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#### *About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.



**THE  
GEOLOGICAL SOCIETY  
OF AMERICA**

Office of Executive Secretary

April 29, 1971

Dr. Alfred Traverse  
529 Deike Building  
Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Mr. Traverse:

The Geological Society of America is pleased to acknowledge your recent contribution to the Gilbert H. Cady Memorial Fund made in memory of Dr. Gilbert H. Cady.

The Fund is growing and your contribution will enable GSA, and particularly the Coal Geology Division, to recognize individuals who have added significantly to knowledge in Dr. Cady's chosen field of study. More importantly, perhaps, the Fund should help to stimulate coal research by many others.

The Division and the Society appreciate your gift.

Sincerely,

Edwin B. Eckel  
Executive Secretary



THE  
GEOLOGICAL SOCIETY  
OF AMERICA

COAL GEOLOGY DIVISION

*File*

*B. H. Cady  
com'd \$10.*

March 24, 1971

To: Members of Coal Geology Division, The Geological Society of America, and  
Other Friends and Former Colleagues of Gilbert H. Cady

Dear Friend:

As you probably know, Dr. Gilbert H. Cady passed away on December 25, 1970, after a long and distinguished career in coal geology.

The *ad hoc* committee indicated below was delegated by E. T. Luther, Chairman of the Coal Geology Division, to develop plans for a suitable memorial to Dr. Cady. This effort has culminated in the proposal for a Gilbert H. Cady Memorial Fund and Award within The Geological Society of America.

The primary object of the award is to promote coal geology in North America by recognizing outstanding contributions in this broad field. We believe this to be very much in keeping with Dr. Cady's interests in the diverse fields of coal geology to which he devoted more than 60 years of his life.

The Executive Committee of the GSA has approved, subject to ratification by the Council, establishment of the Memorial Fund and Award on the basis of a preliminary presentation outlined in the enclosed proposal. We have been authorized to initiate solicitation of contributions to establish the fund.

All checks should be made payable to The Geological Society of America and identified as a contribution to the Gilbert H. Cady Memorial Fund. A contribution card and pre-addressed envelope are included for your convenience.

We hope you are receptive to this plan and will make a contribution that will permit sufficient funds to implement this activity of the Coal Geology Division and the Society in the furtherance of the field of coal geology.

Sincerely yours,

Gilbert H. Cady Memorial Fund Committee  
Coal Geology Division, GSA

J. A. Simon, Chairman	L. G. Henbest
C. G. Ball	R. M. Kosanke
I. A. Breger	L. C. McCabe
M. Deul	J. M. Schopf
R. R. Dutcher	W. Spackman, Jr.
P. A. Hacquebard	

Enclosures

Hunt Institute for Botanical Documentation

GILBERT H. CADY MEMORIAL FUND AND AWARD

The Gilbert H. Cady Memorial Fund is established within The Geological Society of America. All or part of the interest on the principal of the fund will be used to pay expenses of a "Gilbert H. Cady Award" in accordance with the following:

The Gilbert H. Cady Award will be made for outstanding contributions in the field of coal geology. As defined in By-Laws of the Coal Geology Division of the Society, "Coal Geology refers to a field of knowledge concerning origin, occurrence, relationships, and geologic characteristics of the many varieties of coal and associated rocks, including economic implications."

The award will consist of an appropriate certificate or plaque printed and/or inscribed that will include the words "Gilbert H. Cady Award," and a cash award derived from interest funds available from the Gilbert H. Cady Memorial Fund. The certificate format and amount of the award are subject to approval by the Council of the Society.

The award generally will be made biennially, but may be withheld in any year in which no recommendation for the award is forthcoming or for which funds are not available. If no award is made in an appropriate year, interest may accumulate or may be added to the principal sum as determined by the Council of the Society.

An appropriate selection committee of the Coal Geology Division of the Society will make recommendations for the award to the Council of the Society in accordance with the following:

1. The basis of the award will be for contributions in the field of coal geology as defined in the By-Laws of the Coal Geology Division of the Society.
2. If a paper is the basis of the award, it will have been published not more than five years prior to its selection for the award.
3. Generally, the award will be made for contributions considered to advance the field of coal geology in North America, but contributions by workers outside of North America deemed to advance coal geology in North America may be considered for the award.
4. If more than one person is selected as the recipient of the award, each will be provided a certificate as described above, and the cash award will be divided equally among the recipients.

Contributions to the Gilbert H. Cady Memorial Fund shall be made to The Geological Society of America, and indicated by the donor as intended for this memorial fund. The investment and administration of the fund will be subject to the same regulations as those applying to the Penrose Medal Fund.

When the Gilbert H. Cady Award is made, notice of the award will be made at the Annual Meeting of the Society, the form of this notice being left to the discretion of the Council of the Society.

Cahir

July 85

Al-

Many thanks for your confidence.  
It means much, knowing that you  
have friends and colleagues there.

It would be pleasant to conduct  
an academic enterprise in the  
atmosphere that one supposed to  
exist at places like Juniata.....  
less political, no branch campuses,  
and so on.

I'm sure they have their  
problems, equally nettlesome. But it  
is attractive.

John  
Cahir

*file Cahir*

9 July, 1985

Mr. Henry H. Gibbel  
Presidential Selection Committee,  
Juniata College  
P.O. Box 900  
Lititz, PA 17543-7007

Dear Mr. Gibbel:

Thanks for yours of 7 June re the presidential selection process at Juniata.

Although I am greatly honored to be asked for my opinion, I am not sure I can be very helpful. I do, however, have one nomination I'd like you all to give serious consideration:

Dr. John J. Cahir, Dean of Instruction and Professor of Meteorology, College of Earth & Mineral Sciences, Pennsylvania State University (Keike Building, University Park, PA 16802). Dr. Cahir has all the characteristics to make a superb college president: excellent scientist, great teacher, great administrator, intensely interested in the future of education at all levels, good speaker, good money-raiser. Dean Cahir is in his 40s and would make the transition to Juniata easily.

Thanks for reading.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

27 August, 1982

Alfred Traverse

John Cahir

I just noticed in the new advising handbook that I have been added to the list of honors advisors. I appreciate the gesture and can do nothing but accept, but that is not really what I wanted to see happen. My concern is that University Scholars may be attracted to certain aspects of Geosciences (and other fields) and the present regulation will tend to steer these people into a certain area, particularly as a thesis is involved. I know the standard arguments which say that this sort of thing doesn't happen, but I fear that it will. What I think should be done is to make the available list of honors advisors coterminous with the list of advisors, unless and advisor specifically asks to be removed from the list.

26 January, 1982

Alfred Traverse

John Cahir

re: Honors Program advisers

This is to remind you of my concern about this matter. It is not (definitely not) that I want to be added to the "panel" of "honors advisers" (along with Schmalz and Dachille?). Rather, I think any qualified undergrad adviser who does not request the contrary should be eligible to advise persons in the honors program. If this is not the case it very unfairly limits honors candidates to a narrowly circumscribed panel. This is undesirable for both advisers and students.

I hope I'll hear from you on this.

al  
from John Cahir

you 77

Mary Bross sends attached to add to your pile. Are you running for office? I wish you would run for Ammermans... you were certainly right about him. You were also right about our not seeing each other. I miss it. ~~Do~~ Do you and Betty ever stay late? It would be good to have you come by for dinner then, or at any time.

John Cahir

Liz Cahoon

Oct. 28, 1975

Dear Al,

Thanks for the reprints and for looking at our "Triassic" basin.

Wendell had decided that your letter didn't require an answer because everyone knows the Tuscaloosa Formation is Upper Cretaceous.

About a month ago I asked him to look at the stratigraphy in more detail, & he changed his mind about the need for a reply. He is planning to write to you.

as I understand the situation - the productive lignite is close to the saprolite of the basement gneiss. It is definitely Tuscaloosa Formation. The Tuscaloosa Fm in this part of the country is generally considered basal upper Cretaceous, but there aren't many fossils on which to base an age. My impression is that everyone relies on Berry's old floras.

I remember some palynologist questioning whether Tuscaloosa in Georgia & Carolina was really the same as the Tuscaloosa in Alabama and westward. Neither Wendell nor I are knowledgeable on recent literature. We concluded that a young Cretaceous age for Tuscaloosa is definitely newsworthy. We think you should publish.

Please keep us informed.

Liz Calson



UNITED STATES  
ATOMIC ENERGY COMMISSION  
SAVANNAH RIVER OPERATIONS OFFICE  
P. O. BOX A  
AIKEN, SOUTH CAROLINA 29801  
(TEL. & TEL. NORTH AUGUSTA, S. C.)

MAY 14 1974

*file Cahoon*

Dr. Alfred Traverse  
Professor of Palynology  
The Pennsylvania State University  
Deike Building  
University Park, Pennsylvania 16802

Dear Dr. Traverse:

We are pleased that our bedrock cores can aid your research program to determine the age of the so-called triassic basins of eastern North America. As you requested, my staff has made arrangements for you to take your samples on May 20 and 21, 1974. Dr. I. W. Marine, Du Pont geologist, will escort you to the core storage location on May 20. He can be reached at (803) 824-6331, extension 3321.

X ~~Dr. E. J. Cahoon~~, extension 3093, of my staff will contact you to arrange the details of your visit.

Sincerely yours,

N. Stetson  
Manager



UNITED STATES  
ATOMIC ENERGY COMMISSION  
SAVANNAH RIVER OPERATIONS OFFICE  
P. O. BOX A  
AIKEN, SOUTH CAROLINA 29801  
(TEL. & TEL. NORTH AUGUSTA, S. C.)

MAY 14 1974

Dr. Alfred Traverse  
Professor of Palynology  
The Pennsylvania State University  
Deike Building  
University Park, Pennsylvania 16802

Dear Dr. Traverse:

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Dr. E. J. Cahoon, extension 3093, of my staff will contact you to arrange the details of your visit.

Sincerely yours,

Original Signed by N. Stetson

N. Stetson  
Manager

May 8, 1974

Dr. E.J. Cahoon  
Environmental Activities Branch  
Safety & Environment Division  
Atomic Energy Commission  
Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29801

Dear Liz:

I have my reservations now for the trip to Aiken. I arrive in Augusta at 9:38 p.m., Sunday evening, 19 May, on Delta 504. I have not as yet been able to reach my friends who live in Aiken, but I suppose it is possible they might meet me. Failing that, I will rent a vehicle, and there is no need for you to be concerned about picking me up or anything like that. I will return on Wednesday, 22 May, in the late afternoon. That means that I will have all day Monday and all day Tuesday and Wednesday morning, if necessary, for the work with the cores. I will contact you by phone first thing Monday morning to find out where I should report and all that sort of thing. I'm really looking forward to getting a look at these cores and, collaterally, to seeing you again.

Best wishes until then.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/vsi

803 - 824 - 6331

X 309E

April 22, 1974

Dr. E.J. Cahoon  
Environmental Activities Branch  
Safety & Environmental Division  
AEC Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29801

Dear Liz:

I hope the letter, which a copy is enclosed was sufficient to get the job done! Now, regarding possible timing--it looks to me like the best package of time would be Monday and Tuesday, 20-21 May. It could even extend into the 23rd or so without hurting my schedule very much. It happens that that is the very end of the term here. As it turns out, the only other possibility in May would be a similar package beginning the 5th. That is not quite so desirable, because I would have to be back on Wednesday with less room to maneuver. So, I guess what I am saying is that unless you all could have me in the vicinity of 20 May, say 20-22 May, I had better postpone it until July. What do you think?

Best wishes.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/vsi

Enclosure: copy of letter to  
Mr. Stetson,  
reprint of Cornet, Traverse & McDonald paper

April 22, 1974

Mr. Nat Stetson  
AEC Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29801

Dear Mr. Stetson:

I have been in correspondence with one of your people, Dr. E.J. Cahoon, regarding the possibility of my obtaining some small samples of rock from some cores which are available in your organization. The cores are of considerable interest in connection with the project which we have going at Penn State on the so-called Triassic basins of eastern North America. Dr. Cahoon has mentioned in her recent response to my earlier letter that if I wished to make a trip of this sort it would require your permission, and that purpose of this letter is to request such permission. I do hope that I will be allowed to have a look at the cores and remove several small pieces for the purpose of our project here.

Looking forward to hearing from you about this request and with best wishes, I am

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/vsi  
cc Dr. E.J. Cahoon

Black  
Fidelity  
May 29, 1974

Dr. Elizabeth Cahoon  
ABC, Savannah River Plant  
P.O. Box A  
Aiken, South Carolina 29801

Dear Liz:

Thank you so much for all of the kindnesses you extended to me during my visit to your laboratory last week. I really don't know what I can expect to find from the samples I collected although I am rather hopeful that a couple of them might be productive. It only takes one!--to prove what we want to prove--which is the age of the basin. I regret I didn't get to see your property in McBean. I share your love of the land and only wish I had a piece around here somewhere!

Do let's keep in touch. I would like to see you doing at least a little palynology from time to time. Who knows?--it might provide an occasion for you to visit here. Best wishes.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/vsi



UNITED STATES  
ATOMIC ENERGY COMMISSION  
SAVANNAH RIVER OPERATIONS OFFICE

P. O. BOX A  
AIKEN, SOUTH CAROLINA 29801  
(TEL. & TEL. NORTH AUGUSTA, S. C.)

803-824-6331 / EXT. 3093  
February 15, 1974

*Can Liz*

Dr. Alfred Traverse  
Professor of Palynology  
The Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Dr. Traverse:

Thank you for your letter of January 29, 1974. I have checked with the groups responsible for the Triassic cores at the Savannah River Plant and samples could probably be taken from the available cores for your palynological study.

I am enclosing copies of two papers by the Du Pont geologist at the Savannah River Plant, Dr. I. Wendell Marine, which describe the Triassic basin and the test wells drilled into it several years ago as part of the bedrock storage investigations. The last page of the hydrology article, figure 4, shows the location of the five wells that penetrate Triassic rocks and their relationship to the inferred structure of the basin. Two of the cores include only about 100 feet of the Triassic (P5R, P12R). Ten percent of the core is available for one well (DBR10) drilled through about 3000 feet of Triassic (20 feet of core out of every 200 feet). Another well (DBR11) has about 2000 feet of continuous core.

Dr. Marine had one sample of Triassic red bed analyzed for pollen and spores by the U. S. Geological Survey and result was negative. Although the cores are almost entirely red beds, there are some gray or grayish beds and gray reducing centers that could be sampled.

If you would like to make a palynologic study of the Triassic rocks here, there are two options. You could visit the plant and take samples yourself, or Dr. Marine and I could select some representative samples for preliminary analysis. A request for samples or a collecting visit should be addressed to the Manager of the AEC Savannah River Operations Office, Mr. Nat Stetson.

Dr. Alfred Traverse

- 2 -

February 15, 1974

As an environmental scientist for the Atomic Energy Commission, I keep track of the environmental and ecological research at the plant site and try to point up research opportunities for other scientists. I hope the core here can be useful to your project on the eastern Triassic.

Sincerely yours,



E. J. Cahoon, Environmental Scientist  
Environmental Activities Branch  
Safety and Environment Division

EE:EJC:dlm

Enclosures:  
As stated



UNITED STATES  
ATOMIC ENERGY COMMISSION  
SAVANNAH RIVER OPERATIONS OFFICE  
P. O. BOX A  
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Sincerely yours,

E. J. Cahoon, Environmental Scientist  
Environmental Activities Branch  
Safety and Environment Division

EE:EJC:dln

Enclosures:  
As stated

January 29, 1974

Dr. Elizabeth J. Cahoon  
ABC  
Savannah River Plant  
P.O. Box A  
Aiken, South Carolina 29801

Dear Liz:

Just had a letter from John Hall telling me that you are in Aiken these days, which I didn't know, and that you have access to or know about (or something) a core which penetrates the Triassic in South Carolina. How are the chances of getting a crack at it palynologically, or are you doing that? As you probably know, we have a project going on the eastern Triassic (perhaps you saw our paper in Science in December).

Naturally, when you get around to answering I would very much like to hear what you are doing these days. Looking forward to hearing from you and with best wishes, I am

Yours very truly,

*Alfred Traverse*  
Alfred Traverse  
Professor of Palynology

AT/vsi

November 3, 1970

Dr. Elizabeth J. Cahoon  
Department of Geology  
Auburn University  
Auburn, Alabama 36830

Dear Liz:

I am enclosing herewith a copy of the little paper which I mentioned to you. The Melmac impregnated plaster of Paris technique works quite well for making ground thin sections of lignite which has not been allowed to become too dry and crumbly. For woods which are dry and crumbly I would advocate demineralization, embedding in celloidin, and sectioning on a microtome. You will find descriptions for this technique in various books on botanical laboratory procedures. If one is thinking of doing microscopic work at the level involving sidewall pitting and so on, the microtome technique is really far superior. Celloidin embedding is similar to paraffin embedding in principle, but it is much better for materials as hard as wood.

You really missed a fine meeting in Toronto - 110 registrants, and a good time had by all of us! Still, you can't go to every meeting, and you were probably wise to alternate AASP and AIBS! Best wishes as always.

Yours very truly,

Alfred Traverse  
Professor of Geology and Biology

AT:gbm  
Encl.

# AUBURN UNIVERSITY

AUBURN



ALABAMA

36830

SCHOOL OF SCIENCE AND LITERATURE

Department of Geology

Telephone 826-4282  
Area Code 205

September 10, 1970

Dr. Alfred Traverse  
Department of Geology & Geophysics  
Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Dr. Traverse,

You mentioned at the Bloomington Meeting that you have a description of your technique for embedding and sectioning lignitized woods. I would appreciate receiving a copy of those directions and any references you have about the preferential petrification of woods. I'm very curious now about the possibility of woods other than Paraphyllanthoxylon being lignitized. At present, I have only one specimen of lignitized wood that was not from a trunk with a silicified portion.

Thank you for your helpful comments.

Sincerely yours,

A handwritten signature in cursive script that reads "Elizabeth J. Cahoon".

Elizabeth J. Cahoon  
Assistant Professor

EJC/et

Region V  
Box 11, University Station  
Grand Forks, North Dakota

February 8, 1954

Dr. Stanley A. Cain  
Department of Conservation  
University of Michigan  
Ann Arbor, Michigan

Dear Dr. Cain:

Enclosed is my response to the questionnaire sent out with the recent number of the "Pollen and Spore Circular". I enjoyed the Dosten meeting very much and appreciated an opportunity to participate. You are to be much congratulated on arranging a very well planned, well run and stimulating conference.

When I was recently in Indianapolis, my parents-in-law (the Francis Insleys) were interested to hear again of your activities.

Very truly yours,

AT

Alfred Traverse  
Coal Technologist

ATraverse:dm  
Enclosure

cc: Region V  
Lankford  
Traverse  
File 625.1  
C File

Region V  
Box 11, University Station  
Grand Forks, North Dakota

December 8, 1953

Dr. Stanley A. Cain  
Secretary, Section G, A.A.A.S.  
Department of Conservation  
University of Michigan  
Ann Arbor, Michigan

Dear Dr. Cain:

Enclosed is a copy of the "nontechnical abstract" of my paper, as Dr. Negus, the Director of Public Information of A.A.A.S., directed be sent to you. This is not, of course, a full-scale abstract.

Very truly yours,



Alfred Traverse  
Coal Technologist

ATraverse:dm  
Enclosures

cc: Region V  
Lankford  
✓ Traverse  
File 096.1  
C. File

Montechnical Abstract

The Application of Palynological Methods to Investigations  
of Tertiary Coals

Alfred Traversa

Palynology is the study of pollen and spores. Nearly all coals contain quantities of fossil pollen and spores. The waxy outer coats of these tiny (usually microscopic) reproductive bodies of land plants resist decay and other processes of chemical change and are often found to be in an excellent state of preservation in coal-- millions of years after the original formation of the coal beds. It is possible to separate these microfossils from coal by chemical techniques that selectively destroy the other coal components. These other components are also primarily the modified organs of plants, because coals invariably were formed originally by accumulations of plant parts as peat deposits.

Coals of Tertiary age--approximately 70 millions of years old, or less--are usually of low rank: lignite, brown coal or subbituminous coal. There are tremendous quantities of such coal in North America. Most of the plant species that contributed to the formation of Tertiary coals have rather close relatives alive in the modern vegetation, by contrast with the more familiar Paleozoic bituminous coals, which are made primarily of extinct plants. This fact means that the systematic study of the pollen and spores of Tertiary coals has two primary purposes:

1. Since the plant species that contributed to Tertiary coal are often related to living plants, much information about the kind of vegetation that grew at the original site of deposition of the coal can be obtained from comparison of the pollen and spores with modern forms. This information is of general scientific interest. It can also be of direct importance in helping to understand the chemical nature of a low-rank coal. The low-rank Tertiary coals often retain chemical features that are due to the nature of the original plant material. The older coals are more altered chemically from the original material and, besides, do not permit comparative studies with living plants because they are composed of tissues of long extinct plant groups with only remote relations to living plants.

2. Since the pollen and spore content of a coal seam is often characteristic of that seam, systematic description of the pollen and spores in coal seams often makes possible the identification of seams from drill cores or other prospecting samples. When new mines are being opened up, identification of seams can be of considerable importance. This sort of work is also done with the older coals.

4 November, 1974  
1107½ Clarendon St.  
Durham, N. C. 27705

Dear Dr. Traverse,

Before I become chatty, I'll expose my ulterior motive for writing (not that I wouldn't have written sooner or later any way): I would appreciate your writing a letter of reference for me. I am applying for a six week course in Costa Rica offered by the Organization for Tropical Studies. The title of the course is "Tropical Biology: An ecological approach". I have become a population/ecological/genetical biologist and apparently the OTS course is ideal for people who are interested in that kind of thing. The course primarily involves doing field projects in a number of regions of Costa Rica. From all reports it is very exciting and very intense. I'm anxious to go and now seems to be as good a time as any.

The letter of recommendation should go to:

Dr. Donald E. Stone  
Botany Department  
Duke University  
Durham, N. C. 27706

X envelope enclosed

I was told that, as we will be working on projects in small groups, a comment about how I get along with people might be appreciated by the people reviewing the applicants.

As for Duke U., it's great! Initially I was euphoric, but I've settled into a routine and now I'm just happy. My prof, Dr. Janis Antonovics, is very easy to get along with, great at parties, and his other students and the other botanists are lots of fun. I've been on a number of field trips already, major and minor, and I'm learning lots. The organism under study here is the plantain-- Plantago. It makes quite a good joke. In fact, this past Saturday the second annual IPP (International Plantain Program) banquet took place. It's "international" because there's a Taiwanese post-doc here.

Field biology is fantastic. Last weekend we visited a field site in the N. C. mountains and camped there, built a fire, sang campfire songs, toasted marshmallows. The area that site is in is utterly idyllic; it's on the top of a 5000 foot mountain which also serves as a pasture.

So you can see that everything's funky. Notwithstanding the tone of this letter I'm working hard, like a good graduate student should. I'm taking Evolutionary Mechanisms, plant anatomy, and linear algebra. Yes, indeed, mathematics.

I will trust in your customary graciousness and take this opportunity to thank you, once again. I'll send you a post card from the tropics!

Very truly yours,

*Michelle*

Michelle Caisse

April 23, 1968

Dr. Alejandro Calderón-García  
Insurgentes Sur 1020-101  
Mexico 12, D.F.  
Mexico

Dear Dr. Calderón:

Jack Wilson sent me a copy of your letter of 8 April, 1968, to him re the sample we ran from Rancho Marqueno. As you said in that letter, it would be good to look at some better samples--the one I had from Jack was weathered and apparently of superficial origin. It might be some time before I could get at it, but if you could send a sample or two of the lignite and the associated shale, I would put them on the waiting list!

Yours very truly,

Alfred Traverse  
Associate Professor of Geology

AT:kwc



UNIVERSITY OF SASKATCHEWAN

DEPARTMENT OF GEOLOGICAL SCIENCES

SASKATOON, CANADA

July 7, 1971

Professor Alfred Traverse,  
Professor of Geology & Biology,  
Deike Building,  
The Pennsylvania State University,  
University Park, Pennsylvania 16802, U.S.A.

Dear Professor Traverse:

Thank you for your letter of July, 1, 1971, in response to my letter addressed to Dr. Spackman.

It was most kind of you to recommend Mr. Robert E. Dunay for the post of Assistant Professor of Palynology in this Department, and I shall be pleased to receive his application. If it is decided to delay the permanent appointment until July 1, 1972, then I am sure Mr. Dunay will be a serious contender for the position.

I also intend to take your advice and write to Dr. Richard W. Hedlund of the Atlantic Richfield Oil Company in Dallas. Like you, I doubt whether he would be interested in a position at the Assistant Professor level (and I see no possibility of having the level of the position raised), but I should at least give him the opportunity of making an application.

I am grateful to you for placing the names of both these persons before me for consideration, and for doing so so promptly.

Yours very truly,

*W. G. E. Caldwell*

W. G. E. Caldwell  
Professor and  
Acting Head

WGEC/es



UNIVERSITY OF SASKATCHEWAN

DEPARTMENT OF GEOLOGICAL SCIENCES

SASKATOON, CANADA

June 24, 1971

Dr. W. Spackman,  
Pennsylvania State University,  
UNIVERSITY PARK, Pennsylvania,  
16802, U.S.A.

Dear Dr. Spackman: Vacancy in Palynology

The Department of Geological Sciences has a vacancy at the Assistant Professor level, commencing July 1, 1971, for a palynologist, and I am writing to ask if you know of any one who might wish to be considered for the position.

An applicant should hold the Ph.D. degree or equivalent, or be about to complete the requirements for the degree. Moreover, he should be a soundly trained geologist, as in addition to giving a class as required in palynology, his teaching duties will include some introductory geology to beginning students and probably some stratigraphy to senior students.

Currently, the Department of Geological Sciences has twelve members of staff (ten geologists and two geophysicists) and several research associates. The staff includes a research group actively pursuing studies in the Palaeozoic and Mesozoic stratigraphy of the Canadian Great Plains with emphasis on micropalaeontology. It is hoped that the palynologist appointed will wish to work closely with this research group. A disintegration laboratory and technical support already is available. I might add that the present staff forms an extremely cohesive team, and I am most anxious that the palynologist appointed be an amiable person, willing to give and take and to work closely and productively with his colleagues.

It may be of interest also to know that the Department of Geological Sciences has a large undergraduate enrollment, the students drawn from both the College of Arts and Science and the College of Engineering. The normal complement of graduate students is about twenty-four, one third enrolled in programs for the Ph.D. degree, two thirds in programs for the M.Sc. degree.

If it proves impossible to fill the vacancy before classes begin in September, the Department may elect to make a temporary appointment for one year and appoint a palynologist on July 1, 1972. I should be grateful if you would keep this point in mind in thinking on possible candidates for the position.

