July 16, 1964

Dr. P. E. Hare
Carnegie Institution of Washington
Geophysical Laboratory
2801 Upton Street
Washington, D. C. 20008

Dear Dr. Hare:

Thank you for your interesting letter of July 9. I am glad to hear that you have built an extremely sensitive amino acid analyzer; it can be a very useful tool in oyster studies.

I am sending you by separate mail a vial of larvae of Crassostrea virginica and a vial of larvae of Mercenaria mercenaria. Both samples are complete larvae consisting of dried flesh and shell. I suppose you have means of removing the dried flesh without ruining the shells. For our X-ray work we used hydrogen peroxide to remove the dried flesh, before we investigated the shells. If you don't have enough of a sample, please let me know.

Analyzing the adults will require great caution, because there are various shell structures involved. Would you be able to scrape off enough material from the adductor muscle pads, which are aragonitic, without penetrating through them down into the underlying calcitic shell? It would be interesting to analyze for amino acids the aragonitic muscle pad by itself and a piece of the underlying calcitic shell wall, also by itself. See enclosed sketches.

I would like to suggest investigation of various parts of the shell separately, for instance, the chalky deposits, the resilium, etc. The sketches show places I would suggest for analysis. If the results are encouraging, I could send you other species of oysters from genera other than Crassostrea and many fossil oysters. Whatever is done must be done with meticulous attention to anatomical position on the shell, because the different locations have different shell structure and very probably different percentages of amino acids.

I am looking forward to your results.

Sincerely,

H. B. Stenzel

HBS:pl
Enclosures

SHELL DEVELOPMENT COMPANY
Exploration and Production Research Division