

April 19, 1961

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Dear Ralph:

I have finally taken the time to go over the article on tetraethyllead poisoning which you sent me with your letter of February 23. I am sorry for my delay in so doing, but as I indicated in an earlier letter, I simply could not even look at it earlier.

As I suspected, from some experience with previous articles on this subject out of Japan, whether by Japanese or American (military) authors, the article itself is a sad affair. It obscures the facts that we have undertaken to make crystal clear in connection with this problem, and certain of the reported findings are very wide of the mark of validity. You can do as you choose, of course, but if I were responsible for your Medical Bulletin, I would not reproduce this article. I say this because you will be transmitting more misinformation than useful information.

In order to be just, rather than generally condemnatory, let me be specific on a few points. I have little doubt that these were cases of tetraethyllead poisoning, for the most part. This opinion is arrived at, not on the evidence of exposure to tetraethyllead as provided in the article, but on the clinical evidence which, while very poorly presented, is sufficient for me. The authors' utter lack of understanding of the actual source of the exposure to TEL is most unfortunate. Evidently no one in the group asked the right questions, and so, at this time, one does not know just what were the important features of the exposure. The authors' confusion as to why poisoning occurred, in spite of the protective procedures and equipment is an example of futility. Clearly the respiratory equipment was very unsatisfactory or it was not used regularly. This, of course, is an old story. There is no doubt whatever that the exposure occurred via the respiratory route, and a few intelligent questions would have disclosed the facts beyond any doubt. These writers simply do not understand the problem they are writing about, and consequently they give the impression that this was an unexplained and to some extent a mysterious series of cases.

I cannot, at this time, piece together all of the probable factors in this situation. There may have been an unusual amount of exposure to triethyllead and other decomposition products of tetraethyllead. I am

in no position to explain the alleged elevation of the lead content of the blood of some of the patients. This was not the result of the absorption of tetraethyllead, for only a very modest (usually insignificant) elevation of the lead in the blood follows the absorption of tetraethyllead. Nothing is said about methods of sampling the blood and of analysing it, and there may well have been serious errors of technique. It is clear that the authors do not know enough about this even to question this unusual and ambiguous finding.

All that this article does is to report a series of cases of probable tetraethyllead poisoning in connection with the cleaning of fuel tanks. One brief paragraph, essentially like a news report, would suffice to tell this story, so far as useful information is concerned. The remainder is largely misleading, since it casts doubt on the efficacy of the measures of prevention. This is a real disservice to the people who have responsibilities in this matter. The truth is that these measures when applied under adequate supervision, i.e., when actually applied, have never failed to provide complete protection to workmen.

A further statement in the article is quite incorrect and is a false indictment of the industries concerned. It is said that the precautionary measures have been directed toward the hazards of the manufacture of tetraethyllead and the mixing of antiknock compound with gasoline, but that now attention must be given to the problem of tank cleaning. This, of course, represents sheer ignorance on the part of the authors. There have been only a few cases of neglect of the precautions in the petroleum industry, for this industry, in all parts of the world, as the use of leaded gasoline spread, was warned, advised, instructed, and guided in this matter. The hazard was encountered first in 1928, and it has been the principal object of concern and of preventive efforts in the field since that time. On the other hand, cases have occurred in a number of countries, where military fuel tanks were cleaned by uninstructed or unsupervised contractors. A tremendous effort has been made by representatives of Ethyl Corporation and Associated Ethyl to head these off, and a very considerable success has attended these efforts in most places. In certain out-of-the-way areas, and in countries in which measures of industrial hygiene are largely unknown, trouble of this sort has continued to occur from time to time. There have been several articles from Japan in connection with this and other equally unfortunate and wholly unnecessary tragedies. I have been responsible for killing the publication of two of them in American Journals, not because they dealt with a subject that is very unpleasant to me, but because they were so poorly done and so confusing as to be liabilities rather than assets, with respect to medical information. I think we have had all the misinformation we can stand on this subject. It is high time that the stupid and uninformed should be denied an audience, so far as this is decently feasible.

If you wish me to do so, I can prepare a brief article on this subject for your Bulletin, referring in passing to the reports that have been made (some of which have been excellent) of cases and situations, describing the disease in brief, stating the known facts with respect to exposure, and giving the instructions for the prevention of exposure. This has been done elsewhere, but if you think it would be useful to your people I am willing to do it. I cannot do it at once, however, because of a

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series of things that must be completed at the earliest possible time. Moreover, I suspect that most of your people who are in the firing line in this matter have a fairly good understanding of it.

Incidentally, in this connection, I have just returned from Rome, where I met with representatives of Esso, as well as the Mobil group, in a bit of "trouble - shooting" on the introduction of tetramethyllead. Your Dr. Monza of Genoa was there and proved to be very level-headed and tactful, as well as agreeable and attractive. I saw quite a bit of him and liked him very much. I have met a number of your men in different parts of the world, and I think that most of them have had a fairly clear concept of the problem of tank cleaning, as well as of the means of preventing it. I would hate to see such a group presented with an article as confused and as uninformative as the one which you have sent me.

I return the manuscript with this letter, and will await further word from you as to your wishes. It would take a great deal of time and effort to review this entire subject in detail, and I have found it necessary thus far to postpone this type of effort until a later time. I have gathered together a great deal of information on various aspects of the problem of tetraethyllead and related compounds, with the idea of preparing a monograph, primarily for the benefit of the industries concerned the their physicians, on the entire subject. This, I fear, will have to wait until my retirement from this job, for its demands on my time will not give me much freedom for writing.

Sincerely yours,

Robert A. Kehoe, M. D.

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Enclosure - manuscript

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