vol. 1, 1958, pp. 309-311, printed. Pakistan Council of Scientific and Industrial Research, 3/4/D/VI, Nazimabad, Karachi, Pakistan.

"Studies on the Economical Manufacture of Vitamin A Concentrate from Fish Liver Oil. X--Adsorption by Weakened Acid Clay," by Hideo Higashi and others, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 25, July 1959, pp. 196-203, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokaiku Suisan Kenkyujo, Tsukishima, Koyobashi, Tokyo, Japan.

#### WALRUS:

Preliminary Investigation of the Atlantic Walrus, by Alan G. Loughrey, Wildlife Management Bulletin, Series 1, No. 14, printed. Department of Northern Affairs and National Resources, Ottawa, Canada.

#### WHALES:

"Effect of Difference of Initial and Final Temperature of Whalemeat When it is Taken Into and Out of Freezer on Drip," by Kazuo Tanaka and Takeo Tanada, article, Journal of the Tokyo University of Fisheries, vol. 43, no. 1, 1957, pp. 13-17, printed in Japanese. Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Minato-ku, Tokyo, Japan.

"On the Mass Strandings of Sperm Whales," by Raymond M. Gilmore, article, Pacific Naturalist, vol. 1, no. 10, August 6, 1959, pp. 9-16, illus., printed. The Beaudette Foundation for Biological Research, Box 482, R.F.D., Solvang, Calif.

"Whales Without Flukes," by Raymond M. Gilmore, article, Pacific Naturalist, vol. 1, no. 9, August 6, 1959, pp. 3-9, illus., printed. The Beaudette Foundation for Biological Research, Box 482, R.F.D. 1, Solvang, Calif.



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#### WHALING:

Whaling--Amendments to the Schedule to the International Whaling Convention Signed at Washington on December 2, 1946, Treaties and Other International Act Series 4404, 6 pp., printed, 5 cents. Department of State, Washington 25, D. C., 1960. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Presents the amendments adopted at the Eleventh Meeting of the International Whaling Commission, London, June 22-July 1, 1959.

#### YELLOW PERCH:

Evaluation of the Yellow Perch Hatchery Program in Maryland, by R. J. Muncy, Resource Study Report No. 15, 13 pp., illus., printed. Maryland Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md., January 1959.

#### YUGOSLAVIA:

Stock Breeding and Fisheries 1958, 43 pp., printed in Serbo-Croatian with English abstract. Federal Statistical Institute, Belgrade, Yugoslavia, October 1959. Contains statistical data on stock breeding, veterinary services, and fisheries in Yugoslavia during 1958. The section on fisheries includes information on fishing craft for salt- and fresh-water fisheries; the catch of salt- and fresh-water fish and shellfish by species and by months; and the catch of salt- and fresh-water fish by fishing enterprises and cooperatives and its distribution during 1958. Most of the tables include data for the years 1954-1958.

Morsko Ribarstvo, (Marine Fisheries), printed in Yugoslavian with an English Summary of principal articles, no. 11, November 1959, 24 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "Fisheries and Shipbuilding," by Ivo Tilic; "Experimental Tuna Fishing with Clipper," by Dinko Marelic; and "Trawling in the Neretva-Channel," by S. Zupanovic.

\_\_\_\_\_, no. 12, December 1959, 24 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains among others, the following articles: "The World Scientific Congress of the Biology of the Sardine and Its Relatives," by R. Muzinic; and "On the Occasion of the Article Entitled--New Fishery Experts Study the Fishing of *Clupeonella delicatula*

Caspia on the Caspian Sea," by M. Zei and J. Skrk.

\_\_\_\_\_, no. 1, January 1960, 26 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "Relations Between Climatic Changes and Fish Abundance in Adriatic," by A. Obuljen; "Small Blue-Fish Fishing Along Yugoslav Coast," by A. Domancic; and "Quality Control of Fishery Products," by D. Milos.

\_\_\_\_\_, no. 2, February 1960, 18 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "The Problem of Professional Cadres in Marine Fisheries," by I. Blagaic; "The Results of the Fertilization of the Lim-Channel in 1959," by M. Buljan; and "Some Details on Biology of Tuna," by D. Morovic.

\_\_\_\_\_, no. 3, March 1960, 18 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. The major part of this number is dedicated to problems connected with shellfish breeding.

\_\_\_\_\_, no. 4, April 1960, 22 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "Advisory Meeting on Problems of the Fisheries Economy," by N. Cuculic; and "Tuna and Its Life," by D. Morovic.

\_\_\_\_\_, no. 5, May 1960, 24 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "Minutes from the Yearly assembly of the Professional Association of the Marine Fisheries of Yugoslavia;" "The Five-Year Plan of the Exploration Work in the Advancement of Marine Fisheries," by N. Cuculic; and "A Talk With the Pioneer in Purse-Seines, M. Mezic."

\_\_\_\_\_, no. 6, June 1960, 20 pp. Morsko Ribarstvo, V. Bagata 3, P. O. B. 185, Rijeka, Yugoslavia. Contains, among others, the following articles: "Working Time and Fishing," by M. Grubelic; "On Fishing Experiments by Submarine Light in Tunisia," by R. Muzinic; and "A Few Observations on the Whiting in the Mid-Adriatic," by S. Zupanovic.

--Listings under Yugoslavia supplied by K. Sepic, Engineer.

