

PUBLIC HEALTH SERVICE

BETHESDA 14, MD.

NATIONAL INSTITUTES OF HEALTH

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Professor Joshua Lederberg Genetics Department Stanford University Palo Alto, California

Dear Josh:

I foolishly postponed the reading of your Nobel address until today, and I am embarrassed that I did not know your current ideas on the origin of life when I wrote last. However, I had heard about them vaguely from Newton Morton, and I felt that because of your active interest and definite ideas on the subject, you would be a particularly good person to expose my own ideas to.

The idea of a simple DNA-like polymeric system is appealing and I think a very likely <u>intermediate</u> step in the early evolution of life, but I believe the polymeric nature of the genetic material is a refinement that the <u>earliest</u> reproducing systems may have been able to do without. I think a careful analysis of the question reveals that <u>mutable</u> reproduction does not have to be built into the gene-analog. New "genes" might be contributed as exceptional by-products of the old ones or by entirely independent chemical reactions. Natural selection can operate on a "frozen" gene pool, i.e., on the backlog of genetic variability, and continued evolution by natural selection is indefferent to the source of new genetic material, as long as there is such a source.

I am enclosing a reprint of my 1957 paper in the hope that a rereading of it may help persuade you to see the problem as I see it.

Sincerely yours.

Condon Allen