



FISH AND WILDLIFE SERVICE PUBLICATIONS

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- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
 SSR.- FISH. - SPECIAL SCIENTIFIC REPORTS - FISHERIES (LIMITED DISTRIBUTION).
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

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CFS-1416	North Carolina Landings, August 1956, 2 pp.			
CFS-1420	Texas Landings (Revised), August 1956, 3 pp.			
CFS-1421	Frozen Fish Report, September 1956, 8 pp.			
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Sep. No. 454	Development of Markets for Underutilized Lake Erie Fish--Progress Report.			
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Sep. No. 457	<table border="0"> <tr> <td rowspan="2">Cold Storage Studies on Gulf of Mexico Yellowfin Tuna.</td> <td rowspan="2">Fungicidal Properties of Modified Unsaturated Fish Oils.</td> </tr> <tr> <td></td> </tr> </table>	Cold Storage Studies on Gulf of Mexico Yellowfin Tuna.	Fungicidal Properties of Modified Unsaturated Fish Oils.	
Cold Storage Studies on Gulf of Mexico Yellowfin Tuna.	Fungicidal Properties of Modified Unsaturated Fish Oils.			
Sep. No. 458	North Atlantic Shrimp Keeping Quality in Cold Storage.			

Sep. No. 459 - Technical Note No. 34 - Growth Characteristics of the Pink Yeast that Causes Discoloration of Oysters.

SSR-Fish. No. 174 - Size Variation of Central and Western Pacific Yellowfin Tuna, by Edwin S. Iversen, 28 pp., illus., processed, June 1956.

SSR-Fish. No. 183 - Observations on Serology of Tuna, by John E. Cushing Jr., 17 pp., processed, October 1956. (Also Contribution Hawaii Marine Laboratory No. 85.)

SSR-Fish. No. 187 - Commercial and Sport Shad Fisheries of the Edisto River, South Carolina, 1955, by Charles H. Walburg, 9 pp., illus., processed, October 1956. Describes the Edisto River, South Carolina, shad fishery investigations to determine fishing effort, fishing rate, total catch, size of run, and spawning escapement for 1955. The commercial fishery catch-and-effort data were obtained from logbooks kept by each fisherman. The total catch made by sport fishing was determined by a post-card survey. The catch-and-effort data were combined with a tagging and recovery program, and it was estimated that the fishing rate was approximately 20 percent, the total catch was 11,000 shad, and the size of the run was 56,000 shad (fiducial limits 28,000 to 100,000). Unfortunately, catch-and-effort records for previous years were not available for this stream; therefore, sizes of former runs and escapements could not be determined.

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

California Fisheries Trends and Review for 1955, by V. J. Samson, 38 pp., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) This is a review of the 1955 trends and conditions in the California fisheries. Among the subjects discussed are the tuna fishery (cannery receipts, total pack for 1946-1955, ex-vessel prices, domestic catch and fishing conditions, imports of frozen tuna, and canned tuna market conditions and price quotations); California sardine (pilchard) fishery (landings, ex-vessel prices, canned pack, and canned sardine prices); mackerel fishery (cannery receipts and ex-vessel prices); anchovy fishery; and canned pet-food production. Included in the statistical tables are data on tuna receipts and canned pack by months and species; landings and products of sardines (pilchards) by months, products, and areas; landings and pack of mackerel and jack mackerel by species and months; production of miscellaneous fishery products; freezing of fish and shellfish; cold-storage holdings; landings of market fish and shellfish at certain

California ports; and imports of fishery products into California and Arizona.

Gulf States Production of Fishery Products for Selected Areas, 1955, by L. A. Keilman, 26 pp., processed, December 1956. (Available free from the U. S. Fish and Wildlife Service, 609-611 Federal Bldg., 600 South St., New Orleans 12, La.) The author discusses trends and conditions in Gulf Coast fisheries during 1955 and gives a resume of the individual fisheries. For the shrimp fishery a detailed account is given of general conditions, total landings, composition of the landings by species, increase in consumption, prices, canned shrimp, and data on cold-storage freezings and holdings. Production and market conditions for the oyster, blue crab, and finfish fisheries are included in the summary, as well as significant developments in these fisheries. Imports of fresh and frozen fish are briefly mentioned. Statistical tables show shrimp closed seasons in effect in Gulf states in 1955; minimum shrimp size regulations; conversion factors and container capacities; shrimp sizes; total landings by area; total landings of selected areas and species by months; fishery imports through the New Orleans Custom District and Port Isabel and Brownsville, Texas; and weekly canned oyster and shrimp packs. Included also are tables showing the monthly range of wholesale prices of fishery products on the New Orleans French Market, a summary of Gulf shrimp landings for selected areas, monthly LCL shipments from New Orleans by month and by destination, and fishery products market classifications in the Gulf area. The areas covered by the report are: Mobile and Bayou LaBatre, Ala.; Pascagoula and Biloxi, Miss.; New Orleans and lower Mississippi River area, Golden Meadow area, Houma, Chauvin, Dulac, Morgan City, Berwick, Patterson, and Delcambre, La.; Galveston, Freeport, Port Lavaca, Palacios, Aransas Pass, Rockport, Corpus Christi, Port Isabel, and Brownsville, Tex.

