UNIVERSITY of ILLINOIS
COLLEGE of AGRICULTURE
AGRICULTURAL EXPERIMENT STATION
URBANA, ILLINOIS

DEPARTMENT
of HORTICULTURE

April 12, 1955

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
College of Agriculture
Madison, Wisconsin

Dear Dr. Lederberg:

Enclosed is a reprint of "The Physiology of the Actinomycetes". I am delighted that you have undertaken the study of the genetics of this group of organisms. We had contemplated doing this for a few years now, but always "backed off" because we never felt competant to carry through such a program.

For the past few years we have been studying the biosynthesis of chloramphenicol, a metabolic product of Streptomyces venezuelae. As part of this investigation, we have studied the production of U.V. and X-ray mutants. Many mutants appear with X-ray irradiation. Most frequent are those for pigment production, early fragmentation of the mycelium, loss of sporulation and colony size. In addition, some mutants lose their autotrophic (except for carbon) metabolism. A few mutants which we have tested produce a great deal of acids, which we are identifying. We are now attempting to find the growth-promoting factor which is absent in the mutants that have lost their ability to grow on chemically defined media.

The mutants which no longer produce a melanin-type pigment but retain their mycelial habit also are very striking.

Some of these cultures might furnish excellent material for genetic studies. If you are interested in some of these cultures, we would be glad to cooperate with you.

Sincerely yours,

David Gottlieb
Professor, Plant Pathology

DG:vgg

P.S. As I think of it, another useful feature might be the utilization of various C compounds for growth. Many pairs of "O pairs" have converse abilities in this regard. Some of these have now been tested in a number of laboratories and seem to be fairly stable for this characteristic. Not all the data is available in the literature, but can be obtained personally.

I am sorry that most of my papers are out of print.

RS