Leo Rideout - archae. buffs
Gen. Sci. -
Rm 11-223

Dr. Yde Vandermulen - Recruiting officer, Univ. Relations - 2397
Boss = Bill Turner - 2045

Lasers
IBM - support
computer
Feb.

1/21/71

February 23, 1972

6K + 25%
1.5
~8K

Dr. R. Allan Freeze
IBM Research
P.O. Box 218
Yorktown,Heights, New York 10598

Dear Dr. Freeze:

Many thanks for your kind hospitality and for the generous honorarium, etc. I enjoyed very much talking with you and your colleagues. Dr. Rainey was pleased to hear that you are interested in applying your knowledge of hydrology to archaeological problems.

Bobbie (R.L.) Raikes address is:
Via dei Mattei
00030 Colonna (Roma) Italy
Tel. 943052

I have enclosed two sheets of references on general subjects.

I have sent Dr. Rideout a 1968 bibliography of MASCA - type techniques in case you are also interested.in these. This list was prepared by Professor Robert Ascher, Dept. of Anthropology at Cornell University, and I am writing to him to find out if he has a more up-to-date one.

Sincerely yours,

Elizabeth K..Ralph

EKR/ek
Enclosure

Leo Rideout
~~Vincent~~
914-945-1744
(3000)

Dr. Thomas Horten, Director of University Relations
IBM, Old Orchard Road
Armonk, N.Y. 10504

Dear Dr. Horten:

In 1972 Alan Freeze, hydrologist at IBM, invited me to give a talk at Yorktown, and I was impressed by the facilities & the research being done there. More recently, I have talked to Leo Rideout, who suggested that inquiries in regard to possible grants from IBM should be directed to your office. He mentioned also that IBM is concerned with laser research.

We have three specific projects in mind for which we are seeking collaboration and/or financial support. They are as follows:

1) Laser Techniques

a) Enrichment of natural ^{14}C by means of lasers.

It has been demonstrated that

DRAFT OF AN APPLICATION TO IBM REQUESTING A GRANT OF $25,000 FOR MASCA

The University Museum of the University of Pennsylvania, through it's Applied Science Center for Archaeology, has been operating the Akhenaten project in Egypt for the past several years. In one very real sense the IBM Co. has made this research project a success.

Pharoah Akhenaten is the ruler who tried to revolutionize the religion of Egypt when he conceived of monotheism and tried to establish Aten, the Sun God, as a paramount god in Egypt. But his successor returned to the old religion and totally destroyed the vast temple dedicated to the God Aten which Akhenaten had built in what is now Luxor. More than 30,000 carved and engraved stones from this Akhenaten Temple were used in the later construction of Egyptian temples at Luxor. During the past century of excavations at Luxor these individual building stones were identified by the particular artistic style of the Akhenaten period. Hence, they were pulled out and set aside in a large storeroom in Luxor. The University Museum conceived an idea of using a computer to sort out and match up these building stones with their distinctive style of carving and Egyptian language texts engraved on those stones. The IBM Co. supplied the computer time (IBM 360) in Cairo and over the years these 30,000 blocks have been sorted out so that the carvings and the inscriptions can be restored in photographs. It should be observed that all 30,000 stones were individually photographed and the photographs matched up with the use of the IBM computer.

IBM 360

Naturally this project has received a great deal of international publicity, particularly through a documentary film made and broadcast by the British Broadcasting Corporation.

The Applied Science Center of the University Museum continues to develop such innovative techniques in archaeology and many of these innovative techniques involve research abroad such as that with the Akhenaten temple stones. We are, for example, experimenting with various electronic techniques for underground exploration at archaeological sites, with the application of satellite remote sensing devices for discovery of ancient settlement patterns and sites, the development of new techniques for dating archaeological material, and with the recently discovered chemical technique for preserving ancient monuments of all kinds.

