

RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE OFFICE OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON, D. C. 20402. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
- FL - FISHERY LEAFLETS.
- FFL - REPRINTS OF REPORTS ON FOREIGN FISHERIES.
- SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number | Title |
|---------|--|
| CS-3985 | - Michigan, Ohio & Wisconsin Landings, October 1965, 4 pp. |
| CS-4044 | - Gulf Coast Shrimp Data, October 1965, 19 pp. |
| CS-4048 | - Michigan, Ohio & Wisconsin Landings, November 1965, 4 pp. |
| CS-4066 | - Gulf Coast Shrimp Data, November 1965, 18 pp. |
| CS-4071 | - New Jersey Landings, January 1966, 3 pp. |
| CS-4078 | - Michigan, Ohio & Wisconsin Landings, December 1965, 4 pp. |
| CS-4082 | - Massachusetts Landings, December 1965, 9 pp. |
| CS-4083 | - Shrimp Landings, December 1965, 5 pp. |
| CS-4084 | - Gulf Coast Shrimp Data, December 1965, 16 pp. |
| CS-4085 | - New York Landings, January 1966, 4 pp. |
| CS-4086 | - Texas Landings, January 1966, 2 pp. |
| CS-4090 | - Alabama Landings, January 1966, 2 pp. |
| CS-4092 | - Florida Landings, February 1966, 8 pp. |
| CS-4094 | - Fish Meal and Oil, February 1966, 2 pp. |
| CS-4095 | - Michigan, Ohio & Wisconsin Landings, January 1966, 3 pp. |
| CS-4098 | - United States Fisheries, 1964 Annual Summary, 17 pp. |
| CS-4099 | - Louisiana Landings, January 1966, 3 pp. |
| CS-4101 | - California Landings, January 1966, 4 pp. |
| CS-4100 | - <u>Fisheries of the United States, 1965</u> , by Charles H. Lyles, 81 pp., illus., Mar. 1966. This report presents detailed information on the United States catch of fish and shellfish, production of manufactured fishery commodities, foreign trade in aquatic products, and supplies of selected fishery items (domestic production plus imports). Data in the report show that the catch in 1965 amounted to 4,722 million pounds worth \$451 million ex-vessel--the highest dollar value in our history. The volume taken was 181 million pounds or 4 percent more than in 1964. The value increased \$61 million (or 16 percent), and the average price of 9.5 cents per pound was the highest ever recorded. Shrimp was |

the most valuable item taken by domestic fishermen in 1965, accounting for 18.2 percent of the total paid for all species. The amount of \$82.1 million was paid for shrimp. That was 22 percent more than for the second most valuable item--Pacific salmon. Blue crab, flounder, king crab, and lobster catches were all higher than in 1964. The pack of canned fishery products in the United States, American Samoa, and Puerto Rico was 38.3 million standard cases (1.1 billion pounds) valued at \$484.1 million to the packers. Compared with the pack in 1964, production increased by 2.6 million cases and \$47.4 million. The gain in production was mainly from a record pack of tuna, and increases in packs of Maine sardines, clam products, animal food, and shrimp. Packs of salmon, mackerel, Pacific sardines, and oysters were smaller. Production of fresh and frozen packaged fish fillets and steaks (excluding Alaska and Hawaii) was 167.5 million pounds valued at \$65.5 million. Production of industrial fishery products was valued at \$81.9 million--an increase of \$11.9 million over 1964. Marine animal scrap and meal amounted to 253,371 tons, marine animal oil 195.6 million pounds, and fish solubles 98,017 tons. Products from oyster shells and buttons from freshwater and marine mollusk shells were valued at \$5.7 million, a decrease of \$490,000 from the previous year. Other industrial items in 1965 included agar-agar, fish feed pellets, animal feeds, Irish moss extracts and stabilizers, kelp products, fish leather, fish fins, liquid and dry fertilizer, pearl essence and novelties, colored chips, and crab shells valued at \$20.1 million. Production of fish sticks and portions was 221.1 million pounds valued at \$91.4 million.

Sep. No. 762 - The Atlantic Tuna Fisheries, 1963.

Sep. No. 763 - Pacific Hake (Merluccius productus) as Raw Material for a Fish Reduction Industry.

FL-586 - Commercial Flounder Giggling, by Hilton M. Floyd, 8 pp., illus., Feb. 1966. Describes a commercial method of spearing southern flounder (Paralichthys lethostigma), and the gear used. The essential equipment is a spear and a light.

The Fisheries of Chile, by Sidney Shapiro, Circular 234, 18 pp., illus., Nov. 1965. Trends and developments in the Chilean fisheries are discussed, with special emphasis given to the expanding fish-reduction industry. Within a few years Chile has become one of the world's largest producers and exporters of fish meal and oil. Information is also presented on other exportable products, mainly shrimp and plated lobster (langostino), and on segments of the industry that produce for domestic consumption.

The Fisheries of Japan, by Sidney Shapiro, Circular No. 233, 28 pp., illus., Nov. 1965. Trends, developments, and statistical data are presented on important aspects of Japan's worldwide fisheries. Included are discussions of the principal types of fish and other aquatic products landed by the Japanese, areas in which species are caught, size and composition of the fishing fleet, fishermen's organizations, marketing methods, the main uses to which fishery products are put, trends in international trade, and the structure of the Japanese fishing industry. Information is also presented on Government support to the fisheries and on international fishery agreements to which Japan is a party.

The Fisheries of Norway, by Sidney Shapiro, Circular 235, 22 pp., illus., Nov. 1965. This report presents trends and developments in the Norwegian fisheries, the largest in Europe, excluding those of the U. S. S. R. Since domestic consumption uses only about one-eighth of fishery landings, the Norwegian fishing industry is dependent on maintaining a large export trade. The industry has encountered difficulties because of declining landings of cod and winter herring and because of competition in foreign markets. The Norwegian Government has committed itself to a policy of supporting fishermen's incomes so that they are on a level with the general wage level of the country. Support to the industry consists of subsidies, loans, and programs to modernize vessels, processing plants, and other facilities.

Progress in 1964-65 at the Bureau of Commercial Fisheries Biological Laboratory, Honolulu, by Thomas A. Manar, Circular 243, 42 pp., illus., printed, Feb. 1966. This report deals with research results achieved by the Bureau of Commercial Fisheries Biological Laboratory in Honolulu from Jan. 1, 1964 to June 30, 1965. Described are developments in the following fields: the sensory capacities of tuna; tuna behavior; subpopulations research using genetic techniques; studies of the ecology of the skipjack tuna and the albacore tuna; biological surveys of the Indian Ocean; investigations of the oceanography of the Hawaiian Islands area and of the entire Pacific; and studies devoted to the evaluation of the use of a submarine for research in fisheries and oceanography. Publications issued or in press during the period are listed.

Shark Fishing Gear: A Historical Review, by Mary Hayes Wagner, Circular 238, 17 pp., illus., Jan. 1966. In this account the descriptions of shark fishing and gear and accessory equipment, and suggestions for fishing methods and bait, are simplified and basic. The gear used for the capture of large sharks is the primary concern of this report. Small sharks that travel in schools are easily caught in large numbers by otter trawls. The author points out that "Fishing methods must be adapted to the fishing locality. Weather and sea conditions affect the choice of the vessel and limit the kinds of gear that are practical. Other factors that determine the gear are: the nature of the bottom in the fishing area; the species and abundance of sharks available; local costs of gear and labor; and the value of the products at the point of sale. It is not possible to develop general rules for shark fishing because each situation demands trial and error in the selection of the appropriate gear and method."

