

RALPH DEV.

NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

September 28, 1966

Wed.
Oct. 12
10:45-11:00

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

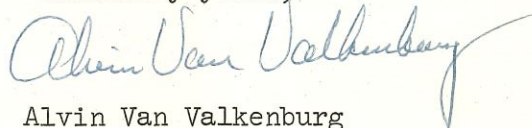
Dear Miss Ralph:

It will be very much appreciated if you can review the enclosed research proposal submitted to the National Science Foundation for possible support.

It will be especially helpful if you can comment on the scientific merit of the proposal, whether the proposed work duplicates other research now in progress, competence and potential for growth of the principal investigator, facilities available to carry out the proposed research, and propriety of the budget. We will be pleased to have you include any additional comments which you believe will contribute toward a proper evaluation of the proposal. Your comments will of course be held confidential.

For your convenience, a rating sheet and franked envelope for the return of the proposal and your evaluation are enclosed. Your early reply will be very helpful to the Foundation.

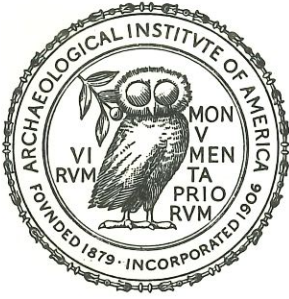
Sincerely yours,



Alvin Van Valkenburg
Program Director
for Geochemistry
Earth Sciences Section

Enclosures

202-343-7739



ARCHAEOLOGY

EDITORIAL OFFICE: DOUGLASS COLLEGE, RUTGERS
NEW BRUNSWICK, N.J. 08903 PHONE: (201) 247-1118

May 25th, 1972

Miss Elizabeth K. Ralph
University Museum
33rd and Spruce Streets
Philadelphia, Pennsylvania 19104

Dear Miss Ralph:

Let me test your memory. We met in Italy--in autumn of 1965--when I was a member of Professor Edward's staff at Torre del Mordillo. My position has changed for I am soon to become editor of ARCHAEOLGY Magazine and I need your help.

Would you be willing to serve on the Editorial Advisory Board of ARCHAEOLGY? The term would be for two years--the length of my own appointment as editor. The duties of the members of the Board include the following: forwarding news, screening articles, advising on what to include and giving suggestions on where to get good articles. This unfortunately sounds much more arduous than it actually is.

The magazine will stay essentially the same. However, there will be some change in editorial policy, one you should know before committing yourself. The Institute is trying to increase the circulation of the magazine and to accomplish this, we feel it must be made more appealing to the layman--more "popular". This word "popular" may be troublesome, so I will explain what basic changes I would make in the magazine.

I believe ARCHAEOLGY should truly cover the archaeology of the world and each issue should contain various types of articles and be well balanced geographically. This does not preclude an occasional special issue although I am not planning any in the immediate future. Secondly, I believe quite emphatically that the articles should be readable. I do not want to "water down" any technical material, but would like to present it in a simple manner. This can be accomplished by careful editorial reworking of articles written by professionals with their ultimate approval and control.

It goes without saying that I would be delighted if you would agree to serve on the Board. As you no doubt know, our coverage of technical articles has not been good, therefore, I am particularly interested in receiving help in this area. I would like not only to publish more



ARCHAEOLOGY

EDITORIAL OFFICE: DOUGLASS COLLEGE, RUTGERS
NEW BRUNSWICK, N.J. 08903 PHONE: (201) 247-1118

TO: Miss Elizabeth K. Ralph

May 25th, 1972

articles dealing with science's contributions to archaeology, but would like to present a report every so often on the newest discoveries in science which pertain to archaeology.

As a member of the Advisory Board you would not need to write any of this material yourself but we would ask you to help us get this material from others. I would be very happy indeed if you would agree to join the Board. Thank you very much.

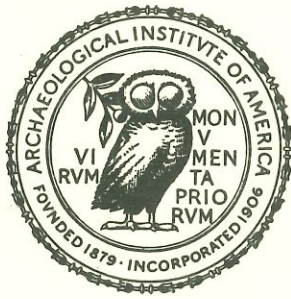
Sincerely yours,

Phyllis Pollak Katz

PPK/md
1 Encl.

(Mrs.) Phyllis Pollak Katz
Assistant Editor

--page two--



ARCHAEOLOGY

EDITORIAL OFFICE: DOUGLASS COLLEGE, RUTGERS
NEW BRUNSWICK, N.J. 08903 PHONE: (201) 247-1118

Notice of Change of Address and Appointment
of New Editor of ARCHAEOLOGY

Beginning July 1st, 1972, the new editor of ARCHAEOLOGY will be:

Mrs. Phyllis Pollak Katz

All communications should be addressed to her at the new editorial office:

260 West Broadway

New York, New York 10013

The new telephone numbers will be:

212-925-7170

and

212-925-7138



ARCHAEOLOGY

EDITORIAL OFFICE: DOUGLASS COLLEGE, RUTGERS
NEW BRUNSWICK, N.J. 08903 PHONE: (201) 247-1118

June 18, 1972

Elizabeth K. Ralph
Museum Applied Science Center
for Archaeology
The University Museum
33rd and Spruce Streets
Phil. , Pa. 19104

Dear Miss Ralph,

I'm delighted you are willing to serve on the Advisory Board. I assume from your letter that you will be in Philadelphia during July. If so, would it be possible for me to come there and meet with you? I am most interested in getting some leads on authors who could write for *ARCHAEOLOGY* on technical subjects and perhaps learn of someone who could write a summary of the advances in science as they apply to *ARCHAEOLOGY*.

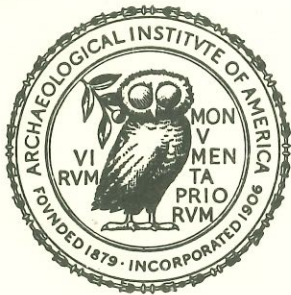
These things could be handled by mail, but if it is not too troublesome to you we could get more done more quickly by actually meeting. I look forward to hearing from you. My very best wishes.

Sincerely yours,

Phyllis

Phyllis Katz
Assistant Editor

P.S. The new address is already in effect. Probably the easiest way to set up a time to meet is by telephone.



ARCHAEOLOGY

EDITORIAL OFFICE: DOUGLASS COLLEGE, RUTGERS
NEW BRUNSWICK, N.J. 08903 PHONE: (201) 247-1118

Notice of Change of Address and Appointment
of New Editor of ARCHAEOLOGY

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Mrs. Phyllis Pollak Katz

All communications should be addressed to her at the new editorial office:

260 West Broadway

New York, New York 10013

The new telephone numbers will be:

212-925-7170

and

212-925-7138

7333

Betsy Whitehead

May 30, 1972

Mrs. Phyllis Polak Katz
Editorial Office for Archaeology
Douglass College, Rutgers
New Brunswick, New Jersey 08903

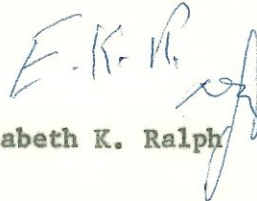
Dear Phyllis:

Yes, I remember you very well inspite of our sybaritic lunches and dinners.

Also, yes, I shall be willing to serve on the Editorial Advisory Board, and am flattered that you think that I can help. The one reservation that I should like to make clear is that I am away frequently on field trips and usually do not have facilities nor time for paperwork while abroad. This year I shall be away in June, possibly September, and more definitely in October, November, January and April. About next summer, I do not know at this time.

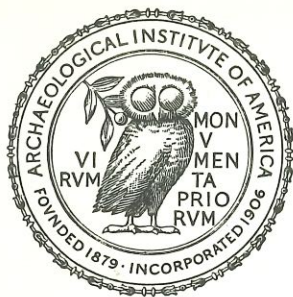
If these absences will not interfere, then I shall be glad to accept. If you think they will, do not hesitate to count me out.

With best regards,



Elizabeth K. Ralph

EKR/ek



ARCHAEOLOGY

260 WEST BROADWAY, NEW YORK, N.Y. 10013 U.S.A.

PHONE: ~~(212) 925-7170 / 925-7130~~

Please note our new telephone
number: (212) 925-7333.

