



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.
 SSR.- FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-1614	- Alaska Fisheries, 1956 Annual Summary (revised), 8 pp.
CFS-1694	- Lake Fisheries, 1956 Annual Summary, 11 pp.
CFS-1707	- Frozen Fish Report, December 1957, 8 pp.
CFS-1711	- Pacific Coast State Fisheries, 1956 Annual Summary, 6 pp.
CFS-1720	- Mississippi River Fisheries, 1956 Annual Summary, 8 pp.
CFS-1724	- Massachusetts Landings, August 1957, 5 pp.
CFS-1727	- Louisiana Landings, November 1957, 2 pp.
CFS-1728	- New York Landings, December 1957, 4 pp.
CFS-1730	- Texas Landings, October 1957, 3 pp.
CFS-1732	- Texas Landings, November 1957, 3 pp.
CFS-1733	- Frozen Fish Report, January 1958, 8 pp.
CFS-1734	- Manufactured Fishery Products, 1956 Annual Summary, 7 pp.
CFS-1736	- Florida Landings, December 1957, 6 pp.
CFS-1737	- Massachusetts Landings, September 1957, 5 pp.
CFS-1738	- New Jersey Landings, December 1957, 3 pp.
CFS-1739	- Maine Landings, December 1957, 3 pp.
CFS-1740	- Massachusetts Landings, October 1957, 5 pp.
CFS-1741	- Alabama Landings, December 1957, 2 pp.
CFS-1743	- Texas Landings, December 1957, 3 pp.
CFS-1744	- South Carolina Landings, 1957 Annual Summary, 3 pp.
CFS-1845	- Mississippi Landings, December 1957, 2 pp.

Wholesale Dealers in Fishery Products (Revised):

- SL- 5 - Connecticut, 1957.
 SL-22 - Oregon, 1957.
 SL-23 - Washington, 1956.
 SL-25 - Wisconsin (Lakes Area), 1957.
 SL-27 - Indiana (Lake Michigan Area), 1957.
 SL-34 - Wisconsin (Mississippi River and Tributaries Area), 1957.

- SL-35 - Illinois (Mississippi and Illinois River Area), 1957.
 SL-39 - Tennessee, 1957.
 SL-40 - Oklahoma, 1957.

SSR-Fish. No. 234 - Physical Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States--M/V THEODORE N. GILL Cruise 4, by William W. Anderson and Jack W. Gehringer, 196 pp., illus., December 1957.

SSR-Fish. No. 242 - Drift Bottle Records for Gulf of Maine and Georges Bank, 1931-56, by Dean F. Bumpus and C. Godfrey Day, 64 pp., illus., November 1957.

SSR-Fish. No. 243 - Wind Atlas of the North Pacific, by James W. McGary and Thomas M. Naito, 39 pp., illus., September 1957.

SSR-Fish. No. 246 - Diversion of Adult Salmon by an Electrical Field, by Roger E. Burrows, 15 pp., illus., December 1957. This report is concerned with a general description of an electrical weir, the factors influencing its efficient operation, the reaction of salmon to the electrical field, and the application of the weir in salmon culture. An electrical weir consisting of a line of hanging electrodes and a submerged ground line has proved satisfactory for the diversion of adult salmon. The electrical field is created by 110-volt, single phase, 60-cycle, alternating electrical current available from most commercial sources. The optimum operating conditions for a weir of this type require minimum stream velocity within the electrical field of 3 feet per second, minimum barrier voltage of 0.5 volts per inch, and minimum field length of 10 feet with a voltage gradient which may vary within the range of from 0.3 to 0.7 volts per inch in the effective field. Adult salmon, once conditioned to the electrical stimulus, may be diverted from their normal migration path into an alternate route by the electrical field. With adequate water velocities and voltage gradients the electrical weir is a positive barrier to the upstream migration of adult fish. Downstream migrant salmon fingerlings pass through the weir with impunity. The weir is generally applicable to the varying conditions encountered in salmon streams of the Pacific Coast.

Relative Abundance of Maryland Shad, 1944-52, by Charles H. Walburg, Research Report 38, 18 pp., illus., processed. (Also Contribution No. 110, Chesapeake Biological Laboratory, Maryland Department of Research and Education, Solomons, Md.) Each year, the Maryland Department of Research and Education obtains catch and effort statistics from all commercial shad

fishermen in Maryland waters as part of the Maryland Management Plan. These data for the years 1944 to 1952 were used in conjunction with a tagging experiment, to estimate fishing effort, fishing rate, catch, size of run, and spawning escapement for each of these years. It was found that effort had increased almost twofold, despite the operation of a plan designed to keep it constant. The evaluation of the relation between factors which might cause changes in the size of the Maryland shad population is complicated because the effect of the Virginia shad fishery on the Maryland shad population is unknown. Without knowledge of this effect, the influence of other factors affecting the Maryland population is obscured.

e-p. No. 506 - Oysters.

e-p. No. 507 - Japanese High-Seas Salmon Fishery in the North Pacific Since 1952.

e-p. No. 508 - Research in Service Laboratories (April 1958): Contains these articles--"Fish-Oil Research at the Seattle Fishery Technological Laboratory;" "Effect of Season, Fishing Area, and Processing Techniques on Physical Constants of Fish Body Oils;" and "New Methods of Packaging Fish Fillet Blocks."

