THE UNIVERSITY OF WESTERN ONTARIO
FACULTY OF MEDICINE

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY
THE HAMILTON KING MEEK MEMORIAL LABORATORY

375 SOUTH STREET,
LONDON, CANADA

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Dr. Joshua Lederberg,
Department of Genetics,
College of Agriculture,
University of Wisconsin,
MADISON 6, Wis., U.S.A.

Dear Lederberg:

I hope that the enclosed reprint will be useful to you but I fear that it will not provide the technical details that you would like to have. Therefore, I am also enclosing a draft of the more complete paper that is in process of preparation. The illustrations are not assembled yet and I regret that I cannot send them along. You can get an idea of what is meant by reference to the diagram in the reprint.

Of course, all the statements refer only to B. cereus and cannot really be transferred to other cells. We have tried to do similar work on some enterics (Escherichias and Shigellas) and there are some similar problems. The correspondence of phase and hydrolyzed-Giemsa preparations is much closer in the Gram negative (as shown by Stempen) but I am fairly certain that the chromatin is embedded in an achromatic matrix and that our ordinary preparations only give us a part of the story. Care must be taken in interpretation and we prefer to go much more slowly than our nasty colleagues.

Robin and I are engaged in some comparative cytology (with Fungi, blue-greens, and some protozoa) in order that we may have a better understanding of the possible alternatives in interpretation as well as the difficulties of observation. He will appreciate your greetings when he returns from a jaunt to the wilds of New York and New Jersey!

There is much to be learnt about the structure of these damn nuclei before we can make a reasonable (and educated) guess as to the gross mechanics of division. As a personal feeling, I do not believe that anyone can or should be able to write (or talk) about "The cytological basis of bacterial genetics" as some of our

esteemed colleagues have done. The problem is not only one of artefacts but also one of unscientific approach and lack of critical appraisal of alternatives.

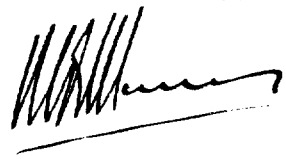
If we can be of any help, let us know. We are very acutely interested in finding the fruitful approaches to the problems. Let me know if you want more detailed information.

Jim Whitfield and I have had a pleasant and profitable year trying to study the cytological changes during the lysogenization of Shiga with the P1 and P2 phages. We have some good information and it seems to show that there are some quite special reorganizations in the chromatin of the cell, but hard to interpret.

Rome was quite an experience. Scientifically, it was not too informative but the cytology symposium served its purpose as a sort of psychoanalytical catharthis!

With best regards to you and your wife.

Yours sincerely,



RGEM:mj
Enclosures

R. G. E. Murray, M.D.
Professor