



## 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.  
 SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-2175	- Louisiana Landings, June 1959, 2 pp.
CFS-2179	- Shrimp Landings, August 1959, 6 pp.
CFS-2184	- California Landings, July 1959, 4 pp.
CFS-2192	- Mississippi Landings, October 1959, 2 pp.
CFS-2193	- Fish Meal and Oil, November 1959, 2 pp.
CFS-2208	- Texas Landings, November 1959, 3 pp.
CFS-2211	- Rhode Island Landings, October 1959, 3 pp.
CFS-2213	- Maine Landings, November 1959, 3 pp.
CFS-2214	- New York Landings, November 1959, 4 pp.
CFS-2215	- North Carolina Landings, December 1959, 4 pp.
CFS-2217	- Frozen Fish Report, December 1959, 8 pp.
CFS-2221	- New Jersey Landings, December 1959, 3 pp.
CFS-2224	- New York Landings, December 1959, 4 pp.
CFS-2230	- California Landings, August 1959, 4 pp.
CFS-2231	- Fish Sticks and Portions, 1959 Annual Summary, 3 pp.
CFS-2233	- California Landings, September 1959, 4 pp.

### Wholesale Dealers in Fishery Products, 1959 (Revised):

- SL-4 - Rhode Island.  
 SL-5 - Connecticut.

Sep. No. 581 - Processing and Quality Studies of Shrimp Held in Refrigerated Sea Water and Ice: Part 1 - Preliminary Observations on Machine-Peeling Characteristics and Product Quality.

Sep. No. 582 - Braided Synthetic Twines and Their Use in the New England Trawl Fishery.

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

California Fishery Products Monthly Summary, December 1959; 14 pp. (Market News Service,

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

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, November 1959, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces for fresh- and salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, January 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, January 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, December 1959, 23 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 November 1959, 20 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.

Production of Fishery Products in Selected Areas of Alabama, Florida, Louisiana, Mississippi, and Texas, 1958, by Peter DiMarco, 25 pp., processed, December 1959. (Available free from the U. S. Fish and Wildlife Service, 609-611 Federal Bldg., 600 South St., New Orleans, La.) The first part reports on trends and conditions in Gulf Coast fisheries during 1958 and gives a resume of the individual fisheries. For the shrimp fishery, a detailed account is presented of total landings by states, extent of coverage of landings, composition of shrimp landings by species and sizes, prices, canning, imports, cold storage stocks and freezings, general trends and developments, Pacific Coast shrimp developments, new leaflet issued on shrimp gear, and voluntary breaded shrimp standards. Discusses production and market conditions for the oyster and blue crab fisheries, as well as imports of fresh and frozen fish and shellfish. The second part includes shrimp closed seasons in effect in the Gulf States during 1958, minimum shrimp size regulations, conversion factors and container capacities, and shrimp sizes. The second part also contains statistical tables showing total fishery products landings by areas and species, by species and months, by areas and species by months; fishery imports through the New Orleans Customs District and Port Isabel and Brownsville, Tex.; and LCL express shipments from New Orleans for 1958 by months and destination. Also includes tables showing monthly range of wholesale prices of fishery products on the New Orleans French Market; Gulf States weekly oyster and shrimp packs, 1957/58 season and packs by season 1953/58; summary of Gulf shrimp landings for selected areas, 1957-58 and 5-year averages; and fishery products market classifications in the Gulf area.

Production of Fishery Products in Selected Areas of Virginia, Maryland, and North Carolina, 1958, by William N. Kelly, 46 pp., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Reviews commercial landings of fish and shellfish and the production of crab meat and shucked oysters as reported by producers and wholesalers in the specific areas mentioned. Covers production of fishery products by months and by localities, shrimp landings in certain North Carolina localities, and production of certain shellfish in selected areas of Virginia and Maryland. The statistics in this summary represent partial commercial fisheries production only and do not show complete

commercial landings or production for a given area, individual state, or the Chesapeake Bay area as a whole. However, the data do give an indication as to the trend in fisheries production for the specific areas designated and do reflect the over-all production trend.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, January 1960, 9 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Ore.), wholesale dealers; Seattle's otter trawl landings and prices; Northwest Pacific halibut landings; receipts of canned fishery products; and Washington shrimp landings; for the month indicated.