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

California Fishery Products Monthly Summary, January 1958, 10 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of raw tuna and tunalike fish, herring, mackerel, anchovies, and squid; pack of canned tuna, herring, mackerel, anchovies, and squid; market fish receipts at San Pedro, Santa Monica, San Diego, and Eureka areas; California imports; canned fish and frozen shrimp prices; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, January 1958, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; and wholesale prices of fish and shellfish on the New Orleans French Market; for the month indicated.

Monthly Summary of Fishery Products in Selected Areas of Virginia, North Carolina, and Maryland, February 1958, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Ocean City, and Cambridge; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

New England Fisheries--Monthly Summary, January 1958, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) This is the first issue

of New England Fisheries--Monthly Summary. It will be a regular monthly feature, and will supplement and replace the Boston Fishery Products Monthly Summary. The new summary, incorporating many new features, covers: review of the principal New England fishery ports; food fish landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; for the month indicated.

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Accelerated Development of Testis after Unilateral Gonadectomy, with Observations on Normal Testis of Rainbow Trout, by O. H. Roberson, Fishery Bulletin 127 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 58), 25 pp., illus., printed, 25 cents, 1958.

Alaska Fishery and Fur-Seal Industries, 1955, by Seton H. Thompson, Statistical Digest No. 40, 88 pp., illus., printed, 40 cents, 1957. Detailed reports and statistical tables concerning the operation and yield of the various fishery industries are presented, with added data on certain related matters, particularly the condition of the fishery resources. Under the section on fishery industries, the following subjects are covered: court decisions, Alaska Department of Fisheries; research; exploratory fishing investigations; administration; management; and general statistics on salmon, herring, halibut, shellfish, and miscellaneous fishery products. The second section on the Pribilof Islands fur-seal industry covers administration, fur-seal population studies, and general statistics on the fur seals taken in 1955. A statement is also included on sealing privileges accorded aborigines.

Observations on the Spearfishes of the Central Pacific, by William F. Royce, Fishery Bulletin 124 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 57), 60 pp., illus., printed, 40 cents, 1957. The taxonomy, distribution, size, food, and spawning habits of spearfishes are considered. Observations on several hundred spearfishes caught in the central equatorial Pacific and in the Hawaiian fishery are presented, together with an extensive review of Japanese and other literature. A morphometric study shows marked variation in all diagnostic characters and allometric growth in many. Six species are recognized: swordfish, Xiphias gladius, shortnose spearfish, Tetrapturus angustirostris, sailfish, Istiophorus orientalis, black marlin, Istiompax marlina, striped marlin, Makaira audax, and Pacific blue marlin, Makaira ampla. All six species are shown to be fishes of the high seas of wide distribution in the Pacific, but with different centers of abundance. The swordfish and striped marlin prefer

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the more temperate waters, the Pacific blue marlin the equatorial region, and the black marlin the coastal areas off Asia, America, and Australia. Maximum known weights of the Pacific forms (in pounds) are as follows: swordfish--1,061, shortnose spearfish--114, sailfish--132, black marlin--1,560, striped marlin--483, and Pacific blue marlin--1,450. All are broadly carnivorous on fish and cephalopods. The Pacific blue marlin probably spawns throughout most of the year in equatorial waters.

MISCELLANEOUS PUBLICATIONS

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AUSTRALIA:

The Systematic Position of the School Prawn from Western Australia, by A. A. Racek, Fisheries Bulletin No. 6, 13 pp., illus., printed. Superintendent of Fisheries, Western Australia Fisheries Department, Perth, Australia. An illustrated description of a commercially-important shrimp species of the genus Metapenaeus from Western Australia.

BRAZIL:

Introducao ao Estudo das Pescas no Brazil (Introduction to the Study of Fisheries in Brazil), vols. I and II, 323 pp. text, 8 maps and charts; and 193 pp. text, 2 map folders; respectively, illus., printed in Portuguese. Missao Portuguesa de Pesca no Brazil, Rio de Janeiro, Brazil, 1956. A two-volume report on fisheries in Brazilian maritime waters and the Amazon River, prepared by a mission of Portuguese fishery experts. Volume I describes the present status of the fisheries of the most progressive nations of the world; the status of Brazilian fisheries; general development of the fisheries--including reports on government projects for port improvements, marketing and industrial aids, and technical assistance; and a detailed description of the various fishery zones of Brazil. Volume II is devoted largely to maps of Brazilian waters and descriptions of tests performed by the Portuguese Mission with trawl nets.

Perspectivas da Pesca e Piscicultura na Bahia (Prospects of Fishery and Fish Culture in Bahia), by Rui Simeos de Menezes, 35 pp., printed in Portuguese. (Reprinted from Bulletin No. 17, Servico de Divulgacao da Secretaria da Agricultura Industria e Comercio do Estado da Bahia, May-August 1956.) Servico Piscicultura, Governo da Bahia, Bahia, Brazil, 1956. Reports on the possibilities for fisheries and fish culture in the marine and inland waters of the state of Bahia, Brazil. Contains a 19-page bibliography of pertinent information.

CANADA:

The Fishes of Labrador, by Richard H. Backus, Bulletin of the American Museum of Natural History, vol. 113, article 4, 55 pp., illus., printed, \$2. American Museum of Natural History, New York, N. Y., 1957.

