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21. 2. 1952.

Dear Dr. Lederberg,

To-day I am sending you a number of new photos which I definitely think (dare I say it so positively?) represent the zygote of E. coli. They are bodies of a fairly large diameter and there is indication that they divide into four smaller bodies which grow out into bacilli. Both bodies and newly formed bacilli have a great avidity to the stain and darkly staining nuclear structures. Zygote and new bacteria turn up between the

twelfth and twentieth hour of incubation and disappear fairly rapidly. On the mating plates they are usually found in groups of 1, 2 or four, sometimes 8 as shown on photo 1. They are rare, but you can find several groups in one bacterial cell. Occasionally, it seems one can find more of them at a corner of an edge of growth. Such a lucky accident was used for the production of photos 2 - 4. In 2 and 3 there are only the round bodies lying on fading material. In 4, 5 and 6 the new bacteria are present as well. They seem to grow out of the little body with a tapering end. They are usually in twos, hanging together at first with their fatter ends,

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thus forming a characteristic pattern which scattered over a field. In photo 7 the "zygotes" are seen dividing. They are very characteristic in their appearance and may impress the uninitiated as "contaminants". I am confident they are not. I think they can always been found in the mating experiments at the appropriate time. I have not seen them so far in the single cultures 58-161, W1144 or W644. – I also have made some progress now in finding out how they arise and where the mating might take place. I am pretty sure that the ♂ forms play a role in the story, but they

are <u>not</u> zygotes. I hope I shall make gradually more progress and may be a able, eventually, to piece it all together. I have learned quite a bit about the morphology of the two different cultures, but there is so much to be seen in fines preparations that I sometimes get bewildered. Yet I shall carry on, as it is one of the most interesting problems I have ever endeavoured to solve.

I want to ask you about the following: The Rockefeller people have not been to see me yet. It may be March or April until I am going to be interviewed. Personally I should very much like to stay at your laboratory much longer than I originally intended.

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Perhaps some months, in order to do some work with you. If you also feel that this would be useful and you would wish it yourself, let me know. I shall ask Rockefellers if they can support me for so long. On the other hand if they could not, would you be able to find funds just for the time I would be staying with you. I also want to stay at least 2 months with Robinow. Prof. Murray has already invited me. If you feel it might be helpful, perhaps you would write to Dr. Pomerath, Ass. Director, Rockef. Foundation, and explain

your point of view. Yet I leave that to you as I don't know what you feel about it and if it is advisable or not.

I have now Dr. Catheride's book and your collection of papers from the Wisconsin Press and am very glad about it.

You see I am occupied. —

Yours sincerely,

Emmy Nobel.