

FISH AND WILDLIFE SERVICE PUBLICATIONS

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- 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-1104	- Alabama Landings, Dec. 1954, 2 pp.
CFS-1113	- Rhode Island Landings, 1954, By Gear and Months, 7 pp.
CFS-1150	- Mississippi Landings, March 1955, 2 pp.
CFS-1151	- Mississippi Landings, April 1955, 2 pp.
CFS-1152	- Alabama Landings, March 1955, 2 pp.
CFS-1126	- Mississippi Landings, February 1955, 2 pp.
CFS-1138	- Alabama Landings, January 1955, 2 pp.
CFS-1139	- Alabama Landings, February 1955, 2 pp.
CFS-1140	- New York Landings, March 1955, 4 pp.
CFS-1143	- Frozen Fish Report, April 1955, 8 pp.
CFS-1147	- Rhode Island Landings, March 1955, 3 pp.
CFS-1148	- Massachusetts Landings, February 1955, 5 pp.
CFS-1149	- Meal and Oil, April 1955, 2 pp.
CFS-1153	- Chesapeake Fisheries, 1953 Annual Summary, 6 pp.
CFS-1155	- Frozen Fish Report, May 1955, 8 pp.
CFS-1157	- Maine Landings, April 1955, 4 pp.
FL - 254	- List of Fishery Assns. in the United States, Alaska and Hawaii (Revised May 1955), 12 pp.
FL - 292	- List of Fishery Cooperatives in the United States and Alaska (Revised June 1955), 5 pp.
FL - 422	- Consumer Preferences for Breaded Shrimp and Fish Sticks, 16 pp.
SL - 6	- Wholesale Dealers in Fishery Products, N. Y. Coastal Area (Revised), 11 pp.

FIRMS CANNING (Revised):

- SL - 101 - Salmon, 1954, 3 pp.
 SL - 102 - Maine Sardines, 1954, 1 p.
 SL -102A - California Sardines, 1954, 1 p.
 SL - 104 - Mackerel, 1 p.
 SL - 108 - Salmon Eggs for Bait, 1954, 1 p.
 SL - 110 - Oysters, 1954, 2 pp.
 SL - 111 - Clam Products, 2 pp.
 SL - 113 - Crab Meat, 1954, 2 pp.

FIRMS CANNING (Revised) (Contd.):

- SL - 116 - Food for Animals, from Marine-Animal Products, 1954, 2 pp.
 SL - 120 - Anchovies, 1954, 1 p.

FIRMS MANUFACTURING:

- SL - 151 - Fish Meal, Scrap, Body & Liver Oils, 1954, 8 pp.
 SL - 155 - Marine Pearl Shell Buttons, 1954, 1 p.
 SL - 161 - Producers of Packaged Fish, 1954, 6 pp.

SSR-Fish. No. 145 - Contribution to Knowledge of fishes from Bering and Chukchi Seas, by Anatoly P. Andriashev, translated by Lisa Lanz and Norman J. Wilimovsky, 84 pp., illus., processed, May 1955. This is a translation of a paper, first published in a Russian journal in 1937, based on an experimental fisheries survey in Bering and Chukchi Sea waters by the Soviet Government during 1932-33. Since World War II there has been a renewed interest in the resources of Northern regions. Surveys and inventories of our natural resources have been inaugurated under the auspices of several agencies and governmental departments. However, in the case of Alaska, research on the fish fauna by our government has almost all been concerned with commercial fishes as salmon, halibut, and cod. The U. S. Bureau of Fisheries research vessel Albatross conducted the last general ichthyological survey in the Bering Sea shortly after the turn of the century.

SSR-Fish. No. 146 - Oxygen Requirements of Some Hawaiian Tuna Baitfish, by Austin Pritchard, 34 pp., illus., processed, May 1955.

SSR-Fish. No. 148 - Critical Review of Biology and Control of Oyster Drills Urosalpinx and Eupleura by Melbourne Romaine Carriker, 156 pp., processed, April 1955.

Freezing Fish at Sea--New England:

Sep. No. 405 - Part 9 - Improvements in the Brine-Freezing mechanism on the Trawler Delaware.
 Sep. No. 406 - Part 10 - Studies of Miscellaneous Handling Problems.

Sep. No. 407 - Packaging Frozen Fish in Tin Results in Superior Storage Life.

Sep. No. 408 - Technical Note No. 32 - Freezing rates and Energy Requirements for Freezing Packaged Fish Fillets and Fish Sticks in a Multiplate-Compression Freezer.

