

THE FRANKLIN INSTITUTE  
OF THE STATE OF PENNSYLVANIA  
PHILADELPHIA 3 · PENNSYLVANIA

FOUNDED FEBRUARY 5, 1824

COMMITTEE ON SCIENCE AND THE ARTS

April 20, 1961

Miss Elizabeth K. Ralph  
Department of Physics  
University of Pennsylvania  
Philadelphia 4, Pennsylvania


Dear Miss Ralph:

We received a letter from you dated 28 March 1960 in which you very kindly outlined the status of the so-called thermoluminescence method of dating pottery and other fired materials. Now that another year has passed, we are wondering if recent investigations carried on by this method have yielded any pertinent information which would warrant our study. As you perhaps know, our interest stems from the desire to investigate contributions of special merit and to recommend the individual or individuals making the contribution for an award, or awards, by the Institute.

Therefore, we would appreciate your evaluation of the status of the art as it exists today.

Many thanks for your kindly assistance with this investigation.

Sincerely yours,

  
RADM. D. S. Fahrney, USN (Ret.),  
Secretary,  
Committee on Science and the Arts.

DSF:mwc

THE FRANKLIN INSTITUTE  
OF THE STATE OF PENNSYLVANIA  
PHILADELPHIA 3 - PENNSYLVANIA

FOUNDED FEBRUARY 5, 1824

COMMITTEE ON SCIENCE AND THE ARTS

January 11, 1962

Dr. Elizabeth K. Ralph  
Research Associate  
Carbon-14 Laboratory  
The University Museum  
Thirty-third and Spruce Streets  
Philadelphia 4, Pennsylvania


Dear Dr. Ralph:

We hope that you may be receptive to another question or two about another method of dating ceramics, since you have been so helpful by assisting us in the past in our investigation of this area of science. We are now studying the process of dating ceramics by counting the corrosion layers on glass that has been submerged for long periods in water or in damp earth. We find this process was suggested by Harrison P. Wood of the Corning Glass Works, and Dr. Robert H. Brill worked out the technique.

It would be greatly appreciated if you would give us your evaluation of the importance of this process of dating ceramics and its impact on the whole art of dating artifacts. Also, it would be helpful if you could give us the names of other authorities in this field to whom we could write for their analysis of the value of this process.

Again, many thanks for your kindly assistance in this study,

Sincerely yours,

  
RADM. D. S. Fahrney, USN (Ret.),  
Secretary,  
Committee on Science and the Arts.

DSF:mwc

February 23, 1962

Dr. A. W. Fairhall  
Dept. of Chemistry  
University of Washington  
Seattle 5, Washington

Dear Dr. Fairhall:

Thank you very much for sending us a copy of "Radio-carbon Dating at the University of Washington". We were pleased to see the results of your long sequoia series.

I was glad to read, too, that you are planning to repeat some of the ones with large tolerances. Since we are concerned especially, about the period A.D. 1000 to 500, I shall be eager to learn if you get differing results from TL-1 in this era.

Our progress with tree-ring dated samples is extremely slow, partly because we were "out-of-business" for six months last year due to tritium contamination. We are now dating some bristlecone pine sections which extend back 4000 years but have not yet been tree-ring-dated. We are using the C-14 results to help sort out the growth patterns of the trees, and hope that the tree-ring dating problems will eventually be solved.

Sincerely yours,

Elizabeth K. Ralph

EKR:LF

April 29, 1974

Dr. Henry Faul  
Department of Geology  
Pahlavi University  
Shiraz, Iran

Dear Henry:

By now I suppose that it is becoming warm in Shiraz as it was in October of 1972. I have nothing in particular to write about other than to say that we have missed you here. The spring series of seminars ended yesterday with an excellent talk by Colin Wilkinson on the "Geology of the North Sea."

In the C<sup>14</sup> lab, we are catching up with our backlog, mostly because we have had no serious breakdowns this year. We are still "dreaming" of benzene but it is not yet operating on a routine basis. There do not seem to be enough hours in the day to keep it going.

MASCA is limping along with some lack of direction, some misunderstandings and confusion but a few things are being accomplished.

I have just finished writing a new proposal for the continuation of the bristlecone pine dating and Bob Giegengack is getting his grant to return to Havasu Creek.

Bob Maddin is still pursuing the X-ray fluorescent equipment and may have scrounged enough money to buy most of it. Of course, no one has found funds to hire some one to run it.

In mid-August I may go to the Island of Paros, Greece, then Iran, and then possibly Egypt.

At home we have planted 1065 Christmas trees, mostly Norway Spruce, and I hope now that we do not have a drought and also that the deer will not be too hungry next winter.

With best regards to you and Carol,

E. K. Ralph

EKR:cat  
Enclosure



The Ohio State University

Department of Geology  
and Mineralogy

107 Mendenhall Laboratory  
125 South Oval Mall  
Columbus, Ohio 43210

Phone 614 422-2721

- 4304 ext.

October 27, 1977

Dr. Elizabeth K. Ralph  
Department of Physics  
University of Pennsylvania  
Philadelphia, Pa. 19104

Dear Dr. Ralph:

Thank you for your letter of October 21 and your kind comments about the isotope-geology book. I am very appreciative of your review of the carbon-14 chapter and am pleased to share with you any merit it may have. Geologists have been somewhat uninformed about the geophysical aspects of carbon-14 dating. I hope that the discussion of secular variations of the carbon-14 content of the atmosphere will open their eyes to some of the complex problems that remain to be resolved.

Best regards.

Sincerely yours,

A handwritten signature in cursive script that reads 'Gunter Faure'.

Gunter Faure

GF/eb

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19104

The College

DEPARTMENT OF PHYSICS

October 21, 1977

Professor Gunter Faure  
Department of Geology & Mineralogy  
Geology Office  
125 South Oval Drive  
Columbus, Ohio 43210

Dear Professor Faure:

Thank you very much for the complimentary copy of your new book entitled Principles of Isotope Geology. I have not yet read all of the chapters, but I have been pleased with most of the ones that I have.

Your chapter on Carbon-14 dating is excellent, and I am glad that you had the courage to state that "changes in the cosmic-ray flux due to the activity of the sun" may be one of the basic causes of the variations in radiocarbon content. I find it hard to convince people of this since so little is known about the interactions between the Sun's and the Earth's magnetic fields.

I had hoped to find a longer chapter on mass spectrometry, but that is only a personal preference.

Several colleagues who are now studying nuclear geology are finding your book to be extremely helpful.

Sincerely yours,

Elizabeth K. Ralph

EKR:ks



THE OHIO STATE UNIVERSITY

September 9, 1975

Dr. Elizabeth K. Ralph  
Museum Applied Science Center for Archaeology  
The University Museum F1  
University of Pennsylvania  
Philadelphia, Pa. 19174

Dear Dr. Ralph:

Thank you very much for your comments regarding the C<sup>14</sup> chapter. I will revise it according to your suggestions and thank you also for the reprint of your paper with the correction tables for C<sup>14</sup> dates.

The first draft of the book is now completed and I have begun to make revisions in response to reviewers' comments. I hope it will be published during the spring of 1977.

I am very grateful for your help and reassured by your comments since I am not a practitioner in your field. <sup>am</sup>

Best personal regards.

Sincerely yours,

*Gunter Faure*  
Gunter Faure

GF/kg

*P.S. Please keep the copy of the chapter*



THE OHIO STATE UNIVERSITY

August 6, 1975

Dr. Elizabeth K. Ralph  
Museum Applied Science Center for Archaeology  
University of Pennsylvania  
Philadelphia, Pa. 19104

Dear Dr. Ralph:

Thank you very much for agreeing to look over the C-14 chapter of the book I am writing. I have relied heavily on some of your publications in writing this chapter and am very grateful for your help. I will acknowledge your assistance but will accept all responsibility for any omission and errors and promise to send you a copy of the book when it is published.

The book is intended as a textbook in Isotope Geology to be used by senior undergraduate and beginning graduate students in the Earth Sciences. I have tried to present the principles together with the assumptions and practical problems but have not attempted a presentation of all significant conclusions that have arisen from research in  $^{14}\text{C}$ .

The book is to be published by Wiley and Sons in 1976 or 1977 depending on the time required for drafting, type-setting etc. The manuscript is nearly finished now and I expect to begin revisions later this summer.

I thank you again for your help and hope that I have not wasted your time.

Sincerely yours,

A handwritten signature in cursive script that reads "Gunter Faure".

Gunter Faure  
Professor of Geology

GF/kg

September 4, 1975

Dr. Gunter Faure  
Professor of Geology  
The Ohio State University  
Geology Department  
107 Mendenhall Laboratory  
125 South Oval Drive  
Columbus, Ohio 43210

Dear Dr. Faure:

Please excuse my delay in reading your chapter on C<sup>14</sup> dating - vacation got in the way.

I think that the chapter is excellent. A few suggestions are listed below, but none of them is very important in case it is too late to make changes.

If you want me to return the preprint, please let me know.

p. 3. A.V. de Grosse participated in and provided sewage gas. He also postulated the existence of natural radionuclides in 1922. You might mention that the sewage gas experiment was done by enrichment in thermal diffusion columns.

Fig. XII. last sentence.. As assumed?

p. 10. There is no evidence that modern atmospheric carbon exchanges with old organic samples.

Misleading to mention "counting their growth rings." Tree-ring dates must be determined by the tedious process of cross-dating - namely dendrochronology as you have mentioned further on.

Sequoia gigantea sp.

Fig. 3. Our data of 1973 are more correct. See Newsletter enclosed. You are welcome to reprint any or all of it.

p. 11. data are plural "Lerman et al (1970) show(s).

p. 13. Rather than just "carbon", you might say non-radioactive or stable carbon.

p. 17. "Efforts" or "laboratories" began to use liquid scintillation techniques.

p. 18. With shielding, the predominant source of the background is that from cosmic rays, especially, mesons.

With "anti-coincidence", coincident discharges in the Geigers are not required - if one is "fired" that is sufficient.

Table X.1. Charcoal. Do you want to mention that humic acids can be removed by treatment with NaOH?

Sincerely yours,

Elizabeth K. Ralph



THE OHIO STATE UNIVERSITY

March 22, 1977

Dr. Elizabeth K. Ralph  
Museum Applied Science Center for Archaeology  
University of Pennsylvania  
Philadelphia, Pa. 19174

Dear Dr. Ralph:

I would like to let you know that the Isotope Geology book is on schedule and should be published during July of this year. At this point I have read the galleys and am awaiting the page proofs which have been promised to arrive shortly. If all goes as planned, I hope to be able to send you a complimentary copy of the book early in the fall.