Most of our research here is financed by the National Science Foundation, but since this is a U.S. government organization, we have difficulty in raising the funds for foreign travel and research necessary to develop an experiment with these techniques in foreign countries. For example, we must demonstrate this new technique for the preservation of ancient monuments in several foreign countries, we must send our people abroad to collect the materials for developing new archaeological dating techniques and we must do ground surveys in connection with our search instruments - both the electronic instruments on the ground and the satellite instruments in the air. Because of this difficulty in utilizing National Science Foundation funds for research abroad we are sending this proposal to the IBM Co. for a grant of $25,000 a year during the next two years in

order to continue the foreign work of our researchers. To give you some idea of the purpose of MASCA and its accomplishments during the last 15 years of research, we are enclosing examples of MASCA Newsletters and some background papers on the work of MASCA. This is the only organization of its kind in the U.S. and I think the very substantial support by the National Science Foundation for the last 15 years will demonstrate the practical achievements of the Center during that period. We hope that the IBM Co. will give this request its most serious consideration and if you have any other questions about this research, please let us know.

P.S. Suggest you enclose one of those news stories on the Akhenaten project and perhaps other news clippings on the Bristle Cone Pine stories, Ban Chiang and so forth.

John D.H. ILES

44 Fairfield Road,
Toronto, Ontario
M4P ITI

February 17th, 1976

Dr. Elizabeth K. Ralph
Associate Director
The University Museum
33rd & Spruce Streets
Philadelphia, Penna.
19104 U.S.A.

Dear Dr. Ralph,

I shall look forward to your article in Antiquity, but meanwhile could one question from my last letter please be answered?

Was test P-726 ever actually published in Radiocarbon?

yes - RA VIII, 1965 R, v.7, 187-199

Yours sincerely,

J.D.H. Iles

J.D.H. Iles, M.B., B.Ch.

P.S. My apologies for not addressing Dr. Weinstein correctly.

sent 2/23/76

January 11th, 1977

Dr. J.D.H. Iles
44 Fairfield Road
Toronto M4P 1T1
Ontario, Canada

Dear Dr. Iles,

In our laboratories we are concerned with the physical sciences and not with Dr. Velikovsky's theories.

The ^{14}C dates for Egyptian samples, corrected with the MASCA factors (not Suess) will appear in a book to be published by Noyes Press next June, 1977.

Sincerely yours,

Elizabeth K. Ralph

cc. Professor Glyn Daniel

ANTIQUITY
St John's College
Cambridge CB2 1TP
ENGLAND

20 December 1976

Dr J D H Iles
44 Fairfield Road
Toronto M4P 1T1
Ontario
CANADA

Dear Dr Iles

I am writing in reply to your letter of 4 November. Antiquity has not received any paper such as you describe by Drs Ralph, Michael and Weinstein. It sounds a very interesting one. I think they must have sent it to some other journal.

Which really answers your questions 2 and 3. As regards the September number of Antiquity, as we pointed out in the June number we are having to cut down the number of issues per year for the time being. There was a joint September/December number which was published on 1 November.

Yours sincerely

Glyn Daniel

(Professor) Glyn Daniel

FIRST FOLD HERE

Senders name and address
(please show postcode)

Professor Glyn Daniel

ANTIQUITY

St John's College

Cambridge CB2 1TP

ENGLAND

An Air Letter should not contain any enclosure: if it does, it may be surcharged or sent by ordinary mail.

Designed by Nina Klein
McCorquodale Printers Ltd

SECOND FOLD HERE

P.S. Just before mailing this letter to you I received the enclosed note from Prof. Daniel of "Antiquity". J.D.H.

Dr. J.D.H. Iles,
44 Fairfield Road,
Toronto M4P 1T1

4 January 1977

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

Dear Dr. Ralph:

This refers to your letter to me of 12 Feb., 1976. So far the librarian at the Royal Ontario Museum reports that your projected paper on ancient Egyptian C-14 dates has not appeared--though the Dec. '76 issue has not yet arrived there. Am I correct in thinking it will appear in "Antiquity" rather than in "American Antiquity"? Are you yet in a position to know in which issue to expect its publication?

