

Lead Industries Association

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January 19, 1944

Dr. Robert A. Kehoe
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Dear Dr. Kehoe:

If you read TIME no doubt you saw the item which appeared in the December 20 issue entitled, "Paint Eaters" derived from an article by Byers and Lord, published in the November, 1943 issue of the American Journal of Diseases of Children, entitled, "Late Effects of Lead Poisoning on Mental Development." It drew some amazing conclusions alleging that lead poisoning in early childhood had left effects showing up years later. It was a most alarming revelation. Naturally, I immediately instituted an investigation because, if what this article describes is correct, then we have indeed a most serious public health hazard.

However, on examining the article from which the TIME condensation was made, I am really surprised that a reputable journal of the American Medical Association would publish such a dissertation. Superficially it is a long paper, well illustrated, and must seem impressive to the profession at large. Many case histories are described, but to any one who has studied lead poisoning intensively and who is familiar with the vast amount of work that has been done in recent years on the metal, and who wishes to sift fact from fancy, the assertions made appear to be far from proven.

Although 20 cases of alleged lead poisoning in children are individually described in not a single case have I found the authors making the slightest attempt to ascertain whether or not the paint used on the cribs contained any lead. They apparently proceed on the assumption that any paint chewed from any crib must be lead bearing and build up their contentions on medical diagnoses that do not sound convincing to me.

For example, take the very first case. There was no stippling of the blood, the urine was normal, there

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"dense bands of metallic deposit at the growing ends of the shafts, characteristic of lead poisoning." For that reason alone the case was alleged to be lead poisoning.

Take Case No. 2, the youngster had scarlet fever and other infections. Again the X-ray is relied upon as the only evidence. There was no analysis of the paint.

Or Case 4, in which it was stated, "results of the physical examination and laboratory investigation were not remarkable," but again the X-ray comes along with a "positive" determination of lead! No paint analysis.

All the cases are more or less alike, but one of the prizes is Case No. 6 because here there is alleged to be a high lead content of the blood but the X-ray was negative! Nevertheless it was diagnosed as lead poisoning.

Or better yet, look at Case 11 in which an infant's blood at 2-5/12 years showed "a mild secondary anemia and her urine a moderate amount of pus." When she was 4 1/4 years old she showed a "history of chewing wood.." and "her blood was examined for stippled cells, without success." At 5 1/2 years her family stated definitely that "in chewing wood she had chewed painted articles of furniture." On this occasion "her blood showed 1.2 per cent stippled cells and a mild secondary anemia." The X-ray examination suggested "recurrent lead poisoning." Two years later the X-rays showed "faint bands of density some distance behind the growing ends of the long bones, thought to be due to the old deposits of lead." But, here comes the most interesting point of all; four years later, when she was 11, and still growing, "her blood, urine and spinal fluid showed about one hundred times the concentration of lead found in normal persons. In spite of these results, roentgenograms of the long bones showed no evidence of lead deposits." Rather confusing, isn't it?

All the cases are more or less similar and there is no need of going into any more of them here.

I note, too, that most of the work involved in this article was prepared by Elizabeth E. Lord, Ph.D., who died recently.

As you know, it is our belief here, based on careful investigation, that no crib manufacturer in the United States today is using any lead paint on cribs, nor has he used any for years, for two reasons:

(1) other paints, such as zinc oxide, lithophone and titanium base enamels are cheaper than white lead, and

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(2) they make a harder and more satisfactory enamel than white lead.

Wouldn't you think, therefore, that rather than jump to conclusions, conclusions based chiefly upon only one premise, and X-ray diagnosis of the bones, the authors would at least have tried to ascertain whether or not the cribs had been painted with lead? This would have been so easy to determine. Window sills might be painted with lead but here, too, leadless paints are more apt to be employed which is the current vogue on interiors.

In the second place I am struck with the fact that the examinations made of the children in almost all cases showed no stippling of the blood and in most cases where an effort was made to find out whether the children were excreting any lead, the urine was normal, or no analysis was made. On the other hand, the authors place great weight upon the X-ray and their article is replete with X-ray photographs of the bones calling attention to well marked deposits of "lead" on the margins of the shafts of long bones.

Now it may very well be that the authors did not see or don't agree with the careful work of Dr. L. T. Fairhall, reported in Public Health Report Vol. 52, No. 6, dated February 5, 1943, entitled, "Identification of Lead in Bone Tissue" where he states:

"It is apparent that the small amounts of lead deposited in bone are insufficient to register by means of X-rays and that darkened areas which have heretofore been accepted as lead deposits are likely to be due to calcium. From what is now known concerning the distribution of lead in bone, it would be surprising indeed if such small amounts of lead so evenly distributed would be revealed by X-rays in the presence of such large amounts of calcium. The lead content of human bones with known exposure to lead is also insufficient in amount to impart any marked opacity to X-rays."

If lead was so prominent in the X-ray photographs shown by Byers and Lord in their paper there must have been perfectly enormous amounts of lead in the bones to do so. This seems incredible to me. Why didn't it show up in the urine?

Another point which I can not understand is that years after these youngsters were alleged to have contracted lead poisoning and were removed from the exposure and subsequently re-examined, this so-called lead line was still found in the bones. How do the authors account for that?

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Dr. Kenoe:

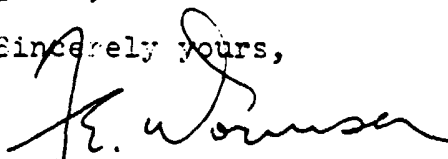
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I hesitate, of course, to bother you in wartime with this topic but I think you will agree with me that this is an episode which, because of your deep interest in lead and your high standing in the profession, can not be ignored. It is unfortunately true, and I know from bitter experience, that other doctors will accept as authoritative this paper of Byers and Lord and probably build upon it still more fantastic assertions. I would, therefore, like to know from you what, in your judgment, is the best thing to do. Do you think, for example, that it is something which might be brought to the attention of your distinguished committee on lead poisoning which has just published such an able report for the American Public Health Association?

With kindest regards,

Sincerely yours,


Secretary.

P.S. In the event you do not have a copy of the paper mentioned at your disposal, I am enclosing a photostatic copy.

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