October 19, 1972

Dr. Elizabeth K. Ralph
University Museum
33rd & Spruce Streets
Philadelphia, Pennsylvania 19104

Dear Dr. Ralph:

One of the privileges of being on the Editorial Advisory Board of ARCHAEOLOGY is receiving three copies of the magazine. I am arranging to have the October issue sent to you under separate cover.

These extra magazines should help you in describing the format to any prospective authors or interesting people in the magazine in general. If you do not want to have these extra copies sent to you regularly, please let me know.

I would be interested in any comments, good or bad, you have to make about the October issue. My very best wishes.

Sincerely yours,

Phyllis Katz

Phyllis Katz
Editor

PK/bf

October 17th, 1973

Mrs. Phyllis Katz, Editor
Archaeology
260 West Broadway
New York, N.Y. 10013

Dear Phyllis,

This article by Ehlers seems to be O.K. I have written a few comments on the manuscript.

It seems to me that that I have been of very little help to Archaeology.

With best regards,

Elizabeth K. Ralph



ARCHAEOLOGY

260 WEST BROADWAY, NEW YORK, N.Y. 10013 U.S.A.

PHONE: (212) 925-7170 / 925-7138 925-7333

October 10, 1973

Dr. Elizabeth Ralph
University Museum
33rd and Spruce Streets
Philadelphia, Pa. 19104

Dear Beth:

Here is a copy of an article which I think would be good for publication in ARCHAEOLOGY. I'd like very much to hear your opinion of it.

Dr. Rainey's article should appear in the January issue of ARCHAEOLOGY. Thank you for getting it for us.

We are very appreciative of all the help you have given us.

My very best wishes.

Sincerely yours,

Phyllis Katz

Phyllis Katz (Mrs.)
Editor

encl:sk.

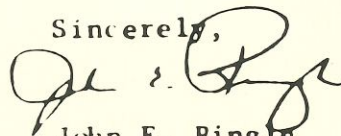
SCIENCE

1515 MASSACHUSETTS AVENUE, NW, WASHINGTON, D. C. 20005

20 August 1974

Thank you for your helpful comments
about the paper we recently sent to you.
Your cooperation is much appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Ringle". The signature is written in a cursive style with a large initial "J".

John E. Ringle
Assistant Editor

**1973 Anniversaries:
125 Years - AAAS
90 Years - SCIENCE**

Dr. E. R. Ralph
Museum of Applied Science
Center for Archaeology
University Museum
Philadelphia, Pa. 19174



30 July 1974

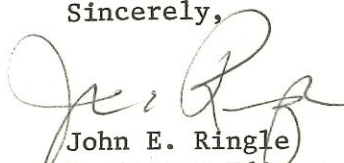
Dr. E. K. Ralph
Museum of Applied Science
Center for Archaeology
University Museum
33rd & Spruce Sts.
Philadelphia, Pennsylvania 19174

Dear Dr. Ralph:

Recently you were kind enough to referee an earlier draft of the enclosed paper by Drs. K. M. Creer and J. S. Kopper on "Paleomagnetic Dating of Cave Paintings in Tito Bustillo Cave, Asturias, Spain". Will you please let me know if the substance of your criticism has now been met?

Also enclosed is a copy of the author's letter of transmittal, a new set of referee forms and a copy of your own earlier comments.

Sincerely,



John E. Ringle
Assistant Editor

JER/rls

Enclosures

SCIENCE

Author **CREER, K.M. & KOPPER, J.S.**

Title **Paleomagnetic Dating of Cave Paintings in Tito Bustillo Cave, Asturias, Spain**

Comments:

This paper seems to be very much improved. Frankly, I cannot see a clear correlation of A, B, and C (Fig. 2) with Fig. 1, but I may be blind.

At least, the dating of this cave by means of this correlation is a new idea, and I think that it would be of interest to the readers of Science.

(Continue on additional sheet if necessary)

Overall Evaluation

- Excellent, merits rapid publication
- Publish if space is available
- Belongs in a specialty journal
- Should not be published anywhere

If you recommend publication in Science, please check one or more of the following:

- Opens a new and significant area of research
- In an established field, rates in the upper tenth with respect to significance
- Has broad appeal to non-specialists
- Is important to specialists in three or more disciplines, namely

Confidential Comments:

Elizabeth K. Ralph

August 1, 1974

Advisor's Name

Date



ARCHAEOLOGY

260 WEST BROADWAY, NEW YORK, N.Y. 10013 U.S.A.

PHONE: (212) 925-7333

February 21, 1975

Dr. Elizabeth K. Ralph
University Museum
33rd and Spruce Streets
Philadelphia, PA 19104

Dear Beth:

Enclosed is another article by Professor Ernest G. Ehlers. I think it is quite suitable for publication in ARCHAEOLOGY and I would be interested in hearing your opinion.

If you can make any suggestions as to other people to contact for our technical articles, I would appreciate it very much. My very best wishes as usual.

Sincerely yours,

Phyllis Pollak Katz

Phyllis Pollak Katz (Mrs.)

Editor

PPK:jgh

February 26, 1975

Mrs. Phyllis Katz
Editor, Archaeology
260 West Broadway
New York, N.Y. 10013

Dear Phyllis:

Thank you for your letter of February 21st. I am sorry to say that I do not agree with you about Professor Ernest G. Ehlers' article.

Better explanations of the technique of X-ray diffraction can be found in the following:

- 1) Zussman, J., Physical Methods in Determinative Mineralogy (Academic Press, London and New York, 1967) pp. 261-334.
- 2) Jenkins, R. and DeVries, J., Practical X-Ray Spectrometry, (Springer-Verlag, N.Y. Inc., 2nd Ed. 1973) 189p.
- 3) Kaelble, E.F., Handbook of X-Rays, For Diffraction, Emission, Absorption, and Microscopy (McGraw-Hill, 1967)
- 4) Many others.

If you really want a condensation for Archaeology, then Ehlers should make it clear in the beginning that two types of information may be obtained with the technique of X-ray diffraction - namely,

- 1) Determination of the crystal lattice structure, and arrangement of atoms of atoms.
- 2) Determination of the compounds, but not atoms.

As for his applications in the end of the article, they may be all right, but I wish that he had spelled Gettens correctly.

If you want a reviewer for technical articles from here, I suggest my colleague, Miss Kathleen Ryan. Her formal background is in Archaeology, but since she is in charge of our Information Center, she has been exposed to more recent technical articles than I have.

With best regards,

Elizabeth K. Ralph

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19174

The University Press

3933 WALNUT STREET T8

November 12, 1975

Dr. Elizabeth Ralph
Physics Department
2E5 Rittenhouse Lab / R1

Dr. Ralph:

Horse sense and expertise are evident in your evaluation of
RADIOCARBON. We are following your advice. Many thanks.

Cordially yours,

A handwritten signature in cursive script that reads "Robert Erwin". The signature is written in dark ink and is positioned below the typed name.

Robert Erwin
Director

RE:gl

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19104

The College

DEPARTMENT OF PHYSICS

November 11, 1975

Dr. Robert Erwin, Director
The University Press
3933 Walnut Street/T8

Dear Dr. Erwin:

Re: Radiocarbon: Calibration & Prehistory edited by Trevor Watkins

This is a good book, but it is written entirely by "Britishers", and I feel that it should be published only in the British Isles. This is not to say that due credit has not been given to workers and authors in the U.S.A. and other countries, but to be published here, it should contain a few articles by leaders such as W.F. Libby, H. Suess, P. Damon, and perhaps University of Pennsylvania as well as those in other countries -- many of whom have had much more experience than the authors of these chapters.

Several of the authors have a lack of understanding of the fact that the world-wide mixing rate of atmospheric C^{14} is rapid (or the order of two to three years), and have, therefore, made misleading statements. Since the mixing rate is rapid, the results of the tree-ring-dated sequoias and bristlecone pines from California can be applied to samples throughout the world. It is a good plan to develop independent tree-ring chronologies from the "Old World", but it is not essential for this reason.

