

July 1, 1948.

Dear Luria,

I wish I were out there at OSH myself. It gets damnably hot here!

Those cultures you wrote for will go right out to Miss Kuan. I am very pleased that you want them.

Lately I've been finishing up some work on the genetics of the phage resistance patterns "K/1" and "K/1,5", or as they may alternatively be written V_1^R and $V_{1,5}^R$, since these are definitely non-allelic. Novick sent me a culture of T1h, and as you might expect, V_1^R is resistant, $V_{1,5}^R$ is sensitive. Both from wild type and from "K/1", T1h types have been found, almost all of them resistant, but a few sensitive to T5. I have the impression from your papers that in coli B, B/1h is always resistant to T5. However, you indicate that some of the virus mutants may differ from each other. In what respect? If you have preserved them, would it be worthwhile to test them on the K/1h I know have? Also, a large series of "K/1,5h" were tested, and they were all still sensitive to T1. However, K-1,5 differs from B, as you pointed out in giving clearcut resistant mutants to T2 and T2h. Would you care to see the manuscript, in a couple of weeks, before I send it in? No complex resistants have been found as yet.

In connection with my embryo program on Salmonella genetics, I came across the lysogenicity of *S. typhimurium* S21 on *S. gallinarum* S36. It is a little puzzling to me that none of several hundred survivors of S21 treated with very heavy doses of ultraviolet has failed to carry the lysogenic phage! I would like to find a phage-free S21, and propose now to try some specific anti-phage agents, perhaps Phosphine G80 or desoxyuridine. Burnet reported that antiserum had no

sterilizing effect. It seems possible that a) virus reactivation prevents the disinfection of the cell, b) that irradiated virus may prevent cell multiplication or c) that the bacterium has formed an adaptive symbiotic relationship of some sort so that the disinfected cells do not often survive. I am convinced that in these cases of "permanent" lysogeny, the phage is transmitted intracellularly, although it may be excreted only upon the occasional lysis of a cell. It will be difficult to do absorption expts. on the infected cells, but it may be possible to do something with virus mutants.

Best regards,

Sincerely yours,

Joshua Lederberg.