



RECENT FISHERY PUBLICATIONS

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-1119 | - New York Landings - Annual 1954 - By Months, 8 pp. |
| CFS-1142 | - Imports & Exports of Fishery Products - Annual 1950-1954, 8 pp. |
| CFS-1167 | - Massachusetts Landings - April 1955, 5 pp. |
| CFS-1170 | - Florida Landings - Annual 1954, 6 pp. |
| CFS-1171 | - California Landings - March 1955, 4 pp. |
| CFS-1173 | - Fish Meal and Oil - June 1955, 2 pp. |
| CFS-1174 | - New England Fisheries - Annual 1953, 7 pp. |
| CFS-1175 | - Florida Landings - April 1955, 6 pp. |
| CFS-1179 | - Fish Stick Report - April-June 1955, 2 pp. |
| CFS-1180 | - Florida Landings - May 1955, 6 pp. |
| CFS-1181 | - Texas Landings - June 1955, 3 pp. |
| CFS-1182 | - Massachusetts Landings, May 1955, 5 pp. |
| CFS-1183 | - California Landings - April 1955, 4 pp. |
| CFS-1184 | - New Jersey Landings - June 1955, 2 pp. |
| CFS-1187 | - Rhode Island Landings - June 1955, 3 pp. |
| CFS-1188 | - Pacific Coast Fisheries - 1953 - Annual Summary, 7 pp. |
| CFS-1190 | - Maine Landings - June 1955, 4 pp. |
| CFS-1191 | - Massachusetts Landings - June 1955, 5 pp. |
| CFS-1193 | - North Carolina Landings - June 1955, 2 pp. |
| CFS-1194 | - New York Landings - June 1955, 4 pp. |
| CFS-1195 | - Mississippi Landings - May 1955, 2 pp. |
| CFS-1196 | - Mississippi Landings - June 1955, 2 pp. |
| FL - 298 | - Employment Possibilities in the Alaskan Fishing Industry (Revised), 5 pp. |
| FL - 355 | - The Trouts of North America (General Remarks on Classification), by Samuel F. Hildebrand, 13 pp., processed, Reissued March 1955. |
| FL - 423 | - Trout Feeds and Feeding, by A. V. Tunison, 23 pp., illus., processed, revised February 1945 |

Wholesale Dealers in Fishery Products:

- SL - 10 - Maryland - 1955 (Revised), 11 pp.
 SL - 12 - Virginia - 1955 (Revised), 11 pp.

Wholesale Dealers in Fishery Products (Contd.):
 SL - 23 - Washington, 1955 (Revised), 6 pp.

Firms Canning:

- SL - 106 - Shad or Shad Roe, (Revised), 1 p.
 SL - 118 - Groundfish Flakes, (Revised), 1 p.
 SL - 119 - Squid, 1954, 1 p.

- Sep. No. 412 - Regime of the High Seas and the Conservation of the World's Fisheries Resources.
 Sep. No. 413 - Early Experiences with Fish Oils--A Retrospect.
 Sep. No. 414 - Freezing and Cold Storage of Pacific Northwest Fish and Shellfish - Part V - Palatability and Cold-Storage Life of Blacktip Rockfish (*Sebastes aleutianus*) and Flag Rockfish (*Sebastes rubrivinctus*).

Research in Service Laboratories Section:

- Fishery Technological Research Program.
 Sep. No. 415 - Fish Meal and Oil Project.
 Some Factors Affecting Sawdust Losses in Cutting Fish Sticks.

SSR-Fish. No. 130 - Reaction of Tunas to Stimuli, 1952-53. Part I: Response of Tuna to Chemical Stimuli, by Albert L. Tester, P. B. van Weel, and John J. Naughton. Part II: Response of Tuna to Visual and Visual-Chemical Stimuli, by Sidney C. Hsiao and Albert L. Tester, 130 pp., illus., processed, March 1955. (Also Contributions Nos. 47 and 48 of the Hawaii Marine Laboratory, University of Hawaii.)

SSR-Fish. No. 147 - Observations of Skipjack Schools in Hawaiian Waters, 1953, by William F. Royce and Tamio Otsu, 36 pp., illus., processed, May 1955. This report presents the results of the first year's study of locating skipjack schools in Hawaiian waters, particularly in areas where and at times when they are not available to the local fishery. In addition a comparison and evaluation of vessel and airplane scouting techniques are presented.

