

REF

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Dr. Joshua Lederberg  
The University of Wisconsin  
College of Agriculture,  
Agricultural Hall,  
Madison 6, Wisconsin

Dear Dr. Lederberg

I received your agreeable letter, and I am extremely grateful to you for helping me in many ways.

I have taken proceeding to order the papers in microbial genetics, through the book importer. I could not order directly, because of the state control of foreign money-order.

I should like to introduce your great achievement about gene recombination and genetics of bacteria to Japanese widely. I have read so many literatures as far as possible in Japan, and almost finished writing the detailed review composed of ca 20000 words.

Enclosed is the list of them I have read. If anyone is omitted, please tell me it, and would you kindly send its copy, as the literature omitted from my list will be never caught in Japan.

And I can't find the literatures  $\odot$  marked in my list in Japan.

Of course, I know that your article "Gene recombination and linked segregations in *Escherichia coli*" published in *Genetics* 32; 305-325 1947 is included in the papers in microbial genetics which I have ordered, but, the book importer said, it takes two or three months that the postal parcel arrive to Tokyo from U.S.A. I am afraid, the papers is late for the ~~est~~ crossing day. I want to perfect my review as far as possible for the good of readers and yourself. So, would you kindly send to me a type-written copy of that article. By the same reason, I would also appreciate copies of your publication at the 1951 Cold. Sp. H. Symp.

Moreover, please enclose your portrait and brief study-history, as it is desirable to insert them at the top of my review.

"I have one question of your article "Aberrant heterozygotes in *Escherichia coli*" published in *Proc. nat. acad. Sci* 35; 178-184, 1949, At 179 page written that H-1 (prototrophic,  $T_1^S T_5^S$  Diploid) is obtained from the conjugation of  $B^- M^- Lac^+ T_1^r T_5^S$  and

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$T^{-}L^{-}B^{-}Lac^{-}T_1^{r}T_5^{r}$ . Here, the parents are together resistant to  $T_1$ , but, H-1 is sensitive  $T_1$ .  
What is this reason, is there modifier gene?

At what Journal and when the article "Instructions for crossing biochemical mutants of *Escherichia coli*" enclosed in your letter is published?

In "Gene recombination in bacterium *E. coli*" published in *J. Bact* 53, it is said that two parent strains are cultivated together in a broth culture, and then washed, spread on the minimal agar. But, in "Instructions for crossing biochemical mutants of *E. coli*" it is said that the parent strains are cultivated separately and washed, then combined and spread on minimal agar. Which method is better? Where and when the latter method was first published <sup>shed</sup> ~~ated~~?

I ~~also~~ want to know "the trace element solution" at 676 page in *J. Bact* 53 1947. I can't catch the *Am. J. Botany* 32. So, please teach me about "the trace element solution".

I am now experimenting the cross of *Shigella flexneri* type 4 strains isolated in Japan. These type strains are biochemically divided in two groups. One is mannitol fermentation +, trimethyl amin oxyd reductase +, and nicotinic acid requirement +. Another is mannitol fermentation -, trimethyl amin oxyd reductase +, nicotinic acid requirement -. ( But, very few strains are MTL -, TMA -, NA - )

I think, there is the linkage of MTL +, TMA -, NA +, and the linkage of MTL -, TMA +, NA -, between these two types. And, the linkage is almost complet but little crossing-over is there.

Perhaps, these haploid are descendants of Diploid MTL +, TMA +, NA -. This Diploid is not discovered naturally. But I imagine this Diploid is Pro-type 4 *Shigella flexneri*. I consider thus the systematical genesis of flexner group *Shigella*.

Now, I am making the Diploid. It is hopeful. Soon, I will send you the detailed result.

( You may know Dr. Kihara who has succeeded the genom-analysis of wheats and thereby ~~he~~ concluded the origin of wheats. )

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In this letter, I have entreated too much. I beg your pardon and waiting for your kind letter.

The strains, I will receive from Prof. Kikkawa.

Sincerely yours.

Tetsu Nakagama

N. I. H.

Japan