THE FOLLOWING FOREIGN FISHERY LEAFLETS (FORMERLY MARKET NEWS LEAFLETS) ARE AVAILABLE FROM THE BRANCH OF FOREIGN FISHERIES, BUREAU OF COMMERCIAL FISHERIES, ROOM 8015, U. S. DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C. 20240:

Number	Title
FFL-5	Denmark's Fishing Industry, 1964, 10 pp.
FFL-18	Panama's Fisheries, 1965, 10 pp.
FFL-58	Republic of Korea Fisheries, 1964, 4 pp.

THE FOLLOWING ENGLISH TRANSLATION OF A FOREIGN LANGUAGE ARTICLE IS AVAILABLE FROM THE U. S. BUREAU OF COMMERCIAL FISHERIES, ICHTHYOLOGICAL LABORATORY, U. S. NATIONAL MUSEUM, WASHINGTON, D. C. 20560:

Taxonomic Study of the Tunas, by T. Iwai, I. Nakamura, and K. Matsubara, Translation No. 38, 73 pp., processed, 1965. (Translated from the Japanese by Chufa Tasi.) This translation is intended to be an aid to the use of the original; the figures have not been reproduced.

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

California Fisheries, 1965 (Preliminary), by L. A. Keilman, 24 pp., April 1966. (Fishery Market News Service, U. S. Fish and Wildlife Service, Rm. 205, P. O. Bldg., San Pedro, Calif. 90731.) Contains a brief review of major fisheries developments during 1965. Includes statistical data for 1965 with comparisons on canners' receipts and pack of tuna, tunalike fish, Pacific and jack mackerel, and miscellaneous fishery products. Also includes data on landings and canned pack of sardines, meal and oil production; cold-storage holdings of fish and shellfish; landings of market fish and shellfish; imports of fishery products into Arizona and California Customs Districts; and California whale fisheries 1963-65.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, March 1966, 14 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.) California cannery receipts of tuna and tunalike fish and other species used for canning; pack of canned tuna, tunalike fish, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; prices for fish meal, oil, and solubles; for the month indicated.

California Fishery Market News Monthly Summary, Part II - Fishing Information, March 1966, 8 pp., illus. (U. S. Bureau of Commercial Fisheries, Biological Laboratory, P. O. Box 6121, Pt. Loma Station, San Diego, Calif. 92106.) Contains sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists; for the month indicated.

Fishery Industrial Research, vol. 3, no. 1, Dec. 1965, 53 pp., illus., printed. (Branch of Reports, U. S. Bureau of Commercial Fisheries, 2725 Montlake Blvd., Seattle, Wash. 98102.) Contains articles on: "Occurrence of pomfret (*Brama japonica*) in the Northeastern Pacific Ocean," by Charles R. Hitz and Robert R. French; "Author index of publications and addresses-1964, Bureau of Commercial Fisheries, Branches of Economics and Technology, and the Branch of Reports, Seattle," by Helen E. Plastino and Mary S. Fukuyama; "Influence of temperature on the fatty acid pattern of muscle and organ lipids of the rain-

low trout (*Salmo gairdneri*)," by Werner G. Knipp-
ath and James F. Mead; "Costs and earnings of
tropical tuna vessels based in California," by Roger
Green and Gordon C. Broadhead; and "Amino acid
composition of the alewife (*Alosa pseudoharengus*),"
by Mary H. Thompson and Robert N. Farragut.

Inhibition of Unicellular Algae by Synthetic Surface-
Active Agents, by Ravenna Ukeles, 9 pp., illus.,
printed. (Reprinted from *Journal of Phycology*, vol.
no. 3, 1965, pp. 102-110.) U. S. Bureau of Com-
mercial Fisheries Biological Laboratory, Milford,
Conn.

Monthly Summary of Fishery Products Production in
Selected Areas of Virginia, North Carolina, and
Maryland, February and March 1966, 4 pp. each.
(Market News Service, U. S. Fish and Wildlife Serv-
ice, P. O. Box 447, Hampton, Va. 23369.) Landings
of food fish and shellfish and production of crab
meat and shucked oysters for the Virginia areas of
Hampton Roads, Chincoteague, Lower Northern
Neck, and Lower Eastern Shore; the Maryland areas
of Crisfield, Cambridge, and Ocean City; and the
North Carolina areas of Atlantic, Beaufort, and
Morehead City; together with cumulative and com-
parative data on fishery products and shrimp pro-
duction; for the months indicated.

Receipts and Prices of Fresh and Frozen Fishery Prod-
ucts at Chicago, 1965 (Preliminary), 49 pp., April
1966. (Fishery Market News Service, U. S. Fish and
Wildlife Service, Rm. 704, 610 S. Canal St., Chicago,
Ill. 60607.) Contains statistical tables on receipts
of fish and shellfish at Chicago wholesale market by
species, states and provinces, and by months; whole-
sale market price ranges by months for fresh-water
fish, frozen fillets, and other frozen fish and shell-
fish.

(Seattle) Washington and Alaska Receipts and Landings
of Fishery Products for Selected Areas and Fish-
eries, Monthly Summary, March 1966, 7 pp. (Mar-
ket News Service, U. S. Fish and Wildlife Service,
706 New Federal Office Bldg., 909 First Ave., Se-
attle, Wash. 98104.) Includes landings by the hali-
but fleet reported by the Seattle Halibut Exchange;
salmon fleets reported by primary receivers; land-
ings of halibut reported by the International Pacific
Halibut Commission; landings of otter-trawl ves-
sels; receipts reported by the Fishermen's Market-
ing Association of Washington; local landings by in-
dependent vessels; coastwise shipments from Alas-
ka by scheduled and non-scheduled shipping lines
and airways; imports from British Columbia via
rail, motor truck, shipping lines, and ex-vessel
landings; and imports from other countries through
Washington customs district for the month indicated.

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.

BACTERIOLOGY:

Articles from Chemical Abstracts, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006:

"The marine bacteria. I - Comparative observations on the inorganic salt requirements of marine and terrestrial bacteria," by Tomio Hidaka, vol. 62, Apr. 26, 1965, Abstract No. 10863e.

"Marine bacteriology and the problem of mineralization," by Sydney C. Rittenberg, vol. 63, Aug. 2, 1965, Abstract No. 3327d.

"Phospholipids of nervous system in vertebrates and invertebrates," by E. M. Kreps and others, vol. 60, Apr. 13, 1964, Abstract No. 9652b.

BOTULISM:

Sixty-five Years of Human Botulism in the United States and Canada (Epidemiology and Tabulations of Reported Cases, 1899 Through 1964), by K. F. Meyer and B. Eddie, 76 pp., June 1965. University of California Printing Department, University of California, Berkeley, Calif. 94720.

