THE TRAVELERS RESEARCH CENTER, INC.
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October 21, 1966

Dr. Matthew Meselson
Harvard University
The Biological Laboratories
16 Divinity Avenue
Cambridge, Massachusetts 02138

Dear Matt:

I have collected and reviewed the publications you requested in your letter of October 18. Publication 7000-103 is enclosed. It is a proposal prepared some time ago by George Milly for ONR. Although it is outdated, some of the ideas expressed might remain valid. This was prepared prior to my association with TRC.

The remaining publications (7022-83, 7231-184, and 7231-202) were produced under contract to the U. S. Army, and I am not permitted to release them. Report 7022-83 is to be distributed by Dugway Proving Ground, Utah; and 7231-184 and 7231-202 have to be ordered from the Department of Defense Documentation Center, Alexandria, Virginia. The studies are unclassified however. Therefore, I see no reason why you could not be permitted to read them here at TRC. The restriction only applies to transmittal of the documents. It might be profitable for you to visit us again and to spend a day here at your convenience. I will be glad to make available any information that you might believe useful. It would also provide additional opportunity to pursue the subject of detection.

George and I are extremely interested in this problem and will appreciate any added information. I have thought about this problem some more. I believe as you do that more information is needed about natural background, and more specifically, about the particle size distribution of this background. It occurs to me that the "natural" processes of aerosolization of biological materials are quite inefficient. Thus even in those situations where total numbers of biological particulates are high, the distribution in the 1-5 μ range might be extremely low (e.g. high energy levels are required for efficient aerosolization of material in this range, explosive generation is often $\leq$ 1% efficient, and gas pressure 10% or less).

I believe that during the preliminary technical feasibility phase of this study it might be worthwhile to remove your criterion of "cheapness" from the problem and consider only the problems of background and sampling techniques. Technique applications (i.e. detection of BW activity) might be considered

later during a system design phase. It might turn out, for example, that a highly effective biological particulate detector could be developed for sampling background levels. This might improve significantly the state of knowledge in aerobiology, with only limited application for BW detection if a "cheap" system were required; but it might be a worthwhile development for detection problems in general and could provide additional insights into the problems of developing an inexpensive detection system.

At any rate, I believe it would be profitable to pursue this discussion further and possibly to discuss a structure for a research protocol and systematic approach to the overall problem.

Thank you for visiting us. Both George and I found our discussion profitable and stimulating. Lets meet again soon at our mutual convenience.

Sincerely,

Bob

Robert H. Ellis
Director
Operations Research Division

RHE:nsm
enc. 7000-103