

January 13, 1953

Dr. U. N. Lanham
Department of Zoology
University of Michigan
Ann Arbor, Mich.

Dear Dr. Lanham:

Thank you for your letter of January 9.

I hope my review suggested no pretensions on my part of expert knowledge of insect symbioses. Few geneticists are so much as aware of the existence of these things, and it was my hope to present them as they seemed to be in their genetic aspects. While we should be careful to sort out the various phenomena, I note that you will accept at least the rickettsia as endosymbionts subject to transovarial transmission, and I assume that you will admit at least the occasional intracellular habitat of some of the yeast-like forms, notwithstanding these seem usually to be transmitted on the egg surface, rather than inside. Without wishing to gloss over important distinctions, however, I suggest that from some points of view the most important fact is that the symbionts are regularly connected with the reproduction of their hosts. To put the matter another way, differences due to symbionts would be very likely to show up in cross-breeding tests as if they were due to cytoplasmic or maternally inherited factors.

Your comment on *Pseudococcus brevipes* was especially interesting. I can only hope that a more extensive application of genetic and microbiological approaches to these problems will settle them finally.

Although I am not working in insect symbioses myself, I should be indebted to you if you would keep me in touch with your future work via reprints of your publications.

Yours sincerely,

Joshua Lederberg
Associate Professor of Genetics