It is clear from a previous letter received from Dr. Weinstein that he firmly believes that conventional Egyptian chronology is fixed by astronomical calculations and is accurate to within 20 years or so; since he is a co-author, does this mean that results which turn out to be, say, 300-500 years at variance with the accepted chronology will simply be discarded either because (in retrospect) they could not possibly have been authentic after all, or else they must have been contaminated ? Your own dates for those chips of wood from Tutankhamon's casket take a lot of explaining even when the Suess correction is applied -- those selfsame chips it took Dr. Velikovsky so many frustrating years to acquire and to get tested! (The British Museum, having found that palm kernels from Tutankhamon's tomb yielded dates 500 years too recent, then declared they had tested them merely to check their authenticity -- and had proved, of course, that they could not be authentic).

Would you be kind enough to draw Dr. Weinstein's notice to the enclosure with this letter ? I'd be grateful if he would answer two questions after considering this article in detail. The first is: does he believe that Velikovsky has cheated in any way, either by misrepresenting important facts or by omitting vital bits of evidence that would have supported the conventional set-up ? If the answer to this question is 'No', the second question is: does Dr. Weinstein honestly still believe such a ramshackle hodge-podge of a chronology could possibly be accurate to within 20 years, or could possess any genuine basis in astronomy ? Perhaps the crucial point is the spurious identification of Sothis with Isis.

The enclosure was photocopied from Pensée, but I believe it is an extract from the text of "Peoples of the Sea" to be published this month by Doubleday. One archaeologist has ruefully described it as a hatchet job on conventional Egyptian chronology ; but surely, if the latter has been built up in anything like the way Velikovsky says it has, then a hatchet job seems entirely appropriate.

Yours sincerely, J.D.H. Iles

IV. CONCLUSIONS

The radiocarbon dating method has been shown to be uniquely applicable to the evaluation of Velikovsky's hypothesis. However, much available data which pertain to this evaluation remain unpublished. This is unfortunate, because Velikovsky's catastrophes invalidate several basic assumptions of the dating method and its calibration. Moreover, several assumptions of the method are currently in question on other grounds. Without public data, there is no way to determine the reliability of Suess' calibration curve, which this research indicates may be suspect. In light of this, the fact that Suess' calibration is actively promoted without substantiating data is reprehensible.

The data which are available support Velikovsky, often strongly. Further research would be justified on these grounds alone. Also, Velikovsky's catastrophes provide an explanation for several unresolved theoretical difficulties and the potential for independent verification of the bristlecone pine chronology. Further, Velikovsky opens up new applications for the radiocarbon dating method.

In order to command the continued support of the scientific community, the basic premises of the radiocarbon dating method must be verified. Therefore, Velikovsky's hypothesis must be specifically tested; the method cannot claim to give absolute dates (even if calibrated) while this remains undone. And confidence in relative dating would surely suffer if such a fundamental historical and technical problem were ignored. In short, it is in the best interest of those institutions performing radiocarbon analysis to give careful consideration to Velikovsky's hypothesis.

Dr. J.D.H.Iles,
44 Fairfield Road,
Toronto M4P 1T1
Ontario, CANADA

20 Feb., 1977

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

Dear Dr. Ralph :

Thank you for your reply to me dated January 11th.

My natural inclination, quite truthfully, would be to assume that you know your own business best, but the small cutting enclosed indicates that there is at least room for other opinions.

These "conclusions" are expressed by Thomas Mowles of the Lawrence Berkeley Laboratory in Berkeley, California ; they are derived from his paper "Radiocarbon Dating and Velikovskian Catastrophism"pp.19-25 of PENSÉE issue #IV of the special series.

Several parts of Mowles' paper are beyond my comp--rehension, but it is quite obviously a serious contribution and one that might well contain a few points of interest to a specialist like yourself (if you have been unacquainted with it hitherto).

No acknowledgment of this note is expected, but thank you for your patience and courtesy to me in the past.

Yours sincerely,

John D.H. Iles. M.B., B.Ch.

