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DIVISION OF BIOLOGY

Sept. 19, 1960

Dear Josh,

In reply to your memo, I would like to attend the Eugene meeting, but I doubt if I will be able to, because of the time involved. It takes just about as long to get to Eugene from Pasadena as it does to go to Washington. I'll have to see how things work out here. In any case, I am tied up on Oct. 18th.

Now that Stanley Miller is at La Jolla, I wish to recommend him for membership in Westex, or Committee 14. Aside from his personal qualifications, which are numerous, he would provide us with a contact with La Jolla, which is an important center of space research. His address is School of Science and Engineering, University of California, La Jolla.

The following are some random thoughts that might provide agenda items. Decontamination continues to be a problem and will, I am sure, be an uphill battle all the way. It was discussed again in Washington last week at the meeting of Melvin Calvin's Biology Advisory Committee. Carl Sagan came up with the excellent suggestion of keeping the Russians informed on everything we learn about decontamination techniques. This might best be done via the Academy. The continuing education of our own public and our decisionmakers on this matter is also important. I understand that Chas. Philips will have an article in Science soon on his experiments; and NASA is planning a series of films, one of which will deal with decontamination.

An interesting question in connection with the possibility of survival of terrestrial organisms on Mars is the isotopic composition of Martian water. If, as is possible, Martian water is highly enriched in deuterium, this would obviously be important in limiting the multiplication of terrestrial organisms. The effect of heavy water on bacterial growth has, I suppose, been studied. Perhaps more should be done--I am not familiar with this literature. In any case, one of the first questions for future infrared studies of Mars should be that of the deuterium content of its presumed organic molecules. This will also be important in deciding what media should be used in experiments designed to detect life on the planet.

In connection with your detection system, I am wondering about the use of a liquid flotation process, since this would seem to require that the apparatus land right-side-up. If dropped by parachute, the package will tumble and could come to rest in almost any position. If landed by retro-rocket, a worse problem may be introduced, since the blast from the retrorockets may sterilize the ground around the package. An alternative method of enrichment that would not require a liquid medium would be an electrostatic precipitator of some sort. I wonder if this would work.

Your UV microscope seems to have marvelous possibilities. If individual cells can be detected and recognized without requiring the growth of colonies, the chances of success will be significantly increased.

Best regards,


Norman Horowitz