

Madison 6, Wis.,  
October 16, 1951.

Dear Dr. Kbieneberger-Nobel:

I was, of course, most disappointed at the news that your trip had been postponed or cancelled. However, I should think you might do very well on the alternative plan you mentioned. If such a trip materializes, I hope you will be able to visit our laboratory long enough to discuss the many points at ~~October~~ <sup>October</sup> 15, 1951. our interests about. Until next summer, we will not have the lab. space that might make it possible to allow a more direct discussion with experimental material in hand, but after that time some such arrangement might be possible as well, if it seemed appropriate.

As to E. coli K-12, three cultures have been in the mails for two weeks or so. In addition to the parental wild type culture, I included two mutant derivatives with which the phenomena of recombination are very readily demonstrated. Simple directions are included with the cultures. No special materials are required: only a synthetic agar medium which selects for recombinant cells. Simmons' citrate agar + glucose will do as well as the formula given. The characters that you would probably find the easiest to score would be lactose fermentation and streptomycin resistance which can be handled by ordinary established methods, preferably on agar rather than in broth, (the parents 58-161 and W-1177 are contrasted as Lac<sup>+</sup> S<sup>S</sup> vs. Lac<sup>-</sup> S<sup>r</sup> respectively.)

Unfortunately there are no books or monographs which give a comprehensive treatment to bacterial genetics. Dr. Catcheside, (Botany-Cambridge) may have one in the press. There are several reviews, especially by Luria (Bact. Rev. 11:1-40); Braun (Bact. Rev. 11:75-114) which are quite sound, as well as my own (Heredity 2:145-198; Ann Rev Microbiol. 3:1-22; and for methods, Methods in Medical Research (Yearbk Publ., Chicago) Vol 3.) Perhaps I should also call attention to the volume used as a text in my course here, a collection of original papers "Microbial Genetics" issued by the University of Wisconsin Press. In addition to the papers, this has an introductory commentary and a selected bibliography. The Press will undoubtedly have mailed you a descriptive circular.

## review

The mention in your paper of L-forms in rhamnose-papillae of S. typhi was useful, and possibly evoked FA from this serotype that would act on S. typhimurium. The converse interaction has been clearly established, and we have fairly conclusive evidence of the synthesis of new Salmonella serological and cultural types by recombination of typhimurium X typhi. We have not observed L-forms in lactose-papillae which are probably of a different origin (see e.g., Lwoff, Cold Spr. Harb Symp., 1946). Do you have an organism that illustrates this? I would appreciate the opportunity of a verification.

I am not sure just what to suggest by way of a morphological study of strain K-12. The possibility that L-forms are implicated is neither supported nor contradicted by the evidence. Recombination occurs infrequently, but must have some morphological basis; we do not know how to evoke or demonstrate L-forms in this material. The field is rather bare, but I hoped your experience and imagination might uncover some leads.

Sincerely,

Joshua Lederberg