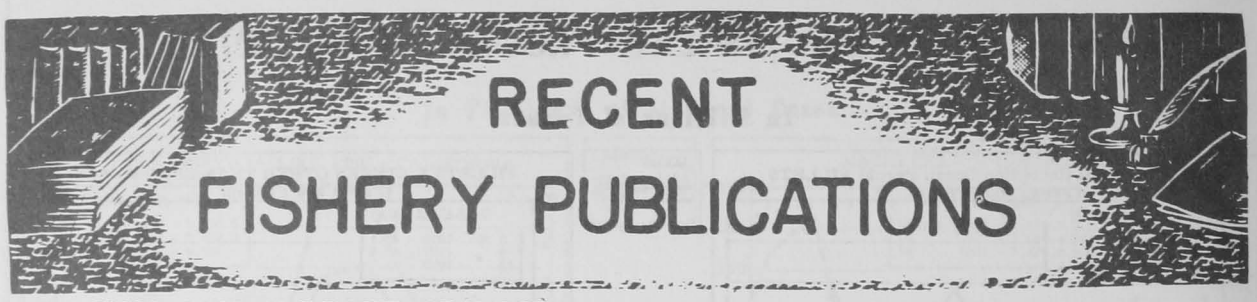

FISH AND WILDLIFE SERVICE

PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

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

Number — Title

CFS-1836 - Alaska Fisheries, 1957 Annual Summary (Revised), 8 pp.
CFS-1875 - Massachusetts Landings, June 1958, 5 pp.
CFS-1879 - Maine Landings, July 1958, 3 pp.
CFS-1880 - New Jersey Landings, July 1958, 3 pp.
CFS-1881 - New York Landings, July 1958, 4 pp.
CFS-1886 - Texas Landings, July 1958, 3 pp.
CFS-1888 - California Landings, May 1958, 4 pp.
CFS-1889 - Ohio Landings, August 1958, 2 pp.
CFS-1891 - South Carolina Landings, August 1958, 2 pp.
CFS-1892 - Alabama Landings, July 1958, 2 pp.
CFS-1893 - Georgia Landings, August 1958, 2 pp.
CFS-1894 - Mississippi Landings, July 1958, 2 pp.
CFS-1895 - North Carolina Landings, August 1958, 3 pp.
CFS-1896 - Fish Meal and Oil, August 1958, 2 pp.
CFS-1897 - Louisiana Landings, February 1958, 2 pp.
CFS-1899 - Louisiana Landings, March 1958, 2 pp.
CFS-1903 - Maine Landings, August 1958, 3 pp.
CFS-1904 - Florida Landings, August 1958, 7 pp.
CFS-1906 - New York Landings, August 1958, 4 pp.

Wholesale Dealers in Fishery Products (Revised):
SL- 7 - New Jersey, 1958.
SL-10 - Maryland, 1958.
SL-20 - Texas, 1957.
SL-26 - Illinois (Great Lakes Area), 1958.
SL-29 - Ohio (Great Lakes Area), 1958.
SL-30 - Pennsylvania (Great Lakes Area), 1958.
SL-31 - New York (Lakes Area), 1958.

FL-336LL - Commercial Fisheries Outlook, October-December 1958, 45 pp. processed. Covers the outlook at a glance; general business conditions; the food situation; general fishery situation; specific marketing situations as applied to salt-water fish, shellfish, fresh-water fish, and industrial products; and market terms.

FL-470 - Double-Rig Shrimp Trawling in the Gulf of Mexico, 12 pp., September 1958. A recent major development in the shrimp fisheries of the Gulf of Mexico and the South Atlantic Coast is the widespread conversion of conventional trawlers from single-trawl to two-trawl rigs. The immediate purpose of this leaflet is to provide owners of conventionally-rigged shrimp trawlers with basic information required for conversion to double-rig trawling. Although this method of shrimping has reached a successful stage in its development, it is still evolving, and improvements are frequently made by members of the shrimp industry.

SSR-Fish. No. 259 - Age, Length, and Body Weight of Salmon Caught by Japanese High Seas Fleets in North Pacific, by George Tanonaka, 14 pp., illus., February 1957. Data on the age composition of red salmon caught by the Japanese high-seas salmon fleets indicates the dominance of 2-year-in-ocean reds in the even years and 3-year-in-ocean reds in the odd years. In 1956 the majority of the chum salmon were 5 years old and mostly mature. The pink salmon available to the fishery were all mature fish.