Best personal regards.

Sincerely yours,

A handwritten signature in blue ink that reads "Gunter".

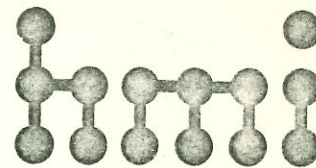
Gunter Faure  
Professor of Geology

GF/eb

Prof. Fred W. Felix c/o  
Hahn-Meitner-Institut für Kernforschung Berlin

Gesellschaft mit beschränkter Haftung

BEREICH KERNCHEMIE UND REAKTOR



Hahn-Meitner-Institut, Postfach 39 01 28, D-1000 Berlin 39

Glienicker Straße 100  
1000 Berlin 39 - Wannsee

Telegr.: Kernreaktor Berlin  
Telex: 01-85 763

Tel. Sammel-Nr.: (030) 8 00 91

Durchwahl: (030) 80 09

Applied Science Center  
for Archaeology  
The University Museum  
University of Pennsylvania  
Philadelphia Penna 19174

*Beth or Barbara*

March 25, 1980

*Did you also get a letter from him?*

Ladies and Gentlemen,

I would like to apply for a visit of your laboratory, as I am planning a study trip in the States to see the important archaeometric laboratories. Up to date my interest in archæometry is a purely accademic one through my course in nuclear chemistry at the Technical University Berlin, where I usually give a complete account of the nuclear methods in dating minerals and artefacts. In the future, however, I want to do practical measurements in cooperation with the other groups in this field who exist in Berlin, especially with application of our nuclear facilities.

I would be very grateful, if you could give me the chance to infomr myself about your own activities. At the moment I am not yet able to produce an exact schedule, but I shall probably be around Philadelphia in the middle of June.

Being these days at the Symposion on Archaeometry in Paris I hope to meet a member of your staff, so that I might make an arrangement already there. If not, it would be pleasant to receive your answer, preferably with an indication how to reach you by cable or phone.

Many thanks in advance.

Yours sincerely

*Fred Felix*

Beth



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

LABORATORY OF TREE-RING RESEARCH

15 August 1970

Dr. Henry N. Michael  
Applied Science Center for Archaeology  
The University Museum  
University of Pennsylvania  
33rd. and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Henry:

I have had a successful month in the White Mountains, and soon will leave for a nine-day trip on the Colorado (we have some 40,000-year-old driftwood from a cave 120 feet above the river), and a short tour with the Forest Service of some of the critical sites in Nevada.

Enclosed is a copy of the terminal report, Dendrochronology of Bristlecone Pine in East-central Nevada, recently submitted to the Humboldt National Forest.

Both my Nevada and California bristlecone pine studies may eventually result in separate monographs (or a combined one), so comments and suggestions will be greatly appreciated.

Sincerely yours,

C. W. Ferguson *car*  
Associate Professor  
of Dendrochronology

Enclosure

cc: ✓ E. K. Ralph ✓

CWF/veh



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

LABORATORY OF TREE-RING RESEARCH

25 September 1973

Dr. Elizabeth Ralph  
Applied Science Center for Archaeology  
The University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Beth:

I am very grateful to you for your good letter on behalf of Wes Ferguson. These matters can be a chore, but be assured your efforts will substantially help in presenting the best possible case for Wes.

Thanks again.

Sincerely,

Bryant Bannister  
Director

BB:aa



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

LABORATORY OF TREE-RING RESEARCH

16 October 1973

Dr. Elizabeth K. Ralph, Director  
Applied Science Center for Archaeology  
The University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Beth:

Thanks for your letter of 11 October.

Two more specimens are being sent to Henry today.

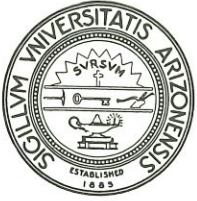
If I spend too much time trying to figure out the dating on #46, I may not get a proposal in before I leave. My general feeling is that a three-year NSF sponsorship will ultimately be of more value than #46. Still, we are in the process of putting solid chunks of dating together in an attempt to tie down this interval of #46.

Sincerely,

C. W. Ferguson  
Associate Professor of  
Dendrochronology

CWF:aa

cc: H. N. Michael



THE UNIVERSITY OF ARIZONA  
TUCSON, ARIZONA 85721

LABORATORY OF TREE-RING RESEARCH  
BUILDING #58

November 4, 1980

Dr. Elizabeth K. Ralph  
Radiocarbon Laboratory  
Dept. of Physics DRL-E1  
University of Pennsylvania  
209 South 33rd Street  
Philadelphia, Pennsylvania 19104

Dear Beth:

I am planning to go to Bishop for a retirement party for Rocky on the evening of 8 November. If the weather, personal schedule, and finances permit, I may go up the hill to collect some bulk wood, especially TRL 80-126. If any of the other quickie samples turn out to be hot, I could collect them too.

I will arrive in Bishop probably late on Friday, the seventh, and would leave Bishop no later than the afternoon of Monday, the tenth. This would allow me early Saturday, Sunday and early Monday to collect.

Enclosed are a list of contacts. I may be staying at the Enfields.

Sincerely,

C. W. Ferguson  
Professor of Dendrochronology

CWF:aa

Encl. contacts  
cc: Henry Michael

Contacts:

Mr. Robert L. Rice  
Forest Supervisor  
Inyo National Forest  
873 N. Main St.  
Bishop, California 93514

Tel: (714) 873-5841, ext. 22

Mr. Michael T. Goggin  
District Ranger  
White Mountain Ranger District  
Inyo National Forest  
798 North Main Street  
Bishop, California 93514

Ph: 714, 873-4207

Mountain View Motel  
730 West Line Street  
Bishop, California  
93514

Ph: 714, 873-4242

Mr. Edwin C. Rockwell, Jr.  
P. O. Box 597  
Bishop, California  
93514

Ph: 714, 873-3097

Brian Miller  
Forest Information Officer  
White Mountain Ranger District  
Inyo National Forest  
798 North Main Street  
Bishop, California 93514

Ph: 714, 873-4207

---

Rollin O. Enfield  
Route 2, Box 150-A  
Bishop, California  
93514

Phone: 714, 387-2318

PRESERVATION COPY 04/24/2014

February 1, 1962

Prof. G. J. Fergusson  
Institute of Geophysics  
University of California  
Los Angeles 24, California

Dear Gordon:

One of the dates in UCLA Radiocarbon Dates I (which was shown to me by Dr. Satterthwaite, University Museum) caused Dr. Rodney S. Young, Dr. Ellen L. Kohler and me considerable amusement and some chagrin at lunchtime today.

The sample in question is UCLA-114, Queen's Tomb, Gordion, Turkey. Its dismemberment, item by item is as follows:

"Tumulus 8 or the Queen's Tomb..." There is no tumulus at Gordion labelled "no. 8" nor "Queen's". They are labelled A, B, C.....thru W.

"Polatli (formerly Gordion)..." The town of Polatli is 12 miles from Gordion and was never "formerly Gordion".

"(second largest)"....If this was taken from the second largest, it may have been Tumulus W (nicknamed Pauline), but who knows?

"Subm. by David A. Northrop, October, 1961."  
Dr. Young has never heard of D. A. Northrop. No one except Dr. Young and his assistants has excavated nor has had permission to excavate at Gordion since A.D. 1900. The German expedition prior to that date numbered theirs with Roman numerals I-VI. If the sample was collected in October, 1961, it must have been stolen, as the excavation house was closed. Tumulus W was sealed by refilling in 1957.

Comparison with U. of P. dates. Three dates (P-135, P-136 and P-137) represent samples from various levels of the City Mound - not tombs. The others (P-127, P-128, P-133, and P-134) represent Tumulus MM and may have no temporal correlation with Tumulus 8 or whatever it is. All of these and the older wood problem, which is very important at Gordion, are discussed more fully in the enclosed AJA reprint.

Since UCLA-114 favors "the older part", it must have been taken from the inner part of a beam which could possibly have comprised 700 growth rings. I quote Dr. Young - "No matter what Tumulus it came from, the time of construction could not have been as early as 1220 B.C." These are the archaeological facts-of-life.

Sorry to pick this apart, but we hate to see these incongruities in print for a U. of P. site. If you would like some representative samples from Gordion, we'd be glad to send them.

P.S. [from my colleagues]

Perhaps some of the label material for other sites should be checked with the excavators concerned. e.g.

- 1) UCLA 109 Ptolemy - where is it? Do you mean Ptolemais? There were at least 4 kings called Ptolemy.
- 2) UCLA 112 - Rivalry in the antiquity of a sample makes archaeologists see red. It's practically unethical.
- 3) Bob Stuckenrath, who works with me, has been making a study of shell dates. He is wondering, therefore, what pretreatments some were given, what was used as the basis of age calculation, etc.

P.S. [from me]

Please forgive these outspoken comments, which may be due partly to my overexposure to archaeologists. Hope that you will criticize my efforts in return.

With best regards,

*Beth*

E. K. Ralph

EKR/deh

cc: *Dr. R.S. Young*  
Dr. Linton Satterthwaite  
University Museum

February 21, 1962

Prof. G. J. Fergusson  
Institute of Geophysics & Planetary Physics  
Los Angeles Laboratories  
Los Angeles 24, California

Dear Gordon:

Many thanks for your kind letter and date list.

This is a hasty note to ask another question.  
When is your Channel Island Conference being held?

With best regards,

E. K. Ralph  
C-14 Laboratory

EKR/deh

C  
O  
P  
Y

December 13, 1962

Professor G. J. Fergusson  
Isotope Laboratory  
Institute of Geophysics  
University of California  
Los Angeles 24, California

Dear Gordon:

Many thanks to you and Babs for making my recent visit so pleasant. Needless to say, the evenings spent with you were among the highlights of my trip west. It was encouraging to find too that our lab results were in such good agreement.

The publication which contains Suess' article is entitled "Secular Changes in the Concentration of Atmospheric Radiocarbon" (with Sequoia results) is as follows: Nuclear Science Series Report No. 33, "Problems Related to Interplanetary Matter," Proceedings of an Informal Conference, Highland Park, Ill., June 20-22, 1960; Publication 845, National Academy of Sciences, National Research Council, Washington, D. C., 1961.