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.

Algunos Aspectos de la Dinamica de las Poblaciones y su Importancia para la Administracion de Pesquerias Marinas Comerciales, by Milner B. Schaefer, Bulletin vol. 1, no. 3, pp. 59-88, illus., printed in Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1955. (The English version was published in Bulletin vol. 1, no. 2.)

Australian Journal of Marine and Freshwater Research, vol. 6, no. 1, February 1955, 151 pp., illus., printed, single copy 7s. 6d. (85 U.S. cents). Australian Journal of Marine and Freshwater Research, Commonwealth Scientific and Industrial Research Organization, East Melbourne, C.2, Victoria. Includes, among others, these articles: "Aspects of Reproduction in the Male Humpback Whale, Megaptera nodosa (Bonnaterre)," by R. G. Chittleborough; "Eggs and Larvae of the Sabre-Toothed Oyster Blenny, Dusson steadyi (Whitley)," by I. S. R. Munro; "A Revision of the Australian Pearl-Shells, Genus Pinetada (Lamellibranchia)," by J. S. Hynd.

British Columbia Catch Statistics, 1954 (By Area and Type of Gear), 139 pp., illus., processed. Department of Fisheries of Canada, Pacific Area, Vancouver 5, B. C. (Limited distribution.) An annual summary 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.

(California) Forty-Third Biennial Report of the Department of Fish and Game for the Years 1952-1954, 96 pp., illus., printed. California Department of Fish and Game, Sacramento 14, Calif., Nov. 1954. This report covers the period during which the Department put into effect the decentralized reorganization plan established by the Legislature on June 1, 1951, and the transfer of headquarters from San Francisco to Sacramento, to create a more efficient operating agency. In addition, the report reviews the activities and plans of the Wildlife Conservation Board, the Marine Research Committee, and the various branches of the Department in fostering the conservation and wise uses of California's wildlife resources. A summary of important policy decisions of the Fish and Game Commission and important new legislation affecting fish and game also is included. Among the reports included, that of the Marine Fisheries Branch discusses the commercial fisheries of California--sardine, live-bait, tuna, salmon, jack mackerel, anchovy, Pacific mackerel, clam, abalone, crab, oyster, bottom fish, and shrimp. Also reviewed are the surf-fishing investigations; the work of California's research vessels; fish screen and ladder program; seismic explorations; and the work of the Pacific Marine Fisheries Commission, the statistical unit of the Branch, and the

Marine Research Committee. Fisheries statistics are included in an appendix--total production of fishery products; landings (quantity and value) by species; status of the commercial fishing fleet by ports; and number of licensed commercial fishermen.

The Canadian Commercial Fisheries of the Great Lakes, Basebook of Fishery Statistics--No. 2, 220 pp., illus., processed. Department of Fisheries of Canada, Ottawa, May 1955. This is the second of a series of Basebooks presenting statistical information on the Canadian fisheries. The purpose of the series is to make available compilations, analyses, and other information of general use to those interested in the fishing industry, which have not heretofore been conveniently accessible. The publication of this Basebook results from the need for a collection of information in one volume on the commercial fisheries in the Canadian part of the Great Lakes. The Great Lakes fisheries are the subject of an International Convention now under process of ratification by the Governments of Canada and the United States. The Basebook is intended to serve as a reference volume for legislators and as a source of material for administrators, scientists, and the fishing industry generally. The present volume deals with the quantity and value of fish landed on the Canadian side of the Great Lakes, the fishing craft and equipment used, and certain other categories of economic information pertaining to these fisheries. Some geographic information has also been included. The landings series covers the period 1867-1953 and has been broken down by species and by lakes. Charts have been drawn for all but the very minor species and all species have been shown in tabular form wherever possible. Data on such species as muskellunge and black bass, which were taken during the early years, have not been included but the records are available in this office. The landed-value series covers a short period, 1945-53. Records were not available on the same basis, i. e. by species and by lake, prior to this period. This information is presented in tabular form only. The data on fishing craft and equipment used in the fisheries are presented in tabular form for the period 1920-53, by lakes. Other information contained in this volume includes maps and tables dealing with the distribution of fishing enterprises, of fishermen (classified in rather broad income groups), of commercial fishing licenses by type of license and of the fish packing and processing industry with an indication of the extent of its operations. The geographic information includes maps and data on the drainage basins, lake profiles, depth contours, lake levels, surface area, volume, mean outflow, and shoreline length.

