

FISH AND WILDLIFE SERVICE PUBLICATIONS

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

Number	Title
CFS-3602	- Florida Landings, 1963 Annual Summary, 15 pp.
CFS-3608	- Michigan, Ohio & Wisconsin Landings, June 1964, 6 pp.
CFS-3624	- Great Lakes Fisheries, 1963 Annual Summary, 9 pp.
CFS-3640	- Frozen Fishery Products, September 1964, 8 pp.
CFS-3646	- New Jersey Landings, August 1964, 3 pp.
CFS-3648	- Rhode Island Landings, June 1964, 3 pp.
CFS-3650	- New York Landings, August 1964, 5 pp.
CFS-3651	- Virginia Landings, July 1964, 4 pp.
CFS-3654	- Alabama Landings, August 1964, 3 pp.
CFS-3655	- Louisiana Landings, August 1964, 3 pp.
CFS-3660	- Virginia Landings, August 1964, 4 pp.
CFS-3665	- Maine Landings, August 1964, 4 pp.
CFS-3668	- Mississippi Landings, July 1964, 3 pp.
CFS-3669	- Florida Landings, September 1964, 8 pp.
CFS-3672	- Fish Meal and Oil, September 1964, 2 pp.

Sep. No. 722 - Review of Industrial Bottomfish Fishery in Northern Gulf of Mexico, 1959-62.

Sep. No. 723 - Summary of Tuna Observations in the Gulf of Mexico on Cruises of the Exploratory Fishing Vessel Oregon, 1950-63.

Sep. No. 724 - Equipment Note No. 15 - Airlift for Harvesting Oysters.

Sep. No. 725 - Salmon Research Cruise in Western North Pacific.

SSR-Fish. No. 456 - Ecological Studies of Sockeye Salmon and Related Limnological and Climatological Investigations, Brooks Lake, Alaska, 1957, by Theodore R. Merrel, Jr., 69 pp., illus., July 1964.

Operations of the Bureau of Commercial Fisheries under the Saltonstall-Kennedy Act, Fiscal Year 1963, 118 pp., illus., August 1964. The ninth annual

report to the Congress of the activities of the U. S. Bureau of Commercial Fisheries during the fiscal year ending June 30, 1963, under the provisions of the Saltonstall-Kennedy Act of July 1, 1954. Discusses commercial fishery progress in nationwide programs in technology, market news reporting, statistical reporting, marketing, biological and oceanographic research, foreign trade, and economics. In the Pacific Region, emphasis was placed on the increasing threat to salmon from multiple purpose dams, the fresh halibut grading program, improving the quality of fresh halibut, quality studies of Dungeness crab, measuring changes in fish quality, marketing and home economics activities, and increased market news coverage of Alaska halibut and troll salmon fisheries. The Gulf and South Atlantic Region worked on brown and pink shrimp research, shrimp behavior studies, environmental studies, trawl experiments, biological studies of Atlantic menhaden, striped bass research program, studies on oysters and clams, seasonal sampling of scallop beds, mullet utilization, and product quality control. In the North Atlantic Region, activity centered around oceanographic studies; tagging studies; haddock and scallop abundance; the Atlantic Herring Prerecruit Program; FY 1963; oyster drill study; shellfish ecology; oyster setting in local waters; drill control used by oystermen; survival and growth of juvenile oysters; culture of bivalve food; fish protein supplement; fishing gear research; pelagic trawling; electrical trawling; Maine sardine promotion; and vessel safety program. Great Lakes and Central Region programs included environmental research in Lake Erie; lake trout research; Lake Superior herring studies; controlled atmosphere storage; fishing methods and equipment assistance; consumer education; economic studies; and Great Lakes and inland waters statistics. Alaska Region activities emphasized king crab and shrimp studies; king crab stocks and biology; oceanography investigations; pink salmon ecology; Olsen Bay pink salmon studies; estimating pink salmon returns; pink salmon blood studies; Auke Lake investigations; technology of king crab; and technical assistance to small packers. In the California Area, work went forward on subpopulation studies of sardines; pelagic surveys; behavior studies; tuna operating cost studies; and marketing and education work. Activities in the Hawaii Area included research on the skipjack fishery; introduction of monofilament gill nets; and field trials with gill nets.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE AVAILABLE ONLY FROM THE ICHTHYOLOGICAL LABORATORY, BUREAU OF COMMERCIAL FISHERIES, FISH AND WILDLIFE SERVICE, U. S. NATIONAL MUSEUM, WASHINGTON, D. C. 20560.

Contribution to the Knowledge of the Flyingfish Fauna (Exocoetidae) of the Pacific and Indian Oceans, by N. V. Parin, 42 pp., processed, 1964. (Translated from the Russian, Trudy Instituta Okeanologii, vol. 42, 1961, pp. 40-91.)

The Distribution of Deep-Sea Fishes in the Upper Bathypelagic Layer of the Subarctic Waters of the Northern Pacific Ocean, by N. V. Parin, 21 pp., processed, 1964. (Translated from the Russian, Trudy Instituta Okeanologii, Akademii Nauk SSSR, vol. 45, pp. 259-278.)

Systematics, Origin, and History of the Distribution of the Eurasian and North American Perches and Pike-Perches (Genera PERCA, LUCIOPERCA, and STIZOSTEDION), by A. N. Svetovidov and E. A. Dorofeeva, 32 pp., processed, 1964. (Translated from the Russian, Voprosy Ikhtologii, vol. 3, no. 4, 1963, pp. 625-651.)

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

(Baltimore) Monthly Summary--Fishery Products, October 1964, 10 pp., illus. (Market News Service, U. S. Fish and Wildlife Service, 103 S. Gay St., Baltimore, Md. 21202.) Receipts of fresh- and salt-water fish and shellfish at Baltimore by species and by states and provinces; total receipts by species and comparisons with previous periods; and wholesale prices for fresh fishery products on the Baltimore market; for the month indicated.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, October 1964, 16 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; for the month indicated.

(Chicago) Monthly Summary of Chicago's Wholesale Market Fresh and Frozen Fishery Products Receipts, Prices, and Trends, August 1964, 17 pp. (Market News Service, U. S. Fish and Wildlife Service, U. S. Customs House, 610 S. Canal St., Rm. 1014, 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.

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, October 1964, 11 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 608, 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; fishery imports at Port Isabel and Brownsville, Texas, from Mexico; Gulf menhaden landings and production of meal, solubles, and oil; and sponge sales; for the month indicated.

New England Fisheries--Monthly Summary, October 1964, 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 month indicated.

Seattle List of Brokers and Importers of Fishery Products, 1965, 6 pp., November 1964. (Fishery Market New Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Contains the name and complete address of every firm in Seattle, Wash., importing fishery products and their sources. It also lists all Customs House brokers in Seattle.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, October and November 1964, 9 and 7 pp. respectively. (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 months indicated.