Receipts of Fresh and Frozen Fishery Products at Chicago, 1955, by G. A. Albano, 53 pp., processed, November 1956. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 565 West Washington St., Chicago 6, Ill.) This report presents an analysis of the marketing trends for fresh and frozen fishery products and statistical tables on the receipts of fresh and frozen fish and shellfish at Chicago during 1955. Statistics on arrivals of fishery products at Chicago are presented by species and by states and provinces of origin; states and provinces by species; species by months; states and provinces by months; totals by species; and totals by states and provinces. Receipts are tabulated by methods of transportation (truck, express, and freight). A table shows the monthly range of wholesale prices of some of the leading varieties of fresh and frozen fishery products handled on the Chicago market. In the analysis of the marketing trends for fresh and frozen fishery products at Chicago, the author discusses the sources of the receipts, methods of transportation, months of greatest receipts, receipts by species and varieties, lake trout and whitefish receipts,

U. S. Great Lakes fishery production, U. S. imports of fresh and frozen fish from Canada, U. S. imports of frozen fillets and cold storage inventories. Also included is a table giving the names, classifications, and approximate weights of certain fishery products sold in the Chicago wholesale market.

Boston Fishery Products Monthly Summary, September 1956, 15 pp.; Boston Fishery Products Monthly Summary, October 1956, 15 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Landings and ex-vessel prices by species for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; and Boston frozen fishery products prices to primary wholesalers; for the months indicated.

(Chicago) September 1956 Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, 10 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; fresh-water fish, shrimp, and frozen fillet wholesale market prices; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, October 1956, 5 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; and wholesale prices of fish and shellfish on the New Orleans French Market; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, October 1956, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 S. King St., Hampton, Va.) Fishery production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Ocean City, and Cambridge; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

(New York) Monthly Summary - September 1956 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N. Y.) Receipts in the salt-water section of the Fulton Fish Market by species and by states and provinces for the month indicated.

(Seattle) Monthly Summary - Fishery Products, October 1956, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, 421 Bell St. Terminal, Seattle 1, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Oregon) wholesale dealers; also Northwest Pacific halibut landings.

Progress in Developing Methods for Chemical Control of Molluscan Enemies, by V. L. Loosanoff, vol. 20, Bulletin No. 12, November 7, 1956, 5 pp., processed. (Available free from the Fish and Wildlife Service, Marine Biological Laboratory, Milford, Conn.) Answers requests for more information concerning the development of methods for chemical control of shellfish enemies. Discussed briefly are the effects of various chemicals on molluscan enemies, methods of using chemicals, effects of chemicals on useful animals, and significance of the application of the methods being developed.

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Comparative Study of Food of Bigeye and Yellowfin Tuna in the Central Pacific, by Joseph E. King and Isaac I. Ikehara, Fishery Bulletin 108 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 57), 26 pp., illus., printed, 30 cents, 1956.

Propagation and Distribution of Food Fishes for the Calendar Years 1953-1954, Statistical Digest 38, 39 pp., printed, 20 cents, 1956.

This is a Salmon Hatchery (Circular 25), This is a Trout Hatchery (Circular 31), This is a Pondfish Hatchery (Circular 40); pamphlets each 2 pp., illus., printed, 5 cents. The purpose of the circulars is to portray in a quick, easy-to-read manner the function, operation and physical features of each of the three types of hatchery. Each circular is illustrated with photographs of a typical hatchery and with artist's drawings which portray the life cycle of various fish and some of their physical characteristics. Hatchery operations are shown by both photograph and drawings. The circulars show that the pondfish hatchery is a group of rearing ponds, each about an acre in extent, while trout and salmon hatcheries have batteries of concrete raceways or rearing ponds each about 8 feet by 80 feet in area. A feature of some salmon hatcheries is the fish ladder from the stream to spawning and holding ponds in addition to the concrete raceways. Each leaflet explains the cultural methods used for the species and the manner in which the hatchery product helps solve the particular fishery problem. The pondfish produced are mostly largemouth bass and blue gills and, to a lesser extent, other warm-water fish like smallmouth bass, redear sunfish, northern pike, walleye, and channel catfish. Rainbow, brown, cutthroat and brook trout provide much of the sport fishing in the United States and account for most of the production from trout hatcheries. There are five species of salmon native to the Pacific area, the king (chinook, spring); red (sockeye, blueback); silver (coho); chum (dog) and pink (humpback). All species except pink salmon are reared in Federal hatcheries in the Northwest. In some instances there are facilities for both trout and pondfish culture at the same hatchery and in others the salmon and trout are reared in a single installation.

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.

Abstract of Commercial Fisheries Laws of California, 1955-1957, folder, 2 pp., printed. Department of Fish and Game, Sacramento 14, Calif.

"Age Determination in Yellowstone Cutthroat Trout by the Scale Method," by Martin Laakso and Oliver B. Cope, article, The Journal of Wildlife Management, vol. 20, no. 2, April 1956, single copy \$2. Cayuga Press, Inc., 113 East Green St., Ithaca, N. Y.

Annual Report--Passage of Fish over Bonneville and McNary Dams, Columbia River, Oregon and Washington, 1955, Reports Control Symbol NPDGW-79, Chief of Engineers, U. S. Army, Washington 25, D. C.