INSTITUTE OF ARCHAEOLOGY
AMSTERDAM

LA 5-1000

BRYN MAWR COLLEGE
BRYN MAWR, PENNSYLVANIA

DEPARTMENT OF CLASSICAL AND
NEAR EASTERN ARCHAEOLOGY

May 22. 1961

Dear Beth,

My Phrygian colleague in Amsterdam, C.H.E. Haspels, who is writing a tome on the monuments of Western Phrygia, would like to know (quote in translation from Dutch): "The formula of the C_{14} method applied to the Gordion Midas Mound" Her C_{14} advisers (not mentioned by name in her letter) would like to know whether there is a sigma (or two, or more) σ in it.

I do not know anything about such details. Is your method identical with anything in print, or is the σ business just what you are working on now? I'd appreciate a hint from you how to deal with this. Hope you are fine & making good progress with new experiments, Yours Machteld

Prof.
Inst. of Archaeo
Weesperzyde 33
Amsterdam

B

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN
BOX 618 ANN ARBOR, MICHIGAN
TELEPHONE NORMANDY 3-1511

Filed

August 21, 1962

Ralph – what kind of gobbledegook is this! not our pidgin – can't understand it. FGR

Dr. Froelick G. Rainey
Director of the Univ. Museum
University of Pennsylvania
Philadelphia, Pennsylvania

Dear Dr. Rainey:

Expansion of current research at the Institute of Science and Technology on the subject of remote sensing of environment, and evidence of increased interest on the part of the military departments, government agencies, and individuals active in the earth science fields, has encouraged us to reconsider an earlier decision to the effect that a second symposium would not be necessary. Our tri-service sponsored study program on remote sensing of environment is now on an expanded time base, thanks to recent augmentation of funding (by the Office of Naval Research) for some experimental work, and arrangements for a second symposium, to be held on the University of Michigan campus on 15, 16, and 17 October, are being made. This second meeting, in accordance with our original proposal, will include considerable representation on the part of industrial organizations, and will be more frankly promotional in nature.

The purpose of this letter is to invite your attendance and to encourage submission of papers for presentation at the symposium. Talks expressive of the need for new research capability in the earth sciences, or exemplary of current work in the field, and ranging in length from five minutes to twenty or thirty minutes, will be appropriate. Requests for additional information and forms for registration and submission of papers will be filled promptly.

Inquiries received since publication of the Proceedings of the first symposium indicate that attendance will be large and enthusiastic. We shall look forward to hearing from you.

Sincerely,

J. O. Morgan

Joseph O. Morgan
Research Physicist

JOM/so

INSTITUTE FOR SCIENTIFIC INFORMATION

325 Chestnut Street Philadelphia Pa 19106 / Telephone 215-923-3300

Cable SCINFO

September 23, 1965

ASCA

Dr. Froelich Rainey, Director
Applied Science Center for Archaeology
The University Museum
University of Pennsylvania
33rd & Spruce Streets
Philadelphia 4, Pa.

Dear Dr. Rainey:

This is a confirmation of our telephone conversation of yesterday afternoon concerning the mark "ASCA".

We are very pleased that you have graciously decided not to use this mark on the Newsletter published by your organization, or on any printed material.

I would like to present you with a complimentary ASCA subscription that I think may be of significant help to you. If you submit a bibliography of articles you are interested in to us, we will send you a weekly computer printout of those new items in the journals we cover that cite any of the items in this bibliography. Although we do not cover Archaeological journals, we cover many basic scientific journals that might be of interest to you.

After you have reviewed the enclosed descriptive material, you can then decide whether this ASCA subscription would be helpful.

Again, thanks for your cooperation.

Sincerely,

Marvin Schiller

Marvin Schiller
Associate Director
MS/s
Encls.

EDUCATIONAL & CULTURAL
COUNSELLOR

EMBASSY OF INDIA
2107 MASSACHUSETTS AVENUE, N. W.
WASHINGTON 8, D. C.

August 11th, 1961

Our Ref. F. 408/01

Dear Dr. Ralph:

Mr. A. Ghosh, Director General of Archeology, has informed me that the Government of India propose to start a Carbon-14 Laboratory in the Department of Archeology for dating ancient objects by Carbon-14 tests.

