



FISH AND WILDLIFE SERVICE PUBLICATIONS

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

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
- SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
- SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
- SSR.- FISH.- SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).
- | Number | Title |
|-------------------|---|
| CFS-1090 | - Fish Meal and Oil, December 1954, 2 pp. |
| CFS-1092 | - New Jersey Landings, December 1954, 2 pp. |
| CFS-1098 | - Frozen Fish Report, January 1955, 8 pp. |
| CFS-1100 | - New York Landings, December 1954, 4 pp. |
| CFS-1101 | - Fish Meal and Oil, January 1955, 2 pp. |
| CFS-1103 | - New Jersey Landings, January 1955, 2 pp. |
| CFS-1105 | - Texas Landings, December 1954, 3 pp. |
| CFS-1106 | - Massachusetts Landings, November 1954, 8 pp. |
| CFS-1108 | - Maine Landings, Annual 1954, 10 pp. |
| CFS-1109 | - Texas Landings, January 1955, 3 pp. |
| CFS-1112 | - New York Landings, January 1955, 4 pp. |
| CFS-1114 | - Mississippi Landings, November 1954, 2 pp. |
| CFS-1116 | - Maine Landings, January 1955, 4 pp. |
| SL -1 | - Wholesale Dealers in Fishery Products, Maine, 1954 (revised), 6 pp. |
| SL -9 | - Wholesale Dealers in Fishery Products, Delaware, 1954 (revised), 1 p. |
| Sep. No. 397 | - Use of Underwater Television in Fishing-Gear Research (Preliminary Report). |
| Sep. No. 398 | - Bottom Fish and Shellfish Explorations in the Prince William Sound Area, Alaska, 1954. |
| Sep. No. 399 | { Oyster-Processing Research for Atlantic and Gulf Coasts.
Weight Changes During the Cooking of Fish Sticks. |
| SSR-Fish. No. 128 | - Analysis of Catches of Nine Japanese Tuna Longline Expeditions to the Western Pacific Ocean, by Garth I. Murphy and Tamio Otsu, 51 pp., illus., processed, December 1954. Nine Japanese mothership expeditions fished for tuna in the western equatorial Pacific Ocean between June 1950 and October 1951. The pur- |

pose of this paper is to summarize the records of these expeditions with regard to the abundance of the principal species comprising the catch (yellowfin tuna, big-eyed tuna, and black marlin), and to examine the relation of abundance to factors in the environment. Since this type of consideration involves interpreting catch rates (usually expressed as catch per 100 hooks) as indexes of abundance, the observers also examine the possibility that the catch rates might be affected by factors other than abundance, such as the type of bait used and vessel efficiency.

SSR-Fish. No. 136 - Mid-Pacific Oceanography. Part V, Transequatorial Waters, May-June 1952, August 1952, by Thomas S. Austin, 89 pp., illus., processed, November 1954.

SSR-Fish. No. 137 - Longline Fishing for Deep-Swimming Tunas in the Central Pacific, August-November 1952, by Garth I. Murphy and Richard S. Shomura, 45 pp., illus., processed, February 1955. Two previous reports cover the results of long-line fishing from July 1950 to June 1952 by the Service's Pacific Oceanic Fishery Investigations research vessels. This report describes the results of four cruises to equatorial waters during the period August to November 1952. The catches are examined in relation to the environment, and a summary is given of the geographical and vertical variation in the catch rates. In connection with geographical variation a summary is given of selected Japanese commercial fishing catches. There is included a resume of the size distribution of long-line caught yellowfin and big-eyed tuna across the equatorial Pacific, and an analysis of the sex ratios of the yellowfin tuna. Finally, certain topics of particular interest to commercial fishermen, such as gear design and shark damage are briefly discussed. The summarized field data from the four cruises appear in the appendix.