SSR-Fish. No. 150 - Maturity and Fecundity of Bigeye Tuna in the Pacific, by Heeny S. H. Yuen, 35 pp., illus., processed, June 1955.

SSR-Fish. No. 151 - A comparative Study of Long-line Baits, by Richard S. Shomura, 38 pp., illus., processed, June 1955. Describes in detail a comparative study of long-line baits-- the attractiveness of different baits to the various species of tuna taken on longlines, the durability of the various baits while on the hook and "soaking," and the effect of such preserving techniques as dry-salting or brining and finally of different ways of impaling the bait on the hook. A study of bait returns shows a progressive decrease in the number of sardine baits retrieved with increasing soaking time. With

respect to sardine, there were no differences in catches as between salted and brined or between salted and fresh-thawed baits. Of the three principal bait species studied (sardine, herring, and squid), the evidence shows the sardine to be the best long-line bait. The sardine need only be single-hooked, whereas the herring in order to attain equal efficiency must be double-hooked. The sardine's superiority over squid is based on higher catches in moderate to rough seas. If this advantage is due to visibility, then the herring, which is similar in appearance to the sardine, should also be superior to the squid in rough seas, providing the herring are double-hooked. Thus the order of preferability of the commonly available long-line bait is single-hooked sardines, double-hooked herring, and finally squid. The differences in the catch related to the kind of bait are not attributable to dietary preference but are explained on the basis of availability or visibility during the soaking period.

- SSR-Fish. No. 152 - Mid-Pacific Oceanography. Part VI - Hawaiian Offshore Waters, December 1949-November 1951, by James W. McGary, 141 pp., illus., processed, June 1955.
- SSR-Fish. No. 153 - Report of an Investigation of the Spearfishes of Formosan Waters, by Hiroshi Nakamura, 50 pp., illus., processed, July 1955.
- SSR-Fish. No. 154 - A Summary of Sightings of Fish Schools and Bird Flocks and of Trolling in the Central Pacific, by Garth I. Murphy and Isaac I. Ikehara, 24 pp., illus., processed, June 1955. The results of 546 days of trolling and watching for bird flocks and fish schools are summarized in three categories based on distance from islands. The frequency of fish-school sightings appears to be a function of the abundance of birds, and was lower beyond 180 miles from land than within that range. Skipjack were the dominant species in the open ocean; yellowfin were more abundant near land in most instances. There is a seasonal pattern in the frequency of sightings, possibly associated with the life patterns of the birds. In island areas good agreement was obtained between the abundance of fish schools and the abundance of plankton. In the oceanic areas the agreement was not very good. Possible reasons for the discrepancies are discussed.
- SSR-Fish. No. 156 - Spring and Summer Distribution of Haddock on Georges Bank, by John B. Colton, 69 pp., illus., processed, June 1955. Systematic surveys of the populations of bottom fish in the Georges Bank area were made by the Fish and Wildlife Service vessel *Albatross III* during the summers of 1948 and 1949 and in the spring and summer of 1950. These surveys were conducted to estimate the size and composition of the populations of haddock and other species of demersal fish and to obtain information on distribution, movements, year-class strength, and growth rates in relation to environmental conditions. This paper presents an analysis of the distribution of haddock (*Melanogrammus aeglefinus*) by area, depth, bottom type, season, and year.

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

Evaluation of Three Types of Fish Rearing Ponds, by Roger E. Burrows and Harry H. Chenoweth, Research Report 39, 32 pp., illus., processed, 15 cents, 1955.

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.

Age Determination of the Northern Anchovy, (ENGRAULIS MORDAX), Fish Bulletin No. 101, 66 pp., illus., printed, Marine Fisheries Branch, Department of Fish and Game, Sacramento 14, Calif., 1955. Contains these two articles: "Studies Relating to the Validity of the Scale Method for Age Determination of the Northern Anchovy (*Engraulis mordax*)," by Daniel J. Miller, and "Age and Length Composition of the Northern Anchovy Catch off the Coast of California in 1952-53 and 1953-54," by Daniel J. Miller, Anita E. Daugherty, Frances E. Felin, and John MacGregor.

Alla Pesca Vagantiva Dei Giovani Tonni, by Tito Biancalana, 32 pp., illus., printed in Italian. (Reprinted from *Il Giornale della Pesca*). *Il Giornale della Pesca*, via Barberini n. 47, Rome, Italy.