SSR-Fish. No. 265 - Physical Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States (M/V Theodore N. Gill), Cruise 6, by William W. Anderson and Jack W. Gehringer, 103 pp., illus., July 1958.

Sep. No. 528 - An Economic Analysis of Freezing Fish at Sea.

Sep. No. 529 - Contribution to the Chemistry of the King Crab (Paralithodes camtschatica).

Sep. No. 530 - Research in Service Laboratories (November 1958): Contains these articles--"Fish Spoilage - I - Determination of Bacterial Metabolites by Gas Chromatography;" "Technical Note No. 47 - Steelhead Trout - Description and Proximate Composition;" "Possible New Use for Oyster Liquors;" and "Clue to Causes of Odor in Fish Oil."

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

Gulf Monthly Landings, Production, and Shipments of Fishery Products, September 1958, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans

French Market; and sponge sales at Tarpon Springs, Fla; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, August 1958; September 1958; 12 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces for fresh-water fish, salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the months indicated.

(New York) Monthly Summary - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, September 1958, 14 pp. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N. Y.) Receipts in the salt-water section of the Fulton Fish Market by species and by states and by states and provinces; for the month indicated.

(Seattle) Monthly Summary - Fishery Products, September 1958, 8 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle, Astoria (Oregon), Alaska, and British Columbia wholesale dealers; also Northwest Pacific halibut, shrimp, and salmon landings; for the month indicated.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Analysis of Catch Statistics of the Hawaiian Skipjack Fishery, by Daniel T. Yamashita, Fishery Bulletin 134 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 58), 28 pp., illus., printed, 25 cents, 1958. The catch statistics of the Hawaiian skipjack fishery and its associated live-bait fishery for the period 1900 through 1953 are brought together from all available records. The various facts of the live-bait fishery, the only important one in the central Pacific, the methods of data collection for the skipjack and live-bait fisheries, and the completeness and accuracy of the catch records are analyzed. A description of the 1953 fishing fleet and the essential specifications of the sampans in the Territory of Hawaii, information which may be useful in evaluating future changes in catch per unit of effort, are presented.

Relative Value of Ten Genera of Micro-Organisms as Foods for Oyster and Clam Larvae, by Harry C. Davis and Robert R. Guillard, Fishery Bulletin 136 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 58), 16 pp., illus., printed, 15 cents, 1958. A report of the results of some feeding experiments designed to determine the relative food value to larvae of oysters and clams of representatives from ten genera of micro-organisms, and of one experiment designed to test the effect on larval growth of five different concentrations of the two micro-organisms that proved to be of most value as foods. Findings show that the presence, or perhaps thickness, of cell walls and the degree of toxicity of the metabolites are probably important factors in determining the usability of micro-organisms as foods for bivalve larvae.

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.

BAIT FISH:

A Study of the Age, Growth, Sexual Maturity, and Spawning of the Anchoveta (CETENGRAULIS MYSTICETUS) in the Gulf of Panama, by Gerald V. Howard and Antonio Landa, 79 pp., illus., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. II, no. 9, pp. 391-467.) Inter-American Tropical Tuna Commission, La Jolla, Calif., 1958. More than 27,000 fish from 231 collections captured in the Gulf of Panama between June 1951 and January 1956 are the basis of this study of the age, growth, sexual maturity, and spawning season of anchovetas in that area. The collections came from three sources, those made by California-based tuna fishing vessels, collections by personnel at the Commission's laboratory in Panama, and samples obtained from a biologist of the Food and Agriculture Organization of the United Nations. Estimates of age and rate of growth were made by studying the temporal progression of modal-size groups from monthly length-frequency distributions. A section of this report discusses the methods for making age and growth estimates, analysis of length-frequency data, and relative abundance of age groups. Sexual development and time of spawning were determined from gross examination of ovaries and measurements of ovarian eggs. A section on the sexual maturity and spawning discusses methods for making estimates, time and frequency of spawning, frequency of spawning within a season, age at first maturity, age in relation to time of annual spawning, consideration of a "gonad index" to sexual maturity, and application of the gonad index.

CALIFORNIA:

Age and Length Composition, Pacific Coast Catches Sardines and Pacific Mackerel, 1955-56 and 1956-57 Seasons, and the Northern Anchovy, 1954-55 Through 1956-57 Seasons, Fish Bulletin No. 106, 72 pp., illus., printed. Department of Fish and Game, Sacramento, Calif., 1958. The age and length composition of the catches of three of the more important pelagic marine fishes of California are included in this bulletin. The data are presented in four separate papers.