If you know of any person who might wish to apply for this position, would you be so kind as to send me the necessary information without delay. Any applicant should submit the usual curriculum vitae, and include the names of three persons under whom he has studied or worked and who can be contacted by the Department.

Yours sincerely,

*W. G. E. Caldwell*

W. G. E. Caldwell,  
Professor and Acting Head.

WGEG/mg

# JUNIATA COLLEGE

Huntingdon, Pennsylvania 16652

814-643-4310

October 25, 1976

J. OMAR GOOD VISITING DISTINGUISHED  
PROFESSOR OF EVANGELICAL CHRISTIANITY

Rev. Alfred Traverse  
St. John's Episcopal Church  
212 Penn Street  
Huntingdon, PA 16652

Dear Father Traverse:

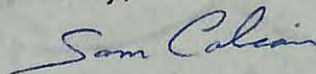
This is an invitation to participate in one session of a new course at Juniata College on "Medical Ethics and the Professions." It is my hope to bring stimulation and reality to our students interested in professional ethics. You will be a vital part of our seminar as you listen and discuss with the students your insights to the issues surrounding the case study assigned for your date. No speeches will be expected. Please read the enclosed material prior to class.

Enclosed is a copy of the case study and course outline indicating date, time and place. I sincerely hope you will be able to reserve this time in your busy schedule. Your presence will mean much to our students.

If I can answer any further questions, don't hesitate to give me a call. If the date assigned is not convenient, perhaps you might be able to exchange with one of your colleagues. I would like to be kept informed of any changes. Enclosed is a postcard for your response. I would appreciate hearing from you by November 3.

I believe this experiment in cross-professional dialogue will be a meaningful experience for all of us.

Sincerely,



Carnegie Samuel Calian

Enclosures  
CSC:d1

March 1, 1972

*file* → Mr. Nicholas Szigethy  
Order Librarian  
Order Section, Dexter Memorial Library  
California State Polytechnic College  
San Luis Obispo, California 93401

Dear Mr. Szigethy:

Regarding your request for information on the Catalog of Fossil Spores and Pollen of 14 February, 1972, I would like to inform you that the Catalog is a compendium published at somewhat irregular intervals, approximately two to three numbers a year. It has so far published 34 volumes several of which are out of print but will be reprinted in the fairly near future. We recommend that if there is serious interest in using the Catalog that all available volumes should be ordered along with a standing order for future volumes and for the volumes which will be reprinted to supply the vacant out-of-print numbers in the serious. The price per volume to an institution is as indicated per the enclosed price list. We also enclose a brochure about the Catalog which is now slightly out of date but we have written in the additional information that you would need excepting that you should note that it now runs to 34 volumes with 35 in press. Hoping that we can have you as an subscriber, we are

Yours very truly,

Alfred Traverse  
Professor of Geology & Biology

AT/vsi  
Enclosures: brochure

*Cambridge Univ. Press*

To: [traverse@ems.psu.edu](mailto:traverse@ems.psu.edu)  
Subject: review reward

Dear Dr Traverse,

I apologise for not getting back to you concerning your review of 'The Biomarker Guide', nearly a year ago now. To be honest, I thought that I had got back to you.

Your review was most useful, and you should feel free to choose some Cambridge books in return for your help (up to about \$125-worth). The best place to select from is on our searchable web catalog, at

*http://www.cup.org*

Sorry again for the silence from my end.

Best wishes,  
Matt

---

Dr. Matt Lloyd  
Editor (Earth and Environmental Sciences)

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West Coast Office  
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Stanford University  
Stanford  
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USA  
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Fax: +1 650 723 0625  
E-mail: [mlloyd@cup.stanford.edu](mailto:mlloyd@cup.stanford.edu)

For online complete catalogue, details of new and recent titles & ordering information, visit our websites:  
(US server)  
(UK server)

To obtain monthly e-mail notification of new Cambridge titles register now  
at: \_\_\_\_\_ or \_\_\_\_\_

*See Julia  
please for  
more counsel*

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
307 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

21 October, 1998

Dr. Matt Lloyd  
Editor (Earth and Environmental Sciences)  
Cambridge University Press: Publishing Division  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, UK

Re: Peters, et al., The Biomarker Guide, 2nd Edition

Dear Matt:

When I started reviewing the proposed second edition of the Biomarker Guide I called a colleague at another prominent university, who is one of this country's leading biomarker chemists, for a candid opinion about the book. He said that The Biomarker Guide is indeed an important work, useful and much consulted.

As a scientist in a closely allied field, I would say that although the authors stress that the book is a "standard in the field," the field is not a huge one. and the book has not had much competition. I note that on pp. 2-3 of the proposal, the authors in effect admit that the Guide has had few to no real rivals. That means that the market is not extensive, but it also means that everybody with interest in this field will have to have a copy. I doubt that the book will ever have a direct competitor, and this second edition will therefore be a standard reference work until someone puts together the third edition. I suspect that will be at least another ten years.

The authors are highly qualified, well known and respected. As a once-upon-a-time oil company employee, I am impressed that Chevron permits publication of the book. Exclusive possession of such a database would clearly be to the company's advantage, and I can assure you that my oil company would never have permitted me to publish such a thing.

Now, as to criticisms: the author's idea of including a CD with the glossary, etc., and a "library of several hundred mass spectra" is o. k. IF it really doesn't significantly add to the cost, but the "exercises" at the end of each chapter seem to me to be out of place in what is unquestionably for the most part a reference work. Dropping the exercises will shorten the book quite a bit, and they will be missed by few of the users of the

work. Perhaps thought should be given to making the CD and the "exercises" available as a separate publication, and offering the book either with or without them. I know that if I were to buy a copy of the book for my reference shelf I would resent both CD and the "exercises."

In their apologetics for the book, the authors emphasize the usefulness of some of the techniques for age-dating of the sedimentary rocks studied by the techniques outlined. They should really not stress this so much, mention it instead only in passing, because the sort of age-dating they mention as possible is so broad as to be of little use, almost laughable. For example (p. 4 of proposal) they mention a technique that will yield a date of Cretaceous/Tertiary--a range of far more than 100 millions years. Another technique will "date" rocks as Oligocene or younger, or pre-Oligocene, that is more than 38 million years old, or less than 38 million years. Another will spot "early Paleozoic" vs. older and younger--in other words, from 3.5 billion to about 600 million, or less than 400 million. The sedimentary rocks in question, or strata closely related to them practically all contain one or another kind of microfossils with which dates to within a million years, or better, are routine.

The first edition of the book seems to me to be well written and organized, and I would expect the new edition to be likewise. Clearly the authors are on top of the subject, and the new book will be apparently up to the minute regarding new advances in the subject.

That seems to cover my assessment of this proposal. I am assuming that I may dispose of both the xeroxed partial copy of the first edition, and the proposal, but I will keep them around for a while until I hear.

Very truly yours,

Alfred Traverse  
Professor Emeritus of Palynology

P. S. Regarding the honorarium in kind of \$125 in books, does this include the books that have a reduced price in recent lists from CUP? To whom do I send my "order?"



**CAMBRIDGE**  
UNIVERSITY PRESS

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Earth System Science Center and Dept. of Geosciences  
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USA

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E-MAIL [information@cup.cam.ac.uk](mailto:information@cup.cam.ac.uk)

WWW <http://www.cup.cam.ac.uk/>

Monday, September 28, 1998

Dear Professor Traverse

**The Biomarker Guide, 2nd Edition - Peters, Walters, Moldowan**

I apologise for this unsolicited approach, but I wonder if I might impose on you to comment briefly on the enclosed proposal for a second edition of 'The Biomarker Guide'. I have enclosed a synopsis of the proposed revisions, and a copy of the first edition (in case you do not have one on your shelves). It seems to have been a successful book: what do you think of the authors's plans for the updated edition? I have also enclosed a leaflet 'Guidance for Reviewers' which tells you the type of information I require.

Should you agree to comment on this proposal, I would be happy to offer you a choice of Cambridge books to the value of \$125. If, for any reason, you do not feel able to help on this occasion, perhaps you could pass the proposal on to an appropriate colleague. Please feel free to contact me by e-mail if this is more convenient.

Best wishes,

*Matt*  
*Matt Lloyd*

Dr Matt Lloyd  
Editor (Earth and Environmental Sciences)  
Direct line: (01223) 325744  
e-mail: [mlloyd@cup.cam.ac.uk](mailto:mlloyd@cup.cam.ac.uk)

*Geo Pat.*  
*Fitcher's*  
*e-mail add.*

via the vacation pr, 07:09 PM 1/21/99 , away from my mail

---

Delivered-To: traverse@ems.psu.edu  
From: mlloyd@cup.cam.ac.uk (via the vacation program)  
Subject: away from my mail  
To: traverse@ems.psu.edu  
Date: Thu, 21 Jan 1999 19:09:24 +0000

You have reached Matt Lloyd, the commissioning editor in Earth and Environmental Sciences at Cambridge University Press. I am away from my desk until January 25th 1999. I will be reading my e-mail on occasion while I am away, and will reply to your message on my return, if not before. If your message needs urgent attention, please contact my assistant, Nik Stearn, at nstearn@cup.cam.ac.uk.

Best wishes,

Matt

\*\*\*\*\*

Dr. Matt Lloyd  
Commissioning Editor (Earth and Environmental Sciences)  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU  
United Kingdom  
Tel: 01223 325744  
Fax: 01223 315052  
mlloyd@cup.cam.ac.uk  
\*\*\*\*\*

To: mlloyd@cup.cam.ac.uk  
From: Alfred Traverse <traverse@ems.psu.edu>  
Subject: review  
Cc:  
Bcc:  
Attached:

Greetings, Dr. Matt Lloyd:

At the end of September of last year (28-IX-98) you contacted me about doing a review of a proposal by Peters et al. for the Biomarker Guide, 2nd edition.

A bit later I sent you my review, which was admittedly very brief, but seemed to me to be what was required for a successful operation that is, after all, only a sort of dictionary.

I don't think I ever heard whether you did in fact receive my review. Could you please inform?

Best wishes. Alfred Traverse

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
307 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

20 September, 1999

Dr. Matt Lloyd  
Cambridge Univ. Press  
Edinburgh Bldg.  
Shaftesbury Road  
Cambridge CB2 2RU  
United Kingdom

Dear Dr. Lloyd:

I am very dogged about unfinished business. Therefore, please inspect the enclosed Exhibits "A" and "B".

As I note in the e-mail, of which "B" is a xerox copy, it is possible that you regarded my review as inadequate, in which case you should have so informed me and given me a chance to expand it. Instead, there has been a stony silence about this matter.

Perhaps I need to consult "litigating Larry," my local attorney, about this, huh?

Regards.

Yours very truly,

Alfred Traverse  
Professor Emeritus of Palynology

encl.: xeroxes

**Matt Lloyd, 07:05 PM 5/21/97, Editorial Visit**

**1**

X-Sender: mlloyd@sun1.cup.cam.ac.uk  
Date: Wed, 21 May 1997 19:05:41 +0000  
To: traverse@ems.psu.edu  
From: mlloyd@cup.cam.ac.uk (Matt Lloyd)  
Subject: Editorial Visit

Dear Dr Traverse,

Please allow me to introduce myself as a commissioning editor for the earth and environmental sciences at Cambridge University Press. I am planning to visit Penn State University on Monday 2nd and Tuesday 3rd June 1997. Would you be able to spare me 15 minutes to discuss book publishing in Paleontology/Stratigraphy? Do you have further book plans after your editing of the Sedimentation of Organic Particles volume?

Whilst my ultimate aim is of course to encourage new projects, I am also keen just to chat more generally about book publishing in the earth sciences. I wish to hear about any colleagues around the world that would be interested in writing; any ideas for books that are currently not available or inadequate for teaching, research and reference; and generally what is interesting and 'hot' in your particular subject at the moment.

Please let me know if you would be available on the 2nd or 3rd June (I would prefer the 2nd), and at what times during the day. Could you also give me instructions on how to reach your office please. I would be happy for you to pass this message on to other members of your department who may be interested in talking to me (I have e-mailed several other members already). I will look forward to meeting you.

Best wishes,

Matt Lloyd

\*\*\*\*\*

Dr. Matt Lloyd  
Earth and Environmental Sciences Editor

The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU  
United Kingdom  
Tel: 01223 325744  
Fax: 01223 315052

**Printed for traverse@ems.psu.edu (Alfred Traverse)**

**1**

E-mail: [mlloyd@cup.cam.ac.uk](mailto:mlloyd@cup.cam.ac.uk)

Worldwide web <http://www.cup.cam.ac.uk> OR <http://www.cup.org>

\*\*\*\*\*

To: mlloyd@cup.cam.ac.uk  
From: traverse@ems.psu.edu (Alfred Traverse)  
Subject: your visit to PSU  
Cc:  
Bcc:  
X-Attachments:

Dear Dr. Lloyd:

Rats! I will be in Boston on 2-3 June (and for a few days before and after too), attending commencement at Harvard and affairs associated with a reunion of my class there. I would have enjoyed talking with you.

Between now and our leaving for New England, this place is and will be pretty empty, as it is between terms. Hope you have a good trip.

Best. Al Traverse.

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

13 Oct., 1995

Cambridge University Press  
40 West 20th St.  
NYC 10114-0495

Dear Friends:

Several times in last few weeks I've received your ads and lists for CUP books on paleontology.

Question: why isn't my "Sedimentation of organic particles" (1994) listed?

If it isn't paleontology, I'm the proverbial monkey's uncle.

Yours very truly,

Alfred Traverse



**CAMBRIDGE**  
UNIVERSITY PRESS

Professor Alfred Traverse  
Department of Geosciences  
The Pennsylvania State University  
435 Deike Building  
University Park PA 16802  
USA

**Publishing Division**  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, UK

TELEPHONE 0223 312393

FAX 0223 315052

TELEX 817256

Wednesday, July 20, 1994

By fax to 0101.814 863 7823

Dear Alfred,

### **Sedimentation of Organic Particles**

Thank you for your fax and letter of 7 July which arrived whilst I was away at conferences. Unfortunately there was a delay in sending out the contributors' copies from our warehouse but I have been advised that they all went out on 5 July. We normally specify air mail for all foreign destinations so I would have thought most people will have received their copy by now.

I did indeed receive your earlier fax of 31 May and remember looking into the matter of offprints. These were not specified in the original agreements and we therefore did not provide any; also the copies of the book had already been printed by then so it was too late to do anything about that. I thought I or Catherine (with whom I checked on that matter) had communicated this to you but I must apologise if I inadvertently forgot to get back to you.

With best wishes,  
Yours sincerely,

Dr Conrad Guettler  
Journals Director

Direct line 0223 325743  
Electronic mail [conrad@cup.cam.ac.uk](mailto:conrad@cup.cam.ac.uk)

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823

22 July, 1994

Dr. Conrad Guettler  
Journals Director  
Cambridge University Press  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, UK

Dear Conrad:

Thanks for your fax of earlier today. I had a phone call today from one pleased author who had just opened his copy of the book. He lives in rural Georgia, so I assume that the flood of messages demanding information about "my copy of the book" will now cease.

Regarding reprints, I know that there was no promise of such and no arrangements of any kind. I told the inquirers that I doubted it could be arranged, but I felt obliged to get "official word." It is possible that one of you previously had made it all clear, but I could find nothing in the files.

I should report also that I received yesterday two boxes from CUP, one with a single copy of the book, one with six copies. The invoice bore your name. Thanks very much!

Best wishes.

Yours very truly,

Alfred Traverse



**CAMBRIDGE**  
UNIVERSITY PRESS

Professor A Traverse  
Department of Geosciences  
Pennsylvania State University  
435 Deike Building  
University Park, PA 16802

**North American Branch**

West Coast Office  
Press Building  
Stanford University  
Stanford, CA 94305  
USA

**Mailing Address**

P.O. Box V  
Stanford, CA 94309

*Telephone* 415 723 0663

*Fax* 415 723 0625

July 18, 1994

Dear Alfred

**Traverse - Sedimentation of Organic Particles**

I hope that you are having a good summer. I thought that I would drop you a line to say that I think that your book is splendid, and I hope that you are happy with the final result of all your efforts. We sent it to the recent Forams-94 conference in Berkeley as its first outing and it received a good reception - we just need to turn that into sales now. Let me know if there are any meetings that we should be going to, or if you have any queries. I will keep you posted on sales in the coming months.

Best wishes

Catherine Flack  
Editor, Physical Sciences

Telephone: 415 723 0650

Electronic Mail: [catherine.flack@forsythe.stanford.edu](mailto:catherine.flack@forsythe.stanford.edu)



**CAMBRIDGE**  
UNIVERSITY PRESS

**North American Branch**  
40 West 20th Street  
New York, NY 10011-4211  
USA

*Telephone* 212 924 3900  
*Fax* 212 691 3239

TO: CUP AUTHOR

FROM: THE MARKETING DEPARTMENT

Attached is a copy of the marketing plan for promoting your book in the United States and Canada. The plan has been prepared by the marketing managers in New York in consultation with your editor. The U.K. marketing staff has prepared a similar plan for promoting your book in the rest of the world and they will send it to you shortly.

To give your book wide exposure in the North American market, we will be promoting it in direct mail brochures which include other books of related interest.

You may order copies of your book for personal use (but not for resale) at the author's discount as specified in your contract. Please be sure to specify, when applicable, whether you would like hardcover or paperback copies sent to you. Please direct these orders to the attention of Sheaver Woodfaulk in the Editorial Department at the address above.

If you have any questions or comments regarding your North American marketing plan, please refer them to: Kevin Hinkle, Marketing Assistant.

Enclosure

CAMBRIDGE UNIVERSITY PRESS  
NORTH AMERICAN MARKETING PLAN for

Sedimentation of Organic Particles

Editor(s): Alfred Traverse  
Seasonal List Announcement: Fall 1993

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- \*NY PALEONTOLOGICAL SOCIETY'S NOTES
- \*CARBONATES AND EVAPORATES
- \*ECONOMIC GEOLOGY
- \*MICROPALEONTOLOGY

**EXHIBITS**

American Geophysical Union  
Geological Society of America

**Selected Coops**

Ocean Sciences Meeting  
Geological Association of  
Canada/Mineralogical Association of Canada

**SPECIAL NOTES:** All coops are tentative and subject to change



**CAMBRIDGE**  
UNIVERSITY PRESS

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USA

**Publishing Division**  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, UK

TELEPHONE 0223 312393

FAX 0223 315052

TELEX 817256

Friday, August 7, 1992

Dear Alfred

Thanks for your fax. I am pleased to hear that you are getting enquiries regarding the book. We start advertising the book in a couple of months time through our seasonal lists. Flyers and advertisements in journals will not go out until the book is published which will be in the first half of '93.

I am happy for you to pass on any of the enquiries to me. I will keep their addresses on file and send them information of prices and dates as soon as we have that. This will hold also for any US enquiries as I will have the information before our New York office.

Copy-editing proceeds pace and we hope to finish by the end of September. Myself and Douglas will be in touch again in the near future regarding the cover and queries from the manuscript.

Best wishes.

Yours sincerely

Catherine Flack  
Earth Sciences Editorial

Direct line 0223 325762  
Electronic mail [caf11@uk.ac.cam.phx](mailto:caf11@uk.ac.cam.phx)



**CAMBRIDGE**  
**UNIVERSITY PRESS**

Professor Alfred Traverse  
Department of Geosciences  
The Pennsylvania State University  
435 Deike Building  
University Park PA 16802  
USA

Friday, August 6, 1993

**Publishing Division**

The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, UK

TELEPHONE 0223 312393

FAX 0223 315052

TELEX 817256

By fax to 0101.814 863 7823

Dear Alfred (if I may),

**Paleobotany and the evolution of plants**

Thanks for your note of 20 July which took two weeks to get here. I am arranging for a copy of the Stewart & Rothwell text to be sent to you by air.

With best wishes,  
Yours sincerely,

Dr Conrad Guettler  
Publishing Director (Physical Sciences)

Direct line 0223 325743  
Electronic mail cg119@phx.cam.ac.uk

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802  
Phone: (814)863-3419; Fax: 814-863-7823

20 July, 1993

*file* → Conrad Guettler  
Publishing Director for Physical Sciences  
Cambridge University Press  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU, England

Dear Friend:

Maybe it should be Dr. Guettler?--or Conrad?

Anyway, I have a matter quite independent from "my" book, with which you can perhaps help me now that you're my CUP contact.

I teach the paleobotany course here, in addition to palynology. For some years I used W. N. Stewart's textbook as text for the course. Then it got a little dated for my purposes, and I switched to another book. I note that CUP is just out with a second edition: "Paleobotany and the evolution of plants, 2nd Edition"--by W. N. Stewart and G. W. Rothwell. Could you arrange a copy for me, for consideration as textbook for my course?

Thanks.

Yours very truly,

Alfred Traverse



CAMBRIDGE  
UNIVERSITY PRESS

NORTH AMERICAN BRANCH  
40 West 20th Street  
New York, N.Y. 10011-4211  
U.S.A.

TELEPHONE 212 924 3900  
FAX 212 691 3239

March 5, 1992

Dr. Alfred Traverse  
Department of Biology  
The Pennsylvania State University  
University Park, PA 16802-5301

Dear Dr. Traverse:

I am writing to introduce myself as the Life Sciences Editor for Cambridge University Press New York, and to say that I will be visiting The Pennsylvania State University on Wednesday, March 18th, and Thursday, March 19th. I would like to come in and talk to you for a short period about any area where you see the need for new books, either in your own teaching area, or for graduate students and researchers in your particular area of research. Of course, if you have any publishing plans yourself I would be delighted to discuss them with you.

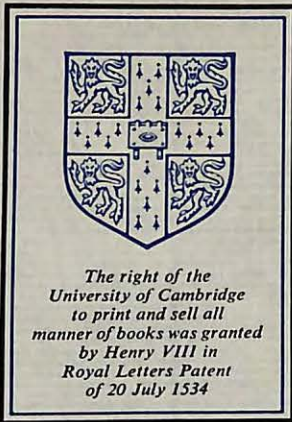
If you would like to talk about some area of biological sciences publishing, then please give me a call, either at the number above, or toll-free at 1-800-221-4512, extension 416, and we can arrange a convenient time to meet. Otherwise I hope you will not mind me dropping by sometime during one of these two days. Naturally, I will understand if you are too busy, or are otherwise engaged.

Thank you in advance.

Yours sincerely,

*Robin C. Smith*

Dr. Robin Smith  
Life Sciences Editor



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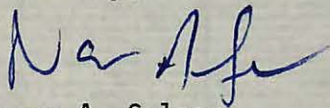
Dr. Alfred Traverse  
The Pennsylvania State University  
Department of Geosciences  
435 Deike Building  
University Park, PA 16802

Dear Dr. Traverse:

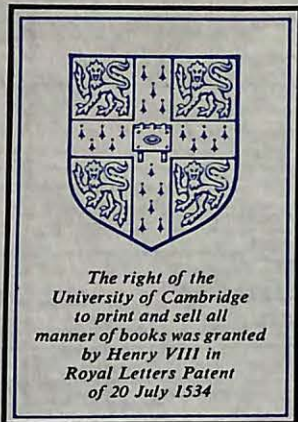
I am writing to fill you in on the status of your ordered book. The Origins of Angiosperms and their Biological Consequences went out of print in the hard-back edition shortly before you ordered it. It has recently become available in paperback, and a copy has been ordered for you.

I hope the delay has not caused you any inconvenience. If I can be of any assistance, please let me know.

Sincerely,



Nancy A. Selzer  
Assistant to Peter-John Leone



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32 EAST 57TH STREET, NEW YORK, N.Y. 10022

↑ file

17 October 1988

Professor Alfred Traverse  
Department of Geosciences  
Pennsylvania State University  
University Park, PA 16802

Dear Professor Traverse:

Greetings. You may remember that not long ago we discussed the possibility that you might like to write a book on evolution that emphasizes the philosophical underpinnings of evolutionary theory. I am wondering if you still have an interest in this idea. If so, I would be eager to pursue it with you now.

I look forward to hearing from you about this or any other book writing plans you may have. I will be at the GSA conference in Denver on 31 October through 2 November, where Cambridge University Press will have a book booth in the exhibition hall. If you plan to attend, I would be pleased to meet with you there.

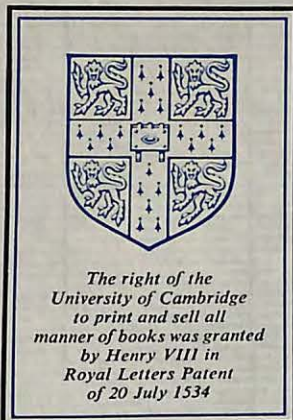
With best wishes,

Yours sincerely,



Peter-John Leone  
Editor, Earth Sciences

P-JL/mec



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Richard Schermerhorn

26 March 1986

Professor Alfred Traverse  
The Pennsylvania State University  
Department of Geosciences  
Deike Building  
University Park, Pennsylvania 16802

Dear Professor Traverse:

Thank you for your kind reply of 19 March. It's good to hear that someone, particularly you, is bringing out a modern palynology text, even if it is for another publisher! I hope that someday we can collaborate on a reference book in the same subject. It might be something you develop from your work on the present book. At any rate, I hope we can keep in touch about the possibilities.

Yours sincerely,



Peter-John Leone  
Editorial, Physical Sciences

P-JL/ljb

19 March, 1986

*file* → Mr. Peter-John Leone  
Editorial, Physical Science  
Cambridge University Press  
32 East 57th St.  
New York, NY 10022

Dear Mr. Leone:

Thanks for your most flattering letter of 14 March.

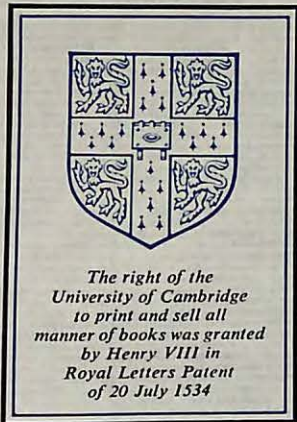
As it happens, I am in the latter stages of producing an elementary textbook for paleopalynology, to be published by George Allen & Unwin.

When that project is completed, I might later be interested in undertaking a companion, more advanced volume that would be a reference book, as you suggest. However, we're looking at some way down the road!

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et



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Controller and Resident Director, New Rochelle

Richard Schermerhorn

14 March 1986

Professor Alfred Traverse  
Department of Geosciences  
Pennsylvania State University  
University Park, PA 16802

Dear Professor Traverse:

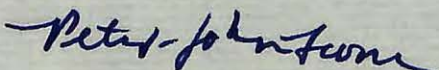
May I introduce myself as the earth sciences editor at the Press in North America?

