



## FISH AND WILDLIFE SERVICE PUBLICATIONS

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

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.  
 FL - FISHERY LEAFLETS.  
 SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
 SSR - FISH - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).  
 SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number            | Title  |
|-------------------|--|
| CFS-1267          | - Alabama Landings, November 1955, 2 pp.   |
| CFS-1270          | - New Jersey Landings, December 1955, 2 pp.  |
| CFS-1272          | - Frozen Fish Report, January 1956, 8 pp.  |
| CFS-1273          | - Massachusetts Landings, November 1955, 5 pp.   |
| CFS-1274          | - North Carolina Landings, December 1955, 2 pp.  |
| CFS-1277          | - Mississippi Landings, December 1955, 2 pp.   |
| CFS-1278          | - Fish Meal & Oil, January 1956, 2 pp.   |
| CFS-1279          | - New York Landings, December 1955, 4 pp.  |
| CFS-1280          | - Alabama Landings, December 1955, 2 pp.   |
| CFS-1284          | - Shrimp Landings, January 1956, 2 pp.   |
| CFS-1285          | - California Landings, October 1955, 4 pp.   |
| CFS-1288          | - North Carolina Landings, January 1956, 2 pp.   |
| CFS-1289          | - New Jersey Landings, January 1956, 2 pp.   |
| CFS-1299          | - Maine Landings, January 1956, 3 pp.  |
| FL - 432          | - Fishery Statistical Publications of the Fish & Wildlife Service, 20 pp.  |
| SL - 162          | - Firms Producing Fish Sticks, 1955 (Revised), 2 pp.   |
| SSR-Fish. No. 166 | - Studies on an Ichthyosporidium Infection in Fish: Transmission and Host Specificity, by Paul V. Gustafson and Robert R. Rucker, 10 pp., illus., processed, January 1956. |
| SSR-Fish. No. 167 | - Passage of Fission Products through the Skin of Tuna, by Walter A. Chipman, 9 pp., processed, February 1956.   |
| SSR-Fish. No. 168 | - Mid-Pacific Oceanography Part IX, Operation NORPAC, by J. W. McGary and T. S. Austin, 134 pp., illus., processed, January 1956.  |

Sep. No. 434 - Condition of the Middle Atlantic Pound-Net Fishery.

Sep. No. 435 - School Lunch Fish-Cookery Demonstrations in Oklahoma.

Sport Fishery Abstracts, vol. 1, no. 3, Abstracts 315-446, 52 pp. processed, January 1956.

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

Fishery Publication Index, 1920-54, Circular 36, 264 pp., processed, \$1.50, 1955. This index describes the publications of the United States Bureau of Fisheries from 1920 to 1940 and fishery publications of the Fish and Wildlife Service from 1940 to 1954. The index is in three parts: (1) A serial list of the numbers issued in each publication series; (2) an alphabetical index of authors; and (3) an alphabetical index of subjects. A description of each publication series is also presented.

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

Boston Fishery Products Monthly Summary, January 1956, 16 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Landings and ex-vessel prices 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 month indicated.

Boston Fishery Products Monthly Summary, February 1956, 16 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.)

California Fishery Products Monthly Summary, January 1956, 11 pp. Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. California cannery receipts of raw tuna and tunalike fish, sardines, herring, and squid; pack of canned tuna, mackerel, sardines, herring, anchovies, and squid; market fish receipts at San Pedro, Santa Monica, Eureka, and San Diego areas; United States imports of fishery products into California and Arizona; cold-storage freezings and holdings of fishery products; canned fish and frozen shrimp prices at the primary or wholesale level; for the month indicated.

California Fishery Products Monthly Summary, February 1956, 10 pp. Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.

(Chicago) January 1956 Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale 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.

(New York) Monthly Summary-December 1955 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Fish Market, 5 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.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, January 1956, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp landings, 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.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, February 1956, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.)

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, February 1956, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, P. O. Box 447, Hampton, Va.) Fisheries 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.

(Seattle) Monthly Summary - Fishery Products, February 1956, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 421 Bell St. Terminal, Seattle 1, Wash.) Includes landings and local receipts as reported by Seattle and Astoria (Oregon) wholesale dealers for the month indicated.

