



RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE PUBLICATIONS

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CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
FL - FISHERY LEAFLETS.
MNL - REPRINTS OF REPORTS ON FOREIGN FISHERIES.
SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
SL - STATISTICAL LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
SSR.- FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

Number	Title
CFS-3694	- Pacific Coast Fisheries, 1963 Annual Summary, 12 pp.
CFS-3767	- New Jersey Landings, 1964 Annual Summary, 11 pp.
CFS-3773	- New York Landings, 1964 Annual Summary, 12 pp.
CFS-3780	- Frozen Fishery Products, March 1965, 8 pp.
CFS-3784	- Gulf Coast Shrimp Data, 1964 Annual Summary, 55 pp.
CFS-3785	- Shrimp Landings, 1964 Annual Summary, 16 pp.
CFS-3786	- Rhode Island Landings, December 1964, 3 pp.
CFS-3788	- Maryland Landings, February 1965, 3 pp.
CFS-3789	- Fish Meal and Oil, 1964 Annual Summary, 4 pp.
CFS-3790	- Maine Landings, 1964 Annual Summary, 7 pp.
CFS-3793	- New Jersey Landings, February 1965, 3 pp.
CFS-3794	- Rhode Island Landings, 1964 Annual Summary, 7 pp.
CFS-3796	- New York Landings, February 1965, 4 pp.
CFS-3797	- California Landings, February 1965, 4 pp.
CFS-3799	- Virginia Landings, January 1965, 3 pp.
CFS-3801	- Florida Landings, March 1965, 8 pp.
CFS-3803	- Massachusetts Landings, December 1964, 9 pp.
CFS-3806	- Louisiana Landings, February 1965, 3 pp.
CFS-3809	- Massachusetts Landings, by Ports, 1964 Annual Summary, 15 pp.

SL-163 - Firms Producing Breaded Shrimp, 1964, 2 pp.

Sep. No. 734 - An Experiment in Electrical Fishing with an Electric Field Used as an Adjunct to an Otter-Trawl Net.

Sep. No. 735 - Equipment Note No. 16--An Exploratory Fishing and Gear Research Buoy.

FL-411 - Care of Tropical Aquarium Fishes, 4 pp., revised Jan. 1965.

FL-436 - Commercial Possibilities and Limitations in Frog Raising, 4 pp., revised 1965.

FL-443 - Construction of a Garden Fish Pool, 4 pp., revised 1965.

FL-576 - Rotenone in Fish Pond Management, 7 pp., 1965.

SSR-Fish. No. 495 - Age and Size Composition of the Menhaden Catch Along the Atlantic Coast of the United States, 1961, with a Brief Review of the Commercial Fishery, by William R. Nicholson and Joseph R. Higham, Jr., 32 pp., illus., April 1965.

Annual Report of the Bureau of Commercial Fisheries Radiobiological Laboratory, Beaufort, N. C., for the Fiscal Year Ending June 30, 1963, Circular 204, 46 pp., illus., March 1965.

The American or Eastern Oyster, by Victor L. Loosanoff, Circular 205, 38 pp., illus., March 1965. The American or Eastern oyster (*Crassostrea virginica*) is the oyster of commerce of the Atlantic and Gulf coasts of the United States. This report discusses the environment in which it lives; its anatomy and physiology; its growth and reproduction; enemies of the oyster; the United States oyster industry--culture and methods of harvesting; and sanitary controls used in distribution.

Progress in 1962-63, Circular 206, 31 pp., illus., Feb. 1965. During the period July 1962-Dec. 1963, the Bureau of Commercial Fisheries' Biological Laboratory at Honolulu made significant new findings in the fields of tuna behavior, the oceanography of the trade-wind zone, the ecology of the skipjack and albacore, subpopulations of skipjack and big-eyed tuna and Pacific-wide and Hawaiian Island oceanography studies that were outgrowths of earlier exploratory investigations. In addition, the Laboratory participated in a survey of the fishery resources of the Indian Ocean. The entire program was aided by the completion of a new vessel, the Townsend Cromwell one of the most modern in the Nation's oceanographic fleet. This report on the Honolulu Laboratory's accomplishments during that period includes a cover photo of the Cromwell as well as photos of the Charles H. Gilbert (another Bureau vessel), tuna under study and other research subjects.

Fishery Bulletin, vol. 63, no. 3, 1964, 227 pp., illus., printed. Contains articles on: "Life history of lake herring in Lake Superior," by William R. Dryer and Joseph Beil; "Annotated bibliography on biology of menhadens and menhadenlike fishes of the world," by John W. Reintjes; "Ocean mortality and maturity schedules of Karluk River sockeye salmon and some comparisons of marine growth and mortality rates," by R. A. Fredin; "A method of measuring mortality of pink salmon eggs and larvae," by William J. McNeil; "Movements, growth, and rate of recapture of whitefish tagged in the Apostle Islands area of Lake Superior," by William R. Dryer; "Meristic variation in the hexagrammid fishes," by J. C. Quast; "Age, growth, sex ratio, and maturity of the whitefish in central Green Bay and adjacent waters of Lake Michigan," by Donald Mraz; "Feeding and growth of juvenile soft-shell clams, *Mya arenaria*," by Alden P. Stickney; "Combined effects of temperature and salinity on development of eggs and growth of larvae of *M. mercenaria* and *C. virginica*," by Harry C. Davis and Anthony Calabrese; and "A critical study of Pribilof fur seal population estimates," by D. G. Chapman.

THE FOLLOWING MARKET NEWS LEAFLETS ARE AVAILABLE FROM THE FISHERY MARKET NEWS SERVICE, U. S. BUREAU OF COMMERCIAL FISHERIES, RM. 510, 1815 N. FORT MYER DR., ARLINGTON, VA. 22209.

Number	Title
MNL- 5	Denmark's Fisheries, 1964, and 1965 Trends, 11 pp.
MNL- 8	Portugal's Fishing Industry, 1964, 28 pp.
MNL-23	Fisheries of Chile, 1964, 22 pp.
MNL-34	Fisheries of Greece, 1964, 7 pp.
MNL-56	Norwegian Fisheries, 1964, 12 pp.
MNL-57	Fisheries in the Federal Republic of Germany, 1964, 31 pp.
MNL-86	Hong Kong's Fishing Industry, 1963-64, 21 pp.

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

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, April 1965, 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, April 1965, 8 pp., illus. (U. S. Bureau of Commercial Fisheries, Tuna Resources Laboratory, P. O. Box 271, La Jolla, Calif. 92038.) Contains sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists; for the month indicated.

(Chicago) Monthly Summary of Chicago's Wholesale Market Fresh and Frozen Fishery Products Receipts, Prices, and Trends, Feb. and March 1965, 15 pp. each. (Market News Service, U. S. Fish and Wildlife Service, U. S. Customs House, 610 S. Canal St., Rm. 704, Chicago, Ill. 60607.) Receipts at Chicago by species and by states and provinces for

fresh- and salt-water fish and shellfish; and weekly wholesale prices for fresh and frozen fishery products; for the months indicated.

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, April 1965, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 608, 600 South St., New Orleans, 70130.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; Gulf menhaden landings and production of meal, solubles, and oil; fishery imports at Mobile, Ala., Morgan City and New Orleans, La., Miami, Fla., and Houston, Port Isabel, and Brownsville, Tex.; and sponge sales; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, April 1965, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 S. King St., 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 comparative data on fishery products and shrimp production; for the month indicated.

New England Fisheries--Monthly Summary, March and April 1965, 22 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.) Review of the principal New England fishery ports. Presents data on fishery 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, and Provincetown), 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 Boston Fish Pier and Atlantic Avenue fishery landings and ex-vessel prices by species; for the months indicated.

New England Fisheries--Annual Summary, 1964, by John J. O'Brien, 38 pp., illus., May 1965. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.) Reviews the fishery marketing trends and conditions at the principal New England ports, and highlights of the Canadian fisheries. The latest developments in the purse-seine tuna and swordfish long-line fisheries, the fish meal market, and frozen fishery products are recounted. Also includes fishery landings and ex-vessel prices for ports of Boston, Gloucester, New Bedford, Provincetown, Portland, Rockland, Point Judith, and Stonington; and principal events in the Maine sardine fishery. In addition, contains data on monthly landings and ex-vessel prices, by species, at Boston and Atlantic Ave. fish piers. The appearance of this report is enhanced by a cover photo of the New England Fish Exchange.

New York City's Wholesale Fishery Trade--Monthly Summary--March 1965, 18 pp. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York, N. Y. 10038.) Includes summaries and

analyses of receipts and prices on wholesale Fulton Fish Market, including both the salt- and fresh-water sections; imports entered at New York customs district; primary wholesalers' selling prices for fresh, frozen, and selected canned fishery products; market trends; and landings at Fulton Fish Market docks and Stonington, Conn.; for the month indicated.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, April 1965, 8 pp. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Includes Seattle's landings by the halibut and salmon fleets reported through the exchanges; landings of halibut reported by the International Pacific Halibut Commission; landings of otter-trawl vessels reported by the Fishermen's Marketing Association of Washington; local landings by independent vessels; coastwise shipments from Alaska 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.

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The American Oyster, CRASSOSTREA VIRGINICA
Gmelin, by Paul S. Galtsoff, Fishery Bulletin, vol. 64, 1964, 483 pp., illus., printed, \$2.75. A comprehensive biological study of Crassostrea virginica, this book opens with chapters on taxonomy, morphology and structure of the shell, the ligament, general anatomy, the mantle, labial palps, gills, and adductor muscle. Next, the transport of water by the gills, and respiration; the organs of digestion and food of the oyster; the circulatory system and blood; and the excretory and nervous systems are covered. Chapters on the organs of reproduction; eggs, sperm, fertilization, and cell cleavage; larval development and metamorphosis; and chemical composition of the oyster follow. Then the final chapter discusses in detail environmental factors affecting oyster populations--the positive factors of water movements, salinity, temperature, food, and bottom composition; and the negative factors of sedimentation, disease, competitors and predators, and pollution. This textbook was written for biologists, administrators, marine biology students, public health officers, and oyster growers. The author has succeeded in using the simplest possible language while still maintaining scientific accuracy.

"Electric rotary fish screens," by William M. Richardson, article, Progressive Fish-Culturist, vol. 27, no. 1, 1965, pp. 20-22, illus., processed, single copy 25 cents.

Progress in Sport Fishery Research, 1964, Circular
210, 119 pp., illus., processed, March 1965, 60 cents.

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.

AFRICA:

Articles from Tr Baltiiskogo Nauch-Issled Inst Morskogo Rybn Khoz Okeanogr, vol. 9, 1963, printed in

Russian, Baltiiskogo Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, Verkh. Krasnosel'skaia U1. No. 17, Moscow, U.S.S.R.

"Kharakteristika perspektivnykh rybopromyslovykh raionov u poberezh'ya Ispanskoi Sakhary i Mavritanii" (A characterization of prospective fishery regions along the coasts of the Spanish Sahara and Mauritania), by R. G. Bernikov and E. S. Prosvirov, pp. 70-80.

"Nauchno-poiskovaya ekspeditsiya na RT 'Muksun' k yugozpadnomu poberezh'yu Afriki" (The scientific and exploratory expedition of the trawler "Muksun" to the southwest coast of Africa), by Yu. A. Komarov and S. K. Kuderskii, pp. 3-19.

ALGAE:

"A list of algae from selected areas in Massachusetts," by E. E. Webber, article, Rhodora, vol. 63, no. 754, 1961, pp. 275-281, printed, New England Botanical Club, Inc., Botanical Museum, Oxford St., Cambridge, 38, Mass.

"Sarganin and chonalgin, new antibiotic substances from marine algae from Puerto Rico," by Noemi G. Martinez Nadal, V. Rodriguez Luz, and Carmen Casillas, article, Antimicrobial Agents and Chemotherapy--1963 (Proceedings of a Conference, 1963), pp. 68-72, illus., printed, 1964. American Society for Microbiology, 115 Huron View, Ann Arbor, Mich.