In answer to Dr. Libby's question about the availability of cloth, charcoal, etc. at Tikal, the answer is probably no. Wood only has been found so far which can be related to the time of beam inscriptions. Dr. Satterthwaite is not unduly upset about the 100-year difference between the two structures and realizes that there are loopholes in their assessments of the inscriptions.

In regard to the growing conditions of the 2 sequoias they were as follows:

P-SW-SEQ-2

Grew on slope of slight hillock, surrounded by dense forest of giants. Since these trees lose their lower branches with increasing age, the forest floor was open.

P-SW-ENT-1

Grew in slight depression with mild slopes to the N & S of it, and a creek several hundred feet away. Surrounded also by similar dense forest of giants and presumably with open floor. (This forest was cut down in 1874).

Our tree and ring dating of both samples sent to you is O.K. As far as I can see, there is no possibility of a 200-year mistake. Next month, we'll try to date a duplicate of your anomalous arc.

If I have forgotten any items of information that you wanted, please let me know.

Please extend my thanks to Dr. Libby for "calling me west". It was extremely helpful to me to have the opportunity to discuss the methodological problems associated with C-14 dating.

With best regards,

Elizabeth K. Ralph

EKR:dml

P.S. After writing this I saw Dr. Satterthwaite. He is worried about my labeling of one of the Temple IV samples as P-422. The two which I sent to you are:

P-243, T-275

P-248, T-478

Perhaps, I made the mistake on my copy, but if not, could you please change it in your date list?

Dr. Satterthwaite would very much like to have a preprint of your date list or a copy of the final dates for each sample with the individual tolerances for each. Hope that this is not too much trouble.

UNIVERSITY OF CALIFORNIA

INSTITUTE OF GEOPHYSICS AND  
PLANETARY PHYSICS  
LOS ANGELES LABORATORIES  
LOS ANGELES 24, CALIFORNIA

December 18, 1962

Miss Elizabeth K. Ralph  
Department of Physics  
University of Pennsylvania  
Philadelphia 4, Pennsylvania

Dear Beth,

Enclosed is check to cover your expenses for trip out West. Our apologies for the delay in getting this to you -- for I was dismayed to discover yesterday that it had not been sent on but was still in accounting office waiting to be picked up.

Many thanks for your note and kind words -- it was certainly a pleasure to us to see you on this coast. Thanks also for the information on the two Sequoia samples and recheck of ring counts. We have not yet recounted these but plan to do so over the coming vacation.

Also received yesterday a note and two color slides from Henry Michael regarding the Sequoias and their growing conditions. In this case I find it hard to believe that any local CO<sub>2</sub> effects are involved, but we shall see how our recount<sup>2</sup> checks out with yours.

Copies of our date list have already gone on to Dr. Satterthwaite and yourself -- hope the Tikal story sounds O.K. -- if not, will be glad to amend same.

May I take this opportunity of wishing you all the best for the Christmas season.

Kind regards,



Gordon J. Fergusson

GJF/vc  
Encl.: Check

December 12, 1969

Dear Sir:

With this I should like to thank you for clearing and approving the research in Sarawak to be carried out by Mr. Richard Fidler. I also want you to know that the University Museum is pleased to sponsor his research in cooperation with the Sarawak Museum. We look forward to a successful period of research for Mr. Fidler in Sarawak, and will be grateful for any assistance which your office can extend to him during his period in Sarawak.

Most sincerely,

Froelich Rainey  
Director

The State Secretary  
c/o Secretariat  
Kuching  
Sarawak, Malasia

FR/j

Finnigan Corporation  
845 West Maude Avenue  
Sunnyvale, California 94086  
(408) 732-0940  
Telex: 346399  
Cable Address: FININSTRO

*Manufacturing Plant*  
Finnigan Corporation  
595 North Pastoria Avenue  
Sunnyvale, California 94086  
(408) 732-0940

**finnigan**

December 19, 1975

Dr. E. K. Ralph  
Department of Physics  
DRL/EI  
University of Pennsylvania  
209 South 33rd Street  
Philadelphia, Pennsylvania 19174

Dear Dr. Ralph:

As requested for you by Mr. Sam Smith, enclosed are quotations for a Finnigan 3100F-100 Electron Impact GC/MS System and a Finnigan Model 400 Gas Analyzer. We have also included an Application Tip from our Laboratory entitled "The Detection of Trace Impurities in Air."

We are willing to work with you in adapting your present CEC Model 21-130 to our instrument.

If you have any questions or require additional information, please call Mr. Sam Smith, our Marketing Engineer in your area, at (302) ~~728~~-9477 or me at the above number.

738

Thank you for the opportunity to quote these Finnigan instruments.

Sincerely,

FINNIGAN CORPORATION

*Jack Hanson*

Jack Hanson  
Marketing Product Specialist

JH:bdp  
Enclosures  
cc: Sam Smith

→ 301-468-9333  
regional office

Finnigan Corporation  
 845 West Maude Avenue  
 Sunnyvale, California 94086  
 (408) 732-0940  
 Telex: 346399  
 Cable Address: FININSTRO



QUOTATION

Submitted to:

Department of Physics  
 DRL/EI  
 University of Pennsylvania  
 209 South 33rd, Street  
 Philadelphia, Pennsylvania 19174  
 Attn: Dr. E.K. Ralph

IN RESPONSE TO YOUR REQUEST WE ARE PLEASED TO QUOTE AS FOLLOWS

REFERENCE NO.	DELIVERY*	F.O.B.	TERMS	DATE	QUOTATION NO.
Verbal	60 Days ARO	Sunnyvale, California	*See Below	12-18-75	9315 <i>y</i>
ITEM	QTY.	CATALOG NUMBER	DESCRIPTION	UNIT PRICE	TOTAL PRICE

1.	1/ea.	3100F-100	Finnigan 3100F-100 Electron Impact Ionization Source GC/MS System. (See enclosed price list).	49,500.00	49,500.00
2.	1/ea.	D-0074D	Delete Light Beam Oscilloscope Recorder.	(3,500.00)	(3,500.00)
3.	1/ea.	D-0116D	Delete Multiple Mass Marker.	(500.00)	(500.00)
4.	1/ea.	D-042	Delete Solid Probe and Inlet Pumping System.	(2,440.00)	(2,440.00)
5.	1/ea.	D-052	Delete Variable Leak Sample Inlet.	580.00)	(580.00)
TOTAL SYSTEM AS QUOTED ABOVE . . . . .					<u>\$ 42,480.00</u>

*45,800*

\*Terms: 85% of invoice upon delivery; 15% upon acceptance.

Quotation Firm

for 60 days

FINNIGAN CORPORATION

*Jack Hanson*  
 Jack Hanson

by Marketing Product Specialist

QUOTATION SUBJECT TO TERMS AND CONDITIONS ON REVERSE SIDE

FINNIGAN

QUOTATION

FINNIGAN CORPORATION  
645 West Main Street  
Sunnyvale, California 94089  
(408) 532-0940

Submitted to:

Department of Finance  
University of Pennsylvania  
373 South 34th Street  
Philadelphia, Pennsylvania 19104

1. Orders are subject to acceptance only at seller's plant at Sunnyvale, California.

2. Title will pass to buyer on delivery to carrier at shipping point. Risk of damage or loss following such delivery shall be on buyer and seller shall in no way be responsible for safe arrival of the shipment. Title shall so pass to buyer regardless of any provisions for payment of freight or insurance by seller or of the form of shipping documents.

3. Seller warrants each item manufactured by it to be free from defects in material and workmanship. This warranty is expressly in lieu of all other obligations or liabilities on the part of seller, and seller neither assumes nor authorizes any other person to make any other representation or warranty on its behalf or to assume for it any liability in connection with the sale of its products.

4. Seller shall not be liable for any delay in performance of any order accepted by it or in delivery or shipment of material thereunder when such delay is directly or indirectly caused by or in any manner arises or results from fire, flood, accident, riot, war, governmental interference, rationing, allocations or embargoes, strikes or shortage of labor, delay in delivery of material by sub-suppliers, or other difficulties (whether or not similar in nature to any of those specified) beyond its control. Delivery of such order shall be deemed suspended so long as any of such causes delay its execution. Whenever such causes have been remedied seller will make and buyer shall accept deliveries under such order.

5. Seller does not report, pay or collect any use tax, sales tax, or similar tax which may be imposed upon the buyer under the laws of the state to which shipment is to be made unless seller shall separately state such charge to buyer on the acceptance of such order and the invoice for such merchandise. Buyer shall report and pay any use taxes or similar taxes which may be imposed upon buyer by reason of such order and shall hold the seller harmless therefrom.

6. Stenographical and clerical errors on the face of this form are subject to correction.

7. No order accepted by seller may be cancelled by the buyer except as follows:

- (a) By mutual agreement of the buyer and seller;
- (b) If the items covered by the order are being purchased for ultimate delivery to the government pursuant to a government contract or for use on a government contract with or without other equipment, then all or any part of this order may be cancelled only in accordance with the cancellation provisions of the corresponding government contract.

9818  
3,500.00  
3,500.00  
2,440.00  
300.00  
42,480.00

TOTAL SYSTEM AS QUOTED ABOVE

\*Terms: 60% of invoice upon delivery, 15% upon acceptance.

