



FISH AND WILDLIFE SERVICE PUBLICATIONS

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CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
MNL - REPRINTS OF REPORTS ON FOREIGN FISHERIES.
SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
SSR. - FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

| Number | Title |
|----------|---|
| CFS-3704 | Gulf Coast Shrimp Data, October 1964, 20 pp. |
| CFS-3710 | Frozen Fishery Products, December 1964, 8 pp. |
| CFS-3712 | Georgia Landings, November 1964, 3 pp. |
| CFS-3714 | California Landings, September 1964, 4 pp. |
| CFS-3715 | Michigan, Ohio & Wisconsin Landings, October 1964, 4 pp. |
| CFS-3717 | South Carolina Landings, November 1964, 3 pp. |
| CFS-3720 | New Jersey Landings, November 1964, 3 pp. |
| CFS-3721 | Manufactured Fishery Products, 1963 Annual Summary, 9 pp. |
| CFS-3722 | New York Landings, November 1964, 5 pp. |
| CFS-3723 | Mississippi Landings, October 1964, 3 pp. |
| CFS-3724 | Virginia Landings, November 1964, 4 pp. |
| CFS-3725 | Fish Meal and Oil, November 1964, 2 pp. |
| CFS-3726 | Mississippi River Fisheries, 1963 Annual Summary, 9 pp. |
| CFS-3727 | United States Fisheries, 1963 Annual Summary, 17 pp. |
| CFS-3729 | Louisiana Landings, November 1964, 3 pp. |
| CFS-3730 | Alabama Landings, November 1964, 3 pp. |
| CFS-3731 | Maine Landings, November 1964, 4 pp. |
| CFS-3733 | South Carolina Landings, December 1964, 3 pp. |
| CFS-3734 | Georgia Landings, December 1964, 3 pp. |
| CFS-3735 | California Landings, October 1964, 4 pp. |
| CFS-3736 | Florida Landings, December 1964, 8 pp. |
| CFS-3737 | Fish Meal and Oil, December 1964, 2 pp. |
| CFS-3744 | Gulf Coast Shrimp Data, November 1964, 21 pp. |

Sep. No. 730 - Exploratory Fishing for Spiny Lobsters, Sand Lobsters, and Scallops in Panama.

Sep. No. 731 - On-The-Job Training Program for Trainee Commercial Fishermen.

SSR-Fish. No. 489 - Pelagic Fur Seal Investigations, Alaska, 1963, by Clifford H. Fiscus, Gary A. Baird, and Hiroshi Kajimura, 36 pp., illus., Jan. 1965.

SSR-Fish. No. 496 - History of Oceanography in the Offshore Waters of the Gulf of Maine, by John B. Colton, Jr., 20 pp., illus., Dec. 1964.

SSR-Fish. No. 497 - Fur Seal Investigations, Pribilof Islands, Alaska, 1963, by Alton Y. Roppel, Ancel M. Johnson, and Douglas G. Chapman, 64 pp., illus., Jan. 1965.

SSR-Fish. No. 498 - Observations of Cetaceans off California, Oregon, and Washington, by Clifford H. Fiscus and Karl Niggel, 30 pp., illus., Jan. 1965.

SSR-Fish. No. 502 - Fur Seal Investigations Pribilof Islands, Alaska, 1964, by Alton Y. Roppel and others, 50 pp., illus., Jan. 1965. Discusses population and related studies on fur seals on the Pribilof Islands seal grounds during 1964. Presents information on male seal age classification and bull counts; female age classification and reproduction; tag recoveries, tagging of pups, and tag survey of yearlings; seal mortality; population estimates of pups from the recovery of tagged males and females, of yearling males of 1961 year-class, from sampling live pups, and from counting pups on four rookeries; and seal-pup weight. Presents statistical data on kill of male seals, by year-class, 1947-62; kill of female seals, by year-class, 1939-63; records of fur seal pups tagged, 1945, 1947-49, and 1951-64; and related information. A total of 48,980 male and 16,452 female seals were killed on the Pribilof Islands in 1964. In all, 1,071 skins from males and females were collected for experimental use in relating economic value to age and sex. The predicted male kill as of Aug. 5, 1965, will be 4,000 ages 2 and 5, 33,000 age 3, and 16,000 age 4.

SSR-Fish. No. 503 - Automatic Data Processing Program for Marine Synoptic Radio Weather Reports, by James H. Johnson, Glenn A. Flittner, and Marvin W. Clark, 77 pp., illus., Feb. 1965.

Annual Report Exploratory Fishing and Gear Research, Bureau of Commercial Fisheries, Region 2, for Calendar Year 1963 Ending June 30, 1963, by Harvey I. Bullis, Jr. and J. R. Thompson, Circular 193, 70 pp., illus., Dec. 1964. Part 1 discusses history of exploratory fishing and gear research work at the Bureau of Commercial Fisheries' stations at Passapatanz, Miss., Brunswick, Ga., and Panama City, Fla. Part 2 discusses nature and function of projects in exploratory sampling devices, sampling patterns in fishery exploration, bases for quantitative estimates of animal abundance.

dance and availability, and exploratory follow-through and fishery developments; exploratory collections and cooperative work; and role of exploratory fishing and gear research in education. Part 2 covers accomplishments of the Gulf of Mexico exploratory fishing and gear research program at Pascagoula, Miss.; the Caribbean and Tropical Atlantic exploratory fishing and gear research program; the offshore shrimp gear research photoinstrumentation; South Atlantic exploratory fishing and gear research program; gear research and development program; and the BCF/AID spiny lobster exploratory fishing project, Republic of Panama.

Columbia River Fishery Program, 1963, Circular 192, 23 pp., illus., printed, Nov. 1964. Reviews the Columbia River fishery and work of the Columbia River Fishery Development Program through 1963. Discusses the history of the region's fishery resource; resource trends in chinook, sockeye, coho, and chum salmon, and summer and winter steelhead trout; and the habitat. Also covers the development program for hatcheries, stream improvement, screening of diversions, appraisal of project results, and operational studies; water resource investigations; fish facilities; and future of the Columbia River fishery.

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

| Number | Title |
|--------|--|
| ML-52 | Menhaden Fish Oil Prices--New York City, New York, 1953-1964 and January 1965, 6 pp. |
| ML-95 | International Fishing Activities in Western and Southern Africa, 1964, 8 pp. |
| ML-96 | Frozen Fish Importers in France, 2 pp. |
| ML-97 | Thailand's Fisheries, 3 pp. |

THE FOLLOWING ENGLISH TRANSLATION OF A FOREIGN LANGUAGE REPORT IS AVAILABLE FROM THE U. S. BUREAU OF COMMERCIAL FISHERIES, SEASIDE AVE., TERMINAL ISLAND, CALIF. 90731.

Statistical Report on the Tuna Longline Fisheries by Fishing Grounds for 1963, Translation Series No. 13, 13 pp., processed, Sept. 1964. (Translated from the Japanese, Statistics and Survey Division, Economic Bureau, Ministry of Agriculture and Forestry, Tokyo, Japan, Sept. 1963.)

THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY FROM THE OFFICE MENTIONED.

California Fisheries, 1964, by V. J. Samson, 48 pp., illus., Feb. 1965. (Market News Service, U. S. Fish and Wildlife Service, Rm. 205, Post Office Bldg., San Pedro, Calif. 90731.) A review of 1964 trends and conditions in the California fisheries, including a summary of fishing seasons in major commercial fisheries during 1964 covering dates and catch quotas. Among the subjects covered are the tuna industry and cannery receipts; the domestic tuna fishery; American Tunaboat Association tuna auctions and ex-vessel prices; tuna prices and changes; the albacore fishery and ex-vessel price stability; reduction in number of tuna canneries by mergers; slight increase in canned tuna pack; imports of frozen tuna and canned tuna in brine; canned tuna prices held steady after early advance; construction of largest U. S. fishery vessel for tuna purse-seining and loss of 7 other vessels. Also covered are the sardine industry and continued failure, canned sardine pack and prices; mackerel fishery; anchovy fishery; canned pet

food pack; whaling industry; and fish meal prices and markets, 1961-64. Included in the statistical tables are data on tuna and tunalike fish--canners' receipts, domestic landings, frozen imported tuna, and canned pack, 1962-64; sardine landings, pack, and meal and oil produced, 1963/64 and 1964/65 seasons; and the cannery receipts and pack of mackerel and jack mackerel, 1962-64. Also contains data on cannery receipts of raw materials and production of anchovies, herring, pet food, and tuna and mackerel meal and oil; landings of fish and shellfish in the Eureka and San Pedro-Santa Monica areas; imports of fishery products into Arizona and California Customs Districts, 1963-64; and whale fishery, 1962-64. An attractive cover showing the new 167-foot steel tuna purse-seiner, City of Tacoma, enhances this year's report.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, Jan. 1965, 13 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, sardines, 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, Feb. 1965, 9 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, Jan. 1965, 14 pp. (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 month indicated.

Fishery Industrial Research, vol. 2, no. 3, Nov. 1964, 81 pp., illus., printed. (Branch of Reports, U. S. Bureau of Commercial Fisheries, 2725 Montlake Blvd., Seattle, Wash. 98102.) Contains articles on: "Free liquid content of Gulf oysters and suggested change in standards," by Arthur F. Novak, Ernest A. Fieger, and Joseph A. Liuzzo; "Comparison of chemical and sensory tests for assessing storage life of iced calico scallops," by Melvin E. Waters; "Cholesterol content of various species of shellfish. 1--Method of analysis and preliminary survey of variables," by Mary H. Thompson; "Evaluation of the micro-diffusion method for the determination of tertiary volatile base in marine products," by John Spinelli; "Preparation of chilled meat from Atlantic blue crab," by David H. B. Ulmer, Jr.; "Observations of the 'blueing' of king crab, Paralithodes camtschatica," by Newman S. Groninger and John A. Dassow; "Comparison of the picric acid turbidity and Nessler tests with subjective evaluations of quality of shrimp," by Mary E. Ambrose, Charles F. Lee, and Frank T. Piskur; and "Economic study of sea scallop production in the United States and Canada," by Richard M. Doherty and others.