The Flounder and Industrial Fishery Project, Interim Report, 4 pp., illus., processed. (Available free from the U. S. Fishery Laboratory, Fish and Wildlife Service, Woods Hole, Mass.) A brief report on a study of the complex mixed industrial fishery at Pt. Judith, including information on the species composition of the industrial catch, catch in pounds per hour of industrial species, catch per hour of food fishes, and population data.

## 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.

Achievements of the Directorate of Fisheries, East Bengal in the Field of Fish Culture, 12 pp., illus., printed. Director of Fisheries, Government of East Bengal, Dacca, East Bengal, 1955.

Alabama Laws and Regulations Relating to Game, Fish, and Fur-Bearing Animals, Season 1954-1955, 146 pp., printed. Division of Game and Fish, Department of Conservation, Montgomery, Ala.

"Analysis of Phytoplankton Yields in Relation to Certain Physical and Chemical Factors of Lake Michigan," by Ruth E. Griffith, article, Ecology, vol. 36, no. 4, October 1955, pp. 543-552, illus., printed. Duke University Press, Box 6697, College Station, Durham, N. C.

British Columbia Catch Statistics, 1955 (By Area and Type of Gear), 137 pp., illus., processed. Department of Fisheries of Canada, 1110 West Georgia St., Vancouver 5, B.C. The fifth annual report of fish-catch statistics for British Columbia based on Departmental copies of sales slips that are completed by all commercial fish buyers operating within the Province. Statistics are presented by species, months, gear, and area. This report is intended as a factual statement of catch and no attempt is made to explain the strength or absence of various runs or catches. However, a review of certain economic, weather, and conservation factors that have a bearing on catch are enumerated.

Boletín Científico, vol. II (1955), 175 pp., illus., printed. Compania Administradora del Guano, Lima, Peru. Articles deal principally with oceanography off the Chilean and Peruvian coasts and Peru's guano birds. One article discusses age and growth of the anchoveta, a bait fish.

Bulletin Officiel D'Information du Conseil Supérieur de la Pêche, Number 22, October-December 1955, 106 pp., illus., printed in French. Conseil Supérieur de la Pêche, 1 Avenue de Lowendal, Paris, France.

(Canada) Eighth Annual Report of the Fisheries Prices Support Board for the Year 1954-55, 10 pp., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1955. Describes the Fisheries Prices Support Act; economic conditions of the British Columbia, Atlantic Coast, and fresh-water fisheries;

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price support programs for bloaters and Atlantic Coast salted codfish; and research and other activities of the Board.

"The Coelacanth," by Jacques Millot, article, Scientific American, vol. 193, no. 6, December 1955, pp. 34-39, illus., printed, single copy 50 cents. Scientific American, 2 West 45th St., New York 36, N. Y.

"The Collapse and Recovery of a Small Whitefish Fishery," by Richard B. Miller, article, Journal of the Fisheries Research Board of Canada, vol. 13, no. 1, January 1956, pp. 135-146, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

(East Pakistan) Fish Wealth of East Pakistan, by Nazir Ahmad, 27 pp., illus., printed. Directorate of Fisheries, Government of East Bengal, Dacca, East Bengal. Describes the inland and marine fisheries of the Province of East Pakistan, fish culture, types of craft and gear used in the various fisheries, conditions of fish markets in East Bengal, and preservation and curing of fish.

(East Pakistan) Report on the Fish and Fisheries of East Pakistan, by Nazir Ahmad, 16 pp., illus., printed. Director of Fisheries, Government of East Bengal, Dacca, East Bengal, 1955. This report (for official use only) describes briefly the fishery resources of East Bengal, fish culture, methods of capture, and fishery problems and their solution.