CANADA:

Progress Reports of the Pacific Coast Stations, no. 111, 28 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada, August 1958. Contains, among others, the following articles: "The Magnitude of Herring Spawn Losses Due to Bird Predation on the West Coast of Vancouver Island," by D. N. Outram; "The Tagging of Spring and Coho Salmon in the Strait of Georgia in 1956," by D. J. Milne and E. A. R. Ball; "Adult Returns of Pink Salmon from the 1954 Fraser River Planting," by W. Percy Wickett; "The Recent Rise in Landings of Whole Fish for Mink Feed in British

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Columbia," by C. R. Forrester; and "A Comparison of the Nutritive Value of Condensed Herring Solubles Prepared by Acid and Enzyme Treatments," by B. E. March, Jacob Biely, J. McBride, R. A. MacLeod, and D. R. Idler.

CANNING:

"A Bacteriological and Chemical Study of Certain Problems in Lobster Canning," by Guilford B. Reed and D. J. MacLeod, article, Contributions to Canadian Biology, vol. 2, no. 1, 1924, pp. 3-29, printed. University of Toronto Press, Toronto, Ontario, Canada.

COD:

"Lipid Changes in Iced Cod. 1--Phospholipids," by J. A. Lovern, June Olley, and Helen A. Watson, article, The Biochemical Journal, vol. 70, no. 1, September 1958, pp. 2p-3p, printed. Cambridge University Press, Bentley House, 200 Euston Road, London N. W. 1, England. A report of research in which gutted cod were stored in ice for up to 56 days, samples withdrawn periodically, the flesh lipids extracted and fractionated chromatographically on silicic acid. Results showed that enzymic degradation appeared to occur at the same rate in all the various phospholipids present and to affect both fatty acid ester linkages.

"Lipid Changes in Iced Cod. 2--Non-Phosphorylated Lipids," by J. A. Lovern and June Olley, article, The Biochemical Journal, vol. 70, no. 1, September 1958, p. 3p, printed. Cambridge University Press, Bentley House, 200 Euston Road, London N. W. 1, England. In experiments carried on at Torry Research Station, Aberdeen, Scotland, free sterol decreased throughout the storage period, reaching about one-twelfth of its initial value after 56 days.

Studies on the Proteins of Fish Skeletal Muscle. 5--Molecular Weight and Shape of Cod Fibrallar Proteins, by J. J. Connell, article, The Biochemical Journal, vol. 70, no. 1, September 1958, pp. 81-91, illus., printed. Cambridge University Press, Bentley House, 200 Euston Road, London, N. W. 1, England. The size and shape of the cod fibrillar proteins are very similar to those of the rabbit proteins. The unusual properties of the fish proteins cannot be explained therefore on this basis, states the author in conclusion.

CONSUMPTION:

"Fishing for Consumers," by J. Fridthjof, article, United Nations Review, vol. 5, no. 1, July 1958, pp. 42-44, printed. United Nations, New York, N. Y. An expert tells how he made seafood popular in South America and Yugoslavia.

COOPERATIVES:

Cooperatives as a Means of Fostering Fishery Development, FAO Fisheries Paper No. 9, 6 pp., processed. Fisheries Division, Food and Agriculture Organization of the United Nations, Rome, Italy, June 1958. Extracts from the agenda and report of the Third FAO Regional Conference for Asia and the Far East, Bandung, October 8-19, 1956. Emphasis is placed on the current programs, the middleman problem, education and training, and recommendations to the Conference. The Conference discussed the value of cooperative organizations in fisheries, an investigation of the functions performed by middlemen and cooperatives respectively and their influence on fish production and trade; and a training center in fisheries cooperatives and administration to be conducted in 1957 under FAO's Expanded Technical Assistance Program. The training center was subsequently held in Australia, December 1957-January 1958.

DISEASES OF FISH:

Diseases of Fishes of the Western North Atlantic. VI--Geographic Discontinuity of Myxosporidiosis in Immature Herring from the Gulf of Maine, by Carl J. Sindermann, Research Bulletin No. 29, 20 pp., illus., printed. Department of Sea and Shore Fisheries, Augusta, Me., December 1957. This paper is one of several reports resulting from the herring investigation carried on jointly by the U. S. Fish and Wildlife Service, the Maine Department of Sea and Shore Fisheries, and the Maine Sardine Industry. Myxosporidiosis (gross symptoms are opaque white fusiform intramuscular cysts) of immature sea herring is distributed discontinuously along the Maine coast, with abundant infections in Casco Bay and southward. The geographic distribution of this infection suggests absence of large-scale movements of sardine herring along the Maine coast, and a separation of such immature fish from eastern and western Maine, at least during the latter part of the first and much of the second years of life, concludes the author.

