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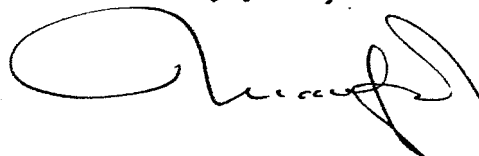
July 27, 1949

Robert A. Kehoe, M. D., Director
Kettering Lab. of Applied Physiology
University of Cincinnati
College of Medicine
Cincinnati 19, Ohio

Dear Bob:

You may be interested in the enclosed comments by Hervey Elkins relative to the lithopone crayon matter on which there has been considerable correspondence.

Sincerely yours,



enc.
mb/sd

*See file
130-107-103/109*

RE 0014746



Excerpt from letter, July 14, 1949
Hervey B. Elkins to Manfred Bowditch

"As I told you in New York, I have not been able to find anything in the literature on the toxicity of lithopone. It occurred to me, however, that it had not been demonstrated that the zinc sulfide in lithopone is decomposed by the gastric juice normally present in the human stomach. Accordingly, I obtained from Carpenter Morton Co. a free sample of lithopone and to 2 grams added 100 ml. of 1/2% hydrochloric acid. According to our physiology text books, this represents the approximate upper limit of acid normally present in the gastric juice. On standing for approximately 18 hours and aerating at intervals, enough hydrogen sulfide was recovered to account for 2.3% of the zinc sulfide theoretically present. Upon increasing the strength of the acid, additional hydrogen sulfide was obtained, until finally using 5.3% acid, or approximately ten times as strong as that presumed to be present in the stomach, I obtained in about a week something over 80% decomposition of the zinc sulfide.

"This is only a rough experiment, however, and I certainly would not use it to predict that lithopone would be non-toxic. However, I think it may explain the fact that lithopone is apparently not highly dangerous. According to some rough calculations, a single crayon weighing six grams and containing 3% zinc sulfide could produce about one-third the amount of hydrogen sulfide required to fatally poison an adult. Such an amount would presumably be rapidly fatal to a small child. However, if only 3% of the zinc sulfide were decomposed in a period of an hour or so, there would not be enough hydrogen sulfide produced to injure even a very small child, if my assumptions as to a fatal dose are correct.

"Much as I hate to do it, therefore, I am inclined to side with your physician friends, as opposed to my colleague Dr. Fisher, in their contention that in all probability the dyes rather than the lithopone were responsible for the case in question."

RE 0014747