FINNIGAN CORPORATION

Jack Hanson  
Marketing Product Specialist

Question Form  
10

QUOTE IS SUBJECT TO TERMS AND CONDITIONS OF REVERSE SIDE

Finnigan Corporation  
 845 West Maude Avenue  
 Sunnyvale, California 94086  
 (408) 732-0940  
 Telex: 346399  
 Cable Address: FININSTRO



QUOTATION

Submitted to:

Department of Physics  
 DRL/EI  
 University of Pennsylvania  
 209 South 33rd. Street  
 Philadelphia, Pennsylvania 19174

Attn: E.K. Ralph

IN RESPONSE TO YOUR REQUEST WE ARE PLEASED TO QUOTE AS FOLLOWS

REFERENCE NO.	DELIVERY*	F.O.B.	TERMS	DATE	QUOTATION NO.
Verbal	60 Days ARO	Sunnyvale, California	*See Below	12-18-75	4162 <i>g</i>

ITEM	QTY.	CATALOG NUMBER	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1.	1/ea.	400-013	Model 400-013 Quadrupole Mass Spectrometer/Gas Analyzer with an operating range of 1-325 AMU.	7,950.00	7,950.00
2.	1/ea.	400-050	Vacuum System including manifold with UHV flanges (but without quadrupole probe), cold baffle, diffusion and forepumps, vacuum and temperature controller, for use with 400 Series Mass Spectrometer.	5,250.00	5,250.00
3.	1/ea.	400-049	Liquid Nitrogen Cold Trap.	550.00	550.00
4.	1/ea.	400-099	Recirculating Fluorocarbon Cooler for Analyzer Cold Trap.	750.00	750.00
5.	1/ea.	400-040	Finnigan Output Module including Tektronix Model 604 Monitor Scope, preamplifier controller, and preamplifier box.	4,250.00	4,250.00

Page Two

Quotation Firm

for 60 days

FINNIGAN CORPORATION

*Jack Hanson*

by Jack Hanson  
 Marketing Product Specialist

QUOTATION SUBJECT TO TERMS AND CONDITIONS ON REVERSE SIDE

# finnigan

## QUOTATION

ITEM	QUANTITY	CATALOG NUMBER	DESCRIPTION	UNIT PRICE	TOTAL PRICE
5. a)	1/ea.	400-100	Electronic Console to house rack-mounted modules, 42".	650.00	650.00
6.	1/ea.	400-012-0061	Strip Chart Recorder for Total Ion Chromatogram.	1,350.00	<u>1,350.00</u>
TOTAL AS QUOTED ABOVE . . . . .					<u>\$2 0,750.00</u>

\*Terms: 85% of invoice upon delivery; 15% upon acceptance.

*J.E.H.*

March 6, 1968

*Harp*  
*Fitzhugh*

Dear Mr. Fitzhugh:

Ritchie Williams has just sent on to me a copy of your paper on Environmental Analysis in Air-Photo Archaeology and I wonder whether we could get together sometime so that you can have a crack at some of the infrared aerial photographs that we have been making. So far I don't see that we have any very positive results from infrared, but we are still trying. Also, I know that Elmer Harp has been doing this in the north and perhaps in the fall when I am back from Europe and the Near East and have some more results from our various experiments you and Elmer Harp could get together with Williams and have a real appraisal of this type of aerial reconnaissance. We have no results from our experiments in Arizona as yet and I have also not received the second run over the site of Sybaris made by the Italian Air Force.

I shall be leaving about two weeks from now and probably won't be back until sometime in May. In any case, the best of luck with what you are trying to do.

Sincerely,

Froelich Rainey  
Director

Mr. William W. Fitzhugh, IV  
Department of Anthropology  
Harvard University,  
Cambridge, Mass. 02138

FR/jc  
cc: Mr. Elmer Harp

Department of Anthropology  
Peabody Museum  
Harvard University  
Cambridge, Massachusetts  
11 March 1968

*Techniques*  
~~Peabody~~  
Julia  
please remind  
me of this when  
I get back  
FR

*file*

Dr. Froelich Rainey, Director  
University Museum  
University of Pennsylvania  
Thirty-Third and Spruce Streets  
Philadelphia, Pa 19104

Dear Dr. Rainey,

Thankyou for your letter of 6 March 1968. I would be most interested in getting together with you for a discussion of infrared aerial photography when you return from Europe in May. I will be leaving in mid-June for a summer's survey of Lake Melville, Labrador in which I will be using aerial photography for environmental analysis, but I would like to take a look at your material before leaving.

Williams mentioned to me the Snaketown photography which I think should be an excellent case for evaluating infrared and other narrowband exposures. I mentioned to him that I would very much like to look it over when it comes in. Offhand, I would think the problem of Sybaris is of a different nature, since land which has been farmed as much as I understand that area has poses not only indicator discrimination questions, but also the need to decipher various levels of anomalies, ie all cultural activity before and since. Snaketown should present a more clear-cut test case, especially with some archaeology known. Also, Elmer's material, owing to the lack of soil development in arctic environments and corresponding closeness to the surface of cultural remains, could be very useful for evaluation of aerial photographic techniques. Unfortunately, the archaeology of the east coast of Hudson Bay is sparse.

Best wishes for the spring excursion. I shall be glad to hear from you in May.

Sincerely,

*William Fitzhugh*  
William Fitzhugh

*Teal*

May 14, 1968

Dear Mr. Fitzhugh:

First, let me say that I have been cracking my head trying to figure out some way to put a lever on the Air Force to get a flight to Labrador. The trouble is my only contact with the Air Force through recent years has been through Ritchie Williams. But I will have a talk with one of my Board members at lunch today who is a flier with Air Force contacts and he might have an idea about it. In the meantime, what about Elmer Harp. I know he has been working with the Air Force, but you must know about that.

I had hoped to get together with you and Ritchie to have a look at our new films of the Sybaris Plain, but I have just learned that they are held up in Italy for 15 or 20 days to get security clearance. I am not sure I will have them before you get off for Labrador. Our experiments here with infrared have always run into difficulty finding experienced interpreters and so we have no real results so far. In any case, what with those taken in Italy and Southern Mexico and Southwest United States, surely some time this year we should have a critical look at them.

All the best, and I certainly will advise you at once if Sam has any ideas about the Air Force.

Regards,

Froelich Rainey  
Director

Mr. William Fitzhugh  
69 Prentiss Street  
Cambridge, Mass.

69 Prentiss Street  
Cambridge, Massachusetts  
9 May 1968

Dr. Froelich G. Rainey, Director  
University Museum  
University of Pennsylvania  
Thirty-Third and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Dr. Rainey,

Several weeks ago I wrote you concerning research I am engaged in for my dissertation project at Harvard. This involves air-photo interpretation and archaeological reconnaissance in the Lake Melville region of Labrador. I have been discussing some aspects of this research with Ritchie Williams at Air Force Cambridge Labs, and he sent you down a paper I had written on interpretation based on Elmer Harp's Hudson Bay material. I have been hoping to look over the newly received Snaketown photography, and when Williams gets a break in his schedule we plan to have a crack at it.

My Labrador project is shaping up and I plan to be in the field in mid-June. I have purchased and received a large number of panchromatic air-photos from the Canadian government with which to conduct preliminary field analysis. The best material I could get was about 1/40,000, too high for much detailed site location of Indian and Eskimo sites, but quite adequate for regional analysis and cultural interpretation -- I actually have spotted one Eskimo house mound (Thule culture) site from the photography. I will be using some of Williams' equipment to analyse the photography further.

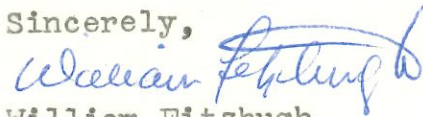
I have one problem you might be able to help me with: do you know of any way I could get the US Air Force to allow me to fly up to Goose Bay on one of their routine flights? Williams had no idea about how to arrange this; perhaps it is not feasible, but I thought I would ask you. This request comes as a result of my attempt to conserve a very limited amount of available funds for the summer's project. The National Museum of Canada is giving me \$3000 under a Contract Grant, and I hope to receive support from the National Science Foundation, but the Harvard NSF funds have got incredibly fouled up this year due to a policy change at NSF about "block grants". If I could get an Air Force flight up to Goose this would help tremendously.

If you know someone who might be influential in arranging such transportation, or can put me in touch with people who might be responsive to such a request I would be very grateful. The proximity of my research to Goose Bay and the fact that I am working in aerial photographic interpretation might have some beneficial effect on such a request, particularly since the Air Force is involved in related projects at Snaketown and elsewhere. Ritchie Williams did not know what channels for me to take, and noted that it was getting increasingly difficult to arrange assistance such as this.

Please do not hesitate to inform me of your feelings about the possibility of transportation assistance. I only write because I thought you might have some ideas.

I hope to meet and talk with you about your progress with air-photo work during your next visit to the Cambridge area. If I don't see you before the summer, best wishes; perhaps we could all get together in the fall.

Sincerely,

  
William Fitzhugh

January 14, 1970

Mr. William Fitzhugh  
Harvard University  
Department of Anthropology  
Cambridge, Massachusetts 02138

Dear Mr. Fitzhugh:

I have yours of January 7 regarding aerial photography , and I don't quite know how to reply. With the Air Force and the N.A.S.A. people I am trying to work out an experiment in England on archeological sites which are very well known from air photographs. We are doing this with the Ministry of Public Works in order to experiment with some pretty far out remote sensing devices, and if it really should work out this spring and summer then we might very well add this kind of research to our Applied Science Center here. But at the moment its very chancey, and so I don't want to mislead you in any way. Actually we need somebody badly in the Applied Science Center, but at the moment we simply don't have any funds to employ anybody else and I am trying to stir up something which will give us more financial support for that type of operation. Anyway I'll keep in touch.

All the best,

Froelich Rainey  
Director

FR:gb

PRESERVATION COPY 03/20/2014

UNIVERSITY OF FLORIDA

GAINESVILLE, FLORIDA 32603

DEPARTMENT OF ANTHROPOLOGY

March 10, 1965

Miss Jeannette Flamm  
Applied Science Center  
The University Museum  
33rd & Spruce Streets  
Philadelphia, Penna., 19104

*W. C. M.*

*response of 3/19/65*

Dear Miss Flamm:

The first issue of the ASCA Newsletter was a pleasure to read and fills a need of which I have long been aware. I hope that you will continue to provide this service.

I wonder if you have received or want to receive the papers of the 3rd and 4th Historic Sites Conferences. These involve some discussions of laboratory methods in conservation and preservation. These two reports were printed as Vol. 17, No. 2 (June), 1964 of The Florida Anthropologist. I expect to print the papers of the 5th Historic Sites Conference in the same series in June of this year. Please let me know if these would be of use to you.

You might also be interested in the existence here of a glass patina dating laboratory. We are working out the technique developed by Brill and are having moderate success. In the near future we expect to be able to accept glass samples for dating from outside sources. So far we have been asking only for samples of known date to serve as checks on our technique. We have re-checked the samples from Jamestown which Brill had previously dated and have dated some samples from a number of Florida sites. The problems of protecting the fragile patina in the field and the embedding of the glass to have been solved.

Sincerely,

*C. H. Fairbanks*  
✓ C. H. Fairbanks  
Chairman

Pensione Imhof  
ROMA  
VIA MODENA 5

As from Bonn

ROMA, 29.4.66  
TELEFONO 46.12.59

Mrs. Jeanette M. Flamm,  
ASCA  
Philadelphia

Dear Mrs Flamm, (FLAMM)

Your letter of the 12th of April has been forwarded to me here. I regret that the reprint of my article in *Archaeo-Physika* had not arrived at the time you wrote. It was sent by surface mail as printed matter. Delivery to USA takes from 3 weeks onwards. I hope that in the meantime, you have received it.

