



Recent publications of interest to the commercial fishing industry are listed below.

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

Number	Title
CFS-811	- Alaska Fisheries, 1951, Annual Summary, 6 p.
CFS-812	- Manufactured Fishery Products, 1950, Annual Summary, 6 p.
CFS-818	- Florida Landings, September 1952, 6 p.
CFS-819	- Mississippi Landings, September 1952, 2 p.
CFS-823	- Frozen Fish Report, December 1952, 8 p.
CFS-824	- Mississippi Landings, October 1952, 2 p.
CFS-825	- Florida Landings, October 1952, 6 p.
CFS-826	- Maine Landings, October 1952, 4 p.
CFS-827	- Texas Landings, November 1952, 4 p.
CFS-828	- Fish Meal and Oil, November 1952, 2 p.
CFS-829	- Massachusetts Landings, October 1952, 7 p.
FL -160	- Partial List of Fishery Periodicals (Revised), 9 p.
FL -162	- Aquatic Biology and Oceanography--A Selected List of Books, 12 p.
FL -3360-	Quarterly Outlook for Marketing Fishery Products, January-March 1953, 36 p.
SL -107	- Firms Canning Fish and Shellfish Specialties, 1951 (Revised), 5 p.

Number	Title
SSR-Fish. No. 76	- Migrations and Habitat of the Tuna (<i>Thunnus thynnus</i> L.), Studied by the Method of the Hooks, with Observations on Growth, on the Operation of the Fisheries, etc., by Professor M. Sella (Translated by Wilvan G. Van Campen), 22 p., illus., July 1952.
SSR-Fish. No. 89	- <u>Offshore Fishing in Bristol Bay and Bearing Sea</u> , by Joseph T. Barnaby, 32 p., illus., processed, October 1952. Deals with the life history of the salmon, the salmon fishery as carried on by United States nationals, the regulations imposed on the fisheries of Alaska by the United States Government, and the results of the experimental offshore fishing carried on by the U. S. Fish and Wildlife Service during the years 1939, 1940, and 1941.
Sep. 336	- Sea-Food Products in Armed Forces Rations.
Sep. 337	- A Report on the Cuban Tuna Fishery.

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Factors Influencing the Orientation of Migrating Anadromous Fishes, by Gerald B. Collins, Fishery Bulletin 73 (From Fishery Bulletin of the Fish and Wildlife Service, Volume 52), 25 p., illus., printed, 20 cents, 1952. The influence of certain physical and chemical characteristics of water upon the orientation of one type of anadromous fish was examined by presenting the migrating fish with a choice between two channels with different water characteristics. The orientative influence of the water properties was measured by the number of fish selecting each

channel. The reactions of more than 8,000 fish of the genus *Pomolobus*--alewife, *P. pseudoharengus* (Wilson), and glut herring, *P. aestivalis* (Mitchill)--were tested as the fish migrated upstream through the Herring River at Bournedale, Mass., toward their spawning area. Presented with a choice of waters having different temperatures, 77 percent of the fish entered the channel with the warmer water when the temperature difference continuously exceeded 0.5° C. The response of the fish to temperature differences near the threshold difference decreased as the

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temperature level of the water increased. Presented with a choice of waters having different amounts of free CO₂, 72 percent of the fish entered the channel with the water having the lower CO₂ content when the free CO₂ difference exceeded 0.3 ppm. The sex of the fish appeared to have no influence on its response to differences in CO₂ or temperature. Experiments indicated that velocity and turbulence can influence orientation. The relative orientative influence of CO₂ and temperature, when the two factors were in opposition, was shown to depend on their relative differences of magnitude. Behavior of the fish during the experiments indicated that the orientation was accomplished by a method of "trial" involving both movement of the fish and a comparison of intensities of stimulations which were successive in time.

