

VISIT REPORT

Date of Visit: July 10-11, 1972

Location: Kettering Laboratory
University of Cincinnati

Visit By: D. R. Lynam

Report By: D.R. Lynam *D.R.L*

Persons Seen: Dr. Les Michael
Dr. Stan Gross
Dr. Scott Clark

Subject: Cadmium Criteria Document
Lead Glazes in Ceramics
Pediatric Lead Sources

This visit was made to the Kettering Laboratory and various members of the faculty were contacted regarding various research projects concerned with lead and zinc.

The visit with Dr. Michael was in reference to the criteria document on occupational exposures to cadmium, which he is preparing and research for Block China Corporation regarding lead release from ceramic glazes. Kettering laboratories, with Dr. Michael as the principal investigator, was recently awarded a contract by the National Institute for Occupational Safety and Health (NIOSH) to prepare a criteria document on cadmium. I was able to provide Dr. Michael with some of the cadmium literature from our files and to discuss the most significant publications on cadmium. The criteria document for cadmium based on Dr. Michael's findings will eventually be submitted to the Department of Labor, Occupational Safety and Health Administration (OSHA), by NIOSH and will become a compliance standard under the Occupational Safety and Health Act (1970).

Dr. Michael was also the principal investigator on the study of cadmium and lead release from glazes, which was initiated and is being financed by Block China Corporation, 25 East 26th Street, New York City, New York. The Block China Corporation imports china from Europe and has run into difficulty with high lead and cadmium releases from dinnerware (specifically plates) containing decals. Dr. Michael has served as consultant to Block China in meetings with consumer groups including housewives in Rochester, New York and is engaged in a research project consisting of the following:

1. Literature review.
2. Testing program.
 - a. Effect of shape of vessel on lead release.
(Area vs. volume, immersion vs. contact, repetitive analyses)
 - b. Assess release as a function of shelf life of piece.
 - c. Effect of dishwasher detergents on lead and cadmium release.
(Caustic aging, detergent system, aging of analysis)
 - d. Develop a dose per unit concept.
3. Develop a quality control program.
 - a. Statistical Analysis (number of pieces required, number of analyses per piece, etc.)
 - b. Correlate existing test procedures (U.S. vs. German vs. British, etc.)
 - c. Determination of quantity of release of other contaminants such as cobalt, selenium, etc.)

Dr. Michael is also co-operating with the division of Community Environmental Management of HEW in developing micro-methods for lead screening program. He has been engaged in the City of Cincinnati screening program, primarily in the area of between laboratory analytical results. He is presently evaluating ^{the} Delves analytical procedure.

Dr. Gross is conducting a study to determine lead content in bone and various organs and to relate lead levels to age. He has been obtaining samples from cadavers obtained from the local coroners office and hospitals. Much effort has been devoted to development of analytical technique and sample preparation. He is presently using a Mossman furnace and feels that only the data obtained by this technique are reliable.

In response to my question of relationship of blood lead to total body lead content Dr. Gross expressed the opinion that blood lead is not a good indication of total body lead content. Dr. Gross is the principal investigator on a research project, which is now in the initial stages, for the National Paint and Coatings Association on the subject of bio-availability of lead in paint. Only the first phase, a literature review, has been approved by NPCA. Another aspect, which NPCA is interested in, includes solubilities of various lead compounds in gastric juices.

Dr. Clark was contacted because of his interest in determining sources of lead to children who have elevated blood lead levels. Dr. Clark has a student working with him who is preparing a thesis for ^a Masters degree dealing with this subject. Dr. Clark indicated that the present data are too preliminary to form any conclusions but he would hope that near the end of the year quite a bit of information would be available. Some analyses have been done for lead in soil in yards of children with elevated blood leads.

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