"All's Not Quiet on the Potomac," by James Wharton, article, *The Commonwealth*, vol. XXII, no. 7, July 1955, pp. 11-13, 35-36, illus., printed, single copy 25 cents. Virginia State Chamber of Commerce, 111 North Fifth St., Richmond 19, Va. Deals with the unsolved problems of the Potomac River's oyster industry.

Bulletin of the Nippon Institute for Scientific Research on Pearls, No. 2, illus., printed in Japanese with summaries in English. Nippon Institute for Scientific Research on Pearls, Zoological Institute, Science Faculty, Kyoto University, Kyoto, Japan, 1955. A collection of scientific papers on pearls.

Bulletin Officiel D'Information du Conseil Supérieur de la Pêche, Number 19, January-February-March 1955, 94 pp., illus., printed in French. Conseil Supérieur de la Pêche, 1 Avenue de Lowendal, Paris, France.

Catch Localities for Pacific Albacore (THUNNUS GERMUS) Landed in California, 1951 through 1953, by Harold B. Clemens, Fish Bulletin No. 100, 28 pp., illus., printed. Printing Division, Documents Section, Department of Fish and Game, Sacramento 14, Calif., 1955.

Check-list of the Fish Specimens in the Taiwan Fisheries Research Institute, by Yun-shang Liang, Report no. 3, 35 pp., printed. Fisheries Research Institute, Taiwan, China.

The Chemistry and Fertility of Sea Waters, by H. W. Harvey, 224 pp., illus., printed, \$5.50.

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

Cambridge University Press, 51 Madison Ave., New York 10, N. Y.

The Chronological Order of Fraser River Sockeye Salmon during Migration, Spawning and Death, by S. R. Killick, Bulletin VII, 100 pp., illus., printed. International Pacific Salmon Fisheries Commission, New Westminster, B. C., Canada, 1955.

DERMESTES PERUVIANA (Cast.) y DERMESTES MACULATA (Deg.) Coleopteros que Parasitan el Pescado Salado, Seco, by Victor H. Bertullo, Marcos Herrera, and Estela Rodriguez Rivas, Tomo VI, no. 2, 7 pp., illus., printed in Spanish with summary in English. (Reprinted from Anales de la Facultad de Veterinaria, pp. 53-59.) Republica Oriental del Uruguay, Montevideo, Uruguay, 1954.

A Description of Two Species of Bonito SARDA ORIENTALIS and S. CHILIENSIS and a Consideration of Relationships Within the Genus, by H. C. Godsil, Fish Bulletin No. 99, 43 pp., illus., printed. Printing Division, Documents Section, Department of Fish and Game, Sacramento 14, Calif., 1955.

Distribution of Certain Vitamins in the Edible Portion of Fish, Shellfish, and Whales (Wet Weight Basis), by H. L. A. Tarr, Pacific Fisheries Experimental Station Industrial Memorandum No. 17, 2 pp., printed. Fisheries Research Board of Canada, Ottawa, Canada, 1954.

The Elementary Chemical Composition of Marine Organisms, by A. P. Vinogradov, Memoir No. 2. Translated from Russian by Julia Efron and Jane K. Setlow, with bibliography edited and newly enlarged by Virginia W. Odum, 647 pp., printed, \$17. Sears Foundation for Marine Research, Yale University, New Haven, Conn., 1953.

Los Escombridos en Cuba--su Biología e Industrialización, (Atun, Bonito, Albacora, Sierra, Serrucho, Pintado y Peto), by Luis Howell Rivero, Contribucion No. 2 del Centro de Investigaciones Pesqueras, 106 pp., illus., processed, in Spanish, Division Agricola, Banco de Fomento Agricola e Industrial de Cuba, Habana, Cuba, 1954.

Estados Larvales y Juveniles del Bonito, by Luis Howell Rivero y Mar Juarez Fernandes, Contribucion No. 9 del Centro de Investigaciones Pesqueras, 25 pp., illus., printed in Spanish. Dependencia de la Division Agricola del Banco de Fomento Agricola e Industrial de Cuba, Playa Habana, Bauta, Cuba, 1954.

Fishes of the Western North Atlantic, by Henry B. Bigelow and William C. Schroeder, Memoir 1, pt. 2, 588 pp., illus., printed, \$15. Sears Foundation for Marine Research, Yale Univ., New Haven, Conn., 1953.

Fishes of Yosemite National Park, by Willis A.

Evans and Orthello L. Wallis, Yosemite Nature Notes, vol. 23, no. 1, 30 pp., illus., printed. Yosemite Natural History Association, Yosemite National Park, Calif., revised June 1955.