THE FOLLOWING SERVICE PUBLICATION IS FOR SALE AND IS AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, U. S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C. 20402.

Revised Bibliography on the Cutthroat Trout, by Oliver B. Cope, Research Report 65, 48 pp., illus., printed, 1964, 35 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:

"Estimating the fisheries potential of African lakes," by M. J. Holden, article, New Scientist, vol. 24, no. 411, October 1, 1964, pp. 20-23, illus., printed, single copy 1s. 3d. (about 20 U. S. cents). Cromwell House, Fulwood Pl., High Holborn, London WC1, England. To provide part of the protein that is lacking in so many African diets the Uganda Fisheries Department is developing the fisheries on 5 large lakes as rapidly as possible by encouraging the use of

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better nets and better canoes with outboard motors, and also by providing markets for the increased catch. However, there is a limit to the maximum fish production from any body of water. In order that the fisheries should not be stimulated beyond this optimum level, the Department has initiated surveys of the lakes to assess their potential sustainable yields.

ALASKA:

Science in Alaska, 1962--Proceedings Thirteenth Alaskan Science Conference, Juneau, Alaska, August 22 to August 26, 1962, edited by George Dahlgren, Jr., 221 pp., illus., processed, April 25, 1963. Alaska Division, American Association for the Advancement of Science, College, Alaska. Among the many papers are 5 of the 9 papers on fisheries presented at the Conference: "The effects of toxaphene treatment on Kitoi Creek, Afognak Island, Alaska," by William L. Sheridan and William R. Meehan; "Loss of isthmus loop tags, *Paralithodes camtschatica* (Tilesius)," by George W. Gray, Jr.; "An experiment to improve an Alaskan salmon spawning area," by Donald E. Bevan; "A preliminary study of the migration and growth of the Dolly Varden char in Kitoi Bay, Alaska," by Leonard Revet; and "Growth of king crabs *Paralithodes camtschatica* (Tilesius) in the vicinity of Kodiak Island, Alaska," by Guy C. Powell. Also, there is a report on the general session on "Northeast Pacific Fisheries Program Planning."

ALGINS:

"Edible corn-carbohydrate food coatings. I--Development and physical testing of a starch-algin coating," by L. Allen and others, Food Technology, vol. 17, no. 11, 1963, pp. 99-104, illus., printed. The Garrard Press, 510 N. Hickory, Champaign, Ill.

ANCHOVIES:

"Manufacture of anchovies," by W. Brandenburg, article, Fischerei-Forschung, vol. 5, no. 6, 1962, pp. 21-25, printed in German. Institut für Hochseefischerei und Fischverarbeitung, Rostock-Marienehe, Germany.

The Peruvian Anchovy Fishery 1959-1962--Statistics of Catch and Effort and an Attempt to Assess the Fluctuations in the Apparent Abundance of the Stock, by G. Saetersdal, I. Tsykayama, and B. Alegre, 1964 CalCAFI Conference Contribution No. 11, 37 pp., processed, 1964. Instituto del Mar del Peru, Callao, Peru.

BOTTOMFISH:

"Probable state of the resources and stocks of bottomfishes in the Barents Sea, 1963," by T. G. Maslov, article, Nauchno-Tekhnicheskii Byulleten' PINRO, no. 4, 1962, pp. 306, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U. S. S. R.

BYPRODUCTS:

Preliminary Recommended Sanitation Guidelines for Processors of Industrial Fishery Products, 10 pp., processed, February 1964. Agricultural Research Service, U. S. Department of Agriculture, Hyattsville, Md. 20781. These guidelines represent the

combined efforts of many individuals and groups interested in preventing *Salmonellae* infections in live-stock, poultry, and man. The report covers requirements for plant premises, transportation of raw and processed materials, containers for processed material, sampling and laboratory examination, training of employees, responsibility for compliance, cleaning agents, and disinfectants.

CANADA:

Noms Francais et Anglais des Poissons de l'Atlantique Canadien (French and English Names of the Canadian Atlantic Fishes), by Vianney Legendre, W. B. Scott, and Julien Bergeron, Report No. 2, 183 pp., processed in French and English, June 1964. Ministère du Tourisme, de la Chasse et de la Pêche, Province de Québec, Canada. Includes the French, English, and scientific names of fish by orders, families, and species, together with remarks on the derivation and citations from literary sources--301 species are listed.

Pêche (Fisheries), 16 pp., illus., printed in French and English. (Reprinted from Quebec Yearbook 1963, pp. 363-377.) The Quebec Department of Industry and Commerce, Quebec Bureau of Statistics, Montreal, Canada. Contains sections covering fishing at the Provincial, National, and world levels; commercial fishing territories; Quebec's maritime fisheries; capital equipment in primary operations; cold-storage plants; Quebec's island fisheries; fishing methods; and biology of cod. Includes statistical tables showing landings by continent, world catch in relation to Canadian and Quebec catches, 1938 and 1947-61; quantity and value, by species, of fish caught, 1960-62; marketed value by principal species, 1961-62; fishermen, vessels, investments and expenses, by area, 1962; cold-storage plants and their capacity in 1962; and total catches, fixed capital and fishermen, by county, 1962.

CANNING:

"Cooking under pressure of sardines and tunny fish," by R. Meesmaecker and Y. Sohler, article, Revue de la Conserve, vol. 18, no. 2, 1963, pp. 171-180, illus., printed in French. Societe d'Edition pour l'Alimentation, 1 rue de la Reale, Paris I, France.

"Experimental canning of low-valued fish," by M. I. Baukin, article, Rybnoe Khozyaistvo, vol. 39, no. 6, 1963, pp. 89-93, printed in Russian. Rybnoe Khozyaistvo, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

CARP:

"First attempt to breed carp in small Karelian lakes," by Yu. S. Dmitrenko, article, Nauchno-Tekhnicheskii Byulleten' GosNIORKh, vol. 15, pp. 43-46, printed in Russian. Gosudarstvennyi Nauchno-Issledovatel'skii Institut Ozernogo i Rechnogo Rybnogo Khozyaistva, Moscow, U. S. S. R.

CHOLESTEROL:

"The Nobel Prize for Medicine, 1964, the biochemistry of cholesterol," by J. W. Cornforth and G. J. Popjak, article, New Scientist, vol. 24, no. 414, October 22, 1964, pp. 220-221, illus., printed, single copy 1s. 3d. (about 20 U. S. cents). Cromwell House, Fulwood Pl., High Holborn, London WC1, England.

