

Defting  
Archaeological  
Technique

March 8, 1961

Dr. C. Lalor Burdick  
4400 Lancaster Pike  
Wilmington  
Delaware

Dear Dr. Burdick:

I have yours of March 3rd regarding the project of developing the use of the electron microscope for museums and archaeological research. Here are the answers to your questions insofar as I can give them at this time.

We believe here that no one is using the electron microscope for these purposes at this time. At the British Museum they are using a Vickers Projection microscope for the study of surface structure of paints and so forth to detect fakes, patching and so forth. Also, I have seen, in Leningrad, an elaborate application of microscopy at the Hermitage for the study of the surface of the various objects to determine how they were made, but I do not believe they are yet using the electron microscope.

There is a new research laboratory for the Fine Arts, at the Institute of Fine Arts, New York University. Also, the Boston Museum has a laboratory in this field for archaeology. One of the best laboratories is that at Oxford, located at 6 Keble Road. We are at the moment compiling a card catalogue for development of all these techniques for museum and archaeology, but it is not yet in useable form.

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416 - M.  
L.C. 31

As for Mrs. Revere's connections with du Pont, I have just called her on the telephone and have the following information. She worked with Dr. Oliver Burke and Dr. Paul Floury. Also, Dr. Harkins in the U. S. Rubber Reserve Program during the War. Thereafter, she worked with the Waynesboro group, which I understand was a du Pont project on synthetic fibers and on problems of contamination with certain fungi. She did not remember off hand the names of the people in the Waynesboro group, but says she was paid for her work by du Pont. She also says that Dr. Willoughby, who I understand works at du Pont, will know all about her work on carbon black in synthetic rubber. Also, she worked with your Dr. Deiter, a du Pont metallurgist, now working on titanium, when they were both at the Aberdeen Proving Grounds.

Mrs. Revere seems very keen on getting out of her present work for the Air Force and into her personal preference for work on archaeology and museum problems. I feel sure she will be glad to come down and talk with some of your people, if that will be helpful.

Yours,

FR:ah

Froelich Rainey  
Director

C. LALOR BURDICK  
4400 LANCASTER PIKE  
WILMINGTON  
DELAWARE

March 3, 1961

Dr. Froelich Rainey, Director  
The University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia 4, Pa.

*Titanium*  
*R. Deter*  
*Metolupit*  
*Copeland*  
*Prov. fund.*

Dear Dr. Rainey:

This concerns your letter of February 21 and your request to Mr. Copeland for assistance in support of the work of Dr. Helmut Deterra and Mrs. Althea Revere in developing new examination techniques for museum and archeological research, in particular, the use of the electron microscope.

Appropriately competent scientific experts within the Du Pont Company have kindly assented to examine and review the information which you presented to us. It also will be useful to us to know what research of similar or parallel character is going on in the principal museum laboratories other than your own. What, for example, about the Fine Arts in Boston, the Metropolitan, the Freer, the British Museum and Oxford?

It is interesting that the biographical data on Mrs. Althea Revere in the project states "----first to have established private lab. for electron microscopy for consulting work on colloids, plastics, textiles and metals under contract with U. S. Rubber Reserve, du Pont,---- etc." Would you be so kind as to let us know who were Mrs. Revere's contacts in the Du Pont Company and what she did. We could then look this up and perhaps develop a bit of continuity.

Yours sincerely,

*C Lalor Burdick*  
C. Lalor Burdick

*Mr. Willoughby*  
*work on*  
*Rubber*

cc: Mr. L. du P. Copeland

*Retreat*  
*Mr. Alan*  
*Burke*  
*was*  
*Pond*  
*Flaney*

*Mr. P. Arbin*  
*U.S. Museum*  
*Waynesboro*  
*Appellate*  
*CLB/mwa*  
*carbon*  
*broader*  
*jump*

*Mr. G. du P. Copeland*  
*Institute*  
*on funds*

*Vickers projection microscope*  
*structure -*  
*John*  
*7 luminous ultra violet*

*Duke*  
*Hove*  
*Ar characteristics*  
*Vol. 3*

Deterra  
Archaeological  
Techniques

February 24, 1961

Mrs. Revere  
Electron Microscope Laboratory  
Martha's Vineyard  
Massachusetts

Dear Mrs. Revere:

Under separate cover I am sending on two shells which I have just brought up from Tikal, they date from about 400 A. D. Helmut Deterra told me you wanted some from Tikal. Also, as I wrote Helmut, I have discussed the proposed research with the Electron Microscope with the du Pont people and have forwarded the application to Mr. Burdick there. It looks promising and I hope to be talking with him shortly.

I remember very well meeting you here and as you know I have always been interested in some arrangement whereby we can try out the Electron-Microscope for museum and archaeological research. Let's hope we make it this time.