(Florida) Summary of Florida Commercial Marine Fish Landings for 1954 (Report to Florida State Board of Conservation), by Gordon Luce with collaboration of Billy F. Greer, 46 pp., illus., processed. The Marine Laboratory, University of Miami, Coral Gables, Florida, July 1955. Contains tables summarizing the total Florida commercial landings and value of food fish, nonfood fish, shellfish, and miscellaneous items by species for the year 1954; a breakdown of the landings between east coast and west coast; and landings and value by county and by species. Trends and conditions and a list of common names and distribution of commercial marine fish landed in Florida are also included. This is the fifth year in which a summary has been compiled in the cooperative program between the U. S. Fish and Wildlife Service and the Marine Laboratory of the University of Miami on behalf of the Florida State Board of Conservation.

Gremio dos Armadores da Pesca da Baleia (Relatório e Contas do Exercício de 1954 e Orçamento para 1955), 33 pp., illus., printed in Portuguese. Comissao Revisora de Contas, Lisbon, Portugal, 1955.

Gulf States Marine Fisheries Commission Fifth Annual Report 1953-54 (to the Congress of the United States and to the Governors and Legislators of Alabama, Florida, Louisiana, Mississippi, and Texas), 29 pp., printed. Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans 16, La. Contains the Commission's activities for the period October 1953-October 1954. 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 biological research and exploratory fishing in the Gulf area. Describes an oceanographic survey of the Gulf of Mexico and oyster investigations. A list of Public Law 466 projects (approved as of September 10, 1954) covering biological research and investigations, exploratory fishing, statistical, technological, educational, market development, and economic research and services is presented. A financial report of the Commission is included.

Handbuch der Seefischerei Nordeuropas, Band IX, Heft 5, 105 pp., illus., printed in German. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart, W. Germany, 1954. Contains the following articles: "Gerwinnung und Verwertung der Seetiermehle," by Dr. Ing. Hans Kurmeier and "Gewinnung und Verwertung der Seetierole," by Prof. Dr. W. Ludorff.

"Ices Containing Chlorotetracycline in Experimental Fish Preservation", by D. C. Gillespie, J. W. Boyd, H. M. Bissett, and H. L. A. Tarr,

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article, Food Technology, vol. 9, no 6, June 1955, pp. 296-300, illus., printed, single copies of periodical: domestic US\$1, foreign US\$1.25. The Garrard Press, 119 West Park Ave., Champaign, Ill. (Published by the Institute of Food Technologists.) Methods of preparing flake-type and block ice containing added chlorotetracycline (CTC) are described. The work described was initiated in order to ascertain the value of CTC as a fresh fish preservative when applied under normal commercial conditions. It has involved the preparation of flake-type of ice containing the antibiotic, and has included the design of a method by which it can be distributed uniformly throughout blocks of ice prepared by customary slow-freezing procedures. These ices have been used to ice fish on commercial fishing vessels. Further tests concerning the effect of inclusion of CTC in refrigerated sea water on keeping quality of fish transported in this medium have also been made.

Informe Preliminar Sobre Investigaciones en Plac-ton de los Mares Cubanos, by Jose A. Suarez Caabro, Contribucion No. 10 del Centro de Investigaciones Pesqueras, 39 pp., illus., processed, in Spanish. Dependencia de la Division Agricola del Banco de Fomento Agricola e Industrial de Cuba, Playa Habana, Bauta, Cuba, 1954.

"Inhibition of Mold and Yeast Development in Fish Products," by J. W. Boyd and H. L. A. Tarr, article, Food Technology (published by the Institute of Food Technologists), vol. 9, no. 8, August 1955, pp. 411-412, printed, single copies of periodical: domestic US\$1, foreign US\$1.25. The Garrard Press, 119 West Park Avenue, Champaign, Ill. A brief report on experiments concerning inhibition of mold and yeast development in fish products. Growth of molds and yeasts in smoked fish was strongly delayed when about 0.05 to 0.1 percent sorbic acid was incorporated in the meat during the brining process. Development of "dun" in salted fish, which is caused by the mold Sporendonema epizoum, was likewise markedly inhibited by sorbic acid. Sorbic acid appears to be quite stable in fish muscle. Neither chlorotetracycline nor tetracycline was of any value in retarding mold or yeast development in such fish products.