Regarding *Archaeo-Physika*, I believe that the advertisement in *Archaeometry* contains the pertinent details. The journal will not be issued regularly. When a sufficient number of articles of scientific merit have been accumulated, a new volume will be printed and announced via an advertisement in *Archaeometry*. The publication is designed to provide an outlet for papers on a higher level than that available elsewhere. No limitations on length, mathematical complexity and depth of presentation are posed. It is not intended that the material be made understandable for non-specialists and articles are destined for physicists working in application of their speciality.

Our digital differential magnetometer is not really that new. The first was finished in mid-1961. A number of different models have been produced in our laboratory since then. Briefly, specifications are:

Model I: sequential difference, direct indication to one gamma, with indication of polarity of difference. (one instrument only produced)

Model II: simultaneous difference reading, direct indication to one gamma with indication of polarity of difference. (five instruments produced)

Model II A: as model II, but with accuracy to  $1/4$  gamma. (one instrument)

Model III: simultaneous difference reading with indication of polarity of difference. Absolute readings direct in gamma. (one instrument)

All instruments have been produced in our laboratory except one Model II which was made at the Institut de Physique du Globe at Paris under my direction.

You inquire about price. This is a difficult matter. The Rheinisches Landesmuseum is a government institution. Hence we may not engage in commercial production.

However the demand for the instruments is so great that we have, on occasion, supplied qualified users.

Since a differential instrument with this precision is nowhere else available, the users have turned to us.

We have accepted payment set arbitrarily, judged by our opinion of the user's ability to pay. For some, whose financial base is very weak, instruments are lent for reasonable periods without charge. For others, we have usually first referred them to commercial producers of other types of magnetometers. We feel very strongly, that price should be no obstacle to those whose intention is scientifically sound and we are prepared to help those we consider qualified even at a financial loss to ourselves.

I trust that this goes some way toward answering your query. Should you have any further questions I will be pleased to hear from you on my return to Bonn, around the middle of May.

Yours faithfully,  
Irvin Scott

PRESERVATION COPY 03/20/2014

March 19, 1965

Dr. C. H. Fairbanks, Chairman  
Department of Anthropology  
University of Florida  
Gainesville, Florida 32603

Dear Dr. Fairbanks:

Thank you for your letter of March 10. I have seen Vol. 7, #2 of The Florida Anthropologist and the articles contained therein are in our files. The Museum Library receives the publication but it would be appreciated if you could send a copy of Vol. 17, #2 to ASCA for our own library. We would also be pleased to receive the publication of the 5th conference when it appears.

We are familiar with Dr. Brill's work and would be most happy to hear of the progress in your laboratory. Perhaps for our next newsletter you will be kind enough to write a short report of your recent work. I will contact you again concerning this. I also inquired from our classical section as to whether they had any examples of glass of known age that you might be able to use. At best we have fragments of glass which are not dated closer than ca. 0 to 500 A.D. We doubt that all original layers of patina are on them. Should you want these fragments at a future date, please let us know. They are available.

Sincerely yours,

Jeanette M. Flann

*file*

Austin, Texas, 5 March 1965

Dear Miss Flamm:

This is a fan letter regarding Vol. 1, No. 1 of ABCA Newsletter. An extremely useful source of information. I look forward to subsequent issues.

*E. Holt Davis*  
E. Holt Davis, Univ. Texas

# UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19104

*The Faculty of Arts and Sciences*

DEPARTMENT OF PHYSICS

May 21, 1980

Mr. Gerald Robinson  
Executive Director Personnel Relations  
737 FB/16

Dear Mr. Robinson:

This is a letter of recommendation for Mrs. Jeannette Flamm, acting Registrar in the University Museum. ✓

She worked with me as Research Bibliographer in the Museum Applied Center for Archaeology (MASCA) from 1962 to 1970. Her work was completely satisfactory, and, in fact, she was the best employee that we had had in that position. She is an excellent typist. She is fluent in, at least, four languages - French, German, Italian, and Arabic. She is proficient in writing abstracts, and edited our MASCA Newsletter. She participated also in archaeological prospecting surveys at various sites.

Quite frankly, I think that she should be promoted to Registrar in the Museum. She is capable of learning computer techniques rapidly since that seems to be the problem. However, I am glad to recommend her for any other position that is appropriate in the University.

Sincerely yours,

Elizabeth K. Ralph

EKR:bac

PAUL FISCH  
1420 YORK AVENUE  
NEW YORK, N. Y. 10021

April 8, 1969

University of Pennsylvania  
University Museum  
33 & Spruce  
Philadelphia, Penn. 19104

Att: Dr Elisabeth Ralph

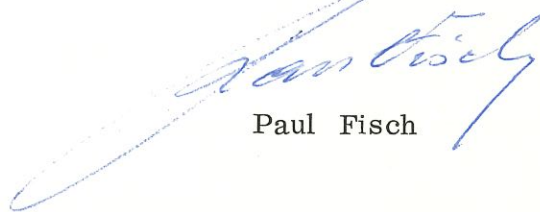
Dear Dr Ralph,

Searching for an existing scientific method to determine the age of an object I was told about the thermoluminescence examination practiced in the U. S. exclusively by you. The carbon 14 method can not be applied in my particular case, since the object is a unique violin which age is estimated to 400 years and no part of it can be destroyed to supply the necessary material for this particular test. The scientific confirmation of the estimated age is very necessary to establish the identity of its maker with the most possible accuracy.

Dear Dr. Ralph, if your method could be applied and it would confirm the expectation of experts, it could lead to the discovery of the only existing violin of a legendary master. For this reason, please, let me know whether your test is applicable to a violin and under what conditions could I obtain your valuable cooperation?

Thanking in advance for your consideration and answer.

Yours very truly,

A handwritten signature in blue ink that reads "Paul Fisch". The signature is written in a cursive style with a long, sweeping underline that extends to the left.

Paul Fisch

PF/lf

April 9, 1969

Paul Fisch  
1420 York Avenue  
New York, N.Y. 10021

Dear Mr. Fisch:

In reply to your inquiry about dating a violin by thermoluminescence, I am sorry to write that the method works only for fired ceramics. Also, it is necessary to sample three grams of the object.

Sincerely yours,

Elizabeth K. Ralph

EKR/mrb

HENRY M. KENNEDY, C.L.U.  
SECOND VICE PRESIDENT

THE PRUDENTIAL  
INSURANCE COMPANY OF AMERICA  
HOME OFFICE  
PRUDENTIAL PLAZA NEWARK, NEW JERSEY

July 26, 1961

Miss Elizabeth Ralph  
Woosamansa Road  
Pennington, New Jersey

Dear Beth:

A friend of mine, Charles Fleetwood, has become very interested in pre-Columbian history - I think that's the right expression. When I was last talking to him in Houston, he was describing carbon 14 tests on ancient relics, artifacts, etc., and I told him you were involved in such testing at the University of Pennsylvania. He is very much interested and wonders how much material would be required to make an accurate carbon 14 analysis. I said I would ask you and this I am now doing.

He also is interested in knowing the approximate cost of setting up the necessary equipment and installation for making these carbon 14 tests. I think he feels it would be appropriate for one of the southwestern universities to set up something of this kind. Would it be possible for you to give me an estimate on this?

Incidentally, I believe it is possible that Charles Fleetwood may visit the University of Pennsylvania exploration site in Guatemala sometime this winter. I assume this is the spot from which some of your samples originate.

Give my love to Peggy and remember me to Sheila. Last week I visited Houston, Los Angeles and Jacksonville, but when I got back, Newark was just about as hot as any of them.

Much love,



HENRY M. KENNEDY, C.L.U.  
SECOND VICE PRESIDENT

THE PRUDENTIAL  
INSURANCE COMPANY OF AMERICA  
HOME OFFICE  
PRUDENTIAL PLAZA NEWARK, NEW JERSEY

July 31, 1961

Miss Elizabeth Ralph  
University of Pennsylvania  
Department of Physics  
Philadelphia 4, Pa.

Dear Beth:

Many thanks for all the information in your letter and the accompanying literature, etc. I have sent this on to Charles Fleetwood, who I know will be delighted. I have told him if there is anything else he feels you can supply to write directly to you. I hope this hasn't been a nuisance.

I am glad that Peggy continues to be comfortable. I am afraid that is about the best we can hope for.

Love from all of us,

HMK/jd



CHARLES FLEETWOOD  
VICE PRESIDENT IN CHARGE,  
SOUTHWESTERN OPERATIONS

THE PRUDENTIAL INSURANCE COMPANY  
OF AMERICA  
SOUTHWESTERN HOME OFFICE  
HOUSTON, TEXAS

August 1, 1961

Miss Elizabeth Ralph  
Woosamansa Road  
Pennington, New Jersey

Dear Miss Ralph:

Ty has sent me the information you gave him on C-14 dating. Thank you very much.

What I had in mind was to interest the University of Houston in setting up facilities for C-14 dating. Of course, it is a question of money, and I suppose it would be up to me to find that. Fortunately, there are a number of people here interested in Middle America, and it would not, in my opinion, be too difficult a task.

In today's mail I received the Tikal Reports from Dr. Coe. I hope to visit Guatemala in February and intend to spend a few days at Tikal, if possible.

Again, let me thank you for your prompt reply to my questions through Ty.

With best wishes,

Sincerely yours,



CC: Mr. H. M. Kennedy

AM 6-200

May 26, 1967

✓ [FLINT]

*See memo*

Dear Dr. Faul:

I am enclosing a note from Dick Flint at Yale, regarding a student of his who may be of interest to you in the Department of Geology. Naturally, we would like to see more geologists interested in archaeology, as per our discussions some time ago. If you have any interest, would you get in touch with Dick or let me ~~know~~ ?

Incidentally, you remember my comments about Frank Morrison who worked with us in Sybaris last year? Beth intends to get him back in the field again this summer, and if you still have any interest in a geophysicist, he is another one with archaeological interests.

Very best wishes,

Froelich Rainey  
Director

Dr. Henry Faul  
Chairman  
Department of Geology  
Fine Arts Building

FGR/vg

May 26, 1967

Dear Dick:

Many thanks for your note about Robert Giegengack who may very well be a candidate for the Department of Geology, here. We have been working quite closely with the new Head of the Department, Here, trying to coordinate their new staff with our work in archaeology. So, I will send on a recommendation.

