

August 19, 1956

DR. H. J. Muller
Jordan Hall
Indiana University
Bloomington

Dear Dr. Muller:

I have just gotten round to read your most provocative paper on mutation in the Brookhaven Symposium. I have often thought that the type of analysis you have been presenting on the y-sc-ac region represents the most refined exploitation of *Drosophila*, and that it is a pity that other fads have preoccupied our colleagues in preference to a more concerted effort along these lines. I do want to urge you to take the effort to write up this study in full detail, which you imply has not been done— this is ~~suggest~~ just to suggest that there would be a deep interest in such an account.

The result is, frankly, rather surprising to me as I had begun to believe there was little or no evidence for structural discontinuities in the chromosome; your discussion certainly gives one pause on that!

We have been doing some structural analysis of our own in *E. coli*, with the following preliminary conclusions. In the Lac₁ region, apparent recurrences (by recombination tests of c. 10⁶ - 10⁸ trials) are the rule; on finer analysis many of the mutants behave like segmental overlaps with one another. In the Gal region, on the other hand, no certain recurrences have been found yet (with about 12 loci fairly fully tested, and 30 or 40 more only roughly). The mutants do fall into 'cistrons' (position effect groups), the detailed pattern of which we are studying now. So far, the cistrons have been closed, i.e., the mutants in one group show cis-trans p.e. (in heterogenotes) in any combination, while the trans-configuration of mutants from different groups is phenotypically +. However, there seem to be some definite exceptions to this rule which we are now studying/

I was puzzled by the footnote at p. 142 of your/ article, and would appreciate your clarifying it. Did Demerec talk about position effect? Can he, in fact, show it in *Salmonella*? What are the supposed localized gene products? I could find none of this in the published paper; perhaps he had some other comment about it.

With best regards,

Yours sincerely,

P.S. Any chance at all of copies of your earlier papers on this analysis ('35, '40)?

Joshua Lederberg