BRAZIL:

The following publications are available from Grupo Coordenador do Desenvolvimento da Pesca (GCDP), Sudene, Cais de Santa Rita, Edf. Entrepasto Fed. Pesca, Recife, Pernambuco, Brazil:

"Glossário de nomes de peixes; português, inglês, sistemático" (Glossary of Fish Names; Portuguese, English, and Scientific), by J. M. Brandao, articles, Boletim de Estudos de Pesca, vol. 4, no. 4, July-August 1964, pp. 7-40; vol. 4, no. 5, September-October 1964, pp. 7-59; vol. 4, no. 6, November-December 1964, pp. 7-59; printed in Portuguese.

A pesca em Pernambuco" (The fishery in Pernambuco), by Osiris Lira, article, Boletim de Estudos de Pesca, vol. 4, no. 2, March-April 1964, pp. 9-14, printed in Portuguese.

CANADA:

Annual Review, Fisheries Council of Canada, 1966, 104 pp., illus., printed, 1966. Fisheries Council of Canada, 77 Metcalfe St., Ottawa 4, Canada. This Review covers the Canadian fishing industry in great depth. It is an authoritative reference manual providing a broad picture of the fishing industry in its editorial columns. Among others, contains these articles: "Science in the service of an industry," by F. R. Hayes; "Fisheries industrial development," by J. Kinloch; "Voluntary versus mandatory inspection in the seafoods industry," by H. E. Crowther; "Modern development of the Japanese fishing industry," by Norio Fujinami; "Planning for greater food production," by David F. Corney; "Canada's sea fisheries in 1965," by A. Proulx; "Automation on trawlers," by Conrad Birkhoff.

Atlantic Salt Fish Commission Report (established by Order in Council dated Oct. 29, 1964, P. C. 1964-1672), 170 pp., illus., processed. Department of Trade and Commerce, St. John's, Newfoundland, Canada. This Report was prepared by the Atlantic Salt Fish Commission established Oct. 29, 1964, to study the Atlantic salt-fish industry and the advisability of establishing a National Salt Fish Marketing Board. The Commission concluded that the problems of the salt-fish industry were in the area of production and quality rather than in marketing. The Commission recommended: (1) that a National Salt Fish Marketing Board not be established; (2) that the manufacturing of salt fish be taken out of the hands of fishermen; (3) that a manufacturing

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agency be established for the primary purpose of salting fish; (4) that these products be offered for sale by auction or by tender to Canadian exporters; (5) that efforts of the Government to reduce the number of inshore fishermen through training and migration assistance be encouraged; (6) that more care be taken by Government in choosing the types of assistance given to primary producers; and (7) that nothing be done in accomplishing these ends that will prejudice the expansion of the freezing industry.

The Report includes chapters on: (1) The Problem and Measures Towards its Solution; (2) Historical Development of the Atlantic Coast Fishery; (3) The World Fishery; (4) Canada's Position in the World Fishery; (5) The Primary Fishing Industry; (6) the Salt Fish Processing Industry of the Atlantic Provinces and Quebec; (7) Frozen Fish or Salted Fish--Some Economic Considerations; and (8) Factors Which Inhibit Economic Development in the Fisheries. Appendices with tables are included.

British Columbia Catch Statistics, 1965 (by Area and Type of Gear), 205 pp., illus., processed, Feb. 4, 1966. Economics Branch, Department of Fisheries of Canada, 1155 Robson Street, Vancouver 5, B. C., Canada. The fifteenth annual report of catch statistics for British Columbia based on Departmental copies of sales slips that are completed by all commercial fish buyers operating within the Province. The report is divided into three sections: (1) summary of landings and landed values by district; (2) highlights of catch statistics--a general review of significant events in the salmon fishery and a review for other species; and (3) detailed district and area statistics by type of gear. Landings of halibut at U. S. ports by Canadian fishermen are included in area and summary totals.

The Canadian Fish Culturist, issue 35, Oct. 1965, 72 pp., illus., printed. Information and Consumer Service, Department of Fisheries, Ottawa, Canada. Among the articles included are: "Water Pollution and Fish Populations in the Province of Newfoundland and Labrador in 1964," by V. R. Taylor; and "Fisheries Problems Associated with Hydroelectric Development," by R. N. Gordon.

CHEMICAL COMPOSITION:

Articles from Chemical Abstracts, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006:

"Blood chemical composition of the carp and sazan," by I. D. Golovats'kii, B. S. Avdos'ev, and Z. P. Nazarkevich, vol. 59, Aug. 19, 1963, Abstract No. 4304b.

"The effect of temperature on the fatty acid composition of the crustacean plankton," by Tibor Farkas and Sandor Herodek, vol. 61, July 6, 1964, Abstract No. 1007f.

"Fatty acid composition of mackerel, shad, and sardine oils," by Antonio Montefredine and Concetta Testa, vol. 63, Aug. 2, 1965, Abstract No. 3177c.

"The lipids of flounder. I--Acetone-soluble lipids from flounder muscle," by Hisanao Igarashi and others, vol. 60, Mar. 16, 1964, Abstract No. 7190f.

"Studies on the fatty acid composition of crayfish lipids," by D. A. Wolfe, article, Journal of the American Oil Chemists Society, vol. 42, July 1965, pp. 633-637, printed. American Oil Chemists' Society, 35 E. Wacker Dr., Chicago, Ill. 60606.

CHESAPEAKE BAY:

Chesapeake Science, vol. 7, no. 1, Mar. 1966, 58 pp., illus., printed, single copy 75 cents. Natural Resources Institute, University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. Includes, among others, these articles: "Osmoregulation in the adult blue crab, *Callinectes sapidus* Rathbun," by Eng-Chow Tan and W. A. Van Engel; and "Tolerances of several marine species to Co 60 irradiation," by John C. White, Jr., and Joseph W. Angelovic.

COD:

"The use of sodium dodecyl sulphate in the study of protein interactions during the storage of cod flesh at -14°," by J. J. Connell, article, Journal of the Science of Food and Agriculture, vol. 16, no. 12, December 1965, pp. 769-783, illus., printed, single issue £1 17s. 6d. (US\$5.25). Society of Chemical Industry, 14 Belgrave Square, London, S.W.1, England.

COD LIVERS:

"Free fatty acid formation in cod livers sterilized by irradiation," by R. G. Ackman, J. E. Stewart and H. E. Power, article, Journal of the Fisheries Research Board of Canada, vol. 23, no. 1, January 1966, pp. 155-156, printed, single issue C\$1.00. Issued by Fisheries Research Board of Canada, Ottawa, Ontario, Canada. (Sold by Queen's Printer, Ottawa.)

CRAB:

The Alaskan King Crab Industry, 8 pp., printed. (Reprinted from Alaska Review of Business and Economic Conditions, vol. II, no. 5, Nov. 1965.) Institute of Business, Economic and Government Research, University of Alaska, College, Alaska 99735.

"Proximate composition of Chesapeake Bay blue crab (*Callinectes sapidus*)," by Robert N. Farragut, article, Journal of Food Science, vol. 39, May-June 1965, pp. 538-544, printed. Journal of Food Science, 510-524 North Hickory St., Champaign, Ill. 61820.

