

Farming the Fish

Biologist Believes Man Will Control Life in Oceans

Editor's note: This is the fourth in a series on the implications of the government's intensified oceanography program and the race between the United States and Russia to learn the mysteries of the ocean depth.

By A. ROBERT SMITH
Mail Tribune
Washington Correspondent
Washington — "I don't see why we can't farm fish just like cows," says Dr. Robert L. Edwards, gazing out to sea from his laboratory at Woods Hole, Mass., the American mecca for oceanographers.

Dr. Edwards, a government biologist, was talking about his hopes for making the ocean fish resource more dependable and more plentiful, not of rearing food fish in ponds or lakes as fish farming is usually thought of. The logistics of "farming" the oceans would be incredible, Dr. Edwards concedes, but he believes man will one day know enough about the marine life of the oceans to influence and alter that mysterious life cycle for the benefit of future generations.

This is not just an academic consideration which intrigues a pipe-smoking scientist. The world fish catch, which reached 90 billion pounds in 1961, is rising each year. The catch seems to double about every 12 years. No one knows for certain how much additional fishing the ocean can sustain without serious depletion of most food fish species. Several species already show evidence of the ravages of over-fishing. But some fisheries experts think the ocean could sustain a catch that is five times greater than the present one.

In any event, the world population boom and the likely increase in commercial fishing by coastal countries that have severe food shortages point inevitably to a rapid rise in the world catch in the years immediately ahead.

Dr. Edwards, deputy director of the Bureau of Commercial Fisheries lab at Woods Hole, is stimulating oceanographic research efforts aimed at increasing the ocean fish population. Fish produce billions of eggs that perish due to disease, predators or other unfavorable factors in their natural environment. Biologists estimate that only about one of every 10,000 eggs produce fish which reach maturity. Dr.

Edwards is confident that oceanographers will learn how to increase the survival rate so that the fish population may one day be doubled.

Such an optimistic goal can be reached, he notes, only through an intensive research effort. To gather data and specimens for laboratory analysis, Woods Hole this spring received a brand new research ship, Albatross IV, the first ever designed and built by the U. S. specifically for fisheries research. It cost \$2.1 million.

During a recent four-day Atlantic cruise, this reporter observed the ship's scientists and technicians set out their big 60 by 80 foot nylon net from this stern trawler and retrieve some 20 marine species. The Albatross has labs where 16 specialists can work. It even has closed circuit television equipment to permit the scientists on shipboard to watch the activities of fish many fathoms below when a camera is dropped with the net.

Raymond Fritz, chief scientist on the Albatross, notes that the abundance of commercial fish varies drastically from year to year unaccountably. By spending 200 days a year at sea, Fritz hopes the Albatross will learn more of the mysterious habits of groundfish species such as cod, haddock, silver hake, redfish, flounder and sea scallop.

"The ideal is to get maximum sustained yield fisheries," said Fritz. "In some cases we may be over-fishing, and in others under-fishing. We need more biological information."

David Miller, a marine zoologist, specializes in studying what happens to various species in their first year after spawning, the period when groundfish mature. He hopes to make a systematic survey from 150 sampling stations scattered about the Gulf of Maine to collect eggs and larvae in search of clues as to how to arrest infant mortality among fish.

The Albatross and Woods Hole are responsible for the Northwest Atlantic between Nova Scotia and New York. Other research ships will in the near future operate in conjunction with new labs at Seattle, La Jolla, Calif., and Beaufort, N. C.

This is but one facet of the nation's intensified oceanography effort conducted by some 20 government agencies and a host of state and private institutions, including Oregon State University and the University of Washington, each of which operates its own research vessel.

While other oceanographers focus on the overriding military aspects of the total effort, the mission of the Albatross is geared to the plight of the American fisherman and his concern over depleted fisheries and rising foreign competition. As Donald L. McKernan, director of the Bureau of Commercial Fisheries, put it, "international fishery problems are increasing and seriously threaten the well-

fare of Canadian and U. S. fishermen."