Echo Sounding Experiments on Fish, by D. H. Cushing and I. D. Richardson, Fishery Investigations Series II, vol. XVIII, no. 4, 38 pp., illus., printed, 5s. 6d. (80 U. S. cents). Her Majesty's Stationery Office, London, England, 1955. Part I of this report discusses the problem, methods, and treatment of results of echo-sounding experiments on fish conducted by the Ministry of Agriculture and Fisheries. Part II discusses the results of the experiments.

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Fluctuations in Production and Abundance of Commercial Species in the Red Lakes, Minnesota, with Special Reference to Changes in the Wall-eye Population, by Lloyd L. Smith, Jr. and Laurits W. Krefling, Paper No. 3136 - Scientific Journal Series, 30 pp., illus., printed. (Reprinted from Transactions of the American Fisheries Society, vol. 83, 1953, pp. 131-160.) Minnesota Agricultural Experiment Station, St. Paul 1, Minn.

(FAO) Operations Report, May 27, 1955, FY 1955, Issue No. 3, 101 pp., illus., processed. Statistics and Reports Division, Office of Research, Statistics and Reports, Foreign Operations Administration, Washington 25, D. C. In addition to the usual tables and data, discusses the technical cooperation program.

"The Free Amino Acids of Fish. 1-Methylhistidine and B-Alanine Liberation by Skeletal Muscle Anserinase of Codling (*Gadus callarias*)," by N. R. Jones, article, The Biochemical Journal, vol. 60, no. 1, May 1955, pp. 81-87, illus., printed, single copy \$3.50. Cambridge University Press American Branch, 32 East 57th Street, New York 22, N. Y.

"From Canadian Waters to Foreign Tables," by T. R. Kinsella, article, Foreign Trade, vol. 103, no. 5, March 5, 1955, pp. 12-14, illus., printed, single copy 20 cents. The Queen's Printer, Government Printing Bureau, Ottawa, Canada. A brief review of Canada's fishing industry for 1954, with special reference to fisheries exports and the market outlook. Statistics cover the value of exports by species and by countries for 1950-54.

Georgia Fish Pond Management, 107 pp., illus., printed. State Game and Fish Commission, Atlanta 3, Ga.

A History of Fish and Fishing in the Upper Mississippi River, by Harriet Bell Carlander, 96 pp., illus., printed. A publication sponsored by the Upper Mississippi River Conservation Committee, 1954. A study of the historical background of the upper Mississippi River in relation to fish and fishing, both sport and commercial. For the purpose of this study, the Upper Mississippi River is defined as that part of the river which is between St. Paul, Minnesota, and Caruthersville, Missouri, a distance of 951 miles. For most of the distance it marks the boundary between Minnesota and Wisconsin, Wisconsin and Iowa and Illinois, and Illinois and Missouri. Contains chapters on the early history of the Mississippi River fisheries; changes in the River; fish propagation and rescue work; mussel fishing and the pearl button industry; the Fairport Biological Station; commercial fishing; sport fishing; and legislation and interstate cooperation.

(India) Report on the Activities of the Ministry of Food and Agriculture, during 1954, 68 pp., printed. Ministry of Food and Agriculture, New Delhi, India. A brief review of the activities of the Indian Ministry of Food and Agriculture during 1954, including, among others, sections on fisheries research and development in India.

"The International Law Commission's 1954 Report on the Regime of the Territorial Sea," by Philip C. Jessup, article, American Journal of International Law, vol. 49, no. 2, April 1955, pp. 221-229, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. Comments on the Report of the International Law Commission on the Regime of the Territorial Sea. The "Provisional Articles" are divided into three chapters: Chapter I, "General;" Chapter II, "Limits of the Territorial Sea;" Chapter III, "Rights of Passage."

Investigation of Sport and Commercial Fishery Activities in Old Tampa Bay North of Gandy Bridge, by James B. Higman and Robert Ellis, Report 55-20, 6 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., April 1955. A report on the results of a survey conducted by the Marine Laboratory of the University of Miami for the Florida State Board of Conservation, dealing with sport and commercial fishery activities in Old Tampa Bay north of Gandy Bridge and the effect of closing Old Tampa Bay to all net fishing except cast netting.

