



STANFORD UNIVERSITY MEDICAL CENTER

STANFORD, CALIFORNIA 94305 • (415) 321-1200

August 20, 1973

STANFORD UNIVERSITY SCHOOL OF MEDICINE  
Department of Genetics

*see automata*

Dr. Martin Pollock  
Department of Molecular Biology  
King's Buildings  
Mayfield Road  
Edinburgh EH9 3JR ENGLAND

Dear Martin,

Thank you for exhuming the reference in Nature 1953 on "bacterial information".

That phrase about no material exchange of substances does have a peculiar ring today, doesn't it! But I think we have to be careful not to overinterpret it. What I think they may have had in mind would be the modification of a self-sustaining reaction state in one cell line by stimuli, be they chemical or electrical, that are not necessarily themselves part of a self-reproducing particle. You may remember that Delbrück had some fun with such discussions, and I am enclosing a few archaic remarks of my own, although I have to say that the criterion of the number of bits of information which are sustained by the self-reproducing system is still an effective criterion.

However, the model probably went a little deeper. Harriett Taylor was quite reluctant to talk about transforming substances rather than transforming principles. Boris: I have to say was a little bit upset that I had left out much reference to her in my note to Nature and I had to tell him that I thought that she really did not believe that material recombination was playing a role in the pneumococcus transformation. You can get some idea of this from her paper in the Cold Spring Harbor Symposia, this was reinforced in her personal conversation and correspondence with me. While Boris thinks I am all wrong about my interpretation of her attitudes about this I certainly do not want to pour any salt into old wounds.

I wonder if you could get Jim Watson to explain what he thought he meant by that note.

Sincerely yours,

Joshua Lederberg  
Professor of Genetics

JL/rr  
Enclosure

① Remember, e.g. Novick - PNAS 7/57; Sonneborn + Beale was widely quoted;

Delbrück 1949 discussion of Sonneborn + Beale was widely quoted;

LT. J. P. KENNEDY, JR. LABORATORIES FOR MOLECULAR MEDICINE, DEDICATED TO RESEARCH IN MENTAL RETARDATION

*I saw Beatty start yesterday. He "never intended to imply" that Avery was ignored like Mendel. "Nagelsen and Hittner were both diehards" - doesn't mean they're the same. So he owes as he is misinformed. J.*

*POLLACK, H.*