April 25, 1946

Dr. Keith D. Fairley,
81 Collins Street,
Melbourne, C. I.,
Australia.

Dear Dr. Fairley:

I resolved to write to you at long last after having had the pleasure of a visit from Mr. Batchelor some days ago. At that time we discussed a number of matters, and mention was made of the fact that certain of the men who have acted as consultants under your direction have requested published information on various phases of the problem, which up to the present time has not been available, either because of the difficulties associated with the war or for other reasons. Unfortunately the green book entitled "Lead Studies," which I provided to medical consultants in former years is no longer available. However, I am sending to you under separate cover a package containing three sets each of the more important published information on tetraethyl lead, together with a number of other more recent publications from this Laboratory which bear on the general lead problem. In addition I am sending three copies of a report of the American Public Health Association on the general subject of occupational exposure and lead poisoning, which I think will be of interest to you and your associates. I can send you additional copies of any of this material on request. In addition to these items I am sending for your information, one copy of each of a series of papers on methods of lead analysis which may of interest and use to you. This brings you up to date so far as the output of this Laboratory is concerned, although there is a great deal of unpublished information which I am attempting to get together for publication at an early date. I face the necessity of putting together another book of all the published work bearing on our problems in connection with tetraethyl lead, but this is a big job, and I fear it will take some time to get it done. Certainly I shall have to be relieved of some of the current work that is now required before I can actually accomplish much along this line.

There is one aspect of our problem which I think should be brought to your attention at this time, since it is a new development. No doubt you have seen the memorandum which I prepared in connection with an investigation of cases of lead poisoning associated with the war-time handling of gasoline under unsatisfactory conditions. This memorandum called attention to the fact that the handling of high octane leaded gasoline under unsatisfactory conditions could result in serious exposure to tetraethyl lead vapors in air. I reviewed various instances that have occurred in different parts of the world and have found a number of instances of the handling of gasoline which has led to

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the excessive spillage and/or excessive evaporation of gasoline. There are two things that are of great importance in this connection, and these things should be known by our medical consultants and borne in mind. Whenever the conditions are such that spilled or sprayed gasoline can be completely evaporated or evaporated to a very large extent, the concentration of tetraethyl lead in the air may reach toxic levels even in the presence of gasoline vapors that can be endured without narcosis. The factors which can produce this kind of condition are usually lacking in connection with the normal handling of gasoline in commercial operations, and it is for this reason that we have not seen cases of lead poisoning at an earlier date. It is not difficult to recognize that the manner of handling leaded gasoline during the war was decidedly abnormal, and that under these conditions a great many factors entered into the problem. In any case, it is of great clinical interest to recognize, that the clinical picture of the poisoning which resulted from these exposures was always that of an acute central nervous system intoxication. No case of poisoning that bore any resemblance to the usual classical type of lead poisoning was seen. Even though poisoning occurred as the result of relatively low dosage over a period of months, the clinical picture was always the same. Consequently I am convinced by these facts and by other related experience over the past twenty years, that exposure to tetraethyl lead does not and cannot produce the type of poisoning that is common following prolonged exposure to inorganic lead compounds. In other words, the so-called chronic lead poisoning of the classical type does not occur following exposure to tetraethyl lead. What happens is either an acute central nervous system intoxication, or nothing at all. I believe that our medical consultants should be made familiar with this important fact.

The problem of tetraethyl lead poisoning in connection with the cleaning of gasoline storage tanks, has reared its head in various parts of the world. You are already familiar with this problem, but if experience elsewhere is any guide, you are likely to have some difficulties along this line as the consequence of the more extensive use and distribution of leaded gasoline. After years of freedom from this difficulty in the United Kingdom there have recently been a number of cases and one or two fatalities. Consequently every effort is to be made to safeguard this occupation, and I am sure Mr. Batchelor will have given much thought and attention to what is being done along this line in this country, where the difficulties have been severest. It appears of some consequence, therefore, to think in terms of therapy of this type of intoxication. Accordingly I am sending you a copy of a memorandum on this subject provided by my former associate in this Laboratory, Dr. Willard Machle. Certain items in the discussion are referred to somewhat tentatively, and in no instance is this article intended to be precise instructions to medical men. It is rather intended to be a representation of past experience together with some consideration of matters that require further investigation. I think you will find it of interest, and although I trust you will not have any experience along these lines, it seems best that you should be fortified with our opinions on these matters.

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Finally I want to have a word with you on the subject of the point of view in Australia concerning the exposure of the public to lead compounds. Some matters have been brought to my attention lately, from not wholly disinterested sources, I may say, to the effect that there is an increasing anxiety in Australia lest lead poisoning should become a serious community problem. I am told that various kinds of legislation tend to exclude the use of lead compounds from many otherwise normal uses. I should assume that to the extent that there is such a point of view, it had arisen in connection with the work of Nye and others and had developed around the discussions and investigations of the problem of lead poisoning and nephritis, as well as vascular diseases. Attention was first focused on Queensland and has since involved other areas. In this connection I am wondering if you could find me a copy of Nye's book entitled "Chronic Nephritis and Lead Poisoning." I have no copy of this work and am very anxious to have it in my library, and if one could be found, I shall be very glad to have it and reimburse you for it. To return to the discussion, I wonder to what extent the attitude of medical men and health authorities on this subject is realistic. I am very much interested in the problem and some time ago I had an exchange of correspondence with Mr. L. A. Keston of the Government Chemical Laboratory in Brisbane, which made me feel that certain rather arbitrary ideas based to some degree on inadequate information, were being put into effect. As you will probably realize my interest in this is factual and scientific rather than practical in the sense of being a spokesman for commercial interests. For this reason I would like very much to have your reaction to this situation. I have considered the possibility that I might visit Australia and also New Zealand in the not too distant future, and if at such a time I might find the means of discussing various problems of this sort with medical and official people, it would be a matter of considerable interest.

This brings me to raise a question which was touched upon by Batchelor. Something was said about the possibility of your visiting this country and perhaps the United Kingdom also. I do not remember how the matter came up or how seriously it was taken, but I do remember feeling that it would be highly advisable if we could get together to discuss certain problems of mutual interest, and despite my own interest in remaining at home and trying to get some of my work behind me, I could not fail to wonder which would be the most advantageous to us both, that is, whether I ought to visit you or you should visit me. For personal reasons I should prefer by all means having you visit us. Nevertheless I should like an expression of your opinion as to which procedure is the more desirable. Obviously there is no reason on my part for doubting that both would be advantageous. In any case, I should be very glad indeed to hear from you on this or any other phases of our mutual interests.

With kindest regards,

Sincerely yours,

Robert A. Kehoe, M. D.

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