(Ecuador) Primer Censo Nacional de Pescadores, 1954 (First National Census of Fishermen), by Censo Agropecuario Nacional por Muestreo (Coordinating and Supervisory Commission of the National Agricultural Census), 180 pp., illus., processed. Direccion General de Estadística y Censos, Quito, Ecuador. The census of fishermen was prepared during 1954 and 1955 in cooperation with FAO experts and covers the entire seacoast of Ecuador, but excludes inland waters and the Galapagos Islands. Two basic questionnaires were used: (1) to ascertain information concerning fishing activities of individual families; and (2) to obtain information about species, prices, etc., within entire fishing communities. The results of the survey are summarized in 25 sets of tables and graphs, covering the number of family units engaged in fishing, types of vessels and implements used, time spent on expeditions, volume of catches, geographical distribution of "fishing zones," varieties of species found, seasonal variation in availability of each species, and sales in local and other markets. Figures are given by province, canton, and in some cases by community.

An Evaluation of Nine Types of Commercial Fishing Gear in Kentucky Lake, by Ellis R. Carter, article, Transactions of the Kentucky Academy of Science, vol. 15, no. 3, October 1954, pp. 56-80, printed. Kentucky Academy of Science, Lexington, Ky. During experimental use of nine types of commercial netting equipment, in

five representative areas of Kentucky Lake, 36 species of fish were taken, of which 15 were game and pan fishes, 16 were commercial species and 5 were forage and trashfishes. Of the nine types of equipment, hoop nets are easiest to use and took predominantly commercial species. Wing nets took more fish, numerically, than any other type, but the catch was 82.07 percent game and pan fishes. Any of the seven barrel-type nets used were more successful when constructed with two throats. Gill nets were inefficient in mesh sizes over 3 inches, and were selective for game fish in mesh sizes under 3 inches. Trammel nets were slightly more successful in taking commercial species. Wire baskets took the smallest fishes; however, 75.30 percent were game fish. Wood baskets produced the lowest average return per unit of effort, but harvested 79.5 percent commercial fishes. Heart-lead nets caught a greater total poundage and also more pounds per net day than any other type. Lead nets were the second most successful type. Both, however, were rather selective for game fishes, which comprised 84.94 and 68.8 percent, respectively, of the poundage take of these nets.

L'Evolution de la Peche a Saint-Jean-de-Luz (Development of the Fisheries of Saint-Jean-de-Luz), by F. Doumenge, 12 pp., illus., printed in French. Centre Regional de la Productivite et des Etudes Economiques, Montpellier, France, 1955.

Fish for More Fishermen, 51 pp., illus., printed. Michigan Department of Conservation, Lansing 26, Mich. Principally for sport fishermen.

"The Fish Population of a Spring-Fed Swamp in the Mississippi Bottoms of Southern Illinois," by Gerald E. Gunning and William M. Lewis, article, Ecology, vol. 36, no. 4, October 1955, pp. 552-558, illus., printed. Duke University Press, Box 6697, College Station, Durham, N. C.

(Florida) Semi-Annual Report, 15 November 1954 to 15 May 1955 (A Technical Report to The Office of Naval Research), by Ilmo Hela, Lansing P. Wagner, and Frank Chew, Report 55-27, 75 pp., illus., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., September 1955. This progress report covers the oceanographic work performed under contract Nonr 840(01), known as Tropical Oceanography, from November 15, 1954 to May 15, 1955.

Follow the Whale, by Ivan T. Sanderson, 423 pp., illus., printed, \$6. Little, Brown & Co., 34 Beacon St., Boston, Mass.

"Frozen Oysters," by Margaret L. Morton and W. J. Dyer, article, Journal of the Fisheries Research Board of Canada, vol. 13, no. 1, January 1956, pp. 47-51, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Quick-frozen freshly-shucked oysters stored at -10° F. (-23° C.) did not

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deteriorate significantly during a storage period of 9 months, as assessed by taste panels on the simmered oysters. Slow freezing and storage at higher temperatures resulted in a much greater loss in quality, and objectionable darkening occurred. Preparation as a stew largely masked this deterioration.

