February 21, 1953

Dr. E. J. Czarnetzky
Wilson and Company
Chicago Illinois

Dear Dr, Czarnetsky:

A few days ago, I was visiting P. R. Edwards at Chamblee,Ga., and happened to refer to the preservation technique outlined in the enclosed circular. In the course of our conversation, he referred to a process of which he had heard from you, and which may be based on a similar principle. If you can make available any additional details, I would appreciate hearing about them.

The circular is more discouraging, perhaps, than it might be. In previous private discussions, I had been optimistic and I did not want to mislead any of my friends into relying on this technique until it had been thoroughly tested. It will be a good many years before this can be done; our own results have been, on the whole quite good and better than represented, but not always reproducible. More research is needed on at least three points:

1) the best medium on which to dry the cells themselves

2) optimal residual free water (as I suspect some failures may have been due to overdrying)

3) optimal suspending medium— some of my colleagues using this method have had better luck with serum or milk.

These empirical problems would be better solved, and in my own mind are superseded by more fundamental biophysical studies on "suspended animation", to which relatively little thought has been given on the theoretical side.

Do you know of anyone else following up this line of work? Dr. Freeman Weiss, at the Type Culture Collection has been planning to do some studies, as I understand, on this silica gel procedure.

Yours sincerely,

Joshua Lederberg
Associate Professor of Genetics

SILICA GEL