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BIOLOGISTS PROBE MYSTERIES OF ALBACORE SPAWNING

The whereabouts of the spawning grounds of the albacore may not be the sea's No. 1 mystery but it is high on the list of the ocean's secrets which the Bureau of Commercial Fisheries, of the Department of the Interior is trying to discover.

To complicate matters there is a mystery within a mystery, for scientists not only are unaware of where or when an albacore spawns but no one has any idea what an albacore larva looks like. Although the albacore is regarded by many as the choicest of all of the tunas or tuna-like fishes, what little biological information is available relates to those in the middle of the life span. Knowledge of the very young and of the old, mature fish is lacking.

In seeking these unknown spawning grounds the fishery biologist is motivated by more than plain curiosity or academic urge. The very definite purpose of the quest is to be able to tell the fishing industry when and where it can catch albacore at the least possible cost--and how many it can harvest and keep the resource at maximum sustained yield. Before these can be accomplished, the secrets of the spawning must be known.

Various species of fish have their own peculiarities for spawning. Some, like the salmon, run into rivers; others go into shallow waters in sheltered places along the shore; still others spawn on the high seas and put their eggs and the hatch into the care of the winds, waves and the ocean currents. Since the albacore has the broad Pacific, the Indian Ocean and parts of the Atlantic as its habitat, it is very likely that the spawning areas, like those of other tunas, is somewhere in the open sea. It is entirely possible that untold numbers of albacore larva have been taken, unrecognized, in the plankton hauls made in routine work.

Two approaches are being made in this quest. One is to keep an eye open for albacore about to spawn, or which have spawned, in an effort to determine when the next spawning would have occurred. The other is to develop means of identifying albacore larva, either by tracing a series backwards from known juveniles or by rearing individual specimens from eggs and then describing the identifiable features when the larval stage is reached.

Biologists also hope that by knowledge learned of the early stages of the albacore's life cycle they may find the answer to another albacore mystery--its strange disappearance from its customary areas and its unannounced return to the same areas years later. The most serious of these episodes were in 1926 when a 20 million pound harvest off the Pacific Coast disappeared practically overnight. Twelve years later the albacore returned in numbers and has been available in California waters at the usual time ever since. (The record harvest was 36 million pounds in 1943.) During all these years, however, the fish have been medium-sized immature fish, 20 to 40 inches in length, with no indication of the whereabouts of the smaller or larger ones.

The albacore is known to shun water colder than 57 degrees. Two or three tagged albacore which have been recovered indicate that they can travel the width of the Pacific. Several fish, tagged in mid-ocean about one thousand miles north of Hawaii have been recaptured off the coast of Japan. One of these grew from 15 to 50 pounds over a period of 471 days. Still others, tagged off the coast of California, have traveled clear across the Pacific.

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