

May 5, 1971

Dear Nacho:

Sorry about the long delay in replying to your letter of April 13 but I have been knocked out with a ghastly case of viral flu leaving me with no enthusiasm for anything. Now I am back at the office and delighted to learn your specialist in Western Mexico is not horrified at the idea of a bulldozer trying to find one of those virgin shaft tombs. We have just elected Hugh Sharp to our Board of Managers and now we have two duPont directors with two aircraft, both interested in Latin America so I really must do something about continuing the search we began in Western Mexico. I told Betty Bell that if we could work something out for this Western Mexico business, I would be the official Field Director as far as we are concerned and collaborate with her. For me, it would be ideal for Otto Schondube to act for me in the field and, of course, also for you. Now I suppose I should write to Betty and make some proposal along these lines so we don't short cut her in this area where she has been involved for sometime. Does this sound reasonable to you? I will let you know her reaction and hope we can get something going in October.

You asked for addresses for Howard Petersen, Sam Carpenter and Henry McIlhenny, which I enclose.

It was really a pleasure to have you and Sofia with us at the Museum dinner and Pen and I are only sorry that our plans were to leave after the dinner for lower California. You will not be surprised that I caught no fish which seems almost unbelievable in that Sea of Cortez; but we did have a lot of sun and a lot of fun so it was worth it.

Incidentally we are in the throws of organizing a symposium on how to communicate research in archaeology and anthropology which will be the official opening of our new wing at the end of October. This is something which you might very well enjoy and if it is possible for you to get up here for a couple of days at the end of October, then we would all be most pleased to have you and I will send you all the dope on the symposium. We have had two small conferences in this line with a dialogue between archaeologists and communicators and they have been extraordinarily interesting. They have been very informal and I think this is always better. I hope you can join us.

All best wishes,

Froelich Rainey
Director

Dr. Ignacio Bernal, Director
National Museum of Anthropology

museo nacional de antropología
CALZADA DE LA MILLA
MEXICO 5, D. F.

I. N. A. H. S. E. P.

April 13, 1971

Write Reply

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

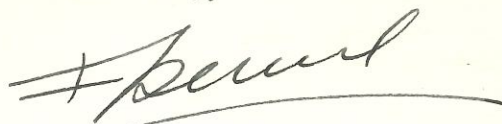
Dear Fro:

I have not written earlier to thank you for the wonderful time and the wonderful medal I got in Philadelphia because I wanted at the same time to have some information for you on Western Mexico. I have talked at length with Otto Schondube, who is a good specialist on that area, and he thinks your idea of bulldozing a small area to try and find a shaft tomb is very good and could result, if the site is well chosen, in the finding of one or perhaps various tombs. He also thinks that the Magdalena area is a good one and that perhaps the months of October or November would be the best for this work. Should you need somebody else, he would be quite happy to form part of the group.

I would like to write both to Mr. Peterson and to Mr. Carpenter, as well as to Mr. McElheney. Could you give me their full names and addresses?

Both Sofía and I wish to thank you both again for the wonderful time you gave us, and we hope to see you here in the near future.

Sincerely,



Ignacio Bernal
Director

May 21, 1971

Dear Nacho:

I am off today for Corsica to try and find those very deep Etruscan shaft graves in Aleria which physically are very much like the shaft graves in Western Mexico. We ought to have better luck in Aleria because the fired brick doorways are more magnetic than the clay that covers the tombs. They are up to 15-20 feet deep.

I cannot imagine Betty Bell fussing about the unscientific approach to these tombs with a bulldozer. She doesn't seem nearly as stuffy as some of our colleagues and I can only assume that she misunderstood Beth's recommendation for that site where they worked with the instruments, to save time. I will send her a copy of this letter to explain what this is all about. The idea, of course, is only to skim off the surface of the ground over the acre or two so we can recognize the cuts going toward the shaft graves, or pick up the shaft graves with the instruments after the surface volcanic detritus is removed. This is standard archaeological procedure in many parts of the world. For example, one of our prize archaeology students, Peter Lade, has just returned from extensive excavation of a Neolithic sites in Western Germany. There, with a bulldozer, they removed the surface humus over a site covering many acres and neatly exposed a whole settlement pattern by careful excavation. I am sure I don't need to tell you or Betty that from the standpoint of archaeological technique, the Germans are infinitely more fussy than the British or Americans. In any case, maybe when Betty cools off she can re-consider this or we can work out some other scheme to get at those graves. Certainly almost anything is better than for the clandestine looting and smuggling it out to the damn dealers in New York.