If anything develops, we will certainly get back to you.

All very best wishes,

Froelich Rainey  
Director

Dr. Richard Foster Flint  
Department of Geology  
Yale University  
New Haven, Connecticut 06520

FGR/vg

Yale University *New Haven, Connecticut 06520*

cc: Dr. Faul

DEPARTMENT OF GEOLOGY

*Box 2161, Yale Station*  
May 17, 1967

Dr. Froelich Rainey, Director  
Museum, University of Pennsylvania  
33d and Spruce Streets  
Philadelphia, Pennsylvania

Dear Fro,

I am writing to you on the off chance that someone in your outfit might be interested in one of our graduate students, now coming up the home stretch on his doctorate. He could be placed in a more conventional geologic job without difficulty, but he doesn't want a conventional job. He is interested in archeology as well as geology, and wants to work in the field in far places. Yours is one of the few institutions where this combination might be in demand.

Robert Giegengack is 28, has an MS from the University of Colorado, and will soon acquire a Yale Ph.D. He spent three field seasons working independently on his own geologic problem, the history of the Nile in Egyptian Nubia since about 15000 B.C., and has come out with most interesting results, supported by C<sup>14</sup> dates and by cultural material. He has also visited East Africa. He is well trained in general and Pleistocene geology, is extremely self reliant, and has an outstanding co-operative personality. These are qualities that should recommend him highly to people in your line of business. He is likely to be available on a full-time basis come September.

I can send you details in case you would like to have them.

With best regards,

Sincerely,

*Rick*  
Richard Foster Flint  
Professor of Geology

RFF/jp

Vincent P. Foley  
ARCHAEOLOGIST

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P. O. BOX 75, WESTCHESTER STATION  
NEW YORK 61, N. Y.  
212 SY 2-3273

September 30, 1964

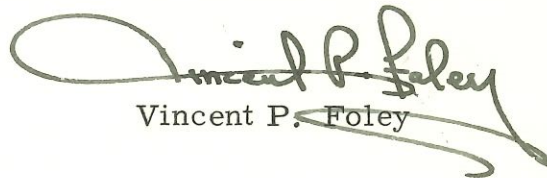
Miss Elizabeth Ralph  
Associate Director  
Applied Science Center for Archaeology  
Pennsylvania University Museum  
Philadelphia, Pennsylvania

Dear Miss Ralph:

I would like to express my deep appreciation for your kindness in sending Heinrich Borstling and the Geohm to my site in Bethlehem. The season ended before I was able to check the resistivity findings by excavation. However, next year I will attack the area in which the readings were taken, and, of course, will let you know the outcome. Mr. Borstling and his brother were very charming and helpful.

Again, I thank you very much for your kindness in this instance and in your reception the day John Cotter and I visited your laboratory. If at any time I may be of service to you, please do not hesitate to call on me.

Yours truly,

  
Vincent P. Foley

VPF:m

May 10, 1972

Forestry Suppliers, Inc.  
P.O. Box 8397  
205 West Rankin Street  
Jackson, Mississippi 39202

Re: Suunto Compass

Dear Sirs:

Last year I purchased a Suunto KB-14 (37010) Compass, Serial No. 114428. The hairline has now broken in the middle and is falling off.

I understand from my colleague Bruce Bevan, who also purchased one, that this is a defect common to this particular lot of compasses.

If you could send me a replacement, I shall be glad to return this one. I am planning to depart on a field trip on May 26th, and I hesitate to ship this one to you now until I am sure that a replacement is available.

Sincerely yours,

Elizabeth K. Ralph

EKR/ek



QUALITY FORESTRY, ENGINEERING & ENVIRONMENTAL EQUIPMENT

# Forestry Suppliers, Inc.

PHONE (601) 354-3565 / CABLE "JIM-GEM" / 205 W. RANKIN ST. / P. O. BOX 8397 / JACKSON, MISS. 39204

May 17, 1972

Ms. Elizabeth K. Ralph  
Assistant Director  
Museum Applied Science Center  
for Archaeology  
The University Museum  
University of Pennsylvania  
33rd & Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Ms. Ralph:

I am sorry that you had difficulty with the Suunto Compass hairline. We will indeed offer you a replacement at no charge. However, I would like to inform you that at the present time we are out of these instruments and do not expect a shipment in time to have one to you for your next field trip. We hope that you will be able to use the one you have for this trip, and then when you return, merely send it with this letter back to us and we will send you a replacement.

Thank you again for calling this to our attention.

Yours sincerely,

FORESTRY SUPPLIERS, INC.

LARRY GLASS

Larry Glass  
Sales Representative

LG/jch

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"What you need, when you need it."

January 7, 1963

C  
O  
P  
Y  
Miss Betty Foster  
United States Embassy  
Via Veneto  
Rome, Italy

Dear Betty,

Many months seem to have slipped by but I continue to think of the good companionship, picnics, wine, Mr. Mueller's beach, etc. at Sybaris, and of your kind help with my car problem in Rome. I was very sorry that we were unable to get together during my last days in Italy, but I shall hope for better luck next time.

My VW arrived in Philadelphia at the end of September and now we are wondering about cars for use at Sybaris this year. Pro Rainey has hopes that our contract will be renewed for work there in April, May, and June. If it is, would it be possible to buy the following used cars from Mr. Fiorentini's travel department at the Embassy?

One Fiat 600 Standard Model  
One Volkswagen Microbus Model 221

If I am mistaken in thinking that the Embassy is in the used car business, please don't hesitate to say so.

I hope that columnist Drew Pearson's rumors are unfounded.

With best regards,

Elizabeth K. Ralph

EKR:dml

*Sybaris*

November 2, 1965

Professor Guiseppe Foti  
Soprintendente alle Antichita' della Calabria  
Reggio-Calabria  
Italy

Dear Professor Foti:

I am sorry to have missed you at Sybaris this fall, but I was only there for about two days to meet Mr. Bullitt, and I understand from Beth that you stopped by shortly after I left.

As you probably know from your visit, the new caesium magnetometer is working very well, so well, in fact, that Beth has picked up what looks like very large constructions 6 meters in depth to the east of Casa Bianca. Her latest reports indicate that these structures continue to the northward, and she continues to do as much as she can this fall to locate other big structures at that depth around the parco del calvo area. When I returned here I looked up the drill records of the region around those big constructions east of Casa Bianca and found that they record only archaic sherds at about 6 meters in depth with no Roman or Hellenistic sherds at all. As you know, she will confirm this with a few additional drill holes, but it now looks as if these are truly extensive archaic structures such as we have been looking for for years. The only thing that bothers me is that we still can not tell whether they are massive stone structures or simply hard, compacted areas of sherds, tiles, and so forth, such as we found in our second excavation north of the long wall. Hence it begins to look as if an additional test excavation must be made there if we are really going to prove whether or not this is Sybaris itself.

With this I should like to explore some possibilities with you, and I hope you will let me know soon what you think about them. First, I would like to suggest that when Beth completes her work there this fall some time during November, that we send you all the data about the structures located with the caesium magnetometer and results of the drilling with our opinion as to what it means, and that you then make a news release yourself from Reggio-Calabria or from Rome, whichever you prefer, expressing your own opinion about the results of this

work, also about the success of the caesium magnetometer on the site. If you make the announcement from there, it will get away from any complications about news releases, American participation, and all that sort of thing, and it would suit me just fine. Second, I should like to propose that we do another test excavation in the spring under your direction, with Mr. Bullitt supplying the money. He is very anxious to go ahead, and has suggested that I write to you.

I was very reluctant to do any more digging on the Sybaris Plain because of the water and sand, and actually tried to discourage Mr. Bullitt, but now I have discovered a new technique which makes it all much more practical. Engineering firms here in America are using a new chemical in order to construct bridge piers and abutments below the water level. The chemical is called acrilamide and is made by the American Cyanamid Company. The area to be excavated is drilled and pumped full of this chemical. Then it joins with the water and the sand and produces a substance something like gelatin, which is absolutely impervious to water. At the same time, this gelatinous substance can be excavated with a shovel. If this all sounds interesting to you, we will experiment with the process here during the winter. It seems to me that we could easily pump the chemical into the ground at the area to be excavated, and around the outside to hold back the ground water, and then excavate down to within a meter of the structure with the drag line, since there are no ruins above it, and then continue by hand with shovel and actually dig dry with the whole area sealed off through the action of the chemical. In any case it seems worth trying, and Bullitt is willing to risk the cost.

Do let me know what you think of these two proposals, and what suggestions you have to make. Beth should finish work there some time in November. She will be returning by boat, and some time in December we should have all of the information on this season's work ready for you so you can prepare some sort of news story in Italy, and I think this time it's a very good story because the new instrument has really been an outstanding success. Then in the spring, with luck, we might really decide finally whether we actually do have Sybaris in that area. Moreover, if this new chemical system of excavation works, you could then continue to work in the practical way at the parco del calvo area, and I am very optimistic that the system will actually work.

Very best wishes.

Sincerely,

Froelich Rainey  
Director

FR/rs

copy to Beth

ve: Microbus

15 marzo, 1966

Caro Professor Foti:

Posso disturbarla di nuovo per chiederle una lettera, simile a quella acclusa, per il rinnovamento della Carta Turistica per il nostro Volkswagen Microbus.

Le sarei molto grata se lei me la potesse spedire all'Hotel Boston, Via Lombardia, Roma. Dovrei trovarmi a quest' albergo il 24 marzo.

Sono contenta di poter tornare in Calabria, e lieta di poterla rivedere questa primavera.

Cordiali saluti,

Elizabeth K. Ralph

Professor Giuseppe Foti  
Soprintendente alle Antichita' della Calabria  
Reggio Calabria, Italy

EKR/vg

Vignale - Lunedì 29

Dear Beth,

Sono a Vignale dove aspetto  
Jhon. L'elmo di Urartu è venuto  
bene, come non speravo!

Ho ricevuto anche l'assegno della  
Banca di Philad. inviati da Marta.  
Tutto è a posto. Vuoi dirlo a Helen?  
Grazie.

Sono stata felice di vedere Helen  
a Napoli. Peccato che il tempo era  
brutto e a Cuma abbiamo preso la  
pioggia!

Ho visto Jhon a Roma. Ospiterò  
la FIAT. Perché vuoi venderla? Ci sono  
novità per A.S.C.A? Noooo!

