

The Jefferson Medical College of Philadelphia
1025 Walnut Street

Dept. of Preventive Medicine
Division of Industrial Medicine

June 17, 1949

Dr. Manfred Bowditch
Director of Health and Safety
Lead Industries Association
420 Lexington Avenue
New York 17, N. Y.

Dear Doctor Bowditch:

I have read with great surprise in Doctor Fisher's letter of May 17, 1949, that the authors of papers on poisoning due to the ingestion of wax crayons have called this type of poisoning "aniline" poisoning. As a matter of fact, not aniline but paranitraniline and benzidine yellow YB have been discussed as possible toxic agents by us as well as by others.

While Doctor Fisher is absolutely right in emphasizing that the problem with which we are confronted is that of a breakdown of the finished dyes and of re-forming intermediates, he stated erroneously that feeding of the crayons or pigments in question to animals "failed to show toxic symptoms." Flinn et al. could not produce methemoglobinemia in rats, dogs and cats, and we, too, have not seen methemoglobinemia in dogs or rabbits. However, dogs and rabbits do not react easily to methemoglobin-forming compounds, and Doctor Samuel S. Spicer, who kindly offered to feed crayons and pigments to conditioned cats, has given definite proof of methemoglobin formation (J. Pediat., 33: 739, 1948).

We have not observed the formation of H_2S in acid stomach fluid, and methemoglobin but not sulfhemoglobin was found spectrophotometrically in the blood of the cats mentioned above and in the clinical cases. Doctor Kehoe's statement that the formation of sulfhemoglobin occurs after death is generally accepted; H_2S does not combine with hemoglobin in vivo. The cyanosis in severe H_2S poisoning is not due to the formation of a specific hemoglobin compound but to asphyxiation by respiratory paralysis.

I am at a loss to understand how absorption of lithopone can possibly produce the type of poisoning observed. I also wonder whether lithopone is present in red, red-orange and other crayons.

I am enclosing a carbon copy of this letter in case you want to send it to Doctor Fisher. I am also enclosing a reprint of several papers on carbon disulphide which have just been published.

If I can be of any further assistance to you, feel free, please, to write to me.

Sincerely yours,

/s/ H. Brieger

H. Brieger, M. D.
Associate Professor and Director
Division of Industrial Medicine