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, Jan. 1965, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 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 Port Isabel and Brownsville, Tex., from Mexico; fishery imports at Mobile, Ala., Morgan City and New Orleans, La., Miami, Fla., and Houston, Tex.; and sponge sales; for the month indicated.

Japanese Views on Whaling, by Lorry M. Nakatsu, 3 pp., illus., processed, Feb. 19, 1965 (Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service, 101 Seaside Ave., Terminal Island, Calif. 90731.)

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, Jan. 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 York City's Wholesale Fishery Trade--Monthly Summary--Nov. 1965, 20 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; marketing 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, Feb. 1965, 7 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; shrimp landings; 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.

Techniques for Infrared Survey of Sea Temperature (Report of a Workshop Held at the U. S. Department of the Interior, Washington, D. C., April 27 and 28, 1964), Circular No. 202, 145 pp., illus., processed, Nov. 1964. (Sandy Hook Marine Laboratory, Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, Highlands, N. J.)

Employment Opportunities in the Bureau of Sport Fisheries & Wildlife, 20 pp., illus., printed, 1964, 30 cents. Discusses briefly the organization of the Bureau of Sport Fisheries and Wildlife and its major program. A section on careers covers refuge manager, fish biologist, wildlife biologist, fish hatchery manager, animal control biologist, mammal control agents (hunters), U. S. game management agent, aid-type positions, engineers, appointment, U. S. game management agent (pilot), salaries, qualifications, how to apply, location, transportation, quarters for employees in Alaska, physical ability, opportunities in trades and crafts, and summer employment. A section on fringe benefits includes information on leave, retirement, group health benefits, group life insurance, incentive awards program, development, and uniform and uniform allowance. Other sections cover opportunities in other agencies, preparing for a career in conservation work, and addresses of Bureau of Sport Fisheries and Wildlife field offices and Civil Service offices. Of interest primarily to young people in school or college who are considering a career in conservation work.

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.

AGAR-AGAR:

"Agar--its uses and potential in New Zealand," by B. Moore, article, Commercial Fishing, vol. 3, no. 1, Jan. 1965, pp. 23-24, 25, illus., printed. Trade Publications Ltd., 47 Lewis Eady Bldg., Queen St., Auckland, New Zealand. About 100 tons of dry seaweed (for the production of agar-agar) are produced annually in New Zealand. Agar-agar is used for growing laboratory cultures in hospitals and laboratories as an additive in canned foods. The New Zealand industry developed during World War II when the supply from Japan, formerly the only agar-agar exporter, was cut off.

ANCHOVY:

Behavior and Natural Reactions of the Northern Anchovy, ENGRAULIS MORDAX Girard, under the Influence of Light of Different Wave Lengths and Intensities and Total Darkness, by Anatole S. Loukashkin and Norman Grant, 62 pp., illus., printed. (Reprinted from Proceedings of the California Academy of Sciences, Fourth Series, vol. 31, no. 24, Jan. 15, 1965, pp. 692.) Sardine Research Program, California Academy of Sciences, Golden Gate Park, San Francisco 18, Cal.

"Economic efficiency of the exploitation of the Black Sea anchovy for the production of feeding flour (fish flour) and oil," by L. S. Alpatikova, article, Trudy AzCherNIRO, vol. 21, 1961, pp. 63-73, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatskii Institut Morskogo Rybnogo Khozyaistva, Moscow, U.S.S.R.

ARTIFICIAL HABITAT:

Housing Scheme for Fishes, by Yasuo Ohshima, Nippon, 56 pp., illus., printed in Japanese. Japan Fisheries

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Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan.

ATHEROSCLEROSIS:

Nutrition and atherosclerosis. Marine algae in atherosclerosis," by Iris Ilona Lieber, article, *Chemical Abstracts*, vol. 59, Sept. 30, 1963, Abstract No. 7915a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

BELGIUM:

Market Factors in Belgium, by Robert H. Walker, *IBR* 64-142, 14 pp., printed, Dec. 1964, 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.) Opportunities for U. S. exporters to boost sales to Belgium are numerous and should increase over the foreseeable future. In addition to market outlook, the report discusses the scope and nature of the market, commercial competition, market analysis for selected commodities, and a market profile for the country.

BRAZIL:

Boletim de Estudos de Pesca, processed in Portuguese, Divisao de Documentacao, Setor de Intercomercio e Aquisicao, Superintendencia do Desenvolvimento do Nordeste, Edificio Juscelino Kubitschek, 9^a Andar, Recife, Pernambuco, Brazil: vol. 1, nos. 9/10, Sept./Oct. 1963, 25 pp., illus. Includes, among others, these articles: "Conteudo estomacal e evolucao sexual dos atuns e especies afins" (Stomach contents and sexual development of tunas and related species), by Jose Bonifacio G. Fonseca and Ilvivo B. Moraes; and "Contribuicao ao estudo as variacoes de produtividade das pescarias de lagosta na costa oriental do nordeste Brasileiro e Flutuações na composicao dos desembarques na praia do Pina (Pe)" (Contribution to the study on the variations in productivity of the spiny lobster fisheries on the west coast of northeast Brazil and fluctuations in the composition of the catches on the Pina coast), by Soloncy J. C. de Moura. vol. 3, nos. 11/12, Nov./Dec. 1963, 35 pp., illus. Contains, among others, these articles: "Observaciones colhidos em nucleos pesqueiros de Alagoas, Sergipe e Bahia" (Collected observations on the fisheries centers of Alagoas, Sergipe, and Bahia), by Bento F. Granjeiro; and "Variacoes sazonais na composicao biologica dos desembarques de lagostas" (Seasonal variations in the biological composition of the spiny lobster landings), by Petronio Alves Coelho, vol. 4, no. 1, Jan./Feb. 1964, 21 pp., illus. Contains, among others, these articles: "Determinacao de parametros biometricos em *Panulirus argus*" (Determination of length-weight relationships in *Panulirus argus*), by Gercilde de Amorim Borges; and "Divulgacoes tecnologicas do pescado" (Fishery technological reports), by Zeneudo Luna Machado.

CALIFORNIA:

California Fish and Game, vol. 51, no. 1, Jan. 1965, 1 pp., illus., printed, single copy 75 cents. Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807. Includes, among others, articles on: "The animal food fishery in California, 1951-1962," by R. J. Nitsos and Paul H. Reed; and "The southern California mackerel fishery and age

composition of the Pacific mackerel catch for the 1959-60 and 1960-61 seasons," by Harold Hyatt.

CAMBODIA:

Foreign Trade Regulations of Cambodia, by Nandor J. Cheplo, OBR 65-2, 8 pp., printed, Jan. 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.) The Cambodian Government maintains strict control over foreign trade as a means of protecting its balance of payments and encouraging local production. In addition to trade policy, the report discusses Cambodia's import tariff system, shipping documents, marking and labeling requirements, and special customs provisions. Also covers nontariff import controls, Cambodia's export controls, sales and other internal taxes, United States foreign trade controls, and Government representation between that country and the United States.

CANADA:

British Columbia Catch Statistics, 1964 (by Area and Type of Gear), 206 pp., illus., processed, Feb. 5, 1965. Economics Branch, Department of Fisheries of Canada, 1155 Robson St., Vancouver 5, B. C., Canada. The fourteenth annual report of catch statistics for British Columbia based on Departmental copies of sales slips that are completed by all commercial fish buyers operating within the Province. The report is divided into three sections: (1) summary of landings by district and total landed value of all fish; (2) highlights of catch statistics--a general review of significant events in the salmon fishery and a review for other species; and (3) detailed district and area monthly statistics by type of gear. For the first time, landings of halibut at U. S. ports by Canadian fishermen are included in the summary and also in the catch from the different areas.

Rapport sur les Pecheries du Quebec pour l'Exercice Financier 1963/1964 (Report on the Fisheries of Quebec for the Financial Year 1963/1964), 97 pp., illus., printed in French. Ministry of Industry and Commerce, Government House, Quebec, Canada.

The following are available from the Queen's Printer and Controller of Stationery, Ottawa, Canada.:

Biological Station, London, Ont., 9 pp., illus., printed. (Reprinted from Fisheries Research Board of Canada Annual Report 1962-63, pp. 65-73.)

Fisheries Statistics, Saskatchewan, 1963, Catalogue No. 24-211, 9 pp., processed in French and English, Jan. 1965, 50 Canadian cents. Contains data on the value of fish landed in Saskatchewan, 1956-63; quantity and value of landings by species, 1962-63; quantity and value of landings by major species and by lakes; capital equipment in primary fisheries operations; and number of persons engaged in the primary fisheries.

Fishes Occurring in the Fresh Waters of Insular Newfoundland, by W. B. Scott and E. J. Crossman, printed, 1964, C\$3.

CARP:

"Food of carp and wild carp during their breeding in the Kuban estuaries," by E. P. Teplova, article,

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Trudy AzNIIRKh, vol. 6, 1963, pp. 163-177, printed in Russian. Azovskii Nauchno-Issledovatel'skii Institut Rybnogo Khozyaistva, Moscow, U.S.S.R.

"Raising 1-year-old carp for sale at Kuban," by S. Strel'nikov, article, Rybovodstvo i Rybolovstvo, no. 1, 1964, pp. 16-18, printed in Russian. Rybovodstvo i Rybolovstvo, Ministerstvo Sel'skogo Khozyaistva SSSR, Moscow, U.S.S.R.

The following articles are from Rybnoe Khozyaistvo Vnutrennykh Vodoemov Latv. SSR, vol. 7, 1963. Trudy Institut Biologii Akademiya Nauk Latv. SSR, Riga, Latvia.:

"Growth of commercial carp fishes in various types of lakes of the Latvian S.S.R.," by M. K. Kundzin'sh, pp. 233-235.