Propagation and Distribution of Food Fishes for the Calendar Years 1944-1948, by O. Lloyd Meehan, E. J. Douglass, and Lee M. Duncan, Statistical Digest 24, 84 p., printed, 25 cents, 1952. Describes the procedure of the Federal fish-cultural stations in the production and stocking of fish; coordination of Federal hatchery program with programs of other agencies; station output; egg collections; distribution operations; and assignment of fish and fish eggs to Territories and foreign countries. Also includes statistical data for the calendar years 1944-1948 on fish and fish eggs produced, and assigned to Federal agencies and State fish commissions. Output of fish and fish eggs by stations, fish eggs collected, and distribution of fish by States are also covered. Fish salvaged and restored to original waters is given for 1945 and 1946.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILD-LIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE AGENCIES OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

"Age Composition of the Southern California Catch of Pacific Mackerel for the 1951-52 Season," by John E. Fitch, article, California Fish and Game, January 1953, vol. 39, no. 1, pp. 141-146, printed. California Department of Fish and Game, San Francisco, Calif. This is the second report on the age composition of the Pacific mackerel (Pneumatophorus diego) catch for 1951/52 in which some 31-1/3 million pounds of mackerel were landed.

(Alaska) 1951 Annual Report, Report No. 3, 84 p., illus., printed. Alaska Fisheries Board and Alaska Department of Fisheries, Juneau, Alaska, 1952. Summarizes the activities of the Alaska Fisheries Board and the Alaska Department of Fisheries of 1951. Describes the biological investigations; and the predator control, watershed management, and sport-fish programs. Discusses stream inspection and enforcement of fishery regulations. This report also contains statistics on the number of operating salmon canneries; total salmon pack by districts for all Alaska (1942-1951); value of canned salmon--initial price per case, approximate total value per species, and total for all species (1942-1951); number of salmon taken in 1952 by gear and species in each geographic section of Alaska; production (quantity and value) of 24 Alaskan fishery products (1942-51); a financial statement; and a discussion of the plans of the Department and its future outlook. A chronological history of the salmon canneries of Central Alaska from 1882 to 1950 is also included.

"California Marine and Fresh Water Sport Fishing Intensity in 1951," by Frances N. Clark, article, California Fish and Game, January 1953, vol. 39,

no. 1, pp. 115-125, illus., printed. California Department of Fish and Game, San Francisco, Calif. Discusses a survey made in 1951 which was designed to measure sport-fishing intensity in four localities: fresh water, San Francisco Bay and Delta area, ocean and bays north of Santa Barbara, and ocean and bays south of Santa Barbara.

(Ceylon) Fish Farming in Malaya (As a Guide to Fish Farming in Ceylon), by E. R. A. de Zylva, Bulletin No. 4, 21 p., illus., printed. Department of Fisheries, Colombo 3, Ceylon, August 8, 1952. Describes the types of fish most commonly used in fish farming in Malaya, construction of fish ponds, the fry trade, stocking the ponds, and harvesting the fish.

(Colony of Singapore) Report of the Fisheries Department, 1951, by T. W. Burdon, 97 p., illus., printed, British Malaya \$2.00 (approximately 60 U. S. cents). Government Publications Bureau, Singapore, 1952. Contains a general review of the fishing industry of the Colony during 1951. Discusses the availability of fresh fish; inventory of the fishing industry (number of fishermen, licensed fishing boats, details of power-propelled fishing boats, licensed fishing gear, and pond cultivation of fish); transportation and marketing; fresh fish prices; prices of materials used to produce fishing gear; trade in salted and dried fish; and trade in other marine products.

(Delaware) Annual Report of the Delaware Commission of Shell Fisheries of the State of Delaware for the Fiscal Year July 1, 1951 to June 30, 1952, 7 p., processed. The Delaware Commission of Shell Fisheries, Dover, Del., 1952. Describes

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the activities of the Delaware Commission of Shell Fisheries for the fiscal year ending June 30, 1952. Also includes a statement of revenue receipts and a financial statement for the same period. Amounts of seed oysters harvested and oyster shells planted in Delaware are also given.

East African Fisheries Research Organization Annual Report, 1951, 52 p., illus., printed. East African Fisheries Research Organization, P. O. Box 343, Jinja, Uganda. Discusses the growth and sexual development of fish under tropical conditions; hydrology and algology of the Buvuma Channel; entomology (especially the species of insects which live in the mud and upon which certain fish feed); mollusca (aquatic snails which form an important element in the food of many fish); and the fish which live in tropical waters.