SSR-Fish. No. 142 - First Year of Mesh Regulation in the Georges Bank Haddock Fishery, by Herbert W. Graham and Ernest D. Premetz, 31 pp., illus., processed, January 1955. The purpose of this paper is to report upon the quantities of small fish protected by the mesh regulation in the Georges Bank haddock fishery, and to present an evaluation of the effects of the regulation upon the quantities and sizes of fish landed from Georges Bank during the first year of regulation. According to the authors, "The large-mesh nets are more efficient in capturing larger fish. This factor has been so effective that it more than compensated for the reduced quantities of small fish taken during 3 of the 4 quarters of the first year of regulation. When the haddock fleet converted to large-mesh nets, the dominant year-

class (1950) was composed of 3-year-old fish which were mostly above the selection range of the net. Consequently, few fish were lost to the industry, while the increased efficiency of the net in capturing larger sizes resulted in greater landings than would have been made with small-mesh nets. This situation prevailed until the last quarter of the year when the next dominant year-class (1952) entered the fishery. Since this group was composed of sizes lying within the selection range of the regulation net, and since the fleet concentrated on these small fish, there was during this quarter a loss in landings of regulated vessels as compared with landings of small-mesh vessels set up as a control." The authors further state that "It is estimated that 12½ million had-dock have been protected by the large-mesh nets during the first year of regulation. It is too early to measure the benefit to the fishery of the saving of these small fish, but the long-term benefit of the large mesh is expected to be greater than originally estimated."

SSR-Fish. No. 143 - Effects of Naval Ordnance Tests on the Patuxent River Fishery, by R. E. Tiller and C. M. Coker, 22 pp., illus., processed, January 1955.

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

Laws and Regulations for Protection of the Commercial Fisheries of Alaska, 1955, Regulatory Announcement 45, 60 pp., printed, January 1955, 25 cents. This publication is divided into two sections. One section contains laws for the protection of the commercial fisheries of Alaska and related information, including the authority for regulation, rules regarding oyster culture, Bristol Bay residence requirements, regulation of salmon escapement, fishing-gear restrictions, exceptions to weekly closed seasons, etc. The second section contains all the regulations for the protection of the commercial fisheries of Alaska amended to date and which became effective February 19, 1955. These 1955 regulations supersede the regulations published in Regulatory Announcement 42 which became effective March 22, 1954.

SSR-Fish No. 139 - Limnological Survey of Western Lake Erie, by Stillman Wright, 347 pp., illus., processed, January 1955, \$2.50. Includes the results of a series of limnological investigations begun by the Conservation Division of the State of Ohio in 1926, and continued in parts of the years 1927, 1928, 1929, and 1930.

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.

Agricultural, Forestry, and Fisheries Program Agreement Between the Government of the United States of America and the Government of Egypt, Treaties and Other International Acts Series 2840, Publication 5272, 17 pp., processed, in

English and Arabic, 10 cents. Department of State, Washington, D. C. (For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.)

Aspects of Deep Sea Biology, by N. B. Marshall, 380 pp., illus., printed, \$10. Philosophical Library, New York, N. Y., 1954. The table of contents of this beautifully-constructed book suggests how logically the author has developed his subject. From opening discussions of the growth of interest in deep-sea studies and the means available for oceanic exploration, the author interestingly explores the deep-sea environment, describes plant and animal life, and the food chains of the deeps. There are absorbing and instructive chapters on vertical patterns of oceanic organisms, sense organs of the deep-sea fishes, sound production, "living light" or bioluminescence, and life histories of some highly specialized animals little known to the ordinary reader. The final chapter on marine biogeography, which Dr. Marshall defines as the study of the distribution of living organisms in the ocean by (1) concentrating on relations between species distribution and the physical environment and (2) tracing ecological relations between the organisms.

References to related literature are given at the end of each chapter. There is a well-prepared index. The four beautiful color plates and the many black-and-white figures, all prepared by Mrs. Marshall, add a great deal to the book's interest.

Although the subject matter is highly specialized and the title not particularly attractive, most literate persons with an interest in the sea will find the book readable and useful.