Beretning om Selfangsten, Hakjerringfisket og Overvintringsekspedisjonene i 1955 (Report on Sealing, Greenland Shark Fishing, and Winter Expeditions in 1955), Arsberetning Vedkommende Norges Fiskerier, 1955, Nr. 10, 23 pp., printed in Norwegian. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1956.

The Boring Sponges which Attack South Carolina Oysters, with Notes on Some Associated Organisms, by Sewell H. Hopkins, Contributions from Bears Bluff Laboratories No. 23, 30 pp., illus., printed. Bears Bluff Laboratories, Wadmalaw Island, S. C., October 1956.

Bulletin Officiel D'Information du Conseil Supérieur de la Pêche (Official Information Bulletin of the Council on Fisheries), No. 25, July-August-September 1956, 93 pp., printed in French. Conseil Supérieur de la Pêche, 1 Avenue de Lowendal, Paris, France.

(Canada) Ninth Annual Report of the Fisheries Prices Support Board for the Year 1955-56, 10 pp., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1956. Describes the Fisheries Prices Support Act; economic conditions of the British Columbia, Atlantic Coast, and fresh-water fisheries; price support program for Newfoundland salted codfish; request for assistance in the destruction of Pacific Coast dogfish; and other activities of the Board.

Changes in the Physiography of Oyster Bars in the James River, Virginia, by Nelson Marshall, Contribution No. 17, 10 pp., illus., printed. (Reprinted from The Virginia Journal of Science, vol. 5, New Series, no. 3, July 1954, pp. 173-181.) The Oceanographic Institute, Florida State University, Tallahassee, Fla.

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The Charles F. Johnson Oceanic Gamefish Investigations, Summary of Investigations for the Period Comprising September, 1955 through August, 1956, by Gilbert L. Voss, Progress Report No. 2, 11 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla. A summary of investigations of the systematics, geographical distribution, ecology, food, migrations, spawning, and growth of the billfishes (including spearfishes, marlins, and the swordfish).

Cod Populations--Identified by a Chemical Method, by Eva Henly Dannevig, Fiskeridirektoratets Skrifter (Report on Norwegian Fishery and Marine Investigations, vol. XI, no. 6), 13 pp., illus., printed. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1956. Gives the results of a study of the proteins of fish muscle. The chemical composition of the muscle of cod varies according to the different localities. First, there is a very definite difference in the chromatographic pattern of cod muscle between cod from the southern waters (Skagerack) and those from northern waters (Lofoten area). This difference occurred in all specimens examined, irrespective of local varieties. Secondly, the cod from the two localities can be separated in subgroups. Finally, the cod muscle has been hydrolyzed, and the different constituents building the complex molecules of the amino-acid group containing part of the muscle are identified.

"Correlations of Various Ambient Phenomena with Red Tide Outbreaks on the Florida West Coast," by Anita Feinstein, article, Bulletin of Marine Science of the Gulf and Caribbean, vol. 6, no. 3, September 1956, pp. 209-232, illus., printed. The Marine Laboratory, University of Miami, Coral Gables 34, Fla.

"The 'Critical Period' in the Early Life History of Marine Fishes," by John C. Marr, article, Journal du Conseil, vol. XXI, no. 2, April 1956, pp. 160-170, illus., printed; single copy Kr. 12.00 (US\$2.32). Andr. Fred. Høst & Søn, Bredgade, Copenhagen, Denmark.

The Distribution of Fishes Found Below a Depth of 2,000 Meters, by Marion Grey, Fieldiana: Zoology, vol. 36, no. 2, 263 pp., printed, \$4. Chicago Natural History Museum, Roosevelt Rd. and Lake Shore Dr., Chicago 5, Ill.

El Agricultor Venezolano (The Venezuelan Farmer), vol. XXI, no. 190, August-September 1956, 78 pp., illus., printed in Spanish. Ministerio de Agricultura y Cria, Caracas, Venezuela. Contains, among others, the following articles: "Fishing in Venezuela," "Oceanography of the Central Region," "20 Years of the Department of Fishery," "Pearl Fishing," and "The Fish Service Provided by the Ministry of Agriculture and Livestock."

"Fish in the Mink Diet," article, Trade News, vol. 9, no. 3, September 1956, pp. 6, 12, illus., printed. Department of Fisheries of Canada, Ottawa, Canada. An interesting development in British Columbia is the increasing use of

fish as a food for mink. This increase is due to its availability and price in comparison to other animal foods, its nutritive value, and to the growth in the number of mink ranchers in the province during recent years. This article describes a study of the subject made by the Markets and Economics Service of the Department of Fisheries.

Fishes from Eylath (Gulf of Aqaba), Red Sea, Second Report, by H. Steinmetz and A. Ben-Tuvia, Bulletin No. 11, December 1955, 11 pp., printed. The Government Printing Press, Haifa, Israel.

Fiskeri-Undervisningen, 1954-55 (Fisheries Training, 1954-55), Arsberetning Vedkommende Norges Fiskerier, 1955, Nr. 8, 37 pp., illus., printed in Norwegian. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1956.

Fiskeriinspektorenes Virksomhet 1/7 1953--31/12 1954 (Activities of Fisheries Inspectors, July 1, 1953--December 31, 1954), Arsberetning Vedkommende Norges Fiskerier, 1955, Nr. 11, 139 pp., printed in Norwegian. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1956.

