March 28, 1944

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Miss Elizabeth B. Ross,
Apartment 16,
335 Clarke Avenue,
Westmount, Quebec,
Canada.

Dear Miss Ross:

I have your letter of March 16, together with the reports, and I shall be glad to do my best to help you out. However, I must tell you that I am in no wise convinced by the analytical data you have sent, that you have some odd physiological characteristics that cause you to retain metals. The fact is that I do not believe that there is any mechanism for the retention of such metals, as the result of some personal idiosyncrasy. If you have unusual quantities of lead or mercury or both in your blood and urine and in your tissues, it is because you have had more or less recent exposure to these elements. Actually in the case of lead, the evidence of abnormal concentrations is not very good. The report dated October 24, 1943 indicates that you have 0.10 milligrams lead per hundred grams of blood. Then the report of January 20, 1944 states that you have none. Actually, I am doubtful of both of these. It is quite improbable and, in fact, virtually impossible that you should not have any in the blood as of January 20. This only means that the method of analysis was not sufficiently sensitive to detect it. By the same token, I doubt if you had as much as 0.10 milligrams per hundred grams in the previous period, since an analytical error of very small size could very well make the difference between the value given and the values found in perfectly normal persons.

In the case of the urine the one analytical result that is given is just at the upper range of normal values, and it may or may not be precise. The result depends very much upon the method of analysis used, and I have no way of telling what method was used in this case and how accurate it was. In any case I doubt the facts and I think it is important first to establish what the facts are. The best way to do this would be to send suitable containers for the collection of samples of urine and blood to some physician whom you may designate, together with detailed instructions for the collection of the samples. We will analyze the samples and on the basis of the results, will advise you or your physician whether they are normal or abnormal. If the results are within normal limits, you can forget the whole matter. If they are abnormal, I

Miss Elizabeth B. Ros

shall then be glad to
to what might best be done.

With respect to mercury, the problem is even more definite, if possible. It is scarcely possible that you should be excreting mercury in any measurable amount, unless you have had some recent exposure, in the laboratory or elsewhere, to mercury compounds. Following the cessation of exposure mercury is lost from the body quite rapidly, and it is unusual to find more than the merest traces, except in the case of some quite recent sources of exposure. Mercury has been found for some time following the introduction of new amalgam fillings into the teeth. This represents a surface effect in the mouth, and after the filling has been there for some time the surface is no longer corroded to any considerable degree, and the mercury disappears from the excreta. It may be doubted seriously as to whether it has any toxicologic importance under these conditions. Here again the facts should be established, and the best way to establish them is by obtaining samples of blood and urine as in the case of lead. I think we shall be able to use the same sample for both determinations, but if this seems inadvisable, I shall let you or your doctor know, if I hear from you. In the mean time I should advise you not to be worried by this situation, for if you have had exposure to either lead or mercury, the exposure can be completely discontinued, and you should be none the worse for your experience.

It is very unfortunate that much too much attention and anxiety has been felt by quite a number of medical men over the absorption of very minute quantities of certain of the trace metals. If you have read much that has come out of this Laboratory, you will recognize that it has been clearly demonstrated that all of us take in regularly certain small quantities of lead and some of the other trace metals (not mercury, however). We are able to handle these small quantities quite satisfactorily without injury or illness, and unless the quantities absorbed are greatly in excess of these normal amounts, nothing of any serious consequence ever happens. I think it is quite safe to say, therefore, that unless you have better evidence of lead or mercury intoxication than that presented by the analytical data you have sent me, you are not suffering from intoxication due to either of these elements.

Very truly yours,

Robert A. Kehoe, M. D.

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