The Department would like to depute one of their scientists to the United States to receive training and to prepare a list of the equipment that will be necessary for setting up this Laboratory.

As it is understood that your Laboratory is fully equipped, Mr. Ghosh has requested me to approach you to find out if you would be willing to accept the prospective candidate to work under you for a period of about two months.

As it is hoped that the Laboratory in India will be established at an early date, I shall be most grateful if you will kindly let me know if you would be prepared to accept the scientist selected for the training desired.

I shall be happy to hear from you in this matter.

Yours sincerely,

L.R. Sethi

Dr. Elizabeth Ralph
University Museum
University of Pennsylvania
Philadelphia, Penna.

UNIVERSITY OF COLORADO

BOULDER, COLORADO

June 16, 1953

ISOTOPES LABORATORY

Miss Elizabeth Ralph
Museum
University of Pennsylvania
34th and Spruce Streets
Philadelphia, Pennsylvania

Dear Elizabeth:

My recent visit with you was very enjoyable, and I want to thank you again for all of the helpful information that you gave to us.

As you will remember, we talked about your glass train diagrams. Your forwarding copies of these diagrams to us will be greatly appreciated. In talking with Jonathan Gill, Dr. Libby's assistant in Chicago, he mentioned that no green wood samples have been run in the year's time that he has been there. He will ask Dr. Libby when he returns for any data that he might have on green wood and promises to forward this to you.

I stopped in at the Radiation Counter Laboratories, Inc., Skokie, Illinois, as they had called Dr. Keller regarding their commercial C^{14} dating equipment. This gave me a chance to point out the troubles that you have experienced with their circuit and just why it is that we won't consider buying their unit.

We are interested in anything new that developes in the way of a solution for your contamination problems and are anxious to get set up so that we can determine just what our problems in this field are going to be.

Very truly yours,

Frank Burlingame

Frank Burlingame
Research Coordinator

FB:bsp
AIR MAIL

UNIVERSITY OF COLORADO

BOULDER, COLORADO

July 8, 1953

ISOTOPES LABORATORY

Miss Elizabeth Ralph
Museum
University of Pennsylvania
34th and Spruce Streets
Philadelphia, Pennsylvania

Dear Elizabeth:

Thanks for sending the diagrams of the glass train. I found them very useful.

I thought you would be interested in a decision that our commercial electrical design engineers, Mount Sopris Instrument Company, arrived at after reviewing all the circuits available on anticoincidence analyzer equipment. They recommend that we buy Atomic Instrument Company's (84 Massachusetts Avenue, Cambridge 39, Massachusetts) Model 503C Anticoincidence Analyzer which sells for $890.00. The current estimated time of delivery is sixty days.

They say that this circuit is well designed, extremely compact, very stable, and would be impossible to duplicate at this price. They recommend that when any necessary tubes need to be replaced, the replacement be made by Red Star 5,000 hour type, since the circuit has been so designed to allow the use of these longer life tubes.

This recommendation along with the information I gathered from Columbia University and Yale University made me decide to place an immediate order with the Atomic Instrument Company for this unit. We found them very cooperative. They sent us a complete circuit diagram and operating manual in the first reply to our original inquiry.

I hope that this information may be of some use to you and I hope to be able to forward to you shortly some minor design changes in the Dr. Libby counter that have been worked out by Dr. Jack Victoreen and myself.

We here at the Laboratory are still involved in the tremendous detail of setting up the Dr. Libby apparatus, and though we are making definite progress, we still have quite a ways to go.

I would be very much interested in learning anything new that you have arrived at concerning your contamination problems. We recently ran counts of dust samples taken from a dirt road in front of the Laboratory and found it to count twenty-one times normal background.

We are in the process of putting together our data collected from the atom bomb fallouts here in Boulder, and we will have to decide very soon whether this information is worth while publishing. In any event, I intend to forward a copy to you.

I would appreciate your letting me know the expense involved in the sending of the reprints of your glass assembly.