FATTY ACIDS:

"Studies on the Conjugated Fatty Acids. Part III--Fat Absorption and Distribution Study in Fish--1. Application of the Conjugated Fatty Acids for the Research on the Fat Metabolism of the Carp, Cyprinus Carpio Linne," by Yasuhiko Tsuchiya and Mitsu Kayama, article, The Tohoku Journal of Agricultural Research, vol. IX, no. 1, March 1958, pp. 41-52, illus., printed. Faculty of Agriculture, Tohoku University, Sendai, Japan.

FISH COOKERY:

"Smoke Barrel Cookery," article, Institutions, no. 42, June 1958, pp. 41-43, printed. Domestic Engineering Company, 1801 Prairie Avenue, Chicago 16, Ill. According to the author, construction of a barrel for smoke-cooking fish is quite simple, requiring only a minimum of work and can be quickly done by the operator wishing to serve such a luncheon. The principal component is a 40-gallon charred oak barrel or similar container. Any non-resinous hard wood can be used to produce the smoke. Although salmon is often prepared in this way, the picturesque "smoke barrel" method can be used for many other varieties of fish including cod, whitefish, haddock, halibut, and lake trout.

FISHERY RESEARCH:

"Fishery Research," by Arthur D. Bradford, article, Pennsylvania Angler, vol. 27, no. 10, October 1958, pp. 2-6, illus., printed, single copy

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10 cents. Pennsylvania Fish Commission, Harrisburg, Pa. Includes definitions of fishery research and discusses fish management research, fish cultural research, and general research projects conducted by the Pennsylvania Fish Commission. The author discloses the fact that last year, in this country, about $10 billion were spent on research of all types and during this period, the combined outlays by all the states and the federal government for all types of fishery research amounted to less than $6 million annually.

FOOD AND AGRICULTURE ORGANIZATION:

2nd World Fishing Boat Congress, 16 pp., April 5-10, 1959, Rome. Prospectus. Food and Agriculture Organization of the United Nations, Rome, Italy. (Note: The source for obtaining this publication, shown in Commercial Fisheries Review, September 1958, p. 127, was incorrect.) A. W. Anderson, Assistant Director, U. S. Bureau of Commercial Fisheries, Washington 25, D. C., has been appointed by the Government of the United States to be the official liaison officer with the Food and Agriculture Organization for the forthcoming second World Fishing Boat Congress, which will be held at FAO headquarters, April 5-10, 1959. U.S. Naval architects, boat builders, marine engineers, and others wishing to attend the Congress should apply to A. W. Anderson for details.

Current Bibliography for Fisheries Science, 102 pp., processed. Food and Agriculture Organization of the United Nations, Rome, Italy, September 1958. Contains a taxonomic index, a geographic index, and a references and author index.

Fishery Programs in Relation to Agricultural and Economic Planning, prepared by the FAO Secretariat, FAO Fisheries Paper No. 10, 10 pp., processed. Fisheries Division, Food and Agriculture Organization of the United Nations, Rome, Italy, June 1958. Report of the Third Meeting of the Working Party of the Economic Commission for Asia and the Far East on economic development and planning. Covers special considerations influencing fishery development planning and includes sections on nutritional aspects and demand, opportunities for development, relationship between fisheries and general economic development, social and institutional factors, and investment. The general heightening of economic activity, including the spread of industrialization accompanied by urbanization and higher per capita incomes is expected to increase the demand for fish products while providing more facilities for their distribution.

Indo-Pacific Fisheries Council Proceedings, 6th Session, Tokyo, Japan, 30th September-14th October, 1955, Section I (188 pp.), Sections II and III (274 pp.), illus., printed. Indo-Pacific Fisheries Council Secretariat, Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Far East, Bangkok, Thailand, 1957. Section I describes the business covered at the meetings and the work of the Committees. Section II covers in detail the technical papers presented. Section III presents a report on the Symposium on Prawn Fishery held during the 6th Session of the Council.

Role of Government in Fisheries Development, FAO Fisheries Paper No. 11, 8 pp., processed. Fisheries Division, Food and Agriculture Organization of the United Nations, Rome, Italy, July 1958. Extracts from the agenda and report of the Third Regional Conference for Asia and the Far East, Bandung, October 8-19, 1956. Contains sections on fishery policies and programs, government fishery services, and coordination of government services.

