

April 26, 1954

Dr. Howard H. Beard
Terrell's Laboratories
Medical Arts Building
Fort Worth, Texas

Dear Doctor Beard:

I send you herewith, unfortunately after an undue but unavoidable delay, a reprint of the article referred to in your letter of March 31.

In reply to your question on analytical methods, I may say that if the method referred to (i. e. H_2S precipitation, etc.) is employed in all the steps required to separate out lead, specifically, from possible interfering elements in biological materials, it may be expected to yield losses of the order of magnitude of 0.06 to 0.10 mg. per sample analysed. Therefore, if the sample is large, and its lead content is such that this amount is insignificant as an error, the method can be employed satisfactorily. Otherwise it is inadequate. I can see no reason at present for the use of such a method in view of the specificity and sensitivity of suitable modifications of the dithizone method. We abandoned the carbazide method in 1939, and have not resorted to it since. The reason lay in the very great superiority of the dithizone and spectrographic methods in dealing with fairly small samples of biological materials. It is necessary, however, to employ one of the very carefully and critically examined versions of the dithizone method in order to obtain uniformly satisfactory results. We do not use or advocate any of the short cut methods, except in occasional screening tests which are to be followed up by the more elaborate method.

Very truly yours,

Robert A. Kehoe, M. D.

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Dictated but not read.
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March, 31, 1954

Dr. R.A.Kehoe,
Kettering Laboratory of Applied Physiology,
University of Cincinnati,
Cincinnati, Ohio,

My Dear Dr. Kehoe,

I would greatly appreciate a reprint of your article on "Experimental Studies on the Ingestion of Lead Compounds" 1940.

I wonder if you would be so kind as to give me your idea about the following:

We had two samples of urine from supposedly cases of lead poisoning recently. My assistant ran these using the s-diphenylcarbazide method after precipitation of the sample with H₂S. The case in question showed 0.039mg lead per 1000cc of urine. The other ran 0.1mg/1000cc.

Now I maintain that this method will not pick up such small amounts of lead and that the dithizone method should be used, which is very sensitive to lead. Would you care to comment on this. I will greatly appreciate it.

Many thanks,

Sincerely yours,

H.H. Beard
Howard H. Beard, Ph.D.
Chemist

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