DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

FISH AND WILDLIFE SERVICE

For Release SUNDAY, SEPTEMBER 21, 1941.

NOTE TO EDITORS: PICTURES ARE AVAILABLE

Oysters have two hearts, but they beat as one. Thus, when the bivalve's foe attacks, a single vital blow is sufficient: its worst enemy, for example, the starfish, needs to wring but once.

Science, however, in the person of experts in oyster pest eradication from the Fish and Wildlife Service, United States Department of the Interior, has, on the basis of comparative figures showing the value to man of the two "shellfish," come out in favor of the oyster. So, on thousands of acres of seafloor--mainly off the coasts of Connecticut, New York, and Massachusetts--conflict against the starfish has been waging since at least 1908. Latest reports indicate the oyster forces winning on all fronts, suggesting the current season will be a good one.

It has been estimated that the starfish damage to the oyster industry in the Long Island Sound area alone amounts to about $750,000 a year. The great destruction of spat (young oysters), caused by newly set starfish, is a particular menace to the industry apparently not generally recognized by the oystermen. An entire crop of seed oysters may be wiped out in a very short time in some areas where starfish setting precedes that of oysters by only a few weeks.

The starfish destroys the oyster by attaching itself to the shell and pulling on this with its suckers, then secreting a fluid which narcotizes the oysters. Having done this, the starfish inserts its stomach between the shells by practically turning that organ inside out, and feeds on the meat inside.

Undoubtedly the most effective starfish exterminator yet known is quicklime. Its use was suggested by practical oystermen and developed by Dr. Victor Loosanoff and J. B. Engle at the Service's fishery biological laboratory at Milford, Connecticut.

Since lime is cheap and can easily be spread over the starfish-infested area, the method has been favorably received by oystermen and is now acquiring wide recognition. It consists in spreading lime over the oyster bottoms infested with starfish. As soon as the starfish come in contact with the lime, they develop wounds and soon die and decompose. Experiments have shown, if lime is uniformly distributed, that 500 pounds of the chemical are sufficient to cover one acre of oyster bottoms and destroy the majority of the starfish population. Of special importance is the fact that in the concentrations harmful to starfish, quicklime does not seriously affect other forms of marine life.

Prior to the introduction of the lime method, oystermen had for many years attempted at great expense to rid their grounds of starfish by the use of mops and dredges, a method found to be slow and inefficient. One firm estimates that since 1931 a minimum of $10,000 per year had been expended for boats and labor to clean its own oyster bottoms of starfish.

Observations in the Milford laboratory show that the particles of lime must come into direct contact with the body of the starfish to be effective. Particles falling on the upper surface of the starfish imbed themselves in the delicate skin

and rapidly cause its disintegration through caustic action. Lesions so created rapidly increase in size, spreading in all directions and involving the delicate respiratory and other structures found on the dorsal surface of the starfish. After several days the lesions penetrate the body wall, exposing the internal organs. Death usually follows very shortly.

Starfish not hit by falling particles as the chemical is being applied, eventually come into contact with it by crawling on the bottom. Lime spread on the bottom retains its effectiveness for some time. Experiments show that either the powdered or granulated form may be used successfully.

In one test, under natural conditions on the oyster beds of Long Island Sound, 25 acres of starfish-infested oyster bottoms were treated with calcium oxide at the rate of 480 pounds per acre. As many as 80 percent of the starfish were found to be affected by the chemical one week after the beginning of the experiment. In an area where 280 pounds of calcium oxide per acre were used, the chemical acted upon 74 percent of the starfish. It is believed that much better results will be achieved when a suitable mechanical method insuring uniformity of distribution of the chemical over the treated area has been developed.

The use of quicklime in combating starfish was first mentioned in 1908 by Frank Wood, Superintendent of Shellfisheries of the State of New York. According to Mr. Wood, some of the oystermen at that time tried to use this substance for the protection of their oyster grounds against starfish. The chief credit for the rediscovery of the use of this chemical is due Butler Flower of Bayville, Long Island, who attempted to use lime on a large scale on his own oyster bottoms and who applied to the Service to solve the scientific aspects of this problem.