An Economic Evaluation of Marine Fisheries Affected by Industrial Wastes, by Donald M. Clifford, 17 p., processed. Prepared for the Atlantic States Marine Fisheries Commission in cooperation with the U. S. Fish and Wildlife Service (the primary research agency of the Commission). The report is primarily concerned with the effect of industrial wastes upon marine fisheries and the resulting economic loss to the states of Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut.

Initially it was planned to be the first of three reports which would include all the Atlantic coastal states. The information compiled for the New England states (more specifically in the conclusions of the report) indicates, when local variables are considered, that similar conditions exist all along the Atlantic coast with respect to the problem of industrial pollution. The body of this report consists of five parts, one for each state of the North Atlantic section of the Commission. For each state there is a description of principal waters which anadromous or inshore marine fisheries are known to inhabit. Any information regarding the lethal or detrimental effects of industrial wastes upon these fisheries is also noted. The concluding paragraphs of each section discuss the various opinions of the state officials regarding the impact of industrial wastes upon their fisheries. Appendixed to the report is a short study of the restricted shellfish areas of the State of Maine, entitled the "Maine Clam Study." The study is an attempt to evaluate the clams lost to the State of Maine due to pollution.

Eleventh Annual Report of the Atlantic States Marine Fisheries Commission (to the Congress of the United States and to the Governors and Legislators of the Fifteen Compacting States), 37 p., printed. Atlantic States Marine Fisheries Commission, Mt. Vernon, N. Y., December 1, 1952. In this annual report the Commission reports progress on fishery research projects initiated and carried on by the Commission and on its behalf by the U. S. Fish and Wildlife Service. Under the North Atlantic Section of the report are included discussions of projects dealing with lobster, haddock, clams, ocean perch, shad, yellowtail, freezing fish in the round at sea, reconstruction of the Service's Woods Hole Laboratory, proposed Federal-State striped bass program, exploratory tuna fishing, catch statistics, and a proposed fishery college in Massachusetts. Under the

Middle Atlantic Section there is a discussion of projects dealing with shad, clams, gray sea trout (weakfish), Hudson River and Delaware River shad, conferences between New Jersey and Delaware commissioners, Delaware River Shad Management Act, proposed Federal-State cooperative striped bass study, and catch statistics. The Chesapeake Bay Section includes discussions of projects concerned with croaker, blue crab, shad, Chesapeake Bay Institute, proposed Federal-State striped bass program, and Potomac River concurrent oyster laws. Under the South Atlantic Section a discussion of the following programs is included: shrimp, shad, carrying shrimp in refrigerated sea water, cooperative Federal-State research program, license fees and severance taxes, and catch statistics. Another section of the report deals with the pollution project; State catch statistics; Northwest Atlantic Fisheries; Amendments No. 1 and No. 2 to the Atlantic States Marine Fisheries Compact--Common Fisheries and Inland Waters; fisheries research; and legislation needed.

"FAO Fisheries Statistics," Reprint from Monthly Bulletin of Agricultural Statistics and Economics, November 1952, 4 p. Food and Agriculture Organization of the United Nations, Rome, Italy. Includes statistics on fish landings in 10 countries in 1952 and external trade in fish and fisheries products of 9 importing and 9 exporting countries in 1952, compared with the corresponding period of 1951.

Fish and Wildlife in the Tennessee Valley, 19 p., illus., printed. Tennessee Valley Authority, Division of Forestry Relations, 1950. The fish and wildlife activities of the Tennessee Valley Authority are directed almost entirely to the multiple-purpose water impoundments on the Tennessee River and its tributaries. This report describes certain TVA program activities which contribute toward maintenance of fish and wildlife resources, types of fish, extent and value of the sport fishery, permanence of fish production, percentage of crop harvested, growth rate of fish, and mussel production.

Fish Recipes, Extension Bulletin 313, 16 p., illus., printed. Michigan State College, Cooperative Extension Service, East Lansing, Mich. A few recipes, collected from a series of fish recipe folders previously published by the Michigan State College Agricultural Experiment Station, are presented in this bulletin. Also includes descriptions of Michigan fish, methods of cooking, selection of fresh fish, and instructions for scaling and cleaning, filleting, and freezing fish.