(FAO) Conservation et Distribution des Produits de la Pêche (Preservation and Distribution of Fish Products), by Giorgio Ricci, Technical Paper No. 43, 10 pp., processed in French with brief abstract in English. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. A paper presented at the Fourth Meeting of the General Fisheries Council for the Mediterranean held in Istanbul September 17-22, 1956, covering the use of ice in the preservation of fish, refrigeration equipment, quick-freezing, distribution of refrigerated fishery products, retail stores, and distribution of frozen fishery products.

(FAO) Transport of Fish for Short Trips by Sea at Medium Temperature, by Selim R. Suntutur, Technical Paper No. 47, 4 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. A paper presented at the Fourth Meeting of the General Fisheries Council for the Mediterranean held in Istanbul September 17-22, 1956.

Gremio dos Armadores da Pesca da Baleia, Relatório e Contas do Exercício de 1955 e Orçamento para 1956 (Whaling Vessel Owners' Guild, Statement of Operations for 1955 and Budget for 1956), 28 pp., illus., printed in Portuguese. A Comissao Revisora de Contas, Lisbon, Portugal.

Gremio dos Armadores da Pesca da Sardinha, Relatório e Contas do Exercício de 1955 e Orçamento para 1956 (Sardine Fishing Vessel Owners' Guild, Statement of Operations for 1955 and Budget for 1956), 15 pp., printed in Portuguese. A Comissao Revisora de Contas, Lisbon, Portugal.

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Grémio dos Armadores de Navios da Pesca do Bacalhau, Relatório e Contas do Exercício de 1955 e Orcamento para 1956 (Cod Fishing Vessel Owners' Guild, Statement of Operations for 1955 and Budget for 1956), 28 pp., printed in Portuguese. A Comissao Revisora de Contas, Lisbon, Portugal.

Inter-American Tropical Tuna Commission Annual Report for the Year 1955 (Comision Interamericana del Atun Tropical Informe Anual Correspondiente al Ano 1955), 95 pp., illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1956. Included in this report are: the recommended program of investigations; progress on investigations; publication of research results; activities of the Tuna Commission at the International Technical Conference on the Conservation of the Living Resources of the Sea; and a short resume of the Commission's regular annual meeting at Panama City, Panama, on July 14, 1955. An appendix to the report describes the investigations conducted by the Commission during 1955, and discussed in this section are the compilation of current statistics of total catch, amount and success of fishing, and abundance of fish populations; compilation and analysis of historical data on tuna and bait fishes; research on biology, life history, and ecology of tunas; investigation of the oceanography of the Eastern Pacific; and investigations of the biology, ecology, and life history of bait fishes. The Commission has the purpose of gathering and interpreting the factual information required for maintaining the populations of tuna and tuna bait fishes at such levels which will permit maximum sustainable catches year after year.

Kieler Meeresforschungen (Marine Investigations), Band XII, Heft 2 (vol. XII, no. 2), 1956, pp. 127-260, illus., printed in German. Institut für Meereskunde der Universität, Hohenbergstr. 2, Kiel, Germany. Contains nine articles on various subjects including biological, historical, oceanographic subjects, and problems observed in various parts of the world.

"The Lamprey in New York Waters," by John R. Greeley, article, The New York State Conservationist, vol. 11, no. 1, August-September 1956, pp. 18-21, illus., printed, single copy 50 cents. The Conservationist, Room 515, Arcade Bldg., Albany 1, N. Y.

Lofotfisket 1955 (Lofoten Fisheries, 1955), Arsberetning Vedkommende Norges Fiskerier, 1955, Nr. 5, 96 pp., printed in Norwegian. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1956.

Memoirs of the Faculty of Fisheries, Kagoshima University, vol. 3, no. 2, 88 pp., illus., printed in Japanese with summaries in English. The Faculty of Fisheries, Kagoshima University, Kagoshima, Japan, May 1954. Contains among others the following articles: "On the Fisheries of Tuna and the Oceanographic Conditions in the Sawu Sea;" "Studies on the Relation Between the Fluctuation in Catch and the

Environmental Factors of the Principal Fisheries in Kagoshima Bay. I. On the Water-Temperature and Salinity Concerning the Catch 'Maiwashi,' Sardinia melanosticta, and 'Urume,' Etrumeus micropus;" "Studies on the Horizontal Finding of Fish School. (III) About Errors of 'Reading' on the Records of General Fish Finder;" "On the Variation of Free-Tyrosine Content of Fish Meat in Decrease of Its Freshness--II. Estimation of Tyrosine Value under Application of Xanthoproteic Reaction;" "Chemical Studies on the Fixative Procedure of Fish Meat for the Various Estimation--I. (1) On the Fixative Procedure for the Estimation of Volatile Basic Nitrogen. (a) Fixation by Using Protein Precipitant;" "Study on the Separating Process of Histamin from Histidine by the Electro-Chromatographic Method;" "Biochemical Studies on the Mould Isolated from Katsubushi--I. On the Antibiotic Action of the Mould;" "A Survey on the Constitutional Transformation of a Fishing Village;" and "An Interpretation of the Developmental Process of Fishery Economy in Japan--Especially a Consideration on the Bonito Fishery at Bonotsu."

