

Lead Industries Association

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July 1, 1949

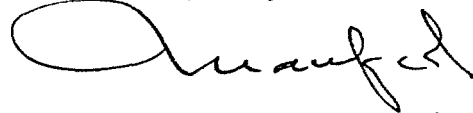
Robert A. Kehoe, M. D., Director
Kettering Lab. of Applied Physiology
University of Cincinnati
College of Medicine
Cincinnati 19, Ohio

Dear Bob:

The discussion of the Connecticut "lithopone" crayon case continues and I should have sent you before this the enclosed copy of Doctor Fisher's letter of May 17. You will note that Doctor Brieger has now entered the fray and has sent quite a batch of reference material. I am still "from Missouri" on the whole business and would greatly welcome any further comments that you may be in a mood to vouchsafe.

I feel not a little pleased at the progress made in Z-37 affairs and look forward to what you and others will contribute to saner lead standards.

Sincerely yours,



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mb/sd

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The Connecticut Agricultural Experiment Station
New Haven, Connecticut

May 17, 1949

Manfred Bowditch, Director of Health & Safety
Lead Industries Association
420 Lexington Avenue
New York 17, New York

Dear Doctor Bowditch:

I must apologize for delaying my answer to your letter of May 13, but I was away most of last week.

The chief comment I would like to make is that this whole question can probably only be settled on the basis of facts rather than opinions by further pharmacological tests. This laboratory is not in a position to make such tests.

Dr. Kehoe raises the question of the symptoms produced by aniline as others have done. To my mind this is almost completely irrelevant, because no synthetic dyes ever did contain aniline. It is true that aniline was used as an intermediate in making a few yellow dyes, but it requires a very strong reducing agent to break down any azo dye and reform its intermediates. There is no more reason to predict the behavior of a dye in the body from that of its intermediates than there is to predict the effect of sodium chloride from those of sodium metal and chlorine gas.

On the other hand, we know that our crayons evolved hydrogen sulphide on treatment with dilute acid in the cold. One sentence in Dr. Kehoe's letter is ambiguous: "Persons with hydrogen sulfide asphyxia, generally speaking, develop cyanosis and they do not develop sulphide hemoglobinemia until after the blood has ceased to circulate." Taken literally, this would appear to mean that he admits that hydrogen sulphide will produce cyanosis before death but not sulfhemoglobinemia. Such a statement I am not prepared to dispute, but the inference from the rest of the letter is that he intended to deny that cyanosis could develop before death in cases of H_2S poisoning. In connection with this, and Dr. Gray's cases, I should like to call your attention to the article by Bunce, Parker and Lewis in the Journal of the American Medical Association, 116, 1515, (April 5, 1941). In the case there described an 8.5 per cent solution of ammonium acid sulphide was applied inside a rubber cap attached to a woman's head. After three minutes this

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woman became unconscious, and by the time a physician arrived "the patron had turned a dark purplish". She was dead less than one-half hour after entering the beauty parlor.

That this was a case of hydrogen sulphide poisoning by absorption through the skin has never been denied, although the case was a very famous one that resulted in the government's forcing the particular wave preparation involved off the market. Further, the high toxicity of hydrogen sulphide is well known. On the other hand, we have a copy of a pharmacological report by Flinn, Axelrod and Brodie of New York University and Goldwater Memorial Hospital, Welfare Island. These gentlemen fed rats, dogs and cats the specific pigments that had been suspected in reports of crayon poisoning (J. Pediatr., 30, 422 (1947); J. Am. Med. Assoc. 136, 917 (1947); Clinic. Proc. Childrens' Hosp., 3, 105 (1947)). There were unable to demonstrate methemoglobinemia or any other ill effects on the animals.

Therefore, do you blame me, when I know that our crayons did liberate hydrogen sulphide — an unquestioned poison — that I still favor the sulphide theory over the dye one, for which there is actually no evidence at all so far as I can see, outside of the fact that because synthetic dyes are called "aniline dyes" some people, even scientific people, seem to think that they contain aniline?

Yours very truly,

/s/ Harry J. Fisher

Harry J. Fisher
Chemist in Charge
Department of Analytical Chemistry

F/t

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