

March 5, 1940

Dr. Bruce I. Ryder
Henry
Illinois

Dear Doctor Ryder:

I am now in position to give you the information requested in your letter of February 23rd. Accordingly I am enclosing herewith a copy of Dr. Schradin's examination record.

I had not seen the various items of information which Mr. [REDACTED] brought with him including the data obtained and supplied by Dr. Kronenberg. I realize that the case requires somewhat fuller comment than I made in my recent letter to you.

I should point out first of all that all of the experimental and clinical evidence has indicated that measureable lead absorption does not occur as the result of skin contact with commercial leaded gasoline, or as the result of the inhalation of vapors arising from such gasoline. We have been studying this problem in a variety of ways over a period of many years, and we have never been able to obtain any evidence which demonstrates the occurrence of appreciable lead absorption even under the most severe conditions of long continued exposure. This man's occupational history gave no basis for the belief that he had absorbed lead. On the other hand his history of skin irritation is in keeping with the known properties of commercial gasoline. From time to time we have seen gasoline dermatitis in mild and also in more severe forms.

Second the medical history as given by Mr. [REDACTED] is not specifically suggestive of lead intoxication in my mind, the only item of consequence being an obstinate constipation which obviously is not necessarily limited to the effects of lead absorption.

Finally the analytical data which we have obtained are entirely within the normal limits, and there is no evidence in them of significant lead absorption. Incidentally the same is true of the results reported by Dr. Kronenberg in spite of his interpretation of them. The discovery of 0.066 milligrams of lead per liter of urine is quite definitely not an abnormal finding. The mean result obtained on a large group of normal in-

dividuals by our methods which have a high degree of sensitivity and accuracy is approximately 0.035 milligrams per liter. Individual results within the normal group, however, range from 0.01 to 0.08 milligrams per liter. It is a mistake, therefore, to regard any result in excess of the mean value as abnormal. Rather it is necessary to consider the results within normal limits unless they exceed the range of normal findings. In our opinion, as expressed in the literature, the result must be in excess of one tenth of a milligrams per liter to be definitely and significantly abnormal. This same is true of the reticulocyte count which, as a matter of fact, in normal individuals may run as high as one per cent. The same is true of the stippled cells. 15.6 stippled cells per 100,000 reds is not definitely abnormal. Groups of normal individuals yield values up to almost ten times this figure. Here again the mean result in a large series of normal individuals by our method of examination is approximately 30 per 100,000 reds or, as we express it, 320 per million. This figure, as you can see, is not even as high as the average result in a large group of normal persons.

It is apparent from all of these findings that no evidence was obtained which was adequate to substantiate the diagnosis of lead absorption in the case of this man. In view of these facts and in view of the results of our examination, we think it is fair to say that this man did not have abnormal quantities of lead in his body, and that his constipation had no relation to lead absorption. With this possibility excluded, it becomes necessary, it seems to me, to base therapeutic measures on some other etiologic factor. From the x-ray plate available, it would seem that some type of pathologic process exists in the colon. The nature of this would require somewhat more detailed study.

I trust this report has given you the information you require, but if we can be of any further assistance to you or if we can give you any other information, I should be very glad to do so.

Cordially yours,

RAK:ls

Robert A. Kehoe, M.D.