

January 12, 1938

Mr. Omar Young
Carbide and Carbon Chemical Company
South Charleston, West Virginia

Dear Mr. Young:-

Please accept my thanks for the records in the case of Mr. H. F. Burns on whose tissues samples were supplied to us through Dr. Sayers of the National Institute of Health.

Unfortunately there are a number of factors which render any interpretation of these analytical results somewhat ambiguous. It is rather difficult to determine the weight of a fresh tissue from such samples as we were provided with. The tissues were dried out to a point of hardness and had lost substantially all of their water content. In as much as lead content is expressed most satisfactorily in terms of a unit weight of fresh tissue, the results as we have expressed them are obviously greatly in error. For this reason the piece of bone gives us the best indication of the lead content of the tissues in general on this man.

Moreover, in our experience embalming fluids are generally quite free of lead, but in this instance, unhappily, the sample of embalming fluid is relatively high in lead. It was also high in boron and the lead contamination was probably introduced with the salts of boric acid. Fortunately this factor does not influence the lead content of the bone very greatly, and therefore the bone represents the most useful evidence of the lead content of this man's body.

There is an additional factor here which makes a diagnosis impossible in relation to the man's initial illness. We have had the opportunity of studying the tissues of persons who were at one time known to have absorbed large quantities of lead. In no instance have we been able to find abnormal quantities of lead in such tissues if a period of one year to eighteen months had elapsed between the cessation of exposure and the death of the patient. Thus it is not to be expected in this man's case that any large quantity of lead would be found in the tissues. The diagnosis of

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lead poisoning can not be made, therefore, from autopsy material unless there is a reasonably close time relationship between the period of lead absorption and the time of death.

I am making these points clear because the medico-legal aspects of such analytical data are not always fully understood.

I should go on to say that with the clinical record with which you have provided me, and with the data on the necropsy, the diagnosis of lead poisoning seems to me to be untenable. There is no definite evidence that this man absorbed considerable quantities of lead and for reasons which I have pointed out, it was impossible at the time of his death to make certain whether he had ever had a significant exposure to lead. Thus the magnitude of his exposure must remain in doubt. On the other hand the necropsy discloses the presence of a factor which could explain not only the symptomatology of this man's illness but could also adequately explain his death. In the presence of such findings, it would appear to be unreasonable to cling to the possibility of lead poisoning as the original cause of his illness.

Very truly yours,

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Robert A. Kehoe, M.D.

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