Several authors have mentioned that for comparison of series of C^{14} dates, there is no need for calibration. This is not true since the calibration curves contain short-term oscillations as well as the long-term trend of deviations. The short-term "wiggles" cause ambiguities which would not be detected by comparison of uncorrected radiocarbon dates.

The book contains many good points and features as well as a few minor errors. I have jotted down some of these if you would like to have a review in greater detail. If so, please return the page proof which I have enclosed.

Sincerely yours,

EKR/jm

Elizabeth K. Ralph

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19174

The University Press

3933 WALNUT STREET T8

October 23, 1975

Dr. Elizabeth K. Ralph
Box 357
Woosamonsa Road
Pennington, New Jersey 08534

Dr. Ralph:

Edinburgh University Press has offered us North American rights to a little book they are publishing called **RADIOCARBON: CALIBRATION AND PREHISTORY**. The book, edited by Trevor Watkins, contains papers presented at a seminar in Edinburgh last year. The Table of Contents is enclosed.

Because of the chance to share Edinburgh's printing cost and acquire only a modest number of copies, it might be feasible in some respects for us to become the U.S. publisher.

The important questions, however, can be answered only by a person with your knowledge of the subject, of the literature, and of current concerns in the field. One wants an authoritative judgment, for example, as to whether the papers are sound and up-to-date. Even if so, are they compelling enough to induce prehistorians and archaeologists to fork out \$10 for the book?

Evaluation of the work by you would be a great help. Say the word, and we will send a set of page proofs to your home or office.

Yours truly,



Robert Erwin
Director

6261

RE:gl
enc.

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19174

The University Press

3933 WALNUT STREET T8

October 27, 1975

Dr. Elizabeth Ralph
Physics Department
2E5 David Rittenhouse Lab / R1

Dr. Ralph:

We are delighted to have your advice on the merit (or lack of merit) of RADIOCARBON, edited by Trevor Watkins. Here are page proofs of the book.

In my previous letter I raised two questions. Are the papers sound and up-to-date? Are they important enough to induce archaeologists and prehistorians to purchase the book?

When you have reached a verdict, please return the proofs (including the Table of Contents).

We look forward to hearing from you.

Yours truly,



Robert Erwin
Director

6261

RE:gl
encs.

Fleming - p.101

p.101 ?

102 - old 1/2-life again

should reach agreement - good!

103 - no need for calib. ~ 5K B.C.

104 "apparent increased imprecision of a calibrated chronology" - emphasized

105-etc. - discussions of archaeo-anthros. problems

106 - not pertinent to calibration.

*107 cultural diffusion, etc.

108 - last sentence - good point!

Appendix I - McKerrell

109 - MASCA - no estimate of overall reliability ?

110 - 114 "Comparative data"

No significant diff. bet. MASCA & McKerrell (50-yr. av.

Egyptian tends to be younger - see refs.

116 - 122 Tables - duplication of ours at 10-yr intervals

123 - C14 vs. Egyptian - where is the "curve" he used?

Appendix II - Harkness

128 "is" = are - good! - types of samples, etc.

Appendix III - Watkins & Harkness

p.135 - O.K. - but not complete (17 only),
~~not alphabetical,~~ but explained.

Refs. - good & a up-to-date

Main erroneous pts. in several articles
"Lack" of need for calibration.
No awareness of rapid mixing rates.

- P.
- 58 "outwith" - 2nd usage
- 59 - needs of tree branches - not the same
- 60 - See Henry's summary - % fit -
McKerrell has picked out misfits.
- 61 - Helladic & Minoan O.K.
- 63 - 31 out of 32 - older than T-R - Egyptian mostly
~ 2000 B.C. [See T-R curve]
- 64 - Clark & Bentzen used wrong "Suess" curve,
someone's PhD thesis
- 65 - again - uncorrected C¹⁴ dates for comparison
[See Figs. 16-18]
- 68 data suggests (top of page)

p.70 50-yr. avg - bad at 2K B.C. - summary
Fig. 2 - There is no "0"

10/28/75

1

P.1 Intro - wording awkward esp. "to"

2 - lack of understanding of world-wide mixing

3 - data are
to hand (at)

* MASCA favored

4 active on (in)

Burleigh - ch. mostly O.K.

6 Nearly all bristlecones

7 1st # - misstatement - wood is available but not T-R

~~Refs. - M & R, 1972 - out of date~~

* Ralph et al (73) - O.K.

X 8 - Not true - radiocarbon yrs only - compared - N.G.

Fletcher

15 - estimated loss of Oak sapwood - uncertain

pp. 15 - 19 examples of portraits, etc. - detailed

20 - 3 cycles - 10K, 200, 11 yrs. - no proof

Oaks more accurate than P. arist. ?

21 - diffusion theory in P. a. tested w. xs C^{14} - none

23 - Suess (1965) 1st - see our Date List VII

24 - MASCA & Damon - no better than Suess -
why not with twice as many dates ?

Growth allowance - good point

26-27 date several rather than single samples - good point

27 Table 5 - should state who's correction.

Ottaways

28 - MASCA not mentioned

29 - Punched their own cards - 15 vols. Radiocarbon

30-31 - Figs. 2 & 3 ~~4~~ should be 10^{+3} not 10^{-3}

" 4 - " " 10^2 " 10^{-3} - disturbances do
not corr. w. kinks (ours)

p. 32 Fig. 5 - Corr. w, MASCA - agreement good?

how did polynom become a st. line?

33 - Climatic effects - dominant?

35 Fig. 7 $\times 10^{-3} \rightarrow \times 10^{+3}$

36 ← criticism of McKerrell may be a good pt.

Summary - possibly a futile exercise, but interesting.

Snodgrass praise for U. of Pa.

39 - Muhly quote - needs to be educated
no interest in C¹⁴

41 - Table 1. - B.C. not specified, old 1/2-life

EKR [Check C-14 dates]

" 42 Lawn, quoted ←

43 - Thera - P-1401, 1456 B.C. - corrected?

[not aware of other dates]

44 - Criticism of Suess curve for Thera - good pt.

Comparison of Wesssex & Aegean?

45 " " Crete vs. Stonehenge -

Do not attempt to calibrate comparisons - wrong again

All wrong re basic causes - no knowledge of
mixing rate.

Reasonably good ^{short} summary of Aegean picture.

McKerrell

47 - Other 300 recently det'd (See Ralph, 1965)

Ref. R, M, & H not mentioned

49 Dendro-age = f(C¹⁴ age) - wrong way

His notion of functions - crazy

50 - Mention of Dendro as variable again

53 - MASCA, 1973 - Han et al. - misquoted

54 - "this" data

SCIENCE

1515 MASSACHUSETTS AVENUE, NW, WASHINGTON, D. C. 20005

23 December 1975

Thank you for your helpful comments
about the paper we recently sent to you.
Your cooperation is much appreciated.

Sincerely,

John E. Ringle

John E. Ringle
Assistant Editor

Dr. E. K. Ralph
Museum of Applied Science
Center for Archeology
University Museum
33rd and Spruce Streets
Philadelphia, Pennsylvania 19174



- (4) If the laboratory (or laboratories) felt it necessary to intersperse the dating of the bristoecones with the samples from Achilleion, it is an indication that they were not sure of the calibration of their counters for any length of time. This pitfall can be avoided by careful repeated checks of a standard sample over long periods of time, even ten years.

The conclusions in regard to the ages of the levels at Achilleion and Anza (if converted to the 5730 half-life) would be of great interest to archaeologists and anthropologists concerned with more precise dating of stages of the Neolithic Period. Regretably, the paper in its present form does not achieve the best accuracy which, in my mind, would be possible by employing the criteria enumerated under (1) and (3).

Sincerely yours,

Elizabeth K. Ralph

P.S. I entrust you to keep these comments in confidence. The three authors are friendly colleagues and frequently review our grant proposals. I expected them to write a better paper.

Table I

Conventional (Libby) radiocarbon ages of three samples from Achilleion (Table II) and of six tree-ring-dated bristlecone pine (BCP) wood samples listed in sequence of the measurements.