Sincerely yours,

FR:ah

Froelich Rainey  
Director

Archival Temp

March 17, 1961

Dr. C. Lalor Burdick  
4400 Lancaster Pike  
Wilmington  
Delaware

Dear Dr. Burdick:

Our luncheon in Wilmington on Tuesday certainly was an education for me and I very much appreciate your invitation to meet with Mr. Patterson and Mr. Brubaker. It seemed to me that their opinion was that the electron microscope is somewhat too refined an instrument for our purposes at this time and that we should do some working with the light microscope before getting into experimentation with an electron microscope. Thinking it over afterwards, I am afraid I did not make myself very clear in trying to explain why I would like to support Mrs. Revere at this time. Obviously my trouble was that I was talking about something of which I know very little. Certainly we will go ahead here with the light microscope following the lead already taken by the British Museum and other museums in this kind of work; but this will be more or less standard operating procedure.

It strikes me that Mrs. Revere, who is an experienced operator of the electron microscope, probably has a much better idea of its use for museum and archaeological work than I have and that her object is to get into a field which really interests her to determine just how it can be used. This is the kind of experimental work which makes up half of our job in the techniques laboratory. I suppose, if one in five of our attempts to develop new techniques really works out, we will be lucky.

If you and Mr. Copeland think that this kind of a flier might be worthwhile in view of the opinions of Mr. Brubaker and Mr. Patterson and you can find some foundation financial support for it, then I would be glad to

attach Mrs. Revere to our techniques laboratory and give her all the help we can even though she would remain doing her work on Martha's Vineyard. On the other hand, you and Mr. Copeland may not consider this worthwhile and, if so, I will suggest some alternative to Mrs. Revere and Dr. De Terra.

It really was extremely interesting to talk to all of you and I appreciate the time you took about it. Also, when Richard Linington gets back from Guatemala, I would very much like to bring him down to talk with Mr. Brubaker and Mr. Patterson and also visit their laboratories with them. This could help us a lot in the various things we are trying to develop.

Most sincerely yours,

Froelich Rainey  
Director

FR/gc

Archaeological  
Techniques

February 23, 1961

Mr. Helmut Deterra  
17 Rockledge Road  
Hartsdale, New York

Dear Helmut:

This is just a note to say that I have talked to Mr. Copeland who seemed interested in the Electron Microscope project and upon his advice I sent your application to Mr. Burdick of the du Pont Company with a long covering letter of my own and I expect I will be seeing him about this before long. In any case, at the moment it sounds promising.

Regards,

FR:ah

Froelich Rainey  
Director

HELMUT DETERRA  
17 ROCKLEDGE ROAD  
HARTSDALE, NEW YORK

*Copeland*

February 16, '61

Dear Fredrick,

Just a hurried note to correct  
the name I gave you of the Dupont  
philanthropic enterprises: Mr. Julian Hill,  
Wilmington. Mr. Revore also knows  
Mr. Benjamin Thoran of Wilmington  
and Vineyard Haven, a friend of Mr. Hill's  
and a Dr. Carl Satrey of Dupont.

Good luck to you!

Cordially

Helmut

C.R. - Archaeological  
Techniques

February 21, 1961

Mr. C. Lalor Burdick  
du Pont Building, 911  
Wilmington, Delaware

Dear Mr. Burdick:

I have just been speaking with Mr. Copeland on the telephone regarding a grant of funds to explore the use of the Electron Microscope in the museum field. Perhaps, I should explain that I am now the President of the American Association of Museums and therefore am concerned with the use of new techniques for museums, in general. Also, we have established here at the University Museum a laboratory for the development of new techniques, both for museums and for archaeological research.

There is attached an application submitted to us by Dr. Helmut Deterra and Mrs. Althea Revere. I know both these people and their work and am very anxious to find some way of supporting them in this research of exploring the uses of the Electron Microscope for museums and for archaeology, as well.

Mrs. Revere has been working for the Defense Department but is anxious to withdraw from that work to concentrate on the kind of thing proposed here. There is no doubt that people with this kind of interest are very rare, but she is competent, and that this holds promise for all of us.

Our techniques laboratory is being financed by the National Science Foundation and I already have requests for grants from them totalling about \$50,000. a year. They have told me frankly that they cannot at this time put more money into this institution for these purposes. However, if you could find some funds to support this project we would be very pleased to support it in connection with our techniques laboratory here. Also, I may say that I believe the exploratory work described here

could be done for much less than the \$26,000. a year requested in this application. As a guess, I would say with our help it probably could be done for \$15,000. a year for two years. If this seems to have promise to you I should be glad to talk it over with you any time.

Perhaps, we could spell out in more detail what we might do here to assist in the research. In any case, if you will look over this application and then let me know what you think of it. I would be pleased to come down and call on you.

Most sincerely,

FR:ah

Froelich Rainey  
Director

C. R. - Archaeological  
Techniques

February 21, 1961

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duPont Building, Room 911  
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