Investigaciones de Puertos Pesqueros, vol. 1, Zona Norte, 282 pp.; vol. 2, Zona Sur (Incluyendo Isla de Pinos), 283 pp.; illus., processed, in Spanish. Seccion de Asuntos Pesqueros, Division Agricola, Banco de Fomento Agricola e Industrial de Cuba, La Habana, Cuba, 1954.

Journal du Conseil, vol. XX, no. 3, 118 pp., illus., printed, single copy Kr. 12 (US\$1.74). Messrs. Andr. Fred. Host & Son, Bredgade, Copenhagen, Denmark, May 1955. Among the articles presented in this journal are the following: "Some Echo-Sounding Experiments on Fish," by D. H. Cushing; "Selection of Soles by the Mesh of Trawls," by A. R. Margetts; and "A Preliminary Report on a New Type of Commercial Escallop Dredge," by R. H. Baird.

"Korean Fisheries, Yesterday, Today and Tomorrow," by Jai Hyon Lee, article, Korean Survey,

vol. 4, no. 7, August-September 1955, pp. 7, 10-11, illus., printed. Korean Pacific Press, 1828 Jefferson Place, NW., Washington 6, D. C. Data given are mostly for 1938.

"Length-Weight Relationship in Migrating Fry of Pink Salmon (Oncorhynchus gorbusha) in Sashin Creek, Little Port Walter, Alaska," by Bernard Einar Skud, article, Copeia, no. 3, August 19, 1955, pp. 204-207, illus., printed. The American Society of Ichthyologists and Herpetologists, Mt. Royal & Guilford Aves., Baltimore 2, Md.

List of Offshore Oil Well Structures in the Gulf of Mexico, 11 pp., processed. Commander, 8th Coast Guard District, Room 332 Custom House Bldg., New Orleans, La., June 1955.

Los Camarones Comerciales de Cuba, Parte II, by Isabel Perez Farfante, Contribucion No. 6 del Centro de Investigaciones Pesqueras, 31 pp., illus., printed in Spanish. Dependencia de la Division Agricola del Banco de Fomento Agricola e Industrial de Cuba, Playa Habana, Bauta, Cuba, 1954.

(Louisiana) Directory Seafood Dealers, 40 pp., printed. Industrial Services Section, Louisiana Wild Life and Fisheries Commission, 126 Civil Courts Bldg., New Orleans 16, La. This directory classifies all of the fish dealers (producers, wholesalers, brokers, retailers, etc.) in Louisiana under the following headings: bait; crabs; crab meat; crawfish; fish; fish sticks; frogs; fresh and canned oysters; shrimp; shrimp bran; and breaded, canned, cooked, dried, frozen, and peeled shrimp. This booklet should be of value to handlers of fishery products all over the country as well as United States exporters of fishery products.

Margins of the Sea, by Maurice Burton, 212 pp., illus., printed, \$3. Harper, New York, N. Y., 1954.

"Maritimes Clam Problem," article, Trade News, vol. 7, no. 12, June 1955, pp. 11, 18, illus., printed. Department of Fisheries, Ottawa, Canada. Describes a study of the soft-shelled clam, Mya arenaria, and its disappearance in the Maritimes. Biologists of the Fisheries Research Board of Canada have found no evidence of disease or parasites, and they say pollution is not a serious factor. In some cases the clams reappeared as mysteriously as they had vanished, but the return was for a short time only. The scientists are now experimenting with a hydraulic digging machine which they hope will cut down the mortality rate. If the machine (which is patterned after a mechanical machine used in the Chesapeake Bay area of the United States) is successful, it may help conserve the beds that are left. The biologists say the future is dismal unless hydraulic digging and the cultivation of seed clams can hold the stocks at their present level.

The Movements of Salmon Tagged in the Sea, Montrose, 1948, 1950, 1951, by K. A. Pyefinch and W. B. Woodward, Freshwater and Salmon

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Fisheries Research 8, 18 pp., illus., printed. Her Majesty's Stationery Office, Edinburgh, Scotland, 1955.

(New Jersey) Annual Report (Division of Fish and Game, for the Fiscal Year Commencing July 1, 1953 and Ending June 30, 1954), 52 pp., printed. Department of Conservation and Economic Development, Division of Fish and Game, Trenton, N. J. Contains, among other subjects, a list of the fishery regulations effective September 1, 1953. These regulations are known as the Fish and Game Code and supersede the statute laws in respect to these regulations. A section on fish contains reports on hatchery operations; fish distribution and reclamation; summary of the pound fisheries; Fisheries Laboratory investigations; Dingell-Johnson projects; New Jersey landings for 1953; and statistics on the Delaware River and Hudson River shad industry.

