

## OYSTER FISHERIES SESSION

TUESDAY—NOVEMBER 15

*Chairman*—J. L. BAUGHMAN, Chief Marine Biologist,  
Texas Game, Fish and Oyster Commission, Rockport, Texas.

### **Recent Research On The Florida Oyster**

ROBERT M. INGLE, *Assistant Director, Oyster Division,  
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THE APPROPRIATION made by the 1947 legislature establishing the Division of Oyster Culture carried the stipulation that all funds were to be used for "Rehabilitation of the natural oyster beds of the State." Accordingly, research has been limited to facts relating to the basic biology of the Florida oyster, such as intensity and place of spawning, length of spawning period, growth rate, salinity optimums, etc. This information is combined with knowledge of glycogen content of oysters from selected spots in the State to select the most desirable locations for rehabilitation work.

A general survey of the west coast has been made and several localities seem promising. Besides Apalachicola Bay, favorable areas noted were Milton, Panama City, Spring Creek, Panacea, St. Marks, Horseshoe, Cedar Key and Crystal River. Further efforts will be brought to bear to revive the industry in these areas.

A steady supply of fresh water seems to be the critical factor in most areas of the west coast. Every effort should be made to find localities such as Indian River on the east coast which can depend upon a year-round, unfailing source of fresh water which will not be too much at one period of the year and too little at another.

Fluctuation of salinity has been found to be harmful on a short time basis, as well as seasonally. A variation of 8 to 10 parts per thousand within 10 or 12 hours or less, such as might be found due to tidal action, seems to retard growth and have a deleterious effect upon the quality of the meats. Much experimental evidence is accumulating that the best oysters in Florida grow in areas where the salinity does not vary more than 5 parts per thousand, from day to day, with a 1 - 2 part variation being ideal.

Another critical item in Florida's oyster culture is the purity of water. Many areas of the state that previously were leading producers are now producing little or nothing because of pollution. The pollution is of two types, sewage and industrial. Studies have been begun to ascertain which times of the year sewage pollution is absent. It is well known that when the salinity of water is raised, enteric organisms tend to decrease. By fishing only during such periods in polluted areas it may be possible to harvest many thousands of barrels of oysters that are now permanently condemned. This plan has been used in Apalachicola Bay with marked success.

The other aspects of the pollution problems are to be studied in the immediate future. In the meantime every encouragement is being given to municipalities to establish adequate sewage treatment facilities.

Factors favoring an increased oyster production in Florida are several. An

extremely heavy spat fall was noted in all areas harboring oysters and a reliable source of seed is therefore almost assured. Growth is especially rapid. It was found that cultch planted in the spring would produce marketable sized oysters by the latter part of the ensuing oyster season. By comparison, northern oysters would require three to four years to attain a similar size. The growth is also continuous throughout the year, whereas in northern waters the growing season extends only through the warmer season.

An exceptionally long spawning has been found to exist. In Apalachicola Bay spat falls from the first of April to the first week of November. Studies further south indicate an even longer period of spawning.

Dr. Pierce, who collected plankton samples at Cedar Key, Bradenton, and Fort Myers monthly for a period of a year, very generously made his collection available to the author. Cedar Key plankton only has been studied to date. Oyster larvae were found for all months but three: January, February, and March. The samples from Bradenton and Fort Myers, which have not yet been examined, should prove interesting.

The usual oyster parasites and commensals have been found to be of exceptionally low incidence in Florida. *Nematopsis* infestation is light, as is *Polydora*. Boring sponges are present in large quantities in very few localities, none of which are of great potential value to the industry. Boring clams are not abundant in the principal areas of production. A great variety of predacious gastropods do exist, however, and the author has found strong evidence that *Melongenacornu*, and *Busycon perversum*, as well as the already incriminated *Thais haemastoma* annually ravage the oyster beds of the State. Studies should be made on these with the aim of control. Exploration should be made into the possibility of using these snails as bait, fertilizer, or other commercial products.

In summing up, an optimistic conclusion is difficult to avoid. The potentialities for Florida oyster culture are great. The waters of the Peninsular State confer potent advantages to oysters which eventually can lead only to greatly increased production if exploited.

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## The Texas Oyster Situation

J. L. BAUGHMAN, *Chief Marine Biologist,*  
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TEXAS OYSTER REEFS are, in general, characterized by their extreme depletion or entire absence. Oyster production dropped (in 1948-49) to an all time low of 12,951 gallons, or about 7000 pounds. The 1949-50 season will probably be at least as bad or worse. This drop has been due to a number of things, including over-fishing.

In a recent survey of the area made by Dr. Philip Butler of the U.S. Fish and Wildlife Service, and Mr. Byron B. Baker, Jr., of the Texas Game, Fish and Oyster Commission, the condition of the reefs was summarized by Dr. Butler as follows:

"Oyster reefs of the entire area were characterized by their serious depletion resulting from either over-fishing, drill predation, or both. With few exceptions, the oyster meats were of only fair to very poor quality. The high incidence of boring sponge and boring clam are probably the primary agents in causing this poor quality as (a) oysters living in marsh ponds cut off from infection with sponges and clams were of excellent quality even though salinity levels were