It has been suggested to me by several of your colleagues that you might like to write a monograph/reference book on Pre-Pleistocene palynology. There seems to be a sore need for a basic reference in palynology, and I agree that such a book would be a superb contribution to the literature and welcomed by researchers and students alike. The Press has an interest in this area, especially with such publications as Huntly and Birks: Past and Present Pollen Maps of Europe, and we are always on the lookout for new and important works. I feel we would be keen to publish a book by you on this topic.

You are probably one of the few people with enough expertise in this area to write such a book, and, indeed, perhaps you have thought about this idea already. If not, I would be more than willing to take it up with you now. Eventually, we would be pleased if you were to draft some sort of book prospectus for our review.

I'm enclosing some information about the Press for your interest. I hope you will feel free to write or call me (toll-free at 800-221-4512) to discuss the matter.

Yours sincerely,



Peter-John Leone  
Editorial, Physical Sciences

P-JL/bms

Enc.

Cambridge University,  
Quaternary Research

~~Bill  
to  
Bill~~

~~Bill  
to  
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Bill~~

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UNIVERSITY OF CAMBRIDGE (england)

DEPARTMENT OF BOTANY

SUB-DEPARTMENT OF QUATERNARY RESEARCH

bits as  
correspondence

ANNUAL REPORT

OCTOBER 1977 TO SEPTEMBER 1978

~~Bill  
to  
Bill~~

UNIVERSITY OF CAMBRIDGE

DEPARTMENT OF BOTANY: SUB-DEPARTMENT OF QUATERNARY RESEARCH

Twenty-ninth Report, covering the period October 1977 to September 1978

In accordance with Regulation 1 (f) for Sub-departments, this Report has been submitted to, and approved by, the Heads of the Departments of Botany, of Geology and of Archaeology.

Staff and Research Students

Dr. H.J.B. Birks, University Lecturer in Botany, has continued to play a large part in teaching and research in the Sub-department and in the Botany School. Dr. V.R. Switsur, Assistant Director of Research, has continued in charge of the Radiocarbon Laboratory, with Mr. A.P. Ward providing technical assistance. Dr. N.J. Shackleton, Assistant Director of Research, is in charge of the Palaeotemperature Laboratory, with Mr. M.A. Hall and Mr. Q.C. Given as research assistants financed by a grant from N.E.R.C. Mr. Given resigned in the summer to take a Diploma in Education course in the University of London. Mrs. S. Peglar has continued as assistant in charge of the Quaternary laboratories in the Botany School.

Dr. H.H. Birks has continued her research on Scottish vegetational history. Mr. R.H.W. Bradshaw concluded his research on modern pollen representation factors and recent woodland history in south-east England. Mrs. D.G. Wilson continued research on plant remains from archaeological contexts in the Nene Valley. Mr. P. Coxon continued research on Middle Pleistocene environmental history in the Waveney valley. Mr. C.D. Bates started research on pollen stratigraphy from deep-sea cores, paying particular attention to the north-east Mediterranean, and Miss M.E. Edwards started research on the vegetation history and ecology of oakwoods in north central Wales. Dr. B. Huntley began work on pollen maps of Europe, supported by N.E.R.C.

Miss U. Allitt continued her work on an atlas of airborne fungal spores. Mrs. J.P. Huntley has continued work, supported by the Nature Conservancy Council, on the National Vegetation Classification under the direction of Dr. H.J.B. Birks. Dr. P.L. Gibbard continued work on an N.E.R.C.-supported project on the Pleistocene of the Middle Thames. Dr. A.J. Stuart, working on Quaternary vertebrate faunas in the Museum of Zoology, has continued his collaboration with the Sub-department, with Mr. A.M. Lister continuing further vertebrate studies. Dr. S.C. Beckett has continued work on plant macrofossils of the Somerset Levels, in association with Dr. J.M. Coles of the Department of Archaeology. Dr. C. Turner (Open University) has continued participation in the work of the Sub-department.

Laboratories and techniques

The new accommodation for the Godwin Laboratory is now in full operation, with the radiocarbon, palaeotemperature and sediment laboratories fully occupied. The laboratories have been greatly improved by the installation of air-conditioning, though some problems remain with dust control.

Mr. Bates has modified the pollen preparation procedure in the Sub-department in order to investigate extremely minerogenic sediment samples such as deep-sea clays. This new preparation scheme includes the use of sodium pyrophosphate as both a deflocculant and an agent for the removal of clay-minerals. The technique has been successfully developed and tested by Mr. Bates, Mr. Coxon and Dr. Gibbard, and is now in course of publication.

## Research

(i) Preglacial Pleistocene. Professor R.G. West concluded work on pollen stratigraphy of the crag at Bramerton. The pollen diagram, showing a middle or late part of a temperate stage and part of a later cold stage, has now been associated with molluscan and foraminiferal analyses by Dr. P.E.P. Norton and Professor B.M. Funnell respectively. The work indicates the presence of a temperate stage not hitherto clearly identified in the East Anglian sequence. Professor West has studied pollen assemblages in marine Baventian clay at Covehithe, Suffolk, in conjunction with molluscan and foraminiferal analyses by Dr. Norton and Professor Funnell. The site provides much evidence for sea-level, vegetation and marine fauna during the Baventian.

Pollen analyses from the interglacial river channel-fill deposits at Sugworth, Berkshire were undertaken by Dr. Gibbard. These analyses, together with the plant macrofossils studied by Mrs. M. Pettit, indicate that the river was flowing through a late temperate mixed deciduous-coniferous woodland dominated by Abies. The deposits were shown to be of Cromerian Cr IIIb age. The results are in the course of publication.

Dr. D.F. Mayhew and Dr. Stuart are working on the voles from the Lower Pleistocene Norwich Crag Formation and the older part of the Cromer Forest-Bed Formation. Much newly-obtained material is being utilized as well as specimens in museum collections. In many cases considerable taxonomic revision is necessary compared with earlier work.

Dr. Stuart continued work on the N.E.R.C.-financed project on the mammalian faunal history of the early Middle Pleistocene.

(ii) Middle and Upper Pleistocene. Professor West started an investigation of marine interglacial deposits on the Selsey-Wittering coast of Sussex. This work continues the earlier (1959) investigation of Ipswichian interglacial deposits at Selsey Bill. Pollen analysis has been begun of further sites in the area, and they indicate the presence of Ipswichian and older marine deposits, probably including "the Selsey mud-deposit" of earlier authors.

Mrs. Peglar has completed pollen analyses of a peat-bed interstratified between tills at Sel Ayre, Shetland Mainland, found by Dr. W. Mykura, I.G.S., Edinburgh. Numerical comparisons by Dr. H.J.B. Birks of the Sel Ayre profile with the presumed Hoxnian sequence at Fugla Ness suggest that the two represent different interglacials, and that the Sel Ayre sequence can be correlated with the Ipswichian interglacial.

Dr. Gibbard has continued the N.E.R.C.-financed research project on the stratigraphy and palaeogeography of the terrace deposits of the Middle Thames region. Work on the Chertsey-Reading-Aldershot area has shown that in this area occurs a previously undescribed, fragmentary series of gravel terraces, distinct from those of the Thames. Information is being assembled to enable a stratigraphical scheme to be developed for the area.

In the Thames Valley Dr. Gibbard undertook a large field work programme during the summer. Evidence has been collected that will facilitate the construction of a firmly-based stratigraphy using litho- and biostratigraphical methods. A new interglacial site, discovered by Soil Mechanics Ltd., will provide a much-needed biostratigraphical marker horizon in the sparsely fossiliferous terrace sequence. This site will be cored during the coming year. Organic deposits have also been discovered in the Flood Plain Gravels at Colnbrook, West Drayton and Kempton Park.

Mr. Coxon continued work on the Quaternary history of the Waveney Valley. Extensive fieldwork has provided an overall picture of terrace sequences and the geology of the area. This work has included levelling important features in the valley, with field mapping. Pollen analyses have been carried out on cores from several important sites to provide a biostratigraphical framework for the work. Detailed study of gravel pits in the area has also been carried out to provide a better understanding of palaeoenvironmental conditions. Part of this work has included the study of palaeocurrent directions and the production of lithostratigraphical units to enable correlation of terrace sequences. It is hoped to bring this work together to determine the inter-relationships between glacial and interglacial deposits in the area.

Mr. Coxon, Dr. A.R. Hall, Mr. Lister and Dr. Stuart have completed a detailed study of the flora and vertebrate fauna of the Ipswichian organic deposits at Swanton Morley, Norfolk. An important new macrofossil find is Trapa natans (subzone Ip IIb) represented by fruits. A number of hazel nuts recovered show clear signs of feeding by woodmouse (Apodemus sylvaticus). Swanton Morley is of considerable importance because vertebrate remains have been recovered from different zones (Ip, IIa, Ip IIb and Ip III) within the same interglacial. The main fauna from subzone Ip IIa includes the voles Microtus oeconomus, M. agrestis and Arvicola cantiana, spotted hyaena Crocota crocuta and pond tortoise Emys orbicularis.

Dr. Gibbard, Dr. Stuart and Professor West have started investigating gravels and organic deposits of probable Devensian age at Block Fen, near Chatteris. Numerous large mammal bones, recovered by workmen, represent mammoth, woolly rhinoceros, reindeer, horse and bovid.

(iii) Late Devensian and Flandrian. Laboratory work on the vegetational history of western Scotland was completed in June 1978. Dr. Williams finished his detailed pollen analysis of a long Flandrian sequence from a site near Salen on the north side of Loch Sunart, Argyllshire, and from the basal two metres of a site near Oban previously studied by Professor J.J. Donner. Both sites are situated within the oak-forest region today. Radiocarbon dates from both sequences have been obtained from the S.U.R.R.C./N.E.R.C. Dating Laboratory at East Kilbride. Mrs. Peglar has completed her analyses of a long Flandrian profile from a site in southern Knapdale. These three sites form the southern end of the transect of twelve Flandrian sites studied in western Scotland. Synthesis of the results obtained over the last five years has continued, with numerical analyses and comparisons of each site now being completed.

Dr. H.J.B. Birks and Dr. H.H. Birks have completed analyses of samples from a boring through organic and inorganic sediments that have accumulated within extensive landslide features in Glen Uig, Skye. This work has been done in conjunction with the I.G.S.

Mrs. Peglar has started pollen analyses of samples from large peat mounds on Ronas Hill, Shetland submitted to the Sub-department by Miss L. Farrell (Nature Conservancy Council).

Dr. H.J.B. Birks has continued his investigations on the Flandrian pollen stratigraphy of small basins and of mor-humus layers within selected woodland types in the English Lake District. The investigations at Ickenthaite in southern Cumbria are now completed, and they provide insights into the possible causes for the initiation and subsequent accumulation of mor humus. Dr. H.J.B. Birks, Mr. Bradshaw and Mrs. Peglar have collected mor humus profiles from woods in East Anglia for pollen analytical study.

Dr. Huntley has completed his work on the macrofossil stratigraphy of a core of Late Devensian and Flandrian age from a small basin in the Morrone Birkwoods National Nature Reserve, Aberdeenshire.

Work by Dr. Huntley on pollen maps of Europe for the last 12000 years supported by a grant from N.E.R.C. has begun with the extraction of data from the literature of pollen analytical sites with radiocarbon dates. In addition, some unpublished data have been made available by various workers. Information extracted includes the geographical position and ecological setting of each site along with numerical data for 55 taxa for the 27 time points at 500-year intervals from 0-13000 B.P. To date, 170 sites in Great Britain, Eire, Faeroes, Norway, Sweden, Denmark, Finland, Spitsbergen, Iceland, Estonia, Lithuania, Holland, Germany, Austria and Luxembourg have been abstracted. Provisional maps for the major tree taxa in Fennoscandia were produced in June 1978, and they have proved to be of considerable interest.

Dr. H.J.B. Birks and Miss B.J. Madsen have prepared for publication their results on the pollen stratigraphy of a Flandrian sequence from the Isle of Lewis. The results are in the course of publication.

Dr. Huntley and Dr. H.J.B. Birks completed two manuscripts on the present vegetation and soils of the Morrone Birkwoods. The manuscripts have been submitted for publication.

Dr. H.J.B. Birks has completed his work on the relationship between the numbers of insects associated with British trees and the age and history of the tree genera. The results of this work have been prepared and submitted for publication.

A series of samples taken from an organic bed in flood-plain gravel of the Thames at Thrupp Farm, near Abingdon, Berkshire are being examined by Dr. Gibbard and Dr. M. Aalto (University of Helsinki). The deposits date from the Late Devensian as shown by a radiocarbon date (Hel-1092:  $13,260 \pm 180$  B.P.).

Mr. Bradshaw analysed pollen from the organic filling of a small collapsed ground-ice mound in Oxborough Wood, Norfolk. A pollen assemblage was described containing high values of Utricularia pollen and Thelypteris palustris spores. A later assemblage was dominated by pollen of Pinus, and prior to clearance by man, Tilia pollen was abundant. Detailed comparison with sites in the Breckland and the Fenland provides evidence for different types of vegetation in these environments in the past.

Miss Edwards began work on the vegetation history of oakwoods in north central Wales. It is hoped that comparison of the local histories of woods containing rich bryophyte floras with those of woods with poor floras will indicate how disturbance and past management have affected the long-term survival of these floras. Pollen diagrams have been obtained for three cores taken in two woods. Subsequent fieldwork established four more promising woodland sites which have also been cored. Pollen analysis of these cores is now in progress. It is hoped that a regional pollen profile will be obtained from an open bog in the centre of the study area.

Mr. Bates has started research on deep-sea cores from the north-east Mediterranean in order to determine a pollen stratigraphy. The aim is to investigate a potentially continuous vegetational and climatic history and compare this with terrestrial records for that region. It is also hoped to compare these results with oxygen isotope measurements obtained from Foraminifera found within the same core samples.

Mr. Bates has also studied deep-sea samples from the North Atlantic to examine subsequent enrichment of pollen brought about by the deposition of ice-rafted sediment.

The study of Flandrian tufa deposits being undertaken by Dr. Turner in collaboration with Dr. M.P. Kerney and Dr. R. Preece of Imperial College has been extended to cover new sites at Caerwys (Gwent), the most massive of Flandrian tufa deposits in Britain, Brigg (Lincolnshire) and Roscrea (Co. Tipperary, Republic of Ireland).

Six bone samples from the Fenland were submitted by Mrs. M. Northcote for pollen analysis. Only two of these turned out to have countable pollen and appeared to correlate with Godwin's zone VIIa at Shippea Hill.

An Aurochs tibia was submitted by the Harrison Zoological Museum, Sevenoaks, Kent, for pollen analysis. The pollen assemblage was very similar to one from the New Dartford Tunnel site assigned to zone VIIa by Dr. R.J.N. Devoy. Further samples have been submitted for pollen analysis.

(iv) Wisconsin and post-Wisconsin of North America. Dr. H.J.B. Birks has completed his work on the Late Wisconsin pollen stratigraphy of Kylen Lake in north-east Minnesota. The profile extends back to nearly 16000 years, and the pollen record, both as relative and influx values, provides a detailed basis for the reconstruction of the vegetational history of this part of Minnesota for the time during which there were several glacial advances and retreats.

Dr. H.J.B. Birks has continued his work on the occurrences of pollen grains and spores of presumed long-distance transport in sediments of Late Wisconsin age in Minnesota. Time-series analysis, using the theory of point processes, of the occurrences of over twenty pollen types reveals different temporal patterns that may reflect changing major wind directions during the Late Wisconsin. This work is currently being prepared for publication.

Dr. Gibbard has worked on a series of pollen samples from a Middle Wisconsin sequence at Mary Hill Quarry, near Vancouver, British Columbia, Canada. Dr. Gibbard is co-operating with Mr. S.R. Hicock (University of Western Ontario) and Dr. R. Hebda (University of Waterloo) in this work, which is being carried out for the Geological Survey of Canada.

Dr. Gibbard continued research begun in 1975 on sections exposing the Late Wisconsin Catfish Creek Drift on the north shore of Lake Erie near Iona, Ontario, Canada. The stratigraphy of the deposits has been studied in detail by Dr. Gibbard and Professor A. Dreimanis (University of Western Ontario). Particular attention has been paid to sedimentary analysis of the till units.

A paper on the sedimentology of Waterlain Catfish Creek Till, arising from this work, will be published shortly.

(v) Pollen and spore dispersal and deposition. Professor West and Dr. R. Randall have continued their work on the relation between pollen content of moss polsters and vegetation in the Monarch Isles, Outer Hebrides.

The pollen and vegetation analyses of 84 surface sample sites in clearings within natural and semi-natural woods in western Scotland have been subjected to a variety of numerical analyses by Dr. H.J.B. Birks in an attempt to quantify the pollen-vegetation relationship at this particular geographical and ecological scale.

Miss K. Heide analysed modern pollen spectra in surface mud samples from 23 lakes in Minnesota and N. Dakota. The samples had been collected by Dr. H.H. Birks in connection with her work on modern macrofossil assemblages. Numerical analyses of the pollen and macrofossil data for these 23 lakes have been completed by Dr. H.J.B. Birks, and the results show interesting corresponding patterns between the two data sets.

Mr. Bradshaw completed analyses of the data comprising pollen counts from woodland moss polsters and basal area measurements of the major tree species growing within a 20m radius. Significant correlations were obtained between the pollen and vegetation measures for Betula, Pinus and Quercus. There is a poor relationship between pollen and vegetation for Fagus at this scale. Pollen representation factors derived from this study assisted in the interpretation of the pollen data from Oxborough Wood and Thompson Common.

Analysis of pollen preservation data collected by Mr. Bradshaw in his research showed that Alnus and Corylus were the pollen types most likely to be under-represented due to differential preservation in the small basins studied. A pollen preservation index was devised to monitor the preservation conditions in each pollen sample analysed.

Detailed studies on pollen deterioration by Mr. Bates have shown that grain preservation may provide valuable information on the provenance and depositional environment of pollen in deep-sea sediment and may support previous research work on the susceptibility of pollen to differential deterioration.

(vi) Air spora. Miss Allitt has added a further approximately 300 slides to the fungal spore reference collection. Airborne spores belonging to a number of visual groups, especially coloured non-septate spores (such as Xylariaceous spores), one-septate spores and lichen ascospores were identified and described.

(vii) Faunal history and micro-evolution in Pleistocene vertebrates. Dr. Stuart has continued his work on micro-evolutionary changes in small mammals through the Middle and Upper Pleistocene, in collaboration with Dr. Joysey. In contrast to the progressive changes seen in the Miomys-Arvicola lineage, the vole M. oeconomus shows no apparent overall changes with time but does exhibit well-marked fluctuations in size, with large forms in cold stages and small ones in the interglacials.

Dr. Stuart has also completed a study of the Pleistocene occurrence of the pond tortoise (Emys orbicularis) in Britain, now in course of publication. The species is of considerable climatic significance in that it appears to require mean July temperatures well in excess of 18°C for its eggs to hatch. Thus it is not found in Britain at the present day. It is nevertheless recorded from every interglacial from the Cromerian to the Flandrian. Significantly there are no less than six known Ipswichian localities with pond tortoise, but only one from the Flandrian - from East Wretham, Norfolk. A specimen of peat associated with pond tortoise material from the latter site was pollen-analysed by Dr. A.R. Hall, who concluded that it was of zone VIIa age.

Mr. Lister continued his work in the Museum of Zoology on Pleistocene deer. Detailed osteological comparisons between the various species have been completed. These have been used for the identification of fossil specimens, for phylogenetic questions (e.g. the Dama/Megaceros relationship), and for the functional explanation of micro-evolutionary change. Cervid dental morphology and its Pleistocene trends are being evaluated. Work continues on the Upper Pleistocene ecology and evolution of giant, fallow,

and in particular red, deer in Europe, using the above results. Some progress has been made on the Forest-bed deer, based in particular on the specific identification and stratigraphical placing of bones and teeth.

(viii) Pollen morphology and reference collections. Mrs. Peglar and Dr. H.J.B. Birks have continued their work on the pollen morphology of the three North American species of Picea (P. glauca, P. mariana, P. rubens) in an attempt to use multivariate discrimination techniques as a basis for identifying fossil spruce pollen.

Miss R. Andrew has continued her work, supported by the S.R.C., on the description of the British pollen and spore flora.

Pollen and seeds were collected by Mrs. Huntley for the reference collections in connection with her plant sociological work. She also collected over 200 samples from the Austrian Alps in August 1978, and further collections of pollen and seeds have been made by other members of the Sub-department. These are now being incorporated into the reference collections.

The study of the major pollen taxa by Mr. Bates in north-east Mediterranean deep-sea sediment samples has enabled him to construct a pollen guide to aid identification.

(ix) Numerical analysis of palaeoecological data and computing. Dr. H.J.B. Birks has completed numerical zonations and comparisons of long Flandrian pollen sequences from southern Sweden. This work is part of a collaborative project with Professor B.E. Berglund (University of Lund), and it has been written up and accepted for publication.

A wide variety of palaeoecological data has been analysed numerically by Dr. H.J.B. Birks. The majority of the data relate to the studies on the vegetational history and modern pollen deposition in western Scotland.

Dr. H.J.B. Birks has completed numerical classifications of distributional data of British pteridophytes recently published in the Atlas of British Ferns.

Dr. Huntley has written several data-handling programs in connection with the pollen mapping project. These programs check and reformat the punched data, select sites required for a particular map, and calculate values to be mapped for these sites. The automatic mapping of these values, producing neat graph-plotter-drawn maps has been made possible by the installation of the CAM package on the University of Cambridge computer by Mr. W.C. Stratton (Brown University).

Dr. H.J.B. Birks and Dr. Huntley have updated and modified various of the computer programs used routinely in the Sub-department, including the programs for processing pollen data and drawing pollen diagrams, for principal co-ordinates analysis, and for cluster analysis.

(x) Quaternary fossil record and data banks. The data bank is now installed in its own room in the Godwin Laboratory. A number of requests have been received for information on the fossil record of particular taxa. Due to shortage of staff, no further material on plant records has been added to the bank during the year. Likewise, it has been impossible to augment the data collection of European radiocarbon dates later than volume 17 of Radiocarbon.

(xi) Radiocarbon Dating. The year has been fully taken up with the design, assembly and testing of new equipment of various sorts in preparation for the dating research programme. After intensive literature survey and consultation with colleagues in other radiocarbon laboratories, who have unstintingly given good advice on the problems, a fairly simple piece of apparatus for the total synthesis of benzene from the carbon contained in the sample to be dated has been designed. The system has been distilled from what was thought to be the best in current use elsewhere and incorporates several original answers to the problems of the synthesis. The preparation and use of several catalyst systems for the conversion of ethine into benzene has been studied, and a technique evolved for the preparation and activation for the one chosen. The results of the work are most satisfactory, the catalyst conversion being apparently 100% efficient, though so far it has proved not possible to recover the final 0.1 to 0.2% of the yield of benzene, which remains firmly attached to the catalyst beads. The overall yield from carbon dioxide to benzene is consistently above 96% on the samples so far tested. At the hydrolysis stage when lithium carbide is converted to ethine there is the possibility of tritium entering the system, and this will be investigated comparing distilled Cambridge public water supply with that from deep bore-hole water known to be very old and tritium-free. Thanks are due to the Anglian Water Authority and to Dr. C.L. Forbes for help and advice on this problem.

In parallel with the above work, various parameters affecting the performance of the liquid scintillation spectrometers were evaluated. The work by Pearson and Qua in the Belfast radiocarbon laboratory has demonstrated that dating with liquid scintillation technique can be made comparable in performance with that of a good proportional gas counting dating system. It is essential to set up the spectrometer very carefully in the initial stages by investigation of the individual instrument performance. In this laboratory several parameters have been studied which affect the efficiency and stability of the spectrometer including the photomultiplier high voltage, dynode voltages, amplifier gain, discriminator settings and window widths and instrument temperature. The effect of the variation of sample to solvent ratios and concentration of scintillant have been studied in comparison with total cocktail volume and the effect of these on counting efficiency. An investigation has been made also on how the apparent efficiency measured depends on the technique of measurement and how stable is the resulting value. There is thus being built up a body of information and experience concerning the spectrometer performance. Much time has been spent on checking the background count rate of the instruments with the various configurations of solvent mixtures and blacking of part of the vials. The sealing of the vials is also an important problem to solve satisfactorily, since over the counting period of perhaps a month small leaks of mixture of scintillant would cause incorrect dates to be obtained.

Meanwhile, however, comparison tests have been carried out in collaboration with Mr. R.L. Otlet and the Harwell radiocarbon dating laboratory, and several test samples have been dated in addition to numerous standards and background measurements. The tests indicate that comparable dates can be obtained from the equipment.

One important factor in the good progress made during the year was the help given by the occasion of a three month British Council study visit to the laboratory by Miss T. Kankainen from the University of Helsinki radiocarbon dating laboratory. This enabled her to study some of the problems of the application of liquid scintillation counting technique to radiocarbon dating. She learned to handle the electronic equipment after a short period of instruction and contributed many of the systematic

measurements required in the investigations. We are grateful both to the British Council and to Miss Kankainen for their timely help with the projects. Since returning to Finland, Miss Kankainen has been appointed in charge of the radiocarbon dating laboratory of the Geologic Survey of Finland at Otaniemi.

Work on the dendrochronology project continued during the year with the collection of further samples of oak sections from the surrounding Fenlands. A meeting was arranged with the dendrochronology group from the University of Nottingham and suggestions for future collaboration were discussed.

(xii) Palaeotemperature analysis. Operation in the Godwin Laboratory has proceeded smoothly. Initially the analytical equipment was set up as in Salisbury Villas, but soon after, the final step was taken to produce a completely grease-free vacuum line. This is now operating very successfully. The new feature is that the acid used for decomposition of the foraminiferal calcite is dropped on to the sample at 50°C through a vacuum stopcock made by J. Young and Co. This stopcock is made of glass with PTFE 'O' ring seals and proves to be very stable when used continuously in hot orthophosphoric acid. An experiment performed to investigate the temperature effect on the isotopic fractionation during acid decomposition of calcite was performed during which it was established that isotopic analysis of clean calcite can be performed with this new system with a reproducibility as low as 0.02 per mil, the limit imposed by the mass spectrometer. That is to say, we appear to have eliminated uncertainties deriving from the chemical aspect of our analysis. Unfortunately this improved system has revealed the presence of analytical uncertainties deriving from build-up of impurities in the vacuum line which are not yet entirely resolved.

Dr. Shackleton's collaboration with the CLIMAP research project has continued. The most interesting part of this at present is the study of the changes in climate at the beginning and the end of the last interglacial. For this project several cores are being studied in very much more detail than hitherto. For example core V28-238 was previously sampled at 5 cm intervals, representing a sampling interval of about 3,000 years, through the last glacial and interglacial. The section including substage 5e and about 10,000 years before and after has now been resampled at 1 cm intervals (about 600 years). The amount of extra detail revealed has been rather more than expected, suggesting that there is in general more detail to be gleaned from the analysis of deep-sea cores at closer sampling intervals than is the rule at present. Several other cores are being analysed in similar detail.

