

THE FLORIDA STATE UNIVERSITY

TALLAHASSEE 32306

DEPARTMENT OF OCEANOGRAPHY  
AREA CODE 904 . . 599-3385

July 26, 1967

Dr. H. B. Stenzel  
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Dear Dr. Stenzel,

Dr. Tucker Abbott informed me that he had sent a copy of my letter of 31 May concerning my work with oysters to you. I received his letter upon my return from Boston (Convention of the National Shellfish Association) and while there, spent a day at the Harvard Museum. I met Dr. Kenneth Boss and he also told me that you were working on the oysters and, I believe, said that you were working on the monograph of the species throughout the world. I am delighted to hear this. As stated in my letter to Dr. Abbott, I am approaching the speciation complex by attempts at hybridization and chromosome analysis. Eventually, I hope to obtain all the species of Crassostrea throughout the world. I do not know how many species there are, but I feel sure that many are synonymous. I am not trained in systematics, but am already finding interesting things, one of which is discussed in a letter to Dr. Abbott. Since that time, I have made other observations that may or may not be pertinent. I have six species of brood oyster and four of these, C. angulata, C. gigas, C. rhizophorae, and C. virginica hybridize readily in vitro with apparently normal mitosis in the developing embryos. Due mainly to inadequate techniques (I feel sure), I have been able to obtain only four hybrids beyond the umbo stage to attachment; the largest of these, C. gigas X C. virginica, are up to forty mm. in length. Crosses of C. iredalei with the other species will develop up to the umbo stage, but analysis of the chromosomes show many anomalies. I get a large percentage of haploids, triploids, and hexaploids. I gave a paper at the recent N.S.A. meetings and concluded that C. angulata, C. gigas, C. rhizophorae, and C. virginica were fairly close together physiologically, at least in their crossing behavior, whereas C. iredalei was further separated and C. commercialis was only distantly related. As you know, C. commercialis has denticles and I understand from Ranson and Thomson that there are about ~~four~~ <sup>five</sup> species of Crassostrea with denticles.

I have written to Australia for three more species that they have and have also tried to secure C. cuculatta, which I believe also has denticles.

After looking at the shell collection at Harvard, I find there may be other species of Crassostrea with the denticles (although most of the shells were still labeled in the genus Ostrea). I examined the position of the abductor muscle, but would not like to place the specimens in the correct genus based on this character alone. If I get several species of Crassostrea with denticles and if they will not hybridize with species that do not have denticles, I feel that there might be justification for placing those with denticles into a separate genus. If all the species of Crassostrea without denticles crossed and developed, even though there were chromosome anomalies, and all those with denticles crossed with each other but not with the first group, it would be fuller justification. I realize there are a lot of "ifs" in my hypothesis. What I need are contacts for sources of oysters throughout the world, especially those Crassostrea with denticles. I have written twenty - thirty letters and have succeeded in obtaining five species besides our own C. virginica. Can you help me out on this? I would like about one hundred sexually mature specimens that could be shipped via air express, collect. Also, as I told Dr. Abbott, I need someone more familiar with the species of oysters than I. I consider myself an oyster biologist, principally of C. virginica and O. equestris, and not an oyster taxonomist. I shall welcome any suggestions or, if you wish, collaboration, advice etc. Please do not feel that you are under any compulsion to aid me in any way because I realize that you have been working on oysters for a long time and are one of the authorities.

Sincerely yours,



R. W. Menzel  
Associate Professor

RWM/mlr