June 16, 1954

Dear Josh,

It has been a longtime since we have corresponded and I am anxious to ask you a few questions about transductions in Salmonella. Has it been shown that the agent responsible for various types of transduction in this genus, inactivated by DNase? I know that you have believed that the genetic characteristics which can be transduced are brought about by DNA carried by phage. What is the evidence that the active material is "carried" by phage? Why not merely present in the lysate? Can the "DNA" be inactivated for transduction without decreasing or destroying the lytic activity of the phage? Can the phage be removed from the active solutions without removing the transducing principle?

Some work which we have been doing with transduction in B. anthracis have suggested the above questions. We are able to transduce motility to some strains of this organism by means of phage lysates. The overall picture is analogous to those which your group has described in Salmonella. Manniger and Nógrádi and Tomcsik have described transductions of capsular material and motility from strains

of B. mesentericus to the anthrax organism and of capsular material from B. anthracis to mesentericus. These were not attributed to phage but apparently no examination was made for its presence. Our active material is contained in phage lysates propagated on B. anthracis (non-motile) and apparently is transferred to other non motile strains of this organism by means of the phage. The active substance is readily destroyed (for transduction) by small amounts of DNase.

The induction of motility in B. anthracis has significance for diagnosis since, as you will remember, the loss of motility and the degree of pathogenicity are the best differential characteristics. This also argues for the close relationship of B. anthracis and B. cereus as several other people have pointed out.

Please do not say anything about this work since we have not received approval for publication. We would appreciate your comments on the questions about Salmonella or on anything else.

Hope you and Esther are having a nice summer.

Cordially,

Bill Cherry

P.S. I am no longer in enteric bacteriology. Am now assistant-in-charge of the Diagnostic Bacteriology Laboratory. This is all ~~Laboratory Branch~~ reference diagnosis in bacteriology except enteric. Not much time for research.