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-7	- Mexican Fisheries, 1958.
MNL-8	- Portuguese Fishing Industry.
MNL-9	- Fishery Developments in the Philippines for 1958.
MNL-10	- Swedish Fisheries for 1958.
MNL-11	- Spanish Fish and Shellfish Industry, 1958.

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Take a Can of Salmon, Circular No. 60, 17 pp., illus., printed, 15 cents, 1960. The recipes in this booklet tested in the Bureau's own test kitchens, are calculated to satisfy a wide range of tastes. There are "Salmon Crepes Bayou," which might suit the gourmet hostess planning a small buffet supper; and then there are "Salmonburgers," a tangy snack easily prepared by the busy mother of small children. Most of the recipes are illustrated with beautifully planned color photos. The economy, versatility, and nutritional value of canned salmon are emphasized in the booklet. "If overweight is a problem in your family, you'll be glad to know that equal portions of salmon and lamb chops contain about the same amount of protein but four ounces of salmon contain only 150 calories while four ounces of lamb chops contain 450 calories," suggests the author.

## MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

### ALGAE:

"Algae as a Source of Human Food," article, *Nutrition Reviews*, vol. 17, August 1959, pp. 238-240, printed. Nutrition Foundation, Inc., 99 Park Ave., New York 16, N. Y.

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

#### ALGINATES:

"Information and Evaluation of Alginates. I," by Willibald Diemari and Hans Hermann Weichel, article, Deutsche Lebensmittel-Rundschau, vol. 54, 1958, pp. 51-55, 76-79, printed in German. Deutsche Lebensmittel-Rundschau, Wissenschaftliche Verlagsgesellschaft m.b.h., Birkenwaldstrasse 44, Stuttgart N., Germany.

Sodium Alginate as a Blood-Plasma Substitute, by Masanobu Tomoda, Kiyoshi Iguchi, and Eichi Ikeda, Japanese Patent No. 4593. Japanese Patent Office, Tokyo, Japan, June 11, 1958.

#### AMINO ACIDS:

"Biological Availability of Amino Acids in Fish Meals and Other Protein Sources," by L. E. Ousterhout, C. R. Grau, and B. D. Lundholm, article, Journal of Nutrition, vol. 69, September 1959, pp. 65-73, printed. Journal of Nutrition, The Wistar Institute of Anatomy & Biology, 36th St. at Spruce, Philadelphia 4, Pa.

#### ANIMAL FEEDING:

"Sources of Unidentified Factors for Practical Poultry Diets. 1--The Value of Fish Meals, Meat Meals, and Fish Solubles for Chicks and Broilers;" "2--The Value of Fish Solubles, Dried Whey, Dried Distillers' Solubles, and Certain Fermentation Products for Chick and Broiler Diets;" and "3--The Value of Fish Solubles, Dried Whey, and Certain Fermentation Products for Turkeys," by J. D. Summers, W. F. Pepper, and S. J. Slinger, articles, Poultry Science, vol. 38, July 1959, pp. 816-825, 846-854, and 922-928, respectively, printed. Poultry Science Association, Kansas State College, Manhattan, Kans.

#### ANTIBIOTICS:

"The Use of Aureomycin for Fish Preservation under South African Conditions," by D. L. Georgala, Progress Report No. 38, 5 pp., printed. Fishing Industry Research Institute, University of Cape Town, Rondebosch, Union of South Africa, February 1959.

#### BARENTS SEA:

Promyslovye Ryby Barentseva Moria i Ikh Pitaniye (Rukovodstvo Dlia Plavstostava Tralovogo Flota) (Fishes in the Barents Sea), by K. Konstantinov, 47 pp., illus., printed in Russian. Poliarnyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii im. N. M. Knipovicha (PINRO), Murmanskoe Knishnoe Izd-vo, U. S. S. R., 1959.

#### BIOCHEMISTRY:

"On Actomyosin of Squid Muscle from Salt-Extract Preparation of Actomyosin," by Juichiro J. Matsumoto, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 2, 1958, pp. 125-132, printed. Japanese Society of Scientific Fisheries, c/o Tokyo Suisan Daigaku, Shiba-kaigandori 6-Chome, Tokyo, Japan.

"Biochemical Studies on the Growth and Maturation of Fish Organs. III--Vitamin B<sub>12</sub> Contents of Fish Organs," by Yasuyuki Shimidzu, article, Nankai-ku Suisan-kenkyusho Hokoku, vol. 6,

1957, pp. 18-24, printed. Nankai ku Suiken, Kochi, Japan.