(Japan) Annual Report on Statistics of Marine Fishery Catches and Culture in Shallow Sea, Jan.-Dec. 1953, Agriculture, Forestry and Fishery Statistics Data No. 56, 505 pp., illus., printed in Japanese and English. Statistics and Survey Division, Ministry of Agriculture and Forestry, Tokyo, Japan, November 1954. This report contains catch statistics of the marine fisheries of Japan and culture in the shallow sea for 1953. A general description of the survey methods and explanation of each statistical table are presented. Statistics are given by fish species and prefecture; type of fishery and prefecture; type of fishery and fish species; type of fishery, stratum, and prefecture; number of boats operated in fishing, number of trips, and catch by stratum and prefecture; and culture in shallow sea by prefecture. Appendices cover a summary of catches by fisheries and aquaculture; whaling; North Pacific Ocean fishing; tuna fishing in the South Pacific Ocean; pearling in Arafura Sea; and South China Sea fishing. Illustrations of the principal species of fish in Japan with English and scientific names are also included.

(Maine) 18th Biennial Report, Department of Sea and Shore Fisheries (For Period July 1, 1952 to June 30, 1954), 43 pp., illus., printed. Department of Sea and Shore Fisheries, Augusta, Maine. This report covers the organization and major duties and functions of the Department for the two years ending June 30, 1954. A review of some of the highlights of this period and reports from the following departmental divisions are presented: Law Enforcement; Statistics; Boothbay Harbor Station; and Research. Also presented are progress reports on the soft-shell clam and quahog management investigations; the anadromous fishery program; lobster studies; and oil-pollution studies.

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Morphometric Comparison of Yellowfin Tuna From Southeast Polynesia, Central America, and Hawaii, by Milner B. Schaefer, *Bulletin* vol. 1, no. 4, pp. 91-136, illus., printed in English and Spanish. Inter-American Tropical Tuna Commission, La Jolla, Calif., 1955.

Natural History of the American Shad in Maryland Waters, Supplement no. 4, 2 pp., illus., printed. (Extract from Maryland Tidewater News, vol. 11, no. 11, April 1955.) Chesapeake Biological Laboratory, Maryland Department of Research and Education, Solomons, Md.

Observations on the Live Bait Shrimp Industry of Pasco and Pinellas Counties, Florida, by James B. Higman, Report 55-16, 5 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., April 1955. A report to the Florida State Board of Conservation covering an investigation of reported damage to trout grounds near New Port Richey, allegedly caused by bait-shrimp trawling.

The Osteology and Phylogenetic Relationships of the Blackfin Tuna, THUNNUS ATLANTICUS (Lesson), by Donald P. DeSylva, Contribution No. 140, 41 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 5, no. 1, March 1955, pp. 1-41.) Marine Laboratory, University of Miami, Coral Gables, Fla.

"The Oyster's Messmate," by Romeo Mansueti, article, Nature Magazine, vol. 48, no. 3, March 1955, pp. 125-127, 162, illus., printed, single copy 50 cents. American Nature Association, 1214 16 St. NW., Washington, D. C. A description of the oyster crab, Pinnotheres ostreum, a small crustacean that lives inside the shell of some live oysters. For many years the oyster crab was regarded as a "commensal," that is, a messmate or partner, one that does not harm or was not harmed. Recent investigations have shown that, when numerous, the crabs can cause serious damage to oysters. Oysters rarely contain more than one adult crab, the size of a lima bean, but as many as 200 or more of the tiny, ticklike, early-stage oyster crabs can be found in heavily infested individual oysters.

A Partial Bibliography of Fish Eggs, Larvae and Juveniles, with Particular Reference to Migratory and Estuarine Species of the Atlantic Coast and Supplemented by a Check List and References to the Early Development of the Fishes and Fish-Like Chordates of Maryland Waters, by Romeo Mansueti, 58 pp., processed. Maryland Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md., August 1954.

A Plan For Indian Fishing Industry, by U. Shanker Rao, *Indian Nautical Literature (Fishery Series)*, 7 pp., illus., printed. (Reprinted from Indian Finance.) U. Shanker Rao, 25A, Palit Street, Ballygunge, Calcutta-19, India.