"Studies on the proteins, peptides and free amino acid contents in some species of marine algae from southeastern coast of India," by E. J. Lewis, article, Review Algol, vol. 7, no. 1, 1963, pp. 15-25, printed, Institute of Science, Bombay, India

ALMANAC:

The Nautical Almanac for the Year 1966, Catalog No. D 213.11:966, 311 pp., printed, 1964, \$3.25. U. S. Naval Observatory, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Provides data required for the practice of astronomical navigation at sea.

AMBERGRIS:

"Ambra" (Ambergris), by M. V. Ivashin, article, Zoologicheski Zhurnal, vol. 42, no. 7, 1963, pp. 1099-1103, illus., printed in Russian with English summary. Redaktsiia Zoologicheskogo Zhurnala, Podsosenskii per. d. 21, Moscow B-64, U.S.S.R.

AQUATIC BIOLOGY:

Books on Aquatic Biology--Fresh Water and Marine, by Carl R. Keeler, 227 pp., processed, 1965. Facile Press, 2306 Mission Rd., Tallahassee, Fla. This list of nearly 2,000 titles of aquatic biology texts includes only those currently in print and published in English. It is international in scope, covers all phases of the subject from algae to mammalia, and includes many Russian works. In addition to listing the books by 55 subjects, it includes an author index and publishers' addresses. Of particular interest are the subject sections on algae, mollusca, arthropoda, pisces, reptilia, behavior, distribution, and economic aspects. This list should be of value to teachers and researchers in the natural sciences throughout the world.

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AUSTRALIA:

Annual Report of the Division of Fisheries and Oceanography, 1963-64, 81 pp., printed, 1964. Commonwealth Scientific and Industrial Research Organization, Cronulla, N. S. W., Australia.

Articles from Australian Fisheries Newsletter, vol. 24, 1965. Fisheries Branch, Department of Primary Industry, Canberra, Australia.:

"Australians eat more fish but most of it imported," by P. C. Pownall, no. 4, April, p. 23.

"Record 1963/64 fin fish catch"; "Drop in local fish most marked in New South Wales"; "Australian marine and freshwater fisheries production, 1963/64," no. 3, March, pp. 5, 23, 32, 24-26. Although Australian finfish production for the 1963/64 financial year was a record 89.7 million pounds, there was a sharp drop in landings of some popular food fish such as mullet, flathead, and whiting. This trend is shown in an analysis by the Fisheries Branch of the annual table of marine and fresh-water edible fisheries, abstracted in these articles. Tuna production jumped from 11 to 18 million pounds; scallop production rose to 15.4 million pounds (landed weight) as a result of the opening of new beds in Port Phillip Bay, Victoria. Spiny lobster landings fell by nearly 4 million pounds, but shrimp catches increased by 6 percent, chiefly as the result of production from new grounds off Western Australia. The fish and shellfish production for each state (including Tasmania) is analyzed in the final article.

BELGIUM:

Rederscentrale vzw. Jaarverslag, 1964 (Annual Report of the Rederscentrale, 1964), 46 pp., printed in Dutch. Federscentrale v.z.w., H. Baelskaai 25, Oostende, Belgium. Contains two sections since "Rederscentrale" is not only a professional organization, but also a commercial organization, which under the minimum price system purchases fish that cannot be sold at the minimum prices at public auctions.

Articles from France Pêche, no. 93, March 1965, printed in French, single copy 2.5 F (about US\$0.50). France Pêche, Boîte Postale 179, Lorient, France.:

"L'aide à la pêche en Belgique" (Aid for the fisheries in Belgium), pp. 22-25, illus.

"La flotte de pêche Belge" (The Belgian fishing fleet), p. 26.

BOTULISM:

"Botulism from canned tuna fish," by R. W. Johnston, J. Feldman, and R. Sullivan, article, Public Health Reports, vol. 78, no. 7, 1963, pp. 561-564, printed. Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

CANADA:

"Canada's fisheries exports reach all-time record," by T. R. Kinsella, article, Foreign Trade, vol. 123, no. 10, May 15, 1965, pp. 2-8, illus., printed, single copy C\$0.25. Queen's Printer, Government Printing Bureau, Ottawa, Canada. Exports of Canadian fisheries products reached an all-time record of C\$202.6

million in 1964, an increase of nearly 18 percent over 1963. Imports also rose during the period. This article discusses exports of Canadian fresh and frozen fish, salted and canned fish, mollusks and crustaceans, and industrial products. It also touches on fishery conferences, missions, and fairs held in 1964. The United States is one of the principal buyers of Canadian fishery products.

The Fisheries of Canada, 23 pp., printed. (Reprinted from Canada Year Book 1963-64.) Canada Year Book, Handbook and Library Division, Dominion Bureau of Statistics, Ottawa, Canada.

Available from Queen's Printer and Controller of Stationery, Ottawa, Canada.:

Fisheries Statistics, New Brunswick, 1963, Catalogue No. 24-204, 35 pp., illus., processed in French and English, May 1965, C\$0.75.

Fisheries Statistics, Ontario, 1963, Catalogue No. 24-209, 12 pp., illus., processed in French and English, April 1965, C\$0.50. Contains tables giving the value of fish landed in Ontario, 1956-1963; quantity and value of landings by species and fisheries districts, 1962-63; capital equipment used in the primary fisheries operations; number of persons engaged in the fisheries; and new capital investment in the commercial fishery.

CANDLEFISH:

"Contribution to the marine life history of the eulachon, Thaleichthys pacificus," by W. E. Barraclough, article, Journal of the Fisheries Research Board of Canada, vol. 21, no. 5, 1964, pp. 1333-1337, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

CARP:

"Energeticheskii i belkovyi balans nagul'nogo karpovogo pruda" (Energy and protein balance of a carp feeding pond), by G. I. Shpet and T. V. Kozadaeva, article, Nauchnye Trudy Ukrain. Nauchno-Issledovatel'skii Institut Rybnogo Khoziaistva, vol. 15, 1963, pp. 27-43, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

"Genetic improvement of carp. V--A comparison of fall and winter growth of several carp progeny," by G. Wolfarth, M. Lahman, and Rom Moav, article, Bamidgh, vol. 16, no. 3, 1964, pp. 71-76, illus., printed. Department of Fisheries and Fish Breeders' Association Nir-David, D. N., Hakirya, Israel.

Untersuchungen über ein Fließbandsystem zur Abfischung von Karpfenteichen und Karpfenintensivgewässern (Studies on a Conveyor System for Landing Carp from Ponds and from Intensively Cultivated Lakes), by G. Predel and G. Seifert, Reprint No. 1964/50, 15 pp., illus., printed in German with Russian and English summaries. (Reprinted from Zeitschrift für Fischerie und deren Hilfswissenschaften, vol. 12, nos. 6/7, 1964, pp. 463-477.) Institut für Binnenfischerei, Muggelseedamm 310, Berlin-Friedrichshagen, Democratic Republic of Germany.

"Znachenie estestvennogo i iskusstvennogo korma pri vyrashchivanii karpov-segoletkov" (The effect of natural and artificial foods on the rearing of carp finger-

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lings), by V. S. Kirpichnikov, article, Rybnoe khoz-yaistvo vnutrennykh vodoemov Latv. SSR (Fisheries of Latvian inland waters), vol. 7, 1963, pp. 339-346, printed in Russian. Akademii Nauk Latvia SSR, Riga, U.S.S.R.

CATFISH:

"Effect of forced activity on blood lactic acid in channel catfish, Ictalurus punctatus (Rafinesque)," by Charles Wax Caillouet, Jr., article, Dissertation Abstracts, vol. 25, no. 4, 1964, pp. 2668-2669, printed. University Microfilms, Inc., University of Michigan, 313 N. 1st St., Ann Arbor, Mich.

"One new species and two redescriptions of catfishes of the South American callichthyid genus Corydoras," by Stanley H. Weitzman, article, Proceedings of the United States National Museum, vol. 116, no. 3498, 1964, pp. 115-126, illus., printed. U. S. National Museum, Washington, D. C. 20560.

CHILLING AND FREEZING:

La Conservation par le Froid des Poissons, Crustacés et Mollusques (The Cold-Preservation of Fish, Crustaceans, and Mollusks), by France Soudan, Michel Anquez, and Alain Bénézit, Encyclopedie du Froid, 30 pp., illus., printed in French, 1965. J. B. Baillière et Fils, Editeurs, 19, Rue Hautefeuille, Paris 6e, France. Some of the chapters on cold-preservation of fish: anatomy and physiology; variation in composition (proteins, fats, other components) with the sexual cycle; chemical composition and decomposition; microbiology of fish; preservation by refrigeration; supplementary means of preservation--washing, evisceration, chemical preservatives; equipment for refrigeration and storage; ice-making; freezing of fish; freezing apparatus and procedures; and transport of frozen fish. Also contains chapters on: morphology, physiology, and chemical composition of crustaceans; their preservation by chilling and freezing; and mollusks and their chemical composition, bacteriology, and preservation by cold.

COD:

"Frisehastighetens innflytelse pa kvaliteten" (The influence of rate of freezing on cod quality), by G. Lorentzen and K. Traa, article, Kjoleteknikk og Fryserinaering, vol. 16, no. 2, Mar.-Apr. 1964, pp. 1-4, printed. Institutt for Kjoleteknikk, Trondheim, Norway.

"Materialy po pitaniyu saiki" (Data on the nutrition of arctic cod Boreogadus), by A. V. Belova and M. I. Tarverdieva, article, Tr Murmanskogo Morskogo Biol Inst, vol. 5, no. 9, 1964, pp. 143-147, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

"The refractive index of the muscle of fish and shellfish. I--A possible method for measuring protein deterioration in fresh and frozen cod," by M. K. Elerian, article, Journal of the Science of Food and Agriculture, vol. 16, no. 4, April 1965, pp. 228-232, illus., printed, single copy £1 17s. 6d. (about US\$5.25). Society of Chemical Industry, 14 Belgrave Sq., London SW1, England.

Articles from Soviet Fisheries Investigations in the Northwest Atlantic (Translation), printed, 1964.

Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151.

"Biological peculiarities of cod with different otolith structure in the Northwest Atlantic," by E. M. Mankevich, pp. 324-337, illus.

"Biology of the Labrador and Newfoundland cod," by A. I. Postolakii, pp. 338-348, illus.

"Feeding of cod in western Greenland waters," by I. N. Sidorenko, pp. 249-255, illus.

"Size-age composition and spawning of the cod on the southwestern slope of the Flemish Cap Bank," by E. M. Mankevich and V. S. Prokhorov, pp. 349-354, illus.

"Some data on the feeding of cod in the Newfoundland area of the Northwest Atlantic," by O. A. Popova, pp. 228-248, illus.

COD AND HADDOCK:

"Nekotorye dannye o zhirnosti treski i pikshi Barentseva morya" (Some data on the fat content of Barents Sea cod and haddock), by N. S. Novikova, article, Tr Polyarnogo Nauch-Issled Proektn Inst Morskogo Rybn Khoz Okeanogr, vol. 15, 1963, pp. 149-162, printed in Russian. Poliarnii Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knipovicha, Moscow, U.S.S.R.

CONTAINERS:

"El envase de aluminio laqueado para conservas de pescado" (continuará) (The aluminum lacquered can for preserved fish--to be continued), by M. Martinez Esteban, article, Informacion Conservera, vol. 13, no. 133, Jan. 1965, pp. 13-16, illus., printed in Spanish, single copy 30 ptas. (about US\$0.50). Informacion Conservera, Colon, 62, Valencia, Spain.

CRABS:

"K voprosu ob akklimatizatsii kamchatskogo i sinego krabov v Barentsevom more." (Introduction of the king crab, Paralithodes, and the blue crab into the Barents Sea), by Yu. I. Orlov, article, Materialy Rybkhozyaistvennykh Issledovaniyakh Severnogo Basseina (Information on Fisheries Research in the Northern Basin), Part 1, pp. 46-47, printed in Russian, 1963. Gosudarstvennyi Komitet po Rybnomu Khoziaistvu pri SNKH SSSR; Poliarnii Nauchno-Issledovatel'skii i Proiektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knopovicha (PINRO), Murmansk, U.S.S.R.

DENMARK:

Articles from Dansk Fiskeritidende, vol. 83, no. 16, April 16, 1965, printed in Danish. Dansk Fiskeritidende, Studiestraede 3, 2, Copenhagen K, Denmark.