Notas Sobre el "Pez Mariposa" (LAMPRIS LUNA) en Cuba, by Luis Howell Rivero, Contribucion No. 7 del Centro de Investigaciones Pesqueras, 7 pp., illus., processed, in Spanish. Dependencia de la Division Agricola del Banco de Fomento Agricola e Industrial de Cuba, Playa Habana, Bauta, Cuba, 1954.

"The Noxious Sea Life in Alabama Waters," by Mabel Loesch, article, Alabama Conservation, vol. 26, no. 6, May-June 1955, pp. 16-17, 22-23, illus., printed. Alabama Department of Conservation, 711 High St., Montgomery, Ala. Describes the various types of sea life which may be annoying to bathers or fishermen in Alabama waters. The author states that "very few of these will be found often as most live in the more tropical waters and only occasionally stray into our waters." The stinging, dangerous to handle, and vicious sea animals are described with suggestions for treatment in case of attack. The fish which are poisonous when eaten are also described.

"Pen Surfaces and Odour Development in Trawler Fish Holds," by W. A. MacCallum, article, Food Technology, vol. 9, no. 5, May 1955, pp. 251-253, printed, single copies of periodical: domestic US\$1, foreign US\$1.25. The Garrard Press, 119 West Park Ave., Champaign, Ill. (Published by the Institute of Food Technologists.) Describes an investigation conducted to learn the effect of various types of surfaces which may come in contact with the fish on the preservation of the catch; and to determine if hold linings impermeable to bacteria, e.g. metal surfaces, are necessary for the proper stowage of groundfish aboard Atlantic Coast trawlers. The author states that, "Of the materials and surfaces studied, rough, unpainted wood boards were shown to be a very serious source of contamination of fish at all levels in the pen. These surfaces could not be effectively washed. Painted and varnished wood surfaces were impermeable to bacteria in most cases. However, when used commercially, many of these surfaces ultimately become broken and eroded. Aluminum, or probably any other corrosion-resistant, non-toxic metal,

gives a satisfactory surface. Such surfaces provide a reasonable guarantee against bilgy and sour odors, provided the catch is well iced. If the fish are not protected by the use of all-metal pens, they should be kept away from slime-bearing pen surfaces with ice. Screens along the pen sides are useful aids. The vertical walls and boards of the pen are the most difficult to ice properly. If only part of the pen can be of metal, the walls should be given priority."

Produccion Destino y Consumo de Pescado en la Republica Argentina, by Carlos Gonzalez, Boletin No. 4, 8 pp., processed in Spanish. Departamento de Investigaciones Pesqueras, Buenos Aires, Republica Argentina.

Progress Report to the Legislature, 1955 Session, by the Senate Interim Committee on Fish and Game (Created Pursuant to Senate Resolution No. 15, 1953 Regular Session), 113 pp., printed. Senate of the State of California, Sacramento, Calif. Among other items, this report contains a chapter on marine fisheries and research, a brief history of the Department of Fish and Game of California, and a report on the catchable trout program and the Wildlife Conservation Board.

Progress Reports of the Pacific Coast Stations, No. 103, 27 pp., illus., printed. Fisheries Research Board of Canada, Ottawa, Canada, July 1955. Among the articles included are: "Selectivity of Trolling Lures," by D. J. Milne; "Results of Tests on Kuralon Staple Twine," by P. J. G. Carrothers; "Preliminary Results of Gray Cod Tagging in Georgia Strait in the Winter of 1954-55," by C. R. Forrester and K. S. Ketchen; "Vitamin A Instability," by Lyle A. Swain and D. R. Idler; "A Soluble Fertilizer from Shrimp Waste," by D. R. Idler and P. J. Schmidt; and "The Nutritive Value of Fish Meal and Condensed Fish Solubles. X. The Vitamin B₁₂ Content of Herring Stickwater and Condensed Solubles," by H. L. A. Tarr.

Prospects for the 1955-56 Herring Fishing Season, by F. H. C. Taylor, Circular No. 38, 9 pp., processed. Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B. C., July 1955.

"Reactions of Herring Larvae to Light: a Mechanism of Vertical Migration," by P. M. J. Woodhead and A. D. Woodhead, article, Nature, vol. 176, no. 4477, August 20, 1955, pp. 349-350, illus., printed, 2s. (28 U.S. cents). Mac Millan & Co., Ltd., St. Martin's Street, London, W. C. 2, England.