"Importance of natural and artificial food in raising carp yearlings," by V. S. Kirpichnikov, pp. 339-346.

CHILE:

Basic Data on the Economy of Chile, by Richard Kennedy and Mildred P. Burr, OBR 64-138, 24 pp., illus., printed, Dec. 1964, 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.) While serious economic problems beset the new administration, in late 1964 there were developments that offered prospects for some improvement in the future course of the economy. The report discusses general information on the geography and climate, population, and government; structure of the economy; industrial sectors; and the labor force. Also covers Chile's financial organization, foreign trade, Government role in the economy, and outlook for the economy. According to a section on the fisheries, the dynamic growth of the fish reduction industry of the north has made fisheries an increasingly important factor in Chile's economy. However, the interest of both Government and private capital now seems to be shifting to processing of fish for human consumption--frozen, canned, salted, and smoked.

CLAMS:

"Condition of the Quahog, Mercenaria mercenaria, from polluted and unpolluted waters," by R. A. Cooper, S. B. Chenoweth, and N. Marshall, article, Chesapeake Science, vol. 5, no. 5, winter 1964, pp. 155-160, illus., printed, single copy 75 cents. Natural Resources Institute, University of Maryland, Chesapeake Biological Laboratory, Solomons, Md.

"R. I. quahoggers make a living despite handraking methods," by Andreas A. Holmsen, article, Maritimes, vol. 9, no. 1, winter 1965, pp. 4-6, illus., printed. Maritimes, Davis Hall, Kingston, R. I. As part of a larger study on the economics of the quahog industry, the Department of Food and Resource Economics at the University of Rhode Island has studied the characteristics of the labor force in handraking. Over 92 percent of the commercial quahog harvest in Rhode Island is taken by handrakers using bullrakes and tongs, since most of the State's waters are closed to dredge boats by legislation. During the license year 1962/63, 872 people took out a commercial handraker's license; yet only

168 persons could be classified as full-time handrakers. An average net return of \$2.84 an hour for full-time handrakers compares favorably with the gross hourly earnings of manufacturing production workers in that State who earned \$2.02.

COD:

Distribution of Cod Catches by Commercial Vessels in the Gulf of St. Lawrence, 1960-1962, by Marcel Morissette, F. D. McCracken, and Alexandre Marcotte, General Series Circular No. 44, 15 pp., illus., processed, Jan. 1965. Biological Station, Fisheries Research Board of Canada, St. Andrews, N. B. Canada.

COMPOSITION:

"Investigations on the technological and nutrient properties of Atlantic fishes," by Z. A. Yakovleva, article, Trudy AzCherNIRO, vol. 21, 1961, pp. 46-50, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, Moscow, U.S.S.R.

CRABS:

"Proximate composition, sodium, and potassium of Dungeness crab," by Richard W. Nelson and Claude E. Thurston, article, Journal of the American Dietetic Association, vol. 45, July 1964, pp. 41-43, printed in English. American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill.

DENMARK:

"Danmarks fiskekonservesindustri 1963-64" (Denmark's fish canning industry 1963-64), article, Konserves & Dybfrost, vol. 22, no. 8, 1964, pp. 99-101, printed in Danish. Teknisk Forlag, Skelbaekgade 1, Copenhagen V, Denmark.

The following are from Dansk Fiskeritidende, vol. 1, 1965. Dansk Fiskeritidende, Studiestraede 3, 2, Copenhagen K, Denmark.:

"Fisk for 8 millioner kr. landet i Stranby i 1964" (Fish worth 8 million kroner landed in Stranby in 1964), no. 5, Jan. 29, p. 57.

"Fisk for 139 mill. kr. landet i Skagen i 1964" (Fish worth 139 million kroner landed in Skagen in 1964), no. 6, Feb. 5, p. 67.

EXPLORATORY FISHING:

"Experimental catch of fish by whaling vessels," by S. Vinnov, article, Trudy AzCherNIRO, vol. 21, no. 1, pp. 18-29, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, Moscow, U.S.S.R.

FISH COOKERY:

Florida Fish Recipes, 16 pp., illus., printed. Southeastern Fisheries Association, Inc., 330 So. Adams, Tallahassee, Fla. Illustrated with full-color photographs and pen-and-ink drawings, this most attractive and appetite-appealing booklet presents 22 new recipes developed and tested by U. S. Bureau of Commercial Fisheries Home Economists. All prepared from fish or shellfish landed in Florida, the recipes include sumptuous broiled fillets, shrimp Miami, green spiny lobster tails, festive mullet, marinated Spanish mackerel fillets, mullett chowder, deviled crab, water club sandwiches, Florida crab boil, southern fish stew, and shrimp macaroni salad. Also included

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are red snapper Floridian, mullet tomato fan-tans, shrimp paradise salad, shrimp tropicana, party shrimp with avocado dip, oriental king mackerel steaks, spicy red snapper, baked red snapper with sour cream stuffing, tomatoes with crab meat dressing, lobster Cantonese, and grouper Parmesan.

FISH CULTURE:

Combined rice-fish culture," by F. Sukhoverkhov, article, Rybovodstvo i Rybolovstvo, no. 1, 1964, pp. 3-6, printed in Russian. Rybovodstvo i Rybolovstvo, Ministerstvo Sel'skogo Khoziaistva SSSR, Moscow, U.S.S.R.

Japan--yellow tail and prawns," by Ian Richardson, article, World Fishing, vol. 13, Sept. 1964, pp. 41, 42, printed, John Trundell & Partners, Ltd., St. Richard's House, Eversholt St., London NW1, England. Japanese fishermen catch the largest quantity of fish in the open sea of any nation in the world, yet the Japanese are making considerable efforts to supplement the natural stocks of fish. In the Inland Sea, the Government has provided artificial shelters in the form of concrete blocks; seaweed has been planted; and artificial reefs have been formed in the belief that these procedures will offer some protection to the fish and that it will result in an increase in the fish stock. In conjunction with private enterprise, the Government has established a sea fish cultivation center in the Inland Sea with the express purpose of hatching fish for liberation into open waters or for further cultivation on marine fish farms. The yellowtail, similar to a horse mackerel, is caught in open water in the spring when it is about 2½ inches long. The small fish are held in net cages until they are large enough to be liberated into larger fish ponds. In less than a year they will have reached market size. The shrimp, Penaeus japonicus, are reared commercially to about 25 grams. The problem in regard to shrimp culture is how to keep the adults in captivity in order to provide the required egg stock. Until this is possible, the egg-bearing females will have to be caught in the open sea.

FISH FARMING:

Fish farming in temperate waters," by C. E. Lucas and B. B. Rae, article, Scottish Fisheries Bulletin, no. 22, Dec. 1964, pp. 5-9, printed, Marine Laboratory, Department of Agriculture and Fisheries for Scotland, P. O. Box 101, Victoria Rd., Torry, Aberdeen, Scotland.

FISH MEAL:

Fishmeal plant development," article, World Fishing, vol. 13, Aug. 1964, pp. 51-52, 55, printed, John Trundell & Partners Ltd., St. Richard's House, Eversholt St., London NW1, England.

FISH PORTIONS:

Design production for flexibility and QC," by John V. Ziemba, article, Food Engineering, vol. 36, July 1964, pp. 64-67, illus., printed, Chilton Co., Chestnut and 56th Sts., Philadelphia 39, Pa. Blocks of fish are cut into strips by a high-powered band saw. Strips proceed through multiple rotary cutters, and the sized portions then travel through batter and breading machines. Portions move directly through tunnel freezer or to continuous deep-fat fryer. Fro-

zen portions are finally carton-packed or sent to storage.

FOOD AND AGRICULTURE ORGANIZATION:

Report on the IPFC Symposium on Increasing Fish Consumption by Improving Handling and Distribution, 11th Session, Kuala Lumpur, Malaysia, 16th-31st October 1964, IPFC/C64/WP42, 15 pp., processed, Indo-Pacific Fisheries Council, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

FOREIGN AID:

"In which Cooley loans are discussed--somewhat," by Arthur P. McDermott, article, International Commerce, vol. 71, no. 9, March 1, 1965, p. 15, printed, single copy 35 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.) Describes, in a humorous vein, the operation of the Cooley Loan Program. The Administration for International Development (AID) sets aside a portion of the foreign currencies it receives in payment for our Food for Peace shipments. Any U. S. firm, or its branch, affiliate or subsidiary is eligible for a loan, as long as it is used to promote business or trade in the country where the funds originated. Since most of these are developing countries, manufacturing projects that would contribute to economic growth are preferred, but there are no formal requirements or restrictions. Early in February 1965 AID had the equivalent of \$112 million in the currencies of 23 nations available for loans to businessmen. Since the program began in 1954, 265 loans for the equivalent of \$213 million have been made. Most Cooley loans have been used for working capital, purchase of land, construction costs, and to pay for local goods and services.

FOREIGN TRADE:

Foreign Commerce Handbook: Basic Information and a Guide to Sources, 177 pp., printed (15th Edition), 1964, \$2. Chamber of Commerce of the United States, 1615 H St. NW., Washington, D. C. 20006. Presents references to sources of information and foreign trade services available from U. S. Government, international intergovernmental, international business, and U. S. business organizations. Also provides briefs on major subjects of particular interest to foreign traders such as advertising abroad, banks in foreign trade, U. S. export control, and tariffs of foreign countries. Includes a bibliography of pertinent reference works, books, pamphlets, and periodicals, with listings of selected organizations and their addresses, such as foreign and domestic chambers of Commerce, foreign Embassies and Legations and World Trade Clubs in the U. S., and Department of Commerce Field Offices.