You didn't reply regarding the symposium in connection with the opening of the new wing here at the end of October and I do hope

Dr. Bernal:
Page 2

you can join us as our guest. I am enclosing a statement about the symposium and it seems to all of us around here that you would be a very good spokesman for the kind of thing we are discussing. The previous two symposia were very informal and I think this looks even better, but I would like to have you on the program as an official guest. I do hope you and Sofia can join us.

All best wishes,

Froelich Rainey
Director

Dr. Ignacio Bernal, Director
National Museum of Anthropology
Calzada de la Milla
Mexico 5, D.F.

P.S. Please don't forget about the popular article you are going to do for us on the finds from the Subway excavations.

museo nacional de antropología
CALZADA DE LA MILLA

MEXICO 5, D. F.

I. N. A. H.

S. E. P.

May 12, 1971

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

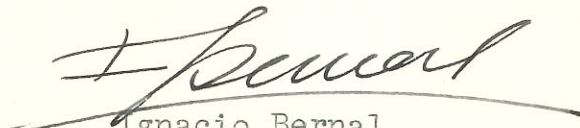
Dear Fro:

Thanks for your letter. I am sorry to see that you have been ill, and I must say that I can't imagine you without enthusiasm for anything.

I saw Betty Bell at the meeting of the S.A.A. in Norman and told her about what we had discussed in Philadelphia. She is shocked to death at the idea and thinks it is a very poor one, since not only would it be badly spoken of in general circles, but the probabilities are that we will not find anything. So as usual, we have two entirely opposite opinions from two experts in the area. Perhaps a compromise would be to dig rather long even if shallow trenches at frequent intervals. Anyway, it would be a good idea for you to write Betty.

With all best wishes to Pen and you,

Sincerely,


Ignacio Bernal
Director



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND 20771

REPLY TO
ATTN OF: 202

September 20, 1974

Froelich Rainey
University of Pennsylvania
Philadelphia, Pennsylvania

Dear Mr. Rainey:

Since you have been selected as a Principal Investigator for the Earth Resources Technology Satellite program, we are requesting that you furnish this office with a biographical sketch.

The sketch will be retained for preparation, in some cases, of "home-towner" type news releases and for reply to news and public media queries.

Please send the sketch to: Public Affairs Office, ERTS Biographies, Code 202, Goddard Space Flight Center, Greenbelt, Maryland 20771.

Sincerely,

A handwritten signature in cursive script that reads "John Kley".

John Kley
Office of Public Affairs

Enclosure

*form ret'd with vita
10/9/74*

February 5, 1969

J. Holderness
Editorial Research
National Geographic Society
Washington, D.C. 20036

Dear Mr. Holderness:

Thank you for sending me the National Geographic (Volume 135, Number 2). I have enjoyed reading Peter Throckmorton's article. It will be a useful addition to the reference files of our Information Center.

Sincerely yours,

Elizabeth K. Ralph

Techniques

January 14, 1966

Dear Helena:

I am enclosing a blurb on the thermoluminescence method which we discussed on the phone. I hope this is something like you wanted. Also, I am sending a couple of kodachromes of the apparatus being developed, which will give you an idea of what it looks like. If you want a black and white picture we can have it made here. We do not have one in the Museum right now, however.

Very best wishes,

Froelich Rainey
Director

Miss Helena Jordan
Executive Editor
✓ Natural History Magazine
American Museum of Natural History
New York, New York

FGR/vg

enclosure

Ralph - have papers

July 29, 1969

Professor Laurence J. Majewski, Chairman
New York University Conservation Center
1 East 78th Street
New York, New York 10021

Dear Professor Majewski:

Mrs. Bourgeois kindly gave Martha Bell and me a quick tour of your laboratories last week when we arrived there unexpectedly. I was impressed by the expansion and improvements that have been made since I last visited the Center about 10 years ago.

We have a limited amount of funds - approximately, \$4500 to employ an additional conservator. Mrs. Bourgeois suggested that one of your "internes" might be available to come here. The length of time would depend upon his salary. We should like to have him as long as possible until the \$4500 is spent. He would be working under the direction of Miss Gayle Wever. His duties would include general archaeological conservation.