Proceedings Symposium on Cured and Frozen Fish Technology, SIK-Publication no. 100, November 1953, 196 pp., illus., processed. Swedish Institute for Food Preservation Research, Goteborg, Sweden, 1954. A collection of papers on cured and frozen fish technology: "Recent Investigations on Protein Breakdown," by A. Tiselius; "A Review of the Microbiology of Frozen and Cured Fishery Products," by J. M. Shewan; "Norwegian Studies on the Bacteriology of Semi-preserved Herrings," by Sverre Hjorth-Hansen; "Changes in Dutch Salted Matjesherring During Storage and Spoilage," by A. F. M. G. Luijpen; "The Bacterial Flora of Fresh Fish and Its Technological Implications," by H. L. A. Tarr; "Quelques Problemes D'Ordre Microbiologique Dans Les Semi-Conserves de Viande," by R. Buttiaux; "Main Problems of Fish Protein Denaturation," by W. J. Dyer; "The Characteristics of Fish Muscle Proteins," by G. Hamoir; "Vorschlag zur Einfuhrung eines neuen Stickstoff-Faktors zur Berechnung des Proteingehalts vom essbaren Anteil des Herings," by Dr.-Ing. Rudolf Dietrich; "Investigations on the Unsaturated Acids of Fish Fat," by Olav Notevarp, Arnvind Roald, Per Sletnes and Sigvard Nordli; "Experiments on Fat Stabilization by Ascorbic Acid with Two Herring Biotypes (Fladen and Iceland)," by Reinhard Marcuse; "Uber den Fett- und Wassergehalt im Herring," by Dr. C. -H. Brandes; "Experimental View-points on Ropiness of Fish Brine," by Gosta Lindeberg; "Freezing Fish at Sea," by Harris W. Magnusson; "Recent Development in Fish-Freezing Technique and Pending Scientific Problems," by Eirik Heen; "The Scientific Foundation of Sanitary Control of Frozen and Cured Fish Products," by Hans Riemann; "To What Extent Does Fish Flesh Break Down Through Autolysis?," by W. Partmann; "Present Status of Fish Processing by Electronic Irradiation at the Massachusetts Institute of Technology," by John T. R. Nickerson and Bernard E. Proctor.

Produccion y Fluctuacion de las Pesquerias (Fisheries Production and Fluctuation), by Valentin Paz-Andrade, 156 pp., illus., processed, in Spanish. Union Espanola de Armadores Pesqueros, S. A., Madrid, Spain, 1954. This booklet contains a detailed study of the Spanish fisheries. It discusses the economic and technical problems affecting the evolution and development of the Spanish fisheries and allied industries. It is divided into twelve chapters and one statistical appendix, each of the chapters illustrated with statistical data and maps.

Recent Biological Studies on TEREDO--A Marine Wood-boring Mollusc, by Charles E. Lane, 7 pp., illus., printed. (Reprinted from The Scientific Monthly, vol. 80, no. 5, May 1955, pp. 286-292.) American Association for the Advancement of Science, 1025 Connecticut Ave. NW., Washington, D. C.

Report of the Fisheries Research Committee, 74 pp., printed. Government of India, Ministry of Food

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and Agriculture, August 1954. A report of the Fisheries Research Committee, appointed by the Ministry of Food and Agriculture for reviewing and assessing the research work of the Central Marine and Inland Fisheries Research Stations. The report discusses the Committee's plan of work; the aims of fisheries research in its bearing on problems of fisheries development, conservation, and management; and fisheries research in the States of India, Universities, and Central Station. Conclusions and recommendations are also presented.

Sanitary Aspects of the Shellfish Industry of Japan,

by L. R. Shelton, Jr. and Richard S. Green, 56 pp., illus., processed. U. S. Department of Health, Education, and Welfare, Washington 25, D. C., December 1954. A report of a survey conducted in Japan during the period from January 5 to March 3, 1954 on the sanitary aspects of its shellfish industry. Shipments of frozen clams from Japan have been offered for entry into the United States since 1948. With increasing volume of shipments, the Food and Drug Administration, U. S. Department of Health, Education and Welfare, has found it necessary to deny entry to approximately one-third of the shipments because bacteriological examination indicated that they were not of satisfactory sanitary quality. In view of the bacteriological quality of some of the shipments offered for entry, the Food and Drug Administration was concerned about the lack of first-hand information on sanitary conditions surrounding the growth, processing, and packing of clams in Japan. This lack of information, coupled with the unknown effect of freezing upon bacteria in clams, made difficult the proper discharge of the Administration's obligations to the American public. The Government of Japan, desiring that its industry prepare an acceptable product, requested the assignment of a survey team from the United States to advise and consult with public-health and other government authorities in Japan on the sanitary conditions desirable for the growth, collection, storage, processing, and packing of bivalve mollusks. The U. S. Department of State, after consultation with the Department of Health, Education, and Welfare, accepted the invitation and arranged for the assignment of a bacteriologist and a sanitary engineer to make up the survey team. The findings and recommendations of the survey team are covered in this report.