"Biochemical Studies on the Growth and Maturation of Fish Organs. VI--The Contents of Iron, Copper, and Zinc in the Ovaries of Yellowfin Tuna," by Shichiro Higasa and Akimi Suzuki, article, Nankai-ku Suisan-kenkyusho Hokoku, vol. 6, 1957, pp. 41-45, printed. Nankai-ku Suiken, Kochi, Japan.

"Determination of Residual Quantities of Chlorotetracycline in Fish," by G. B. Dubrova, Yu. A. Ravich-Shcherbo, and A. Ya. Onikienko, article, Voprosy Pitaniya, vol. 17, no. 4, 1958, pp. 53-57, printed. Scientific Research Institute, Mech. Fish Ind., Leningrad, U. S. S. R.

"On the Formation of Amine in Fish Muscle. III--Simple Method for the Detection of Histamine in Fish Muscle," by Fuyuo Ota, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 1, 1958, pp. 37-40, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokyo Suisan Daigaku, Shiba-kaigandori 6-Chome, Tokyo, Japan.

"An Improved Cylinder Plate Assay Method for Determination of Chlorotetracycline in Fish Tissues," by Tetuo Tomiyama, Atsushi Tsuda, and Yasuo Yone, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 4, 1958, pp. 289-295, printed. Japanese Society of Scientific Fisheries, Tokyo Suisan Daigaku, Shiba-kaigandori 6-Chome, Tokyo, Japan.

#### BYPRODUCTS:

"Polarographic Studies on the Smell of Fish and Whale Meal and Oil," by Ikunosuke Okada and others, article, Journal of the Tokyo University of Fisheries, vol. 39, 1953, pp. 177-184, printed. The Tokyo University of Fisheries, Shiba-kaigandori 6, Minato-ku, Tokyo, Japan.

Preservation of Fish and Fish Offal for Oil and Meal Manufacture, by G. A. Carpenter and June Olley, Food Investigation Technical Paper No. 6, 27 pp., illus., printed, 1s.9d. (about 24 U. S. cents). Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1958.

Preserving Herring for Flour and Oil Production, by Olav Notevarp, Norwegian Patent No. 92,373. Norwegian Patent Office, Oslo, Norway, September 1, 1958.

#### CALIFORNIA:

California Fish and Game, vol. 46, no. 1, January 1960, 112 pp., illus., printed. California Dept. of Fish and Game, 722 Capitol Ave., Sacramento 14, Calif. Includes among others, these articles: "A Survey of Fish Transportation Methods and Equipment," by Kenneth S. Norris and others; "The Morro Bay Otter Trawl and Party Boat Fisheries, August 1957 to September 1958," by Richard F. G. Heiman and Daniel J. Miller; "Observations on the Food Habits of Longline Caught Bigeye and Yellowfin

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

Tuna From the Tropical Eastern Pacific, 1955-1956," by C. E. Blunt, Jr.; and "Recovery of Tagged Bluefin Tuna (*Thunnus saliens*)," by Bruce M. Chatwin and Craig J. Orange.

## CANADA:

Fisheries Statistics of Canada, 1957 (Canada Summary), vol. 1, part 3-A, 33 pp. (tables), printed in English and French, 75 Canadian cents. Dominion Bureau of Statistics, Ottawa, Canada, January 1960. (For sale by Queen's Printer and Controller of Stationery, Ottawa, Canada.) This report provides a summary of the Canadian fisheries and the information is arranged to show separately the three main fisheries areas--Atlantic, Pacific, and Inland. It includes data on the quantity and value of the catch of selected fishery products for Canada, 1956-57; production of frozen, smoked, salted, and pickled fish, canned fish and shellfish, and fishery byproducts, 1956-57; landings by trawlers, draggers, etc.; capital equipment in the primary fisheries operations; and employment in fish processing establishments. Also contains data on the quantity and value of exports and imports of fishery products; quantity and value of Canada's fishery products and byproducts, by provinces, 1948-57; Canada's canned lobster pack by provinces, 1948-57; salmon pack of British Columbia, by species, 1948-57; and fishing bounties paid to vessels and boats in 1957.

Fishing, a Bulletin for Commercial Fishermen, illus., printed. Fisheries Branch, Province of Manitoba Department of Mines and Natural Resources, Winnipeg, Man., Canada.

