

December 31, 1966

Mr. Murray Pickard  
Irish Base Metals, Ltd.  
Tynagh, Loughrae  
County Galway, Ireland

Dear Mr. Pickard:

I have looked up some data that are available in my files in connection with an investigation which we carried out on certain cattle of a dairyman who fed forage from his own and his father's farm in a valley which acted to some extent as a funnel for directing the stream of effluent from an uncontrolled plant in which lead (and certain other metals) were being reclaimed from scrap materials (batteries, cables, bearings, etc.).

This was a bad situation from the aspect of severity, since several of the dairy cows died, a number of others were poisoned but recovered, and the milk production of the herd fell off strikingly. The owner's family, a very fine, young, handsome and sturdy couple and their three fine children, were troubled about the children who drank large quantities of milk. I was not concerned about this at all, but thought it wise to obtain analytical results on the milk for their satisfaction.

The results of all of the analyses carried out in connection with this case are listed on the attached sheet.

Milk such as that represented by the data (at the highest concentration of lead) is certainly not suitable for regular use over a prolonged period of time, but it is not dangerous for short periods, that is for several months. If one consumed two quarts of such milk per day, he would be adding almost 0.17 mg. of lead to his daily diet. This would bring the average intake per day in food and beverages up to somewhere between 0.4 and 0.6 (i.e., in this country), and the latter figure is just about as high as one dare go day after day for years. It is doubtful that this alone would ever cause lead intoxication, even if it were continued for many years, but it would add something to the body burden, and so would create a certain degree of risk.

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With respect to forage, the figures shown in the attached sheet are the best that are available to us. We know that forage contaminated to the maximum extent represented in these data will cause lead intoxication, which may be fatal, in cows.

I am giving you a few additional figures on the lead content of the tissues of poisoned cows. You will note the increase in the concentration of lead in the skeleton. In one instance, at least, this elevation is associated with high levels of concentration in certain organs. When the soft tissues are high in lead, the results can be interpreted as meaning that the recent rate of the absorption of lead was high - that is, that it came in at such a rate, shortly before the animal died or was killed - that it could not be sequestered (so to speak) in the skeleton. This condition, of course, is of serious consequence to the animal organism, in that the soft tissues are more vulnerable to the toxic effects of lead, and may be expected to have sustained a greater effect.

Now with respect to the possibility of my paying you a visit for the purpose of consulting with you on this matter. This is not impossible, and I would not refuse flatly to do so, but I am hard pressed in a number of respects, and I'd like to postpone any such a trip for at least six weeks or two months. It would be better for me if I could give such advice as may seem useful, through correspondence. This is not because I am reluctant to visit Ireland again. Indeed, the prospect of such a visit is a great temptation to me at any time. But I must get some hard and persistent study and writing behind me as soon as possible, and I begin to be concerned lest I shall never have the time, free of other professional responsibilities, to do this.

I shall be willing at any time to write in answer to questions which you may wish to raise, in so far as answers are available, on the basis of factual information which you can supply.

Cordially yours,

Robert A. Kehoe, M.D.  
Professor Emeritus of  
Occupational Medicine

RAK:wp