

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
AMES, IOWA

July 18, 1946

DEPARTMENT OF CHEMISTRY
R. M. HIXON, HEAD

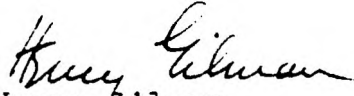
Dr. Robert A. Kehoe,
Kettering Laboratory of Applied
Physiology,
University of Cincinnati,
Cincinnati 19, Ohio.

Dear Dr. Kehoe:

Thanks very much for the information con-
tained in your letter of July 16, 1946 concern-
ing the use of sheet lead for decorative pur-
poses.

With kind regards.

Sincerely yours,


Henry Gilman

HG:he

LEE 00302

July 16, 1946

Dr. Henry Gilman,
Department of Chemistry,
Iowa State College,
Ames, Iowa.

Dear Dr. Gilman:

Dr. Calingaert has raised some questions of me in relation to your letter of July 2 to him, with its enclosure of certain items of correspondence. After a conversation with Calingaert we agreed that it would be advisable to write to you directly on certain aspects of the correspondence.

The comments in "Mrs. Munn's fan mail" are not astonishing in any way, but, in fact, represent the more or less usual reactions of uninformed people who attempt to deal with matters of this kind. The response is usually emotional and not factual, and argumentative rather than soberly critical.

The real problems in this situation have been covered in very large part by the advice given to Mrs. Munn by Dr. Calingaert and yourself. There is one aspect of it, however, to which, so far as I know, no reference was made, and which should receive some consideration. The use of metallic lead or lead compounds of any kind for decorative or other purposes within the household is fully justified under most circumstances. On the other hand, there is one precautionary principle that should always be borne in mind. Metallic lead or lead compounds which are distributed within the environment of small children are a potential source of hazard. This situation should be controlled with meticulous care. The difficulty here arises from the fact that small children get their hands into everything and then put them in their mouths. Moreover, everything that they can pick up and everything that they can reach is likely to be chewed or licked or otherwise introduced in part into the alimentary tract. It is not possible to teach a baby personal hygiene, and as a consequence of this fact, any risk which can be kept completely out of the small child's environment should be so handled. One can go into great detail to explain the various aspects of this problem and to describe the many situations that have been seen coincident with illness and sometimes with fatalities. However, I think I need only say again that the only cure for this situation is to see to it that the small child does not have lead compounds of any kind within his environment. Obviously this applies to household decorations, toys, play-pens, beds, high chairs, kitchen and table implements, and the like.

LEB 00303

Dr. Henry Gilman - (2) - July 16, 1946

The hazard of dealing with metallic lead otherwise, in the case of adults, is primarily a matter of the avoidance of dust or fumes. Thus if metallic lead is scraped, sand papered or otherwise fragmented mechanically, or if its oxidized surface is subjected to mechanical operations of any kind, finely divided metal is likely to be thrown into the air to be breathed by anyone who is near enough to do so. Whether or not trouble occurs will depend upon the concentration of these materials in the air and the length of time over which individuals are exposed. Obviously in work such as Mrs. Munn is performing, this hazard can be avoided completely. Another and less important hazard arises from the fact that the handling of metallic lead on which there is almost always a film of oxide or carbonate, results in the contamination of the skin of the hands by which means food, beverages and/or other materials that may be put into the mouth will be contaminated. This is, generally speaking, a rather insignificant hazard, but it is one that is readily avoided by any prudent or ordinarily cleanly individual. One need not fear lead absorption through the skin under these conditions, for the absorption of inorganic lead compounds through the skin is of theoretical interest, but of no practical importance. This, as you will recognize, is not true of tetraethyl lead, but that is quite another matter.

I think I should not close this discussion without pointing out that any process of operation that involves the application of heat to lead or its compounds increases the risk of inhalation very markedly. Welding, cutting with heat, soldering, melting operations, and all of such procedures, especially the application of any local heat in excess of 800° C., results in the creation of lead fume, the inhalation and absorption of which represents the most serious type of hazard with which we have to deal in industry. In this connection the present standards for safe occupational lead exposure require that the lead concentration in the air breathed throughout the working day should not be permitted to exceed 1.5 mgs. Pb per 10 cubic meters of air. Actually it is advisable to see to it that the concentration does not reach this level at any time, but if such concentration is not exceeded, the occurrence of lead poisoning even after months of daily exposure is not to be expected.

Finally it is to be remembered in connection with exposure to lead compounds, that it is not possible to live on this earth without taking in and absorbing into the body measurable quantities of lead. This is no excuse for carelessness in the handling of this element and its compounds, but it does clearly indicate that lead compounds in order to be poisonous at all must gain entrance to the body in adequate concentration. The limits of such concentrations are well on the way to being accurately

KE 00304

Dr. Henry Gilman - (3) - July 16, 1946

definable, and therefore there is no longer much excuse for the kind of unreasonable beliefs and statements that have hitherto characterized lay and sometimes medical discussion on this subject.