Sincerely yours,

Elizabeth K. Ralph

EKR/mrb

P J Nash
Neals Lane
Chetnole
near SHERBORNE
Dorset
ENGLAND

Elizabeth K Ralph
Associate Director
University Museum of Pennsylvania
33rd and Spruce Streets
Philadelphia - Pennsylvania 19104
United States of America

6th February 1973

Dear Miss Ralph

Thank you for your very helpful letter of 26th January. We were extremely pleased to learn of your interest in our project. As I said in my previous letter, our funds are very limited, and, although we can probably finance an actual dig, it looked as though the search costs were going to put paid to our venture.

I have written to Dr Martin Aitken and will let you know his reply when I have it. In the meantime, I will return to the farmer who owns the land and tell him of your interest - I am sure that this will help us to persuade him to let us use a mechanical excavator if we can locate the aircraft.

We would, of course, be more than pleased to see you during the Summer if you can make it, I don't know whether you have ever visited Dorset but I am sure you would find it interesting as we have many Hillforts, Tumuli and Roman remains, perhaps not as exotic as Egyptian archaeology or the lost city of Sybaris, but interesting nonetheless.

Yours sincerely



P J Nash

PETE J. NASH
NEAK'S LANE
CHETNOLE
SHERBORNE
DORSET
ENGLAND
Nov. 9. '72

Beth
Nash

Dr. F. G. Rainey
University Museum of Pennsylvania.

Dear Dr Rainey,

Having recently learned of the work that you and Elizabeth Ralph did at Sybaris using the Magnetometer, I thought that you would be the best person to contact about the Magnetometer.

We are trying to find a WWII German Me 110 fighter, which nose-dived into a field in the summer of 1940 and disappeared, without trace. We know that it is still there, and that the RAF probed for it at the time, but decided it was too deep to dig out. They estimate the depth of it as 15 to 20 feet.

2.

We know what field it lies in, and even which corner of that field, but our problem is to locate it precisely, because although the land owner is being very co-operative, he obviously does not want 3 or 4 acres of grass ploughed up with test holes.

We have tried normal metal detectors and not even got a bleep, probes are difficult to use there now because the land has been drained since the war.

Our only hope would seem to be the magnetometer, the ground is clay, and I understand this to be OK for the operation of the Magnetometer. The trouble is, that we do not know of an available magnetometer, and our

3. funds are very limited so we cannot hope to purchase one, it would not be worth while anyway as we only have a small area to search.

We contemplated trying to build one as we know a couple of electricians at Westland Aircraft Ltd, but of course we have no plan, and suspect that it is probably too difficult for us.

Our only other hope is that you may be able to help us in some way, perhaps with a circuit diagram, or maybe you know of someone over here who has a magnetometer, and would make it available to us for a day.

I look forward to hearing from you,

Yours faithfully
J. H. East

January 26, 1973

Mr. Pete J. Nash
Neal's Lane
Chetnole
Sherborne, Dorset
England

Dear Mr. Nash:

Your project of finding a buried German Me 110 fighter sounds very interesting. I think that we should like to have a go at it, but it would have to be when we are travelling to Europe with our magnetometers.

At the moment I do not know what our spring and summer schedule will be. When Dr. Rainey returns from Egypt in early February, our plans may be more definite.

There is the possibility too that Dr. Martin Aitken might like to look for it. He is the Associate Director of the Research Laboratory for Archaeology, 6 Keble Road, Oxford, England. He and his group have proton magnetometers that are not so sensitive as our cesium ones, but they might be able to detect the aircraft.

If they do try and do not find it, please let us know by ~~air~~mail.

Sincerely yours,

Elizabeth K. Ralph

EKR/11

NATIONAL ENDOWMENT FOR THE HUMANITIES

WASHINGTON, D.C. 20506



December 22, 1970

Dr. J. Winter
Research Associate
The University Museum
University of Pennsylvania
33rd and Spruce Streets
Philadelphia, Pennsylvania 19104

Dear Dr. Winter:

I read with interest the project description which you sent me on December 4th concerning your plans to apply organic chemistry to archaeological materials. I regret to have to tell you that according to our regulations your project would appear to be purely a scientific undertaking and therefore ineligible for support by the Humanities Endowment. At the same time it obviously holds important implications for archaeological studies and therefore, indirectly, for humanistic knowledge as well.