"Fisk for ekstra 800,000 kroner tilført Vesterø havn i 1964" (An extra 800,000 kroner worth of fish received at Vesterø port in 1964), pp. 217-219.

"77 millioner kg. fisk er blevet landet i de danske havne i Februar" (77 million kg. of fish were landed at Danish ports in February), pp. 207-208.

DOLLY VARDEN TROUT:

Some Feeding Habits of the Anadromous Dolly Varden SALVELINUS MALMA (Walbaum) in Southeastern

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Alaska, by Robert H. Armstrong, Informational Leaflet 51, 27 pp., illus., processed, April 8, 1965. Department of Fish and Game, Subport Bldg., Juneau, Alaska 99801.

DEHYDRATING:

Dehydrated Food Products, B. P. 940,309,20,12,61. U. S., 28,12,60, printed. Patent Office, U. S. Department of Commerce, Washington, D. C. 20231. Dehydration of moist food material, including fish and shellfish, is effected in the method described to give a product which is readily rehydrated to substantially the original form. Process consists of enveloping particles of the food in a fluid medium under partial vacuum so that moisture is rapidly evolved. The free oil is then separated from the dehydrated material. Apparatus used is described.

FACTORYSHIP:

Large refrigerated fish carriers for Russia," article, *Marine Engineer and Naval Architect*, vol. 86, 1963, pp. 18-19, printed. Whitehall Technical Press Ltd., 9 Catherine Pl., London SW1, England.

FISH BEHAVIOR:

O parametrah reaktzii ryb v elektricheskikh pol'yakh peremennogo toka" (On reaction parameters of fishes in electric fields of alternating currents), by V. A. Shentyakov, article, *Tr Inst Biol Vnutr Vod Akad Nauk SSSR*, vol. 6, no. 9, 1963, pp. 224-229, printed in Russian. Institut Biologicheskoi Fiziki, Vodokhraneniia, Akademiia Nauk SSSR, Moscow, U.S.S.R.

FISH CULTURE:

Bolezni Ryb i Osnovy Rybovodstva. Dlya Vet. In-Tov i Fak (Diseases of Fish and Principles of Fish Culture. For Veterinary Institutes and Faculties), by A. K. Shcherbina and F. M. Sukhoverkov, 295 pp., illus., printed in Russian, 1964, 295 Kop. (about US\$0.60). Izdatel'stvo "Kolos," Moscow, U.S.S.R.

Nekotorye voprosy geografii ikhtiofauny i rybolovstva vo vnutrennykh vodakh Afriki" (Some geographic and fish-cultural aspects of African inland waters), by Yu. D. Dmitrevskii, article, *Izv Vses Geogr Obshchestv*, vol. 95, no. 6, pp. 504-511, 1963, printed in Russian. Izvestia Vsesoyuznovo Geograficheskovo Obshchestva, Akademiia Nauk SSSR, Leningrad, U.S.S.R.

Proektirovanie i Stroitel'stvo Rybovodnykh Khozyaistv i Zavodov (Design and Construction of Fish Farms and Fish Hatcheries), by B. A. Kaspin and others, 365 pp., illus., printed in Russian, 1964, 1 ruble, 30 kops. (about US\$1.45). Pishchepromizdat, Mruzoskii, Prospekt No. 1, Moscow, U.S.S.R.

"Voprosy prudovogo rybovodstva" (Problems of fish culture), article, *Trudy Vseros Nauchno Institut Prudovogo Rybnogo Khoziaistva*, vol. 12, 1963, pp. 1-203, illus., printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

FISHERY AGREEMENT:

Japan and South Korea to Make a Fresh Start in Fisheries, by Masaaki Wada, 200 pp., printed in Japanese, 1965, 400 yen (US\$1.11 plus postage). Suisan Keizai Shimbunsha, 39 Banchi, Kita Higakubo-machi, Azabu, Minato-ku, Tokyo, Japan. Gives an insight

into the background of the recently concluded Japan-South Korea fishery agreement. Significant items described in this booklet are: (1) progress of negotiations and issues involved; (2) circumstances leading to the settlement; (3) points of agreement and commentaries on each item; and (4) procedure for implementing the agreement. It also has an appendix containing the provisions of the agreement, chronological summary of developments surrounding Japan-Korea fishery relations, data, and maps.

FISHERY RESOURCES:

Biological Resources in the Tropical Areas of Three Oceans (Atlantic, Indian, and Pacific Oceans), by B. G. Bogorov, Paper No. E/Conf. 39/C/376, 5 pp., processed. (Translated from the Russian.) United Nations, New York, N. Y. 10017. Paper presented at the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, Geneva, Feb. 4-20, 1963.

FISHERY STOCKS:

"Biologicheskie osnovy ratsional'nogo ispol'zovaniya rybnnykh zapasov" (The biological bases for the efficient use of fish stocks), by L. S. Berdichevskii, article, *Referativnii Zhurnal-Biologiya*, 1964, Abstract No. 12173, printed in Russian. Akademiia Nauk SSSR, Institut Nauchnoi-Informatsii, Moscow, U.S.S.R.

FISH-FARMING:

"Vliyaniye mineral'nykh udobrenii na ryboproduktivnost' vyrostnykh prudov Myndykskogo rybkhoza" (The effect of mineral fertilizers on the fish productivity of the Myndyk fish-farm rearing ponds), by E. V. Kozhokaru and V. V. Grimal'skii, article, *Tr Tret'ei Nauch Konf Molodykh Uch Moldavii Biol Sel'skokhoz Nauk (Kishinev)*, vol. 2, 1964, pp. 196-197, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

FISH REACTIONS:

"O reaktsiyakh ryb v elektricheskikh pol'yakh peremennogo toka" (Fish reactions in alternating-current electric fields), by V. A. Shentyakov, article, *Tr Inst Biol Vodokhran Akad Nauk SSSR*, vol. 1, no. 4, 1959, pp. 309-323, printed in Russian. Akademiia Nauk SSSR, Trudy Institut Biologicheskoi Fiziki, Vodokhraneniia, Moscow, U.S.S.R.

FISH SAUSAGE:

"Studies on (bacterial) spoilage of fish sausage. I--Softening of fish sausage," by Eiichi Tanikawa, Minoru Akiba, and Terushige Motohiro, article, *Bulletin of the Faculty of Fisheries, Hokkaido University*, vol. 14, no. 2, 1963, pp. 95-107, printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

FRANCE:

"Douze années de pêche à Boulogne" (Twelve years of fishing at Boulogne), by Jacques Lamarche, article, *France Pêche*, no. 93, March 1965, pp. 45-46, illus., printed in French, single copy 2.5 F (about US\$0.50). France Pêche, Boîte Postale 179, Lorient, France.

FREEZING:

"Freezing at sea; some thoughts on technical and economic aspects. II," by G. C. Eddie, article, *Norwegian Fishing and Maritime News*, vol. 12, no. 1, 1965, pp. 19, 21, 23, 43, 45, printed. Norwegian Fishing and

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

Maritime News, P. O. Box 740, Slottsgt. 3, Bergen, Norway. This is the second part of a paper presented at the OECD (Organization for Economic Cooperation and Development) Meeting on Fish Technology, Sept. 14-17, 1964, Scheveningen, the Netherlands. Discusses the choice of vessel type--mother ship or independent freezer trawlers; transfer of catches at sea; problems of freezing whole gutted fish--maintenance of color, appearance, texture, and flavor; the choice of a freezing plant and a refrigerant; cold-storage methods; and thawing plant problems. It also covers the effects of subsequent freezing on fish; economic considerations such as accessibility of fish stocks, and use of cold storage to increase availability of fishery products to the consumer; other preservation methods--freeze-drying, super-chilling, treatment with antibiotics, irradiation sterilization and pasteurization; and the need for further research and exchange of ideas in the complex field of freezing fish at sea.

"What's new in food freezing," by S. A. Trout, article, Australian Refrigeration, Air Conditioning and Heating Journal, vol. 18, no. 6, June 1964, pp. 19-20, 23-24, printed. Australian Refrigeration, Air Conditioning, and Heating Institute, 62 Margaret St., Sydney, Australia. The latest developments in low-temperature freezing, fluidized freezing, and accelerated freeze-drying (A.F.D.) are discussed by the author.

FRESH FISH:

"Prime ricerche compiute in Italia sul riconoscimento del pesce decongelato dal pesce fresco semplicemente refrigerato a mezzo di refrattometro a mano" (First investigations made in Italy on the differentiation between thawed frozen fish and chilled fresh fish, by means of a hand refractometer), by S. Caracciolo and L. Neri, article, Zooprofilassi, vol. 19, no. 3, March 1964, pp. 119-126, illus., printed in Italian. Zooprofilassi, Rome, Italy.

FRESH-WATER FISH:

"Extinct, rare and endangered American freshwater fishes," by Robert Rush Miller, article, Proceedings of the International Congress of Zoology, vol. 16, no. 8, 1963, pp. 4-11, illus., printed. Permanent Committee of International Zoological Congresses, 105 Blvd. Raspail, Paris 6e, France.

Articles from Rybnoe Khozyaistvo Vnutrennykh Vodoemov SSSR (Fisheries of the Inland Waters of the U.S.S.R.), printed in Russian, 1963. Akademii Nauk SSSR, Institut Okeanologii, Moscow, U.S.S.R.:

"Chislennost' osetrovyykh, lososevykh i sigovykh ryb Eniseya i sposoby ee uvelicheniya" (The abundance of sturgeons, salmonids and whitefishes in the Yenisei and ways of increasing their numbers), by A. V. Podlesnyi, pp. 155-161.

"Novyi metod otsenki nerestilishch presnovodnykh ryb po ikh lichinkam na primere ryb del'ty Volgi" (A new method of evaluating the spawning grounds of freshwater fish based on the distribution of larvae, illustrated by the fishes of the Volga delta), by A. F. Koblit'skaya, pp. 201-210.

FROZEN FISH:

Correlation between the Histological Structure of Frozen Fish Muscular Tissue and its Post-Mortem

Changes, by A. I. Piskarev, article, paper presented at the 11th International Congress of Refrigeration, Munich, 27 Aug.-4 Sept. 1963, printed. Institut International du Froid, 177 Blvd. Malesherbes, Paris XV, France.

GEAR:

Mechanization of Driftnet Fishing Operations, by P. Kuraptsev, paper presented at the Second World Fishing Gear Congress, London, 25-31 May 1963, 8 pp., illus., processed in English with French and Spanish abstracts. Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

GEAR RESEARCH:

"Swimming speed of fish as a factor in gear research" by G. Sundnes, article, Fiskeridirektoratets Skrifter, Serie Havundersøkelse, vol. 13, no. 6, 1963, pp. 123-132, illus., printed. Fiskeridirektoratet, Bergen, Norway.

GERMAN DEMOCRATIC REPUBLIC:

Die Aufgaben der Wissenschaft bei der Weiterentwicklung der Binnenfischerei (The Problem of Further Development of the Inland Fisheries), by Diethelm Scheer, Reprint No. 1964/56, 4 pp., printed in German (Reprinted from Deutsche Fischerei-Zeitung, vol. 1, no. 12, 1964, pp. 362-365.) Institut für Binnenfischerei, Muggelseedamm 310, Berlin-Friedrichshagen, Democratic Republic of Germany.

GERMAN FEDERAL REPUBLIC:

"La pesca marina en la República Federal Alemana" (The marine fishery in the German Federal Republic), article, Boletín de Informacion, no. 77, Feb. 1965, pp. 15-17, printed in Spanish. Sindicato Nacional de Pesca, Paseo del Prado, 18-20, 6a Planta, Madrid, Spain.

Protokolle zur Fischereitechnik, vol. 40, no. 9, Sept. 1964, 81 pp., illus., processed in German. Institut für Netz- und Materialforschung der Bundesforschungsanstalt für Fischerei, Hamburg, Federal Republic of Germany. Includes these articles: "Über die fangigkeit knotenloser heringstreibnetze (raschelnetze) und 'perlon'-endlos" (The catchability of knotless herring drift nets of endless perlon), and "Untersuchungen zur konservierung von fischnetzen. II" (Research on the preservation of fish nets. II), by A. von Brandt; "Einige Gesichtspunkte angewandter Verhaltensforschung in der Fischerei" (Some aspects of behavior research used in the fisheries), by H. Mohr; "Versuche in der pelagischen gespannfischerei mit kottloggern im Jahre 1963" (Investigations on the pelagic pair-trawling fishery with luggers in 1963), by R. Steinberg; and "Fischereimethoden der Kap Verde (Fishery methods at Cape Verde Islands), by A. von Brandt and R. Steinberg.