--Paul E. Thompson

(Canada) Journal of the Fisheries Research Board of Canada, vol. XII, no. 2, illus., printed, March 1955. Fisheries Research Board of Canada, Ottawa, Canada. Contains, among others, the following articles: "Isopleth Diagrams to Predict Equilibrium Yields of a Small Flounder Fishery," by L. M. Dickie and F. D. McCracken; and "Day and Night Characteristics of Spatfall and of Behaviour of Oyster Larvae," by J. C. Medcof.

Canned Food (A Summary of Figures of Production, Consumption, and Trade Relating to the Principal Canned Foods), 106 pp., printed 5s. (70 U. S. cents). Commonwealth Economic Committee, 2 Queen Anne's Gate Buildings, London, S.W.1, England, 1955. This review summarizes recent developments in canned food production, consumption, and trade with particular reference to the position in Commonwealth countries. The chapter on canned fish gives data on production in certain countries during 1938-53; per-capita consumption; exports; importance of canned fish in export trade; distribution of exports; imports; the Commonwealth as a unit; and United Kingdom imports.

Convention Between the United States of America and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, Treaties and Other International Acts Series

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2900, publication 5372, 7 pp., processed, 10 cents. Department of State, Washington, D. C. (For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.)

Directory of Public Refrigerated Warehouses, 1955, 142 pp., printed. National Association of Refrigerated Warehouses, Tower Bldg., Washington 5, D. C. Contains complete up-to-date listings of the organization, services, and facilities of all NARW member companies (specializing in the storage of perishable commodities requiring freezer or cooler service) operating throughout the United States, its possessions, and various foreign countries.

On the Distribution of the Big-Eyed Tuna, PARATHUNUS SIBI, in the Tropical Eastern Pacific Ocean, by Bell M. Shimada, 2 pp., printed. (Reprinted from Pacific Science, April 1954, pp. 234-235.) Inter-American Tropical Tuna Commission, Scripps Institution of Oceanography, La Jolla, Calif.

Economic Survey of Salmon Fishermen in British Columbia, 1953 (Interim Report), by Blake A. Campbell and D. R. Buchanan, 57 pp., illus., processed. Markets and Economics Service, Department of Fisheries of Canada, Vancouver, B. C., January 1955. This interim report, based on records obtained from 266 salmon fishermen, should be of value to those interested in the activities and returns of different types of fishermen in British Columbia in 1953. While it was not the primary intention of this report to discuss methods of fishing, or species of fish caught in British Columbia, or the method employed in catching salmon, the report contains a brief general description of the main characteristics of the commercial fishery. It also contains analyses of 89 gill-net records, 89 troll records, 51 assistant salmon purse-seine records, and 37 captain salmon purse-seine records; and a discussion of the effect of changes in receipts and expenses on net income. The authors in their summary point out that the average total cash operating receipt as reported by 89 gill netters totaled \$3,142 as compared with \$2,812 for trollers and \$2,410 for assistant salmon purse seiners. However, after deducting cash operating expenses from total cash receipts the net cash operating receipts for gill netters was lowest of any of the four groups and averaged only \$1,706 as compared with \$1,810 for trollers and \$2,123 for salmon seine crewmen. The captain salmon purse-seine operators had very much higher average receipts and expenditures and showed a net cash-operating receipt from fisheries in 1953 of \$4,644. Net income from trollers and gill netters before allowing depreciation was approximately the same and averaged \$2,455 and \$2,523, respectively. Assistant salmon purse seiners averaged \$2,936 while captain salmon purse seiners were high with a total of \$5,270. The effect of various factors on net income for the various classes of fishermen has been set out in detail and indicates that in 1953 there was a definite correlation between days fishing, area fished, type of operation, size of boat, and net cash-operating receipts from fisheries. It was

also very evident that many of these factors were interrelated, but it was not possible with the small number of records for certain of the classes to determine the extent of this relationship. The effect of changes in the receipt or expense structure on net income for each type of fisherman is outlined in detail in the last section of the report and provides a basis for determining for the average fisherman what would happen to net income under any given set of conditions.