Fishing Industry Research Institute Fifth Annual Report of the Director (1st April, 1951-31st March, 1952), 19 p., printed. Fishing Industry Research Institute, Cape Town, South Africa. A brief summary is given of: (1) the general activities of the Fishery Industry Research Institute, Cape Town, South Africa, (2) progress on research investigations during the period April 1, 1951, to March 31, 1952, and (3) the results of the routine inspection and analysis services. Research projects included studies on: (1) freezing, preservation, curing, and inspection of stockfish; (2) freezing and canning of rock or spiny lobster; (3) canning of pilchards, maasbanker, snoek, mack-

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erel, bluefin, abalone, and mussels; (4) fish flour for human consumption; and (5) storage and analysis of fish meal.

--F. T. Piskur

Florida's Controlled Seining Program (with a discussion of general fish management principles), by John F. Dequine, Fish Management Bulletin No. 1, 39 p., illus., printed. Florida Game and Fresh Water Fish Commission, Tallahassee, Florida, 1952. Fishery surveys were started in 1947 and 1948 in Lake George and Lake Okeechobee and a number of other larger lakes in Florida for the purpose of finding methods of improving fishing and determining the proper place of commercial fishing in fresh waters. This report summarizes the recommendations made for the continued management of the waters studied, and describes the principles of fish management and the controlled seining program. Resolutions authorizing controlled seining passed February 4, 1952, and amended June 2, 1952, by the Florida Game and Fresh Water Fish Commission, and comments of a panel of fishery scientists on survey findings in Lake George and Okeechobee are quoted.

"Further Observations on the Distribution of Striped Tuna, *Katsuwonus pelamis* L., in Eastern Australian Waters, and Its Relation to Surface Temperature," by J. P. Robins, article, Australian Journal of Marine and Freshwater Research, October 1952, vol. 3, no. 2, pp. 101-110, illus., printed, 7s.6d. per issue (approx. 85 U.S. cents). Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C.2, Victoria. Describes an investigation between August 1950 and August 1951 of the distribution of striped tuna in eastern Australian waters, as indicated by numbers of fish caught per line trolled. The distribution extended from at least as far north as Port Macquarie, New South Wales, to 40 miles south of Tasman Island, Tasmania--much farther south than observed in previous years. Occurrence in abundance was seasonal in any specific area off the coast. Movement to the south from the mid-north coast of New South Wales began in late spring; movement north from the east Tasmanian coast began in mid-autumn. Striped tuna were taken in eastern Australian waters with temperatures between 14.7° C. and 20.8° C. (about 59° F. and 69° F.), but occurred most plentifully between temperatures of 16.0° C. and 18.0° C. (61° F. and 64° F.). They had a preference for water of specific temperatures in the areas in which they occur seasonally. Seasonal movement north and south showed a strong correlation with seasonal changes in water temperatures. Commencement of movement northwards from the south appeared to be influenced by downward change in temperature, which brought about the lower limit of the critical temperature tolerated; this change was coincident with the onset of the seasonal westerly winds. Degree of southerly penetration is related to temperature, whose seasonal fluctuation could explain "abnormal" years.

Growth of the American Oyster, CRASSOSTREA VIRGINICA (Gmelin) in Florida Waters, by Robert M. Ingle and Charles E. Dawson, Jr., Contribution No. 74, 12 p., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 2, no. 2, pp. 393-404). The Marine Laboratory, University of Miami, Coral Gables, Fla.,

1952. Describes a study conducted from May 1949 to August 1951 on the growth of the American oyster, *Crassostrea virginica*, in Florida waters. Basic growth curves remained the same despite seasonal environmental changes. Oysters setting in the fall had very nearly the same growth pattern as those which attached in the spring. Minor aberrations in all states of growth were encountered in areas of good growing conditions but the fundamental pattern did not differ. Oysters which had been periodically exposed exhibited rapid growth when transferred to places where they remained covered by water at all times. Those which continued to be exposed had a diminished growth rate. Coon bars which exist in Apalachicola Bay support an inferior, small oyster because the individual oysters are exposed at low tide. Extremely long and intensive spawning seasons did not alter the basic growth pattern. Growth was continuous throughout the year. Oysters of Apalachicola Bay which are of low glycogen content and presumably low vigor (possibly induced by rapidly fluctuating salinities) showed remarkably rapid growth rates.