## CANNED FOODS:

"Subtilin and Nisin as Additives that Lower the Heat-Process Requirements of Canned Foods," by L. Leon Campbell, Esther E. Sniff, and R. T. O'Brien, article, Food Technology, vol. 13, August 1959, pp. 462-464, printed. Food Technology, The Garrard Press, 510 North Hickory St., Champaign, Ill.

## CARP:

Ergänzende Histologische Untersuchungen Verschiedener Innerer Organe von Karpfen (CYPRINUS CARPIO) Nach Verfütterung von Pathogenen Pseudomonasbakterien (Research on Bacterial Infection in Carp), by Gertrud Durre, 31 pp., processed in German. Bayerischen Biologischen Versuchsanstalt, Munich, Germany, 1958.

## CHEMICAL COMPOSITION:

The Chemical Composition of Fish Tissues, by R. M. Love, J. A. Lovern, and N. R. Jones, Food Investigation Special Report No. 69, printed. Department of Scientific and Industrial Research, London, England, 1959.

## CHILLING AND FREEZING:

"Storage of Whole Atlantic Herrings in Cooled Sea-Water Before Freezing," by S. I. Gakicko, A. P. Bornovalova, and K. M. Fomiceva, article, Rybnoe Khoziaistvo, no. 12, December 1958, pp. 51-57, illus., printed in Russian. Rybnoe

Khoziaistvo, Kotel'nicheskaja Naberezhiaia D 1/15, Souizpechaty Otdelu "Zhurnal-Pochtoi," Moscow, Zh-240, U. S. S. R.

## CHINA:

Studies in the Establishment of Chinese Fishery, by Chang Pao-Shu, printed in Chinese. Fisheries Association of China, No. 6. Lane 34, Kai-Feng St., 1st Section, Taipei, Taiwan, 1952.

## COD:

"Changes in the Lipids of Cod During Storage in Ice," by J. A. Lovern, June Olley, and Helen A. Watson, article, Journal of the Science of Food and Agriculture, vol. 10, June 1959, pp. 327-337, printed. Journal of the Science of Food and Agriculture, The Society of Chemical Industry, 14 Belgrave Square, London S. W. 1, England.

## CONTAINERS:

"What is Outlook for Aluminum Cans"? by L. P. Gotsch, K. W. Brighton, and E. F. Eike, article, Western Canner and Packer, vol. 128, June 1959, p. 54, printed. Western Canner and Packer, The Canner Publishing Co., 817 W. Market St., Louisville, Ky.

## DENMARK:

The Danish Fish Inspection Service, by Poul Fr. Jensen, 12 pp., printed. Department of Fisheries, Ottawa, Canada. A paper prepared for the Canadian Fish Inspectors' Annual Meeting, Ottawa, November 1958.

## ENZYME ACTIVITY:

"Metabolic Patterns in Bivalves. XI--Xanthine Dehydrogenase in *Venerupis philippinarum*, *Macra sulcataria*, *Anadara inflata*, *Ostrea gigas*, *Meretrix meretrix lusoria*, and *Mytilus edulis*," by Kiyoshi Tsuzuki, article, Journal of the College of Arts and Sciences, Chiba University, Natural Science Series, vol. 2, 1957, pp. 239-242, printed. Chiba University, Chiba, Japan.

## EUROPEAN FREE TRADE ASSOCIATION:

"The European Free Trade Association," by Wilfrid Lavoie, article, Foreign Trade, vol. 113, no. 2, January 16, 1960, pp. 25-28, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. On November 20, 1959, The Governments of the United Kingdom, Denmark, Sweden, Norway, Austria, Switzerland, and Portugal initialled a convention for the establishment of a European Free Trade Association.

## FARM PONDS:

"Fish Farming Becoming Important Enterprise on Arkansas Farms," article, Feedstuffs, vol. 31, August 15, 1959, p. 78, printed. Feedstuffs, Miller Publishing Co., 118 So. 6th St., Minneapolis 2, Minn.

## FERTILIZATION:

Fertilization Experiments in Scottish Freshwater Lochs. II--Sutherland 1954, by A. V. Holden, Scottish Home Department Freshwater and Salmon Fisheries Research 24, 42 pp., illus.,

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

printed, 12s.6d. (about US\$1.75). Her Majesty's Stationery Office, 13A Castle St., Edinburgh 2, Scotland, 1959.