GILL NETS:

"O selektivnom deistvii na rybu stavnykh setei v usloviyakh Kamskogo vodokhranilishcha" (On the selectivity of bottom gill nets under the conditions of the Kama Reservoir), by Yu. A. Pushkin, article, Izvestiya Nauchno-Issledovatel'skogo Instituta Perm'skogo Universiteta, vol. 14, no. 6, pp. 115-118, 1963, printed in Russian. Four Continents Book Corp., 156 Fifth Ave., New York, N. Y., 10010.

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

GREENLAND:

The West Greenland Cod Fishery, by David Garrod, Laboratory Leaflet (New Series) No. 7, 16 pp., illus., processed, March 1965. Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England. Declining yields elsewhere in the North Atlantic have led to a switch of British distant-water cod fishing effort to West Greenland. In this leaflet the commercial fishery prospects on those grounds are summarized. Included are a number of statistical tables and graphs showing total catch of cod from the Northwest Atlantic by areas of origin and by participating countries, 1952-63; cod catch per unit of effort by otter trawlers at West Greenland, 1954-62; and other similar data.

HAKE:

"Nuevos metodos de industrialization de merluza en Chile. 1--Productos ahumados" (New methods of processing hake in Chile. 1--Dried products), by Enrique Torrejon, article, Informacion Conservera, vol. 13, no. 133, Jan. 1965, 4, 5-8, 9-11, illus., printed in Spanish, single copy 30 ptas. (about US\$0.50). Informacion Conservera, Colon, 62, Valencia, Spain.

HERRING:

"Examination and quality evaluation of fresh and preserved herrings," by G. Hensel and J. Wurziger, article, Deutsche Lebensmittel-Rundschau, vol. 60, 1964, pp. 311-315, printed in German. Wissenschaftliche Verlagsgesellschaft m.b.h., Birkenwaldstrass 44, Stuttgart N., Federal Republic of Germany.

"Herrings of the northwestern part of the Atlantic Ocean," by I. G. Yudanov, article, Soviet Fisheries Investigations in the Northwest Atlantic (Translation), pp. 361-370, illus., printed, 1964. Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151.

"Nekotorye osobennosti povedeniya salaki v odnorodnom elektricheskom pole postoyannogo i impul'snogo tokov" (Some characteristics of the behavior of Baltic herring, Clupea harengus membras, in a direct-current electric field, both steady and pulsed), by G. P. Danyulite, article, Tr Akad Nauk Lit SSR, vol. B3, no. 32, 1963, pp. 181-194, printed in Russian. Akademiia Nauk SSSR, Moscow, U.S.S.R.

"O nekotorykh osobennostyakh povedeniya okeanicheskoi sel'di v period nagula" (Behavior of ocean herring during their feeding period), by A. K. Tokarev, article, Tr Vses Nauchn-Issled Inst Morsk Rybn Khoz i Okeanog, vol. 36, 1958, pp. 5-18, printed in Russian. Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, Verkh. Krasnosel'skaia U1, No. 17, Moscow, U.S.S.R.

"A quantitative estimate of the number of Pacific herring (Clupea pallasii) in a spawning population," by D. N. Outram and F. H. C. Taylor, article, Journal of Fisheries Research Board of Canada, vol. 21, no. 5, 1964, pp. 1317-1320, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Razmnozhenie sel'di v gube Chupa Kandalakshskogo zaliva" (The reproduction of herring in the Chupa Inlet of Kandalaksha Bay), by K. A. Altukhov, article,

Materialy Po Kompleksnom Isucheniyu Belogo Morya (Materials on the Comprehensive Survey of the White Sea), vol. 2, pp. 100-113, printed in Russian, 1963. Akademiia Nauk SSSR, Institut Okeanologii, Moscow, U.S.S.R.

Reaction of Herring to Fishing Gear Studied by Means of Echo Sounding, by H. Mohr, paper presented at the Second World Fishing Gear Congress, London, 25-31 May 1963, 12 pp., illus., processed in English with French and Spanish abstracts. Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

"Salting of herring in circulating brine," by E. Kordyl, article, Prace Morskigo Instytutu Rybackiego w Gdyni, no. 117b, 1960, pp. 113-122, illus., printed in Polish with Russian and English summaries. Morskigo Instytutu Rybackiego w Gdyni, Gdynia, Poland.

Sel'di Severo-Zapadnoi Atlantiki i Ikh Promysel (Herring of the Northwestern Atlantic and Their Fishery), by Yu. Chuksin and Yu. Byalov, 124 pp., illus., printed in Russian, 1963, 42 Kop. (about US\$0.50). Knigoizdat, Kaliningrad, U.S.S.R.

"O sistematicheskome polozhennii sel'dei Bankov Dzhordzhes i Bankero" (On the systematic status of herring from Georges and Banquereau Banks), by Yu. K. Benko, article, Voprosy Ikhtiologii, vol. 4, no. 1, 1964, pp. 61-67, illus., printed in Russian. Akademiia Nauk SSSR, Ikhtiologicheskaja Komissia, Moscow, U.S.S.R.

"K voprosu o tempe sozrevaniya sel'di banki Dzhordzhes v iyuleavguste 1961 g." (On the question of the maturation rate of herring of Georges Bank in July-Aug. 1961), by V. I. Sauskan, article, Tr Baltiiskogo Nauch-Issled Inst Morskogo Rybn Khoz Okeanogr, vol. 9, 1962, pp. 158-159, printed in Russian. Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii Verkh. Krasnosel'skaia U1, No. 17, Moscow, U.S.S.R.

Articles from Fiskaren, vol. 42, no. 13, March 31, 1965, printed in Norwegian. Norges Fiskarlag, Postboks 172, Bergen, Norway:

"1965 ga historiens første vintersildfiske utelfor Namdalen" (1965 has history's first winter herring fishing off Namdal), pp. 1, 7.

"Vintersildfisket 1965 slutt med eit totalkvantum pa ca. 2,443,635 hectoliters" (Winter herring fishery for 1965 ends with a total catch of about 2,443,635 hectoliters), pp. 1, 7.

ICHTHYOLOGY:

An Introduction to the Study of Fishes, by Albert Carl Ludwig Gotthilf Günther, 736 pp., illus., printed, reprinted 1963. Hafner Publishing Co., 31 E. 10th St., New York, N. Y. 10003.

INTERNATIONAL TRADE:

"O comércio internacional dos productos da pesca" (International trade in fishery products), by Armando de Oliveira Hagatong, article, Conservas de Peixe, vol. 19, no. 227, Feb. 1965, pp. 18-19, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda., Regueirao dos Anjos, 68, Lisbon, Portugal.

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

IRRADIATION PRESERVATION:

"Irradiation and food products," article, Food Engineering, vol. 36, no. 11, 1964, pp. 53-54, printed, Chilton Co., Chestnut and 56th Sts., Philadelphia 39, Pa. A review of the present position of food product irradiation preservation. It is pointed out that this treatment cannot replace canning, freezing, or dehydration but can result in an extended shelf life and an overall improved standard of foods.

JAPAN:

"Researches on coastal fisheries in Japan," by Shigemitsu Sunaga, article, Scientific Reports of the Tohoku University, Serial D (Agriculture), vol. 15, no. 2, 1964, pp. 141-149, printed in Japanese. Tohoku University, Katahiracho, Sendai, Honshu, Japan.

KING CRABS:

Development of the King Crab Fishery Off Kodiak Island, by George W. Gray, Jr., Robert S. Roys, and Robert J. Simon, Informational Leaflet 52, 16 pp., illus., processed, April 12, 1965. Department of Fish and Game, Subport Bldg., Juneau, Alaska, 99801. Discusses the history of the Alaska king crab fishery, types of fishing gear used, catch statistics, fishing intensity, average landed weight of crabs, size limits imposed, other regulations in the king crab fishery, and future of the industry. The expansion of the king crab fishery has probably been as rapid as that of any fishery in the world, conclude the authors. With proper management, the Kodiak Island area will remain a major crab producer, but expansion in the magnitude of 1959-63 seasons is improbable.

Reproduction of King Crabs, PARALITHODES CAMTSCHATICA (Tilesius), by Guy C. Powell and Richard B. Nickerson, 11 pp., illus., printed. (Reprinted from Journal of the Fisheries Research Board of Canada, vol. 22, no. 1, 1965, pp. 101-111.) Alaska Department of Fish and Game, Kodiak Research Center, Kodiak, Alaska.

LAW OF THE SEA:

Sovereignty of the Sea, Geographic Bulletin No. 3, 34 pp., printed, May 1965, 25 cents. Bureau of Intelligence and Research, Office of Research in Economics and Science, U. S. Department of State, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) This Bulletin concerns the rights which the United States and other countries have on, over, and under the surfaces of the oceans. Precise distinctions of jurisdiction on land areas have their counterparts along and off the shores of six continents and hundreds of thousands of islands. The merchant marines and fishing fleets of several scores of countries must operate within the precepts of the law of the sea. Oil derricks and other marine operations in coastal waters signal further exploitation of the sea for which a legal framework must be developed. In the matter of fisheries, agreements between or among interested sovereign participants are recognized by the United States. In recent months American delegations have participated in conferences designed to consider feasible fishing rights off coasts where there have been problems and claimed infringements of international procedure. The Bulletin contains short chapters on the single

ocean concept, question of offshore jurisdiction, offshore pattern of zones, breadth of the territorial sea; double continental shelf, high seas and high flying, and international dissension over territorial waters. Appendices include articles on identifying and projecting a baseline, and boundaries in the sea. The tables show data on areas of the oceans and principles, coastline measurements of world's major political entities, and other information. Included are charts showing a continental shelf in profile, the baseline, the straight baseline, and median line boundary between sovereign states with adjacent or opposite coasts.

LIVESTOCK FEED:

"Etude du besoin qualitatif d'azote chez la truie en gestation et lactation. Comparaison de deux protéines: Farine de poisson et arachide" (Qualitative nitrogen requirements in pregnant and lactating sows. A comparison between two proteins: Ground nut and fish meal), by E. Salmon-Legagneur, article, Annales de Zootechnie (Paris), vol. 13, no. 1, 1964, pp. 51-61, illus., printed in French. Institut National de la Recherche Agronomique, 149 Rue de Gronelle, Paris (7^e), France.

LOBSTERS:

A Unit Suitable for Holding and Displaying Live Lobsters, by James E. Stewart and H. E. Power, New Series Circular No. 21, 8 pp., illus., processed, April 26, 1965. Halifax Laboratory, Fisheries Research Board of Canada, Halifax, N. S., Canada. Discusses a unit which has been built and tested in Canada, suitable for holding and displaying live lobsters in dining areas, stores, and other commercial establishments. It consists of a tank, its supporting structure, a controlled refrigeration system, a pumping and filtering system, and a small air pump to aerate the water. Some suggestions on maintenance, temperature, protection of lobsters from injury and toxicity are given, in addition to a full description and diagrams of the unit. A map showing lobster fishing seasons in eastern Canada is included.

MACKEREL:

"Okeanologicheskie orientiry pri poiske yuzhoafrikskoi stavridy v vesenne-letnii period" (Oceanologic indicators in the search for the South African horse mackerel during the spring-summer period), by Yu. A. Khovanskii, article, Tr Baltiiskogo Nauch-Issled Inst Morskogo Rybn Khoz Okeanogr, vol. 9, 1962, pp. 50-56, printed in Russian. Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozaistva i Okeanografii, Verkhn. Krasnosel'skaia Ul. No. 1, Moscow, U.S.S.R.