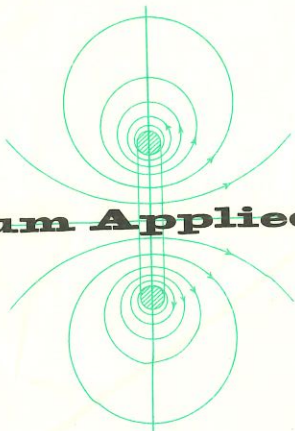
In view of this I feel the best course would be for me to forward your letter to the National Science Foundation for information and with a strong recommendation that it be funded under their archaeology program. I would not of course do this without your approval and I will be interested to see your reaction to this suggestion.

Very sincerely yours,

William R. Emerson
William R. Emerson
Director, Division of
Research and Publication

Replied
OK

Returned 10/1/73
No forwarding address



Museum Applied Science Center for Archaeology

Froelich Rainey, Director

Elizabeth K. Ralph, Associate Director

THE UNIVERSITY MUSEUM • UNIVERSITY OF PENNSYLVANIA
33rd & SPRUCE STREETS • PHILADELPHIA, PENNSYLVANIA 19104
594-7400 (Area Code 215) Cable Address "Antique"

May 23rd, 1973

Mr. L. T. Needham
Creole Petroleum Corporation
Apartado 889
Caracas 101
Venezuela

Dear Mr. Needham,

Dr. Bernard Wailes has just left for Ireland, and I have found your letter of November 15, 1972 on my desk.

In our MASCA group, we have no positions open at the moment, but if you do come to the University, I hope that you will get in touch with us.

Sincerely yours,

Elizabeth K. Ralph

Elizabeth K. Ralph
Associate Director MASCA

November 15, 1972

Dr. Bernard Wailes
Department of Anthropology
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Dear Dr. Wailes:


I am taking the liberty of sending you a copy of a letter addressed to the Department of Computer Sciences in which I set forth an interest in computing as it applies to Anthropology.

Although partially trained through formal and informal study, I can not claim an academic background in Anthropology. Creole, while interested in possible future applications, is not able to justify direct support in this area.

Research and application of the type I have in mind can best be accomplished in a university environment, provided both involved departments are interested. It appears to me that the University of Pennsylvania must have just this situation. I deduce this from Kidder's work at Valencia, Bass's work on instrumentation, the work at Tikal and Leptis Magna and the existence of the Applied Science Center for Archaeology, whose work interests me very much. However, deductions can be quite in error and I hope that you would be kind enough to indicate if I am in error.

I have extracted certain items from my resume that you may find of interest. I hope that I may have an opportunity to work with your Department at the University of Pennsylvania.

Sincerely,



L. T. Needham

Attachments(s)

RESUME EXTRACT:

L. T. Needham
Creole Petroleum Corporation
Apartado 889
Caracas-101, Venezuela

Personal and Educational Background:

Born in 1931. Entered Kansas State Teachers College at Pittsburg, Kansas in 1949. B.S. in Education in 1953 and an M.S. in Mathematics in 1956. Twenty-three additional hours from the University of Tulsa and the University of Utah. High B overall grade average. Married in 1954 and have two sons, ages 13 and 15.

Work Background:

Standard Oil Company (New Jersey), in computing, 1956 - date
Mathematics Tutor, Disabled Veterans, 1955 - 1956
Graduate Teaching Assistantship, 1953, 1955 - 1956

Languages: English, limited Spanish

Memberships:

Association for Computing Machinery, 1959 - date
American Museum of Natural History, 1964 - date
Archaeological Institute of America, 1968 - date

Residences:

Tulsa, Oklahoma 1956 - 1965
Tripoli, Libya 1965 - 1969
Caracas, Venezuela 1969 - date

Avocations:

Collector of Pre-Islamic Glass

The collection includes Phoenician cold cut, Alexandrian blown, millefiori, Sidonian and sand core. It centers on drinking vessels and jewelry. Forty-eight pieces are on long term loan to Philbrook Art Center, Tulsa, Oklahoma

Antiquities Restoration

Roman coins and glass, pre-columbian bone, shell and pottery. Two pieces of restored glass are on display at Philbrook.