"The European Oyster in American Waters," by V. L. Loosanoff, article, Science, vol. 121, no. 3135, January 28, 1955, pp. 119-121, printed, single copies 25 cents. Science, 1515 Massachusetts Ave. NW., Washington 5, D. C. Describes studies to determine whether the common European oyster, Ostrea edulis, might be introduced into this country to occupy eventually a definite ecologic niche in areas where the water is too cold for the successful propagation of our native oyster but is still sufficiently warm to be within the propagating temperature range of the European oyster. Among such areas are certain bodies of water along the shoreline of Maine and some well-protected bays and harbors of the Pacific Coast States. The oysters were intended chiefly for studies to determine whether they would survive and propagate under the ecologic conditions to which they would be subjected in this country. Simultaneously with these studies, observations were also made on the seasonal gonadal changes of the oysters kept in different localities, their rate of growth, artificial propagation, and several other aspects of their biology. Observations show that the European oyster may survive, grow, and propagate in New England waters and that the young oysters, reared at Milford and sent to Washington, grow well there. The author suggests that the introduction of this oyster in certain areas of the United States and possibly Canada may eventually lead to the establishment of a new and prosperous shellfish industry.

Fisheries Dynamics and the Concept of Maximum Equilibrium Catch, by Milner B. Schaefer, 11 pp., illus., printed. (Reprinted from Proceedings of the Gulf and Caribbean Fisheries Institute, 6th Annual Session, September 1954.) Inter-American Tropical Tuna Commission, La Jolla, Calif.

"The Fisheries of Newfoundland," article, Trade News, vol. 7, no. 6, December 1954, pp. 11-13, illus., printed. Department of Fisheries, Ottawa, Canada. A review of Newfoundland's fisheries, with emphasis on the production, processing, and marketing of cod and other major species of fish and shellfish. Of extreme importance to the Newfoundland fisheries today is the revolution that is currently taking place in the three branches--catching, processing, and marketing. This period of progress began with the construction of plants producing frozen fillets which in turn called for diversity of production and made possible, in fact placed emphasis on, such groundfish as haddock, ocean perch, and various flatfishes which fishermen hitherto had discarded. An important byproduct is fish meal from fish not suitable for filleting and offal from the plants. In the wake of these developments there have been

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perceptible changes in the fishing fleet. The large schooners, which at one time fished the banks to the south of the island, have been replaced by powerful draggers and, to a lesser extent, by small craft using the Danish seine. An even larger fleet of "floaters" manned by East Coast fishermen who, in past years, fished the Labrador Coast, has faded out of existence. Experimental fishing by the Federal and provincial governments during the past few years has proven the existence of new offshore fishing grounds and demonstrated the practicability of the long-lining and Danish-seining methods of fishing to such an extent that quite a few boats of these types have been put in operation and more are steadily being added as a new fleet takes shape.

Fisheries Research Papers, vol. 1, no. 3, February 1955, 58 pp., illus., printed. Washington Department of Fisheries, 1308 Smith Tower, Seattle, Wash. Contains the following articles: "Studies on Columbia River Smelt, *Thaleichthys pacificus* (Richardson)," by Wendell E. Smith and Robert W. Saalfeld; "Noteworthy Recoveries of Tagged Dogfish," by Donald E. Kauffman; "Introduction of the Kumamoto oyster, *Ostrea (Crassostrea) gigas* to the Pacific Coast," by Charles E. Woelke; and "Estimating the Contribution of a Salmon Production Area by Marked Fish Experiments," by Charles O. Junge and William H. Bayliff.

