

August 26, 1976

Dr. Richard Young
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Washington, D.C. 20546

Dear Dick,

I may have a chance to talk to you about this personally, but I did not want to take a chance of the thought evaporating while I have a chance to get it down.

Every ten years or so I have had the thought again that we should try to put some experimental effort here to finding the missing evolutionary links in the origin of life on earth, in parallel with what we are all doing about trying to resynthesize them. The big gap *which* can be expressed in various ways - there was a little hint of that in my addendum to you about the code - concerns organisms that must have existed at one time having a less complete development of the code, the amino acid ensemble, the pattern of DNA to RNA to protein. It is, of course, conceivable that every vestige of them has disappeared but that is a point on which there can hardly be explicit evidence and the matter is perhaps in some sense in the same state as was the question of bacterial sexuality in 1945. Until we can find good selective procedures and are well informed about what to look for, how can we be sure?

It occurs to me this would be a good time to renew such an effort. The last time I got barely started, I found that my former graduate student, Norton Zinder, had scooped me on exactly the direction I was seeking: namely with the discovery of RNA phages. So, that even if such a project does not work out, it may have unexpected payoff anyhow.

One thing that occurred to me was whether you might (1) have any ideas or information yourself that we ought to have in mind in fleshing out this program. I assume that we would have the greatest success in looking at unfamiliar environments that are not already swamped with the kinds of organisms already familiar to us, and (2) whether you have any inclination to taking a direct part in such work for some period of time. I do not know whether there is any prospect of your taking a sabbatical or some other arrangement, but I did want to offer you the possibility of 6 months or a year or whatever interval like that would suit you to get your hands dirty in the laboratory again. Since we do not really yet know what we want to do, I think the demands are far more for uninhibited but self-critical

thinking rather than for specialized laboratory technique that would intimidate either of us if I were in your shoes at the present time.

Anyhow, I just wanted to introduce the general topic and hope we might have some other opportunities to discuss it in the near future.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

JL/rr