

UNIVERSITY OF CALIFORNIA

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CRIPPS INSTITUTION OF OCEANOGRAPHY  
LA JOLLA, CALIFORNIA

Professor J. Lederberg  
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The University of Wisconsin  
Madison 6, Wisconsin

Dear Joshua,

Forgive me for my great delay in replying to your letter of June 24 which arrived in La Jolla while I was absent for several weeks. Since my return I have waited a few more weeks to reply as I wanted to get whatever information might be available on the question that you have raised.

Unfortunately, among the marine invertebrates that are easily maintained under laboratory conditions there does not seem to be any that meet the requirements that you specify. Leaving the invertebrates aside, one might consider fishes. My thought, of course, was that of trout, which are commonly bred for commercial purposes. These you will easily find in Wisconsin also, and spawning, at the time when you need sperms and eggs, might be induced by proper hormonal treatment. I am afraid, however, that in view of the very large number of chromosomes of trout the effect of the X or Y chromosome might be too small to be detected. Another possibility among fishes is *Fundulus* which, according to Makino's book on chromosome numbers, has thirty-six chromosomes diploid. *Fundulus* can be kept very easily in the laboratory and can also be brought to spawning artificially. It occurs in the east as well as on the west coast, and I think it should not be difficult to get as much material as you wish. This information comes from Dr. Carl L. Hubbs, who knows his business of ichthyology very well.

I have talked about your problem with Daniel Mazia, who is here for a few weeks, and he believes that it might be better perhaps to attempt to separate sperms having different genetic constitutions on the basis of some chemical property manifest in the cytoplasm of the cell. He was mentioning to me also that H.M. Kalckar is attempting something of the sort in human sperms to see whether there is any cytochemical difference between sperms carrying the factor for galactosemia and the normal ones. Mazia told me also that he will probably drop you a line on a similar matter very soon.

I am sorry that I cannot be of much help to you and if something else comes to my mind I shall certainly resume this conversation.

Next month I will be going to Italy for a while and I shall try, with the help of Cavalli, to get an invitation for Esther and you to visit some Italian laboratory.

With best wishes to both of you,

Yours sincerely,



A.A. Buzzati-Traverso