MARINE BIOLOGY:

Advances in Marine Biology. Vol. 2., edited by F. S. Russel, 284 pp., illus., printed, 1964, \$9.50. Academic Press, Inc., 125 E. 23rd St., New York, N. Y. 10011. The second volume of a new serial published to help biologists keep up with knowledge in the different fields of marine biological research. Contains articles which discuss the artificial propagation of marine life, blood grouping of marine animals; the status of certain aspects of marine microbiology; and the sampling methods used in the benthos.

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MARINE VERTEBRATES:

"A coincidental distributional pattern of some of the larger marine animals (whales, fishes)," by Charles McCann, article, Tuatara, vol. 12, no. 2, 1964, pp. 119-124, illus., printed, Dominion Museum, Wellington, New Zealand.

MEETINGS AND PROCEEDINGS:

Proceedings of the Symposium on Scombroid Fishes Held at Mandapam Camp from Jan. 12-15, 1962, Part I, 580 pp.; Part II, 236 pp., Symposium Series I, illus., printed, 1964. Marine Biological Association of India, Marine Fisheries P. O., Mandapam Camp, Madras State, Ramanathapuram District, South India.

MICROBIOLOGY:

Principles and Applications in Aquatic Microbiology; Proceedings of Rudolfs Research Conference, Rutgers, the State University, New Brunswick, New Jersey, edited by Heukelekian and Norman C. Dondero, 464 pp., illus., printed, 1964. John Wiley and Sons, 440 Fourth Ave., New York, N. Y. 10016.

NAVIGATION:

Fishing Vessel Rules of the Road (Based on the Revised International Rules which Become Effective 1 September 1965), 30 pp., illus., processed, May 1, 1965. United States Coast Guard, Treasury Department, Washington, D. C. 20220. The new rules make substantial changes in light requirements, fog-signal procedures, and other important aspects of Rules of the Road for fishing vessels on the high seas. Fishermen are urged by the Coast Guard to familiarize themselves with these rules before they become effective.

United States Coast Pilot 9--Pacific and Arctic Coasts--Alaska, Cape Spencer to Beaufort Sea, Seventh Edition, 348 pp., printed, 1964, \$2.50. Coast and Geodetic Survey, U. S. Department of Commerce, Washington, D. C. 20230.

NIGERIA:

Establishing a Business in Nigeria, OBR 65-21, 20 pp., printed, April 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

NORWAY:

Forekomst av egg og larver av fisk i vest- og nordnorske kyst- og bankfarvann våren 1964 (Occurrence of fish eggs and larvae in western and northern Norwegian coastal and offshore waters during 1964), by Olav Dragesund, article, Fiskets Gang, vol. 51, no. 11, March 18, 1965, pp. 166-172, illus., printed in Norwegian with English summary. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

A industria de conservas de peixe Norueguesa em 1964 (The Norwegian canned fish industry in 1964), article, Conservas de Peixe, vol. 19, no. 228, March 1965, pp. 23-24, 37, printed in Portuguese. Sociedade de Revista Conservas de Peixe, Lda., Regueira dos Anjos, 68, Lisbon, Portugal.

OCEANOGRAPHY:

"Millions for sea studies," by Howard Simons, article, New Scientist, vol. 25, no. 436, March 25, 1965, p. 777, printed, single copy 1s. 3d. (about US\$0.20). Cromwell House, Fulwood Pl., High Holborn, London WC1, England.

Océanographie, vol. 2, no. 3, 1964, 101 pp., illus., processed in French, single copy 20 F plus postage (about US\$4.10). Office de la Recherche Scientifique et Technique Outre-Mer, Service Central de Documentation, 80, route d'Aulnay, Bondy (Seine), France. Contains textual and tabular data, as well as illustrations and charts, related to various fish species, phytoplankton, salinity, temperatures, and other oceanographic observations. Some of the articles: "Contribution à l'étude histologique du cycle sexuel ovarien de Neothunnus albacora" (Contribution to the histological study of the ovarian sexual cycle of Neothunnus albacora), by J. Ducroz; "Contribution à l'étude de la langouste verte africaine, Panulirus rissoni Desmarest 1825 (P. regius de Brito Capello)" (Contribution to the study of the green African spiny lobster, Panulirus rissoni Desmarest 1825--P. regius de Brito Capello), by E. Marchal and M. Barro; "Contribution à l'étude de l'écologie et des méthodes de pêche des Palinuridae dans la région de Nosy-bé (Madagascar)" (Contribution to the study of the ecology and fishing methods of Palinuridae in the Nosy-bé region of Malagasy), by M. Pichon.

Oceans, an Atlas-History of Man's Exploration of the Deep, edited by G. E. R. Deacon, illus., printed, 1964. Paul Hamlyn, Westbook House, Fulham Broadway, London, England.

RRS DISCOVERY Cruise 3--Report: Oceanographic Work in the Western Indian Ocean, 15 February to 28 September 1964 (International Indian Ocean Expedition), 55 pp., printed, 1965. The Royal Society, Burlington House, London W1, England.

"A simple automatic bottom water sampler for shore use," by J. C. Bayes and A. D. Ansell, article, Limnology and Oceanography, vol. 9, no. 4, 1964, pp. 600-601, illus., printed. K. M. Rae, c/o George H. Lauss, University of Michigan, Ann Arbor, Mich.

Available from Woods Hole Oceanographic Institution, Woods Hole, Mass. 02543.

Bibliography of Reports, 1964, compiled by Jeanne M. Backus, Ref. 64-54, 13 pp., printed, Jan. 1965. A chronological index of oceanographic research carried out by the Institution. An author index is also included.

Oceanography from Space, edited by Gifford C. Ewing, Ref. No. 65-10, 490 pp., illus., processed, April 1965, limited number of copies, \$5. Proceedings of the Conference on the Feasibility of Conducting Oceanographic Explorations from Aircraft, Manned Orbital, and Lunar Laboratories, held at Woods Hole, Mass., Aug. 24-28, 1964. During the past 14 years, reconnaissance of the ocean surface by air-borne remote sensors has undergone rapid expansion until it is now widely used in marine meteorology, physical oceanography, and marine biology. The use of extended strip photography and air-borne infrared radiometry

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to map large scale features such as the Gulf Stream are two research areas in which the Woods Hole Oceanographic Institution made early contributions. This report contains an introductory briefing, and chapters on currents and the shape of the Geoid; identification of water masses; sea ice; coastal geography, geology, and engineering; and security classification of information. A chapter on marine biology contains sections on marine biology and remote sensing; oceanographic observations from manned satellites for fishery research and commercial fishery applications; possible contributions of manned (and unmanned) satellites toward advancing the fields of marine biology and biological oceanography; transparency, bioluminescence, and plankton; and detection of marine organisms by an infrared mapper.

OCEAN PERCH:

Articles from Soviet Fisheries Investigations in the Northwest Atlantic (Translation), 1964. Clearing-house for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151:

"Biology of the West Greenland *Sebastes marinus*," by G. P. Zakharov, pp. 310-323, illus.

"On the groups of rosefish (*Sebastes mentella* Travin) in the Labrador-Newfoundland area," by K. P. Yanulov, pp. 277-289, illus.

"Parasites as indicators of local rosefish (*Sebastes*) stocks," by K. P. Yanulov, pp. 266-276, illus.

"Some notes on rosefish feeding in the Newfoundland area," by M. L. Kashintsev, pp. 256-265, illus.

OYSTER FARMING:

"Ouvindo 'alguem' no meio ostreicola" (Listening to an authority on oyster culture), article, *Jornal do Pescador*, vol. 27, no. 315, April 1965, pp. 19-21, illus., printed in Portuguese, single copy 5 Escudos (about US\$0.20). Junta Central das Casas dos Pescadores, Rua de S. Bento, 644-2^o, Lisbon, Portugal.

PAKISTAN:

Articles from *Pakistan Journal of Science*, vol. 15, no. 6, 1963. Pakistan Association for the Advancement of Science, Lahore, Pakistan:

"Marine fisheries of Pakistan. II--Problems of the fishing industry," by N. Alam Khundker, pp. 257-261.

"Methods to increase the crop harvested from the sea," by P. Korringa, pp. 271-277.

PERU:

Diagnóstico Económico Social de la Pesquería (Estudio Preliminar) (Socio-Economic Analysis of the Fisheries--Preliminary Study), by Javier Iparra-guirre Cortez, José E. García Cabrejos, and Alfonso Elejalde Zea, Documento de Trabajo, 170 pp., illus., processed in Spanish, June 1963. Oficina Sectorial de Planificación Pesquera, Ministerio de Agricultura, Piso 18, Edif. Min. Edc., Lima, Peru. This is an extensive review of Peru's fishery industries. The latest statistics shown are for 1962. Discusses the development of the fisheries; their importance to Peru; the sea, currents (including "del Nino"),

and other oceanographic data. A chapter on the fishery describes the various fishery ports and presents statistics. Other chapters present data on distribution and use of fishery products for human consumption and industrial purposes, processing plants, the role of the Government, the role of fisheries in the country's economy, and recommendations for improvement.

PESTICIDES:

"DDT persistence and its effect on aquatic insects and fish after an aerial application," by E. B. Welch and J. C. Spindler, article, *Journal of Water Pollution Control Federation*, vol. 36, no. 10, 1964, pp. 1285-1292, printed. Water Pollution Control Federation, 4435 Wisconsin Ave. NW., Washington, D. C. 20016.

PHYSIOLOGY:

"K metodike vozrastnykh opredelenii dlya nekotorykh vidov ryb" (Contribution to the technique of age determination in certain fishes), by Yu. A. Pushkin, article, *Izv Estestv-Nauch Inst Permskom Univ*, vol. 14, no. 6, 1963, pp. 119-124, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

POISONOUS FISH:

Yadovitye i Opasnye Ryby (Poisonous and Dangerous Fish), by E. Prosvirov, 80 pp., illus., printed in Russian, 1963, 62 Kop. (about US\$0.70). Knigoizdat, Kaliningrad, U.S.S.R.

PORTUGAL:

Boletim da Pesca, vol. 16, no. 86, March 1965, 109 pp., illus., printed in Portuguese. Gabinete de Estudos das Pescas, R. S. Bento, 644, 2.^o D1.^o, Lisbon, Portugal. Includes articles on: "O desenvolvimento das pescas nacionais" (The development of the national fisheries), by Henrique Tenreiro; "Exploracao e salubridade de moluscos testaceos marinhos" (Investigation of the wholesomeness of the testaceous marine mollusks), by Herculano Vilela; and "A pesca na provincia de Mocambique" (The fishery in the Province of Mozambique), by Romulo de Figueiredo.

"O desenvolvimento das pescas nacionais" (The development of the Nation's fisheries), article, *Jornal do Pescador*, vol. 26, no. 314, March 1965, pp. 15-17, illus., printed in Portuguese, single copy 5 escudos (about US\$0.20). Casas dos Pescadores, Rua de S. Bento, 644-4^o Esq., Lisbon, Portugal.

SALMON:

"Ob effektivnosti estestvennogo neresta semgi" (Some observations on the effectiveness of the natural spawning of Atlantic salmon, *Salmo salar*), by I. N. Grinyu, article, *Materialy rybokhoziaistvennogo Issledovaniya Severnogo Basseina* (Materials of Fisheries Research in the Northern Basin), Part 1, pp. 43-46, 1964, printed in Russian. Gosudarstvennyi Komitet po Rybnomu Khoziaistvu pri SNKH SSSR; Poliarnii Nauchno-Issledovatel'skii i Proiektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knipovicha (PINRO Murmansk, U.S.S.R.

"Eksperimental'no-ekologicheskii analiz molodi gibridov baltiiskikh losoya (*Salmo salar* L.) i kumzhi (*Salmo trutta trutta* L.), vyrashchennykh v prudakh" (Experimental and ecological analysis of pond-raised young hybrids of Baltic salmon, *Salmo salar* L., and

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sea trout, *Salmo trutta trutta* L.), by N. V. Evropeit-eva, and G. V. Belyaeva, article, Referativnii Zhurnal-Biologiya, 1964, Abstract No. 10158, printed in Russian, Akademiia Nauk SSSR, Institut Nauchnoi Informatsii, Moscow, U.S.S.R.