Memoirs of the Faculty of Fisheries, Kagoshima University, vol. 4, 159 pp., illus., printed in Japanese with summaries in English. The Faculty of Fisheries, Kagoshima University, Kagoshima, Japan, December 1955. Contains among others the following articles: "Studies on the Improvement of Yellow-tail Setting Net (II). Model Experiment on Trap Nets of Variant Constructions;" "On the Curve of Tuna Long Line;" "Studies on the Relation Between the Fluctuation in Catch and the Environmental Factors of the Principal Fishes in Kagoshima Bay--II. In the Fisheries of Istiophorus orientalis and Sea Conditions;" "On the Detective Effect of the Radar Upon the Location of the Tunny Longline;" "An Experiment on the Trial Manufacture of Lead Plate Depth Finder for Fishing Tools;" "Fundamental Studies on the Relation of Underwater Sound to the Fish Behaviour. (I) About the Sounds by Dropping or Showering;" and "Chemical Studies on the Fixative Procedure of Fish Meat for the Various Estimations. (II) On the Fixative Procedure for the Estimation of Volatile Basic Nitrogen. b. On the Volatile Nitrogen Produced in Fish Meat Fixed in Acidic Protein Precipitant."

The Migration and Exploitation of the Black Mullet, MUGIL CEPHALUS L. in Florida, as Determined from Tagging During 1949-1953, by Gordon C. Broadhead and H. P. Mefford, Technical Series No. 18, 32 pp., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla., April 1956.

The Movement and Recovery of Tagged Walleyes in Michigan, 1929-1953, by Paul H. Eschmeyer and Walter R. Crowe, Miscellaneous Publication no. 8, 32 pp., illus., printed. Institute for Fisheries Research, Ann Arbor, Mich., 1955.

"The Occurrence of Gymnodinium brevis in the Western Gulf of Mexico," by W. B. Wilson

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and S. M. Ray, article, Ecology, vol. 37, no. 2, p. 388, printed, April 1956, single copy \$2. Duke University Press, Box 6697, College Station, Durham, N. C.

(Oregon) Biennial Report of the Fish Commission of the State of Oregon to the Governor and the Forty-Eighth Legislative Assembly, 1955, 28 pp., printed, Oregon Fish Commission, 307 State Office Bldg., Portland 1, Ore. A report of the operation of the Fish Commission of the State of Oregon together with a financial statement for the period July 1, 1952, to June 30, 1954. It describes the efforts of the Fish Commission which have been directed toward increasing the effectiveness of the fisheries management activities. This has been done by improved operating methods and the construction of new facilities. This report also shows the pack of canned salmon on the Columbia River from the inception of the industry to 1953.

"Organoleptic Studies of Irradiated Foods," by G. B. Pratt and O. F. Ecklund, article, Food Technology (Published by the Institute of Food Technologists), vol. 10, no. 10, October 1956, pp. 496-499, printed. The Garrard Press, 119 West Park Ave., Champaign, Ill. Discusses and gives results of organoleptic studies of irradiated meats and vegetables. Statistical analysis of taste test scores showed significant off-flavor in each of the irradiated meats and vegetables in the experiment. In every case important changes in appearance or flavor developed on storage. According to the authors, some of these changes, but by no means all, might be attributed to enzymatic action.

Oyster Cultivation in Britain (A Manual of Current Practice), by H. A. Cole, 45 pp., illus., printed, 5s. (70 U.S. cents). Her Majesty's Stationery Office, London, England, 1956. An attempt is made to give a straightforward account of the various methods of oyster culture at present followed in Britain and to indicate lines along which further development is possible. Although the work is particularly addressed to anyone contemplating oyster farming, either on a large or small scale, and special attention is given to difficulties likely to be encountered, a full description is also given of those new techniques worked out at home or abroad, which are considered to be of value to British oyster planters. Contains chapters on suitable areas for development; sewage and industrial pollution; legal considerations; equipment and methods of cultivation; seasonal work on an oyster fishery; copper taints in oysters; the purchase of oysters for relaying and restocking; the making of new oyster beds and the reclamation of derelict grounds; frost; the cultivation of Portuguese oysters; and the food value of oysters.

Partners in World Trade (The Goal of the GATT), Department of State Publication 5879, Commercial Policy Series 148, 19 pp., illus., printed, 15 cents. Department of State, Washington, D. C. (For sale by the Superintendent

of Documents, Government Printing Office, Washington 25, D. C.)

(Philippines) Fisheries Statistics of the Philippines, 1953, illus., printed, Bureau of Fisheries, Manila, Philippines.

"Pothead Roundup," by Mark Ronayne, article, Trade News, vol. 9, no. 3, September 1956, pp. 3-5, illus., printed, Department of Fisheries of Canada, Ottawa, Canada. Describes the most recent developments in the Newfoundland pothead whale fishery. The pothead whales are driven into a "corral" at New Harbour, from the outer areas of Trinity Bay where they are allowed to roam at will until they are selected for killing. This latest development phase is reflected in the rows of aluminum-covered sheds which nestle almost out of sight in fir and spruce stands along the road to Dildo. Once virgin forest, a large part of this area has been transformed almost overnight into a bustling mink-ranching center which provincial authorities are hopeful will some day develop into one of the continent's largest. They base these predictions on the abundance of pothead whales and codfish which, barring unforeseen and unlikely changes, can be expected to provide feed supplies for hordes of mink that nobody would dare estimate at this time.