FREEZE-DRYING:

"Storage of food dehydrated by freeze-drying. II--Deterioration of freeze-dried plaice (Paralichthys olivaceus) during storage," by Masakichi Kurogi and Susumu Kimura, article, Chemical Abstracts, vol. 59, Dec. 23, 1963, Abstract No. 15862d, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

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

FREEZING:

"Freezing at sea. I--Some thoughts on technical and economic aspects," by G. C. Eddie, article, Norwegian Fishing and Maritime News, vol. 11, no. 4, 1964, pp. 11, 13, 15, 29, 31, printed. Norwegian Fishing and Maritime News, P. O. Box 740, Slotstgt. 3, Bergen, Norway. Paper presented at the OECD Meeting on Fish Technology, 14-17 Sept. 1964, Scheveningen. Purpose of this paper is to introduce the subject of freezing at sea and to prepare the way for a general discussion of the economic and technical aspects. Presents information on organization and policy--form and quality of product, organization of the market, and technical policy and economic consequences; and ship design, costs, and earnings. Some advantages of freezing at sea are low freezing equipment maintenance costs, economies in fuel use effected by slower speeds, and proportionately larger storage space available in larger trawlers.

FROZEN FISH:

"Time-temperature tolerance of frozen seafoods. I--Review of some of the recent literature on the storage life of frozen fishery products," by J. Perry Lane, article, Food Technology, vol. 18, July 1964, pp. 156-162, printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

GENERAL:

Information Letter, no. 2006, Feb. 10, 1965 (Convention Issue), 71 pp., illus., printed, limited distribution. National Cannery Association, 1133 20th St. NW., Washington, D. C. Includes the report on the symposium, "Three views of the American fishing industry" consisting of these articles: "The conservation of our coastal fishery resources," by E. L. Bartlett; "Some U. S. international fishery problems and international rules dealing with fisheries," by William C. Herrington; and "The American fishing industry--1964," by Donald L. McKernan. Also contains, among others, a symposium on "Food laws and regulations, present and future" consisting of articles on: "Uniformity of food laws and regulations--today and tomorrow," by J. L. Littlefield; "FDA standards, research and pesticide programs," by Lowrie M. Beacham, Jr.; and "FDA inspection and voluntary compliance programs--their relationship to industry," by Franklin D. Clark.

GREECE:

Market Factors in Greece, by John J. Eddy, OBR 65-5, 8 pp., printed, Jan. 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.) In addition to market outlook in Greece, the report discusses the scope and nature of the market, commercial competition, market analysis for selected commodities, and a market profile for the country.

HALIBUT:

Halibut--Treasure of the Deep, 30-minute color film. Executive Secretary, Halibut Association of North America, 66 Marion St., Seattle, Wash. 98104. Pictures halibut fishing in the cold waters of the North Pacific. In contrast to the rough and hazardous life aboard a halibut vessel, other scenes portray the serving of halibut steaks in a restaurant. The film

also shows various ways of preparing and serving halibut at home; in the dining room as well as at a cook-out. The versatility of halibut cookery and methods of preparation are emphasized. The film is available free for television programs, and for showing before women's clubs, home economics classes, and other school and college groups.

HERRING:

"Biology of the herring, Clupea harengus membras in the Aral Sea," by N. E. Bykov, article, Sbornik Rabot po Ikhtiologii i Gidrobiologii, vol. 3, 1961, 185-196, printed in Russian. Institut Ikhtiologii i Rybnogo Khozyaistva, Akademiya Nauk, Kazakh S. Alma Ata, Kazakh SSR.

"Serology of Atlantic Clupeoid fishes," by C. J. Sander, article, American Naturalist, vol. 46, 1889, pp. 225-231, printed. The Science Press, Lancaster, Pa.

"Tilraunir med síldardaelu og síldarflutninga" (Experiment with loading and unloading herring), by Haldr Asgeirsson and Hjaltá Einarsson, article, Aegir, 57, no. 22, Dec. 15, 1964, pp. 439-446, illus., printed in Icelandic. Aegir, Fiskifelag Islands, Reykjavik, Iceland.

INDIA:

Annual Report of the Department of Fisheries, Maharashtra State, Bombay, for the Year 1961-62, 62 pp., illus., printed. Department of Fisheries, Maharashtra State, Bombay, India. Reviews accomplishments of the Maharashtra State Department of Fisheries during the year 1961/62 and highlights the principal events in the fisheries, including devastation caused by a cyclone and floods, and effects of a fish famine. Discusses the marine fisheries; provisions for the fishing industry contained in the Third Five-Year Plan; financial assistance to the fish trade; land navigation, and harbor facilities; and preservation, transport, and marketing. Also includes information on the fish curing yards, Taraporevala Aquarium research, fisheries schools and training, cooperatives and socio-economic development, freshwater fisheries, and technological section projects. Contains statistical data on trawler landings by gear and type of fish; fresh fish shipments into Bombay landings by Government of India deep-sea vessels; arrivals of fish at Greater Bombay markets; state fish production; and financial statement on shark and liver oil manufacture.

INDONESIA:

Foreign Trade Regulations of Indonesia, by M. V. Webber, OBR 65-3, 12 pp., printed, Jan. 1965, 15 cents. Bureau of Foreign 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.) Indonesian import controls are exercised primarily for balance-of-payments purposes. Export controls are applied mainly to insure surrender of exchange proceeds; they also serve to avoid commodity shortages for domestic consumption. In addition to trade policy, the report discusses Indonesia's import tariff schedule, shipping documents, marking and labeling requirements, and special customs provisions. Also covers nontariff import controls, Indonesia's export controls,

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import surcharge, and additional levies; United States foreign trade controls, and Government representation between that country and the United States.

INTERNATIONAL COMMISSIONS:

International North Pacific Fisheries Commission) Annual Report, 1961, 131 pp., illus., printed, 1964. International North Pacific Fisheries Commission, 640 NW. Marine Dr., Vancouver 8, B. C., Canada. This is the eighth consecutive annual report of the activities and achievements of the International North Pacific Fisheries Commission, established by a Convention between Canada, Japan, and the United States on June 12, 1953, for the purpose of promoting and coordinating the necessary scientific studies and to recommend the required conservation measures in order to secure the maximum sustained productivity of fisheries of joint interest. The report contains summary accounts of the annual meeting of the Commission held in Tokyo, November 6-11, 1961; and a brief resume of administrative activities during the year. It also presents summaries prepared by the national research agencies of investigations which they carry out under the planning and coordination of the Commission. Of principal concern are the salmon and king crab fisheries.

IRRADIATION PRESERVATION:

Effects of radiopasteurization on fish and shellfish," by Kinjiro Yamada, article, Chemical Abstracts, vol. 60, May 11, 1964, Abstract No. I2581e, printed, American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

Food Preservation by Irradiation, by Grace M. Urrows, one of a Series on Understanding the Atom, 38 pp., illus., printed, Oct. 1964. U. S. Atomic Energy Commission, P. O. Box 62, Oak Ridge, Tenn. 37831. Presents information on the potential of irradiation and the world-wide interest in this process; preservation of man's food by drying, fermentation, canning, and freezing; how food spoils--food poisoning, botulism; and radiation--a new technique (ionizing radiation) and how it works, research history, testing for wholesomeness, Government clearance, appearance and taste, and packaging). Also discusses marketing programs and devices--AEC "family of irradiators," source selection, U. S. Army Radiation Laboratory, and the goal of commercial development; preserving the taste of the orchard; fruit-stand economics of the future; and total impact of food irradiation (nutritional knowledge increase); use of sterilized food in the civilian economy; and public acceptance. A chapter on fresh fish every day covers the radiation pasteurization of clams and haddock, crab, and shrimp. And a chapter on potential markets for irradiated fish discusses changing distribution practices, cost factors, and ease of retail handling.

"Irradiation des poissons" (Irradiation of fish), article, La Revue de la Conserve, vol. 18, no. 7, 1963, no. 40, printed in French. Societe d'Edition pour l'Alimentation, 1 Rue de la Reale, Paris I, France.

"Radiation preservation of New England seafoods," by Joseph W. Slavin, Maynard A. Steinberg, and Louis J. Ronsivalli, article, Isotopes and Radiation

Technology, vol. 1, no. 4, Summer 1964, Section II--Radiation Processing of Foods, pp. 317-322, illus., printed. U. S. Atomic Energy Commission, Washington, D. C. 20545. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

The following are from Radiation Pasteurization of Foods, TID 7684, 1963. Technical Information Division, U. S. Atomic Energy Commission, Washington, D. C. 20545.:

"Radiation pasteurization of Pacific crab and flounder," by D. Miyauchi, pp. 32-37.

"Study of the basic microbiological and biochemical factors involved in the irradiation preservation of marine products," by A. M. Dollar, pp. 98-104.

"Study of radiation pasteurized fishery products," by L. J. Ronsivalli and J. W. Slavin, pp. 20-27.

ISRAEL:

Selling in Israel, by Joseph D. McLaughlin, OBR 65-1, 8 pp., illus., printed, Jan. 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.) United States-made products are building a reputation in Israel for reliability, versatility, quality, modernity, and ease of maintenance. The report explains the road to selling; representation; direct selling; import requirements; distribution practices; and transportation, port, and storage facilities. Also presents details on commercial practices; marketing aids; Government procurement; selling under United States programs; and helpful information for business travelers on currency, hotel accommodations, and climate.

KENYA:

Report on Kenya Fisheries, 1963, 34 pp., printed, 1964, 3s. (about US\$0.45). Ministry of Forest Development, Game and Fisheries, Fisheries Division, Nairobi, Kenya. Contains information on work accomplished in the inland fisheries of the Western Region; the Lake Victoria fisheries; the fisheries of Lakes Naivasha and Baringo; the trout hatchery; the trout fisheries; the Turkana fishery at Ferguson's Gulf, Lake Rudolf; and the fish culture farm. Also discusses the sea fisheries--North Coast-Kiunga, North Coast-Lamu, Malindi, South Coast, loans to fishermen, gear development-trawling experiments, turtles, the sedentary fisheries (shellfish), big game fishing, and the Coral Garden fish reserves. Included are statistical tables showing quantity and value of the Malindi fishery for demersal and pelagic species, sharks, spiny lobster, and other fish, 1958-63; earnings of 3 Lake Balisa fishermen in one week; imports and exports of fishery products, by type; estimated fish landings on the Kenya coast, 1956-63; results of Japanese shrimp trawling; the Lake Victoria fisheries; and total landings and ex-vessel value of fish in Kenya, 1963.