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COD:

These articles are from Materialy po Kompleksnomu Izucheniyu Belogo Morya, vol. 2, 1963, printed in Russian. Akademiya Nauk SSSR, Karelskii Filial, Moscow, U.S.S.R.:

"Polar cod of the Karelian coast of the White Sea," by A. M. Anukhina, pp. 144-158.

"Polar cod of the Solovetski Islands," by K. A. Altukhov, pp. 119-130.

These articles are from Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina, no. 2, 1964, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO," Murmansk, U.S.S.R.:

"Variations in age composition, sexual maturation, and spawning of cod on the Flemish Cap," by A. I. Postolankin, pp. 16-22.

"Vertical migrations and feeding of cod young in the Barents Sea, September-October," by A. S. Baranenkova, S. S. Drobysheva, and I. Ya. Ponomarenko, pp. 28-34.

"Biology of cod from the eastern part of Tatar Strait," by B. N. El'kina, article, Izvestiya Tikhookeanskogo Nauchno-Issledovatel'skogo Instituta Morskogo Rybnogo Khozyaistva i Okeanografii "TINRO", vol. 49, 1963, pp. 95-114, printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

COD AND HADDOCK:

"Quantitative results of the estimates of the numbers of young cod and haddock in the Barents Sea during the winter 1961-62," by A. S. Baranenkova and Z. P. Baranova, article, Nauchno-Tekhnicheskii Byulleten' PINRO, no. 4, 1962, pp. 9-13, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.

"Results of the estimates of abundance of young cod and haddock in the Barents Sea in winter," by Z. P. Baranova and G. P. Nizovtsev, article, Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina, no. 2, 1964, pp. 22-28, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO," Murmansk, U.S.S.R.

CONVERSION COEFFICIENTS:

"Conversion co-efficients for different kinds of fishery products," by H. Houwing, article, Conserva, vol. 11, no. 11, 1963, pp. 239-241, printed in Dutch with French summary. Maanblad voor de Voedings- en Genotmiddelen-Industrie, Moormans Periodieke, Pers N. V., The Hague, Netherlands.

CRABS:

"Acclimatization of Kamchatka crabs and blue crabs in the Barents Sea," by O. I. Orlov, article, Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina, no. 1, 1963, pp. 46-47, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO," Murmansk, U.S.S.R.

DOGFISH:

"Utilization of the flesh of picked dogfish for food purposes," by V. C. Berezenko, article, Rybnoe Khozyaistvo, vol. 39, no. 7, 1963, pp. 76-77, printed in Russian. Rybnoe Khozyaistvo, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

ECOLOGY:

"Methods and practice in the ecological analysis of the work of the fishing fleet in the Northern basin," by L. S. Nikol'skii, article, Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina, no. 1, 1963, pp. 54-56, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO," Murmansk, U.S.S.R.

EELS:

"Eel culture and its efficiency in the waters (reservoirs) of White Russia," by S. V. Kokhnenko and E. A. Borovik, article, Gidrobiologicheskie Issledovaniya, vol. 3, 1962, pp. 324-327, printed in Russian. Institut Zoologii i Botaniki, Akademiya Nauk Eston. SSR, Tartu, Estonian S. S. R.

ELECTRICAL FISHING:

"Biological premises for the development of electro-fishing in fresh water," by L. M. Nusenbaum, article, Nauchno-Tekhnicheskii Byulleten' GosNIORKh, vol. 15, pp. 65-68, printed in Russian. Gosudarstvennyi Nauchno-Issledovatel'skii Institut Ozerogo i Rechnogo Rybnogo Khozyaistva, Moscow, U.S.S.R.

"Technical principles of electric fishing," by S. K. Mal'kiavichus, article, Rybnoe Khozyaistvo, vol. 39, no. 4, 1963, pp. 42-52, illus., printed in Russian. Rybnoe Khozyaistvo, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

The following articles appeared in Nauchno-Tekhnicheskii Sbornik, printed in Russian. Klaipedskae Ot-delenie Gipropribflota, Vilnyus, U.S.S.R.

"An electronic pulse generator (for marine electro-fishing)." by K. Pabedinskas, no. 3, 1963. pp. 93-99.

"Importance of the kind of impulses of electric current for producing galvanotaxis in Baltic herring (salaka) (on the problem of marine electrofishing)," by G. Daniyulite, no. 3, 1963, pp. 87-92.

"An impulse frequency meter (gear for electrofishing)," by K. Pabedinskas, no. 3, 1963, pp. 100-104.

"Impulse scheme for electro-fishing," by S. K. Mal'kavichyus, no. 2, 1962, pp. 117-133.

"Method of determining the working regime of the electrical part of the equipment for electrofishing," by A. A. Trakis, no. 3, 1963, pp. 80-86.

"Reaction of Atlantic herring to electrical current impulses," by V. Gedminas and G. Daniyulite, no. 2, 1962, pp. 138-143.

"Simple means for directing the tiratron impulse generator (for marine electrofishing)," by K. Pabedinskas, no. 3, 1963, pp. 105-110.

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ENZYMES:

"Tryptic enzymes from pyloric caeca of mackerel," by P. V. Kamasastry, Science and Culture, vol. 29, 1963, pp. 360-361, printed. Science and Culture, Indian Science News Association, 92 Upper Circular Rd., Calcutta 9, India.

EXPORTS:

Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States, processed, 1964, \$6. U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) A new classification for United States export commodities was placed in effect January 1, 1965, and designated as Schedule B, 1965 Edition. The old Schedule B, in effect since 1958, became obsolete on December 31, 1964. Schedule B, 1965 Edition, contains some 3,600 classifications for export commodities, compared with 2,600 classifications under the old Schedule B. It shows 7-digit rather than 5-digit code numbers. The new export classification must be used for all shipments made after December 31, 1964, and the new 7-digit numbers must be reported for all such shipments. The 1965 edition is a looseleaf manual which lists the 3,600 classifications (each designated by code number) and approximately 30,000 products assigned to the various classifications for illustrative purposes. The manual includes an alphabetical index which directs the exporter to the page or pages where classifications or products may be found. In addition, it includes two numerical indexes: one shows the old Schedule B numbers and the new code numbers into which they go; the other shows the new Schedule B numbers and the old Schedule B numbers of which they are composed.

FAROE ISLANDS:

Faroes in Figures, no. 27, September 1964, 6 pp., illus., printed. Føroya Fiskasøla, Torshavn, Faroe Islands. This issue contains an article, "Development of the Faroese fishing fleet," which discusses the renewal and enlargement of the fishing fleet after World War II, the Faroe Fishing Vessel Mortgage Finance Corporation, and the purchase of steel vessels for long-line fishing. Also includes statistical tables showing exports of saltfish and dried codfish and production of saltfish for the first 6 months of 1964; a financial statement of the Faroe Fishing Vessel Mortgage Finance Corporation as of April 1964.