Journal of the Fisheries Research Board of Canada, vol. 15, no. 1, January 1958, 113 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, the following articles: "The Abundance and Distribution of the Northern Sea Lion (Eumetopias jubata) on the Coast of British Columbia," by Gordon C. Pike and Brian E. Maxwell; "The Estimation of Population Size by a Marking and Recapture Procedure," by D. B. DeLury; and "Redescription of Lampetra ayresii (Gunther) of Western North America, a Species of Lamprey (Petromyzontidae) Distinct from Lampetra fluviatilis (Linnaeus) of Europe," by Vadim D. Vladykov and W. I. Follett.

CEYLON:

Operation of Trawlers and Fishing Vessels (Annual Report and Audited Accounts for 1953-54), Trading Accounts Series No. 53/1957, 12 pp., printed, 40 cents. Government Publications Bureau, Colombo, Ceylon, November 1957. A review of the activities of Ceylon's Department of Fisheries in its operation of trawlers and fishing vessels during 1953-1954. A balance sheet and financial statements for the operation of trawlers and fishing vessels are included.

COD:

Changes in the Skin Flora of Cod After Washing and Icing, by D. L. Georgala, 7 pp., illus., printed. (Reprinted from The Journal of Applied Microbiology, vol. 20, no. 1, April 1957, pp. 23-29.) Torry Research Station, Food Investigation Organization, Department of Scientific and Industrial Research, Aberdeen, Scotland.

"Depuis Quelques Annees, la Production Francaise de Morue Salee a Pris une des Premieres Places dans le Monde" (For Several Years the French Production of Salted Cod Has Taken First Place in World Production), by M. Sauveroché, article, La Peche Maritime, Annee 37, No. 959, February 1958, pp. 75-77, illus., printed in French. La Peche Maritime, 190 Boulevard Haussmann, Paris, France.

"L'Exportation de la Morue" (The Export of Cod), by Geep, article, La Peche Maritime, Annee 37, No. 959, February 1958, pp. 72-74, illus., printed in French. La Peche Maritime, 190 Boulevard Haussmann, Paris, France.

Nucleotides in the Skeletal Muscle of Codling (GADUS CALLARIAS), by N. R. Jones and J. Murray, DSIR Food Investigation Memoir No. 1071, 1 p., printed. (Reprinted from Proceedings of the Biochemical Society, vol. 66, Part 1, March 1957, p. 5.) Torry Research Station, Aberdeen, Scotland.

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"La Production de Morue en France et Dans le Monde" (The Production of Cod in France and the World), article, La Peche Maritime, Annee 37, No. 959, February 1958, pp. 69-71, illus., printed in French. La Peche Maritime, 190 Boulevard Haussmann, Paris, France.

"La Vente en France de la Morue Salee" (The Sale of Salted Cod in France), by M. Hardy, article, La Peche Maritime, Annee 37, No. 959, February 1958, pp. 79-80, illus., printed in French. La Peche Maritime, 190 Boulevard Haussmann, Paris, France.

COMMISSIONS:

Gulf States Marine Fisheries Commission Eighth Annual Report 1956-57 (to the Congress of the United States and to the Governors and Legislators of Alabama, Florida, Louisiana, Mississippi, and Texas), 33 pp., illus., printed. Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans 16, La. Contains the Commission's activities for the period October 1956-October 1957, with a summary of some of the points of general interest in the compact between the States of Alabama, Florida, Louisiana, Mississippi, and Texas. This report briefly enumerates and summarizes the activities and accomplishments of those agencies with which the organization is directly associated. Also included are short discussions of the U. S. Fish and Wildlife Service activities in technological and biological research, exploratory fishing in the Gulf area, and the Gulf fishery statistical program. A financial report of the Commission is included.

CRABS:

"Crabbing. . . and Crabs," by Eduard Waldo and Percy Viosca, Jr., articles, Louisiana Conser-vationist, vol. 10, no. 1, January 1958, pp. 10-13, 22-23, illus., printed. Louisiana Wild Life and Fisheries Commission, 126 Civil Courts Bldg., New Orleans, La. Dual articles, the first of which describes the methods of taking crabs and gives specifications for the construction of crab pots and traps. The second article describes briefly the various crabs that inhabit the coastal waters of Louisiana, with emphasis on the life history of the blue crab.

CUBA:

The Present Situation in the Fishing Industry of Cuba, by Jose A. Suarez Caabro, Monografia No. 3, 8 pp., printed. (Reprinted from Proceedings of the Gulf and Caribbean Fisheries Institute, Ninth Annual Session, November 1956, pp. 136-143.) Universidad de Villanueva, Laboratorio de Biologia Marina, Havana, Cuba. Describes in general the fishing industry of Cuba, including the annual production of fish and shellfish and the types of fishing vessels which are used in the fisheries. Further details are given individually on the shrimp, spiny lobster, shark, tuna, grouper, and snapper fisheries. Information is also included on imports and exports of fishery products.

EELS:

"The Eel. . . Truly a Remarkable Creature," by Roger M. Latham, article Pennsylvania Angler,

vol. 27, no. 2, February 1958, pp. 2-7, illus., printed, 10 cents. Pennsylvania Fish Commission, South Office Bldg., Harrisburg, Pa. An account of the American eel and its interesting life history. Methods of taking eels commercially are described as well as ways used by the sports fishermen. Methods of cleaning and preparation for smoking and pickling are also described.