A very interesting study has been made with Mr. Jonathon Erez, a student at Woods Hole Oceanographic Institution. The object was to investigate exactly what factors determined the observed isotopic composition of foraminifera found in deep-sea sediment. To this end foraminifera were analysed from plankton tows and also from sediment traps (designed and deployed by S. Honjo) which are suspended in the open ocean at various depths (for the first experiment at four depths between 400 m and 5200 m) and recovered after a few months. The traps thus intercept the particulate flux to the sea floor.

Two further cores from the Lamont-Doherty Geological Observatory core collection were analysed with a view to extending the combined oxygen isotope and palaeomagnetic stratigraphies; the record now includes the whole Pliocene and part of the Late Miocene (to early Magnetic Epoch 6, at about 6.5 M.y.).

Two further papers dealing with the oxygen isotope calibration of Pleistocene biostratigraphic datums were published during the year, involving the study of a good core from the subantarctic Pacific ocean (RC12-225) and one from the Equatorial Atlantic (RC13-205). In addition some cores were analysed in a study to determine the local (Pacific) extinction of the pink morphotype of Globigerinoides ruber (at about substage 5e). This study is almost complete.

Several cores from the eastern Mediterranean covering approximately the past 12,000 years have been examined in collaboration with Dr. H.F. Shaw (Imperial College, London) and Mr. H. Buckley (British Museum (Natural History)). These include the area in which Mr. Bates is embarking on a study of pollen in deep-sea sediment. Two Plio-Pleistocene sections have also been examined; the classic section of Le Castella and the Crostolo section in northern Italy. It is not yet clear how much useful information might derive from detailed isotopic work in these sections, but they do apparently contain well-preserved material.

Some material from a Middle Miocene section in a borehole south west of the Scilly Isles was analysed in collaboration with Dr. Graham Jenkins (the Open University). A short report on this work has been submitted for publication.

A preliminary sampling and analysis has been made of an unusual piston core from a sea-mount at about 10°N in the western equatorial Pacific. The core apparently contains a record of about the past 2.5 M.y. and because of the shallow depth at which it was collected, the foraminifera are exceptionally well preserved. Unfortunately the material was distorted during coring so that the core is not suitable for palaeomagnetic work. It is hoped that detailed correlations will be possible with core V28-179, for which Dr. Shackleton and Dr. N.D. Opdyke published an oxygen isotope and palaeomagnetic record to the base of the Gauss magnetic epoch. The new core, V28-240, will permit rather detailed analysis to be made of climatic fluctuations in the late Pliocene.

(xiii) Archaeology. Mrs. Wilson continued her work on the palaeobotany of archaeological sites in Britain, with especial reference to the Nene Valley. During the year analyses were made of Iron Age samples from Fengate, as part of the Nene Valley excavations. They revealed a richness of aquatics related to the lowlying situation on the edge of the Fens, in contrast to the analyses at Longthorpe where hedgerow and open scrubby woodland is indicated by the flora. During these investigations Mrs. Wilson has continued to accumulate information on techniques and retrieval methods.

Dr. H.H. Birks has completed a series of pollen analyses from archaeological sites in the Lincolnshire Fens in conjunction with Mr. B.B. Simmons (South Lincolnshire Archaeological Unit).

Dr. Beckett has carried out both pollen- and macro-fossil analyses from archaeological sites within the Flandrian peats of the Somerset Levels. The main sites under study have been a Neolithic wooden trackway, and the Iron-age lake village at Meare, which has now been dated by radiocarbon assay.

(xiv) National Vegetation Classification. Mrs. Huntley has continued her work on the phytosociology of East Anglia and south-east England as part of the National Vegetation Classification supported by the Nature Conservancy Council. Data collected in the 1976 and 1977 field seasons were analysed during the winter using a variety of computer techniques and the vegetation of the region classified into nodes. The broad associations of vegetation

thus defined were used to delimit ecological and geographical gaps and the 1978 field season was spent in sampling these gaps. Over 3000 relevés have now been collected from throughout the region and the overall regional synthesis of all vegetation types will continue this winter.

Large datasets of chalk grasslands, neutral grasslands, and base-rich wetlands have been made available to the N.V.C. and Mr. H. Blackburn (Noise Research Laboratory, Department of Engineering) has been employed part-time to do the computing necessary to incorporate them into the main N.V.C. dataset. He is using programs written by Mr. W.C. Stratton (Brown University) during his visit to the Botany School in the summer of 1978.

Dr. J.M. Lock (Lancaster University) visited Cambridge for a week in September to dive and sample some aquatic communities for the N.V.C.

Dr. H.J.B. Birks and Mrs. Peglar have completed their phytosociological surveys of selected East Anglian fens as part of the N.V.C. project.

Dr. Huntley has developed further computer programs for the N.V.C. project. These programs calculate and handle constancy values for vegetational data. A much modified version of the basic phytosociological table-writing program has been developed to handle not only raw relevé data but also nodal constancy data. The on-line job submission system has also been revised in an attempt to reduce the file-space required for jobs, rationalise as far as possible the parameters used, and carry out more parameter checking before job submission.

#### Summary of activities supported by research grants

N.E.R.C.	Vegetational history of Western Scotland (Dr. H.J.B. Birks).
	Pollen vegetation and climatic maps for Europe, 0-13000 years ago (Dr. H.J.B. Birks).
	Oxygen isotope stratigraphy of the Lower Pleistocene and latest Pliocene (Dr. Shackleton).
	Faunal history, palaeoecology and micro-evolution of mammals of the early Middle Pleistocene (Dr. K.A. Joysey and Dr. Stuart).
	Stratigraphy, sedimentology and palaeobotany of the Middle Thames terrace sequences (Professor West and Dr. Gibbard).
	Thermoluminescence dating of M. Pleistocene deep-sea sediments (Dr. Shackleton).
S.R.C.	British pollen and spore flora (Professor West).
Nature Conservancy Council	National Vegetation Classification (Dr. H.J.B. Birks).
Royal Society	Computer aids in Quaternary pollen analysis (Dr. H.J.B. Birks).
Nene Valley Research Committee	Palaeobotany of archaeological sites in the Nene Valley (Mrs. Wilson)

### Teaching

Professor West and Dr. H.J.B. Birks gave the Part II Botany course on 'The History of the British Flora' and the Part IB Plant Biology course on 'Phytogeography and Palaeoecology'. Dr. H.J.B. Birks and Dr. P. Adam gave the Part II Botany course on 'British Vegetation', and Dr. H.J.B. Birks gave the Part II Botany courses on 'Quaternary Palaeoecology' and on 'Multivariate Data Analysis'. Professor West, Dr. H.J.B. Birks, Dr. Shackleton and Dr. Switsur contributed lectures to the course in the Department of Archaeology on 'Man's Quaternary Environment'. Professor West, Dr. Shackleton and Dr. Switsur contributed lectures to the special course on 'The Quaternary Period'. Dr. Shackleton and Dr. Switsur contributed lectures to the Part II Archaeology course on 'Chronology'. Practical classes have been held on sediments, pollen analysis and radiocarbon dating. Dr. H.J.B. Birks ran a series of informal evening seminars on various aspects of quantitative biology and he, Dr. Huntley and Mrs. Huntley assisted with departmental bryology excursions. Dr. Huntley and Mrs. Huntley helped to run the Departmental field excursion to Obergurgl in the Austrian Alps in August 1978 in conjunction with Dr. P.J. Grubb and Mr. J. Akeroyd. Dr. Stuart gave a course of lectures to Part II Zoology on 'Pleistocene Faunal History'.

During the year consultations were held with the Departments of Botany, Geology, Geography and Zoology on the provision of a course for the M. Phil. degree (one-year course). The course would provide teaching in fundamental aspects of Quaternary research together with a short research thesis. It is hoped that this may start in 1979.

### Colloquia

The following topics were discussed at informal open meetings in Cambridge of the Quaternary Discussion Group.

- 21 October 1977 Dr. Thompson Webb III (Brown University): "Sensing the vegetation with pollen data: the influence of scale."
- 4 November 1977 Dr. W. Tutin (University of Leicester): "Lake-catchment ecosystems - evidence in sediments on the last 3000 years in Britain."
- 25 November 1977 Dr. B. Huntley (University of Cambridge): "The vegetational history of the Morrone Birkwoods."
- 1 February 1978 Dr. J. Pilcher (Queen's University, Belfast): "A new look at Radiocarbon Dating."
- 3 February 1978 Professor W.A. Watts (Trinity College, Dublin): "The Burren."
- 17 February 1978 Dr. A.J. Stuart, Mr. A. Lister and Mr. P. Coxon (University of Cambridge): "Swanton Morley: new work on flora and vertebrate fauna."
- 10 March 1978 Professor F. Oldfield (University of Liverpool): "Towards quantifying and characterising the material flux in lake watershed ecosystems: a preliminary evaluation of some new techniques."
- 28 April 1978 Dr. A.R. Hall (York University): "The Interglacial at Wing, Rutland."

- 12 May 1978 Dr. A.P. Bonny (University of Leicester): "Aspects of pollen recruitment to a Cumbrian lake."
- 9 June 1978 Dr. P.D. Moore (University of London, King's College): "A preliminary report on palaeo-environmental studies in the Turan Biosphere Reserve, Eastern Iran."

### Visitors

Dr. Thompson Webb III (Brown University) worked for the academical year in the Sub-department on various aspects of pollen-vegetation relationships, scale, and climatic reconstructions 18000 years ago.

Mr. W.C. Stratton (Brown University) worked for two months on various computational projects, and he successfully installed the valuable CAM mapping project. Miss Kathleen Heide (Brown University) worked for four months on modern pollen samples from lakes in Minnesota and N. Dakota, under the direction of Dr. H.J.B. Birks.

Dr. Switsur received the following visitors at the radiocarbon dating laboratory:- Dr. Austin Long (University of Arizona, Tucson), Dr. K. Gopalan (Physical Research Laboratory, Ahmedabad, India), Dr. K.T.M. Hegde (Department of Ancient History, University of Baroda, India), Dr. L. Strauss (Department of Anthropology, University of New Mexico), Miss E. Souninen (University of Helsinki, Finland) and Mr. H. Jungner (University of Helsinki, Finland). Several exchange visits were made by Mr. R.L. Otlet and members of the staff of the Harwell radiocarbon dating laboratory, and Dr. Switsur with Mr. Ward similarly visited Harwell in connection with the exchange of information and samples. Dr. Switsur and Mr. Ward have also visited the Research Laboratory of the British Museum in connection with setting up new equipment. Miss T. Kankainen (University of Helsinki) spent three months in a research study visit to the radiocarbon dating laboratory under the auspices of the British Council. Dr. R. Laxton, Dr. C. Litton, Dr. C. Triggs, Dr. G. Simpson and Miss P. Whitley of the Dendrochronology Unit of the University of Nottingham visited Dr. Switsur in connection with possible future collaboration in tree ring research. Dr. Anne Boersma spent several weeks in Cambridge working with Dr. Shackleton as an N.E.R.C. senior visiting research fellow. Dr. Judy McKenzie (E.T.H. Zurich) visited the palaeotemperature laboratory to discuss analytical techniques with Dr. Shackleton and Mr. Hall, and Dr. K. Gopalan (Physical Research Laboratory, Ahmedabad) visited for the same purpose. Dr. L.G. Strauss (University of New Mexico) paid a brief visit to discuss seasonality studies in an archaeological excavation in Spain. Dr. Naja Mikkelsen (Danish Geological Survey) spent some days in the palaeotemperature laboratory in connection with studies of equatorial Pacific sediments with particular regard to diatom preservation.

Professor B.E. Berglund (University of Lund) and a group of his students visited the Sub-department while on an excursion to Britain. Professor West, Dr. Turner and Dr. Gibbard led parts of this excursion in East Anglia. Dr. J. Corbin (Auckland, New Zealand) came for help with the identification of airborne fungal spores and to discuss various aspects of spore trapping.

Visitors for short periods included Dr. A.D. Hecht (National Science Foundation), Dr. J.E. Kutzbach (University of Wisconsin), Dr. I.C. Prentice (University of Newcastle), Professor W.A. Watts (Trinity College, Dublin), Professor G.F. Mitchell (Trinity College, Dublin), Mr. J. Bloomental (University of Liverpool), Dr. P.D. Hulme (Macaulay Institute), Mr. J. Godfree (Hadham Hall School, Ware, Herts.), Mr. C.J. Strange (Great Cornard Upper School, Sudbury, Suffolk), Mr. R.E. Sims (Maiden Newton, Dorset), Dr. A.R. Hall (Environmental Archaeology Unit, University of York) and Miss D. Stevens (University of East Anglia).

Visits, lectures

Sir Harry Godwin received the distinction of being elected an honorary member of INQUA, and he also was honoured at the formal opening of Godwin House, Huntingdon, the Nature Conservancy Council's major regional office in East Anglia. Professor West gave the Margary Lecture to the Royal Meteorological Society and contributed to the London Quaternary lectures in the University of London.

Dr. H.J.B. Birks visited the Botanical Institute of the Bulgarian Academy of Sciences, Sofia and the Botany Department, University of Sofia in May 1978 as part of the British Council Cultural Exchange System. He went on several valuable field excursions with Dr. E. Bozilova, Dr. S. Kožuharov, Dr. S. Stanev and Dr. L. Filipovitch and was able to discuss various ecological and palynological problems with Bulgarian colleagues. He also gave lectures on 'Models of Forest History' and on 'Postglacial Forest History of Scotland'.

Dr. H.J.B. Birks attended the Soviet-American Bilateral Meeting on Quaternary Climates organized by Dr. J. Imbrie, Dr. J. Hays and others at Lamont Geological Observatory in June 1978. Dr. Birks gave a lecture there on 'Preliminary Holocene pollen maps for Fennoscandia'.

Dr. H.J.B. Birks assisted Professor B.E. Berglund, Dr. M. Sonesson and Dr. W. Karlen teach a research course on arctic and subarctic environments at the Åbisko Research Station, Swedish Lapland in July 1978. He contributed lectures on 'Revegetation of Deglaciaded Landscapes', on 'Late glacial vegetational history of Britain and eastern North America', and on 'Flora and Vegetation of the Scottish Highlands'.

Dr. H.J.B. Birks gave lectures on 'The Flandrian Forest History of Scotland' at the University of Newcastle and the State University of Utrecht (The Netherlands), on 'Numerical Methods in Quaternary Pollen Analysis' at a regional meeting of the Linnean Society at Cardiff, and on 'Recent woodland history in South Cumbria, as evidence by pollen analysis of mor humus layers' at the British Ecological Society meeting at Lancaster. He and Mrs. Huntley organized a meeting of the National Vegetation Classification project in Cambridge, and attended a similar meeting in Lancaster. Dr. H.J.B. Birks and Dr. H.H. Birks attended the British Bryological Society's meeting at Leicester. Dr. H.J.B. Birks and Dr. Huntley attended meetings of the Mathematical Ecological Group of the British Ecological Society and the British Micropalaeontological Group in London. Dr. H.J.B. Birks and Mr. Bradshaw attended the British Ecological Society's symposium on 'Population Dynamics' in London.

Dr. Shackleton was an invited speaker at the second Ewing Symposium, Columbia University. He gave lectures to the British Micropalaeontological Society (foraminifera section), Eidg. Technische Hochschule (Zurich), Department of Applied Mathematics and Theoretical Physics (Cambridge), Nuclear Physics Division at AERE Harwell, the CLIMAP meeting at Lamont-Doherty Geological Observatory, The Tetrapods (London), the Geological Society of America annual meeting (Seattle, Washington) and to the Grant Institute of Geology (University of Edinburgh).

Dr. and Mrs. Huntley and Miss Edwards attended the British Ecological Society's meeting at Lancaster. Dr. Huntley visited Professor W.A. Watts at Trinity College, Dublin in June 1978 in connection with the pollen mapping project. Dr. Stuart and Mr. Lister organized a Quaternary Research Association Discussion Meeting on Pleistocene mammals, in the Department of Zoology (Cambridge).

Dr. Gibbard gave a glacial geomorphology special course in the Geography Department, Birkbeck College, University of London, and led an accompanying one week student field excursion to the Lake District.

Dr. Gibbard aided by Mr. J. Rose, also arranged and led a weekend field excursion for the Quaternary Research Association to examine the Quaternary geology of the Vale of St. Albans.

At the invitation of Professor A. Dreimanis, Dr. Gibbard spent four weeks at the University of Western Ontario in June and July, to continue work on the cliff exposures on the north shore of Lake Erie, S.W. Ontario. During the stay he visited Dr. R. Hebda (University of Waterloo). The trip was financed by the National Research Council of Canada.

Miss Allitt attended the Third Charles Blackley Symposium on 'The Clinical Aspects of Allergic Disease' at Nottingham, and gave a poster entitled 'The Visual Identification of Airborne Fungal Spores, with special reference to Leptosphaeria s.l.' at the First International Conference for Aerobiology in Munich.

Dr. Turner and Mr. Bates, with Dr. Shackleton, attended the winter CLIMAP meeting at the Lamont-Doherty Geological Observatory. Dr. Turner and Mr. Bates visited Dr. Heusser's laboratories at New York University, and Mr. Bates also visited Dr. M. Rossignol-Strick's laboratory at Columbia University.

Dr. Beckett gave a lecture to the Conference of Young Archaeologists at Leicester.

Mr. Bradshaw presented a paper entitled 'Reconstruction of local forest vegetation using pollen analysis' to the Lancaster meeting of the British Ecological Society.

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*R.G. West.*

31 December 1978

Botany School,  
Downing Street,  
Cambridge.  
CB2 3EA

Professor R.G. West  
Director  
Sub-department of Quaternary Research  
University of Cambridge

October 4, 1967

Dr. Cornelia Cameron  
Resources Research Branch  
U.S. Geological Survey  
Washington, D.C. 20242

Dear Dr. Cameron:

You may remember having met me (the bald palynologist!) at Commencement last spring when you were in these parts. I showed you around the paleobotanical-coal petrographic-palynological facilities that we have.

Our mutual friend, Ed Koppe at the Pennsylvania State Geological Survey, has written me about your work with peat in this state. I had written to him requesting literature references, or whatever, that might indicate the peat resources of Pennsylvania, even in a very gross way. He referred me to you, so here I am.

I am trying to pull together a little report on commercial possibilities of peat exploitation in which some rough idea of the tonnage (or cubic yards, or whatever) of the substance thought to be available in Pennsylvania would be very useful. Do you know of any such data? Do you know of any statewide study of peat that I could consult?

Hoping to hear from you in the near future and that you might visit us again during term time when things are going on, so that we can show you what we are doing with peats of Florida.

Yours very truly,

Alfred Traverse  
Associate Professor of Geology

AT:kwc

June 1, 1959

Dr. John D. Campbell  
Research Council of Alberta  
87 Avenue and 114 Street  
Edmonton, Alberta, Canada

Dear Jack:

Good to hear from you after so long a lapse in our correspondence. I have often wondered how things were going with you. The thought crosses my mind every time I pass over my little file on those two samples of Alberta coal that were sent me years ago, especially when I realize that by trying to do something with them too rapidly I made a couple of blunders.

My wife and I do plan to make it to Montreal in August, and it will be good to renew contacts with you. Thanks for the nice compliment re pollen taxonomy. I am especially concerned lest some of our more wild-eyed brethren try to create a special nomenclature for pollen.

About ultrasonics and palynological processing: it is no particular secret that the practical palynological laboratories are using the technique a great deal. Every visitor to the Jersey lab (Esso-Imperial to you) in Tulsa, for example, is shown their big unit. There is, however, nothing useful in the literature, though the suggestion was first made in a German paper of some years ago. There is little use in your reading it, as it is more confusing than helpful. As to advice, and without sidestepping you at all, I would say that you can only experiment with the material you want to process-- the results obtained and frequency of oscillation required and method used vary with the material. I would say your 10 kc outfit should work sufficiently well for you to experiment with it, but you might get other apparatus on approval for comparison. For example, the following firms sell equipment of this sort:

Pioneer Control Division  
Bendix Aviation Corp.  
Davenport, Iowa

(They have some good pamphlets on ultrasonics cleaning and their equipment.)

Narda Ultrasonics Corp.  
625 Main St.  
Westbury, L.I., New York

Dr. John D. Campbell

2

Gulfton Industries  
212 Durham Avenue  
Methuchen, New Jersey

(They have a variable frequency unit that  
might be interesting to try.)

You presumably realize that ultrasonic treatment is used as an  
additional treatment, not instead of, regular maceration.

Best wishes.

Very truly yours,

  
Alfred Traverse

AT:pjd

Shell Development Company  
Exploration and Production Research Division



RESEARCH COUNCIL OF ALBERTA

87TH AVENUE AND 114TH STREET  
EDMONTON, ALBERTA, CANADA

May 13th, 1959.

Dr. Alfred Traverse,  
Palaeobotanist,  
Shell Development Co.,  
3737 Belaire Blvd.,  
Houston 5, Texas.

*Dear Alf:*

Peter Moore of Shell's Calgary Branch was in here the other day for a while and told me about his plans to have his man Audretch do Palynology. Apparently that makes four companies working on the spores here in Alberta. I gather that it's getting to be quite a popular endeavour with the oil industry nowadays.

Peter also mentioned that you people have a technique of disintegrating coal and shale, and thus freeing spores, by means of ultrasonics; this is immediately interesting to me, partly because Council has recently acquired a Raytheon 10 k.c. supersonic generator (in addition to the Mullard variable very high frequency ultrasonicator that we already possessed) and partly because of the obvious shortcomings of chemical methods.

Would it be too much to ask you about this ultrasonic technique? Are there any references in the literature? I sincerely hope you will be able to clear the information; any method that would help me with the weathered outcrop samples that are so frequent in my work would be of immense value.

Thanks for the papers you've sent me, particularly the reprint of your taxonomic paper in "Micropalaeontology". I am planning to attend the Ninth Botanical Congress at Montreal next August including the Taxonomic pre-session, and I suspect that your paper will prove more helpful than most of the current crop for preparing myself. Are you going to be there? If so, I certainly hope I shall see you.

In the meantime, thank you for any help you can give me.

Yours very truly,

*Jade Campbell*

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

10 September, 1995

Mr. Robert H. Campbell  
Box 191  
Bras d'or, Nova Scotia B0C 1B0  
Canada

Dear Mr. Campbell:

Your nephew did come by the other day with the little package from you. My palynology course is going full blast, with 11 students, so even though I am now "emeritus" I am a very busy fellow.

The pieces you sent all seem to be wood all right. As you know, it is necessary with wood to have thin sections made, indeed sections in three orientations (radial, tangential and transverse), in order to say much more than "wood."

Your collections would be scientifically more interesting if you formed the habit of numbering each specimen RHC-1, etc., with a sample book in which you record the exact location, date of collection, something about stratigraphic position, and remarks. I use model airplane dope to paint a small blob on each specimen. Within an hour one can write on an identifying number--rhc-1, etc.. I then protect the label with colorless fingernail polish. Then one can comment about a certain specimen and find out in return where it came from, etc.

You mention Mother's death--oldest living alumna of Mount Allison at the time of her death. That occurred in 1990. Since then I have become emeritus and celebrated my 70th birthday, among other things.

One of these years I plan to take a trip to Cape Breton Island and will look you up on the way. When I was a kid I spent every summer in New Brunswick, so I am no stranger to the Atlantic Provinces (Maritimes, as we said then).

All the best.

Yours very truly,

Alfred Traverse

Sept. 1995

Dear Mr. Trause:

Enclosed a few pieces of petrified wood to show some of the cell structure on the Cordaites or ~~so~~ Callit. The bordered pits are very plain on the pieces partly preserved by marcasite, or possibly pyrite, the three continuous rows show up at 80X. Enclosed is an article I made up for the Lapidary Journal but was never published as I am no writer.

My nephew William Nugent ~~is~~ <sup>was</sup> on a visit said he was going on a visit to Penn State so jumped at the chance to send a few small pieces.

Hope all is well with you and sorry to hear of the passing of your mother.

Respectfully yours  
Robert Campbell

P.S. Excused any misinformation I may have put into this article.

ROBERT CAMPBELL  
Box 191  
BRAS D'OR NOVA SCOTIA  
B0C1B0

CORDAITES: PETRIFIED TREES OF NOVA SCOTIA

The Sydney Coal Fields on Cape Breton Island, Nova Scotia, Canada is known for some of the finest carbon compressions and impressions fossils and has possibly one of the biggest and best quality deposits of fossil trees in eastern North America showing excellent preservation of the tree structure by silica or quartz. Pictures by electron microscope up to 2000 magnification and even with a stereo microscope at 80x show three rows of bordered pits that identify the wood as Cordaites that lived during the Carboniferous Period; this deposit on Boularderie Island around 300 million years old. There are two deposits on Cape Breton Island, one along the western shore of the island especially around Port Hood where some is preserved by black silica and some by silica and calcite; the other on the western end of Boularderie Island which is better preserved and more colorful.

The petrified wood on Boularderie Island is replaced by Chalcedony, a cryptocrystalline quartz with a hardness of 7 on the Mohr's scale and comes in beige, black, yellow, orange, brown and some rare faint red or purple. Logs are found in the sandstone cliffs above and below the waters of the salt water Bras d'Or Lakes, in rocks and gravel along the shore, rock piles at edge of fields and along the sides of roads. Any place where bulldozing is done one is apt to find pieces of wood, one piece in particular 300 to 400 lbs found in the construction of the Kempt Head Road; some pieces found in plowed fields that are float are usually with more color. The longest tree

found so far was 20 to 30 feet exposed on the cliff at an angle, most pieces the butt end sticks out of the bank and come up to 2 feet in diameter. The trees found deep in the sand stone are usually black but when found along the shore after dropping out of the cliffs have beige skin which appears to get deeper the longer its exposed to the sun and salt water. Trees found near the surface usually have more color being infiltrated by other minerals such as pyrite or marcasite found in some of the wood.

The Cordaites Tree is the only tree that we have found preserved by silica but do have the lycopods; Sigillaria and Lepidodendron along with the rush Calamites as carbon compressions in sandstone. This tree grew to about 100 feet in height with leaves up to 1 meter long and 6 inches wide; the trunk had no annual rings as this area was near the equator<sup>at that time</sup>, the climate warm and moist. Floods carried the trees here to Boularderie Island, quickly covered them with sand and water protecting them from decay by bacteria and fungi which break down practically all life, only a small percentage survive as fossils. The Cordaites is a Gymnosperm, the first tree to have its seed in cones, the first Family in the Division of Coniferophyta and the probable ancestor of the Conifers; our main source of lumber and pulp today. Cell structure is the same as the conifers today except the cells are larger, the pith is about one inch in diameter, there are three rows of bordered pits while our northern conifers only have one row, and there are no annual <sup>w</sup> growth rings. Different pieces we have show xylem, primary and pith cells; as yet we have found no phloem or bark cells and after writing to different Paleobotanist around the world and visiting museums found no examples of the bark of the Cordaites Tree.