LJ No.	Sample	Archaeological field no. or tree-ring age B.C.	Conventional Radio-carbon age BP and one sigma error
			<u>5730 half-life</u>
3306	BCP Wood	6030-6020	5389 \pm 55
3308	BCP Wood	5960-5950	5217 \pm 100
3325	Charcoal	B-5 L-21	5556 \pm 52
3310	BCP Wood	5990-5980	5388 \pm 52
3328	Charcoal	B-1 L-19	5576 \pm 52
3311	BCP Wood	6100-6000	5460 \pm 53
3312	BCP Wood	5990-5980	5421 \pm 52
3329	Charcoal	B-1 L-26	5639 \pm 52
3314	BCP Wood	6050-6040	5366 \pm 51
3313	BCP Wood	6040 B.C.	5315 \pm 51
Average of seven BCP Wood Samples 6000			7100 \pm 21
Average of LJ 3325 and LJ 3328 (II a2) 6211			7297 \pm 36

Table I

Conventional (Libby) radiocarbon ages of three samples from Achilleion (Table II) and of six tree-ring-dated bristlecone pine (BCP) wood samples listed in sequence of the measurements.

LJ No.	Sample	Archaeological field no. or tree-ring age B.C.	Conventional Radiocarbon age BP and one sigma error	
				<u>5730</u> B.C.
3306	BCP Wood	6030 - 6020	7125 ± 55 5389 ✓✓	-636
3308	BCP Wood	5960 - 5950	6958 ± 100 5217 ✓	-738
P-2005		5960	5489 ± 79	-471
3325	Charcoal	B-5 L-21	7287 ± 52 5556 ✓	-380
P-2004		5980	5600 ± 79	-597
3310	BCP Wood	5990 - 5980	7124 ± 52 5388 ✓	-597
3328	Charcoal	B-1 L-19	7307 ± 52 5576 ✓	-491
P-2011		6000	5509 ± 68	-545
3311	BCP Wood	6100 - 6000	7194 ± 53 5460 ✓	-541
P-2002		6020	5479 ± 78	-564
3312	"	5990 - 5980	7156 ± 52 5421 ✓	-564
3329	Charcoal	B-1 L-26	7368 ± 52 5639 ✓	
3314	BCP Wood	6050 - 6040	7103 ± 51 5366 ✓	-679
P-2010		6040	5613 ± 67	-427
3313	"	1950 - 1960 6040 B.C.	7053 ± 51 5315 ✓	-725
Average of seven BCP Wood Samples		6000	7100 ± 21 5363	<u>5538</u>
Average of LJ 3325 and LJ 3328 (II a2)		6211	7297 ± 36 5566	

do not type

wrong

rec'd 12/2/75

SCIENCE

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
1515 MASSACHUSETTS AVENUE, NW, WASHINGTON, D.C. 20005 • 202-462-4440

INSTRUCTIONS FOR REVIEWERS - REPORTS

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If you believe that you cannot judge a given paper impartially, please return it immediately to the editorial office with this explanation.

Criteria for judgment. We want to publish highly significant, technically sound papers. A paper should have news value for the scientific community, unusual interest to the specialist, or broad interest as an interdisciplinary problem.

Your recommendation. Because of space limitations, we can accept less than one-fifth of the papers submitted. Most of the papers meet the usual standards for specific experimentation. Hence we must be particularly selective. Since our rejection rate must be held at about 80%, many publishable papers must be declined. It is best if you do not make any specific statement about the acceptability of a paper in your comments for transmission to the author. To aid us in our selection, please indicate your overall evaluation in the appropriate space below.

- Excellent and exciting, merits rapid publication.
- Above average, publish if space is available.
- Belongs in a more specialized journal.
- Mediocre or poor, should not be published in Science.

If you recommend publication in Science, please check one or more of the following:

Opens a new and significant area of research.

In an established field, rates in the upper: 1% 5% 10% 20% with respect to significance. Evaluation based on a comparison with papers in first-rate primary journals, namely:

Provides important information of broad interest to the scientific community.

Is important to specialists in three or more disciplines, namely:

_____ 1 2 3 _____ 1 2 3 _____ 1 2 3

Indicate the breadth of interest within the discipline by circling the appropriate number. 1 = Nearly all workers will be interested. 2 = 25 to 75 percent will be interested. 3 = Just a few will be interested.

Organization and writing. Our audience consists of scientists in all fields, and all of them are busy. Papers should be organized so that the news comes first, supporting details second. They should be free of specialized jargon, shorthand expressions, and trivial details.

Significance. Has the author made the significance of his work obvious or is specialized knowledge required to understand the significance? One of the most useful functions a reviewer can serve is to suggest effective means of highlighting important ideas.

Report form. A report form is enclosed. Comments to be sent to the author should appear above the perforation; advice and confidential remarks addressed to the editor should appear below the perforation. Please retain the yellow copy for your files.

IT WOULD BE HELPFUL IF YOU CAN RETURN THE PAPER, ALONG WITH YOUR REVIEW AND THIS FORM. WITHIN 1 WEEK. IF YOU ARE UNABLE TO COMPLETE YOUR REVIEW IN THIS TIME, PLEASE TELEPHONE COLLECT. AREA CODE 202 467-4445

NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

February 20, 1976

Dr. Elizabeth K. Ralph
Department of Geology
University of Pennsylvania
Philadelphia, Pennsylvania 19174

Dear Dr. Ralph:

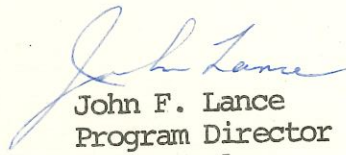
It would be very much appreciated if you could review the enclosed research proposal submitted to the National Science Foundation for possible support. As you know, your advice and that of your colleagues in the scientific community is most helpful to us in determining which research requests should be supported. Accordingly, we ask your professional judgment in evaluating the enclosed proposal.

Your opinion of the scientific merit of the proposal is especially desired. However, we would be pleased to have you include any additional comments which you believe would contribute toward a proper evaluation of the proposal.

Your participation as a reviewer of this particular proposal is regarded as confidential by the Foundation. However, to acknowledge our debt to reviewers and to inform the public, the Foundation will publish annually a list of the names and addresses of all persons who have assisted us by providing reviews. There will be no identification with specific proposals. Verbatim copies of reviews, ratings and associated correspondence will be sent, on request, to the principal investigator/project director. These copies will be edited to remove your name and institutional identification and to avoid compromising the privacy of third parties whom you might mention, but may not be retyped or otherwise changed to remove other information which might reveal your identity. Your comments and identity, of course, will be available to Foundation staff, including consultants, involved in evaluating and processing the proposal (and to the Advisory Panel for Earth Sciences). Subject to Foundation policies, and applicable laws, including the Freedom of Information Act, 5 USC 552, your participation as a reviewer and the content of your review will be given maximum protection from disclosure.

Please treat the proposal as a privileged document and with extreme care. No material from it should be copied, quoted, or otherwise used without permission of the author; nor should the author's name be revealed in connection with this proposal. If you believe that a colleague can make a substantive contribution to the review, please consult us before disclosing either the contents of the proposal or the applicant's name. When you have completed the review, or if you are unable to do it, please return the proposal in the enclosed franked envelope.

Sincerely yours,



John F. Lance
Program Director
for Geology
Division of Earth Sciences

Enclosures

The proposal
"sat" in Geology
for several days.

NATIONAL SCIENCE FOUNDATION

PROPOSAL RATING SHEET

Reviewer: Dr. Elizabeth K. Ralph
Department of ~~Geology~~ **Physics**
University of Pennsylvania

Proposal No.: 7614782
Investigator: Ferguson
Institution: Univ. of Arizona
Please return to: Geology
If possible by: 3/5/76

Comments (Continue on additional sheet if necessary)

This is an excellent proposal and as Ferguson has explained, there are critical and diverse needs for the continuation and expansion of the tree-ring dating of bristlecone pines, as well as the collection of more cores and cross sections. Also, as mentioned, the research programs in 3 laboratories (Arizona, La Jolla, and Pennsylvania) are dependent upon this work at the Laboratory of Tree-Ring Research, as well as the numerous new and auxiliary experiments which have been planned.