LAW OF THE SEA:

"A code of conduct for the fishing grounds," by Lawrence A. White, article, United States Naval Institute Proceedings, vol. 91, no. 3, March 1965, pp. 76-82, illus., printed, single copy 75 cents. United States

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

Naval Institute, Annapolis, Md. Since there is as yet no control over much of the fishing activity on the high seas, there is growing concern not only for depletion of species but also for the number of incidents involving use of force by fishermen on each other. Internationally, there seems to be general understanding concerning the extent of a state's sovereignty over the territorial sea (at least up to a three-mile width) and what particular jurisdiction can be applied in the contiguous zone (at least up to 12 miles from baselines). There is even substantial agreement on a coastal state's rights in or on its continental shelf. In matters concerning fishing rights, however, substantial disagreement still exists. The most urgent problem seems to be the devising of a code of conduct to be applied by fishermen, regardless of their right to fish in an area. The question of fishing rights and quotas can only be answered by logical use of scientific facts concerning both conservation measures and national needs. Just as we have joined together in the United Nations for our common peace and security, we must unite to produce an orderly regime for the high seas, territorial seas, and related areas, asserts the author.

LOBSTERS:

Lobster Storage and Shipment, by D. W. McLeese and D. G. Wilder, Fisheries Research Board of Canada Bulletin No. 147, printed, 1964, C\$1.75. Queen's Printer, Ottawa, Canada.

MASSACHUSETTS:

The Massachusetts Marine Fisheries Advisory Commission, by Robert F. Hutton and Frederick C. Wilbour, Jr., Educational Series No. 1, 23 pp., illus., processed, 1964. Massachusetts Division of Marine Fisheries, 15 Ashburton Pl., Boston, Mass.

MULLET:

A Bibliography of Systematic References to the Grey Mullet (Mugilidae), by J. M. Thomson, Technical Paper No. 16, 128 pp., processed, 1964. Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.

NETS:

"Een beter garnalennet" (Better shrimp net), by R. Boddeke, article, Visserij-Nieuws, vol. 8, no. 1, Jan. 1965, pp. 2-8, illus., printed in Dutch. Directie der Visserijen, 1e van den Boschstraat 4, 's-Gravenhage, Netherlands. Describes a French-developed net for shrimp. The net strains out immature flat fish. It is expected that use of this type of net will permit intensive shrimp fishing without damage to flat fish stocks.

NEW JERSEY:

Annual Report of the Division of Fish and Game for the Fiscal Year Commencing July 1, 1963 and Ending June 30, 1964, 64 pp., illus., printed. New Jersey Department of Conservation and Economic Development, Trenton, N. J. 08625. Contains sections detailing work in administration, law enforcement, the Bureau of Wildlife Management, and the Bureau of Fisheries Management. The section on fisheries discusses activities of the Freshwater Research and Development Section in trout management and

research, warm-water fisheries research, warm-water management, pollution studies, and habitat improvement; the Marine Fisheries Research and Development Section; State fish hatcheries; and commercial fishing. Included are statistical data on hatchery distributed, raised, and on hand, 1964 season; landings from fish pounds, 1963; total New Jersey commercial catch; and stocking of New Jersey streams and lakes, Fiscal Year 1964.

NORWAY:

"Norwegian outfit in world fisheries," article, Norwegian Fishing and Maritime News, vol. 11, no. 1, 1964, pp. 7-8, printed. Norwegian Fishing and Maritime News, P. O. Box 740, Slottsgt. 3, Bergen, Norway. The Norwegian export of vessels, gear, equipment, processing machinery, and "know-how" for the fishing industry have shown quite a remarkable increase the last few years. Value of exports rose from £1.8 million in 1960 to £7.0 million in 1964. Exports were expected to reach £10 million in 1964. In 1964 Norway imported fishing equipment and gear with total value of £9 million. Principal export markets are Iceland, Sweden, Denmark, Peru, Chile, and Germany. Fishing vessels, representing 30 per cent of the total exports, are being built in about 75 Norwegian yards. One firm is now delivering seven-foot stern trawlers with freezing facilities for Canada while another will soon launch a fleet of eight stern trawlers and a mothership for a Kuwaiti company. The Government has contributed considerably to many projects in the developing countries, where expanded fisheries are needed to meet the protein needs of a growing population.

NUCLEAR REACTORS:

Power Reactors in Small Packages, by William R. Corliss, one of a Series on Understanding the Atom, 28 pp., illus., printed, June 1964. U. S. Atomic Energy Commission, P. O. Box 62, Oak Ridge, Tennessee 37831.

OCEANOGRAPHY:

Abyss (The Deep Sea and the Creatures That Live in It), by C. P. Idyll, 414 pp., illus., printed, 1964, Thomas Y. Crowell Co., 201 Park Ave. S., New York, N. Y. 10003. Man has used the sea as a means of travel and a source of food for centuries, but it is only recently that he has come to realize that there is much more to it. This book describes the physical, chemical, and dynamic characteristics of the ocean waters and its boundaries which mold and influence all life in them. In spite of the fact that man has fished a small part of the sea and explored it in a tentative way, the deep sea that makes up nine-tenths of the water of the oceans is still a vast unknown. How this creates mystery is ably pointed out by the author: "The deep sea is pitch black, with the least glimmer of the sun's rays to give it color. It is cold, only a little above freezing; it is under enormous pressure, with power to crush to a shapeless mass any body not constructed to combat it. This is a general account of the deep sea for the layman and the scientist. The author tells us what is known about this vast unknown, but he also points out what is still unknown. After theorizing about the birth of the ocean, the author describes the land beneath the sea with mountains higher than Everest, valleys deeper than the Grand Canyon, and its great submerged rivers

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...od part of the book is devoted to the "grotesque improbable" creatures of the deep sea, such as that are all mouth; the six-foot urn-shaped eel; the South Sea worm that spawns precisely the third-quarter of the November moon; the poisonous jellyfish; the brilliant scarlet shrimp; the enormous octopus and squid that squirt ink; the luminous angler that entices its prey with gleaming and shimmering colored lights; and the fossil remnants of ancient life. All these would be unbelievable except for the more than 100 photographs and drawings that show that some of the creatures are even more grotesque than we could imagine. Also covered are: sea monsters; how the environment of the deep sea (darkness, pressure) molds the creatures that live there; the economic value of the deep sea as a source of food, power, minerals, and a weapon of personal defense; and the future of oceanography. An appendix includes a classification of the animals mentioned in the book and a list of more books about the sea. To increase its usefulness, it has a good index. In the years to come, the sea will exert more influence on man. This book will be of value to anyone interested in gaining some understanding of that unknown--the deep sea.

-- J. Pileggi

International Indian Ocean Expedition Newsletter, vol. 2, no. 2, Sept. 1964, 28 pp., illus., printed. Indian National Committee on Oceanic Research, Council of Scientific and Industrial Research, New Delhi, India. Includes, among others, articles on: "India and ocean research"; "Indian Programme: Scientific cruises of INS *Kistna*"; "Indian Ocean Biological Centre, Ernakulam"; "International Meteorological Centre, Bombay"; "Third IOC session in India"; and "Second meeting of the IOBC Consultative Committee."

Mine Defense Laboratory as an Oceanographic Center, Report No. RAD R244, 29 pp., printed, Oct. 1964. Navy Mine Defense Laboratory, Panama City, Fla. In spite of intense effort on strictly military problems, interesting observations have been made on natural phenomena, hypotheses and conjectures have arisen requiring theoretical solutions, and equipment for special purposes had to be designed and tested. As a result, data, analyses, and inventions of purely scientific value have been generated and become part of the literature of oceanography. This report documents the belief that sufficient conditions have been made to basic oceanography in the form of publications, papers presented at scientific meetings, technical notes, memoranda, and reports to warrant giving consideration to placing the laboratory firmly on the list of the world's active and productive oceanographic centers.

Final Report: "Anton Bruun" Cruise 8, U. S. Program in Biology, International Indian Ocean Expedition, News Bulletin No. 10, 17 pp., illus., processed, Oct. 1965. Woods Hole Oceanographic Institution, Woods Hole, Mass.

Biological Observations in the Indian Ocean in the H. M. A. S. DIAMANTINA (Cruise Dm 1762), Oceanographical Cruise Report No. 14, 131 pp., illus., processed, 1964. Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.

Operational Notes on a Shipboard Computer, by Richard M. Morse and Robert M. O'Hagan, Oceanographic (Unpublished Manuscript), 11 pp., processed, Oct. 15, 1964. U. S. Coast Guard Oceanographic Unit, Washington, D. C. 20220.

Serial Atlas of the Marine Environment--Surface Circulation on the Continental Shelf Off Eastern North America between Newfoundland and Florida, by Dean F. Bumpus and Louis M. Lauzier, Folio 7, 15 pp., illus., printed, 1965, looseleaf \$5, bound \$8. Serial Atlas of the Marine Environment, American Geographical Society, Broadway at 156th St., New York, N. Y. 10032. Presents the nontidal drift at the ocean's surface on the continental shelf off eastern North America between Newfoundland and Florida as inferred from the results of all available drift-bottle data, 1948-62. Twelve charts, one for each month, exhibit the annual cycle of circulation. On the basis of a 30-foot rectangular grid, the charts show where drift bottles were released, the percentage recovery from each rectangle to the North American seaboard, and the velocity of the drift through those rectangles from which the bottles originated. Four final charts portray the surface circulation pattern on a seasonal basis.