Scuba and skin diving

November 15, 1972

Chairman
Department of Computer Sciences
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Dear Sir:

I am seeking a position in a University Computing Sciences Department.
My credentials include:

- a. B.S. in Education and an M.S. in Mathematics
- b. 16 years of experience in computing
- c. experience with Computing Center Operations, Operating Systems, Teleprocessing and technical and commercial Analysis and Programming
- d. programming experience at machine level, in Assembler, Fortran and COBOL.

My interests are in Data Capture, Information Storage and Retrieval and Man/Information Interfaces. The data problems of Archaeology and Anthropology are of particular interest.

Specifically I am interested in Computer Operations and in teaching. I would hope to be able to also contribute to the application of computing to the data problems of Anthropology. I suspect that the University of Pennsylvania has both the computing facilities and the ambient that I am seeking.

I have taken the liberty of attaching a copy of my resume, academic credentials and references. Available - January 1, 1973.
I request your consideration.

Sincerely,



L. T. Needham

cc: Department of Anthropology
Department of Classical Archaeology



DEPARTMENT OF CHEMISTRY,
THE UNIVERSITY OF MANCHESTER,
MANCHESTER,

TELEPHONE: 061-273 7121

M13 9PL

GWAN/LFM

6th January, 1977.

Dear Dr. Ralph and Mr. Lawn,

It has been my task to write a popular article on radiocarbon dating. A piece of information that would be useful, namely a value for dpm g^{-1} carbon of modern organic material, has been hard to find. It occurred to me that most radiocarbon laboratories measure NBS oxalic acid, but either they don't publish their results or quote cpm only.

I would be extremely grateful if, from your data, you could give me a best estimate of the dpm g^{-1} carbon for NBS oxalic acid, with a 1σ error value if possible. The figure will be treated confidentially.

Thanking you in anticipation.

Yours sincerely,

(Dr. G.W.A. Newton).

January 13, 1977

Dr. G. W. A. Newton
Department of Chemistry
The University of Manchester
Manchester M139PL
Great Britain

Dear Dr. Newton:

¹⁴C The exact value for the specific disintegration rate of natural ¹⁴C has been somewhat uncertain since the beginnings of radiocarbon dating. In 1952, W. F. Libby (Radiocarbon Dating, Univ. of Chicago Press, p. 10) published a value of 15.3 dpm/g, and measurements since then have ranged from 16 to 12 dpm/g. The best estimate in 1971 (H. N. Michael & E. K. Ralph, Dating Techniques for the Archaeologist, M.I.T. Press, Cambridge, Mass., & London) was 13.56 ± 0.07 dpm/g. More recent measurements have not differed greatly from this value although some have been outside of the uncertainty quoted. The best authority is probably Dr. Ingrid U. Olsson, Institute of Physics, Univ. of Uppsala, Box 350, S-751 21, Uppsala, Sweden.

The disintegration rate of the ¹⁴C oxalic acid has been related to true ages by comparison of counting rates with tree-ring-dated wood samples (corrected for "zero" age) to avoid the present-day tampering with the atmosphere. The counting rate of the oxalic acid is 5 percent greater than the wood calibration samples. The uncertainty varies with laboratories.

The main reason that the specific dpm/g has not been determined more precisely is that an absolute calibration of the counters is not needed for ¹⁴C dating. We base the calculation upon the decrease in counting rate from the calibration sample, that is, $I = I_0 e^{-\lambda t}$ becomes $t(\text{age}) = \frac{I_0}{I} \times 18.5 \times 10^3$ (with 5568 half-life) for routine age calculations.

I hope that this has answered your question.

Sincerely yours,

Elizabeth K. Ralph

EKR:mbp

November 22, 1961.

Nicad Division of Gould National Battery Co.,
7 Dey Street,
New York 7, N. Y.

Dear Sirs:

Will you please send me a catalog, including costs, and dimensions of your Nicad batteries.

We are interested in ones that either, singly, or combined will furnish 12 volts for 4 to 10 ampere hours before recharging. These are for use in portable units to be transported by air so that sealed ones are preferable.

Sincerely yours,

Elizabeth K. Ralph

EKR:LF

December 19, 1961

Professor Roy F. Nichols
104 College Hall

Dear Professor Nichols:

My attempt to clarify the C^{14} - cosmic ray problem is given below.