It was the dominate tree in the coal swamps in Kansas and Iowa, second to the lycopods in Illinois and Indiana; and common in the coal fields of the Maritimes in Canada such as the Sydney Coal Fields. Some beds of coal are made up almost entirely of the leaves of the Cordaites Tree and this tree was found world wide when plants dominated the world. The leaves were up to a meter long and 6 inches wide while most conifers today have short needles more adapted to dryer climates; the conifers of the southern hemisphere such as the Agathes has leaves up to 7 inches long and 2 1/2 inches wide. A radical change in the climate at the end of the Permian Period killed off most of the Cordaites Trees although some lingered on into the Triassic Period. This time period also saw the extinction of many plants and animals; the climate turning dry and cool.

During the Mississippian Period parts of Nova Scotia, New Brun Brunswick, and Newfoundland were covered by the Winsor Sea so that today potash, salt, gypsum, and limestone are found below my farm and gypsum and limestone outcrop around the Bras d'Or Lakes. When the formation that contains the petrified wood on western Boularderie and the coal at the eastern end of the island was laid down we were part of a flood plain in a progressively subsiding ancient river valley of fresh water as petrified wood is practically never formed in salt water. Today Boularderie is again surrounded by salt water and the coal mines to the east decend out under the ocean for miles.

Having an interest in petrified wood visited many of the museums in Eastern North America to compare our wood with others especially those from the east. Saw large pieces

from the clays of New Jersey 1 million years old, well preserved but probably by calcite for it seemed softer, small pieces from Delaware, large pieces found in the digging of foundations in Washington, D.C. seen at the Smithsonian along with smaller pieces from other states in the east. Only a few pieces are put on display at any one time in any museum but Harvard and Smithsonian Museums in particular have large collections of from North America plus more from around the world. in storage.

Boularderie wood is not suitable for book ends or large slices but believe it to be as good as any for jewelry; takes a good polish and pieces near the surface have a variety of colors. Most pieces break along the radial cut <sup>of</sup> the wood and are free of cracks especially those in the water are protected from the effects of freezing and thawing. Have at least three pieces over 250 lbs, no cracks and looking like wood.

In the fall of 1987 flew to Calgary, Alberta, Canada; rented a car and zigged zagged down the west coast to Tucson, Arizona visiting three petrified forests along the way. My stops were brief but found the Gingo Petrified Forest Museum had some beautiful slices of different trees about 15 million years old of tree species still living but probably not in that area today as it was very arid. Crossing over from the California coast to Napa Valley came to the Petrified Forest Of Calistoga, 6 million years old Redwood Trees, one 8 ft in diameter and 80 ft long lying as they fell with little or no cracks that I remember. The last of course is the Petrified Forest National Park in Holbrook, Arizona that is well known to all interested in wood. On the way back from Arizona visited the Tyrrell Museum Of Palaeontology and Field Station situated in the Badlands 6 KM northwest of Drumheller, Alberta specializing in Dinosaurs

but having some fossile plants. It is a new , beautiful and far larger museum than any of the others we visited and worth seeing. Boularderie Island deposit is small compared to those out west, we do not have the erosion of the Ginko and National Forest Parks that exposed so much on the surface, here all is covered with green fields or woods and we have the water something one is so consious of the lack of out west. The fall <sup>of</sup> the year added to the dry look with the grasses being matured and brown. Leaving the rain forest on the coast and crossing a range of mountains would bring a different scenery and environment such as short grass county or desert. To me the high lite of the trip was the drive on a dirt road through the Red Wood Tree National Park in Nothern California, certainly a beautiful and majestic sight of trees once wide spread but like the Cordaites before them headed for extinction.

Besides having a variety of fossils Cape Breton Island is noted for its unspoiled beauty, from the Cape Breton Highland National Park whose Cabot Trail skirts the sea and small mountains up to 2000ft; the beautiful salt water fog free Bras d'Or Lakes that I enjoy to the fishing villages of the south coast; truly Nova Scotia's masterpiece. Along with petrified wood, carbon compression fossils, N.S. agates the new fine of small dinosaur bones in the Bay of Fundy area makes N.S. an int~~er~~esting place for fossil hunters.

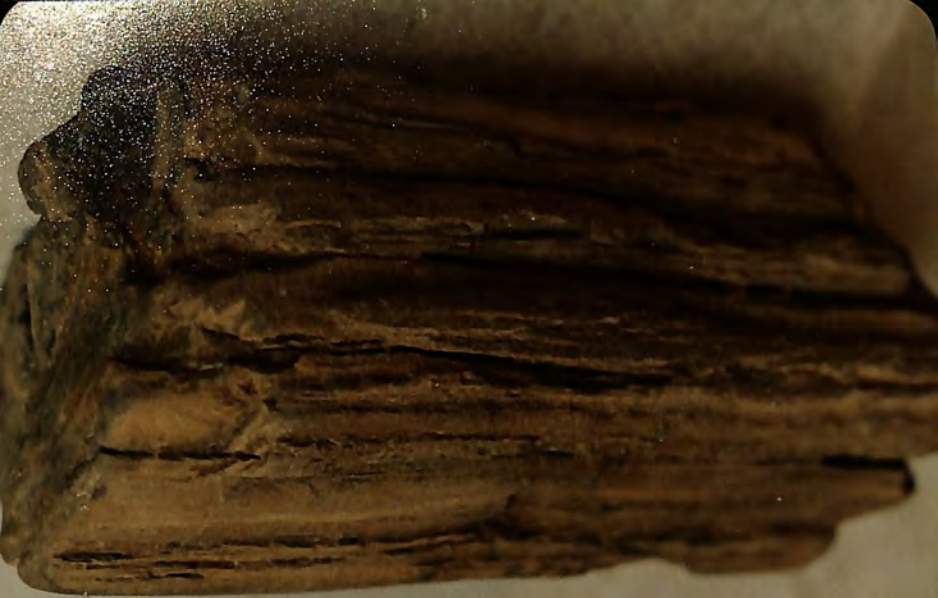
# INTER-DEPARTMENT MAIL

Envelope to be delivered to last address  
(DO NOT SEAL)

NAME	ROOM No. & BLDG.
Andrea Messer	Rase Building
A Traverse	435 Deike
Robert Campbell	
	photo



Hunt Institute for Botanical Documentation



Hunt Institute for Botanical Documentation



THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 Deike Building  
University Park, PA 16802  
phone: 814-863-3419; fax: 814-865-3191

30 October, 1990

Robert Campbell  
Box 11, Kempt Head  
RR 1  
Brasford, Nova Scotia  
BOC 1B0

Dear Mr. Campbell:

So good to hear from you. My mother, the Mt. A. girl, died the day before you wrote. I believe at her death she was nearly the oldest graduate.

Thanks for the "wood chip"--some day I would like to visit Cape Breton. If I do, I hope I'll get to see you and your tons of fossil wood!

All of the people you mention are friends of mine. Else Marie Friis is a fine paleobotanist. Until fairly recently I had a copy of my 1950 paper on cordaitean stems, but the copies are all gone now. A xerox is enclosed.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et  
encl: xerox

*Kempt Head*  
R.R.# 1 Bras D'Or  
Post Office Box 191  
Victoria, Co., N.S  
Oct. 12, 1990

Dear Mr. Traverse.

Received your letter which I found interesting, two of my children also went to Mount Allison so they have something in common with your mother.

The word Dectyoxyton type is from a letter from Else Marie Friis, Professor of Palaeobotany of the Swedish Museum of Natural History, as if this was a type of cordaitan bark described from several places plus North America. I wrote to Sweden as Rudolf Florin did so much work on conifers and thought they might have some information on the bark; they did not. She gave me your name and address and that you had produced a paper many years ago of the cordaites with bark preserved.

I've had Professor Gao here twice from the University College of Cape Breton with students to see the wood, I have a few tons of it. By writing ahead to museums and universities and taking samples have been fortunate to meet Elso Borghorn, Bruce Yiffany, Hermand Phifferkorn and Francis Hueber and having a chance to see samples from eastern North America that they have in storage and compare it with the deposit here.

I get only the Cordaites preserved by silica but do get Calamites, Sigillaria and Lepododendron as carbon ~~eeprre~~ compressions or impressions. Its a wonder I don't get Cordaites compressions of the bark as I do the other three in sand stone. As I said in my letter as yet I have seen no Pictures or information on the bark of the Cordaites.

The Island of Boularderie on Cape Breton Island is part of the Sydney Coal Field; Pictou Morien Formation around 300 million years old; coal is mined on the eastern end of Boularderie, I live on the western end.

Dr. Williston of Dalhousie University took pictures ~~eth~~ of the bordered pits by electron microscope up to 2000x but you can see them clear under a stereo microscope the three rows of pits. Have good samples of the primary and pith cells.

Enclosed is a chip that shows bordered pits; and thank you for your letter. I am a retired dairy farmer and enjoy this as a hobby finding ~~picies~~ while snorkling or walking along the sand stone cliffs; it can be used for jewellery.

Respectfully yours

*Robert Campbell*

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 Deike Building  
University Park, PA 16802  
phone: 814-863-3419; fax: 814-865-3191

23 July, 1990

Mr. Robert H. Campbell  
Box 191, Kempt Head  
RR1, Brasd'or, Nova Scotia  
Canada B0C 1B0

Dear Mr. Campbell:

In cleaning my desk (which I very seldom have time to do), I just came across a letter you wrote me on 12 Nov. 1987. Given the usual Canada-US postal service, it probably arrived about 1 Dec. That was almost exactly when I began to have very serious problems relating to my very old mother in Michigan (native of St. John, N.B., alumna of Mt. Allison in Sackville, N.B.). I can only surmise that your letter got buried--I find no evidence that I answered. I'm sorry about that.

In your letter you sent a number of photos of apparently silicified wood, which in the letter you said was Cordaites. Your stumps could well be Cordaites, though the identification really requires microscopy. If the age is Pennsylvanian, as you say, it is the most likely identity for such stumps. You asked about the bark, but what is pictured seems to me to be wood.

One problem about the matter is that "Cordaites" is really the form genus for the leaves. The wood is called Cordaioxylon, Mesoxylon, Pennsylvanioxylon, depending. The pith of the same tree, when preserved, is Artisia. The bark is not too well known, though I've seen it in coal ball preparations. My first scientific paper was about Mesoxylon, one of the cordaitalean woods.

Did you ever get a paleobotanist to have a look at your things? Of the various common textbooks, Wilson N. Stewart, Paleobotany and the evolution of plants. Cambridge: Cambridge Univ. Press, 1983, has the best section on cordaitaleans. You could get it at Dalhousie.

By the way, the name you mentioned, Dictyoxyton, has been applied to seed ferns and sigillarians but not to cordaitaleans, as far as I know.

Hoping this finds you well and still enjoying your fossils, I am

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

BOC 180 RR #1 Brasd'Or  
P.O. Box 111  
Victoria B.C. N.S.  
Nov 12, 1987

Mr. & Mrs.  
Robert Campbell  
Box 191, Kempt Head  
RR 1 Brasd'Or, NS BOC 180

Dear Sir:

In writing to the Swedish  
Museum of Natural History for  
information on the bark of the Cordites  
Tree I was referred to you. I wrote to  
them as Rudolf Floer had done so  
much work on the Cordites and  
Conifers but they had no information  
on it except to say that bark  
specimens had been described from  
several places including North  
America as Dictyonia type.

Have visited most of the Museums  
of Eastern North America but never  
found any pictures of the bark or in  
writing to a few foreign countries.

The Cordites Trees are found  
in two locations in Cape Breton along  
its western shore around Port Hood

picture of some?

I am a retired dairy farmer and the trees are found on the farm and have a number of tons. Enjoy swimming and looking for pieces in the water and in the cliffs along the shore.

Have a few pieces showing pith cells and tons showing pylem (but nothing that I know as bark). A number of pieces show the complete pith but can't cut large pieces. Trees usually split or radial lines showing remains of the plates of pith.

Would appreciate any information or the bark you would have.

Respectfully yours  
Robert Campbell

2  
and the western half of Boulardine Island part of the Sucton-Moreau Formation part of the Pennsylvanian Period around 300 million years old. The Cordates is the only tree found silicified but do get *Lepidodendron*, *Sigillaria* and *Calmita* as Carbon Casts in the sandstone. Trees are found above and below the water line of the Bras d'Or Lakes. Our largest piece is 3 to 4 hundred lbs <sup>1/2 section</sup> no cracks some of the large pieces were in the water and protected from the frost. Under the microscope the 3 rows of bordered pits are very clear and have some photos of the pits 2000x and under done under a electron microscope by Dr. Helleison of Dalhousie Univ.

Would there be any pictures of the bark of the Cordates Tree and any possibility of getting a

Palynological Laboratories

435 Deike Building

The Pennsylvania State University

University Park, PA 16802

PENNS STATE



*photos  
enclosed w. Campbell  
letter of 12-~~XI~~-87*









January 20, 1970

Mr. Fred W. Sturges  
Editor, Camping ← file  
229 Park Avenue S.  
New York, N.Y. 10003

Dear Mr. Sturges:

This is not intended for publication--just a personal reaction to your editorial in the Feb. 1970 issue of Camping, which was, I guess, in part a response to my letter published in the same issue.

I am not an opponent of all hunting or use of guns. My father from whom I gained a love of the open country was an enthusiastic hunter and fisherman, and I have done some hunting and fishing too--time seldom permits. I have encouraged my son's interest in rifles, and he is a fine shot, rifleteam member, rifle instructor for the local park board and an NRA member--got his first deer at 12.

What I objected to in my previous letter is glorification of hunting of rare animals, especially animals as difficult to replace as elephants. Elephants in the wild will become extinct anyway under pressure from human population, but killing off some of the remaining ones at this point seems indecent to me--comparable to collecting bald eagles' eggs for one's curio shelf.

Yours cordially,

Alfred Traverse  
Associate Professor of Geology & Biology

AT:kc

October 15, 1969

*File*  
Mr. Fred Sturges  
Editor, Camping Journal  
229 Park Avenue S.  
New York, New York 10003

Dear Mr. Sturges:

As a recent new subscriber to Camping Journal, I found the cover story and illustrations in the September number rather bittersweet. It was interesting of course to hear about the camping experiences in Africa, but I am sure I am joined by plenty of other nature enthusiasts in deeply resenting your slaughter of a magnificent elephant after "days of tracking". The time for that sort of thing is long past--~~or~~ unless the purpose is truly scientific. For my part, I would greatly appreciate it if you would consider using a Leica camera instead of your big game rifle on future "safaris".

Yours very truly,

Alfred Traverse  
Associate Professor of Geology  
and Biology

AT:kc



Ottawa, Canada  
K1A 0R6

File Référence

June 09, 1983

Dr. A. Traverse  
Geosciences  
Pennsylvania State Univ.  
University Park, Pennsylvania 16802  
U.S.A.

Dear Dr. Traverse:

On behalf of the Natural Sciences and Engineering Research Council, I would like to thank you most sincerely for your evaluation during the recent NSERC competition. Your comments were most helpful to the grant selection committee when making the recommendations for awards.

Your assistance with this essential task was greatly appreciated.

Yours sincerely,

Catherine Armour  
Assistant Awards Officer  
(Grants)

CA/rl

file  
↓

Canada

10 February, 1983

Canada Today  
c/o Canadian Embassy  
1771 N. Street NW, Rm. 300  
Washington, DC 20036

Dear Sirs:

The current number (front cover) and several previous numbers have spoken of Canada's "five time zones". Won't that make Nfld. mad?

I enjoy Canada Today very much and much appreciate it! Happy-1983!

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

3 March, 1980

Canada Today  
c/o Canadian Embassy  
1771 N Street N.W., Room 300  
Washington, DC 20036

Dear Sirs:

I tremendously enjoy Canada Today and very much appreciate your sending it to me--I have my calendar prominently displayed, etc. I continue my strong interest in Canada.

The election special was great, though I didn't get it until after the election. I wish we had such a rational, orderly procedure--though I could do without two national elections in less than a year!

May I incidentally call your attention to a "blöoper" in the election special?--you say Canada is "the only country in the Western Hemisphere to span six time zones". You are neglecting to consider Alaska and Hawaii--with them (integral parts of the USA), USA has far more than six zones. Indeed, I believe the far reaches of Alaska cross even the International Date Line.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

file "Canadian  
Studies"

10 February, 1981

Dr. G. J. Brault  
Department of French  
Pennsylvania State University  
University Park, PA 16802 USA

Dear Dr. Brault:

If I were to be in State College on 3-4 April I would attend the "Friends of Canada" session surely. But, as you see, I am on sabbatical. All the best to you for the session and greetings to Henry Albinski, a former neighbor!

Yours very truly,

Alfred Traverse  
Visiting Professor

AT/et

P.S. Another potential "Canadianist" at PSU: Dr. Henry Johnson in the College of Education. He is interested in Canadian education.

Department of Geosciences  
Pennsylvania State University  
University Park, PA 16802  
March 30, 1993

Ms. Sandra Carey  
134 S. Locust St.  
Hazelton, PA 18201

Dear Ms. Carey:

Dr. Traverse asked me to respond to your letter when he received it in early February. I apologize for not responding sooner.

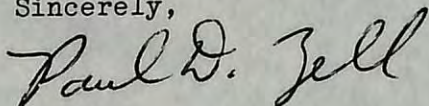
Photo no.s 1-7, and 10-15 appear to be concretions, mineralized nodules of shale. Numbers 8 and 9 seem to be casts of stems or roots, but some may be elongate concretions. Grooves in these rocks are probably the spaces between rounded masses of concretions which have grown together. Unfortunately, your camera does not focus well at short distances. You need to step back farther from these rocks when you photograph them or use a camera with a close-up lens.

I am unaware of what fossil chart map was referred to by your friend, but absence of fossils from a map of the area is not evidence of absence of organisms having lived there. The plant impressions and casts which you have are direct evidence of plants which lived there. Coal is made entirely of plant matter which has been compressed and altered over time. Geologists like myself are constantly revising and adding detail to geologic maps as additional finds are made.

Early amphibians and fresh water fish lived in the coal swamps, but, as in modern swamps and forests, are much less abundant than plants. Turtles did not evolve until somewhat after these rocks were deposited. Bones in Pennsylvanian age rocks such as these, have a porous texture, much like wood (or bone), but are usually bluish white. The pores will be filled with shale (slate) or mineral matter, making them as heavy and dense as ordinary rocks. Fossil eggs are exceptionally rare. If you find them, they will probably be clustered in a depression, have very thin shells, and be more or less crushed. I am unaware of any fossil eggs known from rocks of this age.

The Pennsylvania Geological Survey has produced two publications which may be of interest to you. These are General Geology Reports G-40 "Fossil collecting in Pennsylvania" and G-72 "Fossil plants from the anthracite coal fields of eastern Pennsylvania". I have enclosed an order form; you will need to call the State Book Store for current prices. Some local libraries may also have these publications.

Sincerely,



Paul Zell, Geologist

enclosure: Pa Geological Survey order form

cc: Dr. Alfred Traverse

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802  
Phone: (814)863-3419; Fax: 814-863-7823

6 January, 1993

Ms. Sandra Carey  
134 S. Locust St.  
Hazleton, PA 18201

Dear Ms. Carey:

Thank you for your interesting letter of 17 Dec., and the enclosed photo. The paleontologists here (including me) have had fun speculating about your find. I am a paleobotanist, and I can assure you that it is not a palm, or any other plant. It is far better to see the actual specimen, of course, and we would like to have known where the rock comes from. However, it was interesting that none of the paleontologists saw any similarity to any fossil they knew.

A graduate student in paleontology, Paul Zell, suggested to me that the pattern could well have been made by some sort of drill. The regularity of the pattern and the size agree with that suggestion. Fossils do not occur in granite. Your rock looks in the picture to be sandstone or limestone. The drill was probably one of the older kinds that worked by impact.

We all want to encourage your interest in looking for fossils!  
I enclose your photo. Best wishes.

Yours very truly,

Alfred Traverse

enclosure

c: Paul Zell

October 12, 1955

Mr. E. P. Carman  
Chemical Engineer  
Branch of Bituminous Coal  
U.S. Bureau of Mines  
Washington 25, D. C.

Dear Ev:

Thanks for your letter of October 5. I am sorry to learn that my fears of possible unfavorable reactions in Washington to my resignation are probably justified. Of course, I regretted very much that this opportunity came along so soon after my transfer to Denver. I was sorry for more than purely professional reasons. You know how much we enjoyed Denver, and there was not a little unhappiness about turning over our newly acquired real estate there. But, I really couldn't turn down an opportunity such as this one regardless of the inconveniences of various sorts. Let us hope that I have not made a mistake. One can only do the thing that seems, all balanced, the most advantageous.

The proofs have not been received yet, but I am sure that your letter to Pittsburgh will get some sort of reaction. There is a possibility that the Company will send me to Europe in the near future. If they do, the trip might begin quite soon, so I'd like to have the matter of R.I. 5151 cleared up.

With best wishes to one of the nicest guys with whom I have ever worked.

Very truly yours,

  
Alfred Traverse

AT:hmp

Shell Development Company  
Exploration and Production Research



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON 25, D. C.

October 5, 1955

Mr. Alfred Traverse  
c/o Shell Development Company  
3737 Bellaire Boulevard  
Houston 25, Texas

Dear Al:

This is in reply to your letter of September 14 regarding your resignation from the Bureau of Mines and the question as to when stencil sheets on the Brandon lignite R.I. will be sent to you.

It is somewhat unfortunate that you got this offer and felt obliged to accept it so soon after your transfer to Denver, as I am afraid it may leave a little unhappy feeling in the Bureau, particularly in view of the program developments that were coming along based on your proposed work. However, I believe I have a clear enough picture of the situation to know why it happened as it did.

With reference to your Brandon lignite stencil proofs, I am unable to advise you from here as to their status. The edited manuscript to be published as R.I. 5151 "Pollen Analysis of the Brandon Lignite of Vermont" was sent to the mimeographing section in Pittsburgh on June 29. Possibly you may have received these proofs by this time, but if not they should be coming in soon.

If the stencil proofs have been sent recently, they would go to the Denver station. I am sending a copy of this letter to Mr. Meyer Reiness, in charge of the mimeographing section in Pittsburgh with the request that if the proofs have not yet been sent out that they be sent to your new address at Houston, Texas.

Sincerely yours,

E. P. Carman  
Chemical Engineer  
Branch of Bituminous Coal



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON 25, D. C.

October 5, 1955

Mr. Alfred Traverse  
c/o Shell Development Company  
3737 Bellaire Boulevard  
Houston 25, Texas

Dear Al:

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Sincerely yours,

E. P. CARMAN

E. P. Carman  
Chemical Engineer  
Branch of Bituminous Coal

1950 Glen Dale Drive  
Lakewood 15, Colorado

14 September, 1955

Mr. E. P. Garman  
Chemical Engineer  
U. S. Bureau of Mines  
Washington 25, D. C.

Dear Ev:

You will perhaps have heard by grapevine that I have resigned from the Bureau to go with Shell Oil, in Houston, Texas. It was quite embarrassing to me that this offer should come at just this time, as I was just barely getting set up here. But one cannot put off such things when they come, in such a specialized field as mine. This is a really splendid opportunity for me, and I know that you will be glad for me. I do appreciate all that I have profited from my four years in the Bureau of Mines and I hope very much that this will not mean an end in the fine friendships I have made in the Bureau. Also, as I have discussed with Mr. East, I intend to finish up certain of the projects I had in progress from Grand Forks days and submit them for publication.

Which brings me to the principal burden of this letter. I have been expecting that manuscript on the Brandon lignite to come through any day; I refer to the proofs, of course. I am still anxious to see such proofs despite my untimely resignation from the Bureau. The proofs should be sent to me at:

Shell Development Company  
3737 Bellaire Boulevard  
Houston 25, Texas.

Hunt Institute for Botanical Documentation

Yours sincerely

Alfred Traenkle

Region V  
Box 11, University Station  
Grand Forks, North Dakota

November 24, 1954

Memorandum

To: E. P. Carman, Chemical Engineer, Office of Coal Technology  
Coordinator, Washington, D. C.

From: Coal Technologist

Subject: Coking-petrographic studies at Penn State

Thank you for your interesting letter of November 9, about the speech by A. H. Erisse of U. S. Steel, at the ASME-AIME Fuels Conference in October. You perhaps remember that in connection with the review of one of my papers some time ago there was a difference of opinion between me and the coal carbonization people at the Pittsburgh station about the possibility of coal microscopy contributing to coking studies. One of the reasons I was so adamant in defending my position was that I knew about the work going on at Penn State, through my close friendship with Professor Spackman, the man who directs the work in coal petrography there. It was then and still is impossible to go into much detail on their results because of U.S. Steel's understandable reluctance to release valuable information. I spent two days in State College after the recent coal microscopy conference in Pittsburgh, and can say that Spackman's laboratory is making a fine contribution to the work of several companies by means of petrographic studies. As it stands now, State College is the coal microscopy and petrography center of the country. (Spackman has an eight-man staff, an important item. Assistance is important in this sort of work, involving as it does so much routine manual work.)

Your continuing interest in me and my work is greatly appreciated.

  
Alfred Traverse

ATraverse:vh

cc: Region V  
Lankford  
Traverse  
File 625.1  
C File



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON 25, D. C.

RECEIVED  
NOV 12 1954  
U. S. Bureau of Mines  
Grand Forks, North Dakota

November 9, 1954

Dr. Alfred Traverse  
Coal Technologist, Lignite Branch  
Region V  
Box LL, University Station  
Grand Forks, North Dakota

Dear Dr. Traverse:

This will acknowledge, with appreciation, the copies of your two articles on coal microscopy, which arrived in the office while I was on vacation. We get occasional calls in reply to which these reprints would be very useful, but as we have limited file space here, I would suggest that these copies will be adequate for the present and we will call on you when our stock gets low.

I attended the ASME-AIME joint Fuels Conference in Pittsburgh on October 28 and 29, and was quite interested in a speech by A. H. Brisse, Chief Research Engineer, Coal and Coke, Applied Research Laboratory, U. S. Steel Corporation, who gave a paper by himself and Mr. J. H. Wells, Research Associate, on the subject "Coking Properties of Pittsburgh District Coals." He discussed the fact that the Steel Corporation had a cooperative agreement with Penn State University looking into the possibility of selecting coking coals on the basis of their petrographic constituents and that Dr. Berry of Penn State had come up with some results that were quite interesting, though not yet in actual practical operation. This paper by Brisse and Wells did not have an ASME number and preprints were not available, but if it is published in the Transactions of the ASME, you will undoubtedly be interested in looking it up, as I am sure you will be interested in Mr. Brisse's remarks regarding their interest in coal petrography.