Progress Reports of the Pacific Coast Stations, No. 106, 28 pp., illus., printed. Fisheries Research Board of Canada, Ottawa, Canada, September 1956. Among the articles included are: "Storage of Live Crabs in Refrigerated Sea Water," by S. W. Roach; "Effect of Chlortetracycline Treatment of Fish on Development of Certain Food-poisoning Bacteria," by H. M. Bluhm and H. L. A. Tarr; "Results of Tests on Kuralon Staple Twine," by P. J. G. Carrothers; "Distribution and Movement of Young Pacific Salmon During Early Ocean Residence," by J. I. Manzer.

"Quality of Sardines (*Clupea pilchardus* Walb.) Held Unfrozen and Frozen Prior to Canning," by W. A. MacCallum, W. J. Dyer, S. Curi, J. J. Simoncic, M. Kovacevic, D. C. Horne, R. J. McNeill, M. Drvaric, and H. Lisac, article, Food Technology (Published by the Institute of Food Technologists), vol. 10, no. 9, September 1956, pp. 432-438, illus., printed. The Garrard Press, 119 West Park Ave., Champaign, Ill. Gives the results of tests made on the quality of sardines, *Clupea pilchardus*, held unfrozen and frozen prior to canning. Prior to canning, the fresh chilled fish, the stored unfrozen fish, and the fish thawed after removal from frozen storage were examined organoleptically and peroxide determinations were made. The following tests of canned fish were made: (a) organoleptic examination; (b) determination of peroxide value; (c) determination of free fatty acids; and (d) determination of salt. The authors report the following conclusions and recommendations: "Sardines, to be of good canning quality, should be iced in boxes within two or three hours of catching in a manner which prevents crushing.

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Fish handled in this manner should be held no longer than three days in unfrozen storage prior to canning. Evisceration of sardines prior to storage is not necessary once these conditions are observed. After the sardines are cooled and placed in storage at 30° to 31° F. (-1.1 to -0.5° C.), the presence or absence of ice over the fish does not affect the quality of the fish for canning. Only strictly fresh sardines, iced and handled as specified, should be frozen for later canning. Glazed and unglazed air-frozen sardines can be held at a temperature of -4° F. (-20° C.) in a condition acceptable for canning for a period of up to one month. A storage temperature of about -20° F. (-29° C.) is recommended for use in commercial practice. Organoleptic examination of the fish meat both prior to and after canning is recommended to give a proper assessment of quality for canning.

"Quality Variables Pinpointed for Fish-Stick Makers," by Stephen J. Lirot and John T. R. Nickerson, article, Food Engineering, vol. 28, no. 6, June 1956, pp. 88-90, 189, illus., printed. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York 36, N. Y. Describes a study of the effect processing and coating ingredients have on the quality of frozen pre-cooked fish sticks. Results show that: (1) there is a highly significant correlation between subjective color grading and spectrophotometer reflectance values in the red portion of the spectrum for sticks fried in oil, frozen, then defrosted and oven-heated for 15 minutes at 400° F. Further taste-panel scores indicate a preference for sticks with shades in the central portion of the range, neither too light nor too dark; (2) percent over-all batter and batter pickup of uncooked sticks appears to vary linearly with the logarithm of both batter viscosity and percent frying weight loss. The latter increases as over-all pickup decreases; (3) coating performance is greatly affected by the specific flour or flour combinations used in the batter; (4) above 3 percent, increasing concentrations of egg yolk solids in the batter reduces its viscosity and over-all pickup by uncooked sticks; and (5) compared with batter containing 3-percent egg solids, one with no egg solids produces slightly greater fat absorption and weight loss during frying. A concentration of less than 3-percent egg solids in batter mixtures may be desirable.

Report of the Food Investigation Board with the Report of the Director of Food Investigation for the Year 1955, 85 pp., printed, 4s. (56 U. S. cents). Her Majesty's Stationery Office, London, England, 1956. Contains, among others, a report concerning research work undertaken at the Torry Research Station, Aberdeen, and the Humber Laboratory, Hull. Discusses improvement in quality of iced white fish, freezing and cold storage, smoke curing, drying, fishery byproducts, bacteriology, and biochemistry. It mentions experiments with fish containers; electrostatic smoking of herring; smoke production and its control by means of a "fluidizer;" and the fact that the recording optical-density smokemeter (the Torry Smoke-

meter) is now being manufactured commercially. The report states that, "it is believed this instrument will have wider application than in the smoke-curing of foods."

Revue des Travaux de L'Institut des Peches Maritimes (Review of the Studies of the Marine Fisheries Institute), vol. XX, no. 2, June 1956, pp. 119-220, illus., printed in French. Institut Scientifique et Technique des Peches Maritimes, 59 Avenue Raymond-Poincare, Paris 16, France. Includes articles on the study of the scallop (*Chlamys varia* L.); acclimatization of the clam (*Venus mercenaria* L.) to Brittany; breeding of Portuguese oysters on rafts; and statistics on the French fisheries for 1954 by species and fishing area.