(FAO) 1952-53 Yearbook of Fishery Statistics (Annuaire Statistique des Pêches, Anuario Estadístico de Pesca), vol. IV, Part 1, 259 pp., printed in English and French with preface and general notes in Spanish, US\$3. Food and Agriculture Organization of the United Nations, Rome, Italy, 1955. (Also available from Columbia University Press, International Documents Service, New York 27, N. Y.) With this issue, the FAO Yearbook appears for the first time in two parts. Part I (Production) contains statistics of catch and landings, utilization (disposition), production of preserved and processed commodities, and fishing craft. Part II (Trade) will present available figures on imports and exports of fishery products. This division of the Yearbook into two parts allows production statistics to be published fairly promptly and, if desired, more frequently than in the past. The aim of the Yearbook is not to be a substitute for national statistical publications, but to group and present national data in such a fashion as to make global and regional analyses possible, to provide a comprehensive background against which national fishery statistics can be viewed, and to facilitate international comparisons. The tables in this issue have been compiled, as usual, from national statistical publications and from figures supplied by governments in response to questionnaires and inquiries. This international cooperation, and that of the Bureau of International Whaling Statistics in respect of whaling data, has made it possible to revise the data published in earlier issues of the Yearbook and to add figures, sometimes in preliminary form, for the most recent years. In presenting national statistics in the Yearbook, an effort has been made to include totals for groups of species which are as far as possible internationally comparable, but at the same time to retain an adequate amount of detail. Standardized group totals are therefore

broken down into components which reflect the classification used in the national publications concerned. This practice will also facilitate reference to the national statistics. Most of the regional tables still show gaps and, except where there is an indication to the contrary, no attempt has been made to fill these gaps by estimates. In consequence, the regional totals are often not directly comparable from year to year.

Part 1 of the Yearbook includes 4 sections. Section 1 deals with catch and landings. In the first four tables, the total world catch of fish, crustaceans, mollusks, etc., is estimated and analyzed by groups of species, fishing areas, continents and regions, and countries. The next 11 tables, one for each of the major groups of species, present catch and landings by countries and, under each country, by species. Two tables show the number of whales caught by countries and by area of catch; one summarizes the catch data by countries and groups of species; and one shows, for selected countries, landing data according to various classifications. For each continent the final six tables of this section group values of landings by countries, in terms of national currencies and United States dollars. Section 2 deals with utilization. In this section 1 summary table and 6 tables for the continents present data on the disposition of the catch by groups of species and countries, and 22 commodity tables provide data on the output of processed commodities. Section 3 deals with fishing craft. Six tables show, for the continents, fishing craft by characteristic categories in each of the reporting countries, while a separate table is devoted to shore statistics and craft in the whaling industry. Section 4 gives historical summaries. As an aid to research workers, this Section brings together available data on fish landings for the 44 years 1910-53, arranged in 6 tables, 1 for each continent, and 2 for the whale catch.

(FOA) Operations Report, January 31, 1955, FY 1955, Issue No. 1, 67 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, the report discusses U. S. foreign trade developments.

(FOA) Operations Report, March 25, 1955, FY 1955, Issue No. 2, 88 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 economic developments in Western Europe.

Ice and Chemicals in the Fishing Industry, Their Value and Potential Uses, by C. Isaac Camber, Contribution No. 138, 3 pp., processed. Marine Laboratory, University of Miami, Coral Gables, Fla.

Inorganic Phosphate Measurement in Sea Water, by Leonard J. Greenfield and Frederick A. Kalber, Contribution No. 133, 13 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 4, no. 4, December 1954, pp. 323-335.) Marine Laboratory, University of Miami, Coral Gables, Fla.

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The Life Histories of the Steelhead Rainbow Trout (SALMO GARDNERI GARDNERI) and Silver Salmon (ONCORHYNCHUS KISUTCH), with Special Reference to Waddell Creek, California, and Recommendations Regarding Their Management, by Leo Shapovalov and Alan C. Taft, Fish Bulletin No. 98, 379 pp., illus., printed, 1954. Department of Fish and Game, Printing Division, Documents Section, Sacramento 14, Calif.

"The Long-finned Tunny, Germo alalunga (Bonnetterre), in British Seas," by Denys W. Tucker, article, *Nature*, January 22, 1955, vol. 175, no. 4447, p. 174, illus., printed, 2s. (30 U. S. cents per issue). Macmillan & Co., Ltd., St. Martin's Street, London, W. C. 2, England.

