

Notes for Planetary Biology Discussion - Febr. 21, 1959

The purpose of this meeting is to introduce the problems of planetary biology as a serious subject of experimental planning in national and international programs of space research. Unless informed biologists devote themselves to these problems now, unique opportunities may be irreparably lost. It seems important (1) to formulate a tangible prospectus of planetary biology, drawing on as wide a range of interest and talent as possible and (2) to find or create channels of information and advice to and from other scientists in space research and the agencies responsible for the execution of the experiments. It hardly has to be mentioned that the problem is entangled in a web of domestic and international "politics" but the organization of NASA should be a decisive step in bringing order out of chaos and encouraging the primacy of scientific justifications for space projects.

How to get a clearer picture of the organization for space research is certainly one of our problems. As I understand it, the National Aeronautics and Space Administration (NASA) has primary responsibility for scientific projects, and it presumably also speaks to ARPA in the Defense Department in scientific issues. NASA is the operating agency and is just organizing, in detail, its working groups. It has been advised by a Space Service Board of the National Academy of Sciences (NAS), one of whose subcommittees is "General Space Projects" and is headed by Bruno Rossi (Professor of Physics at MIT). As microbiology is not now extensively represented on the Space Board, Rossi has asked that his subcommittee be advised by ad hoc groups of working biologists. At my own suggestion, two regional groups (Boston and San Francisco) are being set up to save time and travel as compared to a pancontinental one in Washington. It may well be worth while to maintain local foci where we might meet more often in informal and convenient context. Our proposals will be summarized and forwarded to Rossi and perhaps also distributed much more widely. (Effective procedure is of course an important item for our own consideration.) No security questions are involved; we should certainly leave any public announcements to the official group to whom we are, in the first instance reporting. Expenses for the meeting are being paid by the NAS.

Particularly in biological exploration, a purely national program would be futile. I do not know what commitment, if any, the USSR has made towards international cooperation. To succeed the IGY, a continuing international Committee on Space Research (COSPAR) has been organized as an adjunct to the ICSU (International Committee of Scientific Unions). CETEX (Committee on Contamination By Extra-Terrestrial Exploration) now reports to COSPAR. Its first meeting, held in May 1958 was reported in Science, for October 17, 1958. (No Russians and no microbiologists are represented.) Their report is a constructive document and I urge all of you to study it. CETEX has been instructed to draw up a "code of conduct" and will meet March 9. The imminence of this meeting, and of further U.S. and USSR moonshots places some urgency on our meeting. Our report will certainly influence both CETEX and NASA, though of course the policy decisions are their responsibility. The Boston group has already met and their report will be circulated to you.

The immense theoretical importance of planetary biology has not until now been reflected in any serious discussion among the microbiologists, geneticists, biophysicists, etc., who should be most cogently concerned. A purpose of these meetings is to excite your own latent interest, to communicate this to your colleagues so that there will be a sufficiently deep source of inspiration and criticism to insure an orderly and effective program.

A tentative agenda is enclosed. It was drawn up arbitrarily to help us use our time most efficiently. I will preface it with the suggestion that Lunar Exploration is our most immediate problem. (1) Is there any possibility of biologically interesting material on the moon? (2) If so, could it be inadvertently spoiled, and what should be cautioned against? (3) What constructive measures do we have? My uncertainty about (1) has been deepened by controversial reports of "obscuration" (=haze=?moisture) of a lunar crater (Alter, 1957) and spectroscopic evidence of gaseous emissions (Kozyrev 1958). If there is any uncertainty as to the possible persistence of subsurface moisture, presumably by continuous seepage from deeper layers, the moon like the other nearby planets qualifies as a possible habitat for biota of terrestrial origin, and the risk of effective contamination is greatly magnified.

Looking forward to seeing you,

  
Joshua Lederberg