ELECTRICAL FISHING:

Electrical Fishing, by P. F. Meyer-Waarden, FAO Fisheries Study No. 7, 85 pp., illus., printed, 5s. (US\$1). (For sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) Food and Agriculture Organization of the United Nations, Rome, Italy, 1957. This report is intended to eliminate confused ideas and views about electrical fishing, which hamper its future development. The possibilities of its practical use for fresh-water and sea fisheries are explained, and the natural and technological factors restricting that technique are considered. A survey of the various gear at present used and a description of the methods of using them, and of the electro-technical and electro-physiological basic factors, complete the survey of the present state of electrical fishing. The four chapters, which make up this report, include information on the basic principles of electrical fishing, application of electric current in fishing, protective measures against the misuse of electrical fishing gear, and importance of the electrical fishing technique in fisheries. Also includes a bibliography on electrical fishing.

FEEDSTUFFS:

Animal Feedstuffs (Regulations Governing Their Manufacture and Sale in European Countries), by R. Ricard and T. Threlkeld, 137 pp., printed, 5s. (US\$1). Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. (For sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) The object of this work is to set forth the various laws and regulations adopted in European countries concerning the manufacture and sale of animal feeds, especially compound feeds, as well as to describe the experience gained from them. In addition, the study provides the necessary background material from which possible uniform regulations may be made and which, at the same time, provides farmers with the required guarantees concerning the source and quality of the various ingredients in the compound. On the basis of information accumulated from all FAO Member Governments in Europe, the Legislative Service of the Organization prepared this study covering regulations in eighteen countries as at the beginning of 1957, excluding only Turkey and Yugoslavia, since there are in these countries no special regulations on the subject. This publication refers not only to regulations affecting compound feeds, but also to those concerning unmixed feeds, for it was found to be impracticable to separate these two aspects in the regulations that were studied. In addition, the material has been presented as far as possible on a uniform basis so as to facilitate

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comparison and the work of keeping it up to date. Countries covered by this report are: Austria, Belgium, Denmark, Finland, France, Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

FILLETS:

The Expressible Fluid of Fish Fillets. V--Cell Damage in Fillets Frozen from One Side, the General Picture, by R. M. Love, DSIR Food Investigation Memoir No. 1066, 5 pp., illus., printed. (Reprinted from the Journal of the Science of Food and Agriculture, no. 4, 1957, pp. 238-242.) Department of Scientific and Industrial Research, Torry Research Station, Aberdeen, Scotland.

FISH COOKERY:

Recetario para la Preparacion Culinaria de los Pescados de Mar y Mariscos Congelados (Recipe Book for Cooking Frozen Fish and Shellfish), 56 pp., illus., printed in Spanish. "Comisariato" Puccini, Banfi y Cia., Avenida 28, No. 22-63/69, Bogota, Colombia, 1954.

FISH INSPECTION:

"Fresh Fish Quality Assessment in Commercial Fish Inspection," by P. Jensen, article, World Refrigeration, vol. 8, no. 3, March 1957, pp. 168-172, printed. (Paper read at the FAO International Meeting of the Fish Processing Technologists held in Rotterdam, Netherlands, June 23-29, 1956.) World Refrigeration, 140 Cromwell Rd., London, S. W. 7, England.

FOOD ADDITIVES:

Report of Joint FAO/WHO Expert Committee on Food Additives, Nutrition Meetings Report No. 15, 27 pp., printed, 1s. 6d. (30 U. S. cents). Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. (For sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) Following two FAO/WHO reviews of the problems of food additives in 1954 and 1955, a further step was taken the next year with establishment of a Joint FAO/WHO Expert Committee which met in Rome, Italy, to formulate general principles governing the use of food additives. This is the report of that Expert Committee. Basically, the eight-member Committee restricted its discussions to "non-nutritive substances added intentionally to food, generally in small quantities, to improve its appearance, flavor, texture or storage properties." Substances which are added primarily for their nutritive value, such as minerals and vitamins, were not considered by the Committee, although it was recognized that in certain instances chemicals added to food to impart a desired quality or for some other functional purpose may also be of nutritional value. The report contains brief chapters on "Circumstances Governing the Use of Food Additives," "Other Factors to be Taken into Account in Food Additives Control," "Recommendations to FAO and WHO" and an over-all "Summary" of conclusions reached by the Committee. In ad-

dition, there is a list of participants, including observers invited by FAO to attend the discussions.

FOOD AND AGRICULTURAL ORGANIZATION:
General Fisheries Council for the Mediterranean--Proceedings and Technical Papers, No. 1, 99 pp., December 1952; No. 2, 361 pp., 1954; No. 3, 518 pp., 1955; illus., printed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. (For sale by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) Three publications, respectively covering the inaugural, second, and third meetings of the General Fisheries Council for the Mediterranean.

FOODFISH:

Foodfish for the Future, by Charles P. Selden and Irving W. Jones, Educational Bulletin No. 1, 21 pp., illus., printed. Fish Commission of Oregon, Portland, Oreg., 1958. Includes information on what kinds of foodfish are caught in Oregon, who manages foodfish resources, how are foodfish resources managed, and putting the management program into action. Also includes information on hatcheries which are an important part of the salmon management program, and how you can help conserve foodfish resources.