Scientists Stalk Oyster Killers, 16 pp., illus., printed. (Reprinted from The Humble Way, a publication of the Humble Oil & Refining Co.) Humble Oil & Refining Co., Houston, Texas. Presents a brief history of oyster mortalities in different parts of the world; a description of a Louisiana oyster operation; contrasts in marketing; and environment and enemies of oysters. Also describes oyster research work to determine whether or not oil operations would contribute to oyster mortality. After many years of hard work, scientists working independently of each other, and representing divergent interests, have proved that the real oyster killer is a parasitic fungus which flourishes under conditions found most of the year in Louisiana waters. Scientists found that parasite, studied its devastating effect on oysters, and agree that it is the major cause of oyster mortality in Louisiana.

"Some Effects of Specific Organic Compounds on Marine Organisms," by Albert Collier, Sammy Ray, and W. B. Wilson, article, Science, vol. 124, no. 3214, August 1956, p. 220, printed, single copy 25 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave., NW., Washington 5, D. C.

"Some Factors Affecting the Sodium Chloride Content of Haddock During Brine Freezing and Water Thawing," by J. Holston and S. R. Pottinger, article, Food Technology, vol. 8, no. 9, pp. 409-414, illus., printed, single copy \$1. The Garrard Press, 119 West Park Ave., Campaign, Ill.

"Spawning and Egg Production of Oysters and Clams," by H. C. Davis and P. E. Chanley, article, The Biological Bulletin, vol. 110, no. 2, April 1956, pp. 117-128, illus., printed, single copy \$2.50. Lancaster Press, Inc., Prince and Lemon Sts., Lancaster, Pa.

"Stranded Mammals of the Sea," article, The New York State Conservationist, vol. 11, no. 1, August-September 1956, pp. 4-5, illus., printed, single copy 50 cents. The Conservationist, Room 515, Arcade Bldg., Albany 1, N. Y.

Technical Report of Fishing Boat, No. 9, 232 pp., illus., printed in Japanese with brief English

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abstracts. Fishing Boat Laboratory, Production Division, Ministry of Agriculture and Forestry, Kasumigaseki, Chiyodaku, Tokyo, Japan, September 1956. Contains the following reports, with very brief abstracts in English, on various studies in progress at the Fishing Boat Laboratory: (1) "A Note of Fishing Boat Stability (Report No. 1. Medium Type Boat);" (2) "Study of Fish Hold Insulation Materials;" (3) "Wears of Cylinder of etc. Fishing Boat-IX (Effect on Temperature of Cooling Water No. 2);" (4) "Automatic Net-Height Meter Measuring Simultaneously Two Points of the Trawl Net, and Results of Experiments for these Apparatuses;" (5) "Study on Reflection Loss of Ultrasound Milimeter Wave on Fish-Body;" (6) "Study on Fish-Finder for Ground-Fish (Report No. 1 - Technical Examination and Experiment on Fish-Finder for Ground-Fish);" (7) "Study on Fish-Finder for Ground-Fish (Report No. 2 - Study on Finding of Ground-Fish by 50 kc. Fish-Finder);" (8) "Study on Fish-Finder for Ground-Fish (Report No. 3 - Study on Detection of Ground-Fish by 200 kc. Fish-Finder);" (9) "Study of DSL by Ultrasonic Wave (2);" (10) "Investigation of Sea-Noise;" and (11) "Study on Measurement of Under-Water Noises at Kurihama Bay." An appendix lists the reports published in the past, Nos. 1-8.

"Temperature Measurements on Frozen Fish During Road Transport," by D. L. Nichol and J. Lawrence, article, Modern Refrigeration, vol. LIX, no. 702, September 1956, pp. 316-319, illus., printed, 3s. (42 U.S. cents). Refrigeration House, Victoria Road, Woking Surrey, England. This paper is concerned with temperature measurements in a large road container operating under normal commercial conditions. The time/temperature relationship for the cold storage of white fish was established. Results of test indicate that a block of fish which has become heated from 0° F. to +15° F. over 24 hours, provided that it is returned to cold storage at 0° F. and cooled fairly rapidly, will only have suffered deterioration equivalent to about 3 days in storage. With the type of container described even this small deterioration represents the extreme case, that of the most exposed blocks during a journey in very hot weather. The effect upon the majority of the load will be very much less. With insulated containers of this type there is clearly no need to provide refrigeration in transit for journeys of up to 26 hours. The work, however, does indicate that if a refrigerated container were being designed (e. g. for longer journeys) it would be particularly necessary to provide cooling at the edges and corners of the load. Clearly the provision of refrigeration in the air spaces above the load whether by cooling coils or by the use of solid carbon dioxide would not be an efficient method of cooling the bottom edges and corners.

(Texas) Game and Fish Laws, 1955-1956, compiled by Erma Baker, 319 pp., printed. Game and Fish Commission, Austin, Texas, September 1, 1955. Contains the full text of the game, fish, and fur laws of Texas for 1955-1956.

Two of its chapters are devoted to the (1) fresh-water fishing laws and (2) salt-water and commercial fishing laws.