The minor criticisms are as follows:

- 1) Ferguson has presented the most "recent" 860 year extension from 7393 B.P. to 8253 B.P. as a fait accompli and yet in private correspondence or by telephone, he says that it is not pinpointed to the exact year, and he has not allowed us to release the ¹⁴C dates of the older wood even though we obtained them 3 years ago. I think that closer collaboration with the three main ¹⁴C dating laboratories would enhance the value of the project.
- 2) The explanations on page 14 and others would be much clearer if illustrated with a plot of ¹⁴C - dendro-dates.
- 3) In references on page 22 and in the text, he has quoted U. of Pa. Date List XII (1969) instead of our more recent and comprehensive Date List XVI (1974).

In summary, the budget is not unduly large and there is no doubt about the competence of the principal investigator. I recommend strongly that this proposal be accepted.

OVERALL RATING

- EXCELLENT
- VERY GOOD
- GOOD
- FAIR
- POOR

NSF Form 173, Sept 1975

Signature of Reviewer:

Other suggested reviewers (optional):

"Verbatim but anonymous copies of reviews will be sent only to the principal investigator/project director on request. Subject to this NSF policy and the Freedom of Information Act, 5 USC 552, the Foundation will give reviewers comments maximum protection from disclosure."

October 2, 1976

Dr. G. Douglas Vaughan
University of California Press
2223 Fulton Street
Berkeley, California 94720

Dear Dr. Vaughan:

In regard to the proposed book entitled Science and Technology in Ancient Egypt, I am writing to say that I know Dr. Zaki Iskander well and have great respect for his scientific ability. I do not happen to know Fred Stross nor anything about him.

I agree that the new book should be a textbook. However, I feel that there is no need for a rehash of Lucas' book. I would prefer to see a completely new approach with new emphases including summaries of recent analyses, dating methods, and so forth.

I hope I have been of some help. Best wishes,

Sincerely yours,

Elizabeth K. Ralph

UNIVERSITY OF CALIFORNIA PRESS

BERKELEY • LOS ANGELES • NEW YORK

2223 Fulton Street
Berkeley, California • 94720

27 September 1976

Dr. E. Ralph
University Museum
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Dear Dr. Ralph:

We are currently considering a proposal to publish a book tentatively titled *SCIENCE AND TECHNOLOGY IN ANCIENT EGYPT*. The project was suggested by Dr. Fred Stross, curatorial adviser to the Lowie Museum of Anthropology and the University Art Museum at the University of California, Berkeley, and Dr. Zaki Iskander, formerly director general of the Services des Antiquités in Egypt, and now Professor of Science and Technology of Ancient Egypt at the American University in Cairo. An outline and prospectus prepared by Dr. Stross is enclosed.

I wonder if you would be willing to comment, however briefly, on any aspects of this project that fall within your range of interests. We would be grateful indeed for any counsel you might offer in confidence on the likely impact and importance of this volume, based on the outline, on your knowledge of the literature, and on your familiarity with the works of the prospective authors. We wonder especially if there is reason to hope that this work might improve upon or supplement Lucas' well-known *ANCIENT EGYPTIAN MATERIALS AND INDUSTRIES*. We would also welcome any thoughts you might volunteer on other advisers we should contact.

Hopefully and with good wishes,

Sincerely yours,



G. Douglas Vaughan

encl



OUTLINE OF PROPOSED BOOK: SCIENCE AND TECHNOLOGY
IN ANCIENT EGYPT.

By Zaki Iskander and Fred Stross.

The purpose of this memorandum is to provide a short description of a book planned by Dr. Zaki Iskander and Fred Stross. The subject of the book is that indicated by its title, and it is to include references to the application of modern scientific methods in documenting the findings described, without, however, describing these methods in detail.

Two alternatives for the structure of the book have been suggested by representatives of the University of California Press: 1) a textbook, 2) a treatise. This has been discussed in a letter from Grant Barnes to Zaki Iskander dated March 18, 1976.

Dr. Iskander, in his reply of April 14, expresses his preference for the former alternative. There are obvious reasons: It will be easier to develop such a book, using as a basis a syllabus Dr. Iskander has written for the courses he is teaching on the subject at present; by its nature it would take less time and effort to write; moreover, Dr. Iskander is familiar with the needs of a large group of potential users of such a book, namely students in his classes and related courses.

During the last decade or two, interest in the sciences and technologies developed by ancient peoples has increased greatly, both on the professional and the lay level. This has been a substantial area in the professional output of the authors. At the same time, the application of the physical sciences to the field of archaeology has provided many new insights and interpretations. Both authors have contributed significantly in what has become a new discipline with a name of its own, viz. Archaeometry. It consequently seems

logical to combine the background and specialties of these two to acknowledge the import of this new field and to provide a base from which students and interested outsiders can develop understanding of its essential features.

Another reason for using the format of a textbook rather than that of a treatise is that there exists an excellent work in the latter category, entitled ANCIENT EGYPTIAN MATERIALS AND INDUSTRIES. Its author, the late Alfred Lucas, was a truly outstanding chemist-egyptologist, director of the Chemical Department of the Egyptian Government and in fact the chemical expert of the Service des Antiquités. The book was published by Edward Arnold in London in 1926, and was last revised in its fourth edition by J.R. Harris in 1962. This book is thoroughly documented, and it describes the various materials, and a number of the manufacturing techniques utilized by the ancient Egyptians. It is not illustrated. It is the classical reference work for scholars in the field. At the same time, it is not written as a textbook for university study, and it is not, to my knowledge, used as such to any significant degree. The date of its latest revision also precludes a discussion of the more recent developments mentioned above. This is an additional factor in our thinking about making a new contribution in this field.

The following is an outline of the contents of the proposed book. It is understood, of course, that this is a preliminary draft, and that substantial alterations may have to be made in it. The following chapters are being considered at present.

- I. Development of civilization in ancient Egypt.
- II. Early time reckoning.
- III. Metals and alloys.
- IV. Building and building materials.
- V. Pottery.
- VI. Faience and glazes.
- VII. Glasses.
- VIII. Painting techniques and materials.
- IX. Cosmetics and incense.
- X. Food and drink.
- XI. Adhesives
- XII. Textiles and papyrus.
- XIII. Oils, fats and waxes.
- XIV. Mummification.
- XV. Transportation of heavy objects.

* * * * *

We plan to present the following material in these chapters:

I. Development of civilization in ancient Egypt.

Earliest records of man's presence, palaeolithic industries in the Nile Valley, the Kharga Oasis; microlithic assemblages and Capsian culture. Flint, Basalt and other rocks, shell, bone used for early artifacts. Badarian, Naqada I, and Naqada II cultures. Great developments in cultural periods immediately preceding dynastic times. Increasingly sophisticated treatment of hard and soft stones, varieties and sequences of pottery (Petrie etc.). Beginnings of metallurgy; copper, silver, gold. Increasing complexity of burials and housing. Evidence of religious and artistic activities and specializations.

5 - 10 illustrations.

II. Early time reckoning.

Astronomical observations, differentiation between planets and stars; methods of telling time by the stars. Calendar, Water clock. Sothic cycle.

3 illustrations.

III. Metals and alloys.

Copper objects from early predynastic times - systematic production of copper for manufacture of tools and weapons in late predynastic times. Bronze and brass introduced relatively late, probably from abroad. Use of copper and copper alloy tools in combination

with lithic tools and materials in producing statuary and other stone artifacts. Early mining of quartz-associated and alluvial gold, problems with water supply; electrum. Domestic and foreign-influenced development of techniques of working gold and its alloys, lost wax, cloisonné. Silver, niello. Iron metallurgy relatively late; pre-New Kingdom iron probably of meteoric origin. Predynastic and later uses of lead. Gold plating, gold foil, coloring. 8 illustrations.