Sea Fisheries Research Notes, 1954, Fisheries Notice No. 34, 9 pp., printed. Fisheries Laboratory, Lowestoft, England, February 1955. Brief news items on fishery research conducted during 1954 by the British Ministry of Agriculture and Fisheries. A list of scientific and other papers issued by the Ministry is included.

"Sedentary Fisheries and the Australian Continental Shelf," by D. P. O'Connell, article, American Journal of International Law, vol. 49, no. 2, April 1955, pp. 185-209, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. The author discusses in detail the background, basis, and nature of Australia's

claim to the continental shelf adjacent to the coasts of the commonwealth and its territories, with special reference to the sedentary fisheries. The Australian proclamations of September 10, 1953, claiming the continental shelf adjacent to the coasts of the Commonwealth and its territories are interesting in several respects. According to the author, "They depart as to form from the British practice, and so suggest that the United Kingdom drafts have been found by the advisers to the Australian Government to be inadequate; they attempt for the first time to establish a specific relationship between the shelf and sedentary fisheries; and they raise the novel and yet important question of the competence of an Administering Power to extend the boundaries of a Trust Territory. The proclamations were issued only after careful consideration of previous claims and the academic controversies they have generated, and one may conclude from the text that, since the International Law Commission reported on the subject, the concept of the continental shelf and the character of the rights asserted in respect of it have crystallized, and that a definite pattern has now been set for future development of the law."

"The Skeena River Salmon Fishery, with Special Reference to Sockeye Salmon," by D. J. Milne, article, Journal of the Fisheries Research Board of Canada, vol. 12, no. 3, May 1955, pp. 451-485, illus., printed. Fisheries Research Board of Canada, Ottawa, Canada. The general history of the Skeena River commercial salmon fishery is presented from 1877 to 1948. The changes in fishing areas, seasons, and fishing methods are described, together with the trends in the catches obtained. The most accurate data pertain to the important sockeye salmon gill-net fishery. The sockeye catch attained a maximum of 187,000 cases in 1910 and since then has declined to a minimum of 28,000 cases in 1933 and 1943. In recent years the catches have tended to level off. The pink salmon catches declined markedly after 1930. The chum catches also appear to have declined in recent years. Whether or not the spring and coho salmon catches have declined is not known. The size of the sockeye catch appears to be the best available measure of the relative size of the population. An analysis of the age cycles in the catch of sockeye and pink salmon did not reveal a practical basis for prediction. Some possible changes in the fishing regulations are discussed and the need for more data on the fluctuations in the size of the stocks during the fresh-water phase is stressed.

The Smallmouth Bass Fishery of South Bay, Lake Huron, by J. M. Fraser, 30 pp., illus., printed. (Reprinted from Journal of the Fisheries Research Board of Canada, vol. 12, no. 1, 1955, pp. 147-177.) Department of Lands and Forests, Southeastern Research Station, Maple, Ontario, Canada.

"Spoilage of Haddock in the Trawlers at Sea: The Measurement of Spoilage and Standards of Quality," by C. H. Castell and Rosalie E. Triggs, article, Journal of the Fisheries Research

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Board of Canada, vol. 12, no. 3, May 1955, pp. 329-341, illus., printed. Fisheries Research Board of Canada, Ottawa, Canada. This paper is the first in a series of studies dealing with spoilage of haddock in trawlers at sea. During a period of eight months, 850 haddock were taken from a trawler from the Nova Scotian and Grand Banks. Immediately after landing, the fish were filleted and the fillets were examined organoleptically and tested for pH and trimethylamine. It was found that trimethylamine was a more sensitive measure of early spoilage in fish muscle than either organoleptic examination or pH. At least one type of spoilage was encountered that was not accompanied by an increase in either trimethylamine or pH. Normally there is a close correlation between the development of most early spoilage odors and an increase in trimethylamine. For these haddock a trimethylamine value of 1-5 mg. per 100 g. indicated that the fish were already producing off-odors or would do so shortly. Trimethylamine is a useful measure of the initial spoilage changes in the fish muscle even though the trimethylamine itself may not contribute to the odors present.

