

Dr.med. Wolf-Dietrich Hegelmaier  
Stuttgart-Sued  
Auf dem Haigst 14.

Stuttgart, Germany, April 24, 1950

To the President of the  
Kettering Laboratory for  
Applied Physiology,  
University of Cincinnati,  
Cincinnati, Ohio.

Sir:

I have the honor to enclose herewith copy of a letter which I addressed to you on March 17, 1950. Since I am very anxious to finish my work at an early date and since your reply will be of great importance to me, I dare to address you again in the hope to receive an early reply.

Thanking you again for your cooperation and assistance I am

Respectfully yours,

*Hegelmaier*  
Dr.Med. Wolf-Dietrich Hegelmaier

Enclosure:

Copy of letter,  
dated March 17, 1950

N 6026



April 25, 1950

Air Mail

Dr. med. Wolf-Dietrich Hegelmaier,  
Stuttgard-Sued,  
Auf dem Haigst,  
Stuttgard, Germany.

Dear Doctor Hegelmaier:

I shall attempt, briefly, to answer the question raised in your letter of March 17, although I fear I shall not do so to your entire satisfaction. I must apologize for the long delay in replying, which has been occasioned by a rather heavy work schedule.

My primary reason for objecting to the use of milk as a prophylaxis for lead workers, stems from the fact that there are much better ways of protecting the lead worker. Assuming that the use of milk might be somewhat advantageous in this regard, for which there is no evidence, it is still a poor way to provide safety, for it is a substitute for the adequate control of environmental conditions. In my work in the lead trades over a period of a goodly number of years, I have been hurt and distressed by the willingness of employers, and also by industrial physicians, to justify the existence of hazardous exposure, on the ground that conditions have been improved since the earlier period of industrial operations. In general, the control of occupational lead exposure by sound engineering means is not too difficult. There are situations in which it is troublesome, but most of the situations respond to intelligent engineering in an entirely satisfactory manner. Inasmuch as I have been responsible for the hygienic conditions in the most hazardous of all of the lead trades, namely, the manufacture of tetraethyl lead, I am well aware of the fact that sound methods of industrial hygiene and of engineering control can solve the problem in a wholly satisfactory manner. Therefore, there is no point in palliative and in apologetic types of prophylaxis. Therefore, I am opposed to the use of milk as a substitute for appropriate professional methods.

There can be very little question that provision for the use of milk among industrial workmen who are poorly fed is a great advantage, in relation to many types of intoxication. That milk has any other, or more specific, effect than that of its nutritional benefit, has never been demonstrated by anyone. It has been alleged, after the fact, in this country, that its beneficial effect may be exerted through its relatively high content of calcium, which is alleged to be beneficial in tending to immobilize lead in the skeleton. Our metabolic observations have shown that neither mobilization nor demobilization of lead can be achieved by efforts to influence the calcium metabolism, and therefore there is, at the present time, no scintilla of mechanistic evidence for the beneficial effect of milk, other than its well known nutrient capacity. In experiments which we have conducted with human

Dr. med. Wolf-Dietrich Hegelmaier - (2) - April 25, 1950

subjects to whom soluble lead was administered in known quantities over long periods of time, the administration of milk in quite large quantities was demonstrated to have no effect upon the lead metabolism. It neither influenced the absorption from the alimentary tract or the disposition of lead in the tissues of the body after absorption. This is in keeping with our general observations in the course of which we have found only one therapeutic agent that is capable of influencing the rate of excretion of lead from the body, namely, BAL. Under separate cover I shall send you a reprint of our preliminary observations on this material, together with some other reprints discussing some of our experiments and the lead metabolism.

I should not want you to believe that we have spent much time or effort in the investigation of the role of milk. On the contrary, we have not been very greatly concerned with this problem. Rather our concern has been with the more fundamental question of the limits of lead absorption which are compatible with human safety. Most of our experimental effort over the past twenty years has been directed to this point. The result has been that we have been able to set up criteria for safety in the lead trades that can be followed with complete success. If the exposure and lead absorption of workmen can be kept within certain limits, we can be quite sure that there will be no cases of lead poisoning.