(Great Lakes) "The United States-Canadian Great Lakes Fisheries Convention," by Charles B. Selak, Jr., article, American Journal of International Law, vol. 50, no. 1, January 1956, pp. 122-129, printed. The American Society of International Law, Prince and Lemon Sts., Lancaster, Pa. Describes the organization and purpose of the United States-Canadian Great Lakes Fisheries Convention which was signed on September 10, 1954, and entered into force on the exchange of instruments of ratification on October 11, 1955. The purpose of this treaty is to secure through joint action the improvement of Great Lakes fisheries which are of common concern to the contracting parties, and eventually to bring these fisheries to a condition of maximum sustained productivity. Present fishery research on the Great Lakes is conducted by eleven separate agencies. The convention provides for the coordination of these efforts by one activity, the Great Lakes Fishery Commission, so that greater accomplishments can be made to eradicate the sea lamprey--the most serious known cause of the depletion of Great Lakes fisheries.

Grimsby--The World's Premier Fishing Port, 107 pp., illus., printed. Grimsby Trawler Owners' Association, Fish Dock Rd., Grimsby, England. A brief history of the fishing port of Grimsby and the years of development. Also includes chapters on the fishermen of Grimsby, Grimsby Trawler Owners' Association, the fishing industry and how it works, Grimsby processing techniques, sales by auction, ship repairing and engineering, ancillary trades, coal and oil bunkering, British cod-liver oil, the work of the White Fish Authority, scientific research, white-fish meal, training schemes, fish facts, and a plan of the docks at Grimsby.

Gulf States Marine Fisheries Commission Sixth Annual Report 1954-55 (to the Congress of the United States and to the Governors and Legislators of Alabama, Florida, Louisiana, Mississippi, and Texas), 23 pp., printed. Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans 16, La. Contains the Commission's activities for the period October 1954-October 1955, with a summary of the principal decisions reached at the two regular sessions. Summarizes the principal activities and plans of the marine fishery administrations of the Gulf States in the interest of bringing about the proper utilization of the fishery resources. Included are short discussions of the U. S. Fish and Wildlife Service activities in technological and biological research and exploratory fishing in the Gulf area. A financial report of the Commission is included.

(International Council for Exploration of the Sea) Report of the Forty-third Meeting of the Council,

21 pp., printed. Conseil Permanent International Pour L'Exploration de la Mer, Charlottenlund Slot, Denmark, January 1956. An official report of the 43rd meeting of the International Council for the Exploration of the Sea, which was held in Copenhagen in October-November 1955.

(Iran) Basic Data on the Economy of Iran, Part I, Economic Report No. 55-108, 7 pp., printed, 10¢. Bureau of Foreign Commerce, World Trade Information Service, Washington, D. C. (For sale at the U. S. Government Printing Office, Washington 25, D. C., or the U. S. Department of Commerce Field Offices).

Lake Victoria Fisheries Service Annual Report, 1954/55 (covering the period January 1954 to July 1955), by J. D. Kelsall, 53 pp., illus., printed. East Africa High Commission, Nairobi, Kenya, 1955.

The Life in the Sea, by Ralph Buchsbaum, 101 pp., printed, \$1.50. University of Oregon Press, Eugene, Oregon, 1955.

"The Limits of Swedish Territorial Waters," by Torsten Gihl, article, American Journal of International Law, vol. 50, no. 1, January 1956, pp. 120-122, printed. The American Society of International Law, Prince and Lemon Sts., Lancaster, Pa. The author comments on an article entitled "Historical Origins of the Three-Mile Limit," which appeared in vol. 48 of the American Journal of International Law (1954). He states, that "the history of the limits of Swedish territorial waters may be summarized as follows: (a) Originally the limit was defined by the range of vision; (b) In 1758 this limit was replaced by one of 12 or 18 nautical miles, which was considered equivalent to the range of vision; (c) For this limit was substituted in 1779 a four-mile limit, which has been retained ever since and is still in force. In Anglo-Saxon literature a breadth of territorial waters exceeding three nautical miles is sometimes regarded as an (possibly illegitimate) 'extension' of territorial waters beyond the three-mile limit that is characterized as normal. It may therefore be pointed out that the Swedish four-mile limit was in actual fact a reduction of the breadth of territorial waters that had formerly been in force. The Swedish four-mile limit is presumably of earlier date than any three-mile limit that has been officially fixed in any state."