A Survey of the Red Snapper Fishery of the Gulf of Mexico, with Special Reference to the Campeche Banks, by C. Isaac Camber, Technical Series No. 12, 64 pp., illus., printed. Marine Laboratory, University of Miami, Coral Gables, Fla., 1955. Describes a study undertaken by the Marine Laboratory of the University of Miami for the Florida State Board of Conservation, of the Gulf of Mexico red-snapper fishery. This report includes an account of the history of this pioneer Florida fishery, which started about 20 years before the Civil War. It got its start near Pensacola when New England sailors caught snapper while anchored in Pensacola Bay. The industry as a commercial venture began in 1872 and expanded to offshore banks, the most important of which are the Campeche Banks off Mexico. Today the red snapper is one of Florida's most prized food fishes and, according to the author, between 5 and 6 million pounds are landed in Florida annually. It is also a favorite game fish, particularly around the Pensacola area. The object of this study was to obtain basic information on the catch, taxonomy, biology, and ecology of the main species in the red-snapper catch, Lutjanus aya. Due to their importance to commercial fishing, special emphasis has been laid on the red-snapper population on Campeche Banks.

Tide Tables: West Coast North and South America (Including the Hawaiian Islands, for the Year 1956, Serial No. 781, 225 pp., printed, 50 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C.

United States Exports of Domestic and Foreign Merchandise (Commodity by Country of Destination), Calendar Year 1954, Report No. FT 410, processed, Part I, 216 pp., \$1; Part II, 366 pp., \$1.50. Bureau of the Census, U. S. Department of Commerce, Washington, D. C., May 1955. (For sale by the Superintendent of Documents, Washington 25, D. C.) The statistics in Part I covers exports of domestic and foreign merchandise (including fishery products and byproducts) under groups 00 to group 5 from the United States to foreign countries. Part II covers merchandise under

group 6 to 9 (some items of interest to the fishery and allied industries are included).

"The 'Volatile Reducing Substances' Test for Fish Freshness," by P. J. Schmidt and H. M. Mayoh, article, Progress Reports of the Pacific Coast Stations, no. 102, March 1955, pp. 22-23, printed. Fisheries Research Board of Canada, Ottawa, Canada. Brief summary of the results of experiments made with fresh sockeye, coho, and chum salmon to determine how closely the "volatile reducing substances" (VRS) values correlate with organoleptic ratings. The VRS test is based on the theory that volatile odoriferous compounds are produced during deterioration of the fish and that most of these are reducing substances. These reducing compounds are quantitatively estimated by passing air first through a sample of liquid pressed from the fish and then through an alkaline permanganate solution which absorbs the reducing substances from it.

FOOD AND AGRICULTURE ORGANIZATION

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 sales basis, but have been processed only for limited distribution to governments, libraries, and universities. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

Report to the Government of Israel on Inland Fisheries, FAO Report No. 327, 56 pp., processed, January 1955. Presents the fishing industry as a source of animal protein for human consumption; the Government's responsibilities; the history of fish culture and special problems; the characteristics and commercial fisheries of Lake Tiberias; the work accomplished during the assignment; and recommendations.

Report to the Government of Saudi Arabia on Possibilities for Development of Marine Fisheries, FAO Report No. 330, 15 pp., and maps, charts, and 2 plates of photographs, processed, December 1954. Discusses an exploratory survey by the chartered vessel Peppino of the fishing resources in waters off the Red Sea coast of Saudi Arabia to prove the existence of fishery resources on a commercial basis, and to advise and assist the Government in developing these resources. Includes general observations on the fisheries of Saudi Arabia.

Report to the Government of Jamaica on Inland Fisheries, FAO Report No. 339, 10 pp., processed, November 1954. Discusses the problem of the inland fisheries; the present situation in fish culture; fresh waters as a source of fish food; the species of fish used; and presents a summary of recommendations.

Report to the Government of Burma on Inland Fisheries Development, FAO Report No. 361, 9 pp., processed, March 1955. A report on a brief reconnaissance survey of the inland fisheries to determine the possibilities of development to formulate a program to effect this development, and to indicate the FAO assistance which might be provided.