Red Tide Bacterial Studies, by Selwyn J. Bein, Special Service Bulletin No. 10, 2 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., March 1955.

"Refrigerated Test-Bed Northern Wave," article, Modern Refrigeration, vol. LVIII, no. 687, June 1955, pp. 197-199, illus., printed. Refrigeration House, Victoria Road, Woking,

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England. Fitted with specially-designed quick-freezing equipment and a substantial subzero storage compartment, the Northern Wave made its first experimental voyage. The principal objective of the experiment was to discover whether it is possible, by freezing part of the catch at sea, to secure an improvement in the quality of fish brought from distant waters. A brief description of the Northern Wave and scope of the experiment are presented.

Report on Continuous Crayfishing Tests, 1947-8, and their Application to the Management of the Crayfishery of Western Australia, by Keith Sheard, Fisheries Bulletin No. 5, 54 pp., illus., printed. Fisheries Department, Perth, Western Australia, 1954. This report records the extent and rate of replacement of stocks of the marine crayfish, Panulirus longipes (Milne-Edwards), under conditions of intense fishing at a previously unexploited area in the Pelsart Group of Houtman Abrolhos, Western Australia, during 1947 and 1948. The carapace length composition of the catch in the various hauls is recorded in a comprehensive set of tables, both in order to provide raw data of use in future age grouping determinations, and to enable an assessment to be made in the future of the effects of intensive commercial fishing on these stocks. A brief account of the life history and general biology of the species is given. Crayfishery management is discussed. It is pointed out that the most rational fishing practice is that of fishing a given ground with a limited series of pot hauls in a given season, thereafter for a shorter or longer period, leaving the reef areas to be replenished.

"Results of the 1954 Pismo Clam Census," by John E. Fitch, article, California Fish and Game, vol. 41, no. 3, July 1955, pp. 209-211, printed. California Department of Fish and Game, Sacramento 14, Calif.

"A Review of the Black Sea Fish Fauna and General Marine Life Conditions," by E. P. Salas-tenenko, article, Copeia, no. 3, August 19, 1955, pp. 230-235, printed. The American Society of Ichthyologists and Herpetologists, Mt. Royal & Guilford Aves., Baltimore 2, Md.

Revue des Travaux de L'Institut des Peches Maritimes, vol. XIX, no. 2, June 1955, 182 pp., illus., printed in French. Institut Scientifique et Technique des Peches Maritimes, 59 Avenue Raymond-Poincare, Paris 16, France.

(Scotland) Herring Industry Board Twentieth Annual Report for the Year Ended 31st December 1954, 40 pp., printed, 1s. 3d. (17 U. S. cents). Her Majesty's Stationery Office, London, England, 1955. This is a report of Scotland's herring fisheries, with data on marketing, research and development, and the herring fleet. Included are statistics on the volume and value of catches in principal ports, cured herring production, composition and disposition of the fleet operating in East Anglia, and the utilization of herring. Rules and directions having seasonal effect which were issued during 1954

are summarized in an appendix to this report. Also included is a financial statement of the Herring Industry Board for the year ending December 31, 1954.

"The Sea Lamprey Invasion," by Larry Wiegert, article, Wisconsin Conservation Bulletin, vol. 20, no. 8, August 1955, pp. 8-11, illus., printed. Wisconsin Conservation Department, Madison 1, Wis.

Seashores, by Herbert S. Zim and Lester Ingle, 160 pp., printed, paper \$1; cloth \$1.95. Simon & Schuster, New York, N. Y., 1955. A guide to shells, sea plants, shore birds, and other natural features of American coasts.

The Seaweed Story, 21 pp., illus., printed. Department of Fish and Game, 926 Jay Street, Sacramento 14, Calif.

See Through the Sea, by Millicent Selsam and Betty Morrow, 48 pp., illus., printed. \$2.50. Harper and Douglas, 49 E. 33rd St., N. Y. 16, N. Y. A children's book about creatures living in the sea.

Study of the Operations of the Fish and Wildlife Service, 275 pp., illus., printed. House Committee on Merchant Marine and Fisheries, Washington 25, D. C., 1955. A report on hearings before the House Committee on Merchant Marine and Fisheries. The hearings were held March 2-15, 1955, to report to the Committee on the various activities of the Fish and Wildlife Service and to provide some background on services performed. The report includes statements of Fish and Wildlife Service Director John L. Farley, Assistant Directors A. J. Suomela and E. F. Swift, Assistant to the Director A. M. Day, and the Chiefs of all branches and Divisions of the Service. Graphs, charts, and illustrations are included.