FILM STRIPS:

Understanding Oceanography, consists of 6 film strips, three 33 $\frac{1}{3}$ r.p.m. records, 6 Teacher's Guides, complete set \$42.50, each filmstrip with record guide \$9.50. (Recommended for procurement under federally funded education programs, grade level: Jr.-Sr. High.) Society of Visual Education, Inc., 1345 Diversey Parkway, Chicago, Ill. 60614. The latest information about recent developments and discoveries in oceanography (not yet included in most textbooks) is provided in this informative series of full-color filmstrips. Challenges that oceanographers face today are dramatically presented. How can oceanography unlock the secret of earth's past? How can the sea's abundance be utilized for food and natural resources for the growing world population? This series also describes various forms of marine life, ocean currents and tides, and other phenomena peculiar to the sea. The films are titled: "The study of oceans," "The ocean basins," "Characteristics of seawater," "Currents, waves, and tides," "Life of the open seas," and "Life of the sea floor and shore."

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FISH BONE DETECTOR:

"Prototype automatic fish-bone detector," by James Moran and others, article, Food Technology, vol. 9, May 1965, pp. 46-51, printed. Institute of Food Technologists, Suite 1350, 176 N. Adams St., Chicago, Ill. 60603.

FISHING:

Fishing Catching Methods of the World, by Andres von Brandt, 215 pp., illus., printed, 1964, \$12.50. Fishing News (Books) Ltd., 110 Fleet Street, London EC4, England. Some of the chapters discuss development of fishing gear; spearing and shooting of fish; line fishing with and without hook; attracting, concentrating and frightening the fish; mechanical traps and snares; barriers; from the fish basket to the pound net; art of net making; beach and boat seines; from the rake to the mussel dredge; from the beam trawl to the otter trawl; trawl fishery in three dimensions; dip nets, lift nets and fish wheels; visible and invisible gill nets; and elements of fishing gear construction. Included is an adequate bibliography, an appendix with a classification system for gear, and an index.

--Joseph Pileggi

FISH MEAL:

"Nutritive value and analytical characteristics of new and up-to-12 years old herringmeals," by B. Laksesvela and Anna T. Aga, article, Journal of the Science of Food and Agriculture, vol. 16, no. 12, December 1965, pp. 743-749, illus., printed, single issue L1 17s. 6d. (US\$5.25). Society of Chemical Industry, 14 Belgrave Square, London, S.W.1, England.

"Two methods of evaluating fish meal proteins by chick growth," by H. R. Bird and others, article, Poultry Science, vol. 44, May 1965, pp. 865-868, printed. Poultry Science Association, Kansas State University, Manhattan, Kan. 66504.

FISH OIL:

"Decomposition of cod livers and the formation of three fatty acids in cod oil," by P. M. Jangaard and H. E. Power, article, Journal of the Fisheries Research Board of Canada, vol. 23, no. 1, January 1966, pp. 21-25, printed, single issue C\$1.00. Issued by Fisheries Research Board of Canada, Ottawa, Ontario, Canada. (Sold by Queen's Printer, Ottawa.)

"Red perch and soybean oils," by A. Fricker, article, Chemical Abstracts, vol. 61, Sept. 28, 1964, Abstract No. 8532h, printed. American Chemical Society, 1155 16th Street NW., Washington, D. C. 20006.

FISH AND AGRICULTURE ORGANIZATION:

Indo-Pacific Fisheries Council Proceedings, 11th Session, Kuala Lumpur, Malaysia, 16-31 October 1964, Section III "Symposium on Increasing Fish Consumption through Improved Handling and Distribution," 383 pp., processed in English, 1965, US\$1. IPFC Secretariat, FAO Regional Office for Asia and the Far East, Bangkok, Thailand, 1965. (Sold by Publications Section, FAO, Via delle Terme di Caracalla, Rome, Italy.) The full proceedings of this session of the Council consists of three sections.

A total of 37 papers were contributed to the Symposium of which 27 were experience and research papers from within the Indo-Pacific Region and 10 were from outside the Region prepared by specialists on selected subjects of interest to the Region. The papers reproduced in this section have been classified into the following subject groups: "Technology and Economics of Ice Production and Use"; "Handling and Icing Fresh Fish Aboard and Onshore"; "Use of Chilled Sea Water and Sea Water Ice"; "Use of Preservatives Such as Antibiotics, Species"; "Cold Storage, Transport, Containers and Other Distribution Facilities"; "Marketing, Cooperatives"; "Inspection and Quality Control"; "Consumer Education"; and "Role of Government."

FREEZE DRYING:

"An engineer looks at the kinetics and cost of food freeze-drying," by James W. Ryan, article, Food Technology, vol. 19, Apr. 1965, pp. 49-51, printed. Institute of Food Technologists, Suite 1350, 176 N. Adams St., Chicago, Ill. 60603.

"Freeze drying of fish," by Walter Pichel, article, ASHRAE Journal, vol. 7, Oct. 1965, pp. 72-73, printed. American Society of Heating, Refrigerating and Air-Conditioning Engineers, 62 Worth St., New York, N. Y. 10013.

FREEZING:

"Packing company scores again: Starts liquid nitrogen freezing," article, Fishing Gazette, vol. 82, Apr. 1965, pp. 44-45, 49, 114-115, printed. Fishing Gazette Publishing Corp., 461 Eighth Ave., New York, N. Y. 10001.

FROZEN FISH:

"Application of antioxidants in improving the shelf life of frozen fish," by I. A. Shishkanova, N. V. Chermenko, and A. M. Kamaletdinova, article, Chemical Abstracts, vol. 63, Nov. 8, 1965, Abstract No. 13940d, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Protein denaturation of frozen fish. Comparison between super rapid freezing by liquid nitrogen (-196°) and air (-20°) freezing," by T. Suzuki, K. Kanna, and T. Tanaka, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 30, 1965, pp. 1022-1036, printed. Japanese Society of Scientific Fisheries, Shiba-Kaigandori 6, Minato-Ku, Tokyo, Japan.

FROZEN STORAGE:

"Growing import-export FF trade impels zero warehouse building at ports," article, Quick Frozen Foods, vol. 27, May 1965, pp. 119-120, 122, 124, printed. E. W. Williams Publications, Inc., 1776 Broadway, New York, N. Y. 10019.

INDIA:

"Canning of seer fish," article, Indian Seafoods, vol. III, no. 2, 1965, pp. 7-8, illus., printed in English. The Marine Products Export Promotion Council, Mahatma Gandhi Road, Ernakulam-6, Kerala State, India.

IRRADIATION PRESERVATION:

Abstracts from Technical Abstracts Bulletin, Oct. 1, 1965, printed, 50 cents a copy. Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Springfield Va. 22151:

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Development of Irradiation Sterilized Shelf-Stable Fish and Seafood Products, by R. O. Sinnhuber and H. W. Schultz, TAB65-20, Abstract No. AD-620-675, p. 23.

Development of Radiation Sterilized Fish Items for Armed Forces Feeding, by R. O. Sinnhuber, TAB 65-19, Abstract No. AD-619-446, p. 18.

"Physiological changes induced by gamma irradiation of bacteria from shrimp," by Joseph A. Liuzzo, Arthur F. Novak, and Jesse R. Ortego, article, *Journal of Food Science*, vol. 30, July-August 1965, pp. 710-713, printed. Institute of Food Technology, Suite 1350, 176 N. Adams St., Chicago, Ill. 60603.

