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April 28, 1945

Dr. Donald H. O'Rourke,
920 Republic Building,
Denver, Colorado.

Dear Dr. O'Rourke:

I have just received your letter and inasmuch as I shall be away for a time I hasten to answer it at once. I should be very cautious if I were you, in arriving at any conclusion that relates optic atrophy or any other nerve lesion to any type of exposure to leaded gasoline. The fact of the matter is that there have never been any reported cases of lead poisoning of any type among the thousands of persons who have been handling leaded gasoline by commercial methods over the period of the past twenty years. We have been looking for cases of lead absorption and/or lead intoxication during the entire period of the commercial use of leaded gasoline. We have never seen a case of lead intoxication of any kind in this connection, and moreover we have never found evidence that lead is absorbed in appreciable quantity by persons who handle such gasoline, as garage mechanics or filling station attendants. The lead concentration in commercial gasoline is so low that there is no absorption of the lead compounds by the skin. Moreover, the vapors arising from open containers of leaded gasoline contain only the most insignificant traces of lead compounds. In fact, I have never seen lead poisoning in association with any of the varieties of leaded gasoline until in recent years under war conditions, certain extremely unusual and severe conditions of exposure have given rise to symptoms and illness. The conditions that have been required to produce these symptoms have been so severe and so totally unrelated to commercial handling of gasoline that I am quite convinced that they could never be repeated under the normal conditions of commercial handling.

As to optic atrophy no case has arisen as yet in connection with gasoline handlers that has even given rise to this question. Actually the absorption of tetraethyl lead even in the manufacture of the product has never given rise to peripheral neuritis. We have never seen a case of paralysis, nor have we ever seen retinitis, retrobulbar neuritis, nor optic atrophy. From present clinical indications the behavior of tetraethyl lead is sufficiently different from that of the inorganic lead compounds that neuritis is not a lesion to be expected. Do not ask me why this is true, for I do not know. However, it is a fact.

For the above reasons if I were you, I would look for some other

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cause for the optic atrophy. It is of course conceivable that it could come about as the result of undue and prolonged exposure to gasoline vapors. However, I have never seen it in this connection, and I believe that there are no recorded cases in medical literature. Accordingly, I believe you will have to look for some other factor than leaded gasoline for the explanation of the lesion in this man.

Cordially yours,

Robert A. Kehoe, M. D.

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