The Summer Circulation of the Florida West Coast Offshore Water as Deduced from the Pattern of Thermocline Depths and a Non-Geostrophic Equation of Motion, by Frank Chew, Technical Report 55-12, 14 pp., illus., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla., March 1955.

Survey of Bar Clam Resources of the Maritime Provinces, by J. C. Medcof and J. S. MacPhail, No. 102, 6 pp., printed. Fisheries Research Board of Canada, Ottawa, Canada, 1955.

"Swordfish Hunt," article, Trade News, vol. 7, no. 12, June 1955, pp. 12-14, printed. Department of Fisheries, Ottawa, Canada. A brief description of the swordfish fishery off Nova Scotia's coast. As spring rains give way to summer sunshine, more than 200 boats and five times as many men prepare for the short but lucrative chase of the "long snouts." Some of them will follow the migration from the time the swordfish arrive off Georges Bank (off southwestern Nova Scotia) until they finally disappear after reaching Cape Breton waters. In four decades the swordfish hunt has grown

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from a small industry to an important item in the fisherman's income.

Taiwan Fisheries, 18 pp., illus., printed. Industrial Development Commission, Economic Stabilization Board, Republic of China, 1955. Describes Taiwan's deep-sea, inshore, and coastal fisheries; and fish culture. Includes data on fisheries production in Taiwan; fishing craft, fishermen, and enterprises; fishing districts and ports; major fish species; marketing; ice making, cold storage, and freezing; processing of fishery products; imports and exports; and the outlook for Taiwan's fishing industry.

"Theory and Application of Continuous Pressure Filtration to the Extraction of Irish Moss," by D. A. Dahlstrom, Walter Hock, Stanley M. Osri, and Andrew Singleton, article, Food Technology, vol. 9, no. 6, June 1955, pp. 303-308, illus., printed, single copies of periodical: domestic US\$1, foreign US\$1.25. The Garrard Press, 119 West Park Ave., Champaign, Ill. (Published by the Institute of Food Technologists.) The operation and mechanics of continuous pressure filtration is described. After an extensive pressure leaf test program, the requirements for a continuous pressure filter installation were determined. A flow sheet for a proposed filter, taking into account these requirements, is presented and described.

Tide Tables: Central and Western Pacific Ocean and Indian Ocean for the Year 1956, Serial No. 784, 370 pp., printed, 75 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C.

United States Imports of Merchandise for Consumption (Commodity by Country of Origin), Calendar Year 1954, Report No. FT 110, 175 pp., processed, \$1. Bureau of the Census, U. S. Department of Commerce, Washington, D. C., June 1955. (For sale by the Superintendent of Documents, Washington 25, D. C.)

Variations in Temperature and Light Response Within a Plankton Population, by Hilary B. Moore, Contribution No. 137, 7 pp., illus., printed. (Reprinted from Biological Bulletin, vol. 108, no. 2, pp. 175-181, April 1955.) Marine Laboratory, University of Miami, Coral Gables, Fla.

"When the Tilefish Died," by Bernard L. Gordon, article, Natural History, vol. LXIV, no. 5, May 1955, pp. 273-275, illus., printed, single copy 50 cents. American Museum of Natural History, New York 24, N. Y. A brief history of the tilefish fishery. The tilefish was unknown until 1879 when the first specimen was caught south of Nantucket Lightship in 150 fathoms of water. Tilefish were found to be plentiful enough to support an important new fishery, but three years after its discovery the tilefish experienced near-annihilation because of its inability to tolerate changes in environment. Scientists explained that tilefish are bottom dwellers in about 100 fathoms of warm water. In 1882, the Gulf Stream, near the edge of which the tilefish dwell, moved farther out to sea, leaving them in cold water. They could not follow the shifting Stream, as the bottom of the ocean drops abruptly near the 100-fathom line. Consequently, almost the entire population was killed. Whether or not this explanation was correct cannot be stated definitely. In any case, not a single tilefish was caught anywhere for approximately ten years, although frequent searches were made. It was not until 1892 that they were found again.

White Fish Authority, Fourth Annual Report for the Year Ended 31 March, 1955, 47 pp., printed 1s. 6d. (about 20 U. S. cents). Her Majesty's Stationery Office, London, England. Presents a general description of the White Fish Authority, its functions, income, and expenditures. Sections on production of fishery products, marketing and distribution, research and training, and investigations are also presented.



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