



CATFISH FARMING

"Construction of Commercial Catfish Ponds," prepared by T. D. Prestridge Jr. and Edward R. Smith, Department of Agriculture, Soil Conservation Service, Alexandria, La., January 1969, illus.

This is a one-page leaflet outlining some important construction features required for catfish production--pond types, water areas, depth, control, and supply.

DOLPHINS

"Dolphin Noises Recorded by Echo-Sounder," by L. J. Paul, Fisheries Research Publication No. 129, Marine Department, Wellington, New Zealand. (Reprint from 'N. Z. Jl. Mar. Freshwat. Research,' Vol. 3, No. 2, June 1969, pp. 343-8, illus.)

Some records of ultrasonic signals from dolphins seem to suggest these emissions are used for echo-ranging. Mr. Paul explains the possible uses of such records in studying dolphin behavior.

MARINE MAMMALS

"The Biology of Marine Mammals," edited by Harald T. Andersen, Academic Press, Inc., 111 5th Ave., New York, N.Y. 10003, 1969, 511 pp., indexed, illus.

Contributions from experts in different areas of marine mammal research emphasize the functional biology of mammals adapted to a marine habitat.

OCEANOGRAPHY

"Frontiers of the Sea," by Robert C. Cowne (revised edition), Doubleday & Co., New York, 1969, 318 pp., illus., \$6.95.

Updated to include the progress of the 10 years since it was first published, this is a book about the oceans and the science of oceanography, past, present, and future.

PACIFIC SALMON

"Round Trip With the Salmon," by Anthony Netboy, article, 'Natural History,' American Museum of Natural History, Vol. 77, No. 6, June-July 1969, pp. 44-50, 66-67, illus.

Mr. Netboy narrates the migratory drama of the millions of salmon spawned in the rivers of North America and Siberia, their life in the salt water pastures of the North Pacific, and their return to natal waters to mate and die. Charts of their ocean migration patterns are included.

PESTICIDES

"DDT in Trout and Its Possible Effect on Reproductive Potential," by C. L. Hopkins, S.R.B. Solly and A. R. Ritchie, Fisheries Research Publication No. 130, Marine Department, Wellington, New Zealand. (Reprint from 'N. Z. Jl. Mar. Freshwat. Research,' Vol. 3, No. 2, June 1969, pp. 220-9.)

Eggs of rainbow trout (*Salmo gairdneri* Richardson) were reared to discover whether they showed significant survival differences that could be linked with DDT levels in the tissue. The eggs were taken from trout in 5 different lakes: three drain land often treated with DDT, and 2 are virtually free of agricultural contamination. The authors found a possible link between the presence of DDT and the failure of the egg to develop normally.

POLLUTION

"In the Wake of the Torrey Canyon," by Richard Petrow, David McKay Co., Inc., New York, 1968, 256 pp., illus.

Mr. Petrow reports on all aspects of the Torrey Canyon disaster--the personal stories of those it affected, the blunders and successes in repairing the damage, and the unfinished, and still unsolved, legal and biological aftermaths.

"Marine Pollution: can we control it to advantage?" by Maurice Fontaine, article, 'Ceres,' FAO Review, Vol. 2, No. 3, May-June 1969, UNIPUB, P.O. Box 433, New York, N.Y., pp. 32-5, illus. (Single issue \$0.50.)

Mr. Fontaine believes a good use should be found for pollution agents after they have been controlled. He suggests several methods of study.

SALT WATER AQUARIA

"The Marine Aquarium," by Robert F. O'Connell, Great Outdoors Publishing Co., 4747 28th St., North, St. Petersburg, Fla., 33714, 158 pp., illus., \$6.95.

This is a comprehensive description of how to set up an ideal marine tank, and to create the conditions in which marine fish will thrive. It includes the latest techniques and equipment for filtration, heating, lighting, decoration, and feeding. Superb color photographs of many species are included.

FISH & WILDLIFE SERVICE PUBLICATIONS

The following reports, published by the Department of the Interior, Fish & Wildlife Service, BCF, are available from Publications Unit, BCF, 1801 N. Moore St., Arlington, Va. 22209:

Alaskan Freshwater Fishes

"Distribution of Fishes in Fresh Water of Katmai National Monument, Alaska, and Their Zoogeographical Implication," by W.R. Heard, R. L. Wallace, and W. L. Hartman, SSR-F 590, October 1969, 20 pp., illus.