"The Lipids of Fish: 6. The Lipids of Cod Flesh," by M. Dolores Garcia, J. A. Lovren, and June Olley, article, The Biochemical Journal, vol. 62, no. 1, January 1956, pp. 99-107, printed, 20s. (US\$3.25) net per issue. Cambridge University Press, London, N.W. 1, England.

"The Lipids of Fish: 7. Phosphate Esters in the Lipids of Haddock and Cod Flesh," by June Olley, article, The Biochemical Journal, vol. 62, no. 1, January 1956, pp. 107-114, printed 20s. (US\$3.25) net per issue. Cambridge University Press, London, N.W. 1, England.

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"Multiple Use of Salmon Rivers," article, Trade News, vol. 8, no 7, January 1956, pp. 10-11, 13, illus., printed. Department of Fisheries, Ottawa, Canada. Discusses the effects suggested power development in British Columbia would have on the fisheries. According to the article, "Even the most general survey indicates that in the full development of the Fraser for power as it is presently suggested and in spite of the provision of the best modern fish protection facilities, it is evident that: (1) the construction of a storage dam at the outlet of Babine Lake would practically destroy a valuable segment of the Skeena River sockeye fishery; and (2) the construction of four power dams on the main Fraser and six on the Thompson River would preclude the preservation and extension of the salmon and steelhead runs which normally proceed to areas above these dams. This conclusion is reached on the basis of the mortality to seaward migrant young salmon at a series of dams and of the delays in migration caused to the adults. In addition, the proposed development would create may other problems in relation to spawning grounds, stream and lake temperatures and general ecology, and fry migrations, which could seriously interfere with the maintenance of the fishery."

"Mortality of Oysters and Abundance of Certain Associates as Related to Salinity," by Gordon Gunter, article, Ecology, vol. 36, no. 4, October 1955, pp. 601-605, printed. Duke University Press, Box 6697, College Station, Durham, N. C.

"On the Methods Used by the Starfish (Pisaster ochraceus) in Opening Three Types of Bivalve Molluscs," by Howard M. Feder, article, Ecology, vol. 36, no. 4, October 1955, pp. 764-767, printed. Duke University Press, Box 6697, College Station, Durham, N. C.

The Philippine Journal of Fisheries, vol. 3, no. 1, January-June 1955, 96 pp., illus., printed. Office of Agricultural Information, Department of Agriculture and Natural Resources, Manila, Philippines, 1955. Contains the following articles: "The Basnig, a Bag Net for Pelagic Fishing in the Philippines," by Santos B. Rasalan and D. V. Villadolid; "A Preliminary Study on the Preservative Action of Furasukin and Mild Heat in Canning Bangos (Chanos chanos)," by Olympia B. Navarro and Jose I. Sulit; "Studies on the Preparation of Salted Fish Paste (Bagoong) from Dried Dilis (Stolephorus indicus)," by Claro Martin and Jose I. Sulit; "Studies on the Extraction of Alginic Acid from Some Species of Philippine Sargassum," by Jose I. Sulit and Regina C. San Juan; "A Report on the O:N:P: Ratios of Philippine and Adjacent Waters," by Teodoro G. Megia and Ricardo G. Lao; and "The Abuyan, an Improved Type of Goby Fishing Gear, used in Laguna de Bay, with Notes on the Composition of the Commercial Catches," by Santiago R. Capco and Porfirio R. Manacop.

Progress Report on the Economic Survey of Salmon Fishermen in British Columbia, 1953 and

1954, 6 pp., processed. Department of Fisheries, Ottawa, Canada, December 1955. Presents the major findings of surveys conducted by the Department of Fisheries on the economic activities of salmon fishermen in British Columbia for 1953 and 1954.

A Report of the Field Investigation on Poisonous and Venomous Fishes of Cocos and Galapagos Islands, by F. Douglas Horton and Chester C. Lindt, 13 pp., processed. School of Tropical and Preventive Medicine, College of Medical Evangelists, Loma Linda, Calif.