IV. Building and building materials.

Reeds and twigs daubed with clay, transition to brick. Brick: mostly sundried until Roman times; predynastic and early dynastic use (Naqada, Abydos). Stone: limestone used in First Dynasty (Tomb of Hemaka), then in mastabas, pyramids. Granite, sandstone, later increasingly also alabaster, basalt, quartzite. Location of quarries, methods of quarrying. Consideration of quality of rock, shipping of preferred rock where local quality inadequate. 4 illustrations.

V. Pottery.

Early pottery in Egypt; features and styles used in relative dating. Early use of wheel - introduction from abroad? Temper. Decoration: incised and painted. 8 illustrations.

VI. Faience and glazes.

Egyptian faience (a misnomer) is a glazed quartz frit, very much used since predynastic times. Used as substitute for semi-precious stones for beads, amulets and inlay, also for larger objects, bowls, statuettes, tiles. Techniques of manufacture and variants. Nature and use of glazes, how related to Egyptian faience. Glazed pottery a late development - nature of various types of glazes. 5 illustrations.

VII. Glasses.

Difference between glass and Egyptian faience. Composition can be very complex. Early (predynastic) examples. Widespread use in middle

of second millenium, but declines afterward until Romans bring new techniques (glass blowing) and resurgence. Different types of glass, mosaic and transparent glass. Volcanic glass (obsidian).

Research on ancient glass-making techniques at Corning.

4 - 5 illustrations.

VIII. Painting techniques and materials.

Predynastic examples of painting on pottery, textiles, leather, gesso. Protodynastic and early dynastic tomb paintings finely executed, elaborate. Variety of pigments, largely of mineral origin, hence the fresh appearance of paint colors. Paint vehicles and grounds. Varnishes. Writing inks and pigments.

5 illustrations.

IX. Cosmetics.

Evidence of use of cosmetics in earliest burials known, up to those of today. Medical papyri give prescriptions for removing unwanted hair, preventing wrinkles, improving the skin, removing body odor. Eye paints: mainly malachite, lead, manganese and iron compounds, also soot, sometimes impregnated with aromatic essences or resins. Face, paints, lip paints (Turin erotic papyrus). Anointing oils. Cosmetics used for hygienic reasons as well as for reasons of vanity. Perfumes; manufacturing methods. Incense.

5 illustrations.

X. Food and drink.

Beer mentioned in early dynastic texts; relation between beer- and bread making; the two processes often shown together in murals. Cheese - analysis of remnants. Wine and vintage scenes from early dynastic times. Royal vineyards, references to wine and wine trade in antiquity. Types of wine - palm-, date, pomegranate wines; sour-grape juice (omphakion).

4 illustrations.

XI. Adhesives.

Different adhesives for different materials. Glue from animal bones, cartilage, etc. used very early for many purposes. Gum (acacia) and resins widely used for repairs and joining of stone, wood, and

faience articles; use in painting, in mummification, etc. Clay, gypsum used for mortar. 3 illustrations.

XII. Textiles and papyrus.

Basket making first step toward weaving. Woven fabrics as early as neolithic period. Various stages of spinning and weaving shown on tomb murals and tomb models, very detailed and clear representations. Linen most widely used textile; wool considered ceremonially unclean (Herodotus), not used in religious rituals, e.g. burials, hence few examples extant. Introduction of cotton quite late, perhaps 3000 years after Indus Valley cotton. Silk from China via Persia, probably quite late (Ptolemaic period). Hemp, grass, and reed fibers also used (quite early). Dyeing, including use of mordants, many tints, developed early. 4 - 5 illustrations.

XIII. Oils, fats, and waxes.

Used mostly for food, cosmetic and medicinal purposes. Identification mostly from Greek texts, Egyptian names of individual oils not well known. Analysis of remnants of fatty material gives limited results. Beeswax probably only wax used in ancient Egypt - used largely in making art objects and as vehicle in caustic process of painting. 2 illustrations.

XIV. Mummification.

Natural preservation of bodies in earliest times by shallow burial in hot desert sand. Mummification introduced during Old Kingdom. Desiccation by chemical means the key feature in mummification process. Various procedures, costs. Use of natron; other reagents, including resins, spices, ointments, bitumen (very late), honey (?). 4 - 5 illustrations.

XV. Transportation of heavy objects.

Production of huge artifacts characteristic for ancient Egyptian culture, many transported from source of raw materials to location

of use; land and water transport. Moving in finished or unfinished state. Building blocks, e.g. for pyramids; statuary, obelisks. Representations of heavy hauling in mural reliefs and paintings, as early as Old Kingdom. Colossi of Memnon. 3 illustrations.

* * * * *

The number of illustrations suggested is a very rough estimate. An estimate of color to black and white also is difficult at this stage; 50 % of ^{each} ~~which~~ might be a plausible estimate. The black & white would include some graphs, schematic figures and maps.

A short resumé of the background of Dr. Iskander might be in order at this point. Dr. Zaki Iskander, after having obtained his doctorate in chemistry, spent his professional career in the Antiquities Department of Egypt; this Department more recently was organized under the name of Egyptian Antiquities Organizaation. Dr. Iskander recently retired from this body, which has responsibility for the administration of Egyptian museums, regional activities of the Organization, conservation projects such as those involved with Abu Simbel and Philae, and the planning and construction of the Physical Sciences Laboratories of the Organization. At present he is teaching subjects relevant to the topic of the proposed book in five universities and colleges, and is consulting and directing international conservation projects, including those of Philae, Venice, and the Indus Valley. He has written many articles and several books.

* * *

P.S. In addition to the chapters outlined, a chapter on Medicine and Dentistry might be appropriate, especially since recent studies have revealed remarkable examples of dental knowledge in antiquity (gold-wired bridges dating from about four and a half thousand years ago), and recent x-ray studies of mummies have given dramatic results.

NATIONAL SCIENCE FOUNDATION

PROPOSAL RATING SHEET

Reviewer

Miss Elizabeth K. Ralph
University Museum
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Proposal No.: 76-19866-A
Investigator: McGimsey/Wolfman
Institution: University of Arkansas
Please return to:
If possible by:

Comments (Continue on additional sheet if necessary)

As mentioned in this proposal, attempts to do alpha-recoil track dating have been made for about ten years. However, as far as I know, no sustained effort has been made. Therefore, I think that the research proposed would be very worthwhile.

The method does show promise, and the approach of the investigators is realistic. They are aware of the problems and plan to investigate them as well as to proceed with more simplified techniques that might succeed with a minimum of time and expense for routine dating. There is always a need for new and different methods of dating.

One suggestion is that for "bulk" alpha counting, they might try a photomultiplier with a zinc sulfide screen such as we use for thermoluminescent dating. This might give them more sensitivity than cellulose nitrate detectors. As proposed, however, some neutron irradiation experiments to determine the proportions of U^{238} , Th^{232} , etc. will be required.

The authors have written a good brief summary of other dating methods, which demonstrates also their awareness of the problems with all types of dating.

The budget does not seem to be excessive.

I recommend highly that this proposal be approved.

OVERALL RATING

- EXCELLENT
 VERY GOOD
 GOOD
 FAIR
 POOR

NSF Form 173, Jan 1976

Signature of Reviewer:

Elizabeth K. Ralph 4/29/76

Other suggested reviewers (optional):

Verbatim but anonymous copies of reviews will be sent only to the principal investigator/project director on request. Subject to this NSF policy and applicable laws, including the Freedom of Information Act, 5 USC 552, reviewers' comments will be given maximum protection from disclosure.

NATIONAL SCIENCE
FOUNDATION

PROPOSAL RATING SHEET

PROPOSAL NO. ATM-7682591	INSTITUTION Univ. of California, San Diego/La Jolla	PLEASE RETURN BY Nov. 11, 1976
PRINCIPAL INVESTIGATOR Suess, Hans E.	NSF PROGRAM Solar Terrestrial Research	
TITLE Secular Variations of the Atmospheric Carbon-14 Level		
COMMENTS (CONTINUE ON ADDITIONAL SHEET(S) AS NECESSARY)		

It is difficult for me to review this proposal because I am not very familiar with Dr. Suess' work except for some of his publications which I have just read. I have looked at his hand-drawn curve (In: Radiocarbon Variations and Absolute Chronology, Proc. of the Twelfth Nobel Symposium, Uppsala, Sweden 1969) and I am wondering why he did not use statistical and computer analyses before, such as was done by Damon (Dendrochronologic calibration of the radiocarbon time scale. American Antiquity vol. 39, no. 2, 1974) and Clark (A calibration curve for radiocarbon dates. Antiquity vol. XLIX, no. 196, Dec. 1975). Also, I have not been able to find a published list of his dates for bristlecone pines.

