

July 1, 1958

Academician A. I. Oparin  
Academy of Sciences  
Moscow, USSR

Dear Dr. Oparin:

I am enclosing a paper which I hope will interest you, as many of the basic ideas were stimulated by your book "Origin of Life on the Earth". Unfortunately the splendid 3rd edition of this did not reach us until the manuscript was already prepared so that we were unable to take full advantage of your latest ideas. We were able to condense much discussion of Athenius' hypothesis by reference to your book, however.

Despite the strength of the negative arguments however, I do not believe that a question as important as this should be absolutely disposed of without reference to empirical tests, as outlined in the accompanying paper. Our knowledge of the conditions of space is still imperfect, and there may exist organisms which are far more resistant to irradiation than those which have been tested under terrestrial conditions. Furthermore we do not know the possibility of protection of spores which might be embedded in a reflective coating; the possibilities of interplanetary transit under the protection of a meteoritic planetoid, or from the earth to the moon during eclipse seem very remote, but suggest that it would be difficult to anticipate all possible mechanisms. I am in full agreement on the a priori probabilities, but as low as they are, the overwhelming importance of the subject still leads me to encourage a cautious approach to investigations that might lead to serious biological contamination, even of the moon.

That special precautions should be taken to avert any contamination of Mars cannot be questioned once the issue is raised.

Unfortunately, although the experimental study of life on other planets is undoubtedly the most compelling scientific objective in space research, biologists have hardly begun to think about this problem in realistic terms. Since space-flight has become deeply entangled with the tragic political and military rivalry of our times, there is great danger that fundamental scientific objectives will be overlooked, especially if biologists of all countries do not voice their interest and concern in developing a sound program.

It seems to me that the international scientific congresses, for example those on microbiology and on biochemistry this summer, would furnish an excellent opportunity for free discussion of these issues and perhaps for the formulation of a common statement of purpose. I am already in correspondence with Professor V. D. Timakov who will represent microbiologists of the U.S.S.R. at the Congress in Stockholm,

August 4-8, 1958, with a view to organizing such a discussion there. I am writing to ask whether you cannot encourage such discussions on the part of your colleagues, and to ask whether you would not have a vital interest in them yourself. It would please me very much if you could plan to attend the Stockholm Congress yourself, which will have much of biochemical interest to you, so that we might meet for fuller criticism of these arguments.

Yours sincerely,

Joshua Lederberg  
Professor of Medical Genetics

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