#### FISH BONES:

"Softening Free Fish Bones by Chemical Agents," by M. Q. Khuda, S. Fazl-i Rubbi, and N. A. Khan, article, Pakistan Journal of Scientific Research, vol. 10, 1958, pp. 144-148, printed. Pakistan Association for the Advancement of Science, Lahore, Pakistan.

#### FISH FLOUR:

"Composition of Dilis Fish Flour," by Angelina Alcaraz-Bayan and Ruth M. Leverton, article, Philippine Journal of Science, vol. 86, 1957, pp. 247-258, printed. Philippine Journal of Science, Institute of Science and Technology, Manila, Philippines. In this study, raw fish flour was prepared by thoroughly powdering dried, washed, whole fish. Deodorized fish flour was prepared by extracting raw fish flour three or four times with alcohol and drying the residue at low temperature.

"Stable, Odorless, Neutral Flavor Fish Flour," article, Food Processing, vol. 20, October 1959, p. 79, printed. Food Processing, Putman Publishing Co., 111 East Delaware Pl., Chicago 11, Ill.

#### FISH FOOD:

The Possibility of Using the Radioactive Tracer Method for the Solution of the Food Selection Problem in Aquatic Animals, by A. G. Rodina, 9 pp., processed. (Translated from Zoologicheskii Zhurnal, vol. 36, 1957, pp. 337-343.) Ministry of Agriculture, Fisheries, and Food, Fisheries Laboratory, Lowestoft, England, 1958.

#### FISH-LIVER OIL:

"Shark-Liver Oil. II--Recovery of Vitamin A by Different Digestion Methods," by S. Maqsood Ali, Abdul Haq, and S. Mahdihassan, article, Pakistan Journal of Scientific and Industrial Research, no. 1, 1958, pp. 156-157, printed. Pakistan Council of Scientific and Industrial Research, Karachi, Pakistan.

"Studies on the Fish-Liver Catalase. V--Optimum pH of the Fish-Liver Catalase," by Hironari Fukuda, Toshiaki Niguchi, and Akira Kurogi, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 21, no. 10, 1956, pp. 1097-1099, illus., printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokyo Suisan Daigaku, Shiba-kaigandori 6-Chome, Tokyo, Japan.

#### FISH MEAL:

"Spontaneous Heating of Fish Meal--1," by C. J. H. Van den Broek, article, Food Manufacture, vol. 34, September 1, 1959, pp. 349-353, printed. Food Manufacture, Leonard Hill, Ltd., Eden St., London, NW. 1, England.

#### FISH OIL:

"Characters of Some Oils and Fats of Animal Origin. II--Oils and Fats of Marine Animals," by C. Carola, article, Olii Minerali, Grassi e

Saponi, Colori e Vernici, vol. 34, 1957, pp. 382-390, printed. Staz. Sperim. Olii e Grassi, Via G. Colombo 79, Milan 36, Italy.

"Chemical Characteristics of Fish Oil Prepared in Vacuo," by L. Berzins, article, Trudy Instituts Eksperimentalais Medicinas, Akademija, Nauk Latvijas S. S. R., vol. 14, 1957, pp. 165-167, printed in Russian. Latvijas Padomju Socialistiskas Republikas Zinatnu Akademija, Medicinas Eksperimentalais Instituts, Riga, Latvia.

#### FLOUNDERS:

The Spawning of the Plaice (PLEURONECTES PLATESSA) in the Irish Sea, by A. C. Simpson, Fishery Investigations, series 2, vol. 22, no. 8, 32 pp., illus., printed, 9s. (about US\$1.26). Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, 1959.

#### FOOD AND AGRICULTURE ORGANIZATION:

Contribution a la Connaissance de la Faune Benthique dans la Zone Insulaire de l'Adriatique Moyenne (Contribution to the Knowledge of the Benthic Fauna in the Insular Zone of the Central Adriatic), by S. Zupanovic, H. Gamulin-Breda, and S. Alfirevic, Working Paper No. 39, 7 pp., illus., processed in French with English abstract. General Fisheries Council for the Mediterranean, Food and Agriculture Organization of the United Nations, Rome, Italy, 1958.