The amount of C^{14} which is produced at any given time is dependent upon the cosmic ray intensity. The reaction of N^{14} with neutrons (from cosmic rays), which forms C^{14} , takes place in the upper atmosphere. Since C^{14} is being produced continuously and, at the same time, some of the atoms are disintegrating (reverting back to N^{14}), an equilibrium condition exists, but is dependent upon the following factors:

- 1) The constancy of the cosmic ray intensity.
- 2) The consistent uptake (and subsequent release) of C^{14} by the carbon reservoirs. The largest of these are the oceans. Numerous factors are involved -- the exchange of the atmospheric carbon dioxide (a very small fraction of which is $C^{14}O_2$) with carbon compounds in the oceans, the mixing of the ocean waters, temperature changes, and so forth.

The determination of C^{14} values for samples of known age affords a measure of past atmospheric C^{14} contents. This, in turn, provides information about small fluctuations in cosmic ray intensity and/or changes in the equilibrium conditions which may have occurred. Reliable samples are ones such as tree-ring-dated wood sections or archaeologically-dated samples in good condition, which have not been contaminated with "humic" acid or other intrusions of different age.

Sincerely yours,

Elizabeth K. Ralph

Elizabeth K. Ralph
Carbon-14 Laboratory

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 4

ROY F. NICHOLS
Vice-Provost

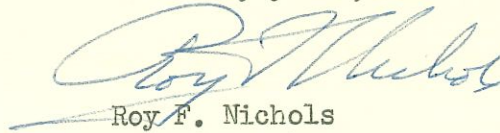
January 24, 1962

Dear Dr. Ralph:

It was very kind of you to tell me so much about your project and to write me about it. I am returning the material which you loaned me, with the exception of your piece from the Pennsylvania Archaeologist, which I hope I may keep.

Thank you very much.

Sincerely yours,


Roy F. Nichols
Vice-Provost

Dr. Elizabeth K. Ralph
B-W-6 Physical Sciences Bldg.

encls.
RFN:ws

Dear Dr. Nobel:

July 1977

In reply to your letter ~~of~~ dated July 14th, I am writing to say that, personally, I do not have much faith in dowsing. The U.S. Marine Corps may have used dowsing rods in Vietnam to detect tunnels, but the U.S. Government supported also the development of small portable cesium magnetometers to detect caches of weapons in tunnels.

I have enclosed a ~~copy~~ reprint of an ~~the~~ article published in Archaeometry as well as MASCA Newsletter, vol. 11, no. 2.

Sincerely yours,

Elizabeth K. Ralph



THE ARMOURIES

H·M·TOWER OF LONDON

EC3N 4AB

Telephone 01-709 0765

19th June 1979

Dear Professor Ralph,

Thank you very much indeed for your kind letter of 23rd May. I have discussed with the relative keepers the problem of the two pieces of wood involved and neither, unfortunately, is willing to part with such a relatively large part of their specimens. The wood is very dry and has lost so much of its "body" that quite a large piece would be involved.

With very many thanks for your kind offer.

Keey Norman

A V B NORMAN
Master of the Armouries

Professor Elizabeth K. Ralph,
The Faculty of Arts and Sciences,
University of Pennsylvania,
PHILADELPHIA, 19104,
U.S.A.

July 8, 1975

Professor Henry North
Aerospace Engineering Department
Lakehead University
Thunder Bay, Ontario, Canada P7B 5E1

Dear Professor North:

Professor Jameson has given me a copy of your letter of June 20th in regard to an "Archaeology Probe."

We want to thank you for this information and to say that I shall write to Mr. Parrish for more details.

Sincerely yours,

Elizabeth K. Ralph

EKR/jmk



motor lodge

Ms. Repke
(grandmother) R #2 Box 332
Coloma, Mich. 49038

ROUTE 17K & N.Y.S. THRUWAY
R. D. 2, COCHETON TPKE.
NEWBURGH, N. Y. 12550
(914) 565-4100

LICENSEE

J. NOSI(W)?

Dear Dr. Ralph:

I was very interested in The Radio-Carbon dating department. I'd always imagined Radio-Carbon dating was a field open only to accomplished scholars and people who had enormous amounts of knowledge. Now I know it is, but really, it is quite simple in principle. Anyway, Thanks a mess for showing me around your department.

