

OCEANOGRAPHY

"Red Tide" Revisits Gulf

Thousands of fish are piling up on the shores of the west coast of Florida as unusual weather conditions combine to allow the "Jim Brevis" organism to flourish.

UNUSUALLY SULTRY WEATHER plus an abundant rainfall appears to be the reason for Florida's latest "red tide."

The tide is now reported to be causing the deaths of thousands of fish—croakers, whittings, sea trout, pompano and mullets—along a 100-mile stretch of western Florida from St. Petersburg to Sanibel Island.

Biologists of the U. S. Fish and Wildlife Service told SCIENCE SERVICE that the unusually warm weather lasting through the fall in Florida has favored the growth of the culprit, a single-celled protozoan labeled *Gymnodinium brevis*, also called "Jim Brevis." It has both animal and plant characteristics.

In addition, abundant rains have flushed into the sea a healthy supply of phosphorus compounds from Florida's natural rock

formations. The combination of the compounds and weather spark the growth of the minute organism, for it depends on phosphorus for food.

The last such "bloom" of ocean organisms in that area occurred in October, 1957. Similar phenomena have occurred in the past off the coasts of California, New Jersey, Maryland, Virginia, Chile and Africa. Many of these "tides," however, did not kill fish, as they were caused by another organism. They were, in fact, "tides" of other colors, ranging from blue to yellow, and were not harmful.

The "red tide" is so named because the "Jim Brevis" killer organism is brownish-red and secretes a substance that is both deadly to fish and makes the surrounding waters slimy. An extremely high density of

dead fish has occurred between Sarasota and Venice. The tide extends from the coastline ten miles into the Gulf Stream at some places, Fish and Wildlife biologists said.

Coastal Floridians are attempting to bury those fish that wash ashore. State conservation authorities told biologists that they expect an increase in the amount of rotting fish now washing ashore.

Many Floridians are aware of the fact that the stench of so many fish plus the unsanitary conditions that result can cause a serious dip in the tourist business. Therefore, biologists have been requested to offer conservative but accurate information concerning the progress of the tide. A cold snap might help the situation, one biologist said. A change of weather might destroy the nutrients that are vital to the tiny organism.

The fish that wash ashore, although dead, would make excellent fertilizer if they could be gathered inexpensively. Local residents can at least take this opportunity to enrich their backyard gardens, a Government biologist suggested.

Scientists at an experimental station of the Bureau of Commercial Fisheries at St. Petersburg Beach study the habits of the organism throughout the year. Scientists at Galveston, Texas, also study this problem along with all phases of fisheries in the Gulf.

At present there is no known fool-proof method of predicting such a tide, nor is there any inexpensive method of curbing or preventing an "ocean bloom."

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ROCKETS AND MISSILES

Amateur Rocketeers Get "Shoots" on Army Posts

THE U. S. ARMY has given permission so far for the launching of 20 amateur rockets by six groups at Fort Knox, Ky., and Camp A. P. Hill, Va., in October and November.

Headquarters of the Second Army said that the two Kentucky groups have been given permission to launch seven rockets Oct. 24 at Fort Knox, and four other groups to launch 13 rockets Nov. 14 at Camp A. P. Hill, Va.

These, so far, represent amateur rockets that have passed the Army's preliminary technical analysis and evaluation. The Army's program of assisting amateur scientific groups requires amateur rocketeers to make formal application for permission to launch their rockets on Army bases, and to submit technical data for analysis and evaluation.

The Army said its program is intended to encourage youth to "pursue scientific study" and to develop a potential source of trained manpower for national defense.

"Such firings," the Army said, "are intended to provide amateurs with opportunities to launch their rockets under qualified supervision to minimize danger to themselves and to eliminate the hazards involved in unsupervised launching of rockets in civilian communities."

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SUPER SENTRY—The rotating 50-ton "boxcar shaped" radar antenna will warn against air-attack as part of the nation's defense network. It is 104 feet long and was developed for the U. S. Air Force by Raytheon Company. The antenna array is called a considerable advance in radar. It can detect invaders hundreds of miles away.