

THE ALBATROSS III

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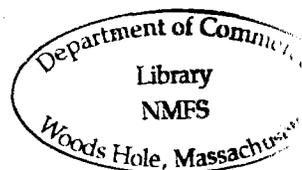
United States Department of the Interior

Since May 19, 1948, the Albatross III has been plying the waters off New England in search of knowledge of our fisheries. This is the first fishery research vessel the U. S. Fish and Wildlife Service has had in many years, and because many people are interested in what she is doing and why, we are presenting here a report on her first six months' operation.

We have, at the present writing, completed 12 cruises and traveled some 10,000 miles. The first several cruises were, of course, primarily shakedown cruises with the scientific work being incidental to getting acquainted with the ship and having scientists and fishermen work together as a team. This teamwork has been successful and the ship, under the able command of Captain John T. Collins, Sr., is an effective fishing vessel as well as a scientific instrument.

This blending of fishing and scientific skills is an innovation. The previous Albatrosses and other vessels of the Bureau of Fisheries were poorly suited to handling commercial fishing gear. They were built and operated primarily for the exploration of the sea and the amassing of knowledge of the living things in it. The work done on these vessels, particularly the Albatross I, has been tremendously valuable in many fields of science. It forms the background for planning the work on the Albatross III, which will be directed at finding the causes of fluctuations in the fisheries and what can be done about it.

A good fishing vessel is needed for this purpose. The Albatross III has fished alongside some of the large Boston trawlers and caught practically the same quantities of fish. She is rigged to handle the largest size commercial trawls as well as oceanographic instruments. With an overall length of 180 feet, she carries a normal operating crew of 21 men, with additional accommodations for 12 scientists. The extra quarters required a sacrifice of hold space which is large enough to ice down only about 60,000 pounds of fish. Part of the hold is mechanically refrigerated. One freezing room can be maintained at --20°F., and another holding room is used to store fish at 0°F. The main propulsion engine is a 7-cylinder Fairbanks Morse Diesel engine rated at 805 horsepower. Three auxiliaries provide power for the electric fishing winch and



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abuse, some of these haddock lived long enough to be brought into Woods Hole and a day or two in the tanks there. Of those tagged, five have been recaptured from one to four months after tagging. This is encouraging. These are the first haddock tagged from an otter trawler which have ever been recaptured. Further work is indicated.

We plan to repeat the above experiment under better conditions and use greater care in handling the young haddock. Also planned are studies on the escapement of other kinds of fish through larger mesh nets. We have on order at the present time a net on which will be placed several different cod ends and with which we expect to demonstrate the escapement of fish through the larger mesh.

Any long-range view of the New England fishing industry includes the possibility of long-range vessels with mechanical refrigeration and provision for processing on board. Such techniques have been worked out in various parts of the world in other fisheries, but any technique must be adapted to the otter-trawl vessel and the particular species of fish. The Albatross III is well equipped to make the necessary preliminary small-scale studies, and the first of these studies got under way in September, 1948, under the direction of Joseph Pmoochar of the Boston Technological Laboratory of the Branch of Commercial Fisheries of the Fish and Wildlife Service. This first study, which is scheduled for completion early in 1949, will determine the effect of freezing, thawing, and re-freezing on the flesh of several major species; this to learn if it is possible to freeze round fish at sea and bring them ashore for filleting and refreezing. Further studies are planned as soon as funds and additional scientific personnel are available.

An important part of the scientific program of the Albatross III will be achieved through co-operation with universities and other scientific institutions. This will take the form of training for fishery students, and of working together on research problems of mutual interest. Fishery students from Harvard have been on cruises as part of their training. Professor Humes of Boston University went on one cruise and made a large collection of the worm and copepod parasites of the commercial fishes. We have been particularly fortunate in having the assistance and co-operation of scientists from the Woods Hole Oceanographic Institution. They have been of great assistance in the oceanographic part of our study, and several of their scientists have accompanied the Albatross III in order to study ocean currents and to test new instruments.

The several minor problems, including those on food habits, rate of growth and tagging for the study of migrations, all are necessary to a full understanding of the complex life of the fish. The Albatross III is providing a wonderful opportunity to collect these data with a minimum of additional expense and work.

An extensive study of the effect of the disposal of waste sulphuric acid on fish life is being made jointly by the Fish and Wildlife Service

Baby haddock, of this year's spawning, but now from 4 to 6 inches long, were found in good numbers over the southwestern part of the bank and in the vicinity of Nantucket Lightship. They were rare west of Nantucket Lightship except at two stations, both within 20 miles of Ambrose Lightship.

Here we made large catches of baby haddock; in one tow one-half hour long there were 570. No adult haddock were taken within 100 miles and the significance of the presence of these young is an enigma.

We found almost no yearling haddock anywhere on the bank. It would appear that 1947 was a poor spawning season for the haddock. The significance of this to the fishing industry will not be known definitely until we compute the quantities available from the 1945 and 1946 spawnings, but quite clearly there is no prospective abundance of haddock on Georges Bank. Work on this problem is going along rapidly under the direction of Howard A. Schuck of the Fish and Wildlife Service at Woods Hole, and we plan to publish other articles on the abundance of haddock early in 1949.

Also of possible importance to the industry is the location of a bed of sea scallops three miles southeast from Nantucket Lightship. We caught several bushels in a half-hour tow of the net with rollers. It is likely that a vessel with scallop dredges might find this location worth while.

The bane of the existence of every fisherman are the wrecks and other obstacles which tear up his nets. Accurate locations on these should be of great assistance. On the Albatross III we have carefully located all tear-ups with our Loran set. One hang-up which appeared to be the wreck of a large ship was reported to the U. S. Coast and Geodetic Survey. But much more information is needed on the location of other obstacles which are not classed as wrecks and which nevertheless cause the loss of gear.

Now that more and more fishing vessels are being equipped with Loran sets, it will be possible to locate hang-ups accurately. If every fishing captain who loses gear will report the exact location to the Fish and Wildlife Service, we will see to it that this information is made available to the fishing fleet. Here is where the use of an electronic instrument and some co-operation should pay off in gear saved and fish caught.

It is on this note of co-operation that I want to end this preliminary report on the Albatross III. Co-operation of scientists and fishermen with a mixture of electronic instruments, biostatistical techniques, and fishing skill will produce information and knowledge, the things we are fishing for with the Albatross III.

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