Mandami notizie - Ti penso spesso -  
Appena posso ti scrivo una lettera  
con calma e in inglese (!!!)

Salutami tutti gli amici - A te  
un affettuosissimo abbraccio

Franca

Spero che il magnetometro abbia  
funzionato benissimo in Francia!

September 30, 1969

Dear Franca:

Please excuse this long delay in doing something about your bank draft. Because of the start of the University fall term, the bank has been very busy, and they have just now looked up your account. To stop the present bank draft and start another, it is all very complicated and will probably take months. The steps are as follows:

- 1) You sign the enclosed "Stop Payment Order" and send it here, either to me or to Mr. Frank Haines, Girard Trust Bank, University City Branch, 135 South 36th Street, Philadelphia, Pa. 19104
- 2) The Girard Trust then sends the stop payment order to the Banco di Roma.
- 3) The Banco di Roma then replies to the Girard Trust.
- 4) The Girard Trust then sends a new bank draft to the Banco di Roma.
- 5) Hopefully, the Banco di Roma notifies you when the new draft has arrived.

If you need the money very soon, I can probably persuade Fro to send you a check from the Museum. In that case, send me the Stop Payment Order and also a letter instructing the Girard Bank to address the new bank draft to the University Museum instead of to you.

Sorry that this is so slow and complicated. However, if the first draft has not yet arrived, the Girard Trust thinks that it is unlikely that it ever will, so we should get the new one started.

We are now having perfect cool clear weather and the dogwoods are turning red. It is beautiful in the country. Wish you were here.

Love,

Beth

January 16, 1962

R. Adm. D. S. Fahrney, Secretary  
Committee on Science and the Arts  
✓The Franklin Institute,  
Philadelphia 3, Pa.

Dear Admiral Fahrney:

In regard to the dating of ancient artefacts by counting corrosion layers - glass, obsidian, or others, I am in somewhat of a quandary. Until recently I doubted the reliability of the techniques. However, the published reports of both glass and obsidian layer counting sound more convincing than I had anticipated. I think now that these methods may provide useful chronological sequences for particular sites; ones, especially, that do not contain other materials for dating. Without knowing more about the techniques, I should hesitate to say that they would provide a means for absolute dating, but could be used for comparative dating for particular sites in a manner similar to the fluorine and nitrogen techniques for ancient bones. I should think that the possibilities for cross-dating among sites subjected to different climatic conditions would be dubious.

As part of our work in the new Applied Science Center for Archaeology in the University Museum, we plan to investigate these and other techniques more thoroughly. Therefore, I hope to be better informed about them, within the next few months.

For glass dating, the only publications with which I am familiar are those of Dr. Brill's. I have a reprint of one here entitled "The Record of Time in Weathered Glass" from Archaeology, Vol. 14, No. 1 (Spring, 1961), pp. 18-22. In this a reference is made to one by Brill and Hood in Nature (189 [1961] 12). I was pleasantly impressed by Dr. Brill when I met him at a small conference in New York last winter. This conference was held at the Institute of Fine Arts Conservation Center, N. Y. University, New York City.

Perhaps, Dr. Edward V. Sayre or someone there is well acquainted with these methods.

The work with obsidian dating of which I am aware is that of Dr. Clifford Evans and Donavan L. Clark (Div. of Archeology, U. S. Nat. Mus. Smithsonian Institution, Washington, 25, D. C.). The three publications with which I am familiar are as follows:

- 1) Donavan L. Clark, "The Obsidian Dating Method" :  
Current Anthropology, Vol. 2, No. 2 (April 1961)  
pp 111-114.
- 2) Friedman, Smith, Evans and Meggers, "Table of  
Obsidian Dates" Am. Ant. Vol. 25 #4, 1960 pp.  
494-522.
- 3) Evans, Clifford and Betty J. Meggers, "A New Dating  
Method Using Obsidian: Part II, An Archaeological  
Evaluation of the Method" : Am. Ant. Vol. 25, #4,  
1960, pp. 523-37.

I hope, someday, to have some progress to report from thermo-  
luminescence dating, but we continue to have little time for it.

Sincerely yours,

Elizabeth K. Ralph,  
Associate Director,  
Applied Science Center  
for Archaeology,  
University Museum.

*Handwritten:*  
BAN CHIANG

February 22, 1973

Dear Mr. Frasche:

I was just talking to Dick Harper on the phone and he tells me that he passed on to you my scribbled letter from Indonesia about the success of our arrangements in Thailand and Indonesia so I need not repeat them all here. In any case, we will begin working at Ban Chiang at the end of this year and in Sumatra in May and I am delighted with the reception I received both in Thailand and Indonesia because it assures our long range campaign in the whole area.

I think you would be amused to see the films and pictures documenting the wholesale looting of the Ban Chiang sites. It really is incredible what is being turned up there and dozens of people in Bangkok are making private collections at this point. Fortunately, with this agreement we would soon be established at Ban Chiang and be able to save the information about the significance of these most remarkable deposits. Right now what interests me most is the age of the Bronze Age there. I am not sure of our thermoluminescence dates of 3500 B. C. and I don't think we could be sure until we have had some systematic work done there.

By the way, somebody passed the word that you would be down here in Philadelphia some time in March. Could you let me know when so that I can be here and show you the films taken at Ban Chiang. Also, I have a tentative arrangement to go to Guatemala in March and would like to be here when you are here in the city. I very much look forward to seeing you.

Sincerely,

Froelich Rainey  
Director

P.S. I am returning the color slides under separate cover. Many thanks for letting me see these slides.

January 6, 1973

Mr. Dean F. Frasche  
36 Park Avenue  
Greenwich, Connecticut 06830

Dear Mr. Frasche,

Thank you for your letter of December 26. Dr. Rainey is out of the country and will return the last week in January. You should be hearing from him at that time.

Sincerely,

  
David Crownover

DC/sa

36 PARK AVENUE  
GREENWICH, CONNECTICUT 06830

26 Dec 72

Dear Dr. Ramsey -

Re: our conversation while you  
were with Dr. Hopper in New York I  
am enclosing 2 photos of Bang Chien  
which were sent to me by a friend:

DR. JOHN A. A. M. STOOPS  
DO-CHO, KAMITANAKAMI  
OTSU-SHI,  
JAPAN

Slide #1 shows stamps I sent to Cornell  
University.

It was a pleasure to talk to you  
on the telephone and I look forward  
to meeting you sometime late  
January - early February '73 -

Happy New Year

Very  
Sincerely  
Dean F. Frasche

DEAN F. FRASCHE

DR. JOHN A. M. STOOPS  
DO-CHO, KAMITANAKAMI  
OTSU-SHI,  
JAPAN

1- SHARDS BELONGING TO QFF. CORNELL UNIV. MUSEUM.

2. Site #1, the farmer's plot. Excavations began here only weeks after the landowner had begun removing pots and artifacts and is thus nearly denuded; the very last stages of the excavation by museum people were well done, but didn't yield very much. Nightly forays by neighbors intent on carrying off anything marketable also account for its nudity.
3. Site #2, at Wat Ban Chieng. Thoroughly well-excavated and now guarded by armed policeman, with depths indicated, and part of a skeleton visible at lower left.
4. Section 2, of 2 chambers, of Site #2.
5. One of the largest jars excavated from Site #2, clumsily glued and tied together, base missing. Height about 70cm from base of cavity to the uppermost part of the fractured neck. The jar was put on a makeshift stand, a plastic bucket with Mickey Mouse design, which I turned around. Objects in foreground are two roller-type styli, used either to stamp motifs on some ware (this is debatable, I think, but possible) or for some talismanic kind of icon or maybe even regalia of some sort. Earthenware beads. This is ensconced (sp?) together with a similar jar on makeshift Buddhist altar in front of Site #2. Incense and donations, streamers and photographs of the king decorate the altar.
6. The shards I brought home. The choice seemed to be between several sherds and one complete piece and I chose the former. Right, top to bottom, bases of jars of different sizes: seemingly made on a potter's wheel, all bases were about the same size, except for unusually small ones, while the bodies of the jars were of various dimensions. This may suggest some kind of assembly-line production, or it may suggest nothing at all. The motifs and designs are almost never the same. Center, top, fractured body of a large jar. Other fragments are lips, necks and shoulders. Two rollers at bottom left, plus part of a black sherd I found which no one seems to have noticed. It was dug from the section very near the skeletons, and is carved, not painted, and has a thick coating of black material (carbon?) which had been rubbed and polished; the designs, not shown, are very different from the painted earthenware, and notch designs along the lip are extraordinary. It is thicker than the other ware and seemingly of different paste. I can not deduce its function or its original shape since it is but a small part (24cm long) of what I think was once a very large shallow basin.

THE FRANKLIN INSTITUTE  
OF THE STATE OF PENNSYLVANIA  
PHILADELPHIA 3 - PENNSYLVANIA

FOUNDED FEBRUARY 5, 1824

COMMITTEE ON SCIENCE AND THE ARTS

January 19, 1962

Dr. Elizabeth K. Ralph  
Associate Director  
Applied Science Center  
for Archaeology  
University Museum  
University of Pennsylvania  
Philadelphia 4, Pennsylvania


Dear Dr. Ralph:

Again we are much indebted to you for your thoughts about dating artifacts by counting corrosion layers on glass. It is most interesting to learn that part of your work in the new Applied Science Center for Archaeology will be devoted to thorough investigations of the various techniques for dating artifacts.

We also appreciate your kindly assistance in supplying us with the names of authorities in the field of dating and, also, the list of publications which are pertinent to our studies. We will most certainly get these publications and write to the individuals you have suggested.

With many thanks again for your cooperative interest in our investigations,

Sincerely,

  
RAdm. D. S. Fahrney, USN (Ret.),  
Secretary,  
Committee on Science and the Arts.

DSF:mwc

THE FRANKLIN INSTITUTE  
OF THE STATE OF PENNSYLVANIA  
PHILADELPHIA 3, PENNSYLVANIA  
FOUNDED FEBRUARY 5, 1824

COMMITTEE ON SCIENCE AND THE ARTS

June 22, 1962

Dr. Elizabeth K. Ralph  
The University Museum  
Thirty-third and Spruce Streets  
Philadelphia 4, Pennsylvania

Dear Dr. Ralph:

Now that another year has passed since you so kindly gave us a status report on "Dating by Thermoluminescence," we are hopeful that you will again favor us with your views concerning this process. As soon as the technique has proven accuracy and is in use as a dating tool, we expect to proceed with an investigation and report.

