

October 10, 1936

Mr. Angus MacLean
804 Lawyers Building
Raleigh, North Carolina

Dear Mr. MacLean:

I have been delayed somewhat in replying to your letter of September 30th by reason of an enforced out of town trip. This morning I have also your letter of October 2nd enclosing a memorandum which I have examined and which I am returning to you herewith.

While I was in New York I heard indirectly from Mr. Edwin S. Hall of the Standard Oil Legal Department, who was inquiring for a report of the investigation of the United States Public Health Service into the question of leaded gasoline. Your two letters together with the statement of Mr. Hall that the crux of the case had to do with the question of the significance of exposure to lead in the handling of gasoline, bring me to amplify somewhat my statements in my earlier letter.

There is a general feeling among medical men that the absorption of any quantity of lead, however small, may result in injury. This opinion is a more or less traditional one which at the present time must be abandoned in view of the evidence from many sources that all people absorb small quantities of lead regularly. It will be necessary in this case to bring out this fact and to discuss the magnitude of this normal lead, its source and its significance. This will have to be done in order to show that although lead is a toxic material in proper dosage, it is entirely harmless and is in fact a normal constituent of living things and of the human body, if small quantities be considered. Despite the adequacy of the above evidence, there will still be a prejudiced point of view in the minds of certain doctors who will probably testify in this case. Obviously, also, this is a point which is not too easy to make before an ordinary jury. The significance of exposure to leaded gasoline, therefore, will have to be presented in detail. As I pointed out to you earlier, the facts are these as demonstrated by sound experimental and clinical evidence. The handling of gasoline containing lead in commercial concentrations does not result in the absorption of lead, and on this point there will be no hedging. There is not one bit of either experimental or clinical evidence to

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demonstrate that lead can be absorbed as a consequence of exposure to gasoline either by way of inhalation or by way of widespread skin contact. I am not speaking here of small quantities. I am saying, categorically, that no lead is absorbed under these conditions so far as any type of evidence, experimental or otherwise, is concerned. On the converse side of this there is very good experimental and clinical evidence that lead can not be absorbed either through the skin by way of contact with the gasoline, or through the respiratory tract from inhalation. It will not be necessary, therefore, for us to discuss what might be the effect of absorbing small quantities of lead from these sources. We have simply to point out that no quantities at all have ever been found or recognized. The experimental evidence is substantiated by the practical experience of the past thirteen years in that no cases of lead poisoning have been found to occur among the tens of thousands of filling station operators that have been handling this type of gasoline. We have made a thorough-going search for these cases, and not only have we not been able to find cases of lead poisoning, but I repeat, that we were quite unable to find even the slightest evidence of lead absorption.

The evidence of which I am speaking will not be found in the Bulletin issued by the United States Public Health Service, nor will it be found in the British report. The things I am mentioning above have been worked out in this laboratory since we are the only persons who have been concerned with this problem in recent years. We have had an opportunity to carry the thing much further than the earlier experimenters, and the experimental and clinical evidence has become thereby much more adequately established. There might be, of course, some tendency to discredit our observations on account of bias. It must be stated, however, in fairness, that our work has been substantiated at a number of critical points by other experimental workers in this country and abroad. Our work on normal lead, for example, is generally accepted as fact, and I do not believe a single expert who could qualify, can cast any doubt upon the validity of this work. Thus, our results have been accepted in a number of other cases before compensation courts and in court of law, and I have been able to defend myself fairly successfully, I believe, against any implications of prejudice. I go to some length in pointing these things out because we have not had an opportunity to discuss these things together and they will certainly be of practical importance to you.

The pitiable illness of this man which will be quite apparent in the court, will go very much against an impartial consideration of the facts in his case. The diagnosis of multiple sclerosis, which seems adequately substantiated, will be of no help since this is a disease

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recognized for a long time but without an explained cause. Almost any toxic agent might be considered in connection with this disease for the simple reason that we do not know the causative factor in any case. I am familiar with what has been done in recent years on the association between multiple sclerosis and lead absorption. The work itself was not such as to inspire confidence and nothing more than the most tentative conclusions could be arrived at. It is thus quite beyond the facts for a medical man to maintain that multiple sclerosis has in any case been demonstrated to have been caused by lead. The idea is at best an hypothesis. Obviously then medical men are still in search of a causative factor and when one can be suggested which is entitled to some suspicion, a paper is written for the information and for the stimulation of other medical men who are interested in the problem. That is the present status of the problem of multiple sclerosis in relation to lead. I believe these points can be made successfully, if necessary, in the course of the trial.

In conclusion let me suggest that you write me at the earliest possible time, letting me know just when you consider it advisable for me to be in Raleigh. I have a number of appointments which I must fit in and I should know at the earliest possible time when I have to be there.

Very truly yours,

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Robert A. Kehoe, M.D.

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