

June 2, 1937

Dr. J. Howard Beard
Health Service Station
Urbana, Illinois

Dear Doctor Beard:

I hasten to reply to your letter of May 28th concerning the experimental administration of lead and arsenic residues to human subjects. I am quite sympathetic with this type of experimentation since I think it is virtually the only satisfactory means of answering some of the questions associated with the spray residue problem. On the other hand I can best tell you whether or not I consider the experimental program safe by describing to you what I would feel to be necessary safeguards in carrying out such work. I would not wish to do this type of experimentation and, as a matter of fact, I would not do it under any circumstances unless I had the facilities, both clinical and analytical, to follow carefully the subjects and to know precisely what was happening in the matter of lead absorption and lead excretion. To be precise, experimental subjects under this regime should be given a physical examination not less than once a week, including a rather careful and thorough-going study of the blood. In addition their fecal and urinary excretion should be followed in such a way as to enable one to be sure that they were maintaining a balance between intake and output. The results here are in some degree predictable from the available information, but I do not believe one could escape a very just criticism for being incautious if he did not maintain such a degree of control in this type of experimental work. The quantities of lead involved here are in the neighborhood of two and a third milligrams per day. I should suspect that the greater portion of this would pass through the alimentary tract unabsorbed. On the other hand, the figure is sufficiently close to the zone of recognized danger in occupational exposure that I do not regard the results as wholly predictable. It seems quite probable that I have had about as much experience in this field as anyone, and yet at the present time I am making some observations in which I do not permit the daily intake to exceed one milligram. Even under this condition I am maintaining the type of experimental control which I

described above.

In as much as you have not outlined the manner of experimentation, I am going somewhat beyond your request in making an additional comment. However I think I am justified in making the statement that this type of experimentation is not likely to be useful in solving the question at issue unless a very accurate and careful determination of the lead intake and output is carried on as part of the experimental procedure. In making this comment I trust you will realize that I am not discussing this matter primarily from the point of view of an experimental man; rather I am speaking to you as one physician to another. I should be glad to see the experiments carried out but frankly I would not do it myself except under the conditions I have outlined, nor would I consider the risk justified by anything other than complete detailed knowledge of the behavior of lead under such conditions.

Cordially yours,

RAK:ls

Robert A. Kehoe, M.D.

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