"The Jack Mackerel, *Trachurus symmetricus*: A Review of the California Fishery and of Current Biological Knowledge," by Phil M. Roedel, article, California Fish and Game, January 1953, vol. 39, no. 1, pp. 45-68, illus., printed. California Department of Fish and Game, San Francisco, Calif. Until 1947, the jack mackerel (*Trachurus symmetricus*) was of minor commercial importance. In 1947 it emerged as a major variety and has remained among the leaders since that year. According to this report, its sudden rise and continued high rank are attributable in a large part to the series of poor seasons experienced by the sardine and Pacific mackerel fisheries. In the earlier years the seiner fleet sought sardines primarily, and Pacific mackerel when they were available or when the sardine season was closed. Jack mackerel catches were in a large part incidental. Jack mackerel are still less highly regarded than are the other two, but they remain available on the fishing grounds. Another factor affecting the fishery's rise is the increased use of depth-sounding devices first installed on California seiners in 1944 and virtually standard equipment within two or three years. The rise of the jack mackerel fishery occurred at the time this equipment was first widely employed, and there is some evidence to show that jack mackerel tend to school somewhat below the surface so are not often observed by visual scouting. If this schooling habit can be confirmed, it would help explain the low catches of the earlier years. For even though these catches were largely accidental, one would anticipate that the total tonnage caught would have been greater if the fish had been as available to the fishermen as they are at present with the use of depth-sounding devices. An alternative explanation is a rise in abundance of jack mackerel concurrent with the decline of sardine and Pacific mackerel. Included in this report are descriptions of the jack mackerel fishery prior to 1926; catch trends, 1926-1951; the Los Angeles region fishery; the Santa Barbara region fishery; the Monterey region fishery; a discussion of the biological knowledge of the jack mackerel; and an estimate of the status of the fishery.

The Job Ahead for Defense Mobilization (Eighth Quarterly Report to the President by the Director of

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Defense Mobilization), 54 p., illus., printed, 30 cents. Office of Defense Mobilization, Washington, D. C., January 1, 1953. (For sale by Superintendent of Documents, Washington 25, D. C.). This is the eighth quarterly report on the defense mobilization program of the United States. Included are discussions on defense mobilization in mid-passage, producing military equipment, industrial expansion and the relief of shortages, completing and maintaining the mobilization base, meeting our needs for manpower, stabilizing prices and wages, and NATO: The need for an integrated defense production program.

(OPS) Directory of Commodities and Services Exempted or Suspended from Price Control (Covers all regulations issued through December 18, 1952), third edition, 73 p., processed, 35 cents. Jurisdiction and Distribution Branch, Executive Office for Price, Office of Price Stabilization, Washington, D. C., 1952. (For sale by Superintendent of Documents, Washington 25, D. C.) Contains an alphabetical index of commodities (including fishery products) and services which have been exempted or suspended from price control. Also included is a list of OPS regulations which contain exemption or suspension provisions, and the text of the agency memoranda setting forth the standards for exempting and suspending commodities and services from price control. The alphabetical index specifies the commodity or service exempted, the regulation or other authority effecting exemption, and the type of action (exemption or suspension).

Regulation and Investigation of the Pacific Halibut Fishery in 1951, Report of the International Fisheries Commission, No. 18, 29 p., illus., printed. International Fisheries Commission, Seattle, Wash., 1952. A brief review of the Commission's administrative and investigational activities in 1951 with reference to the Pacific Coast halibut fishery. In 1951 the Commission completed its twentieth year of regulation of the halibut fishery and carried forward the statistical and biological investigations which form the basis for the regulations. Also presented are the 1951 regulations, statistics of the fishery, landings of incidentally-caught halibut, the fishery in Areas 2B and 2C, changes in composition of catches, and tagging experiments.

Scientific Researches of Fisheries Carried on Under Fisheries Agency, Japanese Government, 28 p., illus., printed. Fisheries Agency, Tokyo, Japan, 1952. Brief accounts of the eight regional laboratories, under the jurisdiction of the Fisheries Agency, which are assigned to work on fisheries problems.