Just as Pacific coast fishermen have felt the impact of foreign competition off the Northwest and Alaskan coast for salmon, halibut and crab

from Japan and Russia, New England fishermen have been hurt by competitors crowding in upon their traditional fishing grounds, notably the Grand Banks and Georges Banks.

A recent example of the result, said Fritz, is the decline of the ocean perch, or redfish, the mainstay of Gloucester, Mass., for two decades. Last year the catch was 124 million pounds, lowest since 1944 and less than half the record catch of 258 million pounds taken in 1951. There's no mystery about this decline—it's due to over-fishing, Fritz said.

Some say that Russian factory ships which ply these waters contributed to this by nearly depleting the Canadian redfish two years ago. Now the Russians are said to be taking great quantities of whiting at the expense of American trawlers.

"It's economic warfare. They're raiding our breadbasket," says Walter Beatey, skipper of the Albatross, and a native of Massachusetts. But back at Woods Hole, Dr. Edwards disagrees, saying too little is known as yet whether increased fishing or other factors are responsible.

Canada tried without success to get the 13-nation International Commission for North Atlantic Fisheries to limit the redfish catch. But it only standardized the size of mesh in nets five years ago to permit greater escapement of immature fish.

Before the decline of redfish, New England witnessed the virtual disappearance of the mackerel. For these and other economic reasons such as rising costs of replacing aged fishing boats and inflated costs of marine insurance, New England's commercial fishing is in the doldrums.

The U. S. has slipped from second to fifth rank among the world's great fishing nations; and Massachusetts has dropped behind California and Alaska in value of its annual catch. Washington ranks 9th and Oregon 14th.

In fact, the U. S. has become a net importing nation in terms of fish. Since 1953 the value of fish imports has exceeded the value of the domestic catch. Last year the value of imports was \$473 million, the value of the domestic catch \$381 million.

The goal of sustained-yield fisheries is a long-range one. The sudden decline of the California sardine some years ago and the one-third dip in the supply of the Pacific Northwest's Dungeness crab last year point up its importance to the Pacific coast, just as the decline of the mackerel and redfish make it meaningful to New England.

Sustained yields of desirable fish species, the Albatross scientists believe, can only be achieved through

Family Council

Editor's Note: The Family Council consists of a judge, a psychiatrist, three clergymen, a newspaper editor, a woman's editor, and two writers. Each article is a summary of an actual case history. The Council reports on problems that have been dealt with by responsible agencies and counselors. (Copyright 1963—General Features Corp.)

Mrs. L. S. — We can get back our rent and live rent-free this way.

Mr. L. S. — The new headaches we'll have won't make it worthwhile.

Mrs. L. S. — We have a beautiful apartment with a large terrace. Our daughter's marriage in June leaves us with a large empty bedroom and bath. A middle-aged gentleman with whom we are friendly has a studio apartment in the building, and asked me whether we'd rent the room to him. Besides the income, we'd fill our empty home again. He's a cheerful person.

Mr. L. S. — He's a little too cheerful for my taste. Let him stay cheerful where he is — I can manage without his brand of sunshine as well as without his rent check. We don't know much about this fellow: I can't find out what he does for a living, he never mentions his family, and I've seen him with a succession of lady friends. I'd hate to worry about my wife joining the list.

The Council: There are problems and sub-problems here. Among the latter, which we must push out of the way for now, are: Why should an apartment occupied by a married couple feel "empty" to Mrs. S., the wife? ... And why doesn't Mr. S. trust his wife's love for him? If she's flighty enough to be in danger of joining this gay blade's "list," she can do so no matter where he lives. But the immediate problem presented speaks not of an inadequate marriage or notions of infidelity, but of Mrs. S. as potential landlady to a male roomer. Forget it, Mrs. S. Keep that spare room ready for your daughter and her husband when they come back to visit. Or, if you need the money, seek a sub-tenant you and Mr. S. can agree on, one you know more about, and can count on to heed the minimum rules for peaceful coexistence. As for cheering the place up, why import sunbeams which may fizzle? Warm up the flickering ones within your walls.

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