I was also very interested in the Thermo-flourescent light department. Dr. Han was very nice.

Since I saw ~~the~~ the R.C. department I've realized all the uses for this

method of dating.

Anyway Thanks Again.

Yours

Sincerely

Jamil Nosi

February 9, 1965

Mr. F. David Dimmick
✓ Nuclide Corporation
642 East College Avenue
State College, Penna.

Dear Mr. Dimmick:

Thank you for the information about the Nuclide
Type 6-60-RMS-2 Mass Spectrometer.

As you mentioned, it is the optimum instrument for
the measurement of C^{13}/C^{12} as CO_2 . However, I have talked to
Dr. Allan Brown in our department of Botany and he is not
willing for us to use his instrument. Since we would have to
install an adapter for batch input, he thinks that we would
interrupt his work too much.

I am wondering if you have installed another instru-
ment in the vicinity of Philadelphia that might be available
for our part-time use.

Sincerely yours,

Elizabeth K. Ralph

EKR/deh

RADIOLOGICAL DATING LABORATORY

PHYSICS DEPARTMENT
THE NORWEGIAN INSTITUTE OF TECHNOLOGY
TRONDHEIM - NORWAY

DATE 21. January 1975

OUR REF. RN/Aa

YOUR LETTER

YOUR REF.

To
Associate Director,
Dr. Elisabeth K. Ralph
The University Museum
University of Pennsylvania
33rd & Spruce Streets
Philadelphia, Pennsylvania 19174
USA

Dear Dr. Ralph,


From Dr. Helge Ingstad - the discover of the Norse Settlement in L'Anse aux Meadows, Newfoundland - I have been asked to discuss the radiocarbon dates which are performed from the Norse Settlement (see Radiocarbon, v 12, no 1, 1970, p 205-237). It is important to treat the dates in a statistical way and make the necessary corrections in order to see how well the dates point to a certain historical age.

My treatment of the problem will be included in a book by the archaeologist Anne Stine Ingstad.

In your (and others) paper entitled Radiocarbon Dates and Reality appearing in MASCA Newsletter(no.1, v.9, 1973) the correction dates are very useful. I am especially interested in the curve (Fig.1) on page 6, and I am so free to ask for your permission to include this curve in my article. The curve will of course be given complete reference to your work. It covers the actual centuries around AD 1000 yrs, where the above mentioned C-14 dates occur. In order to get a good reproduction, I would like to ask for a photograph of Fig.1.

It is long ago since I saw you and the other colleagues within the field of Radiocarbon Dating. I am sorry that the 9th Conference is not to be held in Pennsylvania. Do you think there could be any interest for this conference to be arranged in Trondheim? We have always been guests in other countries, and I feel it should have been given something back. It will however be difficult for us to pay the travel cost for the delegates.

Sincerely yours,


Reidar Nydal

Send also
Archaeometry

8600 Pepperdine Drive
Vienna, Virginia 22180
November 18, 1969

Dr. Elizabeth K. Ralph
University of Pennsylvania
Philadelphia, Pa.

Dear Dr. Ralph:

I read in Science News of August 30, 1969 that you are conducting research into discrepancies in the accuracy of carbon 14 dating. According to that article, discrepancies of between 500 and 700 years are apparent, based on checks with king lists and dendrochronology.

With all the diffidence of a layman who tries to keep up with at least some aspects of scientific research, I am writing to inquire whether you or one of your staff might be able to spare the time to refer me to some published research on this problem, if any has as yet been published, particularly with reference to the following suggestion, which I would think must have occurred early to researchers on the dating problem.

According to the Science News article, the former presumed accuracy of the carbon 14 method was based on the assumption that the decay rate has been constant. That assumption is now questioned, and explanations are being sought to correct the discrepancies and thus restore utility and reliability to carbon 14 dating. My query relates to another assumption, not mentioned in the article, which necessarily underlies the indictment of carbon 14 accuracy. That assumption concerns the accuracy of the calendar. Tree rings do not lie; they credibly record growing seasons, which we interpret as years, but the tree rings are silent with respect to the length of those years. Similarly with king lists; the stones and the clay tablets make no assertion that the number of years the king reigned each consisted of $365\frac{1}{4}$ days of 24 hours each. We supply that assumption, based on the years which we know.