IVORY COAST:

"Evolution de la peche maritime en Cote-d'Ivoire de 1960 a 1965" (Development of marine fisheries in Ivory Coast from 1960 to 1965), by J. M. Bessetaux, article, *La Peche Maritime*, vol. 45, no. 1056, March 1966, pp. 163-164, illus., printed in French, single issue 15 F (US\$3). Les Editions Maritimes, 190, Boulevard Haussmann, Paris, France.

JAPAN:

Ocean Fisheries (a special issue of this quarterly journal featuring Japan's advances in fishing and fishery technology), vol. 2, no. 2, April 1966, 44 pp., illus., printed, subscription \$3.00 for 1 year. Ocean Fisheries, Circulation Department, 500 Howard Street, San Francisco, Calif. 94105. This special number examines notable aspects of Japan's current advances in the fields of fisheries science, technology, economic and geographic development. The editor says: "Long a leader in pelagic fisheries, as well as those of coastal character, the Japanese nation is a builder of fisheries and fishing vessels, an innovator in the engines and machines of fishing and fish packing; and at the same time stands in front rank of those who have devised highly sophisticated electronic instruments particularly for fisheries--and have applied them on and under the sea with signal success." Some of the feature articles, all written by members of the Japanese fishing industry and by Japanese press correspondents, are: "New Fisheries Techniques, Key to Man's Full Use of Resources"; "The Fish Finder, A Factor in Japan's Fishing Success"; "Japan's Distant-Water Trawlers, Special Design for Specific Ground Proposed"; "High Seas Minced Fish, A New Product of Immense Potential"; and several other articles on tuna fishing, cost-cutting techniques in new fishing methods, including gear and vessels.

--Norman B. Wigutoff

MARINE OILS:

"Fatty acid content of vegetable oils, unusual oils, marine oils, and margarines," by J. L. Iverson, article, *Journal of the Association of Official Agricultural Chemists*, vol. 48, Oct. 1965, pp. 902-904, printed. Association of Official Agricultural Chemists, P. O. Box 540, Benjamin Franklin Station, Washington, D. C. 20004.

MARINE RESOURCES:

A Study of the Marine Resources of the Merrimack River Estuary, Monograph Series No. 1, by William

C. Jerome, Jr., and others, 93 pp., illus., printed, June 1965. Massachusetts Department of Natural Resources, Division of Marine Fisheries, 15 Ashburton Place, Boston, Mass. 02208.

MASSACHUSETTS:

Annual Earnings of Boston Fishermen in 1964, Regional Report by Paul V. Mulkern, 19 pp., processed, Feb. 1966. U. S. Department of Labor, Bureau of Labor Statistics, 18 Oliver St., Boston, Mass. 02110.

Annual Report, Fiscal Year July 1, 1964-June 30, 1965, 95 pp., illus., processed, Sept. 1, 1965. Massachusetts Department of Natural Resources, Division of Marine Fisheries, 15 Ashburton Place, Boston, Mass. 02208. Discusses accomplishments of the Division of Marine Fisheries during the year ending June 30, 1965. Covers Marine Fisheries Advisory Commission meetings, contract dragging program, lobster research and management, shellfish research and management, estuarine research program, the coastal wetlands protection program, finfish studies, statistical needs committee, and legislation affecting marine fisheries. Includes statistical tables showing data on the lobster fishery; sea crab fishery; shore, net, and pound fishery; and Massachusetts landings of fishery products. Appendices contain information on "scrubbed" lobsters, uniform minimum legal length of quahogs, lobster and edible crab licenses for non-resident citizens, and other subjects.

MENHADEN OIL:

"Hypercholesterolemic effect of menhaden oil in the presence of dietary cholesterol in swine," by Eldon G. Hill, C. L. Silbernack, and W. O. Lundberg, article, *Proceedings of the Society for Experimental Biology and Medicine*, vol. 119, June 1965, pp. 368-370, printed. *Proceedings of the Society for Experimental Biology and Medicine*, Managing Editor, 630 W. 168th St., New York, N. Y. 10032.

MEXICO:

"Mexican government moves to diversify shrimp-dominated seafood industry," article, *Quick Frozen Foods*, vol. 17, Apr. 1965, p. 130, printed. E. W. Williams Publications Inc., 1776 Broadway, New York, N. Y. 10019.

MICROBIOLOGY:

Applied Microbiology, vol. 14, no. 2, Mar. 1966, 302 pp., illus., printed, single copy \$3. Waverly Press, Inc., 428 E. Preston St., Baltimore, Md. 21202. Contains, among others, articles on: "Effect of different commercial agar preparations on the inhibitory activities of phenols," by J. G. Sands and E. O. Bennett; "Biochemical differentiation of the Enterobacteriaceae with the aid of lysine-iron-agar," by Jane G. Johnson and others; and "Effect of γ -irradiation on the microflora of freshwater fish. I--Microbial load, lag period, and rate of growth on yellow perch (*Perca flavescens*) fillets," by N. Kazanas and others.

NETHERLANDS:

"Le navire-usine 'Van-Gogh' construit aux Pays-Bas pur la Russie" (The factorship Van-Gogh built in the Netherlands for the U.S.S.R.), article, *La Pêche Maritime*, vol. 45, no. 1056, March 1966, pp. 191-195, illus., printed in French, single issue 15 F (US\$3). Les Editions Maritimes, 190, Boulevard Haussmann, Paris, France.

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

NEW ENGLAND:

Economics of the New England Fishing Industry: The Role of Technological Change and Government Aid, by Frederick W. Bell, Research Report, 221 p., illus., processed, Feb. 1966. Federal Reserve Bank of Boston, 30 Pearl St., Boston, Mass. 02110. Investigates the economic development of the New England fishing industry in the postwar period; the economic feasibility of stern trawling to provide data for its possible adoption; and the impact of the 1964 Fishing Fleet Improvement Act on financing technological change.

OCEANOGRAPHY:

Distribution and Characteristics of Surface Bioluminescence in the Oceans, TR-184 by Robert F. Staples, 54 pp., processed, Mar. 1966, 90 cents. U. S. Naval Oceanographic Office, Washington, D. C. 20390.

Oceanography, edited by Mary Sears, 665 pp., illus., printed, 1961, \$14.75. American Association for Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

USSR Charts Pacific, " by S. Osokin, article, Geo-Marine Technology, vol. 2, no. 3, Mar. 1966, pp. 22-24, illus., printed. INTEL, Inc., 1075 National Press Bldg., Washington, D. C. 20004. Soviet scientists have published an atlas, Relief of the Pacific Ocean Bed, which is an encyclopedia of the structure of the world's largest ocean, the Pacific Ocean. The atlas sums up and rationalizes the last 100 years of oceanographic and hydrographic research of that area.

PORTUGAL:

Consumo Mundial de las Conservas de Pescado Portuguesas (World Consumption of Portuguese Canned Fish), article, Boletin de Informacion, no. 86, Nov. 1965, pp. 8-9, printed in Spanish. Sindicato Nacional de la Pesca, Paseo del Prado, 18-20, Madrid, Spain.