Sincerely yours,

E. P. Carman, Chemical Engineer  
Office of Coal Technology Coordinator

R. 4429 Interior Bldg.  
Washington, 25, D.C.  
Sept. 29, 1954

Dr. Alfred Traverse,  
Lignite Research Laboratory,  
Grand Forks, N. D.

Dear Dr. Traverse:

In your recent paper on *Botryococcus*, it was noted that you expressed an interest in oil shale. I do not wish to make recommendations as to the nature of work you should pursue, but I thought you might be interested that one of the men here who has a substantial interest in the oil shale and synthetic liquid fuels work advised he was sure that if you wished to pursue this further as a possible tie-in with your work on lignite, he was sure that the group at Rifle would be glad to make available to you suitable samples of oil shale. Of course, if this is of interest to you, you should proceed through proper channels at the Station, Region V, to H. P. Rue, Chief, Fuels Technology Div, Region IV, at Laramie.

Sincerely yours,

E. P. Carman

RECEIVED

AUG 9 1954

U. S. Bureau of Mines  
Grand Forks, North Dakota

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON 25, D. C.



August 5, 1954

Memorandum

To: Dr. Alfred Traverse, Bureau of Mines, Grand Forks,  
North Dakota

From: Chemical Engineer, Office of Coal Technology Coordinator

Subject: Review of manuscript - PETROGRAPHY OF AMERICAN COALS -  
by B. C. Parks and H. J. O'Donnell

There is being sent under separate cover, a copy of the subject manuscript that should be of considerable interest to you. I mentioned it to Dr. McMurtrie when he was here last week and he said he was sure that you would like to go over this paper, but in view of its rather large size, he did not wish to take it back with him.

Mr. Selvig, in sending the manuscript in for approval, noted that the first draft of the manuscript had been sent to Dr. Gilbert Cady, formerly of the Illinois Geological Survey, whose criticism was that the authors had not adhered strictly to Thiessen's system of microscopical examination of coal. The manuscript was revised to adhere to this system and it was decided that any new concepts advocated by the authors should be presented to professional societies as papers for discussion before publication by the Bureau. Since we concur in this decision, I thought it should be called to your attention in connection with the review of the petrographic work conducted at the Pittsburgh Station, in some of which you may have participated.

It would be appreciated if you would return the manuscript along with any comments or criticisms on the attached Manuscript Review and with your signature as reviewer under Washington Review on the Manuscript for Approval form.

E. P. CARMAN

Attachments

096.2

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
MANUSCRIPT REVIEW

Project No.: 260  
Problem No. PD-68

Date August 5, 1954

Title of manuscript: "PETROGRAPHY OF AMERICAN COALS"

Authors: B. C. Parks and H. J. O'Donnell

Reviewer's name and title: Dr. Alfred Traverse, Coal Technologist, Bureau of  
Mines, Grand Forks, North Dakota

Is experimental or investigative work adequate? **yes**

Are conclusions justified? **yes**

Does the summary tell why work was undertaken, give indicated results, and point out their practical significance? **yes**

		BE AMPLIFIED?	ABBREVIATED?	OMITTED?
Should	Descriptions of methods.....			
	Tables of data.....			
	Graphs and charts.....			
	Maps, photos, etc.....			

If reviewer deems the manuscript worthy of publication, does he agree that it should appear as a Bulletin ; Minerals Yearbook chapter ; Handbook ; Monograph ; R. I. ; I. C. ; journal article ; chapter of a textbook ; other

Detailed criticism:

The report by Messrs. Parks and O'Donnell is a handsomely illustrated, well conceived piece of work. It represents an enormous amount of labor, and should be an extremely useful item for the rejuvenated science of coal petrography.

The organization of the report is, on the whole, good. But I would say that the section on analytical procedure, now under "Type Classification" (pp.48-50) seems out of place there and should either be put in the earlier section, "Terminology of microscopic description of coal," or put in an appendix. As it stands it seems to me to break up the continuity of the report.

The authors have mostly been careful to emphasize that generalizations about physical and chemical properties of petrographic components apply only within a given rank of coal. But they have slipped up in a few places on this. Here are a couple of examples- but it would be wise to check all statements on the physical and chemical nature of the components:

Use additional sheets if necessary

1. p. 43: "The physical properties . . . of attritus . . . . Attrital coal is very compact, hard and much more resistant to breakage than anthraxylon . . . . etc."

This is only true if bituminous coal is specified. It is 100% wrong for lignitic coal, as the authors note in another place.

2. p. 57: The introduction to the section, "Chemical nature and behavior of petrographic constituents and types of coal: Petrographic constituents," should certainly point out that the chemical and physical nature of the components varies with rank.

I would also like to see the subdivision of this section further divided, so that lignitic, sub-bituminous and bituminous coal components were treated separately. The story for lignitic anthraxylon is entirely different from that for bituminous anthraxylon. For example, lignitic anthraxylon commonly even contains residual carbohydrates.

All of the captions for figures must contain the place of origin, age, and rank of the coal, and the scale, or magnification. Captions for figures 11, 16, 20, 22, 24, 27, 28 do not show magnification or scale. Captions for figures 18, 19, 21, 23, 25, 26, 29 do not list the source of coals. None of the captions for figures shows the geologic age of the specimens. Citation of the coal bed is not sufficient in a paper which deals with coals of a variety of ages. It would be satisfactory if the figures referred to the page in the text where this information is available, but it would be better and more conventional for the information to be included in the captions of the figures.

The captions for the photomicrographs in the frontispiece are defective in all three requirements. This limits their scientific usefulness unnecessarily.

The remainder of my comments are corrections of and questions about more or less minor items of fact, mostly paleobotanical. It would be unfortunate to mar such a fine publication with small errors, hence my fine criticisms. These comments are arranged in order of occurrence of the items in the paper.

- Frontispiece: A. is listed as ". . . showing the cellular structure of wood tissue." This presumably refers to the tissue shown in transverse section, which makes up the bulk of the photomicrograph. The tissue looks much more like periderm (secondary cortex) to me.
- p. 21: l. 4 In this instance it would be safer to say: ". . . derived principally from wood and other supporting tissues." Periderm is also very important.
- p. 34: l. 1 "Twigs" redundant, since branches already mentioned.
- p. 34: l. 2 By strict definition, the xylem tissues of stem <sup>e</sup> and roots and leaves constitute true wood. The bulk of the wood is in the stems (including branches) and roots. The roots of woody plants are woody. So are the veins of leaves, though they are, in bulk, relatively insignificant.
- This paragraph should be rewritten.
- p. 34: l. 23 Should be "secreted", not "excreted." This mistake appears elsewhere in the report also and should be corrected wherever it occurs.
- p. 34: l. 27 "Bark" includes all tissue from the cambium out, hence is less committal than "cortex." I would say here, "the yellowish variety is more prevalent in anthraxylon derived from bark," and would omit reference to cortex, a very specific term that might be inaccurate here.
- p. 36: l. 7 Dullness of lignitic anthraxylon not invariable. I have seen quite glossy anthraxylon in North Dakota mines - on fresh surfaces.
- p. 41: l. 3 Should read: ". . . are derived from three general sources:  
1. The cuticular coverings of . . . leaves, seeds, and fruits.

2. The coats of certain spores and pollen. (These are not epidermal.)

3. The secretory products . . . . (not excretory.)

p. 42

Do not use term "epidermal covering" for the oil algae. Say "the oily nature of the colonial matrix secreted by the algal colonies." These algae have no epidermis.

It would also be wise to note that numerous publications since Thiessen's 1925 contribution have shown that the algal genus Botryococcus is the causal organism of the boghead coals. Abundant Botryococcus remains also occur in certain oil shales and in some Tertiary lignites, as well as in recent peats. Botryococcus thrives not only in peat swamps but in a wide variety of swamps, ponds, and lagoons. The section on oil algae and boghead coals should be rewritten. See especially Blackburn, K. B., and Temperley, B. N. Botryococcus and the algal coals. Trans. Roy. Soc. Edin. vol. 58, Part III, 1936, pp. 841-868.

p. 47: l. 23 2mm. = 1/13 inch.

p. 55 See above comments on Botryococcus and algal coals. The material secreted is supposed to be in part waxy, in part oily.

p. 58: l. 16 The comparability of tissues with living equivalents ought to be qualified. The statement is perfectly true for Cretaceous and Tertiary coals. But Paleozoic coals are derived from long extinct groups, and there is some reason to believe that Lepidodendron periderm, for example, was chemically unlike modern plant tissues.

- p. 59: 1. 13      The term pre-anthraxylon in particular may be undesirable, but some sort of differentiating nomenclature to distinguish between bituminous and lignitic components seems highly desirable. Eventually there may have to be a dozen or more sub-varieties of anthraxylon, for example.
- p. 78: 2nd par.    The progressive change of constituents discussed here proves the desirability of differentiating between anthraxylon of lignitic and bituminous coals.
- p. 87: 1. 2        If Blackburn and Temperley (see above) are right, part of the yellow matter in the bogheads is not the same as cuticular matter.
- p. 115: item 15    Same bed as item 14? Seems likely.
- p. 134: item 31    If this is subbituminous, as indicated, why is it not so listed on the map in figure 1?

Figure 3            I would question the meaningfulness of the statement ". . . is a true coal substance . . . ." What a "true coal substance" is, so far as I know, rather arbitrary. Structurally, the material in this instance is wood. It may even contain residual cellulose, so lack of carbohydrates could scarcely be made the boundary between "coal" and "wood". It seems to me likely that all gradations between wood of a living tree and anthraxylon in lignitic coal could be found. Perhaps the authors could say, "Structurally this material is wood, but it is chemically somewhat modified from its original state."

Figure 5            In normal use, cross (transverse) and longitudinal sections are antonyms. Hence, the authors should say: "longitudinal section, normal to bedding plane of coal," or something of the sort, rather than "longitudinal cross section."

- Figure 5            Looks remarkably like figure 18, and frontispiece A. Is it the same?
- Figure 6            See first comment under figure 5.
- Figure 7            Identifying this as cortex seems a bit risky - how about calling it bark?
- Figure 12           Is deformation certain here, or could this be result of deposition?
- Figure 18           See second comment under figure 5.
- Table 4            Algal remains: botanical origin. Delete word "epidermal" for accuracy.
- Table 4            Resinous substance: botanical origin. Delete word "excretory" for accuracy.
- Table 4            Spore and pollen remains: botanical origin. Delete word "epidermal" for accuracy. Also replace "the" before "reproductive organs" with a dash or semicolon, to eliminate suggestion that pollen grains are the organs of reproduction, which they are not. They are male reproductive bodies of the seed plants. Spores of ferns and fern-allies are reproductive bodies produced by the sporophytic plants. From the spores develop the gametophytic generation .
- Table 4            Fusain: botanical origin. I would suggest ". . . same classes of plant remains."

Region V  
Box LL, University Station  
Grand Forks, North Dakota

February 19, 1954

Memorandum

To: E. P. Carman, Chemical Engineer, Office of Coal Tech. Coordinator  
Through: Chief, Fuels Technology Div., Reg. V

From: Coal Technologist, Grand Forks, North Dakota

Subject: Editing manuscripts

Thank you for your comments of February 3 about my suggestion that authors should check their manuscripts after editorial changes have been made. The fact that all papers are checked after editorial revision, at least in Washington, helps me to understand the Bureau procedure, and it now seems much more reasonable. I appreciate your kindness in explaining the process.

As you point out, there is always the possibility that editorial change of style will effect an undesirable change in shade of meaning. The author is the best judge of this, and I would say that whenever something is going into print the author should look at the final manuscript, or at proof, or preferably at both, despite delays that might result.

*AT*  
Alfred Traverse

ATraverse :dm

cc: Region V  
Lankford  
Willing  
✓ Traverse  
File 096.2  
C File

Region V  
Box LL, University Station  
Grand Forks, North Dakota

January 20, 1954

Memorandum

To: E. P. Carman  
From: Coal Technologist  
Subject: Editing manuscripts

Experience with a recent paper has prompted me to comment on the process of editing manuscripts. The procedure seems to be for a paper that has been revised according to reviewers' comments to be forwarded next to the editorial section. After editorial revision, the paper would be submitted to the journal unless the author has made a prior arrangement for the manuscript to be returned to him for submission to the journal.

I would suggest that return of the paper to the author for checking after editorial revision ought to be the rule. In a recent paper I found the bulk of the editorial revisions to be improvements on my language, and I do not mean to suggest that the editorial section is not making a contribution. But in this paper I found among the changes made by the editorial section: (1) seven instances in which the changes caused either grammatical or spelling errors, (2) five instances in which the resulting language was less desirable than the original, (3) one instance in which the change created an error in fact, and (4) one instance in which the alteration changed the sense of a sentence.

All of these instances were minor and were corrected by me before the paper was sent in. My corrections were made so that the final manuscript would be accurate. None of the changes would be objected to by the editorial section. Yet, the number of changes that will have to be made in galley proof was minimized - a distinct advantage.

The moral I deduce from this is that the author should always check an edited manuscript to be sure that editorial changes have not caused errors of fact, sense or grammar.

  
Alfred Traverse

ATraverse:dm

cc: Region V

Lankford

Traverse

File 096.2

C File



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

Region V  
2908 Colfax Avenue South  
Minneapolis 8, Minnesota

January 22, 1954

Memorandum

To: Alfred Traverse, Coal Technologist, Fuels Technology  
Division, Region V  
Through: Robert McMurtrie, Chief, *RM*  
Lignite Branch

From: Chief, Fuels Technology Division, Region V

Subject: Intra-Bureau correspondence

I read, with interest, your memorandum of January 20, "Editing Manuscripts", which was directed to E. P. Carman, and while I am inclined to agree in many instances with what you said, I did not agree with the manner in which the memorandum was sent, that is, your correspondence should have gone through channels which it did not. This might seem to be a small and picayunish item, nevertheless in this particular instance there are some other matters which have connotations to your letter and it is doubtful that, had the letter come to my attention before going to Washington, it would have been sent because of these connotations.

I believe the best interests of all will be served if future correspondence to other stations and offices within the Bureau is directed through the proper channels.

*J. D. Lankford*  
J. D. LANKFORD

CC McMurtrie  
Region V  
df  
files 121  
JDL:lvd

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
307 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

9 March, 1999

*file*  
Ms. Ilona Weyers  
Section of Paleobotany  
Carnegie Museum of Natural History  
4400 Forbes Ave.  
Pittsburgh, PA 15213-4080

Dear Ms. Weyers:

Thanks for your prompt and helpful answer to my enquiry re deposition of the type slides for fossil fungal spores from the Jurassic of Hells Canyon.

The slides are being shipped to you in a box, heavily protected with styrofoam "worms."

Enclosed with this letter is a reprint of the paper in which the new species were published. As it works out, each of the three species had its holotype on a different slide. The location of the fossil palynomorphs is clearly indicated by a pointer on each slide. In addition, the England Finder location is given for each specimen on p. 667 of the paper, and I have hi-lited the relevant lines. The use of England Finder locaters is described many places, for example in my book, **Paleopalynology** (Unwin-Hyman, 1988). If you don't have an EF, you will need to acquire one eventually.

All the best.

Alfred Traverse  
Professor Emeritus of Palynology

File

**CARNEGIE MUSEUM OF NATURAL HISTORY**

4400 Forbes Avenue  
Pittsburgh, PA 15213-4080  
Fax 412 622 8837  
<http://www.clpgh.org>

Ilona Weyers, Collection Assistant  
Phone: (412) 622-1947  
E-Mail: [weyersi@clpgh.org](mailto:weyersi@clpgh.org)

Dr. Alfred Traverse  
Pennsylvania State University  
Department of Geosciences  
Palynological Laboratories  
307 Deike Building  
University Park, PA 16802

March 2, 1999

Ref.: Your letter from 02/19/99

Dear Dr. Traverse:

Your inquiry regarding the storage of type material for fossil palynomorphs was directed to me. I am the collection assistant for the Section of Paleobotany at the Carnegie Museum of Natural History and would be delighted to store the material in our collection facility.

I am assuming that your request is based on the *Memorandum of Understanding between the American Association of Stratigraphic Palynologists and the Carnegie Museum of Natural History* (10/27/93 & 11/24/93). Please address the package to:

Ilona Weyers  
Section of Paleobotany  
Carnegie Museum of Natural History  
4400 Forbes Avenue  
Pittsburgh, PA 15213-4080

I would appreciate it if you could give me as much information about the specimens as possible (age, location, collector's name, etc.). Please let me also know in which issue of the *Journal of Paleontology* the type material was published. After the material has been accessioned and entered into our database, I will send you a list of the CM-numbers assigned to the specimen.

Please do not hesitate to contact me again if you have any further questions.

Sincerely,



Ilona Weyers



**CARNEGIE  
MUSEUMS OF  
PITTSBURGH**

Carnegie Museum of Art  
4400 Forbes Avenue  
Pittsburgh, PA 15213-4080

Carnegie Museum of Natural History  
4400 Forbes Avenue  
Pittsburgh, PA 15213-4080

Carnegie Music Hall  
4400 Forbes Avenue  
Pittsburgh, PA 15213-4080

Carnegie Science Center  
One Allegheny Avenue  
Pittsburgh, PA 15212-5850

The Andy Warhol Museum  
117 Sandusky Street  
Pittsburgh, PA 15212-5890



28 May 1991

Dr. Alfred Traverse  
Department of Geosciences  
Oeike Boulevard  
Pennsylvania State University  
University Park, PA 16802

Dear Dr. Traverse:

I'm writing to urge you, as a Research Associate of the Carnegie Museum of Natural History, to publish one or more of your scientific papers each year in the *Annals of Carnegie Museum*.

You may not be aware that, as of 1987 (Volume 56), the *Annals* changed its format, size, and publishing schedule to conform with other major scientific journals such as *Paleobiology*, *Copeia*, *American Journal of Botany*, *Systematic Zoology*, *The Auk* and so forth. As with these journals, all articles submitted to the *Annals* are reviewed by at least two external referees (outside of Carnegie Museum). For papers requiring little or no revision, our turnaround time is normally nine months. In addition, at the discretion of the section, authors can receive free of charge up to 250 reprints of their articles for distribution to colleagues. You may also not be aware that the *Annals* will now publish color illustrations if they enhance the scientific content of the paper.

The *Annals* are now published four times a year (February, May, August and November) in journal format rather than being issued as separate articles as was done previously. Each issue can contain articles dealing with diverse disciplines or can be devoted to a single monograph. Each issue is distributed to about 600 national and international institutions including libraries, universities, museums, botanical gardens, and other research centers. As such, papers published in the *Annals* have a wide national and international audience and the *Annals* are held in high esteem worldwide.

Part of the attraction of the *Annals* is its diverse subject matter. We publish contributions in organismal biology, earth sciences and anthropology. Specific studies treat fossil and living plants and animals, especially vascular floras, arthropods, molluscs, echinoderms, brachiopods, fish, amphibians, reptiles, birds and mammals. Subjects of major focus include systematics, evolutionary relationships, biogeography, ecology, faunal and floral composition, comparative morphology and karyology, paleontology, paleoecology, palynology, historical geology, biostratigraphy, ethnology and archaeology.

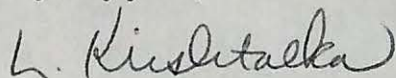
Office of Scientific Publications  
(412) 622-3287  
4400 Forbes Avenue  
Pittsburgh, PA 15213  
Fax 412-622-8837



28 May 1991

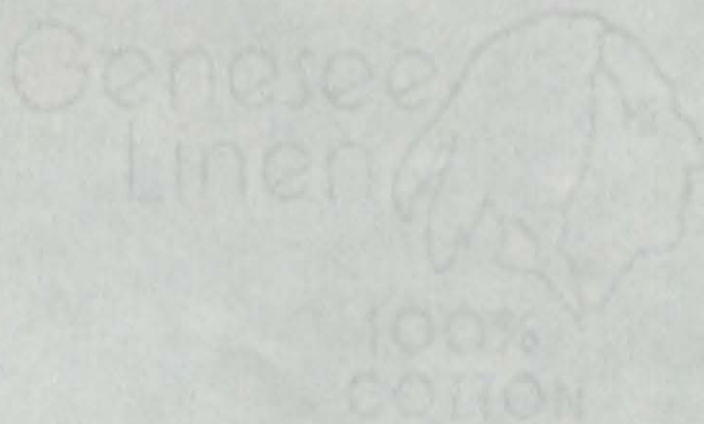
As Research Associates, your scientific contributions to the museum and use of its resources are highly valued. We hope these contributions will extend to publishing in the *Annals of Carnegie Museum*. We encourage you to submit your scientific papers to this office, especially if they deal with Carnegie Museum collections. Thank you very much for your kind attention.

Very truly yours,



Leonard Krishtalka  
Editor, Scientific Publications

LK/mas



## INSTRUCTIONS FOR AUTHORS

ANNALS OF CARNEGIE MUSEUM consist of contributions to the earth sciences, life sciences and anthropology, in 30 by 46 picas format (127 by 195 mm or 5 by 7½ inches). Submit all manuscripts to the Office of Scientific Publications. Authors should give particular attention to scientific content, format, and general style for the ANNALS. Manuscripts that do not conform to the style of the ANNALS will be returned to the author immediately. Every manuscript will be peer reviewed by at least two outside persons. Authors will be asked to subsidize, if funds are available, any or all costs of publication (approximately \$100/page printed).

**Manuscript style.**—Articles should include the following items in this order: title page, abstract, text (with desired headings), acknowledgments, literature cited, tables, figure captions, and copies of illustrations. All manuscripts must be typed *double-spaced* on standard 8½ by 11 inch white bond paper, with at least one inch margins all around, and submitted *in triplicate*—an original for the editors, and two review copies. All pages should be numbered, including tables, literature cited, and the list of figure captions. Only correspondence quality or better dot matrix printouts will be accepted; draft mode is unacceptable.

**Title Page.** The title, on a separate title page should be brief, include the animal or plant group involved, and appear two to three inches below the top margin. Include the authors name(s) and the affiliations of non-CMNH authors. In the case of multiple authorship indicate the address to which proofs should be sent.

**Abstracts.** Abstracts should be short, double-spaced and substantive and included at the head of the first page of text.

**Text.** Do not right justify text or break (hyphenate) a word at the end of a line. *Footnotes and acknowledgments as footnotes are unacceptable.* All text is double-spaced.

**Tables and figure legends.** The list of figure legends and each table should be typed consecutively on individual pages separate from the text. Tables must be double-spaced throughout with no vertical lines.

**Abbreviations.** Refer to the CBE Style Manual for correct abbreviations. Mammalian dentition: use capital letters (I, C, P, M, D, for incisor, canine, premolar, molar, deciduous, respectively) and superscript/subscript numbers (M<sup>2</sup>, P<sub>3</sub>) to designate upper and lower teeth.

**Measurements.** Metric units should be used, if possible.

**Literature Cited.** All references in text must appear in the Literature Cited section. The data (author, date and page) in both citations must agree. *Do not abbreviate the titles of periodicals or serials.* The following style, double-spaced, should be used in Literature Cited:

- 1) Two authors in an institutional series:  
MATTHEW, W. D., AND W. GRANGER. 1923. The fauna of the Houldjin Gravels. American Museum of Natural History Novitates, no. 97: 1-6.
- 2) Same authors repeated—use three-em dash:  
———. 1923. The fauna of the Ardyn Obo Formation. American Museum of Natural

History Novitates, no. 98:1-5.

- 3) Same authors plus a third author—repeat all authors:  
MATTHEW, W. D., W. GRANGER, AND G. G. SIMPSON. 1928. Paleocene multituberculates from Mongolia. American Museum of Natural History Novitates, no. 331:1-4.
- 4) Chapter in an edited volume:  
RAUSCH, R. L. 1963. A review of the distribution of Holarctic mammals. Pp. 29-43, in Pacific Basin Biogeography (J. L. Gressitt, ed.), Bishop Museum Press, Honolulu, Hawaii, xx + 450 pp.
- 5) Unpublished dissertation:  
SMITH, J. P. 1976. Review of Eocene mammals. Unpublished Ph.D. dissert., University of California, Berkeley, 302 pp.
- 6) Book:  
WHITE, M. J. D. 1961. The Chromosomes. Methuen and Co., Ltd., London, 120 pp.
- 7) Journal articles with usual volume and issue number:  
ANDERSON, W. I. 1969. Lower Mississippian condonts from northern Iowa. Journal of Paleontology, 43(4):916-928.

**Illustrations.** All illustrations will be called figures, and are to be numbered in Arabic numerals. Three sets of illustrations are required, one (original artwork) for reproduction, two for reviewers. Xerox copies of photographs for reviewers are usually not acceptable but are adequate for line drawing review copies. All illustrations must be reducible to a maximum of 127 by 195 mm (30 by 46 picas) without loss of clarity. Line copy should be designed for reduction to ⅓ or ½ of actual size. Type-written illustration copy will not be accepted. Photographic figures should be submitted at actual reproduction size, if possible.

Two or more small figures should be combined for reproduction as a unit or plate, but, if feasible, do not combine halftones and line drawings. Rectangular halftone figures should be abutted, without intervening spaces. The printer will insert narrow white spaces during the reproduction process. Halftone figures with solid black backgrounds will not be accepted unless the author agrees to pay for the printing costs. All plates must have *minimally* one inch borders all around. Each plate should be given a protective cover and identified on the back side.

Lettering and/or a magnification scale (linear metric scale) for rectangular halftone figures should be placed directly on the photo, not in a blank space between photos. The scale or lettering for closely cropped photos can be placed in blank areas close to the figure.

**Proof.**—The author should answer all queried proof marks and check the entire proof copy. Return corrected page proof with the edited manuscript *promptly* to the editors.

If an author chooses to make extensive alterations to a paper in proof stage the author or appropriate section will bear the cost. Original manuscripts will not be returned unless requested. Illustrations will be returned to the author.

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 Deike Building  
University Park, PA 16802  
phone: 814-863-3419  
fax: 814-865-3191

file  
28 February, 1990

Leonard Krishtalka, Editor,  
Scientific Publications  
The Carnegie Museum of Natural History  
4400 Forbes Ave.  
Pittsburgh, PA 15213

Dear Friend:

When I was asked to review the enclosed manuscript I did not fully realize what I was getting into--now I do! Mr. Miklausen is an interesting but eccentric old man. He called me a while back and asked to visit here with some plant fossils he wanted to show me. I said o.k. As a state employee it is arguably my duty to help a PA citizen! He came with the fossils in a shoe box and told me what he claimed to see on and in the fossils, and about other features of the plant that made the fossils. I told him (after microscopic study) that I could see none of the structures he claimed to see, and advised him to look for better material or give up the project. He ignored this and later asked if he could acknowledge my "help." I am reasonably sure I said no! I am horrified to see that I am in fact acknowledged in the MS. I note that he also acknowledges the paleobotanists at Ohio University, but I just phoned them (Rothwell, Trivett, Mapes) to discover that they are even more negative than I.