Indo-Pacific Fisheries Council Proceedings, 7th Session, Bandung, Indonesia, May 13-27, 1957, Sections II and III, 223 pp., illus., printed. IPFC Secretariat, FAO Regional Office for Asia and the Far East, Bangkok, Thailand, 1958. Includes, among others, the following articles: "Experiments on Different Stocking Rates of the Common Carp (Cyprinus carpio L.) in Nursing Ponds," by A. Vaas-van Oven; "Fertilization of Bangos Nursery Ponds with Commercial Chemical Fertilizer," by J. I. Sulit, R. S. Esguerra, and H. R. Rabanal; "Age Determination of Albacore by the Vertebral Method," by T. Otsu and R. N. Uchida; "A Review on Age Determination on the Pacific Tunas," by S. Hayashi; "The Growth and Age of the Yellowfin Tuna," by Y. Yabuta and M. Yukinawa; "Fishing Gear Research," by H. Kristjonsson; "A New Method of Handling Longline Gear--A Description of the POFI 'Tub' Gear," by H. Mann; "Bangos Fry Trawl," by D. M. Bunag; "Comparison of Fishing Efficiency between (a) Longline and 'Rawal' (Prawe), (b) Trawl and 'Dogol', and (c) Various Types of 'Pajang'," by R. A. Kartono; "Indigenous Types of Fishing Craft in Indonesia," by Salam; "Mechanization of Fishing Craft and the Use of Improved Fishing Gear in Ceylon," by E. R. A. de Zylva; "Processing and Storage of Salted Herring (Sardinella perforata Cantor)," by J. I. Sulit and others; "Studies on the Preservation of Marine Products by Combined Use of Salt and Preservatives," by S. Tetsumoto; "Fish Flour," by Lembaga Makanan Rokjat; and "Economic Aspects of Fish Processing," by Eddiwan.

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

Rapport au Gouvernement de Haiti sur la Pisciculture Etabli d'Après les Données Fournies (Report to the Government of Haiti on Fishery Culture Established with Donated Funds), by S. Y. Lin and Shimon Tal, FAO Report No. 538, 26 pp., illus., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, 1956.

The Use of Copper Naphthenate and Other Copper Soaps for the Treatment of Fishing Nets, by J. H. White and B. Komarovskiy, Technical Paper No. 43, 8 pp., illus., processed in English with French abstract. General Fisheries Council for the Mediterranean, Food and Agriculture Organization of the United Nations, Rome, Italy, 1958.

The Food and Agriculture Organization has published reports describing that Agency's activities under the Expanded Technical Assistance Program for developing the fisheries of many countries. These reports have not been published on a sale basis, but have been processed only for limited distribution to governments, libraries, and universities. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Report on Fishculture Seminar in Indonesia, May 1-June 15, 1952, by W. H. Schuster, FAO Report No. 46, 9 pp., illus., processed, July 1952.

Report to the Government of Finland on Possibilities for Fishery Development, by A. C. Taft, FAO Report No. 72, 38 pp., illus., processed, 1953.

Report to the Government of Yugoslavia on the Fish Canning Industry, by Rolv Vesterhus, FAO Report No. 106, 12 pp., processed, April 1953.

Relatorio ao Governo de Brasil sobre as Pescarias Brasileiras (Report to the Government of Brazil on the Brazilian Fisheries), FAO Report No. 144, 60 pp., processed in Portuguese, September 1953.

Report to the Government of Yugoslavia on the Handling, Collection, Transport, Storage, and Refrigeration of Fish, by W. A. MacCallum, FAO Report No. 220, 61 pp., illus., processed, January 1954.

Report to the Government of India on the Development of Inland Fisheries in West Bengal, by F. Botke, FAO Report No. 226, 29 pp., processed, February 1954.

Report to the Government of Israel on Fishing Methods, by George S. Napier, FAO Report No. 227, 14 pp., processed, January 1954.

Report to the Government of Yugoslavia on the Processing of Fish (especially Papalin, *Clupea sprattus*), by Ernst Tengberg-Hansen, FAO Report No. 283, 27 pp., illus., processed, June 1954.

Report to the Government of Liberia on Fishing Boats, Gear, and Methods, by Hubertus van Pel, FAO Report No. 322, 36 pp., illus., processed, November 1954.

Report to the Government of Turkey on a Brief Survey of the Trawl Fishery out of Iskenderun, by Hilmar Kristjonsson, FAO Report No. 428, 20 pp., illus., processed, November 1955.

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The factory unit on board handles washing, heading, filleting, skinning, weighing, wrapping, and quick-freezing of fish. The frozen blocks are passed by conveyor to holds kept at  $-10^{\circ}$  F. The offal is converted to fish meal and the oil extracted from livers. The refrigeration machinery has a capacity for freezing 30 tons of fish a day.

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