We will very much appreciate your authoritative opinion and judgement of this subject.

Sincerely yours,

*D. S. Fahrney*  
DSF

RAdm. D. S. Fahrney, USN (Ret.),  
Secretary,  
Committee on Science and the Arts.

DSF:mwc

May 22, 1963

Dr. Charles N. Frey  
45 Cambridge Road  
Scarsdale, New York

Dear Dr. Frey:

Miss Ralph is on expedition in Italy and Northern Ireland at the moment, and is not expected back until sometime in August. Your first letter has evidently gone astray in her absence.

In general, the age values obtained by radiocarbon dating of tree-ring samples is less accurate than those obtained by tree-ring dating. The statistical errors inherent in the first method prohibit tolerances of less than perhaps +25 years, and even then only in cases where a large number of identical samples are available and where time permits an extensive dating program. Assuming accurate cross-ties between trees, etc., the tree-ring dating should be accurate to within 10 years and possibly less.

As to the record ages of trees, our information is slim and hazy at best. Sequoias likely live no longer than 2900-3000 years. Redwoods are shorter-lived, their large size stemming in part from the thickness of tree-rings. Our tree-ring lab thinks the maximum oak age in temperate United States runs about 350 years, and remembers a white pine in Wisconsin of about 1000 years with a Russian pine running about 1200 years. I'm sorry we can be no more definite than that.

For further information on this, I suggest you contact

Dr. Bryant Bannister  
Laboratory of Tree-Ring Research  
University of Arizona  
Tucson, Arizona

Sincerely yours,

Robert Stuckenrath, jr.  
Research Associate

Columbia University in the City of New York | New York 32, N.Y.

INSTITUTE OF NUTRITION SCIENCES

562 WEST 168th STREET

LORRAINE 8-6162-63

45 Cambridge Road  
Scarsdale, N. Y.  
May 18, 1963

Dr. Elizabeth K. Ralph  
Radiocarbon Laboratory  
University of Pennsylvania  
Philadelphia, Pennsylvania

Dear Dr. Ralph:

On April 15, 1963 I wrote you, at the suggestion of Dr. B. Francis Kukachka of the Forest Products Laboratory at Madison, Wisconsin, for information on radiocarbon dating. Unfortunately, I have had no reply and wonder if the letter was overlooked.

I would like to know if the values obtained by radiocarbon dating are more accurate than those obtained by ring counts, and what is the record age in terms of years of various species of trees, such as sequoia, redwood, oak and pine.

I shall greatly appreciate any information you may give me.

Yours truly,

*Charles N. Frey*  
Charles N. Frey

CNF:jl

H ?  
January 27, 1970

Dear Mr. Friedman:

I have just now received this letter from Hampton in England. I have talked with Williams about it on the telephone and he is sending on his letter with the corrections suggested by yourself and myself. Anyway, I am mailing him a copy of this today. Can you give me and Williams your opinion about this.

Regards,

Froelich Rainey  
Director

Mr. Jules Friedman  
United States Department  
of the Interior  
Geological Survey  
Washington, D. C. 20242

enc:

2/17/61

Ralph

313 East Adams St.  
Sandusky, Ohio  
February 8, 1961

Mr. Froelich Rainey  
University of Pennsylvania  
Philadelphia, Pa.

Dear Mr. Rainey:

As an eighth grade junior high school student I have chosen carbon-14 dating as the subject of a science fair project I must assemble this month.

The project will be an effort to explain the principle, procedure, results and benefits of the method on a lay basis. There will be no attempt at actual dating. Charts, outlines, photographs and, possibly, specimens will be used.

As a project on public display the points of most interest would likely be in this order:

1. Actual items or specimens which have been C-14 dated from test samples (or dated by association with the latter).
2. Comparable or simulated versions of the above to be displayed as such.
3. Photo prints of items which have been C-14 dated (or dated by association).

In view of your work with ancient findings which have been C-14 dated, such as specimens from Egyptian tombs, perhaps you can and will loan me material of a nature listed in the above 1., 2., 3. outline. Time is short and selections for display use must arrive soon.

Any help you can give me will truly be appreciated.

Very truly yours,

*Dick Frissell*

Dick Frissell

photo sent 3/14/61

February 17, 1961

Mr. Dick Frissell  
313 East Adams St.  
Sandusky, Ohio

Dear Mr. Frissell:

Dr. Rainey has directed your letter and request for C-14 materials to me. I have enclosed 4 reprints and 2 photographs, and am sending portions of the following samples under separate cover: P-11, P-30, P-85, P-110, P-127, and P-130. The samples are labelled with the appropriate reprint references for their descriptions and C-14 dates except for P-316 which has not yet been published.

Since old Egyptian samples are valuable Museum pieces, the only one available was P-11 from the outer Sarcophagus of Aha-nakht. I have requested a photograph of this for you and will send it as soon as possible.

Best of luck with your science fair.

Sincerely yours,

EKR/lm  
Enc.

Elizabeth K. Ralph  
Research Associate  
Carbon-14 Laboratory

680 West End Avenue  
New York, N. Y., 10,025  
January 12, 1966

Miss Martha H. Rhoads  
Applied Science Center for Archaeology  
The University Museum  
University of Pennsylvania  
33rd & Spruce Streets  
Philadelphia 4, Pennsylvania

Dear Miss Rhoads

Many thanks for your letter about radiocarbon dates for Troy VIIa.

I have carefully studied Blegen's fascicle for the revised edition of the Cambridge Ancient History and also, I believe, all the other available fascicles which have any bearing on the subject of Troy. (Perhaps I ought to explain that I am doing research for a book on the subject.)

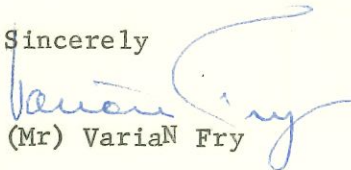
As you say, the relative sequence has been a subject of great controversy.

So has - and is - the date of the siege of Troy. Carl Blegen now believes that the siege took place around 1280 B.C., while George Mylonas holds that it occurred some time after 1200 B.C. Thus there is a difference of nearly a century in the dates assigned to the fall of Troy by two eminent authorities *of our own days.*

Does the fact that the University of Cincinnati expedition completed its excavations at Hissarlik in the nineteen thirties mean that none of the grain found in the Troy VIIa level would now yield meaningful carbon-14 dates? If some of that grain could be sent to your Carbon-14 Laboratory now, would you be able to derive meaningful dates from it? If so, how much would the laboratory work cost?

I have been in correspondence with Carl Blegen and with John L. Caskey at the University of Cincinnati, and I believe that, if it could be tested now, it would be possible to arrange to have a small quantity of the carbonized grain found in the Troy VIIa stratum sent to you.

Sincerely

  
(Mr) Varian Fry

November 1, 1971

*need reprint*

*ASCA*  
*OK*

Dr. Froelich Rainey, Director,  
University of Pennsylvania Museum  
Philadelphia

Dear Dr. Rainey:

For the past two years I have been following the story of Fred Dickson's search for the remains of the Columbus flagship, the Santa Maria, for National Fisherman and several Virginia newspapers, and now have a juvenile book almost finished for Dodd, Mead. I find I ought to know more about the thermoluminescence dating technique you used on the piece of pottery Fred found in 1967.

Do you have a paper with a description of the technique? Ceram's brief discussion in The First American is helpful, but stops short of telling me the potential and the limitations of the technique; what it can and can't do. So far the shard is the key artifact Fred has come across, but as you may know, Carl Clausen, Florida State Marine Archeologist, has expressed some doubt about it.

Anything you can send or tell me will be helpful.

Sincerely yours,

*John Frye*  
John Frye, Associate Editor,  
National Fisherman

## AUTHENTICATED NEWS INTERNATIONAL

EDITORIAL OFFICES

170 FIFTH AVENUE, NEW YORK 10, N. Y. U. S. A.

*Both - another request  
7/11/3*

Dear Sir:

To meet the needs of the publications we service we want to do a picture story about

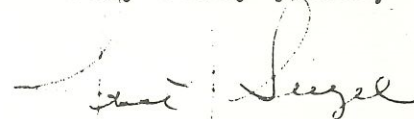
The pottery and wood believed to be from the Santa Maria

We can use from ten to fifteen 8 x 10" glossy photographs with story and caption material, which fully illustrate this subject. We make every effort to supply clippings or tear sheets.

As an accredited news agency, we service several thousand publications of all possible categories, including daily and weekly newspapers, Sunday supplements, house organs, trade journals, textbooks, encyclopedias, religious, medical and travel publications. In addition to the United States and Canada, we have agencies and representatives in Europe, Latin America and the Far East, so that our overseas syndication is quite extensive. Our main interest is to service our client publications with news-worthy features and photo-stories.

We look forward to hearing from you and we would also appreciate your placing our name on your press list to receive all future news and photo-news releases.

Very truly yours,



Jesse J. Seigel  
Managing Editor

JJS/jat

DR. MICHAEL FULLER  
GEOLOGICAL SCIENCES  
UNIVERSITY OF CALIFORNIA  
SANTA BARBARA CA 93107

September 18, 1974

Dear Colleague,

This is just a note to keep you informed concerning the progress of the Takesi Nagata Conference volume.

At this time, we have well over half of the manuscripts. The standard of the papers encourages me to think that the volume could be a useful contribution, and I would like to thank those of you who have sent their manuscripts for making the effort to get them in promptly. May I also encourage those of you who have not been able to get them in yet to try to get them to me shortly. If you gave a contributed paper, a one page abstract will be sufficient, although obviously a couple of pages including a critical diagram or two would be better. Those of you who gave the invited papers will be pestered by me further to inspire your reluctant pens or typewriters.

I plan to have the volume completed and available during the Fall.

Yours sincerely,

Michael Fuller (please note Dr. Fuller's new address at top of letter)  
Professor

AIRMAIL

October 16, 1962

✓ Dr. Ingrid V. Olsson  
Fysika Institutionen  
Upsala, Sweden

Dear Dr. Olsson:

Thank you for your letter. I have enclosed a reprint of our Nature, 1960 article, and have sent another to Mr. Lerman by registered airmail. I hope that it reaches him safely.

Thank you very much for the many reprints which you have sent to us during the past few months. Needless to say, we are glad to have the reports of the fine work which you are doing.

Sincerely yours,

Elizabeth K. Ralph

EKR/deh

Encl.

C  
O  
P  
Y