I don't know anything else to say other than that this article would subject the Carnegie to ridicule if you published it, and you should get rid of the MS as diplomatically, but as firmly and rapidly as you know how. It is certainly not worth the time required to review it formally.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et  
cc: C. Whitlock



THE CARNEGIE

LIBRARY OF PITTSBURGH

MUSEUM OF ART

MUSEUM OF NATURAL HISTORY

MUSIC HALL

TO: Cathy Barnosky  
FROM: Mildred B. Wolfe  
DATE: March 9, 1987

RE: Gift of Research Collection and Library

The Tax Reform Act (which became effective 1 January 1987) affects charitable donations in several ways-- in particular gifts-in-kind such as a library or research collection.

In order to receive a charitable federal income tax deduction very specific documentation is required which may prove time consuming and costly to the donor. In addition, depending on the donor's personal tax situation, the Alternative Minimum Tax may apply. He should consult his personal tax advisor about this.

Now, having said this, we will be happy to help him and his advisor should he decide to pursue this course. He can give either the total gift in one year or give an undivided interest in a certain percentage of it. In fact 1987 may be a good year to make such a gift because the rates are scheduled to be reduced again in 1988.

The simplest way to make a gift is through his will and in order to insure that his library and research collection go to Paleobotany, he should include that stipulation in his will or add a codicil to his current will. Of course he will not receive a charitable deduction for a gift made by will.

I have enclosed an information sheet that gives sample wording that you can send to him or you may wish to simply type a paragraph for him that would read

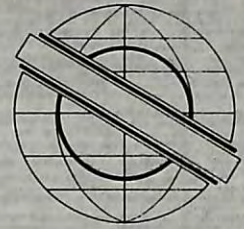
I give and bequeath to the Section of Paleobotany in the Museum of Natural History, Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, my research collection and library.

Enclosure

Planning and  
Development

4400 Forbes Avenue  
Pittsburgh, PA 15213  
412 622-3322

# Ways to Remember Carnegie Institute



## Gifts by Will

There are many ways to give thoughtful remembrances of friends, relatives, or yourself to Carnegie Institute. Both Museums—Museum of Art and Carnegie Museum of Natural History—welcome all gifts: cash, securities, personal property, real estate, life insurance, trusts, etc.

Memorial Gifts by Will make highly appropriate gifts. You can endow a curatorship, purchase a painting or sculpture, name an exhibit after a family member, or donate your natural history or personal art collection to the Museums.

You may restrict your gift to either Museum of Art or Carnegie Museum of Natural History (the two museums that make up Carnegie Institute).

If you wish to purchase works of art for the Museum of Art collection, you can specify the type of art in various ways:

<u>period</u>	pre-20th century, contemporary
<u>nationality</u>	American, European, Japanese
<u>medium</u>	paintings, drawings, prints, photos, decorative arts, etc.

If you wish to purchase materials for exhibit in the Carnegie Museum of Natural History collection, you can specify the area you wish to contribute to such as:

<u>Section</u>	Mammals, Birds, Anthropology, Botany
<u>Program</u>	Education, Powdermill Nature Reserve, Special Exhibits, etc.

You may stipulate a specific section/ program of Carnegie Institute or the particular use for which the gift may be used. In order to provide the maximum benefit of your gift, we ask that you give us as much flexibility as possible, especially since circumstances and needs may change drastically over the years.

While there are needs in almost every area, your unrestricted gift is the most helpful as it may be used to meet pressing or unanticipated needs at a particular time.

Every effort will be made to comply with your intent. However, in the event it becomes impossible to use funds for their designated purpose, final use of the gift will be determined by the Carnegie Institute Board of Trustees.

You may provide for Carnegie Institute in a number of ways:

- an unrestricted bequest of a specified sum of money;
- a bequest of the residue of your estate (what is left after all direct bequests have been made will go to Carnegie Institute);
- a bequest providing for your beneficiaries during their lifetimes with the residue of the estate ultimately going to Carnegie Institute;
- a contingency bequest providing that if none of the beneficiaries under your Will survive you, the estate (or a specified portion of it) will go to Carnegie Institute.

When considering a bequest to Carnegie Institute, we urge you to consult your attorney. We will gladly provide whatever information you and your attorney/ advisor may need.

Please use our legal name Carnegie Institute when making a bequest.

Examples of general purpose provisions are:

To further the stated aims and objectives of Carnegie Institute.

To further the stated aims and objectives of the Museum of Art (or Carnegie Museum of Natural History), Carnegie Institute.

To benefit the work of the Section of \_\_\_\_\_ in the Museum of Art (or Carnegie Museum of Natural History), Carnegie Institute.

To purchase laboratory equipment for the Section of \_\_\_\_\_, Carnegie Museum of Natural History (or Museum of Art), Carnegie Institute.

To support the research (or field research) of the Section of \_\_\_\_\_, Carnegie Museum of Natural History (or Museum of Art), Carnegie Institute.

To support the educational programs of the Section of \_\_\_\_\_, Museum of Art (or Carnegie Museum of Natural History), Carnegie Institute.

To endow the \_\_\_\_\_ fund to further the stated aims and objectives of the Section of \_\_\_\_\_, Carnegie Museum of Natural History (or Museum of Art), Carnegie Institute.

To establish and maintain the \_\_\_\_\_ Exhibit Hall of \_\_\_\_\_, Carnegie Museum of Natural History (or Museum of Art), Carnegie Institute.

Examples of bequest clauses to consider when making a gift by Will to Carnegie Institute:

#### UNRESTRICTED GENERAL BEQUEST

I give and bequeath to Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, the sum of \_\_\_\_\_ (\$ ) Dollars for its general purposes.

#### BEQUEST FOR ENDOWMENT

I give and bequeath to Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, the sum of \_\_\_\_\_ (\$ ) Dollars to be added to its endowment.

#### SPECIFIC BEQUEST

I give and bequeath to Museum of Art, Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, my art collection consisting of paintings and sculptures.

#### BEQUEST OF RESIDUARY ESTATE

I give and bequeath to Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, the residue of my estate including real and personal property owned by me at my death for its general purposes.

#### CONTINGENT BEQUEST OF RESIDUARY ESTATE

I give and bequeath the residue of the property owned by me at my death, real and personal and wherever situate, to my wife, \_\_\_\_\_, if she survives me. If my wife does not survive me, I give and bequeath my residuary estate to Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, for its general purposes.

#### AMOUNT OF BEQUEST DEPENDENT ON SIZE OF ESTATE

I give and bequeath the sum of \_\_\_\_\_ (\$ ) Dollars or \_\_\_\_\_ % of my residuary estate, whichever is the lesser, to Carnegie Institute, Pittsburgh, Pennsylvania, and its successors forever, for its general purposes.



THE CARNEGIE  
MUSEUM OF  
NATURAL HISTORY

Section of Paleobotany  
March 3, 1987

Dr. Alfred Traverse  
Palynological Laboratories  
Pennsylvania State University  
435 Deike Building  
University Park, PA 16802

Dear Alfred:

Enclosed is information from our Development Office about charitable donations and gifts by will. Let me know if you have any questions.

Chuck Unger of Outdoor Pennsylvania was here this week, filming Tony and me for a show they are doing on the ice ages. It was a pretty strange experience, and I've decided I am not the show-biz type.

Hi to Betty.

Best regards,

*Cathy*

Cathy W. Barnosky  
Assistant Curator

encl.



Carnegie Museum of Natural History  
Section of Paleobotany  
4400 Forbes Ave.  
Pittsburgh PA 15213

6 March 1987

Dr. Alfred Traverse  
Palynological Laboratories  
Pennsylvania State University  
435 Deike Building  
University Park PA 16802

Dear Alfred:

I enclose a second letter to you that serves as a proposal to teach at Penn State next year. I hope this is what you need. Mary and I talked with Dr. Robert Wilburn, our Institute President, this week about my teaching a course. He was very supportive of the plan and expressed hope that it would lead to greater cooperation between institutions. He is all for the Paleobiology Program and perhaps for seeking support from the Mellon Foundation. (I'm impressed by the old-boy network in this regard--everyone knows every else at these echelons). Speaking of which, yesterday Dr. Wilburn had occasion to talk with the President of Penn State, and in the course of the conversation, he brought up the paleobotany plans. He invited your President and the Provost to pay Carnegie a visit in the near future and discuss the possibilities for a larger program.

Dr. Wilburn suggested that we invite the Dean and departmental chairmen to come to Carnegie for a day to discuss using paleobotany as first step towards developing a Paleobiology Program (Would Charles Hessler be another person to invite?) We could show them the Earth Sciences Division, take them to lunch, and explore some of the future possibilities. Would you provide me with the names and addresses of appropriate people?

I agree with you that we shouldn't let negotiations get bogged down for the paleobotany course. It is possible for me to negotiate individually with Penn State and involve the Institute only peripherally. On the other hand, I like the idea of setting up the teaching arrangements between institutions in the hope that both administrations will get enthusiastic about the idea of an expanded paleobiology program.

With regards to your giving your library and collection to the section, the Development Office is getting together some information which I'll pass on next week. I guess there a couple of ways you can arrange it.

My good wishes to you and Betty,

*Cathy*

Cathy W. Barnosky

**Carnegie Museum of  
Natural History**

Section of Paleobotany  
(412) 622-3170

11 June 1986

Dr. Alfred Traverse  
Department of Geosciences  
Deike Building  
Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Alfred:

How about getting together at the end of the month to discuss your manuscript, to develop a strategy with Mary Dawson regarding the paleobiology program, and for me to take delivery of the centrifuge? Actually I'll be available any time from 23 June to 11 July-- after that I'm heading back to Jackson Hole for another round of coring. Why don't you let me know your schedule, and we can arrange a visit?

I am very impressed with your manuscript. It is very well written and covers a tremendous range of subject matter. I have some suggestions on the Neogene and Quaternary sections, as well as some references you might not be aware of.

Looking forward to seeing you again. As I said before, Tony and I would like to invite you and Betty (if she can make it) to be our houseguests when you come to Pittsburgh.

Best regards,

*Cathy*

Cathy W. Barnosky

*11/2?*

*Alfred I mean here just or  
not?*

# Carnegie Museum of Natural History

Division of Earth Sciences

Section of Vertebrate Fossils

(412) 622-3247

4 November 1985

Dr. Alfred Traverse  
Department of Geosciences  
Deike Building  
Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Alfred:

The best reference for the use of silicone oil as a mounting medium is probably Faegri and Iversen (1975, p. 11-114). I have enclosed a xerox of their procedure with some amendments. I would say that this is the mounting medium used in most labs doing strictly Quaternary work, although it has obvious disadvantages for older material.

Silicone oil can be purchased from Accumetric  
P.O. Box 843  
Elizabethtown, Kentucky 42701.

It is manufactured by Dow Corning Corporation as 200 Fluid Dimethylpolysiloxane (Viscosity: 2,000 centiStokes). The label on my jar says "200 Fluid is a clear, water white, silicone liquid available in a range of viscosity grades. For additional information, request a product data sheet." Hope this helps.

As a reminder, would you send me the recipe for making glycerine jelly sometime? Also, a reference slide of Engelhardtia when you get around to making some new slides for yourself. I would also appreciate the reference that you gave me as the best source of information on Carboniferous megafossils. I neglected to write it down and have already forgotten it.

Thanks for everything.

Best regards,

Cathy W. Barnosky

? done?  
Take  
(also centrifuge)

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 Deike Building  
University Park, PA 16802  
(814)863-3419

18 June, 1989

*for Gath*

Customer Service  
Carolina Biological Supply Co.  
Burlington, NC 27215

Dear Friends:

Some time ago I bought, I believe from you, a red necktie with pictures of fossil human skulls (Australopithecus, Homo erectus, etc.). It says on a label in back that it was designed for Richard Leakey of National Museum of Kenya. I believe, however, that I bought it from Carolina. Is that right? If so, how can I buy more? If not, have you any idea where I did get it?

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

27-1601

\$16.50 each.

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu

5 February, 1995

Dr. Guy Caron  
Univ. de Moncton  
École de sciences forestières  
165 Boulevard Hébert  
Edmunston, New Brunswick E3V 2S8  
Canada

Dear Guy:

It was great fun to hear from you per yours of 3 January. Getting to know you and Rosema was a highpoint of the Valencia caper. We loved the pictures of you and your lovely family!

I thank you for the most interesting group of your papers. Do come to see us if you ever venture southwest. You come close to us on just about any trip that you get past New York. On the other hand, you can never be sure we won't pop up in Edmunston some day.

Yours very truly,

Alfred Traverse



UNIVERSITÉ  
DE MONCTON

Centre universitaire Saint-Louis-Maillet

École de sciences forestières

*✓ Carl*

January 3 1995

Dr. and Mrs. Alfred Traverse  
Pennsylvania State University  
Palynological Laboratories  
435 Deike Building  
University Park, PA 16802 USA

Bonjour à tous les deux,

It was a great pleasure for both Rosema and I to hear from both of you in October. As you can see, both Rosema and I are not regular writers but we still like to give some of our news from time to time. It doesn't stop you from writing! We appreciate very much having news from others but we tend to slack off on our side. Sorry!

We sent Best Wishes cards for Christmas and for the New Year to our friends but we decided to spend a bit more time by writing you a letter instead. You are the only ones!!!

When I first read Alfred's letter in the faculty lounge, I started laughing at "What nobody told me was that the garden closes when it rains!". I guess I did it a bit too loud as I interrupted a heated debate between two administrators. They soon realized that I was not laughing at them!

We enjoyed very much our trip to Spain. We enjoyed spending time with both of you in Valencia. It was most pleasant to have someone to chat with, and this in the Shakespearean language!

We left Valencia on September 23 en route to Alicante. We had the car rental company pick us up downtown, because I didn't like riding in these old and narrow city streets. In the newer sections of town, everything was O.K. We made it to Alicante, but again the city streets were narrow, and badly indicated. We survived! We finally went to the beach on the 24th after visiting the Castillo Santa Barbara. That beach stop was way too short for Rosema!

165, boulevard Hébert  
Edmundston  
Nouveau-Brunswick  
Canada E3V 2S8  
Téléphone: (506) 737-5068  
Télécopieur: (506) 739-5373

We left on the same day for Granada. We reached Granada only by evening. The next day we went to the beach at Motril (south of Granada) to pick up rocks for our kids. That's what they wanted most! On the same day (25th), we went to the Alhambra (in Granada) and went to a local festival in honor of their Madrone. The next day we left for, and visited partly, Toledo. On the next day, we wanted to visit furthermore Toledo but I visited more often the can! Yes, I got the "tourista"! The visits in town were short distance from our hotel because finding a public "aseos" was not the easiest thing in Toledo, that is when they allowed you to use theirs! We were able to buy most of our souvenirs of, and gifts from, Spain in Toledo!

We left on the 27th for Madrid. That evening, we went downtown (near Madrid), and bought the remaining gifts. It was about 21h00 when we saw McDonalds! Up to now, we had kept with Spanish-like dishes, but this time, I didn't care because I was so hungry - the tourista, you know! It was a great feeling to have a Big Mac! However, it was all in the can within the hour!

The next day, we were up three hours early in order to be on time for our flight. We immediately left for the airport, got rid of the rental, and started to wait patiently. After one hour of waiting, there was no indication that our plane was due next. I went to check and the lady told me that I was too early. When only 15 minutes were left, no indication yet of our flight. I went back, and she more-or-less thought I was a wacko! I was too early again! I explained to her that my plane should leave in 15 minutes. "No", she replied. "It will leave in 2 hours and 15 minutes". What? For one, I had misread my watch by one hour. Don't ask me how! On top of that, (to take Alfred's wording), "What nobody told us was that the time had changed during the weekend and had been rolled back by one hour!" So, we had no choice but wait furthermore and patiently for our flight!!!

Our trip to Montreal went well, and we were home in St Jacques on the same day (28th). It took us about 2-3 weeks to be back to normal. I had the tourista for that long, but tests revealed no major problem or bug!

Thank you Alfred for the information on the Canadian Assoc. of Palynologists and for a copy of some of your most recent publications. In return, here are a few of mine! As you'll notice, most of them are not related to palynology. I'm more in Tree Development and Reproduction. Palynology is one interest of mine that relates to my main research theme.

Rosema and I enjoyed receiving the photos from you, Betty. Please find enclosed a photo of our family at Christmas 1993. We usually have one of these family pictures every two years. If you have one shot of you and Alfred, we would appreciate a copy! We have no slide (or picture) with Alfred present! Is he camera shy or what?

Let's keep in touch! Drop to see us if you are once again in the Edmundston region.

All the best for 1995!

*Guy & Rosema*

Guy and Rosema Caron

Office Tel: 506-737-5243  
Home Tel: 506-739-6876  
Office FAX: 506-737-5373  
E-mail: GCARON@CUSLM.CA

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu  
12 October, 1994

Dr. Guy Caron  
École de sciences forestières  
Univ. de Moncton  
165 Boulevard Hébert  
Edmunston, N. B. E3V 2S8  
Canada

Dear Guy:

It was great fun meeting you and Rosema (hope I've spelled it right) in Spain. We're back and more or less straightened out now. Fortunately my ex-student, who is a post-doc at Univ. S. Carolina, who agreed to live in our house and teach my classes for the experience (and two weeks free rein in my collections and library), had no trouble and did a great job. As you know, I "cut" the APLE field trip and planned to spend the day at the botanical garden. What nobody told me was that the garden closes when it rains (!). I had an umbrella and was prepared to tough it, but the best they could agree to after I pleaded and pleaded was one half-hour. So, I took a long walking tour of the town. After lunch I watched the bullfights on TV for two hours, which should satisfy my needs in that direction for the rest of my life. After the meeting we had a great visit in Madrid, with a side trip to Toledo. We hope you both did o. k. on your post-convention excursion.

According to my notes I promised info on CAP (Canadian Assoc. of Palynologists). I enclose a xerox copy of their most recent newsletter from my files. I also enclose a xerox from my book, Paleopalynology, which I think is what you wanted about that. As I probably told you, it's now out of print, and I'm doing a second edition. I also am sending a xerox of the opening pages of my new book, which might be of some interest, who knows. I'm sticking in a couple of reprints, just to inform you about the variety of things we do.

I hope we can keep in touch. New Brunswick is very dear to me, and I love to have contacts there! You are welcome here too!

All the best.

Yours very truly,

Alfred Traverse

encl.:xeroxes, reprints

October 1, 1969

Dr. J.A. Carreiro  
Department of Design & Environmental Analysis  
Cornell University  
Ithaca, New York 14851

Dear Dr. Carreiro:

I read your recent paper "Modular construction: an innovation for housing", in the recent number of New York's Food and Life Sciences. In the article you make reference to a report entitled "The new building block...." Could you tell me how to obtain a copy of that report and any other information that might be readily available regarding manufacture of "modules"?

Thanks for your help.

Yours very truly,

Alfred Travesse  
Associate Professor of Geology  
and Biology

AT:kc

24-I-00

To: traverse@ems.psu.edu  
Subject: cheers

Dear Alfred,  
nice for me too being in touch again  
thank you very much for your reprints. I rescued the precious one in  
Historical Biology and got new stuff for my own education! Your work  
deserves all my respect.

I am now working on lake deposits and finding interesting data. The  
personnel conflict is that I have got involved in projects allegedly  
aimed to determine climatic versus local controls,.....while I am  
becoming very skeptical on the existence of any deterministic role of  
site-specific physical features on the pollen changes. Moreover, I  
don't see equilibrium or stability anywhere. Maybe some coincidences,  
but coincidence is not correlation and apparent trends can arise from  
underlying stochasticity. I am getting the feeling (and trying to  
demonstrate it with a friend at Maths) that vegetation dynamics  
in most Spanish Mediterranean places is mainly  
determined by hysteresis. Initiating factors appears to be historical  
rather than physical and disturbance rate (mainly fire) more  
important than regional or global climatic trends. Again, particular  
stories (unexpected stories) rather than the beautiful history of  
positive outcomes and nice for climatic transfer functions!

Hope you are well  
greetings for your wife  
Cheers  
Pepe

*Carriou*

ca 1 Dec. 99

Dear friend,  
long time without  
hearing of you.  
Hope you are well.  
Can you please send me  
a copy of your fantastic  
paper in historical  
Biology comparing Plant  
and Animal Evolution  
as well as recent papers?  
cheers Jeff

Joe Corvino

To: Alfred Traverse <traverse@ems.psu.edu>  
Subject: Re: hi

Alfred:

It was great to hear from you. I really enjoyed meeting you at Kevin's thesis exam. It was the most enjoyable such exam that I've ever participated in. I agree that dinner was not set up for discussion but a good time none-the-less.

Please let us know if you're in the area again, perhaps we can get out with Francine for a quieter evening.

All the best

Rick

.....  
.Rick Cheel           Phone: (905) 688-5550 ext. 3512  
.Professor of Earth Sciences       FAX: (905) 682-9020  
.Brock University           E-mail: rcheel@craton.geol.brocku.ca.  
.St. Catharines, Ontario  
.Canada L2S 3A1

. Home Page: <http://craton.geol.brocku.ca/faculty/rc/default.html>  
.....

Received: from UOVSV1.UOVS.AC.ZA (uovsvm1.uovs.ac.za [146.182.9.11]) by pangaea  
Received: from rs.uovs.ac.za by UOVSV1.UOVS.AC.ZA (IBM VM SMTP V2R3) with TCP;  
Tue, 21 May 96 14:28:03 SAT  
Received: from RS/SpoolDir by rs.uovs.ac.za (Mercury 1.21);  
21 May 96 14:28:27 GMT+2  
Received: from SpoolDir by RS (Mercury 1.21); 21 May 96 14:28:01 GMT+2  
From: "Dr. JS Carrion" <PLJC@rs.uovs.ac.za>  
Organization: University of the Orange Free State  
To: traverse@ems.psu.edu  
Date: Tue, 21 May 1996 14:27:51 GMT2  
Subject: from South Africa  
Priority: normal  
X-mailer: Pegasus Mail for Windows (v2.10)  
Message-ID: <1C491AB3686@rs.uovs.ac.za>  
Content-Type: text

Hi Alfred,

how are you? I hope you continue so active intelectually.  
Finally, the paper of Navarres that you improved is in press in New  
Phytologist. Thank you very much for it.  
I am now working with Louis Scott, at Bloemfontein. My goal with this  
travel was to test the potentialities of non-ordinary material for  
Quaternary pollen analysis. I am making a bit of everything: breccia,  
stalagmites, hyrax middens, cow dung,... Because in the semi-arid  
Spain there are no many wet places for conventional pollen analysis,  
I think this experience will benefit my work there. Otherwise, Louis  
is quite a nice guy and personally I find South Africa a wonderful  
country with good climate and funny people.

I have not forgotten the possibility of future collaboration. Maybe  
something we could do in the distance, some comparative study. From  
next September we can think about it, if you like.

Greetings to your wife. It was a nice meeting in Valencia.

Cheers

J.S. Carrion

*answered*  
*27-V-96*

Received: from vax3.sara.nl (vax3.sara.nl [192.16.188.187]) by pangaea.ems.psu.e  
Received: from horus.sara.nl by SARA.NL (PMDF V4.2-15 #2498) id  
<01HZVNOFCTA896X85X@SARA.NL>; Thu, 11 Jan 1996 09:22:36 +0100 (MET)  
Received: from biomacI-149.bio.uva.nl by horus.sara.nl (AIX 3.2/UCB 5.64/4.03)  
id AA28645; Thu, 11 Jan 1996 09:18:02 +0100  
Date: Thu, 11 Jan 1996 09:18:23 -0100  
From: carrion@sara.nl (Jose Carrion)  
To: traverse@ems.psu.edu  
Message-id: <9601110818.AA28645@horus.sara.nl>  
X-Envelope-to: traverse@ems.psu.edu  
MIME-version: 1.0  
Content-transfer-encoding: 7BIT  
Content-Type: text/plain; charset="us-ascii"

DEAR ALFRED

HAPPY NEW YEAR AND ALL THE BEST FOR YOU AND YOUR WIFE.

YOU DON'T NEED THANK TO ME THE REPRINTS. OF COURSE, YOU ARE IN MY LIST OF  
PALYNOLOGISTS WHICH ARE USUALLY INTERESTED IN ANYTHING I DO.

MY SECOND SURNAME IS GARCIA. I DON'T KNOW IF YOU REFER THIS IN YOUR LETTER.  
ON THE OTHER HAND, I COLLABORATED IN ONE PAPER WITH MARIA GARCIA, A  
MICROSPIST. THERE IS NOTHING IMPORTANT TO SAY ABOUT MARIA GARCIA. SHE  
CONTINUES TO BE A GOOD RESEARCHER IN YOUR OWN FIELD.

I'LL BE HERE, IN AMSTERDAM FOR THREE MONTHS, AND I'LL TRAVEL TO  
BLOEMFONTEIN, SOUTH AFRICA IN MAY, ALSO FOR THREE MONTHS. I NEEDED GO OUT  
FOR A TIME! I'VE HAD SOME PERSONAL PROBLEMS. THE ONLY IS THAT I MISS MY  
DAUGHTER AND THE SWEET TEMPERATURES OF MY COUNTRY.

CHEERS

PEPE

*answered  
28-I-96*

Received: from unimur (unimur.um.es) by pangaea.ems.psu.edu  
(4.1/PSU\_ESSC/GEOSC-2.02) id AA02333; Wed, 15 Feb 95 11:59:49 EST  
Received: from afrodita.fcu.um.es by unimur (4.1/SMI-4.1)  
id AA25580; Wed, 15 Feb 95 18:05:32 +0100  
Received: by afrodita.fcu.um.es (4.1/SMI-4.1)  
id AA29401; Wed, 15 Feb 95 17:59:19 +0100  
Date: Wed, 15 Feb 95 17:59:19 +0100  
From: carrion@afrodita.fcu.um.es (Jose Sebastian Carrion Garcia)  
Message-Id: <9502151659.AA29401@afrodita.fcu.um.es>  
To: traverse@ems.psu.edu  
Subject: from Carrion Murcia Spain  
Mime-Version: 1.0  
Content-Type: text/plain; charset=us-ascii

Dear Alfred

certainly, there has been some troubles with E-mail at Murcia Univ.  
network for the past few days,  
allegedly due to pirated activities. I doubt it could be the case for  
Valencia.

As you can see, your experiment has been successful.  
Sorry if I could have been misunderstanding your definition of p.palynology.  
I feel I have not expressed well my intention in the last message.  
I don't know how to be ironical in English. I only wanted to make  
reference to the criticism of your book in Palynos. Of course, I don't  
agree here with the opinion by Charles Felix.  
No doubt, you presented extensively  
your concept of paleopalynology in your book and my  
view is closer its versatility than a supposed inconsistency.  
I remember well: "all what my net  
catches is a fish" It is OK to the case.