FISH BEHAVIOR:

Importance of Mechanical Stimuli in Fish Behavior, Specially to Trawls, by C. J. Chapman, 10 pp. illus., processed in English with French and Spanish summaries. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. Paper presented at the Second World Fishing Gear Congress, London, May 25-31, 1963.

"Underwater observations on the behavior of fishes during the 22d cruise of the research ship Tunets," by O. N. Kiselev, article, Nauchno-Tekhnicheskii Byulleten' PINRO, no. 1 (19), 1962, pp. 23-24, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.

FISHERY RESOURCES:

Development of Fishery Resources, by G. C. Rawson and J. N. N. Adjetey, processed in English with French, Russian, and Spanish summaries. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. Paper presented at UN Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, Geneva, Feb. 4-20, 1963.

FISH FARMS:

"Prospects for the development of the collective and state fish farms in White Russia," by E. P. Leonenko, article, Gidrobiologicheskie Issledovaniya, vol. 3, 1962, pp. 328-330, printed in Russian. Institut Zoologii i Botaniki, Akademiya Nauk Eston. SSR, Tartu, Estonian S.S.R.

FISH FINDERS:

These articles are from Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina, no. 2, 1964, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO," Murmansk, U.S.S.R.

"Use of electronic recordings (In search for fish and bottom)," by O. E. Shatoba and M. N. Shcherbino, pp. 145-148.

"Use of echo sounder in fishing under ice," by A. A. Gan'kov and O. N. Kiselev, pp. 148-151.

FISHING TECHNIQUES:

"Results of scientific investigations aimed at improvements of fishing techniques," by A. I. Treshchev, article, Trudy VNIRO, vol. 47, 1962, pp. 7-27, illus., printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

FISH PROTEIN:

Preparation of a Whipping Agent, by A. G. Bonagura and R. J. Mashy, Canadian Patent 663,558, printed, May 21, 1963. Canadian Patent Office, Ottawa, Canada.

FLOUNDER:

"Fishery-biological characteristics of the yellow-finned flounder of Southern Sakhalin," by N. S. Fileev, article, Izvestiya Tikhookeanskogo Nauchno-Issledovatel'skogo Instituta Morskogo Rybnogo Khozyaistva i Okeanografii "TINRO", vol. 49, 1963, pp. 3-64, printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

FOOD SERVICE:

Food Service in Private Elementary and Secondary Schools, by Martin Kreisberg, Marketing Research Report No. 678, 25 pp., illus., processed, October 1964. Marketing Economics Division, Economic Research Service, U. S. Department of Agriculture, Washington, D. C. 20250. The market for food in private schools has grown rapidly, according to this report. Cash receipts for food served in the Nation's private schools were about \$9 million during March 1962, or \$75 million for the school year. Larger schools, those with enrollments of 500 or more, accounted for almost 60 percent of the total private school market. A major portion--\$60 million worth--of the food used in the 1962/63 school year was pur-

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chased locally through regular commercial channels. The rest of the food served was donated by the Federal Government pursuant to existing legislation. To expand the market for food in private schools and to provide the children with nutritious lunches, a two-fold effort is indicated: (1) increase the participation by pupils in schools now serving lunches under the National School Lunch Program; and (2) facilitate the establishment of lunch services for schools where lunch facilities are not available, and where the burden of needy children may be too great for those associated with the school to support school feeding.

FRESH-WATER FISH:

"Creation of stocks of commercial fishes in the Volgograd Reservoir," by A. N. Yakovleva, article, Nauchno-Tekhnicheskii Byulleten' GosNIORKh, no. 15, 1962, pp. 3-6, printed in Russian. Gosudarstvennyi Nauchno-Issledovatel'skii Institut Ozernogo i Rechnogo Rybnogo Khozyaistva, Moscow, U.S.S.R.

Our Freshwater Fishes, Educational Series, Picture Nos. 1, 2, 3, and 4, 1964, \$1.50 a set. R. E. Eshmeier, 224 Elizabeth St., East Lansing, Mich. 48823. An educational series of four 6x9-inch plastic-coated cards showing 36 species of fresh-water fish in full-color photographs. In spite of the fact that color photographs are quite common today, there is still a lack of good color photographs of fish and other marine animals. The pictures shown on these cards show the color of living fish--something which is difficult to capture. Each card shows nine species of fish, and the back of the card has concise life history notes on each fish. The fish shown on the cards are: bluegill, smallmouth bass, black crappie, pumpkinseed, largemouth bass, green sunfish, northern longear sunfish, rock bass, warmouth, lake trout, sea lamprey, yellow perch, brown trout, brook trout, lake whitefish, rainbow trout, walleye or yellow pike, brown bullhead, black bullhead, and lake sturgeon. Also shown are: longnose gar, bowfin, carp, white sucker, river herring, white bass, channel catfish, freshwater drum, northern pike, golden shiner, muskellunge, grass pickerel, common shiner, tiger muskie, creek chub, and river chub. Teachers, educators, students, biologists, researchers, restaurants, and dealers will find these color photograph cards ideal for differentiating between and identifying the most common fresh-water fish species. Others interested in fisheries will find that the cards would lend themselves to framing. The author-photographer also has completed 11 fish pictures for the Society for Visual Education's 13x18-inch cards for schools; he is also able to supply transparencies of about 50 species of fresh-water fish.

-- J. Pileggi

FROGS:

"On frog legs," article, Fish Technology Newsletter, vol. 14, no. 3, 1963, p. 1, printed, Central Institute of Fisheries Technology, Ernakulam, India.

FROZEN FISH:

"Bacteriological examination of detailed packed frozen cod and plaice fillets," by B. V. Jorgensen, article, Konserves og Dybfrost, vol. 20, no. 8, 1962, pp. 94-99, illus., printed in Danish. Teknisk Forlag, Vester Farimagsgade, 31, Copenhagen V, Denmark.

"Defrosting frozen food, particularly fish, with high frequency energy," by J. Reiske, article, Fischerei-Forschung, vol. 5, no. 6, 1962, pp. 29-38, printed in German. Institut fur Hochseefischerei und Fischverarbeitung, Rostock-Marienehe, Germany.

GERMAN FEDERAL REPUBLIC:

"The new look of Hamburg's fish harbor," by E. Gramcko and W. Mannitz, article, Allgemeine Fischwirtschaftszeitung, no. 22, 1963, pp. 20-24, illus., printed in German. Verlag Carl Th. Gorg, P. O. Box 406, Bremerhaven F, Federal Republic of Germany.

GREENLAND:

"Investigation of the natural resources for trawl fishing in Western Greenland," by L. N. Pechenik and I. N. Sidorenko, article, Nauchno-Tekhnicheskii Byulleten' PINRO, nos. 2-3, 1962, pp. 11-16, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.

