

For Dr. Stenzel

THE FLORIDA STATE UNIVERSITY

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DEPARTMENT OF OCEANOGRAPHY
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May 31, 1967

Dr. R. Tucker Abbott
Department of Mollusks
The Academy of National Sciences of Philadelphia
19th Street and the Parkway
Philadelphia, Pennsylvania 19103

Dear Dr. Abbott:

Thank you for your letter of 25 May 1967 and the identification of Crassostrea iredalei.

In my work on oysters I am attempting to obtain as many species of Crassostrea as possible to determine their chromosome morphology as well as their crossing behavior. So far I have C. iredalei, C. commercialis from Australia, C. angulata through Peter Walne in England (a letter to France got a polite "runaround"), C. rhizophorae from the Panama Canal Zone and Puerto Rico and C. gigas through the state of Washington. Along with the native species, C. virginica, I have attempted all combinations of crossing. All crosses have produced fertilization, cleavage and development of larvae to the umbo stage with limited success in getting them to attach, except with the Australian species, C. commercialis. This is the only species tried so far in which the eggs and sperm are incompatible with any of the other species. Also, C. commercialis is the only species I have that has the denticles along the anterior margins of the shell that I have always considered typical of the genus Ostrea.

From J.M. Thompson's paper (1954 "The Genera of Oysters and the Australian Species." Australian Journ. Mar. Freshwater Res., 5(1):132-168), I understand there are four species in Australia with the denticles (C. ~~anasa~~, C. commercialis, C. echinata and C. tuberculata). I have written Mr. Peter H. Wolf in Sydney, Australia requesting, if possible, if he could send me the other three species. Reading between the lines of your letter, the part marked out "--may belong to the genus Ostrea." and also in correspondence with Dr. C.V. Kulkarni in Bombay, India, I am assuming that C. cucullata has the denticles. I do not have a copy of Atwati and Rai's paper on this species and do not remember (it has been 13 years since I last read the paper) whether this species has the denticles or not. I have written to Dr. Kulkarni requesting C. cucullata as well as C. madrasensis, which he says is similar to our C. virginica. I believe Ranson (1948, Prodissoconques et Classification des ostreides vivants. Bull. Mus. Hist. Nat. Belg., 24(42):1-12) lists only three species with the denticles. I have not had the opportunity to review this paper.

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All of this is preliminary to an hypothesis that I am developing in my own mind that perhaps those species of Crassostrea which have the denticles form a group of subgeneric status or even generic status apart from those species of Crassostrea without the denticles. Admittedly, this is based on the observation that C. commercialis, when crossed reciprocally, would not cause fertilization and cell cleavage in any of the five species of Crassostrea that do not have denticles, yet each of these five species at least initiate cleavage when crossed with each other.

I am not trained in systematics as such and do not have all the literature available on oyster species nor do I know all the procedures for researching the past literature. However, I find such an hypothesis fascinating, based not only on the shell morphology but also the physiology of compatibility of each of the species as well as the mitosis of the hybrid embryos. I need a collaborator to offer suggestions and also one who is familiar with molluscan taxonomy and the literature. Are you interested and do you have the time?

It will be some time before I can avail myself of your kind invitation to visit your museum because of prior commitments as well as teaching duties. Our Fall Quarter ends December 15 and the second quarter does not begin until January 2 and at the present time this would seem to be the only period that I would have. (Although, several years ago I attended a meeting in Maryland in January and swore I would never go north in the winter time again).

Sincerely yours,

R.W. Menzel

R.W. Menzel
Associate Professor

RWM/rh