Sincerely yours,

Robert A. Kehoe, M. D.

FAK ef

Dictated but not read.

LE ■ 00305

ETHYL CORPORATION

**RESEARCH LABORATORIES
1600 WEST EIGHT MILE ROAD
FERNDALE 20
DETROIT, MICHIGAN**

July 8, 1946

Dr. F. A. Kehoe
College of Medicine
University of Cincinnati
Eden Avenue
Cincinnati 19, Ohio

Dear Bob:

Confirming our conversation, I am sending you herewith Dr. Gilman's letter to me of July 2, with attachment. Both Dr. Gilman and Mrs. Munn would be more than pleased to have your comments on the hazards involved in using sheet lead as a decorative medium.

Very sincerely yours,


George Calingaert

Enc.
Encls.

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS

AMES, IOWA

July 2, 1946

RECEIVED
JUL 8 1946
J. A. [unclear]

DEPARTMENT OF CHEMISTRY
W. F. COOVER, HEAD

no feeling
10-1-46

Dr. George Calingaert,
Research Laboratories,
Ethyl Corporation,
1600 West Eight Mile Road,
Ferndale, 20, Detroit, Michigan.

Dear George,

You may recall that a few years ago when you were here we went down to visit Mrs. Munn who was using sheet lead as a decorative medium. At that time we both cautioned her about the danger of working with lead.

Yesterday afternoon Mrs. Munn phoned me and told me that she had sent in a brief article to a magazine called "Craft Horizons" on the use of sheet lead as a decorative medium. In that short article she had reproduced two very attractive photographs of the chests she had decorated.

Shortly after the article was published the editor of the periodical had two letters from readers who were concerned about the use of lead. These two letters are numbered I and II of the enclosed material which Mrs. Munn sent me. Item 3 is a copy of a note to Mrs. Munn from the editor of the periodical. Item 4 is a copy of a letter by Mrs. Munn to the editor of the periodical.

As a background I might give you the following extract from her article to show what emphasis she did place on the danger of working with the material. In this extract the Belgian chemist she refers to is you.

"My first knowledge of its danger came one day when I was working on some pieces of lead and a friend, whose husband is a chemist, seemed a bit disturbed that I was working with this material. She told her chemist husband about my activities and from then on I had advice and counsel from some of the outstanding scientists of our country, which in itself was a thrilling adventure. These friends even brought a noted Belgium chemist to call when he was on the campus for a chemistry seminar. They all agreed that there was danger in the use of lead and they warned me to use extreme care in the way I worked with it. They said never to take my hands to my eyes, nose or

KE 00307

mouth without first washing my hands well with soap and hot water, and of course never to eat food without taking the same precaution. I was never to work with the lead if I had a cut on my hands. I had worn heavy gloves because the tin-snips used in cutting were big and awkward and hard for me to handle. These men cautioned me that the gloves themselves would store up poison from the lead so that even greater care should be used. Heeding all of these precautions over the period of several years during which I have worked with lead, I have had no ill effects but have found much pleasure in its use and satisfaction in the finished results."

Mrs. Munn's concern now is to help reduce danger after the work is done. That is, she thinks it might be appropriate if she wrote a letter to the editor explaining how exposure to the finished art product might be reduced by some appropriate coating to the lead. May I know whether you have any suggestions on what sort of a coating or varnish might be applied to reduce the danger of exposure or contact with the lead once the art object has been completed? I made it clear to Mrs. Munn that if I got information it would be with the understanding that no names were to be quoted.

She feels that she made a reasonable case in emphasizing precautions in working with the material. What she would like to do now is to inform readers of the article that there may be ways of reducing the danger once the finished decorative work has been done with lead.

Needless to say she might have been spared the present concern had she taken the suggestions that you and I made. It was, however, too late then because she had already started and actually completed most of the work.

With kind regards.

Sincerely yours,



Henry Gilman

Encls.

HG:he

COPY

May 28, 1946.

American Craftsmen's
Cooperative Council, Inc.
485 Madison Ave.
New York 22, N.Y.

Editor, Craft Horizons:

On reading Ann Leichter Munn's article "Using Sheet Lead As A Decorative Medium", I was appalled at the casualness with which she mentions the danger attendant in the general use of this metal for decorative design. [I]

May I, for the benefit of those unwary craftsmen who are contemplating using lead in this manner, mention a few of its "Disadvantages" since the author has failed to do so anywhere in her article.