Carbon 14 atoms make no assertion; we apply our present known year to a decay rate to yield arithmetically a certain number of years. A constant rate is not disproved if the calendar can be questioned.

Readily available information on ancient calendars in standard reference works indicates at least some serious question as to the length of the year in ancient times. Prior to Numa's calendar, there are references to a possible 360-day year and to a possible 10-month year. If one assumed a 10-month year for the approximately 4,000 year period

prior to Numa which carbon 14 encompasses, one has a possible explanation for the discrepancy.

I realize that problems in science, or in less demanding fields for that matter, are rarely if ever so pat. However, there is a great deal of information available from ancient inscriptions and calendars in all of the known ancient civilizations which have been studied for many years and which relates to the calendar query. I would presume that the matter has been explored far beyond the superficial level that I have attempted. However, there did seem to be a possibility that, in the complexity of modern science, experts on ancient calendars might not have been consulted in connection with the carbon 14 discrepancy. It is only to propose this possibility that I am taking the liberty of imposing on your time.

Sincerely yours,

Benjamin R. Moser

Benjamin R. Moser

RADIOLOGICAL DATING LABORATORY

PHYSICS DEPARTMENT
THE NORWEGIAN INSTITUTE OF TECHNOLOGY
TRONDHEIM - NORWAY

DATE 11. June 1976

OUR REF. RN/Aa

YOUR LETTER May 25. 1976

YOUR REF. EKR:LF

Dr. Elizabeth Ralph
Department of Physics
University of Pennsylvania
Philadelphia 19174
USA

Dear Dr. Ralph,

Many thanks for your letter of May 25.
I am looking forward to the conference, and also to my
visit in Philadelphia. I hope to arrive on Wednesday
afternoon July 7, and will leave on Saturday, July 10.

If you can make a hotel reservation (not too
expensive) for the 3 days, I should be most thankful.

Sincerely yours,


Reidar Nydal

International Hse EV 7-5125
#15
→ #15 key
3701 Chestnut
in advance

RADIOLOGICAL DATING LABORATORY

PHYSICS DEPARTMENT
THE NORWEGIAN INSTITUTE OF TECHNOLOGY
TRONDHEIM - NORWAY

DATE May 6, 1976

OUR REF. RN/Aa

YOUR LETTER

YOUR REF.

Dr. Elisabeth K. Ralph
Department of Physics
University of Pennsylvania
Philadelphia, Pennsylvania 19174
USA

Dear Dr. Ralph,

Our conference in Trondheim was cancelled when I heard about the plan of Berger and Suess. At the present time I make preparations to go to the ^{14}C conference in Los Angeles and San Diego.

I have not visited your laboratory earlier, and I wonder if this could be possible either before or after the conference. I hope that such a visit could fit into my round trip ticket, I hope in any case to see you in Los Angeles.

Sincerely yours,


Reidar Nydal

May 25, 1976

Dr. Reidar Nydal
Radiological Dating Laboratory
Physics Department
The Norwegian Institute of Technology
Trondheim, Norway

Dear Dr. Nydal:

That is good news that you would like to visit our laboratory. It would suit us better if you come after the conference, but this is not essential if your travel plans work out better for a visit before the conference.

Dates to avoid are June 11th and July 4th and 5th. On the latter two, there will be Independence Day celebrations and the city will be crowded.

I am looking forward to seeing you. If you would like me to make hotel reservations, please let me know.

With best regards,

Elizabeth K. Ralph

EKR:LF

Tel No. 215-243-8168

September 8, 1977

Dr. Reidar Nydal
Radiological Dating Laboratory
The Norwegian Institute of Technology
7034 Trondheim, Norway

Dear Reidar:

Henry Michael has returned and has said that he enjoyed his visit in your laboratory and especially the opportunity to visit the Museum of Musical Instruments. I just wish that I had been there too.

In regard to the purification of stainless steel storage cylinders, Barbara Lawn has written the enclosed procedure.

Thank you very much for the drawings of your iron guard rings. I am old-fashioned and still prefer to use individual geigers, but we may try to copy yours for one of our counters.

During our three-day Labor Day weekend, two friends and I completed another weeding of the Christmas trees, and we also pruned all of the larger trees to encourage them into better and thicker shapes. I continue to be grateful to you for all of the weeding and cutting that you did.

With best regards,

Elizabeth K. Ralph

EKR:mbp
encl.