There is, of course, a larger question than the one referred to above. It would be of the utmost value if we could demonstrate whether or not there are any long-term effects of slow absorption of lead, in apparently safe quantities over a long period of time. We have been engaging in several clinical studies of plant populations with this idea in mind, with substantially negative results. These are not wholly conclusive, but they represent our best experience up to this time. My opinions on this subject are set forth in some of our articles, but are perhaps best represented in a comprehensive way in a report issued by the American Public Health Association some years ago on the general subject of lead absorption and lead poisoning. This report, so far as my viewpoint is concerned, is up to date, with the single exception that at that time I was unable to satisfy myself on the subject of the therapy of lead intoxication. At that time we had no absolutely conclusive evidence on the inadequacies of the hypothesis of Aub and his associates on the relationships obtaining between the calcium and lead metabolism. We have since had ample opportunity to convince ourselves that this hypothesis has no foundation in fact, and that indeed, the lead metabolism and the calcium metabolism are substantially independent of each other, except for the fact that both lead and calcium tend to find their way into the skeleton in relatively high concentration. It is quite apparent from our observations that lead can be absorbed into the skeleton and excreted out of it entirely independent of what is happening to calcium at the same time.

I trust that the information in this letter, together with that which

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I am sending you separately, will be useful to you, but if I can answer any other questions, I should be glad to try.

Cordially yours,

Robert A. Kehoe, M. D.

RAK ef

Dictated but not read.

Reprints under separate cover.

Occupational Lead Exposure and Lead Poisoning  
Safe Occupational Lead Exposure  
Exposure to Lead  
Influence of Dithiopropanol (BAL) on Human Lead Metabolism  
Lead Poisoning Symposium  
A Spectrochemical Study of the Normal Ranges of Concentration of Certain  
Trace Metals in Biological Materials  
Experimental Studies on the Ingestion of Lead Compounds

UNIVERSITY OF CINCINNATI  
DEPARTMENT OF PREVENTIVE MEDICINE AND INDUSTRIAL HEALTH

April 25, 1950

THE KETTERING LABORATORY  
COLLEGE OF MEDICINE—EDEN AVENUE  
CINCINNATI 19, OHIO

Air Mail

CABLE ADDRESS: KETLAB, CINCINNATI  
TELEPHONE: CAPITOL 1414

Dr. med. Wolf-Dietrich Hegelmaier,  
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Auf dem Haigst,  
Stuttgart, Germany.

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Robert A. Kehoe  
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Dr.med. Wolf-Dietrich Hegelmaier  
Stuttgart-Sued  
Auf dem Haigst 18

Stuttgart, Germany, March 17, 1950

To the President of the  
Kettering Laboratory for  
Applied Physiology,  
University of Cincinnati,  
Cincinnati, Ohio.

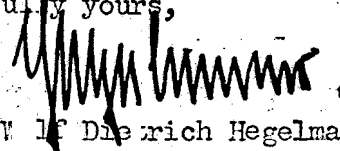
Sir:

In a scientific work I am presently occupied with the problem of the significance of milk allocations to workers of graphical trades, in particular lead workers. Since many years, milk is used in Germany as prophylaxis for lead workers. Recently, however, certain doubts have come up with regard to this question and some German trade doctors are mentioning the word of the "Milk Lie".

I understand that in the United States and in particular in your laboratory milk is disapproved as prophylaxis for lead workers. My attention was called to your research work in this field through articles in the "Zeitschrift Deutscher Metallhuetten- und Bleiarbeiter" by Dipl. Chem. H. Lowicki and Dr. Miksch. Since, however, both articles only mention your results without giving details and since, according to my knowledge, you are the only institute that has dealt with this question, I would greatly appreciate if you would give me a little more detailed information about your research work in connection with the significance of milk as prophylaxis for workers of graphical trades and in particular lead workers. I would be most grateful if you would advise me as to literature and statistical material published in this field. I am particularly interested in those publications which may be available to me in Germany, but would also appreciate any indications as to articles published in other countries.

Any information received from you will be most valuable to me; may I, therefore, ask you to send me an early reply? Thanking you in advance for your cooperation and assistance in this matter I am

Respectfully yours,



Dr.med. Wolf-Dietrich Hegelmaier

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