A Study of Transmission of Weather and Oceanographic Data from Floating Weather Stations, by W. J. Fay, D. R. Munoz, and S. Weisbrod, Report No. 416, 56 pp., printed, Oct. 1964. Smyth Research Associates, San Diego, Calif.

The following are from Physical Aspects of Light in the Sea, edited by J. E. Tyler. University of Hawaii Press, Honolulu, Hawaii:

"Application of photography to observations in the sea," by H. E. Edgerton, pp. 31-35.

"Degeneration of image contrast and resolution in underwater photography," by A. May and P. H. Cords, Jr., pp. 25-29.

"On the instruments for measuring angular distributions of underwater daylight intensity," by T. Sasaki, pp. 19-24.

"Measurement at sea of water samples," by A. Ivanoff, pp. 11-17.

"Optical classification of ocean water," by N. G. Jerlov, pp. 45-49.

"An undersea observation vessel *Kuroshio* and its photographic apparatus," by N. Inoue and others, pp. 7-10.

OYSTERS:

"Bacteriological survey of an oyster bed in Tangier Sound, Maryland," by M. W. Vaughn and A. W. Jones, article, Chesapeake Science, vol. 5, no. 5, winter 1964, pp. 167-171, illus., printed, single copy 75 cents. Natural Resources Institute, University of Maryland, Chesapeake Biological Laboratory, Solomons, Md.

Field and Laboratory Studies on Heat-Shock Method of Preparation of Oysters for Shucking, 27 pp., illus., processed, Nov. 1964. Gulf Coast Shellfish Sanitation

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Research Center, Division of Environmental Engineering and Food Protection, Public Health Service, U. S. Department of Health, Education, and Welfare, Dauphin Island, Ala. The heat-shock method of preparing oysters for shucking, as indicated by the results of this study, shows a definite trend in a reduction in the parameters which are normally used in assessing the bacterial quality of shellfish. Oysters that have been immersed at 140° F. for 5 minutes, at 150° F. for 3 minutes do not appear to be altered metabolically or physically to such an extent that the oyster could not be considered to be fresh. The use of 150° F. heat-shock temperature and an immersion time of not more than 3 minutes, with an immediate chill-down after removal from the immersion water, as a method of preparing oysters for shucking seems to offer no immediate public health problems over the normal cold shucking method. However, there appears to be a need for establishing sanitary control measures in the shucking bench area to prevent the holding of heat-shocked oysters for excessively long periods.

"Serological studies of species and races in oysters," by K. I. Numachi, article, *American Naturalist*, vol. 46, no. 889, pp. 211-217, printed. The Science Press, Lancaster, Pa.

PACIFIC OCEAN:

Proceedings of the Ninth Pacific Science Congress of the Pacific Science Association, Held at Chulalongkorn University, Bangkok, Thailand, November 18th to December 9th, 1957, Vol. 10--Fisheries, 100 pp., illus., printed. 1961. Secretariat, Ninth Pacific Science Congress, Department of Science, Bangkok, Thailand. Includes, among others, articles on: "Report of the Chairman of the Standing Committee on Pacific Fisheries," by O. E. Sette; "A review on fisheries activities in Thailand for the period 1954 to 1957," by Thiemmedh Jinda; and "Summary report of the meeting of the Fisheries Division." Among the papers for the Symposium on Biology of Aquatic Animal Life with Special Reference to the Indo-Pacific Area is: "Flying fishes of the north-western Pacific," by N. V. Parin. Papers for the Symposium on New or Little Explored Aspects of Fishery Research include: "Some relationships within fish populations causing fluctuations in production," by H. S. Swingle; "Dimensions of albacore shoals in the Pacific Ocean," by Toshiro Kuroki; "Pacific salmon: ocean stocks and fishery developments," by Ferris Neave; "A hypothesis of the population biology of the sardine, *Sardinops caerulea*," by John C. Marr; and "On the biological basis of fishery in the western Pacific," by P. A. Moiseev. The Symposium on the Improvement and Management of Natural Inland Waters and Impounded Waters includes: "Some scientific aspects of fish culture in ponds," by G. A. Prowse; and "The public health significance of the recent outbreaks of poisonings by marine organisms in Japan," by Bruce W. Halstead, Toshiharu Kawabata, and Thomas F. Judefind.

PESTICIDES:

Pesticides in Soil and Water, an Annotated Bibliography, compiled by Richard E. Thomas, Jesse M. Cohen, and Thomas W. Bendixen, Public Health Service Publication No. 999-WP-17, 94 pp., printed, Sept. 1964. Engineering Section, Basic and Applied Sci-

ences Branch, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio 45226.

POLAND:

Polish Sea Fisheries Development, by Andrzej Niewski, 33 pp., printed, 1963. (Reprinted from *Polish Western Affairs*, vol. 4, no. 2, 1963.) Instytut Znacodni, Stary Rynek 2, Poznan, Poland. Part I discusses the world fisheries. The increasingly acute problem of feeding the world population has made into paramount issue the utilization of the resources of the seas and oceans as a source of protein. A qualitative increase in the development of exploitation of the sea must in its final form lead to a change in the character of economic activity from a mere exploitation of sea resources, even if controlled and restricted by passive methods, to production in the form of farming of the sea. Sea fisheries, although producing markedly increased catches in the last few decades have not developed at the same rate in all countries; their growth has varied according to region. There has been no increase in sea catch in Europe and North America; the increase has been shown most by countries of other continents. The lack of animal protein still occurring in many countries may be covered much more quickly and at a lower cost by the utilization of all the protein resources in the sea than by increasing livestock production. Part II details the fisheries development of Poland. Two major periods can be seen in the development of Polish sea fisheries after World War II: during the first, from 1945 to 1949, there was a need to put quickly into operation the destroyed technical base indispensable for landing fish. But even at that time preparatory work was started for the further development of sea fisheries. The second period was initiated on the basis of the Six Year Plan (1950-55) and the successive long-term plans. The rapid development of sea yards and industry made it possible to design and build a modern fishing fleet, while the investment in the fishing ports and the construction of the necessary auxiliary enterprises and processing plants create a technical base for expansion of the fishing industry indispensable to the Polish economy as a whole. The long-term plan for the development of the Polish sea fisheries provides for a catch of about 900,000 tons of fish in 1980. This quantity will make it possible to raise the annual consumption of fish in Poland to 12-13 kg. (26.4-28.6 pounds) per capita, providing nourishment of full value and at medium cost.

Selected Articles, OTS 63-11402, 28 pp., illus., processed, 1964, 50 cents. (Translated from the Polish *Roczniki Panstwowego Zakladu Higieny*, vol. 8, no. 1957, pp. 481-493; vol. 10, no. 4, 1959, pp. 395-400; vol. 11, no. 4, 1960, pp. 329-334.) Office of Technical Services, U. S. Department of Commerce, Washington, D. C. 20230. Includes articles on: "Tin and iron contents in some Polish canned fish" (O zawartosci cyny i zelaza w niektórych polskich konserwach rybnych), by Jozef Wierzchowski and Maria Severina; "Control of fish processing stages. I--Herring in oil"; II--"Bullhead" in tomato sauce (Kontrola cyklu produkcyjnych w przetworstwie rybnym. I--Sledz w oleju; II--"Byczki w pomidorach), by Jozef Wierzchowski and others.

PROCESSING:

"Basis of new forms of wastes and losses in commercial fish processing," by N. I. Goremykina, article

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

Trudy AzCherNIRO, vol. 21, 1961, pp. 29-31, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, Moscow, U.S.S.R.

FOUR SOURCE CONSERVATION:

Coastal Alterations, by Robert F. Hutton, Educational Series No. 2, 8 pp., processed, 1964, 5 cents. Massachusetts Division of Marine Fisheries, 15 Ashburton Pl., Boston, Mass.

BYLON:

Distribution, growth, and food of young salmon in the rivers of the Latvian S. S. R., by A. R. Mitans, article, Rybnoe Khozyaistvo Vnutrennykh Vodoemov Latv. SSR, vol. 7, 1963, pp. 309-317, printed in Russian. Trudy Institut Biologii Akademiyi Nauk Latv. SSR, Riga, Latvia.

Nutrition of salmonoid fishes. XII--Isoleucine, leucine, valine and phenylalanine requirements of chinook salmon and interrelations between isoleucine and leucine for growth, by Ronald E. Chance, Edward T. Mertz, and John E. Halver, article, Journal of Nutrition, vol. 83, July 1964, pp. 177-185, printed in American Institute of Nutrition, 36th St. at Spruce, Philadelphia 4, Pa.

Pacific Salmon in the Northern Waters--Species and Life-History, by Tomonari Matsushita, No. 6-1, 36 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan.

Pacific salmon survive in Atlantic, by J. J. Quigley, article, Trade News, vol. 17, no. 6-7, Dec. 1964-Jan. 1965, pp. 3-5, illus., processed. Information and Consumer Service, Department of Fisheries, Ottawa, Canada. Noteworthy in 1964 was the return of Pacific salmon, offspring of pinks transplanted as eggs to a Newfoundland stream from British Columbia in 1962. The authentic returns occurred in Mary's Bay from 2.5 million eggs airlifted and transplanted in North Harbour River. Fresh-water survival from the first transplant was excellent, with a fry run of 87 percent. First indications that the mature fish were heading for the spawning grounds from which they had migrated came during the summer of 1964 when commercial fishermen reported strange fish in their catches which later proved to be pinks. Shortly after the captures in the commercial fishery the pinks began to show up in North Harbour River, and several "spents" were later recorded indicating successful spawning. Ultimate success in transplanting the pinks could well mean that in years to come Newfoundland fishermen will have available a species that plays an important part in the fisheries of British Columbia, a species that could take the pressure off the intensively fished Atlantic salmon.

Eastern Alaska Pink Salmon Forecast Studies, Emergency Fry Program, by Theodore C. Hoffman, Informational Leaflet 47, 29 pp., illus., processed, Jan. 28, 1965. Department of Fish and Game, Report Bldg., Juneau, Alaska.