Some Reactions of Pelagic Fish to Light as Recorded by Echo-Sounding, by I. D. Richardson, Fishery Investigations Series II, vol. XVIII, no. 1, 22 p., illus., printed, 4s. net (55 U. S. cents). Her Majesty's Stationery Office, London, England, 1952. Describes a number of echo-sounder tracings showing the way in which fish shoals react to daylight and electric light. Shoals of sprats and herrings show a diurnal migration, coming up towards the surface at night and moving down during the day, according to this report. The extent of this vertical migration varies in different areas of the southern North Sea. The diurnal migration takes place in both feeding and non-

feeding fish. The downward movement of the shoals is shown to be associated with increase in light intensity, which is thought to be the operative cause. It has been shown that the fish remain within a certain light intensity during the day. The fish would therefore have to swim downwards to remain in that light intensity. The level at which the shoals remain during the night appears to be definite, and specific gravity seems to be the most likely cause to investigate. An upward movement of the herring shoal, above that of the night level, immediately precedes the downward movement associated with increasing light at dawn. A similar upward movement is seen at dusk before the shoals settle to their night level. The behavior of the East Anglian herring shoals is analyzed and found to be essentially similar to that of herring shoals in other areas of the North Sea. Herring shoals have been shown to avoid electric light of certain intensities. Examples are given of the way in which pilchards and certain fish fry are attracted to electric light.

"State-wide California Angling Estimates for 1951," by A. J. Calhoun, article, California Fish and Game, January 1953, vol. 39, no. 1, pp. 103-113, printed. California Department of Fish and Game, San Francisco, Calif. The results of the 1951 angling survey in California are summarized and discussed briefly by kinds of fish and by departmental administrative regions.

Studies on the Effect of Dredging Operations upon Fish and Shellfish, by Robert M. Ingle, Technical Series No. 5, 29 p., illus., printed. The Division of Oyster Culture, Board of Conservation, Tallahassee, Fla., October 1952. Describes investigations made to determine the effects of dredging operations upon fish and shellfish in the vicinity of Great Point Clear, Alabama. Damage to scalefish and motile crustacean was not observed, even within 25-50 yards of an active dredge. Shellfish were not found to suffer damage when suspended from the dredge itself. Damage due to larger particles of mud occurred on the bottom in the immediate neighborhood of the dredge, but did not extend beyond 400 yards. Because momentary conditions of tide, speed of current, speed of dredging vary, and variations exist in various bay bottoms, every situation merits separate consideration, according to this report. Controlled dredging is suggested as the best solution. By this method the dredging activity is coordinated with local conditions, spatial and temporal. In the areas under consideration (West Florida and Alabama), controlled dredging should begin to operate at 400 yards distance from live oyster reefs. There is some evidence that dredging stirs up organic detritus resulting in a beneficial effect to shellfish and crustaceans.

(Sweden) Fiske År 1950 (Fishing in 1950), 55 p., printed in Swedish with a summary in English. Sveriges Officiella Statistik, Jordbruk Med Binaringar, Statistiska Centralbyran, Stockholm, Sweden, 1952. Kungl. Boktryckeriet, P.A. Norstedt & Soner, Stockholm, Sweden. An account of the fisheries of Sweden in 1950. The fishery statistics mainly cover data relating to salt-water fishing. Data covered are the number of fishermen, fishing gear, and fishing craft; quantity and value of landings in the salt-water fisheries; fishery in the Baltic and in the Sound; West Coast

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fishery; preparation of fish; landings in foreign countries of fish caught by Swedish fishermen and landings in Sweden of fish caught by foreign fishermen; and fresh-water fishery. According to this report, salt-water fishing was carried on by 22,130 persons in 1950--13,810 were professional fishermen and 8,320 followed fishing as a secondary occupation. Principal fish and shellfish taken included herring, cod, eel, salmon, mackerel, sprat, haddock, and shrimp. The most important species was herring (including the Baltic herring).