"A Resting Stage Without Encystment in the Annual Cycle of the Freshwater Copepod Cyclops strenuus strenuus," by Kaare Elgmork, article, Ecology, vol. 36, no. 4, October 1955, pp. 739-743, illus., printed. Duke University Press, Box 6697, College Station, Durham, N. C.

The Silver Mullet Fishery in South Florida, by H. P. Mefford, Report 55-34, 15 pp., illus., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., December 1955. The Florida regulations on mullet fishing refer generally to the black mullet, Mugil cephalus, and no separate consideration is given in them to the silver mullet. Considering the differences in the biology of the silver mullet and the black mullet separate regulations were considered as possibly necessary. An investigation was undertaken in order to consider the necessity of regulations for the silver mullet fishery, either those now applying to black mullet or separate regulations. Additional objectives were to describe the fishery, to define the spawning period, the size at maturity, the composition of the catch, and to outline the economic aspects of the fishery. According to the author, "Landings of silver mullet have steadily decreased since 1951. Production seems to be controlled mainly by market demand. Over 95 percent of the silver mullet production comes from south Florida. As in the black mullet fishery, gill nets and seines are the principal gears used to catch silver mullet. Three species of silver mullet, Mugil curema Cuvier and Valenciennes, Mugil trichodon Poey, and Mugil gaimardianus Desmarest are caught in Florida. The peak spawning period for Mugil curema is April through June. At a size of 225 mm. (8 $\frac{1}{2}$  inches), 75 percent of the fish examined were mature. Of 1,786 fish examined, 51.4 percent were females and 48.6 percent males. At present there appears to be no necessity for the regulation of the silver mullet fishery either by the use of closed seasons or by minimum size mesh regulations. Regulations restricting the fishing for black mullet (Mugil cephalus) should specifically exclude silver mullet from these restrictions."

Sixth Annual Report of the Commonwealth Scientific and Industrial Research Organization for the Year Ending 30th June 1954, 179 pp., printed. Government Printing Office, Canberra, Australia, 1954.

"Spawning of the Sardine at a Definite Time of Day," by T. Gamulin and J. Hure, article, Nature,

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vol. 177, no. 4500, January 28, 1956, pp. 193-194, illus., printed. MacMillan & Co., Ltd., St. Martin's St., London, W.C. 2, England.

"Spoilage of Fish in the Vessels at Sea: 2. Treatment on the Deck and in the Hold," by C. H. Castell, W. A. MacCallum, and H. E. Power, article, Journal of the Fisheries Research Board of Canada, vol. 13, no. 1, January 1956, pp. 21-39, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. A study was made of some of the factors affecting the spoilage rate of fish in the trawlers at sea. It was found that two conditions were major causes of accelerated spoilage: (1) Treatments that resulted in very heavy initial contamination such as storing the fish directly against the slimy wooden pen boards; and (2) Treatments that resulted in a rise in the temperature of the fish. This latter may be a larger increase in temperature for a short period, such as exposure of the fish on the deck during warm summer weather, or a smaller increase over a longer period, such as results from inadequate or inefficient icing. Other types of carelessness and unsanitary conditions did not have any significant effect on the fish until at least 6 or 7 days, as long as they were well iced during the subsequent storage period in the hold.

"Storage of Frozen Plaice Fillets," by W. J. Dyer and Margaret L. Morton, article, Journal of the Fisheries Research Board of Canada, vol. 13, no. 1, January 1956, pp. 129-134, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Taste panel assessments of taste, texture, and grade, and estimations of soluble actomyosin and of fat spoilage on plaice fillets after frozen storage at +10° F. (-12° C.) are reported. The plaice became unpalatable at 6 to 7 months as compared with 2 to 3 months for cod and about 8 months for Atlantic halibut at +10° F. Ascorbic acid was not effective in preventing lipid deterioration. A relationship between protein denaturation and the lipid content of the fish and its deterioration is suggested.

A Summer Study of the Biology and Ecology of East Bay, Texas. Part I. Introduction, Description of Area, Methods, Some Aspects of the Fish Community, the Invertebrate Fauna, by George K. Reid, Jr., 29 pp., illus., printed. (Reprinted from The Texas Journal of Science, vol. VII, no. 3, September, 1955, pp. 316-343.) Texas Game & Fish Commission, Austin 14, Tex.