HADDOCK:

"Method of searching for haddock immigrations into the southeastern areas of the Barents Sea," by M. A. Sonina, article, Nauchno-Tekhnicheskii Byulleten' PINRO, nos. 2-3, 1962, pp. 24-27, printed in Russian. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.

HERRING:

These articles are from Rybnoe Khozyaistvo, printed in Russian. Rybnoe Khozyaistvo, V. Krasnosel'skaia 17, B-140, Moscow, U.S.S.R.

"Chemical characteristics of smoked and liquid-smoked herring," by A. I. Iuditskaia and T. M. Lebedeva, vol. 39, no. 2, 1963, pp. 79-94.

"Determination of the degree of ripeness of herring," by L. L. Konstantinova and K. I. Pakhimova, vol. 39, no. 7, 1963, pp. 74-75.

Life History and Present Status of British Columbia Herring Stocks, by F. H. C. Taylor, Bulletin No. 143, printed, C\$1.75. Fisheries Research Board of Canada, Sir Charles Tupper Bldg., Riverside Dr., Ottawa, Canada.

"Monatskarten der Deutschen grossen herengsfischerei fur 1963" (Monthly reporting of German high-seas herring fishery for 1963), by K. Schubert, article, Informationen fur die Fischwirtschaft, vol. 11, no. 3, 1964, pp. 110-117, illus., printed in German. Bundesforschungsanstalt fur Fischerei, Palmaille 9, Hamburg-Altona 1, Federal Republic of Germany. As in the last few years, the captains of the high-seas herring fishery have made extensive reports on their catches. With the support of shipowners and of the Association for the Promotion of Fishery Research, 91 percent of all landings were reported. Monthly maps on the fishing effort and landings were prepared on the basis of that material. Altogether 8 maps were prepared for the drift-net and 12 maps for the bottom trawl-net fishery. The drift-net fishery maps show (by using black spots) quite clearly a better herring catch in the northern and middle part of the North Sea from May to September 1964 as compared to the previous

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year. In the southern North Sea and in the English Channel, there was no improvement of the catch and none is foreseen. The monthly maps for bottom trawl fishing also indicate a better herring catch from January to April 1964 as compared with 1963. The distribution of the black spots relating to June to October fishing, confirms a better herring catch but it also shows the effect of the cold winter in 1962/63 on summer water temperatures. The data on the trawl fishery in the southern North Sea and the English Channel in November and December confirm poor catch possibilities in that area.

"Results of herring tagging in Sakhalin waters in 1956-60," by A. D. Druzhinin, article, *Izvestiya Tikhookeanskogo Nauchno-Issledovatel'skogo Instituta Morskogo Rybnogo Khozyaistva i Okeanografii "TINRO"*, vol. 49, 1963, pp. 65-69, printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

These articles are from *Nauchno-Tekhnicheskii Byulleten' PINRO*, printed in Russian. *Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.*

"Conditions for catching bottomfishes and herring in the Northwest Atlantic, and the work of the fish scouting," by V. M. Maevskii, nos. 2-3, 1962, pp. 30-33.

"Forecasting the state of the resources for the 1963 herring fishery in the North Atlantic seas," by I. G. Yudanov, no. 4, 1962, pp. 6-8.

"Herring fishery problem in the North Sea," by G. I. Domashenko, nos. 2-3, 1962, pp. 27-30.

"Prospects for Russian herring fisheries in the seas of the North Atlantic," by I. G. Yudanov, no. 1 (19), 1962, pp. 13-15.

"The prospects of the Soviet herring fishery in the Northwestern Atlantic," by I. G. Yudanov, nos. 2-3, 1962, pp. 16-18.

"Variation in the size composition of herring fished at various depths during the autumn-winter period," by V. K. Zilanov, no. 4, 1962, pp. 39-41.

These articles are from *Materialy Rybokhozyaistvennykh Issledovaniy Severnogo Basseina. Polarnyi Nauchno-Issledovatel'skii i Proektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii "PINRO"*, Murmansk, U.S.S.R.

"Composition of the natural resources for the drift net fishery for herring in the Barents Sea in 1960-62, and prospects for 1963," by B. M. Tambovtsev, no. 1, 1963, pp. 31-32.

"Echo survey of herring schools in the Norwegian Sea in 1962," by M. D. Truskanov and M. N. Shcherbino, no. 1, 1963, pp. 6-10.

"Evaluation of the size of the individual year classes of the Atlanto-Scandinavian herring," by I. G. Yudanov, no. 2, 1964, pp. 6-9.

"Herring fishery during summer 1962 in the Norwegian Sea, and the prospects for June-August 1963," by Yu. K. Benko, no. 1, 1963, pp. 10-13.

"Hydrological conditions and distributions of summer schools of herring in the Norwegian Sea," by V. V. Penin, no. 2, 1964, pp. 103-111.

"Some results of the observations on the immigrations and fishery for young herring in the Lofoten area in 1963," by V. K. Zilanov, no. 1, 1963, pp. 13-16.

INDIA:

Conclusions & Recommendations of Seminar on Marine Products Exports, Ernakulam, September 1964, 78 pp., processed, Oct. 7, 1964. Indian Institute of Foreign Trade, New Delhi, India. In the program of intensive studies of export problems on commodity-wise and country-wise basis, the Indian Institute of Foreign Trade, in collaboration with the Marine Products Export Promotion Council, organized a 3-day Seminar on marine products exports at Ernakulam, on September 17-19, 1964. The Seminar discussions covered the entire range of problems pertaining to production, processing, quality control, overseas marketing, and publicity of the marine products. Sixty-four participants drawn from the industry and trade, Export Promotion Councils, concerned Ministries and Departments of the Central and State Governments, export houses, processors, package manufacturers, and research associations, attended the Seminar. After a general discussion in the opening session, the Seminar broke into 3 groups for detailed consideration of the problems comprising the specific areas of studies allotted to them. These groups met on September 18. Group I dealt with the "Problems of Production"; Group II considered the "Problems of Processing and Quality Control"; and Group III was concerned with the "Problems of Overseas Marketing." Reports of the 3 groups were presented in the concluding session of the Seminar on September 19, when the recommendations and conclusions of the Seminar emerged. A major recommendation emanating from this Seminar relates to the preparation of a master plan embodying all essential details in respect of the requirements of large and medium fishing vessels and trawlers, improvement of the indigenous boats, establishment of cold storages, ice plants, additional water supply, creation of additional processing capacity, and mobilizing the overseas effort.