Further information of spawning stock size and resultant production for Skeena sockeye (*Oncorhynchus nerka*), by M. P. Shepard and others, article, Journal of Fisheries Research Board of Canada, vol. 21, no. 5, pp. 1329-1331, 1964, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

Poludyeniya za skatom molodi gorbushi i kety na vostochnom Severe" (Observations on the downstream migration of young pink salmon *Oncorhynchus gorbuscha* and chum salmon *O. keta* in the European North), by E. L. Bakhtanskii, article, Trudy Vostochnogo Nauch-Issled Proekt Inst Morskogo Rybn Khoz Okeanogr, vol. 15, pp. 35-43, 1963, printed in Russian. Poliarnii Nauchno-Issledovatel'skii Prioktnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knipovicha, Moscow, U.S.S.R.

Plodovitosti letnei amurskoi kety" (On the fecundity of summer Amur chum salmon), by T. N. Belyanina, article, Nauchnye Doklady Vyshey Shkoly, Biologicheskii Nauchno-Issledovatel'skii Institut, Gosudarstvennoe Izdatel'stvo "Vysshiaia Shkola", Moscow, U.S.S.R.

Available from the Department of Fish and Game, State of Alaska, Support Bldg., Juneau, Alaska, 99801:

Abundance, Size and Age of Red Salmon Smolts from the Ugashik Lakes System, Bristol Bay, 1963, by Michael L. Nelson and Herbert W. Jaenicke, Informational Leaflet 49, 20 pp., illus., processed, April 1965.

Abundance, Size and Age of Red Salmon Smolts from the Wood River System, 1964, by Michael L. Nelson, Informational Leaflet 54, 27 pp., illus., processed, April 20, 1965.

Fishery and Biological Aspects of the Southeastern Alaska Salmon Derbies for 1959, 1960 and 1961, by Gary Finger and Robert H. Armstrong, Informational Leaflet 53, 20 pp., processed, April 15, 1965.

Recast of the Chignik River Red Salmon Run in 1965, by M. L. Dahlberg and Jack Lechner, Informational Leaflet 50, 9 pp., illus., processed, April 6, 1965.

SARDINES:

"U avil unnta sardiner fra full toll-reduksjon" (U.S.A. will except sardines from complete tariff reduction), article, Tidsskrift for Hermetikindustri (Norwegian Packers' Export Journal), vol. 51, no. 3, March 1965, pp. 104, printed in Norwegian. Norske Hermetikfabrikker Landsforening, Stavanger, Norway.

SARDINES AND ANCHOVIES:

"Nekotorye dannye o sardine i anchouse" (Some data on sardines and anchovies), by A. Druzhinin and M. G. Barda, article, Izvestia Tikhookeanskogo Nauchno-Issledovatel'skogo Instituta Rybnogo Khoziaistva i Okeanografii, vol. 49, 1963, pp. 238-239, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

SAURY:

Lov Sairy Nasosom s Primeneniem Sveta i Toka (Fishing for Saury by Suction Pump Using Light and Electric Current), by I. V. Nikonorov and A. Kh. Pateev, 30 pp., illus., printed in Russian, 1964, 9 Kop. (about US\$0.10). Izdatel'stvo "Pishchevaya Promyshlennost'", Moscow, U.S.S.R.

SCALLOPS:

"Victorian scallopers warned," article, Australian Fisheries Newsletter, vol. 24, no. 4, April 1964, pp. 9, 11, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, A.C.T., Australia. Discusses the State of Victoria scallop fisheries and the State's Fisheries and Wildlife Department's warning to the fishermen to expect a drop in landings from Port Phillip Bay by 1967. The Department released that information to enable the industry to adjust its operations to meet the anticipated changes. It proposed an extension of the scallop beds lying outside Port Phillip Bay. It also intends to investigate the economics of the industry to find out whether the cost of production can be lowered or the return to fishermen can be increased. Processors and fishermen agreed to cooperate in exploratory and conservation plans.

SCORPIONFISH:

Western Atlantic Scorpionfishes of the Genus SCORPAENA, Including Four New Species, by William N. Eschmeyer, Contribution No. 587, 81 pp., illus., printed. (Reprinted from Bulletin of Marine Science, vol. 15, no. 1, March 1965, pp. 84-164.) The Marine Laboratory, Institute of Marine Science, University of Miami, Fla. 33149.

SHRIMP:

"Frosen råvare i rejeindustrien" (Frozen raw shrimp in the shrimp industry), by Jorn Aagaard, article, Konserves & Dybfrost, vol. 23, no. 4, 1965, pp. 38, 39-40, illus., printed in Danish. Konserves & Dybfrost, Gøthersgade 2, 1, Copenhagen K, Denmark.

"Gulf prawn survey," by Jean V. Leyendekkers, article, Australian Fisheries Newsletter, vol. 24, no. 3, March 1965, pp. 15, 17, printed. Fisheries Branch, Department of Primary Industry, Canberra, A.C.T., Australia. The Australian trawler Rama, engaged on a 2-year survey of the shrimp fishing potential of the Gulf of Carpentaria in the far north of the Continent for the Commonwealth and Queensland Governments. A total of 1,597 experimental trawls were made over 91 cruises, ranging from 1 to 7 days' duration. By the end of 1964, 22 species of shrimp were taken; among those 7 may offer some prospect for commercial development. This article traces the progress of the survey and details some of the results so far achieved.

"Radiation pasteurization with cobalt 60 of fresh shrimp prior to freezing," by A. F. Novak, J. A. Liuzzo, and L. St. Amant, article, Quick Frozen Foods, vol. 25, no. 11, 1963, pp. 40-41, 140-142, 144, printed. E. W. Williams Publications, Inc., 82 Wall St., New York, N. Y. 10005.

SMELT:

"Materialy po pitaniyu aziatskoi korysuhki v Obskoi gube" (Materials on the nutrition of the Asiatic smelt (*Osmerus dentex*) in Ob Bay), by A. Z. Amstislavskii and I. N. Brusynina, article, Trudy Salekhardskogo

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

Statsionara-Ural'skii Filial Akademiia Nauk SSSR, vol. 3, 1963, pp. 8-11, printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

SOLE:

"Zheltoperaya kambala vostochnoi chasti Beringova morya (Kratkaya biologicheskaya kharakteristika)" (Yellowfin sole, Limanda aspera of the Bering Sea. A short biological characterization), by N. S. Fadeev, article, Tr Vses Nauch-Issled Inst Morskogo Rybn Khoz Okeanogr, vol. 48, 1963, pp. 281-291, printed in Russian. Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, Verkh. Krasnosel'skaia Ul., No. 17, Moscow, U.S.S.R.

SOUTH AFRICA REPUBLIC:

"Anchovy project added another shoal fish to South African catch," article, The South African Shipping News and Fishing Industry Review, vol. 20, no. 4, April 1965, pp. 91, 93, 95, 97, illus., printed, single copy 30c (about US\$0.45). Thomson Newspapers, South Africa (Pty.) Ltd., Box 80, Cape Town, Republic of South Africa. The continuing expansion of the South African fishing industry has brought an increasing need for parallel services, according to the annual report of the Fisheries Development Corporation of South Africa, Ltd. covering the financial year ended Sept. 30, 1964. The Corporation, states this article, has kept pace by extending its activities to embrace the field of financial assistance, the construction and maintenance of fishing harbors, and research into new fish resources and the application of modern fishing methods. A highlight of the year's activities was the research on landings and processing anchovies, a resource not previously exploited in South African waters. While pilchard catches in South Africa declined, they remained abundant in South-West Africa.

Department of Nature Conservation, Report No. 20, 1963, 131 pp., illus., printed. Department of Nature Conservation, Provincial Administration of the Cape of Good Hope, Cape Town, Republic of South Africa. A section on work of the Division of Inland Fisheries contains accounts of: "Jonkershoek Fish Hatchery"; "Pirie Trout Hatchery"; "Stocking of public waters"; "A description of two small scale trials concerning carp growth," by D. J. van Schoor; "A report of a tour of freshwater fish hatcheries in Europe and the Middle East," by J. J. R. Louw; "A successful experiment in the control of algae by the use of freshwater fish in industry," by J. J. R. Louw; and other projects.

"The role of the South African fishing industry in feeding the nation," by G. M. Dreosti, article, South African Medical Journal, vol. 38, no. 29, 1964, pp. 631-640, printed. Medical Association of South Africa, Box 643, Cape Town, Republic of South Africa.

SOUTHWEST PACIFIC:

Studies in Microbial Ecology of the Australasian Region, by E. J. Ferguson Wood, Contribution No. 514, 204 pp., illus., printed, 1964. (Reprinted from Nova Hedwigia, vol. 8, 1964, pp. 5-54, 453-568, 39 tables.) Marine Laboratory, Institute of Marine Science, University of Miami, Miami 49, Fla. A study of the salinity-temperature relationships of a large num-

ber of species of diatoms and dinoflagellates and of their geographical distribution has shown that a number of populations can be discerned.

SPAIN:

"1964--noventa y dos unidades aumento la flota pesquera española" (1964--92 units were added to the Spanish fishing fleet), article, Industrias Pesqueras, vol. 39, no. 908, Feb. 15, 1965, pp. 78-79, printed in Spanish, single copy 40 ptas. (about US\$0.70). Industrias Pesqueras, Apartado 35, Vigo, Spain.

SPINY LOBSTER:

"The West's crayfishery and its future," by B. K. Bowen and R. G. Chittleborough, article, Australian Fisheries Newsletter, vol. 24, no. 3, March 1965, pp. 11, 13, 32, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra, A.C.T., Australia. In the past 20 years the Western Australian spiny lobster catch has expanded spectacularly--from 600,000 pounds landed in 1944/45 to 21.5 million pounds in 1962/63. However, landings dropped to 18 million pounds in the 1963/64 season. Intense fishing has reduced the spiny lobster population to a point where the industry is now dependent each year on the recruitment into the commercial stock during the preceding closed season, according to the author. But if an adequate breeding stock is maintained and undersized individuals are protected, there is little reason why the population should not yield a relatively stable production in future years, he concludes.

SPRAT:

"Osezonykh izmeneniyakh povedeniya kaspiiskoi kil'ki v zone elektricheskogo osveshcheniya" (Seasonal variations in the behavior of (*Clupeonella*) Caspian sprats in areas illuminated by electric light), by B. I. Prikhodko, article, Trudy Kaspiiskogo Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, vol. 17, 1962, pp. 58-64, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

STURGEON:

"Osetrovye yuzhnykh morei Sovetskogo Soyuza (Biologiya, promysel, vosproizvodstvo)" (Sturgeons of the southern seas of the U.S.S.R.), article, Tr Vses Nauch-Issled Inst Morsk Rybn Khoz Okeanogr, vol. 52, 1964, pp. 1-411, illus., printed in Russian. Vsesoiuznyi Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khoziaistva i Okeanografii, Verkh. Krasnosel'skaia Ul., No. 17, Moscow, U.S.S.R. One of the chapters is "Biologiya osetrovyykh; ikh razvedenie i promysel. Ukazatel' literatury" (The natural history of sturgeon their cultivation and fishery. A bibliography), by G. A. Potapova, pp. 348-402.

"Rezultaty akklimatizatsii aral'skogo shchupa (*Acipenser nudiventris* Lov.) v ozere Balkhash" (Results of the acclimatization of the Aral spiny sturgeon in Lake Balkhash), by N. V. Pechnikova, article, Voprosy Ikhtologii, vol. 4, no. 1, 1964, pp. 142-152, printed in Russian. Akademiia Nauk SSSR, Ikhtologicheskaya Komissiya, Moscow, U.S.S.R.

THAILAND:

A Review of the Flatfishes (Pleuronectiformes-Heterosomata) of the Gulf of Thailand and Its Tributaries in Thailand, by Supap Punpoka, Kasetsart University Fishery Research Bulletin No. 1, 92 pp., illus., printed

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Dec. 18, 1964. The Faculty of Fisheries, Kasetsart University, Bangkok, Thailand. This is a new serial publication, initiated with the establishment of the Kasetsart University Museum of Fisheries in Bangkok.

TIDES:

Tide Tables--High and Low Water Predictions 1966--West Coast North and South America including The Hawaiian Islands, 224 pp., printed, 1965, \$2. Coast and Geodetic Survey, U. S. Department of Commerce, Washington, D. C. 20230.

