

November 24, 1926.

Dr. W. E. Ducl,
The E. I. DuPont de Nemours Co.,
Dye Works Hospital,
Pennsgrove, New Jersey.

My dear Doctor Ducl:

Your letter of November 22d concerning the excretion of lead by the skin is received. The figures which are quotes in W. M. Eldridge's article on the Toxicity of Lead Ethyl are taken from my statistics collected at Dayton. If you will notice the chart which he quotes in his article is a study of 28 cases on which all the symptoms and signs were numerically set down. This data was obtained by me in the study of the Dayton cases, and was included in a report made by the medical committee, a copy of which was sent to Mr. Eldridge by Doctor Thompson for the Standard Oil of New Jersey Medical Staff. The test was made with a ten percent solution of sodium sulphate and water, and some care was taken to cleanse the skin of all external compounds before making the test. I must say, however, that in spite of the fact that I did these tests myself, I do not consider them conclusive for the excretion of lead in the perspiration, for the reason that external contamination of the skin is so difficult to completely rule out that it is almost impossible to say with certainty that the lead which was on the skin did not come from external sources. I know of no experimental data which satisfactorily settles this point. I am convinced that in all probability small quantities of lead are excreted in the perspiration, but the matter is not as yet proven with certainty. I do not regard any test of the skin as being satisfactory. It would be necessary first to cleanse the skin with great care and then induce perspiration before making tests of the perspiration itself obtained under conditions which obviate any possibility of external contamination. In the few cases which I have attempted to study in this fashion the results are inconclusive.

You will realize, of course, that the application of sodium sulphate to the skin produces a precipitation of any one of the heavy metal group so that a black coloration of the skin simply means that some one of this group of heavy metals is present. As to its source one cannot say with certainty. I do not regard the 12 positive results out of 28 which were

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made at Dayton as indicative of anything except the undoubtable presence of lead on the surface of the body. As a matter of fact, that was all I was attempting to determine by my test, for I wanted to know to what extent these men were getting lead on their skin.

I am expecting to be at the Dye Works some day during the coming week, and will be glad to talk this and any other matter over with you at that time.

With kindest regards

Yours very truly,

BAK:OJ

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