GEAR:

The Baird Sledge Dredge and Its Handling, Laboratory Leaflet No. 15, 6 pp., illus., processed. Ministry of Agriculture, Fisheries and Food, Fisheries Laboratory, Lowestoft, England, 1957. Presents instructions on rigging, shooting and hauling, and tooth-setting, of the Baird sledge dredge for scallop fishing. Contains detailed diagrams of the dredge and its sustaining derrick and slip hook. The concluding paragraphs give comparisons with standard dredges, showing the advantages of using the Baird sledge dredge.

GENERAL:

Accordo tra L'Italia e la Jugoslavia Relativo alla Pesca da Parte di Pescatori Italiani nelle Acque Jugoslave e Scambi di Note (Agreement Between Italy and Yugoslavia on Fishing by Italian Fishermen in Yugoslavia Waters and Exchange of Note), Trattati e Convenzioni (Treaties and Conventions), 13 pp., printed. Tipografia Riserata del Ministero Degli Affari Esteri, Rome, Italy, 1956.

A Collection of Drawings of Fishes Ascribed to J. P. Kirtland (1793-1877), in the Library of Bowdoin College, by James M. Moulton, Breviora, Museum of Comparative Zoology, No. 80, 4 pp. text, 2 pp. photographs, printed. Department of Biology, Bowdoin College, Brunswick, Me., September 30, 1957. A very brief report announcing the location of historically significant fishery drawings at Bowdoin College, Me.

HERRING:

A Bibliography of the Herring (CLUPEA HARENGUS and C. PALLASII), by Leslie W. Scattergood, Research Bulletin No. 26, 108 pp., printed.

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Department of Sea and Shore Fisheries, Augusta, Me., October 1957. A bibliography dealing primarily with the biology of the herring, compiled as a result of the herring investigation carried on jointly by the U. S. Fish and Wildlife Service, the Maine Department of Sea and Shore Fisheries, and the Maine Sardine Industry.

HONG KONG:

Hong Kong Annual Departmental Report by the Registrar of Cooperative Societies and Director of Marketing for the Financial Year 1956-57, 41 pp., illus., printed, \$3. S. Young, Acting Government Printer, Government Press, Java Road, Hong Kong. Reports on the accomplishments of Hong Kong's Cooperatives and Marketing Department during the 1956-57 fiscal year. Covers the following information pertaining to fisheries: fish pond society; fishermen's thrift, loan, housing, credit, and marketing societies; credit facilities for fishermen; and activities of the Fish Marketing Organization--including legislation, species of fish marketed, exports of local marine fish, mechanized fleet, fish collecting depots and posts, transport, supplies to fishermen, education, and finance.

IRRADIATION:

"Some Chemical and Organoleptic Changes in Gamma Irradiated Meats," by H. S. Groninger, A. E. Tappel, and F. W. Knapp, article, Food Research, vol. 21, no. 5, September-October 1956, pp. 555-564, printed. The Garrard Press, 119-123 W. Park Ave., Champaign, Ill. A study was made to define the major chemical and organoleptic changes in irradiated beef, pork, chicken, and fish. The meats and fish were finely ground, thoroughly mixed, packed in No. 2 enameled cans, evacuated, gassed with nitrogen or oxygen through a small hole, soldered shut, and frozen in a -0.4° F. room. Samples were thawed, irradiated, refrozen and held in the frozen state until analyzed. Assays were made for drip, moisture, peroxide values, carbonyl compounds, hematin pigment concentration, tocopherols, riboflavin, niacin, and thiamine. A multiple-comparison method was used to evaluate samples organoleptically.

ISRAEL:

Bamidgeh--Bulletin of Fish Culture in Israel, vol. 9, no. 2, 23 pp., illus., printed in English and Hebrew. Joint Agricultural Extension Center, Division of Fisheries, Ministry of Agriculture, Tel Aviv, Israel, July 1957. Contains the annual report for 1956 of the Fish Culture Research Station at Dor, Israel, together with other articles of interest on the development of pond fishing in Israel.

Fishermen's Bulletin, no. 14, December 1957, 38 pp., illus., printed in Hebrew with summaries in English. Ministry of Agriculture, Division of Fisheries, Sea Fisheries Research Station, P. O. Box 699, Haifa, Israel. Contains, among others, the following articles: "Around the Fisheries of Israel," by M. Shavit; "The International Fishing Gear Congress in Hamburg," by M. Ben-Yami; "An Experiment in the Freez-

ing of Cooked Fish," by H. Engelberg; and "An Experiment in Enlarging the Opening of the Trawl Net on the FMV 'Dror'," by D. Benyamini.

JAPAN:

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 2, pp. 87-162, illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan, August 1957. Contains among others the following scientific papers: "Studies on the Beach Seines of Two-Boat Operation along the Pacific Coast of Aomori Prefecture. I--On the Construction of the Beach Seine of Two-Boat Operation Used for Both Mackerel and Sardine Fishing;" "The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Sea Foods. VI--Influence of the Contained Substances upon the Growth of the Formed $MgNH_4PO_4 \cdot 6H_2O$ Crystals in the Test Tubes. VII--The Formation of the Isolated Microscopical Crystal and its Incipient Growth. VIII--The Formation of the Crystals during the Processing of the Cans," "On Fish Tropomyosin. I--Isolation and Amino Acid Composition;" and "Studies in the Bacteriological Chemistry of Shark Muscle Spoilage. III--On the Effects of pH upon the Abilities of the Ureasplitting Bacteria Isolated from Spoiling Shark Muscle."

Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 3, pp. 163-241, illus., printed in Japanese with summaries in English. Faculty of Fisheries, Hokkaido University, Hakodate, Japan, November 1957. Contains among others the following scientific papers: "The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Sea Foods. IX--Method for Preventing the Formation of the Crystals during the Processing of the Cans. X--General Considerations." "Studies on Crystalline Whale Pepsin. III--Analysis of Amino Acid by Paper Chromatography;" "Studies on Crystalline Whale Pepsin. IV--Free amino Acids in Peptic Digests of Various Proteins;" "Studies on Crystalline Whale Pepsin. V--Relation Between Denaturation and Activity;" and "Studies on Crystalline Whale Insulin. III--N- and C-Terminal Residues."

Data Record of Oceanographic Observations and Exploratory Fishing, No. 1, 247 pp., illus., printed in Japanese and English. The Faculty of Fisheries, Hokkaido University, Hokodate, Hokkaido, Japan, May 1957. Concerned with data collected in cruises to the Aleutians and Bering Sea.

Japanese Fisheries--Their Development and Present Status, 253 pp., illus., printed. Asia Kyokai, No. 1, 3-chome, Kyobashi, Chuo-ku, Tokyo, Japan, 1957. An extensive and generously-illustrated report on the progress of the Japanese fisheries since the end of World War II. Presents detailed accounts of the following topics: general aspects of the fisheries; fishing gear and methods; fishing boats; inland fisheries and culture; culture in shallow sea waters; pearl culture; refrigeration in the fisheries--describing the history and present status

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of the ice-making, cold storage, and frozen fish industries; outline and present situation of the canning of fisheries products; fish-paste industry; processed fisheries products; market and transportation; import and export trade; educational and research institutions; research of fisheries resources in Japan; fisheries finance--covering commercial, cooperative, and government financing; fishery cooperatives; public administration in fisheries; and fisheries statistics. An appendix containing 61 tables covers index of industrial activities and prices; national income from fisheries; management units; means of production; fisheries production--including fish catch, whaling, and processed and canned fishery products; distribution; consumption; prices; trade; financing; management; fishing boat insurance; and fisheries cooperative associations.

Memoirs of the Faculty of Fisheries, Kagoshima University (Memorial Number for the Tenth Anniversary), vol. 5, 225 pp., illus., printed in Japanese with summaries in English. The Faculty of Fisheries, Kagoshima University, Kagoshima, Japan, December 1956. Contains, among others, the following articles: "On the Chino-Japanese Fisheries Agreement. A New Principle of the International Regulation of High Seas Fisheries;" "An Interpretation of the Developmental Process of Fishery-Economy in Japan--Especially a Consideration on the Skipjack Fishery at Bonotsu;" "Studies on the Improvement of Yellow-tail Setting Net (III)--On the Tension Meter of Sand-bag Line and Effects Derived from the Measurement;" "Studies on the Improvement of Yellow-tail Setting Net (IV)--Model Experiment on Trap Net Furnished with Sea Bottom Bagnet;" "Studies on the Improvement of Yellow-tail Setting Net (V)--Model Experiment on the Two Different Kinds of Sea Bottom Fixed Nets;" "Studies on the Catch Efficiency Derived from the Difference in the Construction of Tuna Long-Line Gear (I)--On the Catch Difference from Each Depth of Hook in the Long-Line Gear;" "Studies on the Catch Efficiency Derived from the Difference in the Construction of Tuna Long-Line Gear (II)--On the Results of Fishing Test of Tuna Long-Line with 4 Hook Gear and 5 Hook Gear;" "On the Detective Effect of the Radar upon the Location of the Tunny-Long-Line (II);" "Theoretical Estimation of Albacore-Shoals Dimensions in Accordance with the Characteristic of Fishing-Rates;" "Studies on Some Marine Algae from Southern Japan, II;" "A Supplement of the Studies of the Salmon Eggs--Consideration of the Osmotic Pressure and the Destruction of the Eggs;" "On the Formation of Amine in Fish Muscle (I)--Formation of Histamine and Tyramine in Muscle and Shellfish During Spoilage;" "On the Formation of Amine in Fish Muscle (II)--Influence of Temperature on the Formation of Histamine in Fish Muscle;" "On the Variation of 'Tyrosine Value' in the Decrease of Fish-Muscle Freshness III.--Elucidation of Estimation-Value by Phenol Reagent Method;" and "On the Inspection of Radioactivity of Sea-Water in the Several Southern Sea Fronts and the Eastern China Sea."

LOBSTERS:

Canada's Lobster Fishery, by D. G. Wilder, 23 pp., illus., printed, 25 cents. Queen's Printer, Ottawa, Canada. A well-illustrated booklet on Canada's lobster fishery, describing the nature and value of the lobster resource and the need to conserve it. The author states that "To supply the demand, a very intensive fishery has been developed and lobsters are continually in danger of being overfished. Proper management to make best continuing use of this extremely valuable resource is of utmost importance to all concerned. Sound management procedures must be based on thorough knowledge of the lobster's life history and an understanding of the factors that control its reproduction, growth, and survival." The author, who is a leading authority of the subject, gives a brief history of the lobster fishery and a description of the appearance, anatomy, behavior and feeding, molting and growth, maturity and mating, egg laying and hatching, and enemies of the lobster. Methods of catching, distribution, and marketing, and management procedures are also discussed.