COINES:

History of Japanese Sardine, SARDINOPS MELANOSTICTA (Temminck and Schlegel), and a Pro-

posed Methodology on the Investigations, by Keiichi Kondo, No. 5, 56 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan.

"A pesca de sardinha em 1964 e a modernizacao de frota" (The sardine fishery in 1964 and the modernization of the fleet), article, Jornal do Pescador, vol. 26, no. 310, Nov. 1964, single copy 5 escudos (about 20 U. S. cents). Junta Central das Casas dos Pescadores, Rua de S. Bento, 644-4^e Esq., Lisbon, Portugal.

"Technochemical properties of the Atlantic sardine and the causes of decrease in quality in commercial processing," by G. S. Khristoferzen and N. V. Timofieva, article, Trudy AzCherNIRO, vol. 21, 1961, pp. 40-46, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, Moscow, U.S.S.R.

SAURY:

Biological Studies and Fisheries of the Saury, COLOLABIS SAIRA (Brevoort), by Hideyuki Hotta, No. 4, 96 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan.

SCALLOPS:

The following, printed in Japanese, are available from the Japan Fisheries Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan:

On the Scallop in Okhotsk Sea, by Shigemi Ito, No. 7, 40 pp., illus.

Studies on the Propagation of the Scallop, PATINOPECTEN YESSOENSIS (Jay), in Mutsu Bay, by Gotaro Yamamoto, No. 6, 80 pp., illus.

SEA LAMPREY:

Variability in Paper Electrophoretic Patterns of the Serum of Landlocked Sea Lamprey, PETROMYZON MARINUS Linnaeus, by M. L. H. Thomas and H. R. McCrimmon, 8 pp., illus., printed. (Reprinted from Journal of the Fisheries Research Board of Canada, vol. 21, no. 2, 1964, pp. 239-246.) Queen's Printer and Controller of Stationery, Ottawa, Canada.

SHELLFISH:

"Cleaning up the shellfish," article, Maritimes, vol. 9, no. 1, winter 1965, pp. 10-12, illus., printed. Editor, Maritimes, Davis Hall, Kingston, R. I. The process of cleansing shellfish, called depuration, is a major subject of study at the Federal shellfish sanitation laboratory (the Northeast Research Center) which serves the east coast area from North Carolina to Maine. The depuration process may provide an important health-safety factor. The head of the laboratory explains that "We are obtaining biological data and developing engineering plans for a depuration facility. These plans can then be used by any group, public or private, interested in cleansing shellfish of pollution . . ." Already the laboratory has collaborated with the States of Maine, Rhode Island, and New York in developing new and improving existing depuration facilities. "Even though we can cleanse shellfish of bacteria and, hopefully, of viruses, there remain other materials potentially dangerous to

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human beings which cannot readily be removed by present processes. These include pesticides, radioactive materials and heavy metals such as zinc and lead, and many other man-made and contributed pollutants. Further study must be made on the significance of these contaminants," states the laboratory head.

Stalking the Blue-Eyed Scallop, by Euell Gibbons, 345 pp., illus., printed, 1964. David McKay Company, Inc., 225 Park Ave., New York, N. Y. 10017. An amusing and informative book describing the author's adventures in hunting shellfish, inshore fish, and edible marine plants. Included are the biology, preparation for cooking, and recipes for oysters, quahogs, crabs, blue-eyed scallops, razor and surf clams, blue mussel, whelks, sea urchins, cockles, pen shells, abalone, limpets, chitons, wild goose barnacles, grunions, sharks, and blowfish, edible seaweeds, sour sorrel, beach plum, bayberry, lobsters, and octopus. "Surely the way to approach true communion with the sea is the grateful reception of this free gift of food that has never been gathered for gain or sold at a profit, preparing it with the loving care that lifts cooking from an irksome task to a fine art, then eating it with a reverent awareness, not only of its taste, texture, and aroma, but also its very nature and origin," asserts the author in his introductory chapter.

SHRIMP:

"Biology of shrimps acclimatized in the Aral Sea," by A. S. Malinovskaya, article, Sbornik Rabot po Ikhtiologii i Gidrobiologii, vol. 3, 1961, pp. 113-123, printed in Russian. Institut Ikhtiologii i Rybnogo Khozyaistva, Akademiya Nauk, Kazakh SSR, Alma Ata, Kazakh SSR,

34 Ways to Make One-Dish Shrimp Meals, 11 pp., printed. Continental Sea Foods, Inc., 501 W. 16th St., New York, N. Y. 10011. Contains recipes for preparing frozen ready-to-cook small shrimp in a variety of dishes in 30 minutes. Tips are given for adding shrimp to avocado, spaghetti sauce, chow mein, soup, and salad. Included are recipes for shrimp in tomato, baked shrimp Florentine, shrimp stuffed tomatoes, shrimp sole casserole, curried shrimp with rice, baked shrimp in shells, shrimp Cantonese, broiled shrimp sandwich, shrimp Alfredo, and shrimp scramble.

SOMALI REPUBLIC:

Basic Data on the Economy of the Somali Republic, by Joseph Eblan, OBR 65-8, 16 pp., illus., printed, Feb. 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.) The Somali Republic prepared a Five Year Plan in 1963 which outlines improvement aims in every economic and social sector. The report presents details on geography and climate, form of government, and population; structure of the economy; agriculture; mineral resources; industry and power. Also includes information on transportation, communications, finance, foreign trade, a program for economic development, and marketing. A short section on fishing discusses Somalia's abundant fishery resources and the tuna canning and exporting industry.

SOUTH AFRICA REPUBLIC:

Industrial Censuses, 1950-51 to 1960-61. 1.--Preparation and Preserving of Meat; Sausage Casings, Tallow, Dripping and Lard; 2.--Crayfish; Fish Preserving and Other Fish Products, Report No. I, C 48 pp., processed in Afrikaans and English, Nov. 1964. Bureau of Statistics, Republic of South Africa, Pretoria, Republic of South Africa. This is the first of a series of reports showing the final results of the annual industrial census according to kinds of manufacturing industry. Detailed statistics are shown for each of the eleven census years from 1951 to 1960-61. It also contains provisional summary figures for the year 1961-62. Part 2, on spiny lobster processing, fish preserving and other fish products, presents data on ownership by private limited liability companies, number of establishments by employee size group, net output per employee and employment per establishment by employee size group, employment of working proprietors, employment by paid employees, and total salaries and wages for financial year. Also includes statistical tables on employment--production, maintenance, and related workers; employment--administrative, clerical and sales personnel; payments in kind for financial year; cost of South African and imported materials for processing and packing; closing stocks; physical assets, depreciation, and rent paid; number of establishments and gross output, South Africa and provinces; number of establishments by industrial area and certain economic regions.

SPAIN:

The following articles are from Boletin de Informaciones, 74-75, Nov. -Dec. 1964, printed in Spanish. Sindicato Nacional de la Pesca, 18-20 Paseo del Prado, Madrid, Spain.:

"Actividades de la Direccion General de Pesca Maritima. I--Presencia Expanola en los organismos internacionales relacionados con la pesca maritima; II--Concesiones y aprovechamientos; III--Expansión de la flota pesquera; IV--Aprovisionamientos a la flota pesquera; V--La ciencia y la pesca" (Activities of the Department of Marine Fisheries. I--Spanish membership in the international organizations related to marine fisheries; II--Concessions and developments; III--Expansion of the fishing fleet; IV--Outfitting of the fishing fleet; V--Science and the fisheries); pp. 5-15, illus.

"La evolucion pesquera en cifras" (Fishery development in figures), pp. 22-24.

SPORT FISHING:

"The economic aspects of sport fishing," article, Fish News, vol. 17, no. 6-7, Dec. 1964-Jan. 1965, pp. 7-10, illus., processed. Information and Consumer Services, Department of Fisheries, Ottawa, Canada.

SQUID:

"Squid as seafood," article, Fisheries Newsletter, 23, Aug. 1964, p. 23, printed. Fisheries Branch, Department of Primary Industry, Canberra, Australia.

STANDARDS:

The following Amendments to the Federal Food, Drug and Cosmetic Act are available from the Food and Drug Administration, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201.:

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

Fish Definitions and Standards, Part 37, Title 21, Code of Federal Regulations, 8 pp., printed. (Reprinted from the Federal Register: April 16, 1964; 29 F. R. 5225.)

Shellfish Definitions and Standards, Part 36, Code of Federal Regulations, 7 pp., printed. (Reprinted from the Federal Register: May 7, 1963; 28 F. R. 5556.)

STORAGE LIFE:

Time-temperature tolerance of frozen seafoods. --Review of some of the recent literature on the storage life of frozen fishery products," by J. Perry Lane, article, Food Technology, vol. 18, no. 7, July 1964, pp. 156-162, printed, single copy \$1.50. Food Technology, 510 N. Hickory St., Champaign, Ill. 61823.

STURGEON:

Comparative evaluation of the costs of young of sturgeons under various methods of commercial breeding," by Yu. I. Zaidiner, I. Ya. Gol'dman, and N. V. Averkiev, article, Trudy AzNIIRKh, vol. 6, 1963, pp. 241-251, printed in Russian. Azovskii Nauchno-Issledovatel'skii Institut Rybnogo Khozyaistva, Moscow, U.S.S.R.

REPRINTING:

The following reprints are from Journal of the Fisheries Research Board of Canada, vol. 20, no. 6, 1963. Queen's Printer and Controller of Stationery, Ottawa, Canada.:

Using Stainless Steel Anchor Tag, by G. H. Lawler, Illus., p. 1553.

Use of Coloured Tags in Fish Population Estimates, by G. H. Lawler and G. F. M. Smith, pp. 1431-1434.

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 each.:

Canneries and Frozen Foods--Producers and Exporters--Japan, 24 pp., January 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 (including fishery products) on production, exports, imports, and export control of canned, bottled, and frozen foods.