LAPIA:

An attempt to increase the weight of *Tilapia melanocephala*, a fish used in fish farming, with an anabolic steroid ethylestrenol," by R. E. Hutchison, article, South African Medical Journal, vol. 38, no. 29, 1964, p. 640, printed. Medical Association of South Africa, Box 643, Cape Town, Republic of South Africa.

Preliminary experiments in cichlid hybrids," by J. Chervinski, article, Bamidgeh, vol. 16, no. 3, 1964, pp. 95-105, illus., printed. Department of Fisheries and Fish Breeders' Association, Nir-David, D. N., Hakirya, Israel.

TRADE LISTS:

The U. S. Department of Commerce has published the following mimeographed trade lists. Copies may be obtained by firms in the United States from the Commercial Intelligence Division, Office of International Trade Promotion, Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. 20230, or from Department of Commerce field offices at \$1.00 each:

Canneries and Frozen Foods Producers and Exporters--Chile, 6 pp., May 1965. Lists the names and addresses, size of firms, and types of products (including fish and shellfish) handled by each firm. Also contains trade and industry data on production and exports of fish and shellfish.

Canneries and Frozen Foods Producers and Exporters--Pakistan, 15 pp., April 1965. Lists the names and addresses, size of firms, and types of products (including fish and shrimp) handled by each firm. Also contains trade and industry data on production and exports of shrimp and fish.

Canneries and Frozen Foods Producers and Exporters--Turkey, 4 pp., May 1965. Lists the names and addresses, size of firms, and types of products (including fish) handled by each firm.

TRAWLERS:

The changing pattern of trawlers," article, Shipbuilding and Shipping Record, vol. 102, no. 18, 1963, pp. 579-581, illus., printed. Shipbuilding and Shipping Record, 33 Tothill St., Westminster, London SW1, England.

TRAWLING:

Relationship between engine power of a trawler and size of otter board," by T. Koyama, article, Bulletin, Tokai Regional Fisheries Research Laboratory, no. 33, 1962, pp. 29-32, printed in Japanese. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-ku, Tokyo, Japan.

"Results of a sampling program to determine catches of Oregon trawl vessels. 1--Methods and species composition," by Robert B. Herrman, article, Pacific Marine Fisheries Commission Bulletin, vol. 6, 1963, pp. 40-60, illus., printed. Pacific Marine Fisheries Commission, 741 State Office Bldg., 1400 SW. 5th Ave., Portland 1, Ore.

"Study on the high-speed net on two-boat trawler equipped with controllable pitch propeller," by C. Hamuro, article, Technical Report of Fishing Boat, No. 17, 1963, pp. 35-54, illus., printed in Japanese with English abstract. Fishing Boat Laboratory, Production Division, Fisheries Agency, Ministry of Agriculture and Forestry, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

TRAWL NET:

"Instruments used for determination of parameters of trawl gear," by V. K. Savrasov, G. A. Traubenberg, and E. I. Zaitsev, article, Rybnoe Khoziaistvo, no. 1, 1963, pp. 37-47, illus., printed in Russian. Rybnoe Khoziaistvo, V. Krasnosel'skaia 17, Moscow, B-140, U.S.S.R.

"One-boat midwater trawl for industria' type fleet," by C. Nedelec, article, France Peche, no. 70, 1963, pp. 25-29, printed in French. France Peche, Boite Postale 179, Lorient, France.

Universal One-Boat Midwater and Bottom Trawl, by S. Okonski, paper presented at the Second World Fishing Gear Congress, London, 25-31 May 1963, 15 pp., illus., processed in English with French and Spanish abstracts. Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

TROUT:

"Storage life of vacuum-packed iced trout. I--Influence of packing material," by Poul Hansen and B. V. Jorgensen, article, Journal of the Science of Food and Agriculture, vol. 16, no. 3, March 1965, pp. 150-152, illus., printed, single copy £1 17s. 6d. (about US\$5.30). Society of Chemical Industry, 14 Belgrave Sq., London SW1, England. Reports on research conducted with gutted rainbow trout packed in two types of bag. Results showed that the storage life of gutted trout vacuum-packed individually in polyamide or polyethylene bags and kept in wet ice exceeded 2 weeks. The fish packed in polyethylene showed signs of slight fat oxidation at the end of the second week, while that in polyamide showed no fat oxidation throughout the experimental storage period of 3 weeks. Trout in both types of package suffered microbial spoilage during the third week. Viable aerobic microbial counts throughout the storage period were higher in polyethylene- than in polyamide-packed trout.

TUNA:

"Assessment of the quality of canned northern bluefin tuna *Kishinoella tonggol*. I," by A. R. Prater and W. A. Montgomery, article, Journal of the Science of Food and Agriculture, vol. 15, 1964, pp. 885-889, printed, single copy £1 17s. 6d. (about US\$5.25). Society of Chemical Industry, 14 Belgrave Sq., London SW1, England.

"Un equilibre rompu: L'organisation de la campagne thonière africaine 64-65" (A well-ried balance: the

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

organization of the African tuna season, 1964/65), article, *France Pêche*, no. 93, March 1965, pp. 30-31, illus., printed in French, single copy 2.5 F (about US\$0.50). *France Pêche*, Boîte Postale 179, Lorient, France.

TURTLES:

"Stirbt die Suppenschildkroete aus?" (Has the soup turtle (*Chelonia mydas*) become extinct?), by Tom Harrisson, article, *Umschau*, vol. 64, no. 11, 1964, pp. 340-343, illus., printed in German. Umschau-Verlag, Frankfurt-am-Main, Federal Republic of Germany.

UNITED STATES GOVERNMENT:

United States Government Organization Manual, 1965-66, Catalog No. GS4.109:965, illus., printed, revised June 1, 1965, \$1.75. Office of the Federal Register, National Archives and Records Service, General Services Administration, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) The official organization handbook of the Federal Government. Describes the creation and authority, organization, and functions of the agencies in the legislative, judicial, and executive branches of the Government. Provides supplemental information on quasi-official agencies and selected international organizations. Includes about 40 charts showing the organization of the Government, Senate, House of Representatives, departments, and independent agencies. Provides information on executive agencies and functions of the Federal Government abolished, transferred, or terminated after March 4, 1933. Lists several hundred publications, showing the types of materials available from Government establishments. Contains the Constitution of the United States, its signers, and amendments to date. Also includes descriptions of agencies working in fisheries and related fields: Interagency Committee on Oceanography, U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, and Bureau of Sport Fisheries and Wildlife.

U. S. S. R.:

"Aklimatizatsiya tikhokeanskikh lososei v basseine Barentseva i Belogo morei. Materialy po biologii treski i morskikh mlekopitayushchikh Severa" (Acclimatization of Pacific Ocean salmon in the basins of the Barents and White Seas. Data on the biology of cod and of marine mammals of the North), article, *Trudy Polyarnogo Nauchno-Issledovatel'skii i Proektnogo Institut Morskogo Rybnogo Khoziaistva i Okeanografii*, vol. 15, 1963, pp. 1-279, illus., printed in Russian. Poliarnii Nauchno-Issledovatel'skii i Proiktnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knipovicha, Moscow, U.S.S.R.

"Berech' vodoemy, okhranyat' rybnye bogatstva" (Let us protect our waters and conserve our fish resources), by T. P. Zhilenko, article, *Okhrana Prirody na Dal'nem Vostoke* (Conservation of nature in the Far East), pp. 107-111, printed in Russian, 1963. *Okhrana Prirody na Dal'nem Vostoke*, Vladivostok, U.S.S.R.

"New canned product of Caspian sprat and herring," by V. C. Ten'kovskaya, article, *Rybnoe Khoziaistvo*, vol. 39, no. 7, 1963, pp. 72-73, printed in Russian. *Rybnoe Khoziaistvo*, V. Krasnosel'skaia 17, Moscow, B-140, U.S.S.R.

"Reka Samur i ee rybokhozyaistvennoe znachenie" (The Samur River and its fishery importance), by Yu. Saikov, article, *Voprosy Kompleksnogo Ispol'zovaniya i Okhrany Vodnykh Resursov AzerbSSR* (Problems of the Rational Utilization and Protection of Water Resources of Azerbaijan), pp. 160-162, printed in Russian, 1963. *Akademiia Nauk Azerbaidzh. SSR*, Baku, Azerbaijan S.S.R.

Rybnye Zapasy Aral'skogo Morya i Puti Ikh Ratsional'nogo Ispol'zovaniya (Fish Resources of the Aral Sea and Methods of Rational Utilization), 194 pp., illus., printed in Russian, 1964, 1 Ruble 20 Kop. (about US\$1.35). "Nauka," Tashkent, U.S.S.R.

"Soviet fishery investigations and fishing in the North west Atlantic," by V. I. Travin and L. N. Pechenik, article, *Soviet Fisheries Investigations in the North west Atlantic* (Translation), pp. 4-54, illus., printed, 1964. U. S. Department of Commerce, Clearinghouse for Federal Scientific and Technical Information, Port Royal and Braddock Rds., Springfield, Va. 22151.

"K voprosu ob istorii rybnoi promyshlennosti Kamchatki" (On the history of Kamchatka fisheries), by V. S. Gorelik, article, *Tr Dal'nevost Tekhnol Inst Rybn Prom Khoz*, vol. 3, 1963, pp. 5-17, printed in Russian. Four Continent Book Corp., 156 Fifth Ave., New York, N. Y. 10010.

Articles from *Rybnoe Khoziaistvo Vnutrennykh Vodoemov LatvSSR* (Fisheries of Latvian Inland Waters), vol. 7, 1963, printed in Russian. *Akademiia Nauk Latvii SSR*, Riga, Latvia:

"Ob okhrane i vosproizvodstve rybnykh zasposov v Estonskom SSR" (On the conservation and replacement of the fish resources in the Estonian SSR), by N. V. Genina, pp. 357-362.

"Pitanie i rost molodi promyslovykh ryb v ozerakh Latvii" (Food and growth of young commercial fishes in Latvian lakes), by R. Yu. Laganovskaya and Ya. Ya. Sloka, pp. 227-232.

"Sostoyanie i perspektivy razvitiya rybnogo khoziaistva na vnutrennykh vodoemakh Litovskoi SSR" (Conditions of Lithuanian inland water fisheries and prospects of their growth), by R. S. Vol'skis, pp. 363-365.

Articles from *Rybnoe Khoziaistvo Vnutrennykh Vodoemov SSSR* (Fisheries of the Inland Waters of the U.S.S.R.), printed in Russian, 1963. *Akademiia Nauk SSSR*, Moscow, U.S.S.R.:

"Biologicheskie i rybokhozyaistvennye issledovaniya v basseine Dona vyshe Tsimlyanskogo vodokhranilishcha i puti ratsionalizatsii rybnogo khoziaistva Verkhnego Dona" (Biological and fish-cultural studies in the Don Basin above the Tsimlyansk Reservoir, and measures for a rational fishery on the Upper Don), by A. V. Fedorov, pp. 181-184.

"Sostoyanie i perspektivy razvitiya ratsional'nogo rybnogo khoziaistva na vnutrennykh vodoemakh Vostochnoi Sibiri" (Condition and prospects of developing a rational fishery in the inland waters of Eastern Siberia), by A. G. Egorov, pp. 193-200.

"Sostoyanie i perspektivy razvitiya rybnogo khoziaistva na ozerakh, rekakh i vodokhranilishchakh SSSR"

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

(The present state and prospects of the fishing industry in lakes, streams and reservoirs of the U.S.S.R.), by P. L. Pirozhnikov, pp. 4-21.