Some of the symptoms of this "very lovely experience" are- nausea, vomiting, anemia, abdominal pains, muscle cramps, and joint pains, to say nothing of possible impairment in function of any part of the nervous system, often leading to muscle atrophy and the characteristic foot and wrist drop, even brain disease.

Is it any wonder her chemist friends "seemed a bit disturber"? Otherwise it was a good article and she is a beautiful craftsman.

Sincerely, (Miss) Francis B. Fuller, Occupational Therapist
161 W. 16th St., New York 11, N.Y.

Germantown Pike at
Whitehall Road
Norristown Square
Pennsylvania (R.D. 2 Norristown)
June 6th, 1946.

To the Editors of
Craft Horizons
New York City, N.Y.

Gentlemen:

It was with great indignation that I write you concerning the very attractive article in the May issue of Craft Horizons, "Using Sheet Lead as a Decorative Medium" by Ann Leichter Munn. [II]

The article is so enticing and the medium so flexible that almost anyone would dive headfirst into crafting lead. The writer minimizes the terrible dangers to such a point that it is like blowing a bit of thistle down off one's shoulder. Perhaps she has never seen anyone suffer and finally die of lead poisoning. A child could quickly become ill by just having rubbed his tiny hands several times over the design on her attractive chests and then putting his fingers in his mouth for a moment. House painters get what is known as "painter's colic" from having absorbed whitelead thru the skin, and yearly thousands of wild ducks die from having eaten lead shot that have dropped in shallow water. Several years ago I was horrified to see the Philadelphia Art Alliance a beautiful bird bath of cast lead. The maker certainly couldn't have been conscious of offering birds a lethal bath and drink. LE 5 00300

In all fairness to your readers I think it would ne wise to publish a more definite warning against the use of lead for art purposes, especially when in the hands of the average person. It is no joke to have offered a dangerous medium, with ~~the~~ possible death from its use. The enclosed item from the Philadelphia Evening Bulletin is very timely, it seems to me.

Yours very truly,
William Slough.

American Craftsmen's Educational Council
485 Madison Avenue at 52nd Street
June 13, 1946.

Mrs. Ann Reichliter Munn
726 Buff Avenue
Ames, Iowa

Dear Mrs. Munn:

I enclose a copy of a letter which I have just recieved about lead poisoning. I think the man is an over-alarmist, but I thought that I would publish his letter in the Craftsmen's Forum of our August issue. and perhaps you would like to answer it in advance. I would be most appreciative if you would do so.

I hope that you liked the way we ran your article and will be glad to send you some extra copies if you would like to have them.

Yours most sincerely,
Mileen W. Webb
Mrs. Vanderbilt Webb
Vice-President

notation in longland: The second letter came after I wrote this
May we have them back?

726 Duff Avenue
Ames, Iowa
June 20, 1946

Mrs. Vanderbilt Webb
American Craftsman's
Educational Council, Inc.
485 Madison Avenue
New York, 22 N.Y.

Dear Mrs. Webb:

Thank you so much for your letter enclosing my "fan" mail. I am truly sorry if I have caused you any embarrassment by failing to stress more strongly the dangers of working with lead. I am returning the letters as you requested.

May I confere with my good chemistry friends and send you an answer to the letters?

Indeed I did like the way you ran the article and I will be delighted to have extra copies, for the friend who promised to return my copy of Craft Horizons has failed to do so. I do not remember just how much was cut in publishing but as I look at the original article I feel that I did make it quite clear that there was danger in the use of lead. I did not go into all of the symptoms of lead poisoning but I did stress the precautions which should be followed in using it. It seems to me that is more constructive information.

Because there is danger involved in so much that a craftsman does he must always be alert. There is danger in the use and in the abuse of both materials and equipment used so that the craftsman must, from the beginning to the conclusion of his project, use the utmost intelligence at all times. He should recognize the dangers but fill his mind with the proper methods of dealing with these dangers. When using a sharp tool for wood carving he keeps in mind the fact that he must never place his hand or any part of his body in front of the tool but he does not think of the horrors which would be apparent if he were to cut off a finger or run the tool into his body. Every craftsman, or sportsman should recognize dangers and make them a part of his being but he must never let this recognition turn into fear for then he loses his efficiency and certainly his joy of performance. The craftsman who uses power tools must follow the safety rules for their use; the hunter must know all of the rules of safety and abide by them at all times; and the horseman must respect his horse and the dangers involved but he must not have fear.

But I will do some research and try and answer the letters. I

have never seen anyone who has suffered from lead poisoning and

I am sure it is not a thing to take lightly. I did respect the concern my friends had for me and took their advice and have had no ill effects from my experiences in using lead.

Thank you again for writing me and I will appreciate the extra copies for I have had so many people asking for them.

ke

00311