World Fisheries: General Trends and Outlook with Examples from Selected Countries, FAO Fisheries Paper No. 12, 29 pp., printed. Reprint from The State of Food and Agriculture - 1956, Chapter IV. Fisheries Division, July 1958. Food and Agriculture Organization of the United Nations, Rome, Italy. Describes in detail the characteristics of world fish production and trade, Government policies in relation to the fishery industries, typical cases of fishery development under different economic influences, and current development programs and outlook. Widespread radical changes are not expected to occur in underdeveloped fisheries in the near future, but this may be explained by the fact that fishery policies are still far from being coordinated with general economic and food policies, that the available public services are weak and inadequately staffed by comparison with agriculture, and that these are often more limiting factors than the intrinsic technical difficulties of introducing improvements.

GHANA:

Annual Report of the Fisheries Department, 1957, 22 pp., illus., printed, 2s.6d. (35 U. S. cents). Government Printing Department (Publications Branch), Accra, Ghana, 1958. A report of Ghana's Fisheries Department on its activities during 1957 in the sea and river fisheries. Throughout the year the Department's chief responsibility was to extend and establish the operations of the motor fishing fleet. Statistical tables and graphs include data on trawl catches by species of fish and shellfish and by months.

INTERNATIONAL COMMISSIONS:

(International North Pacific Fisheries Commission) Annual Report for the Year 1957, 96 pp., illus., printed. University of British Columbia, Vancouver 8, B. C., Canada, 1958. The Commission was established by Convention between Canada, Japan, and the United States for the conservation of the fisheries resources of the North Pacific Ocean, on June 12, 1953. This report presents a summary of action taken by the Commission at its 1957 annual meeting, which was held in Vancouver, B. C., Canada, from November 4-8, 1957, a summary of administrative activities for the year, and progress reports on research conducted by the member governments under the Commission's program. Research in 1957 was focused on the mid-ocean area where previous studies showed that inter-

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mingling of salmon from the two continents would be most likely to occur. The investigations have disclosed that salmon are more or less continuously distributed across the ocean from Asiatic to North American shores. An extensive zone of intermingling of stocks from the two continents was found in the central North Pacific. Not all stocks from the two continents, however, have been found in the area of intermingling. Future investigations will be intensified and concentrated on the objective of defining the extent, nature, and variability of the intermingling of the continental stocks of salmon. Investigations of the king crab (Paralithodes camtschatica) of the Eastern Bering Sea are being conducted for the Commission by agencies of the United States and Japan, under the provisions of Article III(1) (c)(i) of the Convention. Studies of population size, growth rates, and the effects of ocean currents on the distribution of larvae are progressing.

INTERNATIONAL CONFERENCES:

Participation of the United States Government in International Conferences, July 1, 1956-June 30, 1957. Department of State Publication 6670, 226 pp., printed, 60 cents. Office of International Conferences, Department of State, Washington, D. C., 1958. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Describes, among others, the following conferences: Indo-Pacific Fisheries Council; Seventh Session (May 13-27, 1957), Bandung; International Council for the Exploration of the Sea (ICES), Forty-fourth Council Meeting and Special Symposium on the Composition of Herring Stocks (Sept. 25-Oct. 9, 1956), Copenhagen; and International Whaling Commission, Eighth Meeting (July 16-20, 1956) and Ninth Meeting (June 24-28, 1957), London.

ISRAEL:

Fishermen's Bulletin, no. 16, June 1958, 37 pp., illus., printed in Hebrew. Ministry of Agriculture, Division of Fisheries, P. O. Box 699, Haifa, Israel. Contains, among others, the following articles: "Around the Fisheries of Israel," by M. Shavit; "The Israel Trawl Fishery in 1957," with summary in English, by E. Gottlieb and S. Lipstadt; "Fishing Methods Prior to the Use of Nets," by M. Nun; "Sardine Fishery During May 1958," by Y. Ariav; and "Freezing and Export of Ink Fish," by S. Siskin.

MARINE SCIENCE:

Las Investigaciones Maritimas (Maritime Investigations), publication 1, 16 pp., illus., printed in Spanish. Universidad Catolica de Santo Tomas de Villanueva, Apartado No. 6, Marianao, Havana, Cuba, Feb. 1958.

