March 21, 1947

Dr. R. P. Miller,
E. I. du Pont de Nemours and Co.,
Old Hickory Plant,
Davidson County, Tennessee.

Dear Dr. Miller:

I am sending you herewith the analytical results on the urine and blood of your patient, [redacted] These results are entirely normal, giving a clear indication of the fact that this man has had no recent significant lead exposure. I do not know when his last contact with lead occurred, or what have been his recent opportunities for lead exposure, but certainly such exposure has been entirely insignificant within the last several months. Therefore, any present symptomatology which he may present, as indicative of any present active illness, is unquestionably due to some cause other than lead absorption.

In further reply to your letter about the supervision of lead workers, my advice concerning the lead analyses related not to the diagnosis of lead intoxication, but rather to the determination of the order of magnitude of the actual lead exposure and absorption of individuals, or of an occupational group. If one has any question about the degree of hazard, his question can be answered by this means. Great care has to be taken in obtaining samples, and the analyses must be precise, for otherwise the results will be wholly misleading.

There is no way to determine whether or not a man is ill, other than by regular clinical methods. In the case of lead intoxication the picture of the illness is obtained largely by careful questioning, since the evidence of the intoxication is mostly subjective. The presence of a lead line, if it can be proved to be due to lead, indicates lead absorption, but not intoxication. Microscopic abnormalities of the blood, in the form of increases in basophilic material are also suggestive but not diagnostic, although they come very close to being diagnostic if the changes reach sufficient proportions, and if other types of blood dyscrasias can reasonably be excluded. However, all of these things, including grossly abnormal concentrations of lead in blood, urine and tissues, can exist without illness. For this reason it is necessary to examine the man to determine whether he is sick and the degree of his illness. There are a number of difficulties, as you doubtless know, in questioning men in such a way as to obtain useful information. The man who wants to continue at his job denies that he has any symptoms of illness. The man who wants to quit work and to be compensated complains of

symptoms which he thinks are the right ones. The careless extrovert minimizes his symptomatology, and the neurotic introvert magnifies them. For all of these reasons one must acquaint himself with the men well enough to judge them, and must get close enough to them so that there is mutual trust and confidence. Otherwise it is necessary to depend upon objective evidence, and here the only evidence that can be fully trusted is the positive and negative evidence obtained by complete medical examination plus adequate laboratory work. It is not an easy road, therefore, and in many instances short-cuts which are quite commonly attempted, turned out to be fruitless. Of all the short-cuts the use and interpretation of analytical information on the blood and urine are the most useful, when one uses them merely to interpret the severity of the lead exposure.

I include herewith a bill to cover the cost of the analyses.

If we can be of any further assistance to you, let us know.

Cordially yours,

Robert A. Kehoe, M. D.

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