"Studies on fish of Bay of Bengal. I--Amino acid composition of flesh of Bombay duck, ribbon (fish) and shark; II--Processing of shark flesh," by A. N. Bose, S. K. Das Gupta, and B. N. Srimani, article, *Indian Journal of Veterinary Science*, vol. 27 (Part I), 1958, pp. 25-26; vol. 28, 1958, pp. 163-169, printed. Indian Council of Agricultural Research, Queen Victoria Rd., New Delhi, India.

INLAND FISHERIES:

"Aussenstrand-schwimmreusen--auch für die Binnenfischerei?" (Coastal weirs to be used also in inland fisheries?), by W. Bobzin, article, *Deutsche Fischerei-Zeitung*, vol. 9, Sept. 1964, pp. 264-271, illus., printed in German. Berlin-Friedrichshagen, Muggelseedamm 310, Berlin, East Germany.

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JAPAN:

Outline of Construction Plans for Integrating Port Facility in Osaka Prefecture, 9 pp., illus., printed in Japanese. Osaka Prefectural Government, Osaka, Japan. Outlines the 5-year construction plan for building an integrated port facility in Osaka Prefecture through reclamation of 1.1 square meters of sea area. Facility will provide 395,000 square meters of berthing space for vessels up to 15,000 tons. Construction began in 1963, to be completed in 1967, at total cost of 8 billion yen (US\$22 million).

-- Lorry Nakatsu

Tokai University Fisheries Research Laboratory Report, vol. 1, no. 1, December 1963, 54 pp., printed in Japanese. Tokai University Fisheries Research Laboratory, 45, Miyamaecho, Shizuoka, Shizuoka Prefecture, Japan. Includes, among others, articles on: "Studies on movement of albacore fishing grounds in the Northwestern Pacific Ocean. V--Migration of deep swimming albacore community in wintertime and good or poor fishing conditions of summer albacore in the Southeastern waters off Cape Nojima," by Motoo Inoue; "Studies on environments alluring skipjack and other tunas. I--On the oceanographical condition of Japan's adjacent waters and the drifting substances accompanied by skipjack and other tunas," by Motoo Inoue and others; "On the distribution of *Orcinus* (killer whale) in the northern and southern Pacific equatorial waters as observed from reports on *Orcinus* predation," by Mitsuo Iwashita and others; "Report on test use of improved troll gear," by Motoo Inoue and K. Yamashita; and "Marking experiments of tuna carried out by the Laboratory."

LOBSTERS:

"Offshore lobster fishery increases need for research, management plans," by Saul B. Sails, article, Maritimes, vol. 8, no. 4, Autumn 1964, pp. 1-4, illus., printed. Maritimes, Davis Hall, Kingston, R. I. The discovery about 10 years ago of an offshore lobster population between Georges Bank and Delaware Bay resulted in a rapidly expanding trawl fishery for offshore lobsters. This together with increased inshore lobstering has brought renewed concern for the future of the lobster fishery. The lobster is of interest not only to the gourmet and the fishery biologist but is a unique economic asset since its dock-side price of about 50 cents a pound makes it the highest in value per pound of all United States-Canadian fisheries. Current lobster research includes a cooperative study under way among various state governments and the Federal Government concerned with the Long Island Sound lobster fishery. Rhode Island is also taking its part in the new studies. One of the currently pressing problems confronting the fishery scientists and the lobster fishermen alike is whether the offshore and inshore populations are discrete and identifiable. Effective regulations and fishery management depend on determining the amount of stock and minimum size of lobster to be harvested which will allow a continuation of fishing year after year with a good yield. Of all the current lobster regulations in effect, the concept of a minimum size limit seems most promising.

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Zeitung, vol. 9, Sept, 1964, pp. 257-264, illus., printed in German. Berlin-Friedrichshagen, Muggelseedamm 310, Berlin, East Germany.

MARINE SOUNDS:

Frequency Analysis of Marine Sounds, " by T. Hashimoto and Y. Maniwa, 9 pp., illus., processed in English with French and Spanish summaries. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. Paper presented at the Second World Fishing Gear Congress, London, May 25-31, 1963.

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MOTHERSHIPS:

"Calculating the fishery in planning floating fishing bases (mothership) and plants," by V. S. Krasnyuk, article, Nauchno-Tekhnicheskii Sbornik, no. 3, 1963, pp. 42-54, printed in Russian. Klaipedskoe Otdelenie Gipropybflota, Vilnyus, U.S.S.R.

NETS:

"Influence of visibility of netting on catching efficiency of fishing gear," by V. N. Mel'nikov, article, Fischerei-Forschung, vol. 5, no. 6, 1962, pp. 17-21, printed in German. Institut fur Hochseefischerei und Fischverarbeitung, Rostock-Marienehe, Germany.

"Maximum depth allowing visibility of colored nets," by S. Yajima, G. Yoshimuta, and S. Mitsugi, article, Bulletin, Tokai Regional Fisheries Research Laboratory, no. 33, 1962, pp. 21-27, illus., printed in Japanese with English summary. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-ku, Tokyo, Japan.

"Visibility of nets and catching efficiency," by V. N. Mel'nikov, article, Trudy VNIRO, vol. 47, 1962, pp. 68-112, illus., printed in Russian. Four Continent Book Corp., 156 5th Ave., New York, N. Y. 10010.

NONUTILIZED SPECIES:

"*Micromesistius*, a nonutilized commercial fish," by V. K. Zilanov, article, Nauchno-Tekhnicheskii Byulleten' PINRO, no. 1 (19), 1962, pp. 44-45, printed in Russian. Polarnyi Nauchno-Issledovatel'skii Projektnyi Institut Morskogo Rybnogo Khozyaistva i Okeanografii im. N. M. Knipovicha, Murmansk, U.S.S.R.

NUTRITION:

The Better Use of the World's Fauna for Food, edited by J. D. Ovington, Symposia of the Institute of Biology No. 11, 186 pp., illus., printed, 1963. Hafner Publishing Company, 31 E. 10th St., New York, N. Y. 10003. Includes, among others, articles on: "Assessment of the world's protein needs and supplies," by Francis Aylward; "The giant African snail as source of food," by R. Orraca-Tetteh; "Sea fisheries in tropical areas," by F. D. Ommanney; "Improvement and trends of development in marine fishing

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methods and gear," by J. Scharfe; "Estimation of marine resources off the Atlantic Coast of South America," by I. D. Richardson; "Fish culture in freshwater and brackish ponds," by K. F. Vaas; "The culture of marine molluscs and crustacea," by P. R. Walne; "Some recent advances in the processing of fish," by D. L. Nicol; and "The possible farming of the seas," by Alister Hardy.

OCEANOGRAPHY:

Annual Report of the U. S. National Oceanographic Data Center, July 1961-June 1962, 1 vol., printed. National Oceanographic Data Center, Washington, D. C. 20390.