MARINE FISHERIES MANAGEMENT:

Some Considerations of Population Dynamics and Economics in Relation to the Management of the Commercial Marine Fisheries, by Milner B. Schaefer, 13 pp., illus., printed. (Reprinted from Journal of the Fisheries Research Board of Canada, vol. 14, no. 5, 1957, pp. 669-681.) Inter-American Tropical Tuna Commission, Scripps Institution of Oceanography, La Jolla, Calif. In order to arrive at a rational basis of considering the social problem of fisheries management, the author considers some significant aspects of the population dynamics of commercial fish stocks and of the economics of commercial fishing. He discusses the dynamics of renewable natural resources--the self-regulating and non-self-regulating resources. The economic model of the fishery is considered as well as some social and political considerations.

NETS:

"Net Materials of Synthetic Fibers," by Dr. A. Von Brandt, article, FAO Fisheries Bulletin, vol. X, no. 4, October-December 1957, pp. 182-210, illus., printed. Food and Agriculture Organization of the United Nations, Rome, Italy. (For sale by Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y.) Man-made, or truly synthetic, fibers are produced without the help of fiber-forming raw materials of vegetable or animal origin, such as cellulose or protein-base fibers. The truly synthetic fibers are manufactured from polymers, which are synthesized by laboratory processes from simple chemical units. These fibers belong to the plastic materials now so important. This paper gives a resume of the qualities of the man-made fibers known at the present time. Under the section on qualities of net materials, the following subjects are discussed; resistance to rotting, sunlight, heat, and chemicals; specific gravity of fiber; resistance to water, fouling, and attack by animals; breaking-strength; extensibility and

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elasticity of net twines; flexibility, visibility; and resistance to abrasion. Other sections cover an evaluation of the qualities of net materials, yarn numbering systems, yarn and twine, and truly synthetic fibers used for nets.

NEWFOUNDLAND:

"Newfoundland Fisheries, 1957," article, Trade News, vol. 10, no. 7, January 1958, pp. 8-9, illus., printed. Department of Fisheries of Canada, Ottawa, Canada. Describes very briefly trends and developments in the fisheries of Newfoundland, especially salted cod, frozen groundfish, herring, mackerel, salmon, lobster, squid, turbot, fish meal, marine oils, seals, whales, and bait service. Also discusses fish inspection, conservation and development service, Fish Culture Development Branch, fishermen's indemnity plan, and development projects.

NEW MEXICO:

Guide to the Fishes of New Mexico, by William J. Koster, 152 pp., 104 illus., printed, \$1. New Mexico Department of Game and Fish, Santa Fe, New Mexico. Each species of fish known to occur in New Mexico waters is described. Representatives of 16 families are included, showing their shape, size, coloration, distribution, habits, uses, edibility, and relationship to other fish.

OCEANOGRAPHY:

Sea Temperature in the Gulf of Alaska and in the Northeast Pacific Ocean, 1941-1952, by Margaret K. Robinson, Bulletin of the Scripps Institution of Oceanography, vol. 7, no. 1, 98 pp. text, 1 chart, illus., printed, \$2. (Contributions from the Scripps Institution of Oceanography, No. 917.) Scripps Institution of Oceanography, University of California, La Jolla, Calif., August 30, 1957.

OYSTERS:

"Young Fishermen Learn from 4-H Oyster Project," by George Kyle, article, Alabama Conservation, vol. 29, no. 1, June-July 1957, pp. 8-9, illus., printed. Alabama Department of Conservation, 711 High St., Montgomery, Ala. Describes a 4-H Club project which shows its members how to plant "sea farms" and how to increase oyster production. The oyster project solved the problem of finding projects for 4-H youths in a non-farming area and offered the boys information they could use in later years.

PAKISTAN:

"Fish Industry in Pakistan," by Dr. M. R. Kureshi and Moinuddin Ahmad, article, Economic Digest, vol. 3, no. 6, February 9, 1958, pp. 1-4, printed. Institute of Development Economics, Block No. 56, Central Secretariat Buildings, Karachi, Pakistan. Presents a concise report on the status of Pakistan's fisheries--resources; production; fisheries development; fish harbor project and fresh fish stalls--in Karachi; exploration and research; mechanization of fishing craft; shrimp industry; fish meal and oil industry; East Pakistan marine fisheries; Mekran fisheries; fisheries cooperative societies; and exports of fish and fishery products.

PERU:

El Guano y la Pesca de Anchoveta (Guano and the

Anchovy Fishery), by Robert Cushman Murphy, 147 pp., illus., printed in Spanish. Compania Administradora del Guano, Lima, Peru, July 1954. A report on research into the possible effects of anchovy fishery upon the guano industry in Peru. Excessive fishery for anchovy, and other fish, could be disastrous to the guano-producing birds which depend on the anchovy for their existence. According to the author, since the anchovy and guano industries are both very important to the Peruvian economy, appropriate conservation measures will have to be taken in order to protect each one, and the fishery for anchovy and other species will have to be regulated.

PLANKTON:

A Portable Apparatus for Collecting Horizontal Plankton Samples, by Ruth E. Griffith, 3 pp., (Reprinted from Ecology, vol. 38, no. 3, July 1957, pp. 538-540) Department of Biology, Hood College, Frederick, Md.

RED SEA:

Fishes of the Red Sea and Southern Arabia, Volume I--Branchios-tomida to Polynemida, by Henry W. Fowler, 240 pp., illus., printed. The Weizmann Science Press of Israel, 33 King George Ave., Jerusalem, Israel, 1956.