Note on Correcting G. E. K. Observations of Florida Current off Miami for Tidal Current, by Frank Chew and L. P. Wagner, Contribution No. 131, 10 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 4, no. 4, December 1954, pp. 336-345.) Marine Laboratory, University of Miami, Coral Gables, Fla.

The Occurrence and Vertical Distribution of the Euphausiacea of the Florida Current, by John B. Lewis, Contribution No. 132, 37 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 4, no. 4, December 1954, pp. 265-301.) Marine Laboratory, University of Miami, Coral Gables, Fla.

On the Offshore Circulation and a Convergence Mechanism in the Red Tide Region Off the West Coast of Florida, by Frank Chew, Technical Report 55-5, 28 pp., illus., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., January 1955.

"Rapid Determination of Oil in Fish Meal," by G. M. Dreosti and R. P. van der Merwe (Fishing Industry Research Institute Progress Report No. 18), article, The South African Shipping News and Fishing Industry Review, vol. 10, no. 2 (February 1955), pp. 56-63, illus., printed, 2s. (30 U. S. cents) per issue. S. A. Trade Newspapers (Pty.) Ltd., P. O. Box 2598, Cape Town South Africa. A modification of a refractometric method for the determination of oil in avacados has been applied to fish meal. Using monochloronaphthalene as a solvent, complete extraction of oil is obtained in 10 minutes by heating the fish-meal sample and solvent together in a sealed container immersed in boiling water. The refractive index of the cooled oil/solvent mixture is determined. From this figure the percentage of oil in the sample can be obtained directly by reference to a table drawn up from a graph plotting the refractive index against fat content as determined by Soxhlet extraction. Statistical analysis of the results of duplicate or triplicate determinations on samples of 35 different fish meals showed that the refractometric method is significantly more reproducible than the Soxhlet method. Sources of error and necessary precautions in performing the test are discussed, and data supplied on its success when applied to fishery products other than fish meal.

"Rapid Method for the Routine Determination of Crude Protein in Fish meals," by G. H. Stander (Fishing Industry Research Institute Progress Report No. 19), article, The South African Shipping News and Fishing Industry Review, vol. 10, no. 2 (February 1955), pp. 63-65, printed, 2s. (30 U. S. cents) per issue. S. A. Trade Newspapers (Pty.) Ltd., P. O. Box 2598, Cape Town, South Africa. Perrin's modification of the Kjeldahl method for nitrogen determination was critically examined for use in routine fish-meal analyses. When 2 gm. of fish meal were digested with 25 ml. of concentrated sulphuric acid in the presence of 20 gm. of K_2SO_4 and 1.5 gm. of H_2O , complete recovery of nitrogen was obtained in 15-20 minutes. Results by this method and by a modification of the A. O. A. C. recommended method (employed at the Fishing Industry Research Institute) agreed on average to within 0.1 percent protein. Duplicates agreed to within an average of 0.2 percent protein.

The Red Tide, by Robert M. Ingle and Donald P. de Sylva, Educational Series No. 1, 31 pp., illus., printed. State Board of Conservation, Tallahassee, Fla., 1955. A revision of a report originally issued in 1948, which describes red tide--the popular name given to a peculiar discoloration of sea water caused by microscopic organisms. At certain times these organisms become numerous enough to kill many thousands of marine animals. Since 1844 the Florida red tide has occurred at least 13 times in major proportions. There are apparently gaps of as much as 14 years when no red tides have been reported. Several theories concerning the nature and cause of red tide are presented as well as its effect on marine life. The authors discuss recent outbreaks of red tide and the possibility of determining when and where it is likely to return. Facts are presented which are pertinent to the question of the origin of irritant gases commonly associated with the red tide. Present and future studies on water movements, and methods of control and prevention of red tide are discussed.