"Life in the ocean six miles down," by Torben Wolff, article, New Scientist, vol. 24, no. 414, October 22, 1964, pp. 241-244, illus., printed, single copy 1s. 6d. (about 20 U. S. cents). Cromwell House, Fulwood Pl., High Holborn, London WC1, England. Discusses the fauna found at the bottom of "trenches," depressions in the oceans' floor, at depths of about 30,000 feet. Colorless, totally blind, and often gigantic in size compared with their relatives from lesser depths, nearly 300 "hadal" animal species have now been dredged up from the deepest trenches in the ocean floor. The rapid development of techniques for deep-sea exploration, such as dredging, photography, and direct observation from bathyscaphs, can be expected to lead to great contributions in the coming years, revealing more of the secrets of life in the greatest ocean depths.

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OCEAN PERCH:

"Results of the quantitative estimates of the young of ocean perch in the Barents Sea, 1959-60 and 1960-61," by E. I. Surkova, no. 4, 1962, pp. 14-17.

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"Influence of the fishery on the structure of the populations of ocean perch (Sebastes marinus and S. mentella)," by V. P. Sorokin, article, Materialy

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A Brief Description of Peruvian Fisheries, by W. F. Doucet and H. Einarsson, 1964 CalCOFI Conference Contribution No. 1, 13 pp., illus., processed, 1964. Instituto del Mar del Peru, Callao, Peru.

PORTUGAL:

These articles are from Industria Conservera, printed in Spanish, vol. 30, no. 303, September 1964. Union de Fabricantes de Conservas de Galicia, Calle Marques de Valladares, 41, Vigo, Spain.

"La pesca Portuguesa de la sardina y del atun" (The Portuguese sardine and tuna fisheries), p. 243.

"Panorama estadístico de las industrias transformadoras de la pesca" (Statistical view of the processed fishery products industries), by Mareiro, pp. 233-234.

"Relatorio do Gremio dos Industriais de Conservas de Peixe do Norte" (Report of the Society of the Fishing Canning Industries of the North), article, Conservas de Peixe, vol. 19, no. 223, October 1964, pp. 15-17, 37, printed in Portuguese. Sociedade da Revista Conservas de Peixe, Lda., Regueirao dos Anjos, 68, Lisbon, Portugal.

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"Partition of protein and non-protein nitrogenous constituents in different parts of fish body," by M. Qudrat-i-Khuda and others, Scientific Researches, vol. 1, no. 3, July 1964, pp. 189-195, printed, single copy 65 cents. The East Regional Laboratories, P.C.S.I.R., Dacca, East Pakistan.

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A Collection of Data in Reference to Red Tide Outbreaks during 1963, 125 pp., illus., printed, May 1964. Florida State Board of Conservation, Marine Laboratory, St. Petersburg, Fla.

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"Duration of development of eggs of autumn chum salmon by incubation on frames and on the bottom"; "Tannin as a means of preventing disintegration of the egg membranes of the autumn chum salmon," by A. M. Kol'gaev, pp. 207-213.

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"Effect of the changes in the annual variations in water temperature on the incubation of the salmon eggs and survival of the fry," by M. G. Livshits and N. P. Nefedova, No. 1, 1963, pp. 40-43.

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"Biology of pink salmon acclimatized in the White and Barents Seas," by V. V. Azbelev, S. S. Surkov, and A. A. Yakovenko, nos. 2-3, 1962, pp. 37-38.

"Spawning migration of pink salmon in 1961," by V. V. Azbelev, no. 1 (19), 1962, pp. 16-18.

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JAPANESE PUFFER FISH

The Japanese puffer fish, Sphoerides rubripes, contains poisons 50 times as deadly as strychnine and 1,000 times as lethal as cyanide. Yet the fish is eaten throughout Japan as a culinary delight, "fugu." Only highly skilled and licensed Japanese cooks prepare "fugu" by removing the ovaries, roe, liver, and skin to remove the source of the fish's poison. But despite the efforts of the Japanese Government to control "fugu" preparation, many Japanese and foreign visitors alike join their departed ancestors each year because "fugu" was "out of this world" for them.

The fish's poisons--tetrodotoxin and tarichatoxin--are among the most deadly known. It is estimated that a teaspoon of pure toxin from the puffer fish would kill seven million mice on the spot. (Science News Letter, August 29, 1964.)



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U. S. COAST GUARD'S ALASKA PATROL

The U. S. Coast Guard on September 4, 1964, opened a new chapter in its 97-year operation of the famed Bering Sea Patrol by renaming it the Alaska Patrol. The former name was not sufficiently descriptive of the modern Patrol's many law enforcement and conservation tasks, Coast Guard officials said.



The 269-foot icebreaker Northwind from Seattle has been the most famous of the U.S. Coast Guard cutters involved in the multi-phased operations of the Bering Sea Patrol (now renamed the Alaska Patrol) during the past 20 years. To her has fallen the lot of performing the heavier jobs in Arctic ice in addition to other Patrol duties. With increased emphasis on oceanographic surveys, which are of great value to Alaskan fisheries, the icebreaker has devoted part of her annual summer Patrols since 1962 to that work. Here the Northwind is seen stabbing through the ice-jammed East Siberian Sea during an oceanographic mission which started from the northern tip of Pt. Barrow.

Over the years, the tempo and scope of the Patrol's work have increased steadily, reflecting Alaska's dramatic rise to Statehood. Its responsibilities now embrace a wide arc from the Canadian border on the south to the Beaufort and Chukchi Seas and Arctic Ocean on the north.

This action marks a new phase in the Coast Guard's long collaboration with Alaska which started in July 1867, shortly after the United States purchased it from Alexander II, Czar of all the Russias.

In its nearly a century of operation, the Patrol has become legend in the far northwest. In 1867, the Revenue Cutter Lincoln hauled anchor at San Francisco and headed for northern seas. Her mission was to carry out the first United States exploration of the waters and natural wealth of the newly acquired territory. When the Lincoln arrived, Alaska was largely uncharted wilderness. There was only one lighthouse and a few widely scattered Russian outposts.

(Continued on next page)

During the early years of the Patrol, the captains of the Revenue cutters and later the Coast Guard cutters were virtually the only law in the territory. As United States Commissioners, they heard evidence, conducted trials, and dispensed swift and effective Justice.

By the 1890's, the slaughter of Alaska's fur-bearing animals and fish had become so great as to be an international scandal. United States and foreign adventurers were looting the territory's immense natural resources. They had to be curbed quickly, if only to protect the natives in their fight for survival. Therefore, in 1895, the Revenue Cutter Service, direct ancestor of the Coast Guard, sent additional cutters north to form an official Bering Sea Patrol Force. This was, in effect, a strengthening of patrol operations which had begun 28 years before.