A Summer Study of the Biology and Ecology of East Bay, Texas. Part II. The Fish Fauna of East Bay, The Gulf Beach, and Summary, by George K. Reid, Jr., 25 pp., printed. (Reprinted from The Texas Journal of Science, vol. VII, no. 4, December 1955, pp. 430-453.) Texas Game & Fish Commission, Austin 14, Tex.

Symposium on Marine and Fresh-Water Plankton in the Indo-Pacific (Held at Bangkok, Thailand, 25-26 January 1954), 111 pp., printed, \$1. Indo-Pacific Fisheries Council, Bangkok, Thailand, 1954.

Technical Report of Fishing Boat, No. 6, 149 pp., illus., printed in Japanese with brief English abstracts. Fishing Boat Laboratory, Production Division, Fisheries Agency, Ministry of Agriculture and Forestry, Kasumigaseki, Chiyodaku, Tokyo, Japan, March 1955. Contains the following reports, with very brief abstracts in English, on various studies in progress at the Fishing Boat Laboratory: (1) "Experimental Results of Model Test and Actual Ship's Trial of the 'Seiwa-maru';" (2) "Strength Test of Laminated Beam Knees;" (3) "Wears of Cylinder, etc., of Fishing Boat Engine--V;" (4) "Automatic Net-Height Meter and Automatic Ground Rope Indicator for Trawler and Results of Experiments for these Apparatuses;" (5) "Propagation Characteristics of High Frequency Ultrasonics in Sea Water;" (6) "Reliability of Record for the Shape of Sea Bottom Obtained by Ultrasonic Echo-Sounder;" and (7) "Ultrasonic Reflection Loss of Fish Shoal and Characteristics of the Reflected Wave." An appendix lists the reports published in the past, Nos. 1-5.

(United Kingdom) Herring Industry Board, 20th Annual Report for the Year Ended 31st December 1954, Cmd. 9492, 40 pp., printed. Her Majesty's Stationery Office, London, England, 1955.

The Use of a Portable Depth Recorder for Locating Fish, by George F. Arata, Jr., Technical Series No. 15, 19 pp., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla., November 1955. A detailed description of the revised Bendix Model DR-10E-1 depth recorder is presented. A description of an outboard "fish" for towing the transducer is given. The results of this method of transducer mounting proved very satisfactory. Mechanical problems involving commutator interference are discussed. The recommended changes provided a model without serious operational disorders. Figures of traces positively identified as coming from the following species of fish are shown: Spanish mackerel (Scomberomorus maculatus), kingfish (Scomberomorus cavalla), bluefish (Pomatomus saltatrix), and barracuda (Sphyræna barracuda). Circumstantial evidence points to the following species also being responsible for traces: red grouper (Epenephelus morio), black grouper (Mycteroperca bonaci), and mutton snapper (Lutainus analis). The advantages of using this gear in sportfishing are explained. The author states that "It is also likely that the depth recorder could be very useful in the commercial fishery, where it could probably save time and money and allow more efficient utilization of fishing effort."

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

## 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 mimeographed 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 each.

Oils (Animal, Fish and Vegetable) - Importers, Dealers, Producers, Refiners, and Exporters-- Israel, 7 pages (February 1956). Lists the name and address, size of firm, and products handled by each firm. Includes a brief summary on 1954 domestic production and consumption from agricultural sources only and the 1954 imports of animal, fish, and vegetable oils. The total imports of fish-liver oils in 1954 was 250 metric tons, valued at US\$200,304.



## SQUID AND OCTOPUS AS FOOD

Squid are prized as food in some countries, especially those around the Mediterranean Sea. They are eaten only in relatively small quantities in this country. These animals are one of the most underexploited resources from the sea, for the reason that most people are too squeamish to eat such odd-looking creatures. They have an excellent flavor, tasting a little like clams, so their consumption will probably increase through the years. The Marine Laboratory of the University of Miami is doing research on squid and octopuses, and there is squid research going on in California as well. However, considering their potential value, very little work is in progress on these animals.

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

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