Looking forward to hearing from you soon, I am

Sincerely,

Frank Burlingame

Frank Burlingame
Research Coordinator
Isotopes Laboratory

FB:bsp

14 ~~Eb~~. South St.
5th fl.
Delaware Ave.
McComb

UNIVERSITY OF COLORADO

BOULDER, COLORADO

ISOTOPES LABORATORY

July 20, 1953

Miss Elizabeth Ralph
Museum
University of Pennsylvania
34th and Spruce Streets
Philadelphia, Pennsylvania

Dear Elizabeth:

We are having trouble obtaining the seamless stainless steel tubing and rod as well as the "O" rings to construct a Libby-Kulp counter.

No steel concerns in this area have in stock steel of these dimensions and type. We are not familiar with eastern concerns and would appreciate your suggesting a likely source.

Sincerely,

Frank Burlingame

Frank Burlingame
Research Coordinator
Isotopes Laboratory

FB:bsp

July 22, 1953

Mr. Frank Burlingame
Research Coordinator Isotopes Laboratory
University of Colorado
Boulder, Colorado

Dear Frank:

I can appreciate your difficulty in obtaining special sizes of stainless steel, for I exhausted Philadelphia and had to spend a day in New York telephoning various suppliers until I found the sizes that I needed. I am enclosing the bulletins of the two New York companies which carried the odd stock which I required. Some of their materials are war surplus and slightly rusted, but otherwise they were satisfactory.

The most accommodating and well-equipped supplier in Philadelphia is Joseph T. Ryerson and Son Inc. 5200 Grays Ave. I have asked them to send you a copy of their catalog. However, they don't have everything in stock that is listed in it. Others which carry limited stocks of stainless are as follows:

Allegheny Ludlum Steel Corporation
60 E. 42nd St. N.Y.C.

Edgcomb Steel Co.
D South of Erie Ave. Phila.

Peter A. Frasse and Co.
3911 Wissahickon Ave. Phila.

Horace T. Potts Co.
Erie awe and D. St. Phila.

Superior Tube Co.
Norristown, Pa.

Industrial Steels, Inc.
250 Bent St., Cambridge, Mass.

O-rings can be obtained from Linear, Inc. State Rd. and Levick St. Phila. 35. I have asked them to send you their catalog.

There is nothing new to report from this lab. We have picked up 1 c/m of contamination in our new "dustfree" room. It is probably not due to C 14 from local sources since it is removable, but we have'nt yet decided whether it came from the air or water. In the

meantime we have collected a CO_2 sample from laboratory air and plan to start counting it tomorrow.

I hope that your ~~radiation~~ radioactive dirt road does not cause you trouble.

Sincerely,

Beth Ralph

ER:js

enc:

UNIVERSITÀ DEGLI STUDI - ROMA
ISTITUTO DI FISICA "GUGLIELMO MARCONI,,

ROMA, December 3, 1963
Piazzale delle Scienze, 5

We are writing to you in order to have some details concerning your work with radiocarbon dating.

We hope you will be so kind to reply to the following questions, expecially to the fourth one, which is of the greatest interest for us:

1) which is the volume of your counter (or counters), with which gas do you fill the counter and which is the filling pressure
2) how long does a measurement take
3) which are the intervals among the various readings of the numerators of the electronic registration
4) have you some variation of the counting rate during the measurement of each sample? and which is the amount of this variation?
5) counting rate for modern standard with error
6) background with error
7) difference between modern standard-background with error
8) how do you eliminate the Radon that may be mixed with the sample.

If it will not take too much time to you, here are two other points:

a) amount of the variations of the background during a long time (if you have any)
b) how do you calculate the error on modern standard, on the background, on the unknown sample, and how do you get to the error on the date from these single errors, possibly explaining it with a numerical example.

./.

Please, write to the following address:

Prof. F.Bella
Istituto di Fisica
P.le delle Scienze, 5
ROMA (Italia)

Thanking you warmly, we remain at your disposal for any information, at any time, concerning our laboratory you could be interested.