"Underwater Observations on Escallop (*Pecten maximus* L.) Beds," by R. H. Baird and F. A. Gibson, article, Journal of the Marine Biological Association of the United Kingdom, vol. 35, no. 3, October 1956, pp. 555-562, illus., printed, single copy US\$7. Cambridge University Press, 32 East 57th St., New York 22, N. Y. This article describes the equipment and methods used in underwater observations of scallop beds, and the movement and distribution of scallops, and it gives a comparison of catches by diving and dredging. The authors state that, "Present methods of dredge sampling of escallop beds are unsatisfactory where all age-groups require to be studied. Selectivity by the dredge is continued above the point that might reasonably be expected from mesh size and tooth spacing, the latter being the primary selecting agent. A dredge without teeth and with a fine mesh bag fills with sand and bottom material within a short distance. As the mean density of escallops is low, even on good commercial beds, this results in very small catches. Escallops of all age-groups are present together on the beds with a tendency towards very localized age grouping, which would not be apparent in dredge sampling. There is no evidence that migration from feeder beds occurs. There is little apparent escape reaction; the limited reactions seen occurred most often among 0- and 1-group escallops. Dredge efficiency is low, the Irish dredge used being on the bottom for only a part of the time that it was moving, progression occurring in a series of long shallow leaps. Conservation of stocks of escallops would be most effective if based on dredge-tooth spacing and size rather than on the size of mesh or rings forming the belly of the dredge."

Utilizing Stock Tanks and Farm Ponds for Fish, by Marion Toole, Bulletin 24, 53 pp., illus., printed. Game and Fish Commission, Austin, Texas.

White Fish Authority, Fifth Annual Report and Accounts for the Year Ended 31st March, 1956, 51 pp., printed, 2s. (28 U.S. cents). Her Majesty's Stationery Office, London, England. Presents a general description of the White Fish Authority, its functions, income, and expenditures. Sections on production of fishery products, marketing and distribution, research and experiments, training courses, and investigations are also presented.

The World's Best Fishin' Hole, by J. L. McHugh, 8 pp., illus., printed. (Reprinted from the Bulletin of the International Oceanographic Foundation, vol. 1, no. 2, May 1955.) The Marine Laboratory, University of Miami, 439 Anastasia Avenue, Coral Gables 34, Fla. Briefly discusses fishing in the Chesapeake Bay giving special emphasis to: decline in commercial landings of croaker and gray sea trout; value of the oyster industry; abundant seafoods;

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Virginia Fisheries Laboratory activities; oyster disease studies; blue crab spawning probe; causes of reduced shad and croaker catches; disappearance of the croaker; and ever-increasing sport fishery. The author states that "These are but a few of the fascinating problems the biologists have pledged themselves to solve. The quest will lead them to follow many trails. The answers should benefit not only Virginia, but may contribute to the welfare of the nation and the world. Whether or not it can honestly claim the title 'The world's best fishin' hole,' the Chesapeake is well on the way to getting the scientific attention it deserves."

World Sea Fisheries, by Robert Morgan, 307 pp., illus., printed. Pitman Publishing Corporation, 2 West 45th Street, New York 36, N. Y.; also London, England, 1956. This book describes the fisheries of the world on a rather comprehensive basis considering the scope of the subject and the fact there are only 292 pages of text. The limitation permits coverage of only the more important matters, with details left to the more specialized reports on the subject. The first of three sections--Physical Environment--discusses the physical conditions, the fisheries potential, the economically-important fish, and the coastal zones and their influence. The second--Techniques and their World Distribution--covers fishing methods and craft used in demersal fishing, processing and transportation, and fishing ports. The third--Fisheries of the World's Regions--handles the subject by continents and the more significant areas within them after setting up evaluating criteria. These include technical development in terms

of craft, gear, processing methods, degree of use of available resources, etc.; total production; and the importance of the fisheries to the domestic economy. The final chapter discusses future possibilities with respect to fish farming, international agreements, and improved catching, processing, and distributing techniques. An appendix brings summarized production by countries up through 1953, and there is a 13-page index. Sixteen halftone plates and 61 figures help to clarify the text, and most chapters end with a list of references to specialized reports.

--A. W. Anderson

TRADE LIST

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

Canneries--Japan, 16 pp. (October 1956). The canned foods industry of Japan consists of 450 canners, half of which specialize in canned marine products. The pack of canned foods included more than 9.9 million cases (48 cans) of canned marine products. Exports of canned marine products in 1955 amounted to 62,200 metric tons, valued at US\$45.7 million. The list includes all known canners at the time of publication, but is subject to change without notice. The name of the cannery, address, branch offices, products canned, annual production, and daily productive capacities are some of the data included in the list.



CORRECTION

In the July 1956 issue of Commercial Fisheries Review, page 109, the listing of the publication Laxfisket och Laxbestandet i Ostersjoomradet Under Senare Ar (The Salmon Catch and the Salmon Stock in the Baltic during Recent Years) incorrectly showed two authors. Only one author should have been shown: Dr. Gunnar Alm.



Editorial Assistant--Ruth V. Keefe

Illustrator--Gustaf T. Sundstrom

Compositors--Jean Zalevsky and Helen Joswick

Photograph Credits: Page 27 --Rex Gary Schmidt; page 32--Jack Schott; outside back cover--The Great Atlantic and Pacific Tea Company. Photographs on pages not mentioned were obtained from the Service's file and the photographers are unknown.