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NORTHWESTERN UNIVERSITY
Evanston, Illinois
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Dept. of Physics
The College of Liberal Arts

Dr. Graham Edgar
Ethyl Corporation
405 Lexington Avenue
New York, N. Y.

Dear Dr. Edgar:

I am writing you in the belief that possibly you might be in a position to help me, even though this help should consist merely in putting me in touch with one or more parties who might be interested in what I have to offer.

I am in charge of the Laboratory of Applied Spectroscopy at Northwestern University. We have just completed a project for the Medical Division of the National Research Council dealing with the quantitative spectrographic determination of antimony in urine following dosages of antimony drugs to patients suffering with filariasis. This project terminated October 31.

After December 1 I am to be employed half-time as spectroscopist on a new research project at Northwestern. It seems that I must depend largely upon myself to bring my employment up to a full-time basis. I have an assistant who, if necessary could be depended on to do work on a full or part-time basis.

Although we should be interested in any emission or absorption problem in the ultraviolet or visible range, we are prepared to go into production immediately on a problem such as the quantitative determination of metals in biological fluids or tissues.

There are two types of problems dealing with lead intoxication to which I have given some thought. I know that a great deal has been done on lead intoxication, at the University of Michigan, at the Kettering Laboratory of Applied Physiology of the University of Cincinnati, and many places elsewhere. However, I believe that my laboratory could contribute, perhaps, something of value in this field by reason of the fact that our procedure and technique in the preparation of samples is different from that of other investigators. Our minimum requirement of urine per spectrum is only $\frac{1}{4}$ ml, although we like to receive 2 or 3 ml. Moreover, we do not ash the urine samples, but mix with it an equal amount of a buffer solution containing the internal standard. One-half ml of the mixture is evaporated directly into the cavity of a graphite electrode and this electrode is arced in taking the spectrum. The evaporator we use is unique and I think a description of its construction and manner of use is worthy of publication. Summing up, I believe we could contribute

something to the subject of lead intoxication for two reasons: (1) we use only a small amount of sample, making it possible to ship by air mail at low cost; and (2) our sample preparation is direct and simple, thus reducing the cost of analysis.

The two types of problems referred to above are outlined briefly below:

1. A Study of Lead Intoxication Caused by Industrial Occupations. The study of this problem would logically lead to the development of a rapid, low cost method of testing urine samples, at regular intervals, from persons exposed to the dangers of lead intoxication by reason of their occupation.

2. A GEOGRAPHICAL STUDY of the Lead Content of Urine. The obvious reason for this study is to determine whether the modern environment to which most people are subjected is responsible for the accumulation of an excess amount of lead in their systems.

I know that some work has been done on each of these two problems. However, for the reasons stated above, I thought that my laboratory would be in a position to contribute something additional in connection with them.

I was at the University of Virginia when you were on the Faculty there. I had only the course in General Chemistry under Professor Bird. My interest in science developed after leaving Virginia.

In my attempt to find a suitable research project for my laboratory, any advice or leads would be greatly appreciated.

Sincerely yours,

S/W. H. Abbitt