MULLET:

Growth of the Black Mullet (MUGIL CEPHALUS L.), in West and Northwest Florida, by Gordon C. Broadhead, Technical Series No. 25, 31 pp., illus., printed. State Board of Conservation, Tallahassee, Fla., June 1958. The Marine Laboratory of the University of Miami, at the request of the Florida State Board of Conservation, has been engaged in a study of the Florida mullet fishery since 1948. In 1948 the industry felt that the stocks of mullet were declining because of a lack of proper management in the fishery. Complaints on overfishing, taking small fish, and on the capture of spawning individuals were voiced from the industry. The Board of Conservation provided the funds for an evaluation of the biological and economic status of the fishery. The mullet fishery is the most valuable of the fin fisheries of Florida. Work on the fishery covered the years 1948-1954. This report covers the methods of sampling, growth of tagged mullet, study of mullet scales, relationship of scale radius to fish length, validity of the scale method for age determination of black mullet, and growth rates of black mullet.

NORWAY:

"Fisket ved Vest-Gronland og Newfoundland 1957 " (Fishery off West Greenland and Newfoundland 1957), article, Fiskets Gang, vol. 18, no. 38, September 1958, pp. 487-496, illus., printed in Norwegian with English summary. Fiskets Gang, Postgiro nr. 691, 81, Bergen, Norway. In 1957, 53 Norwegian vessels fished for cod and halibut off West Greenland and Newfoundland. Of these, 2 were trawlers while of the other 51 long-line vessels, 5 were fishing mainly for halibut. The landings amounted to 12,023.7 metric tons of salted cod, 771.7 tons of frozen halibut, 33.9 tons of other fish, and 450.0 tons of cod-liver oil. The value to the fishermen of fish and byproducts totaled 21.7 million kroner (US$3.04 million). Some 20-23 vessels worked the Newfoundland banks during 1957. It is estimated that the Newfoundland area accounted for 5,390 tons of the landings of salted cod and 363 tons of the landings of frozen halibut. The trawlers operated off Greenland during the whole season.

Norwegian Fishing News, vol. 5, no. 2, 1958, 27 pp., illus., printed. Norwegian Fishing News, Ltd., Bergen, Norway. Contains, among others, the following articles: "Chemistry as a Source of New Developments Within the Fishing Industry;" "The Freezing in Alginate Jelly;" and "The Development of Echo-Sounding and Echo-Ranging," by Cmdr. R. G. Haines.

Oversikt over den Norske Fiskeristatistikken (Review of Norwegian Fisheries Statistics), by Knut Friis, Fiskeridirektoratets Smaskrifter No. 3, 11 pp., printed in Norwegian. (Reprinted from Fiskets Gang, no. 29, 1958.) Director of Fisheries, Bergen, Norway, 1958.

PARASITES:

LERNAEOCERA OBTUSA N. SP. Its Biology and its Effects on the Haddock, by Z. Kabata, Marine Research no. 3, 1958, 26 pp., illus., printed, price 8s. (US$1.12). Her Majesty's Stationery Office, 13A Castle Street, Edinburgh 2, Scotland. The first part of this report deals with the biology of Lernaeocera obtusa. The life history of this copepod parasite of haddock is discussed. By an examination of the relative abundance of various developmental phases throughout the year and by the age composition of the parasite population on the final host, its life span is estimated at about $1\frac{1}{2}$ years. Reproductive activity

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and sexual behavior of larvae have been observed by examining larval populations on the intermediate host, the lemon sole. The period spent by the larvae on this fish has been estimated at about six weeks. The distribution of the parasite is discussed and its dependence on the distribution and abundance of the hosts considered. The relationship between the abundance of lemon sole and the degree of infestation of haddock is demonstrated. The rate of infestation increases with the size of the haddock. The parasite attaches itself mainly in the postero-lateral corner of the gills and from there penetrates the wall of a major blood vessel, from which, intermittently, it extracts blood, its sole food. The second part of the report is concerned with the effects of the parasite on the haddock. These effects consist of secondary anemia with associated phenomena, loss of weight, and loss of liver fat. All three factors undergo increase initially, but then show marked decreases. The increase is probably caused by an overshooting of a compensatory reaction. No retardation of growth is observed. The possibility of a retardation of sexual development is suggested, but cannot be regarded as proved.

POISONOUS FISH:

"Peces Venenosos" (Poisonous Fish), by Dr. Bruce W. Healstead, article, Mar y Pesca (Sea and Fishing), vol. II, no. 3, August 1958, pp. 5-13, illus., printed in Spanish. Instituto Nacional de la Pesca, Malecon 59, Havana, Cuba.

