

Cleveland, Okla

September 3, 1930

Dr. C. W. Young,
Cleveland, Okla.

Dear Dr. Young:

Thanks very much for your letter of August 28 and your description of your patient. From your description of Mr. [redacted] experience I can not avoid the conclusion that his exposure to lead was insignificant. You are aware, of course, that the quantity of ETHYL fluid which is in Ethyl Gasoline is small, and that the only lead which would be left behind after the emptying of the gasoline tank and after washing, would be small amounts of unchanged and decomposed tetraethyl lead which might remain in the encrustations on the sides of the tank and to some degree on the bottom. The decomposition materials are to a very large extent soluble in water, and consequently would be removed more or less in the process of washing. This material dissolved in water is almost incapable of being absorbed through the skin.

As a consequence of these facts I think you will see that the exposure of Mr. [redacted] to the absorption of lead compounds was very minute, and that unless he were so exposed over a long period of time it would not be possible for him to absorb a sufficient amount of lead to produce illness. After a considerable amount of experimentation with tetraethyl lead and the products of decomposition, and after several years of observations of conditions similar to these in the industry, I think I can say with a certain assurance that the exposure to lead under these circumstances was negligible.

On the other hand, the tanks, even after such washing, contain a considerable amount of gasoline vapor, and the absorption of such gasoline vapor produces very definite symptoms in all people, and may produce even alarming symptoms in the case of somewhat more than usually susceptible persons. The gastro-intestinal upset as well as the insomnia, are not remarkably unusual occurrences following gasoline intoxication, and in an occasional person the symptoms persist for some period of time and have a tendency to recur on the slightest provocation. For example, an occasional individual is made very ill by merely smelling gasoline after having been overcome by it.

However, I do not wish to dismiss your suspicion that this man absorbed lead, without giving it the consideration that it deserves. Furthermore, your courtesy in writing me about it calls for something more than a merely ex-cathedra statement. Therefore if you and your patient are agreeable I should like to collect samples of his excreta for the purpose

of analysis in order to determine to our mutual satisfaction the amount of lead which he absorbed in his experience. I am sending you a package containing a jug, in which I should like his urine collected, and a mason jar for his faeces. I would appreciate it if you would have him collect a sample of his excreta representing a single large evacuation. This sample should be collected directly into the mason jar and not in any intermediate container, in order that we may be certain there is no external contamination. I should like him also to urinate directly into the gallon jug until he has collected at least half the jug full. The length of time involved is of no great consequence since we estimate the lead in terms of the amount per liter. He should keep these containers at his home and should use the greatest care against introducing any dust from any source into them. They should therefore both be kept tightly covered, except at the time that they are being used. I should be very glad also if you would make one or two smears of his blood and send them to us for microscopic examination. It will not be necessary to use any fixative, merely make the smears and send them on to us for examination by our somewhat specialized method.

The treatment which you used is one which I believe is very good for either gasoline intoxication or for metallic poisoning. I believe that you could have added with benefit the administration of glucose. In serious cases of intoxication due to anaesthetic-like compounds, I believe that the intravenous administration of glucose has proven the most effective measure. I personally use a mixture of alkaline salts sufficient to maintain the urine either neutral or slightly alkaline. The use of sodium thiosulphate has undoubtedly been beneficial in some cases of metallic intoxication. I personally do not use it in lead intoxications, though I have seen benefits from its use in the hands of others. In lead intoxications I have been very much opposed to the use of morphine. In the few cases of acute intoxication in which I have seen it used, it has produced distress rather than beneficial results. I am inclined to believe that you will find this patient's recovery from what I regard as gasoline intoxication, to be somewhat prolonged. My experience with these gasoline intoxications leads me to believe that they are more serious than they are ordinarily given credit for being. I should continue the use of alkaline salts as much as needed, and I should get this man on a normal diet as quickly as possible. They usually recover fairly rapidly when they are able to eat in a normal way. However, such cases as I have seen show a considerable amount of nervous system irritability for some time to come. I should also caution him strongly against any considerable exposure to gasoline fumes for some time after his return to work.

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