It would be fine to extend the bristlecone pine time scale to 10,000 years or more, but it is not clear in the proposal that he or the Tree-Ring Laboratory in Arizona is searching actively for the older wood.

RATING: EXCELLENT VERY GOOD GOOD FAIR POOR

Verbatim but anonymous copies of reviews will be sent only to the principal investigator/project director on request. Subject to this NSF policy and applicable laws, including the Freedom of Information Act, 5 USC 552, reviewers' comments will be given maximum protection from disclosure.

REVIEWER'S NAME (TYPED) Dr. Elizabeth K. Ralph	REVIEWER'S SIGNATURE <i>Elizabeth K. Ralph</i>
---	---

OTHER SUGGESTED REVIEWERS (OPTIONAL)

NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

October 21, 1976

202 - 632 - ~~4198~~
- 4184

Dr. Elizabeth K. Ralph
Department of Geology
University of Pennsylvania
Philadelphia, Pennsylvania 19174

Dear Dr. Ralph:

The National Science Foundation receives many proposals each year for the support of research. Since the Foundation must select only the most worthy proposals for support, it needs the opinions of experts in the field such as yourself. We would appreciate your assistance with the enclosed proposal.

The Foundation receives proposals in confidence and is responsible for protecting the confidentiality of their contents. For this reason, we ask that you refrain from copying, quoting or otherwise using material from this proposal. If you believe that a colleague can make a substantive contribution to the review, please consult me before disclosing either the contents of the proposal or the applicant's name. When you have completed your review or if, for some reason, you find yourself unable to respond to this request, return the proposal in the enclosed franked envelope. If for any reason you will not be able to complete the review by the requested date, please let me know.

Verbatim copies of reviews, ratings, and associated correspondence will be sent to the principal investigator/project director on request. The copies will not contain your name, the name of your institution or names which might constitute an invasion of the privacy of others. Subject to this Foundation policy and applicable laws, including the Freedom of Information Act, 5 USC 552, your participation as a reviewer and the content of your review will be given the maximum protection from disclosure.

The Foundation will publish annually a list of the names and addresses of persons who have reviewed proposals. Individuals will not, however, be identified with specific proposals. In this way the Foundation can publicly acknowledge your service as a reviewer and at the same time protect the confidentiality of your comments.

We realize that your voluntary sharing in these tasks is time consuming and that requests for review can come at inopportune times. The opinions of interested scientists, however, are vital to the continued vigor of this field. Thank you for your cooperation.

Sincerely yours,



Dennis S. Peacock
Program Director for
Solar Terrestrial Research
Atmospheric Research Section

send info

Enclosures

ADVANCES IN CHEMISTRY SERIES

AUTHOR: Robert F. Marschner and Henry T. Wright

X TITLE: Asphalts from Middle Eastern Archaeological Sites

SYMPOSIUM: Sixth ACS Symposium on "Archaeological Chemistry-II"
Aug. 31 and Sept. 1, 1977 in Chicago, Illinois

Reviewer Rating:	Good	Average	Poor
Significance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensiveness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Originality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Reviewer Recommends:

- Publishing without change except for corrections noted on the manuscript.
 Publishing after revision as outlined below.
 Not publishing for reasons stated below.

Reviewer's Comments:

In general, this paper represents an interesting summary and analysis of the uses of bitumens and asphalts in ancient times.

To the chemical reader, there may be confusion among the terms "Mesopotamia", "Middle East," and "Southwest^{Asia}." The explanation for the use of these terms which appears on p. 3 might be more useful in the Introduction.

On page 4, it is mentioned that clays do not generally dissolve in HCl, but we have found that most clays do. It is now known, as mentioned on pages 5 to 7, that chloroform and toluene are better solvents for bitumen than the ones used in earlier analyses, and the authors have done well to make use of the many diverse techniques. However, I should like to see a comparative analysis made with one homogeneous sample. This would also enhance the value of the comparison of Tables III and IV.

Their cautionary note in regard to the application of the V:Ni ratios is good.

Except for these few criticisms, I feel that this is a fine paper, especially, in that it contains good summaries of analyses of materials that are frequently neglected.

Signed: _____

Date: _____



Advances in Chemistry Series

PUBLISHED BY
THE AMERICAN CHEMICAL SOCIETY

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4600

September 23, 1977

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

Dear Dr. Ralph:

The attached paper has been offered for publication in a volume of ADVANCES IN CHEMISTRY based on a symposium as noted on the attached rating sheet. From our study in this office, we find that the subject of this paper is within the editorial scope of ADVANCES IN CHEMISTRY SERIES. We would now like to have your evaluation of the paper.

Papers to be published in the ADVANCES IN CHEMISTRY SERIES are judged by ACS journal standards except that, for the purpose of these volumes, more background and review may be permitted than in the usual journal article. Authors have been told that their papers should be original and that they can be either (1) original reports of research, with data or (2) original reviews that summarize published work on a topic and present the author's own evaluation and analyses.

If the paper is a review, we want to be certain that it is indeed original and not a verbatim repetition of a review that has been published elsewhere. A review should bring a topic up to date and should include the author's evaluation of recent work.

Please mark your ratings and recommendations on the attached sheets, adding any comments that you feel would help the author in his revision or giving reasons why you feel the paper should not be published. Your ratings and comments will be forwarded anonymously. If you prefer to be identified, you may sign the author's copy separately.

If for any reason you cannot complete this evaluation within two weeks, please return it immediately without comment. We would appreciate any recommendations of other reviewers that you feel would be qualified to evaluate the paper.

Sincerely yours,

Mary W. Rakow
Managing Editor

MWR/pmg
Enclosures

National Aeronautics and
Space Administration



Lyndon B. Johnson Space Center
Houston, Texas
77058

Ph. 713-483-2296

Reply to Attn of: SN7

January 26, 1977

Professor E. K. Ralph
Physics Department
DRL/E1
Univ. of Pennsylvania
Philadelphia, PA 19104

rec'd 1/31/77

Dear Dr. Ralph,

Enclosed is the manuscript on thermoluminescence dating by R. J. May which you agreed to review for possible publication in the Journal of Geophysical Research. I am particularly interested in your opinions on the techniques used in this investigation. I would greatly appreciate receiving your review within 2-3 weeks, if possible. Thank you in advance for your efforts.

Sincerely,

Dr. Donald Bogard
Associate Editor, J.G.R.

Enclosure

SN7:DDBogard:ceh:1/26/77

February 8, 1977

Dr. Donald Bogard
Associate Editor, J.G.R.
National Aeronautics and Space
Administration
Lyndon B. Johnson Space Center
Houston, Texas 77058

Dear Dr. Bogard:

Re: JGR Proposal No. 4162; Att'n of SNZ.

The techniques and equipment described in this investigation are suitable and adequate, and they approximate closely those which have been used regularly for TL studies of pottery. In general, the author has demonstrated that TL provides a means for semi-quantitative dating of Hawaiian Alkalic Basalts, but I wonder about three basic aspects.

1) TL Peaks

a) Natural TL

The peaks of the natural-TL (Fig. 2) are not well-defined, and it must have been extremely difficult and uncertain to measure their heights.

b) Artificial TL

The high temperature peak heights (Fig. 3) of the artificial TL were measured 7 minutes after irradiation. As shown in the figure and especially for sample Mol 1e, the induced low temperature peaks have not yet decayed.

With pottery, we have demonstrated that the right-hand tails of these peaks contribute to the high temperature peak heights. If allowed to decay sufficiently, they do not influence the high temperature peaks significantly.