PRESERVATION:

"Some Recent Experiments on Preservation of Fish with Tetracycline Antibiotics," by B. A. Southcott, R. Moyer, E. G. Baker, and H. L. A. Tarr, article, Fisheries Research Board of Canada, Progress Reports of the Pacific Coast Stations, no. 110, April 1958, pp. 16-18, printed. Fisheries Research Board of Canada, Ottawa, Canada.

PROTEINS:

"Fish Proteins--Nutritive Value," by K. S. Ambe and K. Sohonie, article, Indian Journal of Fisheries, vol. 4, no. 1, April 1957, p. 113, printed. Editorial Committee, Central Marine Fisheries Research Station, Mandapam Camp, South India.

"Fish Proteins--Nutritive Value," by S. Konosu, S. Katori, R. Ota, S. Eguchi, and T. Mori, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 21, no. 11, p. 1163, printed in Japanese with English summary. Japanese Society of Scientific Fisheries, Tokyo, Japan, 1956.

SHARKS:

Hakjerringa og hakjerring fisket (Nurse Shark and Nurse Shark Fishery), by Levy Carlson, Fiskeridirectoratets Skrifter, Serie Fiskeri, vol. IV, no. 1, 36 pp., illus., printed in Norwegian. The Director of Fisheries, Bergen, Norway, 1958.

SHRIMP:

Estado Actual de la Pesca del Camaron en Cuba (The Present Situation of the Cuban Shrimp Fishery), by Dr. Jose A. Suarez Caabro, monograph 5, 15 pp., processed in Spanish with English summary. Universidad Catolica de Santo Tomas de Villanueva, Apartado No. 6, Marianao, Havana, Cuba, June 1958.

SPAIN:

Investigacion Pesquera (Fishery Investigation), vol. XI, January 1958, 138 pp., illus., printed in Spanish. Instituto de Investigaciones Pesqueras, Universidad de Barcelona, Barcelona, Spain. Contains, among others, the following articles: "Cefalopodos de Cataluna" (Cephaalopods of Catalonia), by E. Morales; "Variacion Estacional de la Composicion Quimica del Mejillon (Mytilus edulis). II. Hidratos de Carbono" (Seasonal Variation in the Chemical Composition of the Mussel, Mytilus edulis, II. Hydrocarbons), by F. Fraga; "Datos Climaticos del Puerto de Castellon y Termicos de las Aguas Costeras Superficiales en Relaciones con la Pesca, en 1956" (Climatic Data of the Port of Castellon and Thermals of the Shallow Coastal Waters in Relation to the Fish, 1956), by Juan Herrera; and "Componente Vertioal de los Movimientos del Agua en la Ria de Vigo y su Posible Relacion con la Entrada de Sardina" (Vertical Component of the Tides in the Estuary of Vigo and its Possible Relation to the Entrance of Sardine), by R. Margalef and B. Andreu.

SPORT FISH:

"The Sport Fisheries of Great South Bay," by Irwin M. Alperin, article, The New York State Conservationist, vol. 13, no. 1, August-September 1958, pp. 10-12, illus., printed, single copy 50 cents. New York State Conservation Dept., State Campus, Albany, N. Y. For more than two years now biologists of the Fish Research Unit at the New York State Conservation Department's Marine District Office, Freeport, Long Island, have pried into the affairs of the fish and the fishermen of Great South Bay. Along with the biological studies, statistical data of the sport fisheries, with particular attention to fluke (also known as summer flounder or even fillet of sole at your favorite restaurant), have been collected and analyzed to keep abreast of the present utilization of finfish resources in the study area. From late spring to early fall 1957 an estimated 276,500 anglers tried their luck on Great South Bay and of these 213,348 were fishing, at least part time, for fluke.

TIDAL CURRENTS:

Tidal Current Tables, 1959 (Pacific Coast of North America and Asia), 238 pp., illus., processed, 50 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C. Among the tables included in this volume is one giving the predicted times of slack water (no current) and the predicted times and velocities of strength of current for each day of the year at 30 reference stations on the Pacific Coast of North America and Asia. This information can also be obtained for more than 2,100 other places through the use of a table of current differences and other constants which is also included.

Also contains a table for obtaining the velocity of the current at any intermediate time, a

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

table giving the duration of slack, and a table of astronomical data for 1959. Coastal tidal currents, wind-driven currents, and the combination of currents are also discussed in the publication.

Aside from their obvious use as an aid to marine navigation, the Tidal Current Tables are indispensable to the engineer engaged in the maintenance and improvement of channels and harbors, in marine construction and improvement of beaches, and in the problem of sewage disposal.