"Refrigeration of Tuna and Sardines by Sodium Chloride Brines," by Lionel Farber, article, Food Technology, (Published by the Institute of Food Technologists), vol. 9, no. 3, March 1955 pp. 141-147, illus., printed, single copies of periodical: domestic US\$1, foreign US\$1.25. The Garrard Press, 119 West Park Avenue, Champaign, Ill. The refrigeration of tuna, sardines, and mackerel by salt brines is discussed from the points of view of spoilage prevention, salt infiltration, and protein denaturation. The practical application of the laboratory data was tested on board a tuna clipper. Based on the available information certain recommendations are suggested for the practical use of brine refrigeration for tuna, sardines, mackerel, and herring on board fishing boats.

Report to Congress on the Mutual Security Program (For the Six Months Ended December 31, 1954), 69 pp., illus., printed, 45 cents. Mutual Security Agency, Washington, D. C., December 31, 1954. (For sale by Superintendent of Documents, Washington 25, D. C.)

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Trade Agreements Manual (A Summary of Selected Data Relating to Trade Agreements that the United States has Negotiated Since 1934), 55 pp., processed. U. S. Tariff Commission, Washington 25, D. C., March 1955. Designed to provide the answers to certain common questions about United States trade agreements, the manual is a summary of selected data relating to the various trade agreements that the United States has entered into under the authority of the Trade Agreements Act of 1934 and the subsequent extensions of that Act.

Part 1 of the manual considers United States trade-agreement obligations, present and past. Among other things, it includes lists of countries with which the United States had trade-agreement obligations in effect on March 1, 1955; lists of countries with which we have had trade-agreement obligations in the past; and a list of countries from which we have withdrawn trade-agreement concessions. It also includes a master list of all agreements that the United States has concluded under the Trade Agreements Act, whether or not those agreements are still in force, and a brief legislative history of the trade agreements program.

Part II of the manual is devoted to information about the General Agreement on Tariffs and Trade. Among other things, it includes a list of the countries that were contracting parties to the General Agreement on March 1, 1955; a list of the countries that have withdrawn from the agreement; and a list showing the dates of signature of the Anney and Torquay protocols by contracting parties (as distinct from acceding countries). It also includes a master list of all accessions to, and withdrawals from, the General Agreement between October 30, 1947, and March 1, 1955, and a list of the conferences, sessions, and meetings pertaining to the General Agreement that have been held since 1947.

(Union of South Africa) Fishing Industry Research Institute Seventh Annual Report of the Director (1st April, 1953--31st March, 1954), 32 pp., illus., printed. Fishing Industry Research Institute, Portsworld Road, Cape Town, South Africa. Summarizes briefly: (1) the general activities of the Institute; (2) progress on research investigations; and (3) the results of routine inspections and analyses. Research projects reported upon include studies on fresh hake, fish canning, spiny lobster, tomato puree, and fish and spiny lobster meals.

TRADE LISTS

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 lists. Copies of these lists may be obtained by firms in the United States from that office or from Department of Commerce field offices at \$1 per list.

Canneries - Mexico, 10 pp. (February 1955) - includes firms canning fishery products. Lists the name and address, size, and type of product canned by each firm. In a brief summary of the Mexican canning industry the report points out that there is a growing trend towards greater consumption of canned fish in Mexico.

Canneries - Egypt, 3 pp. (January 1954). Lists name and address, size of firm, and type of

product canned by each firm. Includes firms canning fishery products.

Oils (Animal, Fish and Vegetable) - Importers, Dealers, Producers, Refiners, and Exporters - Netherlands, 23 pp. (January 1955). Lists the name and address, size of firm, and type of business of each firm. Includes a brief summary of the Netherlands imports and exports of marine oils for 1953. Firms dealing in fish and marine oils are listed.

Oils (Animal, Fish, and Vegetable) - Importers, Dealers, Producers, Refiners, and Exporters - Spain, 28 pp. (December 1954). Lists the name and address, size of firm, and type of business of each firm. Includes firms dealing in marine oils.



COLLECTION

DISSEMINATION