This is a report on investigations of the distribution and occurrences of freshwater fishes in an area divided by the Aleutian Mountain Range. The authors describe their methods and equipment, discuss the zoogeographical implications, and include an annotated list of species.

Gulf of Mexico Fisheries Research

Florida

"Report of the Bureau of Commercial Fisheries Biological Laboratory, St. Petersburg Beach, Florida, Fiscal Year 1968," Circular 313, May 1969, 25 pp., illus.

The report describes the laboratory's research on projects in the estuarine, red-tide, and industrial schoolfish programs. The projects include studies of sediments and organisms in bay bottoms; plankton crops; fishes in and transferring between estuaries and the Gulf of Mexico; and experimental rearing of pompano in an impounded lagoon.

Texas

"Report of the BCF Biological Laboratory, Galveston, Texas, Fiscal Year 1968," Circular 325, October 1969, 32 pp., illus.

This report describes the progress of research on shrimp involving biology, population dynamics, ecology, and oceanography. It includes a summary of methods used to evaluate engineering projects that affect estuary-dependent species on the Texas coast.

Mississippi

"Report of the BCF Technological Laboratory, Pascagoula, Mississippi, Fiscal Years 1967 and 1968," Circular 327, 18 pp., illus.

This report presents the results of research on new and improved methods of preventing development of browning in snapper; rancid odors and flavors in Spanish mackerel; adverse texture changes in frozen oysters; blue discoloration in crab meat; green discolorations in frozen raw breaded shrimp; and adverse changes in canned shrimp during storage.

It describes a countrywide study of shipment of iced fish in leakproof containers and discusses new attempts to increase the iced storage life of shrimp through use of bacteriostatic agents. The report includes developments in sanitary handling of fish meal and results of a study to mechanize the handling of various types of industrial fish.

RADIOECOLOGY

"Research Facilities of the Radiobiological Laboratory, BCF, Beaufort, North Carolina," Circular 298, December 1968, 17 pp., illus., and "Progress Report of the BCF Radiobiological Laboratory, Beaufort, N.C., Fiscal Year 1968," Circular 309, April 1969, 59 pp., illus.

Radioecology is the study of radioactivity in the environment and the use of radioactive elements in ecological studies. The Beaufort Radiobiological Laboratory is supported jointly by BCF and the U.S. Atomic Energy Commission. Its research is concerned with 1) the fate of radioactive materials in the estuarine environment, 2) the effect of radiation on marine organisms, and 3) the application of radioactive tracer techniques to fishery biology.

Circular 298 describes the history, facilities, and organization of the lab. Circular 309 describes some of its studies in estuarine ecology, biogeochemistry, pollution, and radiation effects.

SALMON

"Return and Behavior of Adults of the First Filial Generation of Transplanted Pink Salmon, and Survival of Their Progeny, Sashin Creek, Baranof Island, Alaska," by Robert J. Ellis, SSR-F 598.

In 1964, 1,866 adult pink salmon from another stream were planted in Sashin Creek. Circumstantial evidence indicated that adult pinks spawning in Sashin Creek in 1966 were mostly progeny of the fish transplanted in 1964. Mr. Ellis describes the study area, and the number, time of migration, distribution, and fecundity of the spawners.

--Barbara Lundy



WHAT IS "FISH FARMING" AND WHERE IS IT PRACTICED?

For the most part, man's role is still that of a hunter rather than a farmer of the sea. In the future, however, it is probable that food shortages will require regulation of the life cycles of marine animals and plants in much the same way as on land. This might include altering the bottom environment, hatching of fish eggs, fencing breeding areas, fertilizing plants, and use of drugs to control diseases.

Japan has developed fish farming and aquaculture to a higher degree than any other country. Fish-farming centers have been established in the Inland Sea to offset the decrease in catch of high quality fish in coastal waters. Eggs are hatched and fry released into the waters of the Inland Sea.

By growing oysters on ropes hanging from rafts, the Japanese have increased the yield per acre to 50 times that of conventional methods. Oyster culture is also highly developed in the Mediterranean Sea where oysters are harvested from sticks thrust into the shoal bottom.

Off the coast of California old streetcars and automobiles have been dumped into the ocean to form artificial reefs to attract fish.

Possible methods of fencing sea areas include the use of nets, electrical impulses, and ultrasonics.

Fertilizers have been used experimentally in enclosed areas of the sea, but they have stimulated growth of weeds and unwanted species as well as of desirable fish. ("Questions About The Oceans," U.S. Naval Oceanographic Office.)