Current tables for the Pacific coast first appeared in 1898 as a part of the tide tables. They then consisted of brief directions for obtaining the times of slack water for a few locations from the times of high and low water. In the following year daily predictions of slack water for two stations were given, and by 1923 the tables had so expanded that they were then issued as a separate publication. This year the tables are continued under a format that was adopted for the 1958 tables after an extensive survey among maritime users.

Although tidal currents at all places are affected by the moon, the declinational effect (north and south of the equator) is so pronounced at two particular stations--Unimak Pass, Aleutian Islands, and San Bernardino Strait, Philippine Islands--that separate pages are allotted for an explanation of predictions at these stations.

TIDES:

Tide Tables--Central and Western Pacific Ocean and Indian Ocean, 1959, 377 pp., printed, 75 cents. U. S. Department of Commerce, Coast and Geodetic Survey, Washington 25, D. C. This volume contains the daily predictions of times and heights of high and low waters, listed in the same column in chronological order, for 72 reference stations. The tidal differences and other constants, by means of which predictions can be obtained for about 1,500 other places listed in the tables, are also given. Predicted heights are determined from the data of soundings on the largest scale chart of the locality. To find the actual depth of water at any time, the height of the tide should be added to the charted depth. If the predicted height is negative it should be subtracted. This publication contains a table for obtaining the height of tide at any time, and other auxiliary tables that are useful to the navigator. It is one of four tide tables which include the entire maritime world. Together they contain daily predictions for 188 reference ports and differences and other constants for about 5,000 stations. Most of the predictions listed in this edition were furnished by cooperative hydrographic and geodetic agencies in Japan, England, India, France, Thailand, and the Philippine Islands.

TUNA:

Inter-American Tropical Tuna Commission Annual Report for the Year 1957, 134 pp., illus., printed in Spanish and English. Inter-American Tropical Tuna Commission, Scripps Institution of Oceanography, La Jolla, Calif. Contains the annual report of the Commission and a report of the Director on investigations during the year 1957. The annual report discussed the program and progress of investigations, and publication of research results. The Director's report discusses the compilation of current statistics of total catch, amount and success of fishing, and abundance of the fish population; current status of the tuna populations; potential fishing power of the fishing fleet; other studies of tuna catch statistics; research on tuna population structure and migrations; other aspects of tuna life history and behavior; investigations of physical, chemical, and biological oceanography and tuna ecology; and investigations of the biology, ecology, and life history of bait fishes.

TURKEY:

La Peche aux Crevettes en Turquie (Shrimp Fishing off the Turkish Coasts), by Dogan Iyigungor, 6 pp., illus., printed in French with brief summary in English. (Reprinted from FAO Debats et Documents Techniques, No. 4, pp. 63-68) Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, 1957. The author states that "Turkey has important shrimp resources. Shrimp fishing is still little developed. It has little importance for the economy of the country. Gear used are shrimp pots and baskets. Near Iskenderun, shrimp are caught by means of trawls. It would be necessary to use the efficient fishing methods and gear employed in other countries to develop shrimp fishing in Turkey and in the Mediterranean region."

UNITED KINGDOM:

Sea Fisheries Statistical Tables, 1957, 36 pp. (mostly tables), printed, 4s. (56 U. S. cents). Ministry of Agriculture, Fisheries, and Food, London, England. (Available from Her Majesty's Stationery Office, London, England.) Includes statistics on the quantity, total value, and average value of fish and shellfish production in England and Wales by species, region, and other categories for 1957. Breakdowns by first-class British vessels (steam trawlers), demersal landings, and pelagic landings are presented. Data on imports and exports are included. Also given are the number of fishermen, number and gross tonnage of vessels, and number of first-class vessels by stations and type of gear.

WHALES:

"Frozen Whale Meat," by T. Tanaka and K. Tanaka, article, Refrigeration (Japan), vol. 32, no. 351, 1956, p. 6, printed. Japanese Society of Refrigeration, No. 3, 1-Chome, Ginza Nishi, Chuo-ku, Tokyo, Japan. According to the authors, to obtain frozen whale meat of biochemically superior quality which not only exudes a small amount of drip but also has a good taste on thawing, freezing the meat is recommended at its early stage of postrigor or at its prerigor state and removing the contractability by keeping it in a room at moderate temperatures (-2° C. to -3° C. or 28.4° F to 26.6° F.) for a short period (5 to 10 days) just before defrosting.