

March 18, 1965

Mr. J. E. Boudreau
Ethyl Corporation
100 Park Avenue
New York, New York 10017

Dear Jim:

I examined the report of Dr. Clair C. Patterson promptly when I received it from your office. I am not certain as to what, if anything, I should do with it, but I can, at least, make a few pertinent comments. If anything is desired of me beyond this response, I shall count on your letting me know. I have talked with Dr. Roush about it, and have expressed to him some of the views that follow below.

First, let me say that this is substantially the same report that I saw previously as a manuscript sent to one of our medical journals for publication, except that certain extraneous material has been deleted, and the entire manuscript has been considerably improved. Its impact on unprejudiced and relatively uninformed technical and scientific persons will, therefore, be greater than the original manuscript would have been.

Second, the paper makes a very considerable contribution to the understanding of the sources of lead that have contributed to the distribution of lead over the surfaces of this planet. There are suppositions and inferences, that are, I think, overworked, in the appraisal of the relative significance of various factors, including that of lead from the exhausts of automobiles. For example, he has swallowed whole the notion that considerable quantities of lead are absorbed by persons who smoke, without examining the evidence that this is a negligible source, in that almost all of the lead remains in the ash of burning tobacco. (This is only one small and relatively unimportant point, but it indicates the way the wind blows in assessing evidence that tends to discredit lead.) He has also discarded the evidence obtained by an investigation in Mexico, for reasons that are so slight as to convict him of a carelessness that amounts to flippancy. It is obvious that this evidence stands as an

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obstacle to his inferences; it is, therefore, simply cast aside on any pretext that offers itself. This is not so much a matter of carelessness in the consideration of evidence, as it is a fundamental skepticism concerning methods of investigation with which he is unfamiliar. There are people who are capable of learning only through their own experience; this is the primary specification for the mental apparatus of the bigot, there being no universe beyond that of which he can conceive.

Be these things as they may, the assembling of ideas, reinforced by some information, concerning what has happened over the centuries with respect to the redistribution of lead, is of considerable interest. When we come, however, to the consideration of the behavior of the animal organism, specifically man, when confronted with a change in environmental conditions, the person who has little or no familiarity with biological adaptation, begins by fearing the worst. This, of course, is Dr. Patterson's difficulty. His approach to the fate of men subjected to exposure to and absorption of lead is as naive as that of a little child. I have no doubt of his "sincerity" which has been referred to by various persons; I do not even doubt his dedication to the welfare of mankind in this issue. But sincerity and a dedicated attitude have nothing to do with the interpretation of facts and information derived from a field of knowledge with which one has no acquaintance. Most educated and cultivated persons, scientists among them, have some appreciation of the limitations of their knowledge and critique. This man not only has no such appreciation but appears not to realize that such limitations exist. This is an expression of youth, perhaps, but I fear that it is an expression of unduly persistent adolescence. We shall see.

Now as to certain practical matters, and the need which may develop for heading off action which would eliminate the use of lead in a variety of ways. You are aware, no doubt, of our interest in bringing more and more control into the lead trades in this country, many of which are handling their hygienic problems very badly (lead poisoning is still the most frequent form of intoxication that occurs in American industry despite our knowledge of how to prevent it). You are also somewhat familiar with the fact that we are, and have been for some time, in the forefront of the proponents of the elimination of numerous sources of the contamination of food and beverages with lead, having helped many food-processing industries to improve their processes and equipment. However, we have investigated, with great care, the problem of lead in the atmosphere, and (as you know) are continuing to do so, with the present aim of establishing a standard for human safety in relation to the lead in the atmosphere. We have spent much effort and money in obtaining

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the information which is required to answer Dr. Patterson's questions, and it is very fortunate that such information is available, since the raising of these questions twenty years ago, in the form in which they now appear, would have resulted, almost certainly, in action based on ignorance and apprehension. Such action would have outlawed not only tetraethyllead, but many other forms of lead and many uses to which such forms are put. Granted that the community could survive if this had been done, the same principle, applied to many other chemicals, would work havoc in the modern community.

It is just such senseless activity which we must learn how to avoid in the further development of a society based, both economically and structurally, on technology, by seeking multidisciplinary information and advice, instead of flying off the handle everytime some untutored or learned jackass has a vision of things outside of his knowledge and experience. It will take a long time for our people to reach such a level of rationality. The alarms and excursions aroused at present by irresponsible and essentially ignorant persons will continue for some time to be important motivating forces in our society.

I urge, as vigorously as I can, that there be little or no obvious effort on the part of those who have an important stake in the lead-using industries, to discredit Dr. Patterson, for such effort will be a boomerang. At the proper time and place, the presentation of the available information on this subject will serve this purpose better than any other to uphold the truth with evidence and also with poise and dignity that are essential.

Sincerely yours,

Robert A. Kehoe, M.D.

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