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MUSEUM OF FISHERIES

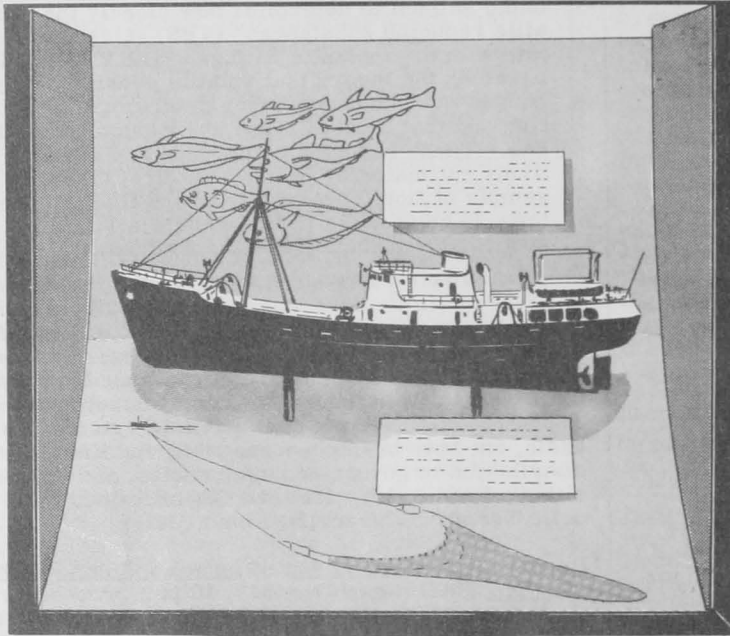
The culmination of the Royal Ontario Museum (acclaimed as the finest on March 28, 1955.

Port by the Department of Fisheries of Canada and Paleontology in Toronto, a Gallery of Canadian fishes (anywhere) was opened to the public in the Museum

The completion of the gallery, unique in Canada, was a singular example of cooperation between government, university, and museum. The cost of the display was shared by the Federal government and the University of Toronto, and the work of preparing the exhibits was a joint enterprise of the Department of Fisheries Information and Educational Service and the staff of the Royal Ontario Museum.

Occupying 2,000 square feet of floor space in the Museum, the gallery contains nearly 200 lifelike fish casts, each accompanied by a concise account of the fish's range, habits, and relation to man.

Ten cases contain models of Canadian commercial fishing craft, built to scale, one-quarter inch to the foot, so that they are actually facsimiles of the vessels in use. The models are ingeniously mounted on curved backgrounds which illustrate the gear used by each vessel.



Model of a Pacific purse seiner.

The completeness of the exhibit immediately brings to the viewer a realization of the magnitude of Canadian fisheries resources. The exactitude of the replicas shows the result of years of painstaking work. The artists and scientists who made the fish casts first went to both coasts and to inland waters to obtain color notes, sketches, and other data of live fishes. They made plaster moulds in the field of specimens freshly caught and, at the Museum, made the final casts of plaster, celluloid, or liquid rubber. Pearl-essence lacquer made from fish scales was used to coat the models and enhance their lifelike appearance.

and oil paints were used to give them a natural coloring. The fins were made of a rubber compound or, in the case of certain species which have clear or translucent fins, of plastics such as cellulose acetate.

Of the 30 individual displays which make up the exhibit, the outstanding ones are contained in four large diorama or habitat cases, which show groups of fishes in their natural environment. They are three-dimensional, and cold cathode light tubes, colored filters, and painted highlights and shadows provide a cool, "underwater" effect, presenting the fish as they would appear to a man in a diving suit. Each of these four cases is eight feet wide, five deep, and 11 feet high. The fish models are held by cleverly hidden or camouflaged supports so that they appear to be swimming. In one instance a section of a gill net shows how the fish are ensnared. Backgrounds are painted to represent underwater landscapes, and the foregrounds, representing the lake or ocean floor, are built up of wire screening and papier mache, modeled and colored to represent mud or rock bottom, either clear or rife with vegetation. An illusion of distance is provided by an exaggerated perspective.

Two decorative murals, treated in simple outline of old gold on a dark red background, are mounted on the wall above the cases which hold the model fishing craft. One of these illustrates the fishing methods used by Canadian aborigines--the Indians of the Atlantic coast with spears, weirs, and smoking methods; the Eskimos using hook and line to fish through the ice, or coralling and spearing fish in open water. The second mural depicts the growth and development of the Canadian fishing industry from its earliest days, when Europeans visited the Grand Banks before Canada was settled, to the present time when technical devices such as echo sounders, radar, and ship-to-shore phones aid the fishermen and modern plants ashore process their catch.

An automatic slide projector, which is used to augment the exhibit, features various phases of the fishing industry, such as the Newfoundland cod fishery, the gill-net and trap-net fisheries of the Great Lakes, the Pacific salmon fishery, and the herring fisheries. Other subjects, like the infamous sea lamprey which has caused havoc in the fisheries of the Upper Great Lakes, are also shown from time to time by the projector.

Another changing exhibit is a "temporary" case which houses different fish from time to time--trout in the spring, muskellunge in the summer; whenever a species is in season or otherwise newsworthy, it can be featured in this display.