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THE BIOLOGICAL LABORATORIES  
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26 June 1972

Professor Yosiaki Ito  
Division of Entomology  
National Institute of Agricultural Sciences  
Nishigahara, Kita-Ku  
Tokyo  
JAPAN

Dear Professor Ito,

I hope the enclosed materials reach you before your meeting on July 8. We are still ~~actively~~ engaged in developing an analytical technique suitable for detecting TCDD in environmental samples. The problem is that previously available techniques cannot detect less than a few parts per billion, while we now know that this remarkably toxic material can block mitosis in plants and animals and can cause death to fetuses and mature animals at concentrations ranging down to a few parts per trillion. Unfortunately, the work involves several technical problems which are being solved only slowly. So far as I know ours is the only laboratory attempting to determine levels of dioxin in the environment at toxicologically significant concentrations. In addition to the possible contaminations of food chains in Vietnam, I am particularly concerned with the use of 2,4,5-T in many parts of the world on pasture land. Scientists at the United States Department of Agriculture find from preliminary experiments that TCDD binds very tightly to plant tissue if applied to the surface. Pastureland grass treated with 1-3 pounds of 2,4,5-T per acre could contain TCDD at a concentration of approximately 1 part in  $10^{10}$  if 2,4,5-T contained 1 part per million TCDD. This dioxin level might then be increased by a factor of 10 in grazing animals eating contaminated grass and perhaps by another factor of 10 in the livers of such animals.

Aside from the dioxin problem we are working to complete a report of the effects of herbicides in Vietnam for the American Association for the Advancement of Science. The conclusions set forth in the Preliminary Report (enclosed) still stand. However, our final report will be much more detailed.

Sincerely yours,

Matthew Meselson

MM:mm  
encl:4

SCB  
Prelim  
Background  
ACS