Copy

to Dr. Graham Edgar

May 10, 1934

Dr. Charles W. Stephenson
179 Allyn Street
Hartford, Conn.

Dear Dr. Stephenson:

Your letter addressed to the Ethyl Gasoline Corporation has been referred to me for reply. The inhalation of lead-containing gasolines has not been associated with the occurrence of lead poisoning among gasoline handlers. In fact there have been no cases of poisoning reported anywhere as a consequence of exposure to leaded gasoline, either by inhalation or as a result of skin contact. I and my associates in this laboratory have studied this problem over a period of years, and I am sending you a reprint of an article which recently appeared in the Journal of Industrial Hygiene which will give you the detailed evidence obtained in our studies.

On the other hand, there is a possibility that men who have been exposed in large tanks which have contained leaded gasoline may absorb appreciable amounts of lead. The situation here is as follows: the lead compound in the gasoline may decompose and deposit crystalline lead compounds in the rust on the side of the tank. The presence of these small amounts of lead is not dangerous unless they are scraped loose with the scale from the tank and suspended in the air in the form of a dry dust. Consequently when such tanks are cleaned, adequate safety can be provided against the lead dust either by means of keeping the sides and bottom of the tank wet, or by the use of a suitable mask.

If your patient was not engaged in cleaning tanks, and if he was not exposed in any fashion to suspended material of this sort, then it seems quite certain that he has had no appreciable exposure to lead, and that his condition is not due to lead absorption. As you are doubtless aware, undue exposure to gasoline fumes results in intoxication to the point of unconsciousness and death unless the subject is removed from exposure. Generally speaking, in my experience, persons who have been so overcome recover quickly from their exposure. However, occasionally an individual develops some degree of permanent injury to the nervous system. It is possible that you are dealing here with such a case.

Dr. Charles W. Stephenson

In the matter of laboratory evidence, it is not my experience that persons who develop acute lead encephalopathy fail to show definite evidences of increased lead in their excreta. In fact, in all of the instances which have come to my notice, short exposures to lead compounds of sufficient severity to produce mental symptoms are associated with a very pronounced increase in the lead excretion of both the faeces and urine. In such a situation as you describe, I should regard the failure to find increased lead as adequate evidence that lead was not responsible for his illness, provided the analyses were made by reliable methods.

I should be very much interested in having any further details which are available as to the character of your patient's exposure, as to the time of onset of his symptoms, and such other details as will enable me to determine whether he had a significant lead intoxication as a result of inhalation of the type of lead compounds which may be found in the scale on the inside of the Ethyl Gasoline storage tanks. Moreover, if I can be of any assistance to you in making determinations to the extent of your patient's lead excretion, I should be glad to do so.

Very truly yours,

RAK:IS

Robert A. Kehoe, M.D.