In the years which followed, treaties were negotiated with Russia, Japan, and Great Britain to regulate sealing and fishing in Alaskan waters. Chief enforcement agency for those international conventions was the Patrol. This remains one of its major functions.

Until this year, the Patrol brought medical and dental care to Eskimo natives of remote northern Alaska. For those isolated people, the yearly arrival of a Coast Guard cutter with its Public Health medical and dental personnel was an eagerly awaited event. This year, however, Public Health medical officers will be flown to native villages. Increasing efficiency of air travel in Alaska has made this a faster way to transact business.

Part of the 1964 Patrol was carried out by the Coast Guard cutter Northwind. Her mission was to conduct oceanographic studies of northern waters and perform law enforcement and conservation tasks. Marine studies were made at Alaska's northernmost tip at Point Barrow, and her crew took bottom soundings and made seismic surveys of the ocean floor. These latter studies may help to throw light on the conditions which produced so catastrophic an earthquake as the one in March 1964 along Alaska's southern coast.

Usually, the Patrol extends from April to November. In addition to the Northwind, a number of other major cutters also participate in the operation. They include the Klamath, Wachusett, Storis, and others. Most of the Patrol's work is in the area of the Aleutians and the Gulf of Alaska where a combined air-surface reconnaissance is carried out. Coast Guard vessels from Seattle, Juneau, and Ketchikan work closely with long-range planes based in Kodiak, Alaska. The Patrol's oceanographic studies are of great value to Alaska's fishing industry.



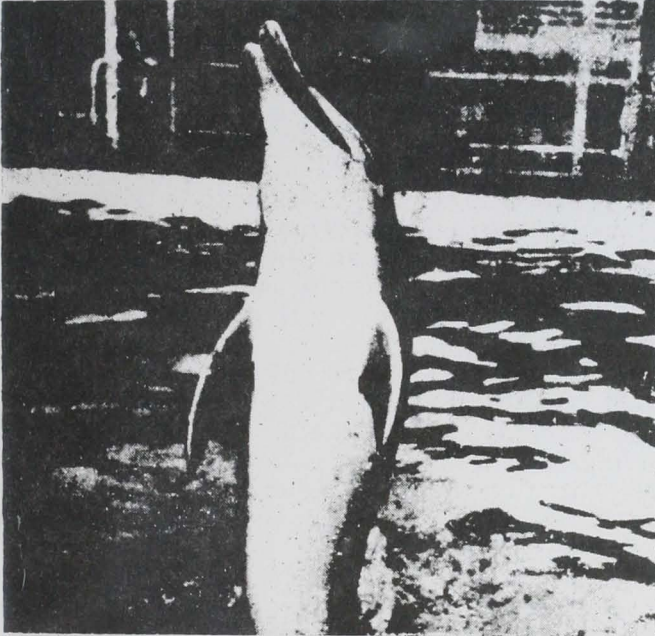
ALASKA A REAL BARGAIN

In 1962 alone, the money paid to fishermen and vessel owners for pink salmon caught in Central Alaskan waters exceeded the \$7.2 million paid to Russia in 1867 for all of Alaska. In value of total fish landed, California leads all states, followed by Alaska, Massachusetts, Florida, and Texas. These five states normally produce more than 50 percent of the total value of the U. S. catch.

DOLPHIN RATED TO BE ACCURATE FISH FINDERS

The general belief that the dolphin and its smaller counterpart, the porpoise, are friendly, intelligent, and harmless is not shared by some fishermen who blame them for destroying and damaging their nets, and chasing away schools of fish.

Marine scientists rate dolphin and porpoise as highly intelligent creatures. Tests have been made that seem to put the dolphin's intelligence on a par with man's. It is pointed out that dolphin learn more rapidly than man, and that they have a proportionately larger brain than man. And also that this brain is highly convoluted or full of wrinkles and folds; a quality which physiological psychologists say is related to intelligence.



A dolphin, which most Australians call a porpoise, leaps high to take food tossed to it in a marineland at Tweed Heads, on the N. S. W. -Queensland border.

ities. He theorizes that the dolphin generates his probing sound pulses deep inside his head and that the sound is led by a sort of cartilage wave guide to a dish-shaped bone in the upper part of the dolphin's head. The dish-shaped bone acts like a reflector and the fatty covering tissue called the melon acts like a lens for sound waves directing and focusing them in a sharp beam towards the target. The ears of a dolphin are widely separated and this binaural hearing greatly improves his directional sense. In this respect the dolphin has got it way over the average mechanical fish finder.

Another advantage the dolphin has is his variable rep rate. When he's near his target he sounds on it more rapidly and thus gets more precise information about it. There is some reason to believe that the fish-detecting machine of the dolphin is so perfected that its entire operation is automatic, that each returning echo triggers the next outgoing noise burst, and that the dolphin is virtually unaware of it happening--much as the iris of your eye adjusts itself to cope with different strengths of light.

It is surprising indeed how closely man has imitated the dolphin in his modern fish finders without realizing that the dolphin had beaten him by millions of years. (Australian Fisheries Newsletter, June 1964.)

Another thing that has been observed is that dolphin seem to talk to each other. Every fisherman knows how playful they are and how they are always surrounded by a number of their own kind. If you were to go skin diving among dolphin or porpoise you would hear a collection of odd squeals, burps, and clicks.

A scientist of the Woods Hole Oceanographic Institute has studied the voice of the porpoise as intensively as any man. He has made hundreds of recordings of dolphin sounds and analyzed them in many ways. One of his most interesting discoveries is the way a dolphin finds fish by sound waves. When a dolphin is fishing he sends out a series of clicks separated by a second or two. The instant the dolphin detects a fish his click rate increases and as he closes in on his victim, his rep rate speeds up in inverse proportion to the distance between himself and his prey. Just before the dolphin clamps his jaws on the fish his sonar signal reaches the pitch of a high buzz--almost a squeak.

According to the scientist, the dolphin's sonar has remarkably accurate directional qual-

U. S. BUREAU OF COMMERCIAL FISHERIES

ORGANIZATION OF NORTH ATLANTIC REGION



The Regional Structure: The Regional Office, located in Gloucester, Mass., exercises administrative supervision over a broadly diversified group of research and service activities. These programs are designed to secure fundamental information on the resource, improve the harvesting, processing, and use of fish and fishery products, and provide direct technical, economic, statistical, and marketing assistance to the industry. Individual research and service programs are carried out in 7 major laboratories, 12 major field offices, and 17 smaller field stations. Seven vessels are used in coastal and offshore research.

--Excerpt from "A Program of Fishery Research and Services North Atlantic Region (Region 3, Bureau of Commercial Fisheries, Gloucester, Mass.), Circular 164 (May 1963).