Fish (Animal, Fish and Vegetable)--Importers, Dealers, Producers, Refiners and Exporters--Norway, 12 pp., Jan. 1965. Lists the names and addresses, size of firms, and types of products handled by each firm. Includes firms dealing in fish, seal, and whale oils. Also contains trade and industry data (including fish and whale oils).

Fish (Animal, Fish and Vegetable)--Importers, Dealers, Producers, Refiners and Exporters--Peru, 12

pp., Jan. 1965. Lists the names and addresses, size of firms, and types of products handled by each firm. Includes firms dealing in fish oil, fish meal, and canned fish. Also contains trade and industry data (including fish oil).

TRAWLERS:

Medium Trawler, by Shinji Endo, No. 3, 56 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, Shiba Nishikubo Sakuragawa-cho, 24, Minato-ku, Tokyo, Japan.

TRAWLING:

"Influence of trawling speed on the parameters and the strain of the trawl net," by A. N. Samaryanov, article, Trudy Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, vol. 21, 1961, pp. 3-15, printed in Russian. Azovo-Chernomorskii Nauchno-Issledovatel'skii Institut Morskogo Rybnogo Khozyaistva i Okeanografii, Moscow, U.S.S.R.

TURKEY:

Balik ve Balikcilik (Fish and Fishery), vol. 13, no. 1, Jan. 1965, 32 pp., illus., printed in Turkish with English table of contents. Et ve Balik Kurumu G. M., Balikcilik Mudurlugu, Besiktas, Istanbul, Turkey. Contains, among others, these articles: "Black caviar production and its problems in Turkey. Part II," by Cevdet Aygun; "Technological developments in the field of fish flour. Part II," by Hikmet Akgunes; and "The role of fish in animal feeding and nutritional contributions of fish products. Part I," by Macide Akgunes.

U.S.S.R.:

Kholodil'naiia Tekhnika, no. 6, 1964, 80 pp., illus., printed in Russian with English table of contents. Four Continent Book Corp., 822 Broadway, New York, N. Y. 10003. Includes, among others, articles on: "Leningrad Fish Storage Warehouse No. 4," by M. S. Ginburg, L. F. Rummyantsev, and S. V. Vinogradova; and "Investigation of time of freezing fish in blocks," by G. S. Konokotin.

VESSELS:

"Kongres panstw Socjalistycznych w sprawach floty rybackiej" (Congress of socialist countries on fishing fleet operations), by Andrzej Ropelewski, article, Gospodarka Rybna, vol. 17, no. 2 (164), 1965, pp. 3-5, printed in Polish. Gospodarka Rybna, Aleje Jerozolimskie 28, Warsaw, Poland.

WHALES:

"Blood types of some species of Antarctic whales," by K. Fujino, article, American Naturalist, vol. 46, no. 889, 1962, pp. 205-210, printed. The Science Press, Lancaster, Pa.

WHALING:

A Caccia de Balene (Whale Hunting), by Piero Pieroni, 150 pp., illus., printed in Italian, March 1964, L. 3,800 (about US\$6.10). Officine Grafiche Vallecchi Editore, Florence, Italy. A beautifully-illustrated book, using both full-color and black-and-white photos and drawings, giving the history of whaling and describing both modern and older whaling operations.

"Crisis in the whaling industry," by John Hillsby, article, New Scientist, vol. 23, Aug. 13, 1964, pp. 368-

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370, printed. Cromwell House, Fulwood Pl., High Holborn, London WC1, England.

YUGOSLAVIA:

Market Factors in Yugoslavia, by Arthur J. Laemmerzahl, OBR 64-140, 8 pp., printed, Dec. 1964, 15 cents. Bureau of International Commerce, U. S. De-

partment of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) In addition to market outlook in Yugoslavia, the report discusses the scope and nature of the market, commercial competition, market analysis for selected commodities, and a market profile for the country.



MIAMI SCIENTISTS DISCOVER NEW FAMILY OF FISH

A new family of extraordinary ocean fish has been discovered by biologists at the Institute of Marine Science, University of Miami. The discovery was announced April 1, 1964, in the Institute's scientific publication Bulletin of Marine Science.

The first representative of the new group to be seen by scientists was caught in a plankton net on August 7, 1964, in the western Atlantic, 150 miles due east of Cape Kennedy. The specimen was taken near midnight at a depth of about 60 feet and, remarkably, came aboard the ship alive and in excellent condition. Upon being placed in a laboratory aquarium aboard the research vessel John Elliott Pillsbury, the strange fish swam about vigorously while motion pictures and other photographs were made of its swimming behavior.

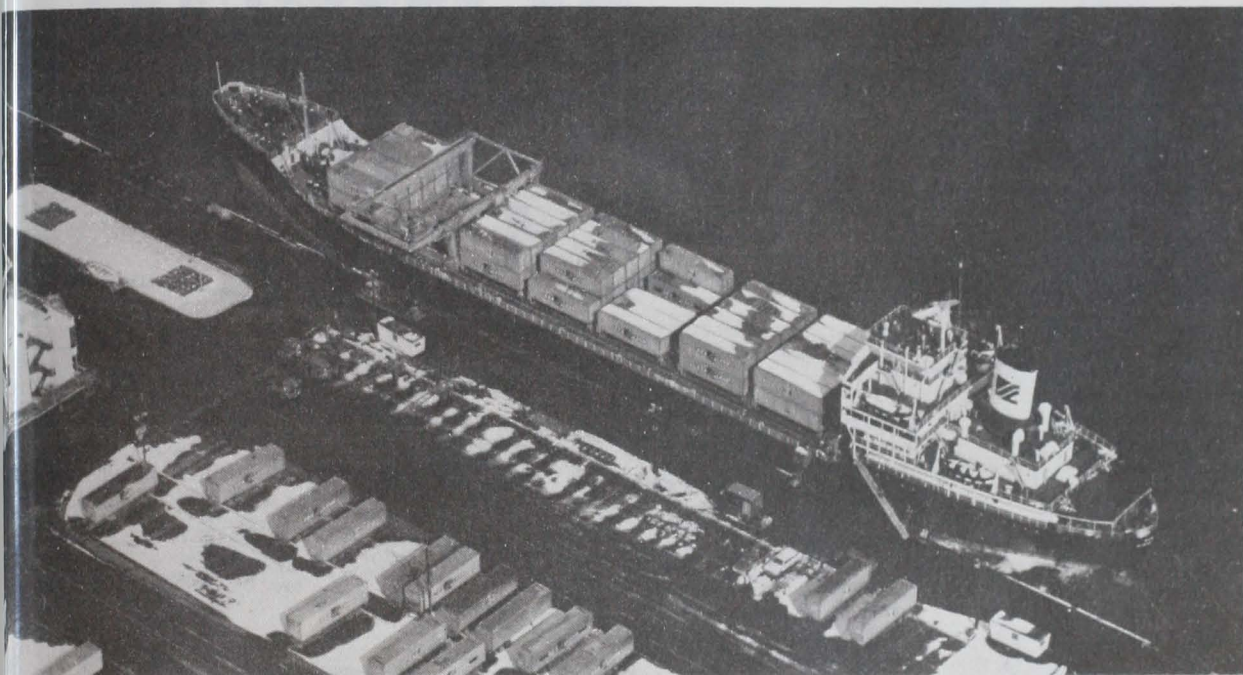
Solid black and about an inch long, the fish had a broad, flat head and enormous eyes. Attached to its underside was a long filament equipped with many leafy appendages. Each appendage displayed an oval luminescent spot. As the fish swam jerkily about the aquarium the appendages streamed out behind. In the darkness only the orange spots on the appendages were visible, resembling a cluster of jellyfish-like animals known as siphonophores. Scientists suggest that the remarkable appendages may be used as a form of camouflage. Possibly the fish lives among groups of jellyfish or siphonophores (hundreds of jellyfish were caught in the same plankton tow with the strange fish) and is protected from predators by its mimicry of the stinging animals. Because of the form and structure of the fish's dangling appendages, the new fish has been given the common name of siphonophore fish and the scientific name of Kasidoron edom. The family has been named Kasidoroidae. The fish is believed to inhabit regions from about 450 to 1500 feet deep during the day and come near the surface at night.

Two other specimens of the family, both smaller than the one captured alive, were taken the same night in the same area. They were brought aboard dead, as is usually the case with midwater fish caught in nets. On examination of previous plankton catches made on the cruise, Institute scientists learned that a tiny specimen of the same group (an immature fish less than one-third of an inch long) had been netted four days earlier while the vessel towed plankton nets near a seamount 15 miles northeast of Bermuda.

"Finding a new family of fishes in this day and age is an extraordinary achievement," stated the Director of Miami's Institute of Marine Science. "It is particularly remarkable to find an entirely new group of fish in surface layers of water in the western Atlantic, where a great deal of scientific studies have been made"

THIRD "TRAILERSHIP" ENTERS ALASKA SERVICE

In early April 1965, the 523-foot "trailership," S. S. Summit, entered service between Seattle, Wash., and Alaska ports, supplementing the service established in May 1964 by the trailerships Seattle and Anchorage. The Summit is a modified T-2 tanker which has been adapted to carry 196 35-foot truck trailers, including 60 refrigerated reefers. The Summit can carry more trailers than the other trailerships, but it lacks their break-bulk cargo capacity.



The S.S. Summit loaded with a cargo of truck trailers.

The trailerships are providing weekly service between Seattle and Alaska. Their reduced loading time allows delivery in Anchorage, Alaska, 4 days after loading in Seattle. See pp. 40-41 of this issue for details on the trailerships Seattle and Anchorage and also for a description of the vanships Nanaimo and Tonsina.



TUNA BECOMES MORE IMPORTANT ON ATLANTIC COAST

Commercial tuna fishing came of age in New England waters in 1962 when purse seiners caught over 7 million pounds. Then landings on the Atlantic coast in 1963 nearly doubled those of 1962, and accounted for 4 percent of the total United States tuna catch.