Third Report to Congress on the Mutual Security Program...for a strong and free world, 26 p., printed, 20 cents. Mutual Security Agency, Washington, D. C., December 31, 1952. (For sale by Superintendent of Documents, Washington 25, D.C.). Covers the operations of the Mutual Security Program for the period from July 1 to December 31, 1952.

(United Kingdom) "The Seaweed Industry," by R. P. Bower, article, Foreign Trade, December 13, 1952, vol. 12, no. 311, pp. 7-8. Foreign Trade Service, Department of Trade and Commerce, Ottawa, Canada. Work by the Institute of Seaweed Research (Scotland) is uncovering new industrial and medical uses for seaweeds. The research formerly financed by the United Kingdom Development Commission by allotment of funds to the

Scottish Seaweed Research Association has now been taken over by the Institute of Seaweed Research and is financed directly by the Treasury. After the Institute had established the availability of quantities of seaweed, it pursued a program along the following lines: (1) Expansion of earlier work in ecology and survey; (2) Fundamental and applied algal chemistry; and (3) Harvesting and handling seaweed and production of seaweed chemicals. Currently seaweeds are used for production of alginates for use as a gel in cosmetics and foodstuffs, as a stabilizer in ice cream, salad dressings, etc., and as a component of films and transparent paper. Other uses are in rubber latex, textiles, and in making fine wools. Seaweed is also used as a fertilizer. Research is being continued to discover further agricultural and medical uses for seaweed. Current processing lines indicate that seaweed can be used for farm-animal feed. "Laminarin," derived from seaweed, has shown possibilities as substitute for blood plasma and as a surgical powder. The harvesting of growing seaweeds has not been satisfactorily solved, but experiments are continuing. Interest has been shown by Canadian firms handling florist's supplies in a species of sea growth which occurs in the Thames Estuary. The material is dried, treated, and dyed and is used as a floral decoration.

--F. T. Piskur



CORRECTION

In the article "Japanese 1952 North Pacific Salmon-Fishing Expedition" contained in this issue, page 4, last paragraph, line 3, "400 miles south" should read "90 miles south."

PARTIAL LIST OF FISHERY PERIODICALS

A Partial List of Fishery Periodicals, Fishery Leaflet 160, was recently revised by the Service's Branch of Commercial Fisheries. This list gives the names and addresses of United States, foreign, and world commercial fishery periodicals and state fishery periodicals.

Free copies of Fishery Leaflet 160 are available from the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.

SPORT FISHING IN CALIFORNIA

Upon analyzing the returns of its 1951 annual postal survey of angling license buyers, the California Department of Fish and Game arrived at the following conclusions:

MOST OF THE CALIFORNIA SPORT FISHERMEN'S TIME--56 PERCENT--IS SPENT FISHING ON INLAND FRESH WATERS.

TWENTY-TWO PERCENT OF THE STATE'S COLLECTIVE ANGLING EFFORT IS SPENT IN OCEAN WATERS SOUTH OF SANTA BARBARA; 10 PERCENT NORTH.

SAN FRANCISCO BAY AND DELTA WATERS ACCOUNTED FOR 12 PERCENT OF THE FISHING EFFORT OF THE ONE MILLION LICENSE HOLDERS.

THE AVERAGE FISHERMAN FISHED 25 DAYS, FOR A TOTAL OF APPROXIMATELY 25,000,000 FISHING DAYS IN CALIFORNIA WATERS IN 1951.

The big picture of the angler's habits is used by the State Agency to determine, among other things, a fair allocation of its funds between fresh-



A SPORT FISHERMAN'S CATCH.

and salt-water conservation activities. Ocean anglers may look forward to a greater share of the Department's attention in 1953 on the basis of the 1951 poll, as it indicates an increase of 25 percent in the number of ocean anglers.

The author of the article, which revealed the above results, believes that part of the change in fishing interest may have resulted from the recent dry years which impaired fresh-water fishing on southern California inland lakes. "Having learned the enjoyment and recreation inherent in salt-water fishing," she writes, "the anglers will continue this activity, and pressure on marine waters will presumably continue to increase."

Among the out-of-state residents who buy California fishing licenses, fresh-water fishing is about four times more popular than ocean fishing, the Department learned from the returns of 30,000 cards sent out.