Exportacao Galega de Conservas de Peixe em 1964 (Galician Exports of Canned Fish, 1964), article, Conservas de Peixe, vol. 20, no. 235, Oct. 1965, pp. 15-19, 28, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda. Requeirao dos Anjos, 68, Lisbon, Portugal.

PROCESSING:

New shellfish processing plant features: Space, light, comfort," article, Pacific Fisherman, vol. 63, July 1965, pp. 11-12, printed. Pacific Fisherman, Editorial Office, 71 Columbia St., Seattle, Wash. 98104.

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Characterization of a collagen from cod fish skin containing three chromatographically different α chains," by Karl A. Piez, article, Biochemistry, vol. 4, Dec. 1965, pp. 2590-2596, printed. American Chemical Society, 1155 16th St., NW., Washington, D. C. 20036.

PUERTO RICO:

Taxonomia, ecologia y valor nutrimental de algas marinas de Puerto Rico (Taxonomy, ecology, and

nutritional value of marine algae of Puerto Rico: agar-yielding algae), by M. Diaz-Piferrer and Celeste Caballer de Perez, 145 pp., printed in Spanish, August 1964. Administracion de Fomento Economico, Laboratorio de Investigaciones Industriales Hato Rey, Puerto Rico and Colegio de Agricultura y Artes Mecanicas, Universidad, Mayaguez, Puerto Rico.

RADIATION:

Articles from Chemical Abstracts, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006:

"Changes in the composition of fatty acids of fish fat due to radiation," by A. A. Fomin, vol. 61, Oct. 26, 1964, Abstract No. 11241b.

"The effects of a few radioactive substances on oxygen consumption of shellfish," by Jutoku Hasegawa, vol. 62, Feb. 1, 1965, Abstract No. 3129e.

RED TIDE:

The Red Tide, by John Torpey and Robert M. Ingle, Educational Series No. 1, 27 pp., illus., printed, 1966. Florida Board of Conservation Marine Laboratory, Maritime Base, Bayboro Harbor, St. Petersburg, Fla.

REFRIGERATION:

"Analyze major problem in use of air curtains," article, Frosted Food Field, vol. 38, Mar.-Apr. 1965, p. 8, printed. Frosted Food Field, 321 Broadway, New York, N. Y. 10007.

SALMON:

"Protein variations in Atlantic salmon (Salmo salar)," by L. Nyman, article, Chemical Abstracts, vol. 63, Oct. 11, 1965, Abstract No. 10357f, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

SEAGRASS:

Preliminary Study of Seagrass as a Potential Source of Fertilizer, by Jack F. van Breedveld, Special Scientific Report No. 9, 26 pp., illus., processed, Jan. 1966. Florida State Board of Conservation Marine Laboratory, Maritime Base, Bayboro Harbor, St. Petersburg, Fla.

SEA NETTLES:

"A new attack on sea nettles," by Edison T. Blair, article, The Maryland Conservationist, vol. XLIII, no. 1, Jan.-Feb. 1966, pp. 16-22, illus., printed, single copy 25 cents. The Maryland Conservationist, State Office Bldg., P. O. Box 231, Annapolis, Md. 21404.

SHARK:

"Blåhaien, Prionace glauca (Linnaeus), 1758" (The blue shark), by Olav Aasen, article, Fiskets Gang, vol. 8, February 24, 1966, p. 142, illus., printed in Norwegian. Fisheridirektoratet, Rådstuplass 10, Bergen, Norway.

SHRIMP:

"Program for Gulf would study shrimp landings fluctuations," article, Fishing Gazette, vol. 82, June 1965, pp. 50-51, 73, printed. Fishing Gazette Publishing Corp., 461 Eighth Ave., New York, N. Y. 10001.

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"The refractive index of the muscle of fish and shellfish. II. Measurement of changes in the muscle of cold-stored prawns, *Nephrops norvegicus*," by M. K. Elerian, article, *Journal of the Science of Food and Agriculture*, vol. 16, no. 12, December 1965, pp. 738-742, illus., printed, single issue £1 17s. 6d. (US\$5.25). Society of Chemical Industry, 14 Belgrave Square, London, S.W.1, England.

"Salt transport organelle in *Artemia salinis* (brine shrimp)," article, *Science*, vol. 151, no. 3709, Jan. 1966, pp. 470-471, illus., printed, single copy 35 cents. American Association for Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

SOUTH AFRICA REPUBLIC:

Fisheries Development Corporation of South Africa Limited, *Annual Report (Covering Period 1st October, 1964 to 30th September, 1965)*, 16 pp., printed in Afrikaans and English, March 16, 1965. Fisheries Development Corporation of South Africa Ltd., Seafare House, 68 Orange St., Cape Town, Republic of South Africa. An annual review of the corporation's financial condition and activities, including summaries of the state of the inshore fisheries for anchovy and pilchards; production of fish meal and oil, canned fish, cooked and live spiny lobsters, frozen lobster tails, and frozen whole lobsters; and activities of the corporation in anchovy, shrimp, tuna, whale, and oyster investigations, construction and maintenance of fishing harbors, and related areas of interest.

SPAIN:

Articles from *Industria Conservera*, vol. 31, no. 317, Nov. 1965, illus., printed in Spanish. Union de Fabricantes de Conservas de Galicia, Calle Marques de Valladares, 41, Vigo, Spain:

"Tecnica Conservera--Conservas de Sardina, Bonito y Anchoa" (Canning Method--Canned Sardines, Bonito, and Anchovy), pp. 306-308.

"El Mercado Aleman de Productos de la Pesca" (The German Market for Fishery Products), pp. 312-313.

Articles from *Industrias Pesqueras*, printed in Spanish. Industrias Pesqueras, Policarpo Sanz, 21-2º, Vigo, Spain:

"El Mercado Espanol del Pescado" (The Market for Fish in Spain), vol. XXXIX, no. 925, Nov. 1965, pp. 496-497, illus., printed.

"La produccion pesquera de Vigo en 1965" (Vigo's Fishery Production, 1965), vol. XL, no. 930, January 15, 1966, pp. 608-609, illus., printed.

SPAIN & PORTUGAL:

"Coup d'oeil sur la pêche espagnole et portugaise" (A look at the Spanish and Portuguese fisheries), by Peter Brady, article, *La Pêche Maritime*, vol. 45, no. 1056, March 1966, pp. 171-177, illus., printed in French, single issue 15 F (US\$3). Les Editions Maritimes, 190, Boulevard Haussmann, Paris, France.

SPINY LOBSTER:

"Methods of holding crayfish at sea," by L. A. Randall, article, *Australian Fisheries Newsletter*, vol.

25, no. 4, April 1966, pp. 19, 23, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, A.C.T., Australia.

SWEDEN:

Articles from *Svenska Vastkustfiskaren*, printed in Swedish. George Åberg, Fiskhamnen, Goteborg V, Sweden:

"Utsiktarna för fisket under 1966-1970" (Outlook for the fisheries in 1966-1970), by Ingemar Gerhard, vol. 36, no. 3, February 10, 1966, pp. 52-53.

"Fangsterna minskade - pengarna ökade i svenskt havsfiske ar 1965" (Volume of the catch decreases--value increases in Swedish sea fishery, 1965), vol. 36, no. 5, March 10, 1966, pp. 100-101.