VESSELS:

Fiberglass pilchard vessel has speed of 11.2 knots," article, The South African Shipping News and Fishing Industry Review, vol. XX, no. 2, Feb. 1965, pp. 77, 79, illus., printed, single copy 30 c. (about 45 U. S. cents). Trial runs of the Gunfi, a fiberglass pilchard vessel, indicated that the speed, stability, and maneuverability were up to expectations and excellent. According to the boatbuilder, fiberglass is the material of the future for fishing boat hulls, and "not many years will pass before the fiberglass hull will be as familiar in the shoal fishing fleets as the wooden hull is today." The vessel is 74 ft. long overall, has a beam of 21½ ft., a molded depth of 11 ft., and a draught of 7 ft. forward and 4 ft. aft. With those dimensions, she is only 70 gross tons and can carry 130 tons of fish in her hold. The vessel is fitted with a double bottom and has 2 ballast tanks in the bows. She is built to Lloyd's rules for hulls of fiberglass, and hull frames and bulkheads are all constructed of fiberglass. The deck is also of fiberglass but has a wood plank overlay to serve as a working surface. The stern and keel are of wood which has also been used for the rubbing boards and gunwales. The deckhouse, funnel, and other superstructure are of fiberglass and the masts are of steel.

Modern Fishing Vessels, by Z. Grzywaczewski and others, OTS61-11362, 303 pp., illus., printed, 1964, \$3. (Translated from the Polish, Wspolczesne Statki Rybackie, Wydawnictwo Morskie, Gdynia, 1959.) This book contains detailed information on modern fishing vessels and gear, with particular emphasis given to those produced in Poland. The introduction discusses the development of fisheries, both worldwide and in Poland. Part 1, fishing vessels as means of production, has chapters on: fishing vessel classification, requirements, characteristics; trawlers and other demersal fish-catching vessels; those designed for the pelagic fisheries; factoryships and auxiliary vessels; and present and future Polish craft. Part 2, power plants of fishing vessels, covers steam power plants, internal combustion engine power plants, the problem of utilization of engine power, and rudder systems. Part 3, equipment, discusses types of gear; navigation, radio and fish-finding devices; and lifesaving appliances. The final part, industrial installations in vessels, includes chapters on processing methods; machines and processing installations on board; refrigerating plants; and mechanization of transport--conveyors, hoists, and problems of transshipment.

Study on the Development of Fishing Boat Design Based on Waveless Hull Form Theory, by N. Yokoyama, Scientific Report No. 5, 132 pp., printed in Japanese, 1961. Fishing Boat Laboratory, Production Division, Fisheries Agency, Ministry of Agriculture and Forestry, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

WEATHER CHARTS:

Heavy Weather Guide. Part I--Hurricanes, by Edwin T. Harding; Part II--Typhoons, by William J. Kotsch, 120 pp., illus., printed, 1965, \$6. United States National Institute, Annapolis, Md. 21402. Sweeping up

from tropical zones into the colder latitudes of the northern hemisphere, vast cyclonic storms each year leave in their wakes death and devastation. In the Atlantic those storms are called hurricanes; in the Pacific, typhoons. Both kinds of storms carry inconceivable amounts of energy and have greater potential for destruction than the most powerful A-bombs. The purpose of this book is to discuss the theory, origin, and habits of those storms, and to show how to evade or survive them. The book treats hurricanes and typhoons separately, even though in most ways hurricanes and typhoons are alike. The reader, whether he is a vessel skipper, weekend sailor, or shoreside dweller, can learn about those storms from this book without actually experiencing one. Part I, on hurricanes, discusses the tropics, the hurricane's formation, its characteristics, the killer side of the storms, the Hurricane Warning Service, tips on protection at sea or ashore, and the future of hurricane forecasting and control. Part II, on typhoons, covers some topical tropical words, phrases, and concepts; the formation of a typhoon; its characteristics; forces of destruction; the typhoon's life cycle and dissipation; the effect of interaction of two typhoons--Fujiwhara effect; the typhoon-warning system; tips on protection afloat and ashore; and outlook for the future. The appendixes contain some excellent writings by weather authorities on the killer storms. This is a well-illustrated book containing many weather charts and diagrams.

Processed weather charts are published by the Weather Bureau, U. S. Department of Commerce, Washington, D. C., and are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, 10 cents each. Charts show stations displaying small craft, gale, whole gale, and hurricane warnings; explanations of warning displays; and schedules of AM and FM radio, TV, and radiophone stations that broadcast weather forecasts and warnings:

Coastal Warning Facilities Chart, Eastern Florida, 1965, Catalog No. C30.22/3:F 66/965.

Coastal Warning Facilities Chart, Morgan City, La., to Apalachicola, Fla., 1965, Catalog No. C30.22/3:M 82/965.

WHALING:

"International Whaling Commission, Chairman's Report on the Sixteenth Meeting," by M. N. Sukhoruchenko, article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 54, no. 2, Feb. 1965, pp. 25-30, printed, Hvalfangerforeningen, Sandefjord, Norway. Reviews the order of business and work accomplished at the 16th Meeting of the Commission, held at Sandefjord, June 22-26, 1964. Discusses the previous season's (1963/64) whale catch, a report on the whale stocks in the Antarctic, blue-whale unit limitation proposals, protection of the humpback in the North Atlantic and of the blue whale in both the North Atlantic and the Antarctic, and protection of sperm whales. The report also covers North Pacific whale stocks, blood-typing, the Sanctuary and open season, taking of gray or right whales, the observer plan, infractions of rules in the Antarctic during 1963/64 season, and other items of discussion.

WHITEFISH:

"Akklimatizatsiya sigovykh ryb v Latviiskoi SSR" (Acclimatization of whitefishes in the Latvian S.S.R.), by G.

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

P. Andrushsitis, article, Rybnoe Khozyaistovo Vnutrennykh Vodoemov Latviiskoi SSR (Fisheries of Latvian

Inland Waters), vol. 7, 1963, pp. 211-214, printed in Russian. Akademii Nauk SSSR, Institute Okeanologii, Moscow, U.S.S.R.



CORRECTION

The June 1965 issue, page 97, showed this report, Gesammelte Sonderdrucke aus dem Institut für Hydrobiologie und Fischereiwissenschaft der Universität Hamburg 1963 (Collected Reprints from the Institute for Hydrobiology and Fisheries Science of the University of Hamburg, 1963), incorrectly under country heading GERMAN DEMOCRATIC REPUBLIC. The correct country heading should have been GERMAN FEDERAL REPUBLIC.



RING-AROUND-ROSY TUNA MACARONI CASSEROLE

Here's a grand tuna macaroni casserole designed for the busy mom by the Tuna Research Foundation. Ring-Around-Rosy Casserole is a snap to make and it's as nutritious and thrifty as you can get. Convenient canned tuna's high in protein. Condensed tomato soup, evaporated milk, and American cheese combine to add their own nutritional advantages in a smooth and tasty sauce that's a breeze to prepare.

You can make this casserole ahead of time, the day or night before you go shopping, and store it in the refrigerator. Then if you get stuck at the department store and are late getting home, all you have to do is heat and serve. It's child's play. (If you have a teenage daughter, you might tell her that. And ask her to set the table, too. Then you'll really have it made!)

RING-AROUND-ROSY TUNA MACARONI CASSEROLE

- 4 ounces elbow macaroni
- 1 can condensed tomato soup
- $\frac{2}{3}$ cup evaporated milk
- 2 cans ($6\frac{1}{2}$ or 7 ounces each) tuna
in vegetable oil
- 1 cup grated process American cheese,
divided

Cook macaroni according to package directions. Drain and reserve. Combine tomato soup and evaporated milk. Add macaroni, tuna, and $\frac{1}{2}$ cup of the grated cheese. Turn into a greased $1\frac{1}{2}$ -quart casserole; sprinkle remaining cheese around edge. Bake in 350° F. oven for 25 minutes. Or prepare early and refrigerate; then bake 45 minutes. Makes 4 servings.

DETERMINING AGE OF ALBACORE TUNA

Albacore fishermen, like fishermen everywhere, often wonder about the size of the fish they catch, and how many years it takes for an albacore tuna to reach a certain size. How old is a 28-pound albacore. How long will it take a 9-pound fish to grow that big to 28 pounds ?

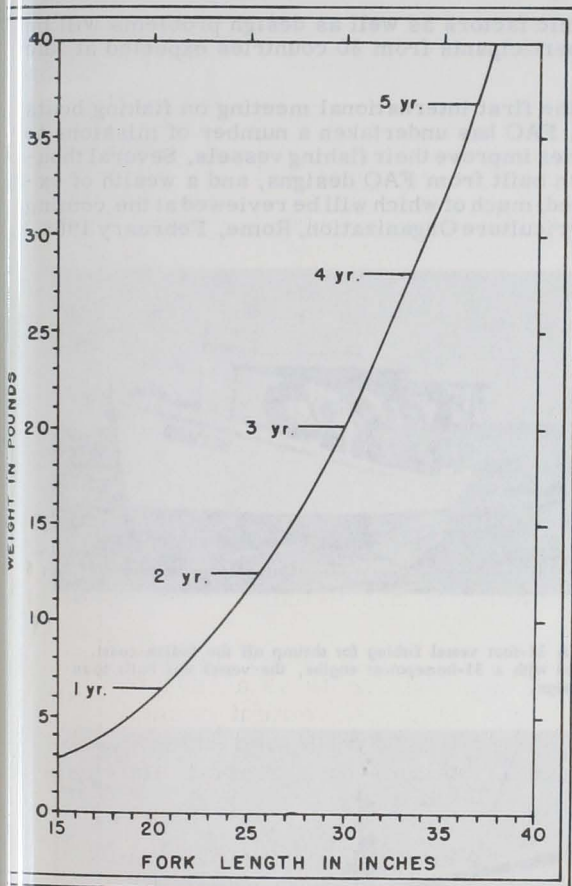


Fig. 1 - Chart shows the weight-length-age relationship of Pacific albacore tuna. If the length or weight of the fish is known, this chart will enable you to determine the other measure and its age.



Fig. 2 - This scale from a two-year-old albacore tuna illustrates the crowding of rings or circuli to form two bands or annuli.

The subject of albacore age and growth is of interest to marine scientists, but early attempts to interpret age from scales, vertebrae, and other structures were unsatisfactory in one way or another. Recently, however, biologists at the California State Fisheries Laboratory, Terminal Island, developed a method for cleaning and staining fish scales, and by using it have succeeded in determining the ages of albacore tuna.

Growth on albacore scales, like many other fish, is recorded as ridges or rings called circuli. When growing rapidly the space between rings is wide; when growth is slow a series of closely spaced rings form. If slow growth occurs at the same time each year, the resulting band of crowded circuli is an annulus, and the area between annuli is equal to a year's growth. By examining scales under a microscope and counting these annuli the age of the fish can be determined.

Biologists of the California State Fisheries Laboratory weighed, measured, and read the ages of numerous albacore tuna and then prepared a graph so anyone may estimate the ages of any albacore caught if either length or weight is known.

The measurement to use is fork length--a straight-line distance from the tip of the snout to the fork in the tail. So, a 28-pound albacore would be 4 years old and measure 33 inches, while a 9-pound fish measuring 23 inches fork length would be on its way to becoming two years old when caught. (Outdoor California, April 1964.)

SMALL VESSEL DESIGN TO BE REVIEWED AT FAO CONFERENCE



Fig. 1 - A vessel designed by FAO experts in the 1950's to be operated from open beaches* in India. FAO did pioneer work in India with small mechanized craft.

The need for small fishing craft (under 100 gross tons) specially adapted for fishing local waters of developing countries will be the theme of the Food and Agriculture Organization's (FAO) Third International Technical Meeting on Fishing Boats, to be held at Goteborg, Sweden, October 23-29, 1965.

Social and economic factors as well as design problems will be reviewed by the 300 participants from 30 countries expected at the Goteborg meeting.

Since 1947 when the first international meeting on fishing boats was held at Goteborg, FAO has undertaken a number of missions to help developing countries improve their fishing vessels. Several thousand vessels have been built from FAO designs, and a wealth of experience has been gained, much of which will be reviewed at the coming meeting. (Food and Agriculture Organization, Rome, February 1965.)



Fig. 2 - An FAO prototype vessel going through the surf after launching from an Indian beach.



Fig. 3 - A 31-foot vessel fishing for shrimp off the Indian coast. Equipped with a 31-horsepower engine, the vessel was built to an FAO design.



Fig. 4 - One of FAO's pioneer experimental vessels designed in the 1950's for work in Ceylon.



Fig. 5 - A Senegalese vessel used for trolling and trawling. The vessel was designed in 1947 by an FAO fisheries expert.

Note: For additional details on plans for the meeting see Commercial Fisheries Review, May 1965 page 50.