SALMON:

Artificial and Natural Production of Silver Salmon, ONCORHYNCHUS KISUTCH, at Minter Creek, Washington, by Ernest O. Salo and William H. Bayliff, Research Bulletin No. 4, 82 pp., illus., printed. Department of Fisheries, Seattle, Wash., January 1958.

"The Importance of Size in the Change from Parr to Smolt in Atlantic Salmon," by P. F. Elson, article, The Canadian Fish Culturist, Issue Twenty-One, December 1957, pp. 1-6, illus., printed. Department of Fisheries, Ottawa, Canada.

"Number of Salmon Needed to Maintain Stocks," by P. F. Elson, article, The Canadian Fish Culturist, Issue Twenty-One, December 1957, pp. 19-23, illus., printed. Department of Fisheries, Ottawa, Canada.

"The Role of Hatcheries in Assuring Maritime Stocks of Atlantic Salmon," by P. F. Elson, article, The Canadian Fish Culturist, Issue Twenty-One, December 1957, pp. 25-32, illus., printed. Department of Fisheries, Ottawa, Canada.

"Using Hatchery-Reared Atlantic Salmon to Best Advantage," by P. F. Elson, article, The Canadian Fish Culturist, Issue Twenty-One, December 1957, pp. 7-17, illus., printed. Department of Fisheries, Ottawa, Canada.

SAMPLING:

"Sampling Problems and Methods in Fisheries Research," by John Gulland, article, FAO Fisheries Bulletin, vol. X, no. 4, October-December 1957, pp. 157-181, printed. Food and Agriculture Organization of the United Nations, Rome, Italy. (For sale by Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N.Y.) A simple introduction to the principles of tackling sampling

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English with Turkish summary. *Balikkilik Arastirma Merkezi Raporlari*, Istanbul, Turkey, 1956. Describes the results of a fishery survey conducted in the Black Sea, October 17 through December 15, 1955.

Report on a Survey of the Turkish Black Sea Coast, by Olav Aasen, İlham Artuz, and Erdoğan Akyuz, *Series Marine Research*, vol. 1, no. 5, 29 pp., illus., printed in English with Turkish summary. *Balikkilik Arastirma Merkezi Raporlari*, Istanbul, Turkey, 1956.

Some Data Concerning the Fisheries in Iskenderun Bay, by Olav Aasen and Erdoğan Akyuz, *Series Marine Research*, vol. 1, no. 4, 20 pp., illus., printed in English with Turkish summary. *Balikkilik Arastirma Merkezi Raporlari*, Istanbul, Turkey, 1956.

Turkiye Denizleri Balikkilik Takvimi (Turkish Marine Fisheries Calendar), 36 pp., printed in Turkish. Hydrobiologic Research Institute, Istanbul University, Istanbul, Turkey, 1954.

VESSELS:

Naval Architecture of Small Craft, by D. Phillips-Birt, 367 pp., 168 text figures, 59 tables, printed, \$15. Philosophical Library, New York, N.Y., 1957. This is a well written and interesting treatment of a subject that can be obscure and dull. The historical approach is used to set forth the problems of design of small vessels of many types. The illustrations are numerous and good and these are tightly woven into the text by reference. The book contains much that is of interest to anyone concerned with construction and operation of small vessels. There is a chapter on fishing vessels. Chapters on the in-

stallation and transmission of power, propellers--fundamentals, propellers--cavitation and design, and powering calculations are excellent. The author appears to have succeeded in presentation of practical information with enough theory to make it interesting and thought-provoking.

WEST GERMANY:

Annual Report, 1956, West German Fisheries, printed. Ministry of Food, Agriculture and Forestry, Federal Republic of Germany, Bonn, Germany. This report discusses the utilization of the resources of the sea, and points out that competition is growing steadily. The fishing yield in the Federal Republic of Germany decreased slightly in 1956. During the year the German trawler fleet was modernized by nine new vessels, while sixteen older ones were eliminated. A number of trawlers were equipped with fish meal and fish oil plants; some with refrigerating equipment and deep freezing plants for processing the catches immediately on board. Nine new vessels were added to the lugger fleet and eight old luggers were eliminated. The cutter fleet (small deep sea fishery) increased in size somewhat, and the coastal fishing fleet remained unchanged.

WHALING:

Whaling--Amendments to the Schedule to the International Whaling Convention Signed at Washington on December 2, 1946, *Treaties and Other International Acts Series 3944*, 3 pp., printed, 5 cents. Department of State, Washington, D. C., 1957. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Presents the amendments adopted at the Ninth Meeting of the International Whaling Commission, London, June 24-28, 1957.



SPONGES

Sponges are animals low in the scale of evolution and not closely related to any others. They live fastened to some object on the sea floor and eat small living and dead particles carried in sea water. The sea water is drawn into fine canals which traverse the inner parts of the sponge. Particles of foods are picked up by special cells in small chambers into which the canals open, and are digested there. Eggs are produced in the tissues adjacent to the canals and are fertilized in these tissues. As they develop, they form larvae which are set free in the water and which have fine, vibratory hairs which keep them moving in the water. When they reach a suitable bottom surface, they attach themselves and eventually grow into adult sponges. There is no certain information on cross-breeding of sponges.

--"Sea Secrets," January 1958,
The International Oceanographic Foundation,
Miami, Fla.