SWITZERLAND:

"The Swiss market for selected seafoods," article, *Indian Seafoods*, vol. III, no. 2, 1965, pp. 11, 14-16, printed in English. The Marine Products Export Promotion Council, Mahatma Gandhi Road, Ernakulam-6, Kerala State, India.

TAIWAN:

"Further Development of Fisheries in Taiwan," K. T. Li, article, *Industry of Free China*, vol. XXV, no. 3, March 1966, pp. 18-25, printed in English, single issue NT\$20.00. Industry of Free China, 118 Huai Ning Street, Taipei, Taiwan.

TRANSPORTATION:

"How expensive is it to operate a nitrogen FF (frozen food) delivery fleet?" by Arthur Gaudio, article, *Quick Frozen Foods*, vol. 17, Apr. 1965, pp. 161, 166, printed. E. W. Williams Publications, Inc., 1776 Broadway, New York, N. Y. 10019.

TRAWLING:

"Underwater observations on fish in an off-bottom trawl," by William L. High and Larry D. Lusz, article, *Journal of the Fisheries Research Board of Canada*, vol. 23, no. 1, January 1966, pp. 153-154, illus., printed, single issue C\$1.00. Issued by Fisheries Research Board of Canada, Ottawa, Ontario, Canada. (Sold by Queen's Printer, Ottawa.)

TUNA:

"Dati sulla pesca all'amo del tonno nello stretto di Messina" (Observations on the catching of tuna with hook and line in the straits of Messina), by Sebastiano Genovese, article, *Bollettino di Pesca, Piscicoltura e Idrobiologia*, vol. XX, no. 1, January-June 1965, pp. 41-51, illus., printed in Italian with English and French summaries. Laboratorio Centrale di Idrobiologia, Piazza Borghese 91, Rome, Italy.

TURKEY:

Balık ve Balıkçılık, vol. 14, no. 1, Jan. 1966, 32 pp. illus., printed in Turkish. Et ve Balık Kurumu G. M., Balıkçılık Müdürlüğü, Besiktas, Istanbul, Turkey. Among the articles included are "Seminar on fisheries economics in Turkey," and "Britain's present fisheries."

"1963-67 birinci bes yillik kalkinma plani 1966 yili programi ve balikçilik" (The fisheries in 1966 program of the first five years development plan, 1963-1967, of Turkey), article, *Balık ve Balıkçılık*, vol.

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IV, no. 2, February 1966, pp. 1-3, printed in Turkish. Et ve Balik Kurumu G. M., Balikcilik Müdürü, Besiktas, Istanbul, Turkey.

UNITED KINGDOM:

Modern Era in Fishing (A Technical Review), Supplement to Fishing News, March 4, 1966, 40 pp., illus., printed. Fishing News, 110 Fleet Street, London, E.C. 4, England. Technical change in British fishing is the theme of this Supplement. Included are articles on the following subjects: freezer-trawler operation; what's new in trawling; changes in inshore vessels; making the sea safer; British trawler development; diesel engines for inshore craft; lubrication of trawler machinery; winches and deck gear; communications and fish-finding equipment; floats and bobbins; synthetic fibers for fishing; and plastics in the fishing industry.

Harpoon Load Meters for Seine Net Vessels, Research Development Bulletin, no. 17, 4 pp., illus., processed, Dec. 1965. White Fish Authority, 2/3 Cursitor Street, London, E.C. 4, England.

U.S.S.R.:

Articles from Okeanologiya, vol. 6, no. 1, 1966, printed in Russian, single issue 1 ruble & 50 kopeks (about US\$1.65). Okeanograficheskaya Komissiya, Akademiya Nauk U.S.S.R., Moscow:

A plankton net with a water-measuring arrangement. Its description and test results," by E. P. Bitiukov, pp. 165-171, illus.

"37th cruise of Vitjaz in the central part of the Pacific Ocean," by V. P. Petelin, pp. 172-175, illus.

"The most recent foreign oceanographic research vessels," by V. L. Tsurikov, pp. 176-185, illus.

YEARBOOK:

The following yearbooks are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402:

The Population Challenge--What It Means to America, U. S. Department of the Interior Conservation Yearbook No. 2, 80 pp., illus., printed, 1966, \$1.25. U. S. Department of the Interior, Washington, D. C. Examines the problem of how the population explosion will affect one's life and the crucial decisions one must make to ascertain a livable environment in the years to come. Discusses among others, the problems of commercial fisheries in the United States today, and how the Bureau of Commercial Fisheries has been helping to solve them.

Quest for Quality, U. S. Department of Interior Conservation Yearbook No. 1, 96 pp., illus., printed, 1965, \$1.00. U. S. Department of the Interior, Washington, D. C. Among other things, discusses the Bureau of Commercial Fisheries' vast research program that spans continents and plumbs the depths of our greatest oceans. Special mention is made of the research to provide fish protein concentrate (known as FPC) to more than 2 billion people who do not receive enough protein to maintain a minimum balanced diet.



Editorial Assistants: Ruth V. Keefe and Jean Zalevsky

Compositors: Alma Greene, Mary Andrews, and Mary Donaldson

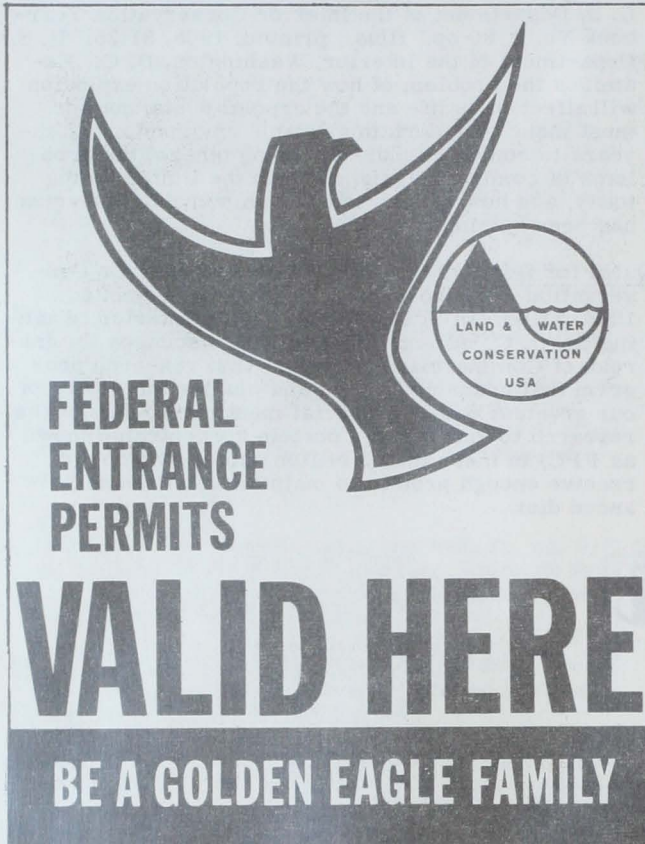
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NEW \$7 FEDERAL "GOLDEN PASSPORT" ON SALE ACROSS THE NATION

The new \$7 Federal Recreation Permit--the "Golden Passport" of the Federal Government's Operation Golden Eagle--went on sale across the Nation March 25, 1966, announced the U. S. Department of the Interior. The wallet-size card was designated a "Golden Passport" because of its gold color and the large number of Federal recreation areas--7,000 of them--it entitles the purchaser and everyone in his car to enter.



