

December 18, 1952

Dr. Henry Gilman
Iowa State College of
Agriculture and Mechanic Arts
Department of Chemistry
Ames, Iowa

Dear Doctor Gilman:

I have no doubt that you have abandoned any hope of obtaining a reply from me to your letter of November 3. I apologize for what may seem a lack of common courtesy, but I have had time lately for only the most urgent items of my correspondence.

I'm afraid I can give you little help in response to your question. I have not seen lead poisoning in cattle, but I have little doubt that it occurs from time to time. Cases of poisoning have been reported, with some show of validity but little real proof, as the result of eating contaminated forage. There is no reason for doubting that lead accumulates in the bodies of cattle as in other mammals, and the well-known tendency of cattle to lick the surfaces of fences, barns and the like would be likely to cause poisoning, if these surfaces were painted with lead-containing paints. The long alimentary tract of the ruminants, and the length of time that food remains in the tract should operate to facilitate alimentary absorption and poisoning.

I do not understand your reference to poisoning (of cattle) that shows up within thirty days or not at all. If exposure to lead continues at a significant level, the danger increases steadily with the lapse of time.

As to the influence of trichloroethylene on susceptibility to lead poisoning, I might hazard the guess that it would exert an effect only to the extent that it promotes disease independently and thus may interfere with the handling of lead in the body. This, however, is a stab in the dark, for which there is no evidence whatever. If trichloroethylene were known to exert a significantly injurious effect on the liver, the probability would be greater, but it is not a very potent injurant of the liver, and so I should expect small amounts to have little influence one way or the other.

I cannot but wonder what inspired your interest or concern in this matter. Certainly lead poisoning among cattle is a fairly rare occurrence, and is of little practical importance. You mentioned lead poisoning among children, however, and that is a matter of real importance. On the basis of evidence obtained in areas where this disease among small children is under investigation and is recognized, the incidence is sufficiently

Dr. Henry Gilman - (2) - December 18, 1952

high to justify the assumption that several hundred of such cases occur annually in the U.S.A. The death rate ranges from 25 to over 30 per cent in these cases, since encephalopathy is the common form of the disease as it is seen in the recognized cases. Most of this is due to the ingestion of paint from a variety of sources in the immediate environment of the child in that period of life in which any and all objects of appropriate size go into the mouth.

Returning to cattle for the moment, there is no reason to suppose that lead poisoning would be recognized in these animals unless they were poisoned fatally and were subjected to toxicologic examination. The form of the disease among many animals bears little resemblance to that seen in man, and I imagine that the diagnosis would present great difficulties.

With kindest personal regards,

Cordially yours,

Robert A. Kehoe, M. D.

RAK ef

165 ■ 00799