

November 24, 1952

Dr. Philip R. Carpenter
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Dear Dr. Carpenter:

Thank you for your letter of November 21.

You will probably have seen the November 1952 issue of the Journal of Bacteriology, which makes further reply on this point unnecessary. I will be pleased to send you a reprint when the supply arrives.

For text purposes, I would suggest that the typhimurium-x typhi transduction may represent a second order of complexity, dealing as it does with a diphasic -x monophasic. Instead, I would suggest that you quote the following very clear cut results:

abony (phase 1) --x typhimurium : IV V XII; b:1,2 (paratyphi B)
IV V XII; b:enx IV V XII; i:1,2

abony (phase 2)
IV V XII; b:enx --x typhimurium : IV V XII; i:enx

abony (phase 2) --x scdai : IX XII; a:enx
IV V XII; b:enx IX XII; a:1,2

These illustrate the pattern which appears to prevail over a wide range of transduction experiments, namely that only one phase is transduced at any one occasion, and that this corresponds to the phase of the bacteria on which the FA (d.e. phage) has just been propagated.

The experiments are done by inoculating soft agar plus antiserum (e.g. anti-i and anti-i,2) with a mixture of the recipient bacteria and the FA. The transductions form buds, then swarms in the soft agar, and have been in the phase indicated by the underlining. This work will be published in due course, but needs considerably more study to fortify a sound genetic theory of phase variation. Until then, it may be quoted as a personal communication from me.

Before I close, may I mention that I may have a vacant assistantship next year for research on this program. If you can recommend any good students, B.A. or M.A., would you ask that they write to me?

Yours sincerely,

Joshua Lederberg