

January 18, 1944

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Mrs. Olive Keys,
Johnson Bronze Company,
Newcastle, Pennsylvania.

Dear Mrs. Keys:

I am sending you herewith copies of analytical reports on a series of employees of the Johnson Bronze Company. Before making any statements with regard to the interpretation of these results, there are a few comments that I would like to make.

1. The volume of the samples sent in several instances has been too small to give us entirely satisfactory results. One of the samples on a man by the name of [REDACTED] was apparently too small to analyze. Two other, those on [REDACTED] and [REDACTED] were too small to give results which I would consider trustworthy. The others are reasonably satisfactory as to volume. There are two difficulties associated with small samples. One is that the sample may not be representative in that it may be a very highly concentrated sample of urine. The other difficulty is that the slightest trace of contamination multiplies the error of the result so greatly that it is difficult to make any sensible interpretation.

2. I am assuming that you are following the strictest precautions with respect to the collection of these samples of urine. I do not have information as to exactly how it is being done, but I must warn you that these samples should always be collected in the presence of an examiner or an attendant who makes sure of the state of cleanliness of the employee, and at the same time takes care that everything is done properly, so that the sample cannot be contaminated. As you will perhaps recognize, whenever high results are obtained there is always a question as to whether the sample has been contaminated, and if the results are as high as two or three of the present results are, one cannot but wonder whether they are correct. The employer is putting himself at a great disadvantage if high results are obtained, since the implications of the results from the point of view of compensation is quite great, and more importantly since a misinterpretation of the status of the employee in relation to his work is almost certain to be made.

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3. As I have indicated in my recommendations concerning the general setup of the plant and the medical work, the detailed information on the men should always be given to the plant doctor, and no interpretation should be made of any results, except on the basis of as good interpretation as we can make here plus that made by the doctor who is in possession of all the other information. I should prefer, therefore, to make my reports to the doctor, unless some mechanism has been set up whereby you act as his intermediary in getting the information together.

4. I should consider it desirable in suspicious cases to obtain samples of blood simultaneous with the samples of urine. The information will then be much more useful, for the two sets of samples will check each other both in the analytical and physiological sense. It may be that you do not have any of our needles and that may be our fault. Actually we have had great difficulty in obtaining an adequate supply of needles for this purpose. I trust we shall be able to remedy this situation in the near future. However, I would appreciate knowing what your program is with reference to the continuation of taking samples on men. We shall try to supply you with the necessary number of needles if you wish us to do so.

5. Finally in order that we may make the best interpretation of the information that is possible, I should be supplied in every instance with a letter or a notation giving the pertinent information in relation to the occupation, the exposure, the length of service, the date of the last day of work in relation to the time of taking the sample, and the clinical symptomatology. The interpretation of the analytical data on a proper basis has the utmost practical importance. I can be of considerable assistance if I have the proper information to go on. Moreover, it is our purpose in carrying on our work, not to do routine analyses, but rather to carry on careful studies on individuals on whom we have information. A great deal of subsequent trouble with respect to records and similar matters will be saved if suitable information accompanies the samples.

Now with respect to the meager interpretation which can be put on the present group of reports. The results on [REDACTED] and Jess Thomas are within the limits of normal individuals and are not indicative of any very significant recent lead exposure.

The result on [REDACTED] is quite high, and if it can be ascertained that there is no contamination of this sample, it is quite apparent that this man has had a recent significant exposure to lead. The findings are within the dangerous zone and could be associated with symptoms of lead intoxication, although not necessarily so.

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The result on [REDACTED] is quite high, so high in fact that I distrust the result. It would be wise to obtain a larger sample on these men, making sure that there is no possibility of contamination. If the result is accurate, this man is having a very considerable amount of exposure.

The same can be said in the case of [REDACTED], although not to the same degree. This man has probably had significant lead exposure, the lead concentration being well above the level associated with safe occupational exposure to lead compounds.

Very truly yours,

Robert A. Kehoe, M. D.

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