

November 24, 1937

Dr. John A. Wentworth
Fifty Farmington Avenue
Hartford, Connecticut

Dear Doctor Wentworth:

I have carefully examined the information given in your letter of November 17th. The clinical picture which you describe is not one which is convincing in relation to a diagnosis of lead intoxication. The degree of anemia which you describe is of very unusual magnitude in connection with lead, and in the presence of such an anemia, it would confidently be expected that there would be a great deal of stippling unless, indeed, one were dealing with a genuine aplastic type of anemia. The largest numbers of stippled cells which one ever sees are found in anemias of this severity in association with such blood dyscrasia as the leucemias. The same, of course, applies to the basophil-Aggregation Test which is only a modification of the test for stippling. From the severity of the anemia, I should suspect the existence of some type of blood disease or, alternatively, a rather severe infectious process.

The analyses reported on the urine and feces are not such as to inspire confidence in their accuracy. In the case of a sick man who has been out of exposure for some days or weeks, quantities of the order of magnitude of two milligrams in the feces are unusual. Moreover a concentration of .67 milligrams of lead per liter of urine is most unusual even in the severest types of lead intoxication. Therefore, unless you were able to show that there had been a serious and significant exposure to lead, my first suspicion would be that these analytical results are grossly in error. It is, of course, not quite fair to conclude that this is the case but, on the other hand, I know nothing of the methods of analysis at the Agricultural Experiment Station, nor do I know what their experience has been in handling such quantities of lead as occur in the excreta of human beings. Unless they are quite experienced in this field, their results are more likely to be misleading than to be useful in a diagnosis, for in general chemists who have been handling the rather large quantities of lead which are found in many materials which are to be tested, are not entirely competent to deal with lead in human excreta. Moreover the manner of collecting samples for analysis must be checked with the utmost caution for under ordinary hospital conditions urine and fecal samples are likely to be grossly contaminated with

lead from urinals and other containers. You will understand, therefore, that I am not at all impressed by the significance of these analytical results.

When it comes to the question of exposure to lead, there is nothing in your description of this man's occupation that suggests that he had any occupational lead exposure. Regardless of the type of gasoline which he may have been handling, and regardless of his manner of handling it, there is nothing in this exposure which can be regarded as hazardous. There has never been more than an hypothetical exposure in connection with leaded gasoline. No cases of lead poisoning have ever been seen, and all of the experimental evidence indicates that even in the most serious conditions of skin contact and inhalation, the lead absorption from this source is too small to be measured. It is thus utterly impossible that such exposure could have resulted in lead absorption to the extent indicated by the analyses which you have reported.

As to the lead content of beer, it seems improbable that this was a factor.

I cannot but wonder whether this man had some exposure to benzol in his occupation and whether he had a leucopenia along with his anemia.

I should be very much interested in any further information which you may obtain about this patient. Moreover if you should have any further opportunity to obtain samples of blood or urine for analysis of their lead content, I should be pleased to send you suitable containers and to report the results of our analyses to you.

Cordially yours,

RAK:is

Robert A. Kehoe, M.D.