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BIOLOGISTS SEEK BEST SPOT FOR ATTACK ON RED TIDE

A relentless search for a weak spot in the life cycle of the organism responsible for the red tide may be one of the results of the most recent red tide outbreak, Department of the Interior officials indicate.

Red tide is a water condition which has occurred periodically in the Gulf of Mexico for more than a century. It is often accompanied by fish kills so great that untold millions of dead fish float for miles along adjacent shores. It gets its name from the color of the water, often, but not always, red. The coloring is caused by the presence of Gymnodinium breve, an organism so tiny that more than a thousand of them could line up on an inch of hair. The organism is probably always present but develops into dangerous proportions with great rapidity when conditions are right to start the "bloom".

The most recent outbreak occurred in October 1957 off Florida's West Coast. Past research has indicated that application of copper sulphate to an infested area might bring about the desired results. Many tons of this material were used in an effort to break the back of this outbreak which has appeared and developed suddenly in spite of the many official and unofficial sea and air patrols made to spot any indication of red tide infestation.

At a recent meeting at the Galveston, Texas, research laboratory of the Bureau of Commercial Fisheries, 33 American scientists representing State, Federal and private research groups met to evaluate past red tide research and to formulate plans for the continuing of red tide investigations.

The scientists generally agreed that the copper sulphate treatment, given a good test during the fall, was not the answer to the problem for three reasons--the cost of extensive application would be enormous; its effect is short-lived; its

side-effects on other marine life is uncertain. It was also agreed that the cost of patrolling Florida's West Coast on a round-the-clock basis to spot incipient outbreaks would require fantastic numbers of men and machines. Concensus of opinion was that victory over red tide seems a long way off and that victory can best be won by hard work and through the cooperative efforts of State, Federal and private agencies.

Final decision of the type of cooperative program to recommend was held in abeyance pending a thorough sifting of all data presented. But the probable line of attack will be a close-knit effort by the Florida State Board of Conservation and the United States Fish and Wildlife Service. This approach will include:

Continued laboratory studies with living red tide organisms to seek a control mechanism, possibly some associated microscopic animal food element or chemical that checks red tide growth, and,

Exhaustive studies to be made in selected areas on Florida's West Coast to determine the conditions of life required by the red tide. It is the hope of the biologists that a better knowledge of the organism in its natural surroundings, coupled with the results of laboratory studies, may show a weak link in the life cycle that will allow its effective control by man.

United States Fish and Wildlife Service biologists, who have been investigating the problems for the past 11 years, showed that the red tide organism, first isolated in 1947, is widely dispersed in the Gulf of Mexico. Painstaking research at the Service's Galveston laboratory has produced bacteria-free cultures of red tide that are poisonous to fish, a demonstration vital in proving that massive outbreaks of the organisms in nature are the direct cause of fish kills.

The first recorded appearance of this fish-killing plague was in 1844. It occurred again in 1954, 1878, 1882, 1883, 1908, 1916, and in 1946. Its earlier appearances have been described as "poison water", "black water", "yellow water", and "rotten water". The term "red tide" is actually a misnomer for there is no "tide" and sometimes the water is green interlaced with yellows and browns.

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