Yours Sincerely,

(F. Bella) (C.Cortesi)

/pp

December 10, 1963

Professor F. Bella
Istituto di Fisica
P. le delle Science, 5
Rome, Italy

Dear Professor Bella:

Some replies to the questions contained in your letter of December 3rd are as follows:

1) Counter volume (2 identical counters) is 8 liters, but because of large insulators to avoid end effects, active volume is only 4 liters.
Counting gas is pure CO_2.
Filling pressure: atmospheric (75 cm) adjusted to temperature changes.

2) Each sample is counted for, at least, two overnight (1000 minute) periods, preferable one or more weeks apart.

3) We take daytime count of sample after filling for approximately 200 minutes, then overnight count of 1000 minutes without interruption. We have no recorders.
(I do not understand your question, so may not have answered it.)

Questions 4) to 7) are answered in greater detail in the enclosed reprint; see especially pages 177 and 178.

4) We do not record intervals shorter than 1000 minutes, but if the second 1000 minute count differs in excess of statistical expectations from the first, we count it again as many times as necessary until the counts are statistically consistent.

Our laboratory is near sea level and is 4 meters below ground with four stories of concrete and brick building above us. Therefore, we do not have fluctuations in the background due to changes in the barometric pressure. Also our

laboratory is sealed and filled with a slight pressure of filtered air. We have not detected any variations due to fall-out, etc.

5) Counting rates for "modern" standard"

1959 & 1960, average of 42 counts = 32.143 ± .031
1961 " 6 " = 32.005 ± .084
1962 to 9/24/63 24 " = 32.030 ± .046

As you can see, the counts of our "modern" standard (100-year-old Oak wood) have been statistically consistent for long periods of time.

6) Background counting rate is roughly 9.8 c/m with standard error of ± 0.1 c/m for one 1000 minute interval. Background is usually consistent for about 10 weeks and then changes slightly for one reason or another. The uncertainty in the background (of ± 0.1 c/m or less) is automatically included in our method of statistical analysis. (see p. 177.)

7) See p. 177

8) We reduce radon by reacting the CO_2 with CaO to form $CaCO_3$. While held as a solid, we pump off the radon. As additional insurance, we store all samples in flasks for 2 weeks before counting. Then, an extra check is the counting of each twice with the lapse of a week or more between counts.

a) Background tends to decrease gradually with time when no air has been admitted to the counter for many months. Was 12 c/m in 1957 and is now 9.8 c/m. Had dropped to 8.8 c/m in 1961 before we were contaminated with tritium.

b) See pp. 177 and 178.

I hope to be in Rome at the end of March, 1964, and would be glad to talk to you directly about radiocarbon dating matters.

Sincerely yours,

Elizabeth K. Ralph

EKR:pc

February 15, 1963

Lo 7-7476

Italian Consulate General, Attn. Mr. I. Gallo
2128 Locust Street
Philadelphia, Pa.

Dear Mr. Gallo:

The items of equipment which I should like to take with me to Italy are described on the enclosed sheet.

Dr. Froelich Rainey, Director of the University Museum, and I are planning to return to Calabria this spring to continue the search (in collaboration with the Department of Antiquities and the Lerici Foundation) for the archaic Greek city of Sibari.

I plan to leave the U.S.A. on March 13, 1963 on the Queen Elizabeth and to send the instruments in bond (except for the Proton Magnetometer which I shall pick up in England) by train to Rome. I expect to arrive in Rome during the last week in March. Therefore, my port of entry and exit for customs purposes will be Rome. I plan to return by air and to ship some of the instruments directly back to the U.S.A. by sea; the rest, I shall take with me.

We experienced many delays due to customs formalities last year. Our procedure then was to send proforma invoices in advance, register the instruments upon arrival, and deposit millions of lire. What bothered us especially was the time it took to accomplish the release of the instruments when we returned.

I shall appreciate it very much if you can arrange permission for me to take these instruments into Italy for three months, that is, on a temporary basis without so many formalities. I guarantee that the instruments will not be sold in Italy and that they will be taken out of Italy at the conclusion of our work there, probably around July 1, 1963.

Sincerely yours,

Elizabeth K. Ralph

EKR:pc

COPY