With basalts, this same feature is illustrated in Fig. 4, but with only 3 curves shown (for both 7 minutes and 40 days) and with the y-axis scale differing from Fig. 2 (Natural-TL), the data presented are insufficient to assess the results if the 40-day instead of the 7-minute measurement were applied. I suggest that this recalculation be made by the author.

- 2) It is normal and expected that the natural TL output (Fig. 5) increase with age, but it is not clear why the artificial TL increases also. This does not occur with pottery, but maximum ages are only 10,000 years. If there is an increase in the production of traps with age, this might be determined by applying successively larger doses of artificial irradiation, to different portions of one sample.
- 3) TL vs. Doses
One would expect both artificial and natural TL peaks to be the same for equivalent doses (page 14). Since the artificial were larger, perhaps, the calculations of the total natural doses were not correct, or fading was truly significant. The latter has been suspected by several workers.

My specific recommendations are given on the enclosed "Reviewer Checklist"

JOURNAL OF GEOPHYSICAL RESEARCH

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Lunar and Planetary Programs Office
NASA Headquarters, Code SL
Washington, D. C. 20546
(202) 755-3730 or -1135

March 1, 1977

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

Re: Thermoluminescence Dating of
Hawaiian Alkalic Basalts

JGR MS #4162

Dear Dr. Ralph:

Thank you for your comments on the above-titled manuscript. They will play an important part in the final decision on this matter.

Sincerely yours,

Edward A. Flinn

Edward A. Flinn

EAF/jrb

September 8th, 1977

Ms. Carol Squiers
Book Review Editor
Archaeology
260 West Broadway
New York, N.Y. 10013

Dear Ms. Squiers,

Thank you for asking me to review Dating in Archaeology: A Guide to Scientific Techniques by Stuart Fleming. Normally, I should be glad to do it, but this author and I are not in agreement on many subjects, especially, the various aspects of thermoluminescent dating. Therefore, my review would be prejudiced, and I think it best to decline.

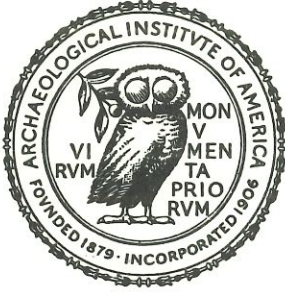
A capable impartial reviewer is Dr. John Winter,
Freer Gallery of Art
Smithsonian Institution
Washington DC 20560

Another excellent person is Dr. M. Tite
Director
Research Laboratory
British Museum
London W.C.1

I hope that you will excuse my declining this request.

Sincerely yours,

Elizabeth K. Ralph



ARCHAEOLOGY

260 WEST BROADWAY, NEW YORK, N.Y. 10013 U.S.A.

PHONE: (212) 925-7333

August 24, 1977

Dr. Elizabeth K. Ralph
University of Pennsylvania
University Museum
33rd and Spruce Street
Philadelphia, Pennsylvania 19174

Dear Dr. Ralph;

Phyllis Katz suggested that I write to you.

Would you be interested in doing a review of
Dating in Archaeology: A Guide to Scientific
Techniques by Stuart Fleming for ARCHAEOLOGY?
We would need 500 to 750 words by October 25,
1977. If you cannot do the review yourself,
could you suggest someone who might be able to?

I hope you agree to do the review and I look
forward to hearing from you.

Sincerely,

Carol Squiers
Book Review Editor

ADVANCES IN ARCHAEOLOGICAL METHOD AND THEORY

July 10, 1978

Editor:

Michael B. Schiffer
Department of Anthropology
University of Arizona
Tucson, Arizona 85721

Dear *Prof Ralph*

Advisors:

Karl W. Butzer
Don E. Dumond
Robert C. Dunnell
George J. Gumerman
William A. Longacre
Fred Plog
William L. Rathje
Colin Renfrew
Stanley South
Stuart Struever
David Hurst Thomas
Ruth E. Tringham
Patty Jo Watson
Robert Whallon, Jr.

In December of 1976 Academic Press launched at my urging a new serial publication entitled "Advances in archaeological method and theory." Once a year, in the spring, a volume will appear containing 10-20 essays that synthesize recent research on diverse topics of archaeological method and theory. As editor of this series I hope to enlist a broad segment of the archaeological community to help in producing authoritative and readable papers.

In order to achieve that goal each paper will be reviewed by several archaeologists familiar with the topic being covered. I hope you will assist me and the author by reviewing the enclosed paper that has been submitted for Vol. 1. Because I expect that all papers will be revised, you may be assured that your input will have an effect on the final product.

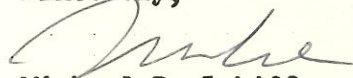
First of all, I would like a brief statement of the strengths and particularly the weaknesses of the paper. Secondly, as you read the paper, please jot down on it directly any comments pertaining to specifics. And third, call the author's attention to any important references that should have been included-- please provide enough information so that we can find them! For your information I am enclosing a copy of my "thoughts on writing a topical synthesis" which each author also received.

If, for any reason, you do not wish to review this paper, please return it to me immediately. Let me assure you that the anonymity of reviewers will be maintained.

Please feel free to recommend papers that ought to be included in forthcoming volumes of Advances and the people whom you believe should write them (including yourself).

Thank you very much in advance for your assistance.

Sincerely,



Michael B. Schiffer
Assistant Professor

Please return this paper and your review before July 25

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A subsidiary of Harcourt Brace Jovanovich, Publishers

Dr. Michael B. Schiffer,
Department of Anthropology,
University of Arizona,
Tucson, Arizona 85721.

2 August 1978.

Re: Remote Sensing and Non-Destructive Archaeology: Approaches to Cultural
Resources Management.

Dear Dr. Schiffer:

Even though I am fond of Tom Lyons, his writing really does bother me. My first general comment is that this article is much too long and that many sentences are repetitive. For example, "Sampling in Archaeology" goes on from pages 25 to 30 as well as being mentioned in other parts of the text..

The sections on photography and electronic scanners (pages 14 to 16) are good and specific, but then these subjects are contained on pages 17 and 18.

Sentences are too long as a rule, especially on page 22, where a whole paragraph consists of one sentence. There are many double and even triple nouns to which I object, and other grammatical mistakes (I have marked some of these on the text).

The information contained in the article is good, and I should like to see it published, but in reduced form.

Sincerely yours,

Elizabeth K. Ralph.

Professional activities

Vijnana Parishad
Maharshi Dayanand Marg
Allahabad-211002
U.P., India

Dated, April, ²⁴ 1979

Dear Sir,

You must have been familiar with the work of Professor Dr. Satya Prakash, in the field of Archaeological Chemistry. He is a distinguished author of the Treatise "Coinage in Ancient India" (1968) and "Chemical Studies of Some Indian Archaeological Antiquities" (1963) and has been one of the past Presidents of Vijnana Parishad, the Hindi Academy of Sciences, India and is the Chief-Editor of Quarterly research journal "Vijnana Parishad Anusandhan Patrika".

He shall be completing the 75 years of his life next year (August 1980). We propose to bring out a special number of Anusandhan Patrika, devoted to Archaeological Chemistry and Archimetry in commemoration of this event.


You have been working since long in the field of the studies of Antiquities and therefore, this is to request you to contribute *Your original paper for our special number.*

You can send your manuscript in your own language (with an English version as far as possible). We shall publish your paper in your language and our national language simultaneously.

We shall appreciate if the paper is sent to us by 31st October 1979. A line in reply that we should be receiving your paper in time would highly oblige us.

Thanking you,

Yours faithfully,


(S. G. Misra)

Managing Editor,
Vijnana Parishad Anusandhan Patrika,
Vijnana Parishad, (Hindi Science Academy)
Allahabad-211002
U.P., India.

हवाई पत्र
Aerogramme



Elizabeth K. Ralph
MASCA. Museum,
University
33rd and Spruce Street
Philadelphia, Pennsylvania
(U.S.A)

दूसरा मोड़ SECOND FOLD

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Sender's Name and Address:-

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