Designates 7,000 areas where the \$7 Federal Recreation Permit--the "Golden Passport"--is valid.

use it on a commercial bus going into an area or when walking into an area or building. The 1966 permit is valid an unlimited number of times from April 1 through March 31, 1967. It does not cover special user charges, such as fees for guides, elevators, etc.

The annual permit is sold at national parks and monuments, national forest areas, wild-life refuges, Corps of Engineers recreation areas, and other Federal recreation areas that charge entrance fees. It also will be on sale in many cities at offices of the American Automobile Association, the Forest Service, National Park Service, Tennessee Valley Authority, Bureau of Sport Fisheries and Wildlife, and the Bureau of Outdoor Recreation.

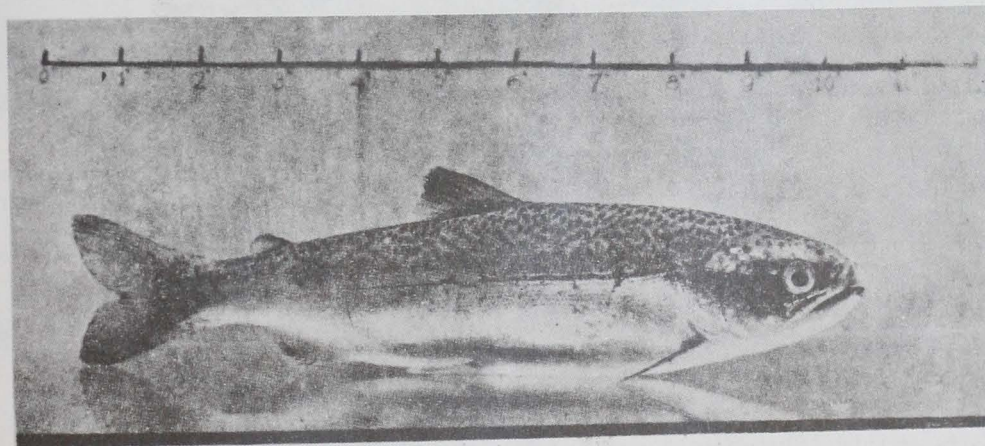
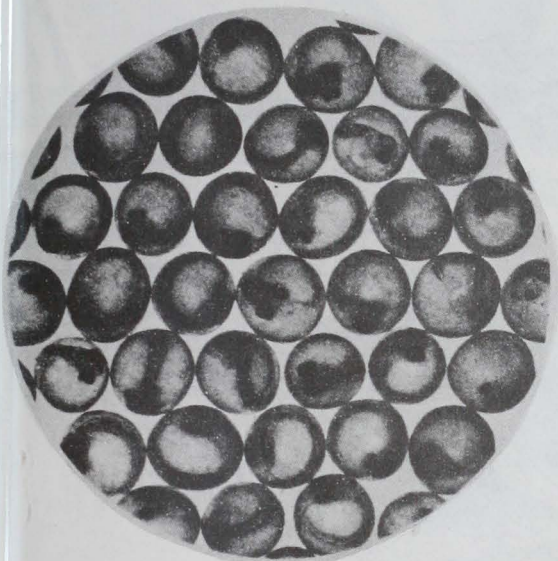
Secretary of the Interior Stewart L. Udall recommended wide citizen support for all phases of Operation Golden Eagle, but especially urged purchases of the \$7 "Golden Passport" to help provide support for the Land and Water Conservation Fund. "How much of the national outdoor heritage we save for future generations is largely dependent on how we today employ the skills and energy at our disposal. Congress wisely provided the means of saving much of what remains through passage of the Land and Water Conservation Fund Act," Secretary Udall stated.

The program to expand revenues of the Fund has attracted wide citizen support. Operation Golden Eagle was devised to provide a rallying point for marshalling support of the program in all the States and territories. Money from the sale of the "Golden Passport," together with other fees and revenues, goes into the Fund. Appropriations from the Fund assist States and their local governments in meeting urgent outdoor recreation needs and in the acquisition of Federal areas authorized by Congress.

Besides admitting a carload of people to Federal recreation areas, the \$7 "Golden Passport" will admit the purchaser himself, regardless of how he travels, to all Federal recreation areas that charge entrance fees. This means that the owner of the permit can

WEST COAST SALMON GROW UP IN MICHIGAN

Coho salmon have now been Michigan residents for one full year, and they are well on their way to a long sojourn in that State. The picture at left shows them as "eyed" eggs, when they arrived from Oregon in January 1966. A second batch arrived from the State of Washington in February 1966. Soon after being placed in rearing pens at Harrietta and Glen hatcheries, they changed to the "sac-fry" size with the egg sacs still attached, as



shown at right. Above, one of the fish as seen in February 1966, after a year in the hatchery, is about 10 inches long. First releases of the fish will be made in the spring of 1966 in the Platte River, Benzie County; in Bear Creek of Manistee County; and in Huron River, Baraga County. (Michigan Conservation, January-February 1966.)

HAWAII CALLS: ONO ONO MAHIMAHI

In October 1868, a mythical ship, Lucy S., arrived in Hawaii. On this mythical voyage, Lucy, the Captain's wife, an avid recipe collector, wrote a series of mythical letters to her cousin, Sarah, who remained in New Bedford. From these letters, the United States Department of the Interior's Bureau of Commercial Fisheries has announced a new collection of kitchen-tested recipes for today's busy homemaker.

Bring the exciting tang and exotic charm of the Hawaiian Islands to your table with Ono Ono Mahimahi (Delicious Dolphin).



Dolphin (not to be confused with the playful porpoises), is a deep-sea adventurer with scales of changeable rainbow colors. It sprints through the water at nearly 50 miles an hour, leaving most fish behind. This warm-water favorite will go just as fast on your table too, because dolphin is flavorful and fanciful.

In this recipe it is broiled with a simple sauce of butter and lemon juice. When golden and flaky the fish is served with a subtle sauce featuring Macadamia nuts from Hawaii. Serve it often--you'll win a wave of compliments.

ONO ONO MAHIMAHI
(Delicious Dolphin)

2 pounds mahimahi fillets or other
fish fillets, fresh or frozen
1 teaspoon salt
Dash pepper

$\frac{1}{4}$ cup butter or margarine, melted
2 tablespoons lemon juice
Macadamia Nut Sauce

Thaw frozen fillets. Skin fillets and cut into serving-size portions. Sprinkle with salt and pepper. Combine butter and lemon juice. Place fish on a well-greased broiler pan and brush with sauce. Broil about 3 inches from source of heat for 4 to 5 minutes. Turn carefully and brush with sauce. Broil 4 to 5 minutes longer or until fish flakes easily when tested with a fork. Place fish on a warm serving platter. Pour Macadamia Nut Sauce over fish. Serves 6.

Macadamia Nut Sauce

1 cup Macadamia nuts, coarsely chopped
 $\frac{1}{2}$ cup butter or margarine, melted

1 tablespoon chopped parsley

Brown nuts in butter. Add parsley. Makes 1 cup sauce.



Natives greet the whaler at Hawaii.