Michele is in contact with me, but, certainly, I have not read your  
letter. Recently, we have had little time to precise some questions.  
I hope we will be able to make ourselves more understood.

Cheers

Jose

Date: Wed, 15 Feb 1995 09:48:20 -0500 (EST)  
From: "Alfred Traverse" <traverse@ems.psu.edu>  
To: michele.dupre@uv.es  
Cc: Traverse@ems.psu.edu  
Bcc: carrion@afrodita.fcu.um.es  
Subject: experiment  
X-NUPop-Charset: IBM 8-Bit

Dear Jose: This is to see if it works, as I just wasted an hour writing a long letter to Michele, and it didn't transmit. Your understanding of my definition of palynology is incorrect. Best. Al.

Received: from unimur (unimur.um.es) by pangaea.ems.psu.edu  
(4.1/PSU\_ESSC/GEOSC-2.02) id AA08397; Sat, 11 Feb 95 11:52:49 EST  
Received: from afroditafcu.um.es by unimur (4.1/SMI-4.1)  
id AA16783; Sat, 11 Feb 95 17:58:39 +0100  
Received: by afroditafcu.um.es (4.1/SMI-4.1)  
id AA16396; Sat, 11 Feb 95 17:52:25 +0100  
Date: Sat, 11 Feb 95 17:52:25 +0100  
From: carrion@afrodita.fcu.um.es (Jose Sebastian Carrion Garcia)  
Message-Id: <9502111652.AA16396@afrodita.fcu.um.es>  
To: traverse@ems.psu.edu  
Subject: From Carrion, Murcia University  
Mime-Version: 1.0  
Content-Type: text/plain; charset=us-ascii

Dear Dr. Traverse:

Last night I have put you in my dreams. I saw you discerning about etimological questions in my Faculty, at Murcia. People was enthusiastic with your knowledge beyond palynology. Here nobody discusses your particular concept of paleopalynology, including animals and excluding dinoflagellate cysts.

Because my dream I have decided to write about two questions:

1. Has your "paleopalynology" re-edited since the first time in 1988? I need this detail so as to complete my review for Acta Botanica Malacitana (M!laga, Spain).

2. Michele told me as you very kindly offered her to collaborative research. I have charged for some years with academic representation of teachers. Thus, I know the spectra of formulations to get funds on the basis of collaboration between Spanish and USA universities. Let me to precise the information before communicating you the possibilities. Surely, both Michele and you will find common points of interest. I would be happy to have you in Spain "in vivo" -you are already "in book" here-

One last thing: In my country, to have a such wide pool of scientific interest usually brings more than one problem with "scientific authorities". How goes it in USA? It's only matter of curiosity.

Cheers,

Jose Sebastian Carrion Garcia

Received: from unimur.um.es by pangaea.ems.psu.edu  
(4.1/PSU\_ESSC/GEOSC-2.02) id AA29479; Tue, 31 Jan 95 07:28:24 EST  
Received: from afrodita.fcu.um.es by unimur.um.es (4.1/SMI-4.1)  
id AA16961; Tue, 31 Jan 95 13:33:07 +0100  
Received: by afrodita.fcu.um.es (4.1/SMI-4.1)  
id AA05834; Tue, 31 Jan 95 13:45:52 +0100  
Date: Tue, 31 Jan 95 13:45:52 +0100  
From: carrion@afrodita.fcu.um.es (Jose Sebastian Carrion Garcia)  
Message-Id: <9501311245.AA05834@afrodita.fcu.um.es>  
To: traverse@ems.psu.edu  
Subject: From Carrion. Spain

Dear Prof. Traverse,

I have just received from Valencia your recent book Paleopalynology. I have already given it to my librarian. Once again, what a wonderful labour! No doubt, you are an author's fossil! Such books are not easily found in the current literature. One must travel through times to find similar, thought-provoking ones such as those of Wodehouse and D'Arcy Thompson. More and more, I am expecting to meet with you to know better your work. I realize, however, my main limitation, as you know: the English. I hope publishing soon a review about your book in some Spanish journal. Congratulations, I will follow it newly during my classes.

Yours very truly

Jos! S. Carri!n

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu  
30 October, 1994

Dr. J. S. Carrion  
Facultad de Biología Vegetal  
Universidad de Murcia  
30100 Murcia, Spain

Dear Dr. Carrion:

Just (!) got your postcard dated 7 Sept. (my birthday!) requesting a copy of the Brandon-update paper. In the meantime, "a lot of water has gone over the dam." I have actually met you, and quite independent of the card have sent you a copy of the requested paper (and a few other publications).

Your country is fascinating--I can hardly wait until it is possible to visit again, on which occasion we must add Murcia to our "life list" (as the bird-watchers say) of places in Spain we've experienced. In the meantime, please don't fail to include us in any North American itineraries you may contemplate.

All the best.

Yours very truly,

Alfred Traverse

encl: a couple more pubs.

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu  
12 October, 1994

Dr. José S. Carrion  
Lab. Palinologia  
Dept. Biología Vegetal  
Universidad de Murcia  
Espinardo 30071-Murcia  
Spain

Dear Dr. Carrion:

How nice to get the interesting batch of reprints from you as a reminder of our encounter in Valencia. I enjoyed it all but especially profitted from the Juglans story.

It was fun to get to know you better through the generosity of Michèle Dupré--what a fine interlude in her apartment!

My wife and I had a splendid time in Madrid and Toledo. We love Spain from this small sample, and can hardly wait until the next visit. We have learned from our first bad experience in the M. airport and will not be victimized again. Even that had its good side. Madrid is a fantastic city.

I enclose some reprints, without knowing whether they will really interest you. From the point of view of some people, I am far too spread out in palynology. I like it that way.

Best wishes.

Yours very truly,

Alfred Traverse

encl.:reprints

26 January, 1984

Mr. Richard E. Carroll  
7C-477 S. Wymount Terrace  
Provo, UT 84604

Dear Mr. Carroll:

Thanks for yours of 18 January, and for your interest in the graduate program in palynology at Penn State. I have turned a copy of your letter over to the appropriate person in the graduate admissions office (Ms. Linda Gruhn). I gather you already have applied and do not need the usual packet of materials.

Admission to the graduate program in Geosciences, of which Palynology is a part, is quite competitive. If you get in, I am sure we can find plenty of things to work on! I enjoyed your letter.

If you have a chance to get to the East on some pretext, a visit here would probably be mutually helpful, though this is certainly not necessary.

Best wishes. Let me know if there are problems.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

cc: Ms. Linda Gruhn

*Find: please  
send material*  
*AS*

January 18, 1984

Richard E. Carroll  
7C-447 S. Wymount Terrace  
Provo, Utah 84604  
(801) 375-7383

Dr. A. Traverse  
Department of Geosciences  
Pennsylvania State University  
540 Deike Building  
University Park, Pennsylvania 16802

Dear Dr. Traverse,

I am currently a graduate student at Brigham Young University pursuing an M.S. Degree in the area of stratigraphy and sedimentation, but I have had for some time a growing interest in palynology. Since I am nearly finished with my Master's thesis, I have been talking with several people about the advantages of going on in my education for a Ph.D. degree in some aspect of stratigraphic palynology, and I have been encouraged to do so. Dr. J. Keith Rigby and Dr. Jess R. Bushman, both of the B.Y.U. Department of Geology, have suggested that I write to you about doctoral research at Penn State.

During my first semester of graduate work I took a class in palynology from Dr. Bushman. It consisted primarily of exercises in preparation and analysis of recent and fossil palynomorphs. Since then I have spent much of my spare time in individual reading and research in palynology with direction from Dr. Bushman. My area of thesis research includes some of the Late Cretaceous coals of eastern Utah, and I have attempted to utilize the palynology of these coals biostratigraphically as well as a paleoecological indicator.

At the present time, my palynological interests are quite varied. As I have said before, I have had some exposure to Late Cretaceous pollen and spores, but I have also dabbled briefly for Early Ordovician chitinozoans in the graptolite-bearing Filmore Formation of western Utah. I have also spent a considerable amount of time building up the modern pollen collection for the B.Y.U. geology department. Of the reading I have done on different aspects of palynology, I have found nearly all of them very interesting. From what I have read of your work and research, you seem to be in a very similar position. I feel that by doing research under your direction, I could accomplish my educational goals, and I am confident that I can be an asset to you and the Penn State Department of Geosciences. My application to the Penn State Graduate School has already been submitted.

If you have any suggestions or questions, please contact me. I can be reached most of the day at the B.Y.U. Geology Graduate Office (801) 378-2082. Thank you for your time and consideration.

Sincerely,  
*Richard E. Carroll*  
Richard E. Carroll

ROBERT D. CARTER  
PETROLEUM GEOLOGIST

402 WILSON BUILDING

CORPUS CHRISTI, TEXAS

TELEPHONE TULIP 4-8651

June 1, 1966

Dear Mr. Travers,

Thank you for your very nice letter concerning our daughter Mary. I'm afraid she made her parents out as cogens. We have been "pushing" her; not so much for the sorority grades as to make sure she can continue at Texas since she is so enthusiastic about it and enjoys it so much. We know she did her best and this is all we ask.

Again, thank you for your interest in Mary.

Very truly yours,  
R. D. Carter

# CATALOG OF FOSSIL SPORES AND POLLEN

DEIKE BUILDING  
THE PENNSYLVANIA STATE UNIVERSITY  
UNIVERSITY PARK, PENNSYLVANIA 16802  
U. S. A.



INTERNATIONAL  
PALYNOLOGICAL

July 26, 1967

Miss Josephine Casey  
Bureau of Economic Geology  
University of Texas  
Austin, Texas 78712

Dear Miss Casey:

It was good to see you looking so well, even if in unfamiliar surroundings. That is surely the fanciest ge building around.

Thanks for your help during our recent visit to Austin. I am sorry that I came bursting into your office during the day we left. I had forgotten both that it was around that in your new quarters things are a bit more formal.

Texas looked very good to me during this recent visit. In 12 years we lived there I made many friends, and my graduate was very impressed that in every city we visited I met at least a couple of people--from Longview to Laredo. I spent in twelve years in Pennsylvania I might be just as well. But there will always be something special about Texas for us.

Best wishes as ever.

Yours very truly,

Alfred Traverse  
Associate Professor of Geology

AT:kaw

# CATALOG OF FOSSIL SPORES AND POLLEN

DEIKE BUILDING  
THE PENNSYLVANIA STATE UNIVERSITY  
UNIVERSITY PARK, PENNSYLVANIA 16802  
U. S. A.



THE  
INTERNATIONAL COMPENDIUM  
OF  
PALYNOLOGICAL SYSTEMATICS

July 26, 1967

Miss Josephine Casey  
Bureau of Economic Geology  
University of Texas  
Austin, Texas 78712

Dear Miss Casey:

It was good to see you looking so well, even if in rather unfamiliar surroundings. That is surely the fanciest geology building around.

Thanks for your help during our recent visit to Austin. I am sorry that I came bursting into your office during lunch period the day we left. I had forgotten both that it was around noon and that in your new quarters things are a bit more formal.

Texas looked very good to me during this recent visit. In the 12 years we lived there I made many friends, and my graduate student was very impressed that in every city we visited I knew at least a couple of people--from Longview to Laredo. I suppose that in twelve years in Pennsylvania I might be just as well connected. But there will always be something special about Texas for all of us.

Best wishes as ever.

Yours very truly,

Alfred Traverse  
Associate Professor of Geology

AT:kaw

THE UNIVERSITY OF TEXAS

BUREAU OF ECONOMIC GEOLOGY  
THE LITTLE CAMPUS  
18TH AND RED RIVER STREETS  
UNIVERSITY STATION, BOX X  
AUSTIN 78712

August 22, 1966

Professor Alfred Traverse  
Department of Geology-Geophysics  
Pennsylvania State University  
University Park, Pennsylvania 16802

Dear Dr. Traverse:

Your letter of August 18 arrived just as I was about to send a note to you. I thought I would try my luck on the key which you sent here a few days ago -- hence the enclosed note to the Business Office. By telephone I got the same information you had, but I still do not see how you got a key to our front door without Dr. Flawn's signing our usual authorization. It occurred to me that the young lady I talked with might not have wanted to thumb through all of the names having key to this particular door but, in any case, I drew a blank.

Sorry to know that the package from Mr. Dobie was damaged in transit. I had thought we tied it but perhaps we just used gummed paper to secure the wrapping. We shall watch this in the future and appreciate your letting us know about it.

Hope that you and your furniture get reunited one of these days. It is certainly good that the furniture rather than the family got delayed.

Best wishes from all.

Very sincerely yours,

*Miss C*  
*Josephine Casey*

JC/cjg  
Enclosure

Department of Geology & Geophysics  
Pennsylvania State University  
University Park, Pennsylvania 16802

18 August, 1966

Miss Josephine Casey  
Bureau of Economic Geology  
The Little Campus  
University of Texas  
Austin, Texas 78712

Dear Miss Casey:

I was glad to be refreshed in memory about your given name—I was embarrassed to have to address you as just "Miss Casey", tho' that appellation seems to have served.

*This would  
not be  
a  
problem*

The package of specimens from my friend, Mr. Dobie, arrived today. It was more or less heart-breaking that the one specimen that I especially wanted, which was a polished surface of opalized fern trunk, of which I had made some photos last summer with Mr. Dobie at Whitsett, was missing. The package was stamped "arrived in damaged condition". Everybody who saw the package agreed that it was most remarkable that the inside box appeared to have been slightly open and that the one economically valuable piece was missing while the odds and ends were still inside. Exasperating.

My wife finally succeeded in selling our house in Austin. The place in Houston had to be rented and has been—so I still am a Texas landowner! Suits me. I still hope to be back one day. Mrs. T. and the kids arrived night before last, and our furniture is in the middle of Georgia according to a recent wire. It shouldn't be more than a month or two before it arrives. I am certainly glad to be with my family again.

Regards to Jo, Carolyn et al.

Yours very truly,

*Al*  
Alfred Traverse

Associate Professor of Geology (but don't rate a decent typewriter yet!)

THE UNIVERSITY OF TEXAS

BUREAU OF ECONOMIC GEOLOGY  
THE LITTLE CAMPUS  
18TH AND RED RIVER STREETS  
UNIVERSITY STATION, BOX X  
AUSTIN 78712

August 8, 1966

Dr. Alfred Traverse  
Department of Geology-Geophysics  
Pennsylvania State University  
University Park, Pennsylvania 10802

Dear Dr. Traverse:

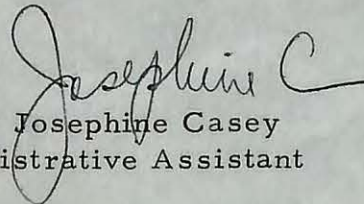
In accordance with your note of August 3, I am glad to send on the samples from Mr. Dobie. I expect your letter to Roselle crossed with my inquiry and I believe she is also dropping you a line.

Austin will not soon recover from the events of last Monday. One more person died early this morning to bring the total of fatalities to 14 (exclusive of wife, mother, and Whitman himself). Yesterday our visiting minister probed rather deeply into the responsibility of a society as a whole and the church in particular for the creation of such an environment that would allow these tragedies to occur.

Happier subject -- we had a fairly good rain and little cooler weather these past few days and so far we have reached a 101 only once and below that only several 99's.

We shall hope to see that our paths will cross again one of these days.

Very sincerely yours,



(Miss) Josephine Casey  
Administrative Assistant

JC/cjg

THE UNIVERSITY OF TEXAS

BUREAU OF ECONOMIC GEOLOGY  
THE LITTLE CAMPUS  
18TH AND RED RIVER STREETS  
UNIVERSITY STATION, BOX X  
AUSTIN 78712

July 29, 1966

Dr. Alfred Traverse  
Department of Geology & Geophysics  
Penn State University  
University Park, Pennsylvania

Dear Dr. Traverse:

Greetings! A few days ago Carolyn forwarded a letter which had come here and in the next day or so mail a package has been received which perhaps is from the same sender, Mr. S. N. Dobie, Whitsett, Texas. If you want this package forwarded also, please let me know.

I saw Mr. and Mrs. Cobb at Ironton last month. They knew of your move from Austin. They looked very well and were planning to vacation in Colorado on a sort of "busman's holiday."

With best wishes for the coming year.

Very sincerely yours,

*Miss Casey*

*MJC: 09*

November 8, 1972

Dr. Richard E. Casey  
Department of Geology  
Rice University  
Houston, Texas 77001

Dear Dr. Casey:

Thank you for sending me a notice about the "plankton people" meeting at the University of Minnesota. Unfortunately, I have just returned from our annual AASP (palynological) session in Rhode Island, and I feel that I have shot my meeting bolt for a time and will not be present at the GSA session this year. I do hope you will keep me informed of future developments regarding the "pp".

Best wishes.

Yours very truly,

Alfred Traverse  
Professor of Geology & Biology

AT/vsi

23 February, 1983

Dr. Maria Teresa Castro  
66 No. 2243, (1900) La Plata  
República Argentina

Dear Dr. Castro:

Thanks for your flattering letter of 6 January. From the top:

1. The Brandon monograph has been unavailable for years. Sorry.
2. So also, Nichols et al., 1973.
3. Traverse & Ames, 1979, Catalog of Fossil Spores & Pollen, vol. 41, can only be obtained by purchase from:

The Coal Research Section  
Deike 517  
Pennsylvania State University  
University Park, PA 16802

The other publications, and a few additional, are on their way.

Best wishes to you in your work.

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT/et

Ira Plata, 6 de enero de 1983

Dr. Alfred Traverse  
435 Deike Building  
Pennsylvania State University  
University Park, P A 16802  
Estados Unidos de America

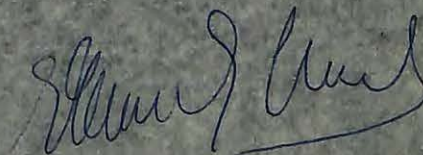
Dear Dr.:

I would greatly appreciate having a copy of your papers:

- X- Traverse, A., 1955, Pollen analysis of the Brandon lignite of Vermont, published in: U. S. Bureau of Mines Rept. Invest. N° 5151, 107 p.
- ✓ - Nichols, D. J. & Traverse, A., 1971, Palynology, Petrology, and depositional environments of some Early Tertiary lignites in Texas, published in: Geoscienc. & Man, 3: 37-48, 1 lám.
- X- Nichols, D. J., Ames, H. T. & Traverse, A., 1973, On Arecipites Wodehouse, Monocolpopollenites Thomson and Pflug, and the species Monocolpopollenites tranquillus, published in: Taxon, 22: 241-256.
- ✓ - Traverse, A., 1974, Palynologic investigation of two Black Sea cores, published in: Amer. Assoc. Petrol. Geol. Mem., 20: 381-388.
- X- Traverse, A., 1977, Preliminary palynological results of the "Glomar Challenger leg 42 -B (1975)" to the Black Sea, published in: Palynology, 1: 177 (Abst.).
- ✓ - Traverse, A., 1978, Palynological analysis of D.S.D.P. leg 42-B (1975) cores from the Black Sea, published in: Init. Repts. Deep Sea Drilling Proj., 40(2): 993-1015.
- X- Traverse, A. & Ames, H. T., 1979, Late Cretaceous and Early Tertiary spores and pollen from the U.S.A. and the U.S.S.R. published in: Catalog. of fossil spores and pollen, Pennsylvania State University, University Park, 41, 268 p. If available.

Thank you very much in advance.

Sincerely yours.



LIC. MARIA T. CASTRO

THE PENNSYLVANIA STATE UNIVERSITY

DEIKE BUILDING

UNIVERSITY PARK, PENNSYLVANIA 16802

College of Earth and Mineral Sciences

Department of Geosciences

Palynological Laboratories

Area Code 814

865-6543

865-2342

August 8, 1975

Dr. Anna Farinacci  
Istituto di Geologia e Paleontologia  
Università di Roma  
Roma, ITALY

File  
↓

Dear Dr. Farinacci:

Some time ago I purchased Vol. 1 of Catalogue of Calcareous Nannofossils.

It has come to my attention that more volumes are available now. Would you please advise how to obtain them?

Yours very truly,

Alfred Traverse  
Professor of Palynology

AT:cj

September 15, 1970

Catomance Ltd.  
Bridge Road East  
Welwyn Garden City  
Hertfordshire, England

Your ref.: JVAH/HD

Dear Sirs:

In spite of appearances, I very much appreciated your letter of 20 May, 1970, and my delay in answering it is simply a result of a long absence from the office and various other obligations.

In your letter to me of 20 May, you indicated that you would be willing to let me have for experimental purposes a quantity of Mystox LPL 100% (pentachlorophenyl laurate). I would like to have a gallon of the material, and I propose to experiment with the use of it for protection of dried biological specimens. While we are very pleased by your offer to provide us with thy material free of charge, we would be quite willing to pay for it, if you feel that the quantity I need is larger than you can dispense gratis. I note in your letter that you said that you would be able to send it to me immediately on receipt of this letter, and I look forward to receiving the material as soon as transportation delays make it possible. Thank you very much for your interest in my work.

Yours very truly,

Alfred Traverse  
Professor of Geology & Biology

AT:kc



DIPARTIMENTO DI SCIENZE GEOLOGICHE E PALEONTOLOGICHE  
UNIVERSITÀ DI FERRARA

CORSO ERCOLE I° D'ESTE, 32 - TEL. 0532 - 210341  
44100 FERRARA (ITALY)  
TELEX 510850 - FAX 0532 - 206468

Ferrara, 27/12/1994

Dear Prof. Traverso,

many thanks for the kind letter and for the reprints of your papers which I partly knew. I particularly appreciate receiving them because this year I am teaching Paleobotany.

All the best for you and your wife in 1995

Yours sincerely

Luca Cattani

DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu  
12 October, 1994

Prof. Laura Cattani  
Laboratorio di Palinologia  
Dipartimento di Scienze Geologiche e Paleontologiche  
Corso Ercole I D'Este 32  
44100 Ferrara, Italy

Dear Laura:

It was such a lot of fun to meet you in Valencia and area. That you treated Betty and me to lunch when we were penniless will always be a most pleasant memory!

I also enjoyed your lecture and understood an amazing amount of it. I thought your Spanish was so clear and understandable until I found out later that you actually spoke in Italian. It is clear to me that with a little study I could understand scientific Italian and Spanish without too much difficulty.

I am not sure you have any publications of mine, nor whether any would be of interest. I enclose a few, just in case.

All the best. Come to see us.

Yours very truly,

Alfred Traverse

encl.:reprints

July 30, 1970

Miss Suzanne L. Cavalier  
*American Scientist*  
155 Whitney Avenue  
New Haven, Connecticut 06510

Dear Miss Cavalier:

I have already had several requests for reprints of my review in the current number of *American Scientist*. Now that I think of it, I can't remember having seen galley proof of the review. Did I? If so, did I remember to order reprints at that time?

Thank you for assisting my ailing memory. (I really have no recollection of seeing proof, though it must be your custom to send out same, isn't it? That is the normal time for ordering reprints, I suppose.)

Yours very truly,

Alfred Traverse  
Professor of Geology and Biology

AT/mrw

X-Sender: jcawley@mail.vt.edu  
Date: Tue, 10 Sep 1996 21:52:47 -0400  
To: traverse@ems.psu.edu  
From: jcawley@vt.edu (jon cawley)

Good evening sir--

have not managed to catch up with you since your retirement--and i dont know if you check email regularly. But I thought Id drop you a note and see if you are on-line. I have defended and submitted my masters, which went well. And begun a PhD project working with lake core in the VPI Biology department with Bruce Parker. Have spent much of this week with my nose in the Traverse Organic Particles book. Much enjoying it--good stuff. Hope all is well. Drop me a note here if this catches up with you..... jon  
c cawley

THE PENNSYLVANIA STATE UNIVERSITY  
DEPARTMENT OF GEOSCIENCES  
PALYNOLOGICAL LABORATORIES  
435 DEIKE BUILDING  
UNIVERSITY PARK, PA 16802, USA  
Phone: (814)863-3419; Fax: 814-863-7823  
E-Mail: traverse@ems.psu.edu  
15 September, 1994

Jon C. Cawley  
Department of Geological Sciences  
4044 Derring Hall  
Virginia Tech  
Blacksburg, VA 24061-0420

Dear Jon:

How nice to hear from you. I hope you told Dewey that the main reason you got a C was that you spent yourself in the service of poor old Fred. And HE got a B! But your helping him greatly impressed me.

Betty and I are just hours away from flying off to Spain to attend the Spanish palynological Congress. They invited me to give a wrap-up lecture. Might be the last meeting I'll ever attend. We'll be gone for two weeks. The palynological course is in full swing--16 students. PSU won't allow a course with only one student--not efficient, they say. So what? Sometimes not doing it means that the prof doesn't teach AT ALL.

I enclose a couple of reprints. Now I must dash. Best regards to Dewey. Thanks for writing and for thinking of me.

Best wishes to you.

Yours very truly,

Alfred Traverse

encl.:reprints



- September 8, 1994 -

Dear Dr. Traverse -

Salutations! I'd wanted to drop you a short note - to let you know what's going on with my life here at VPI. With the beginning of Fall semester I am now taking the grad level Poly course under D. McLean -- I'm the only student taking it, so it's a good and intense one-on-one. Lots of scope work -- all marine, of course. And I'm in the midst of learning the dinoflagellate tabulation a la Evitt. Dr. McLean has many very flattering things to say about A. Traverse. And we refer to your book surprisingly often.

(Eventually I very much would like to talk you out of an author-signed copy you know!) Trying to get back into the textual and sculptural terms.

The more important (for me at least) compliment is that Dr. McLean has decided that A. Traverse did teach me a few things well and right back there once upon a time. [Do you know it's been ten years!] We began things by Dr. McLean showing me a grain and saying "So, -- what do you think of this..." And I said - "This is a P03 Triporate -- Angiosperm -- not terribly old." which got things off on a sound footing. I told him I only had gotten a C in your class back then. But at least I've retained a little over the years between.

The late Cretaceous stuff I was playing with last summer worked out well -- at least for preliminary. That's to say I got well-preserved pollen -- of correct age and such. But from my initial macerations the populations are too sparse to be really dealt with statistically for much. I got some *Aquilapollenites*, *Normipollis* (more *oculipollis* mostly), and a few bisaccates -- The bisaccates being preferentially associated with the bentonite layers --

meaning. I presume, that the ash was pretty oil when it settled, and may have preferentially dropped the pine pollen to the sediment with it? Anyhow-- I was surprised to find that I did get some pollen from the stuff relatively close to the fossil bone there -- (Although admittedly it was in all cases from samples  $\geq$  1 foot away from bone material proper.) My barren samples all appeared to be so mainly in places where the sediment was obviously way too fine. where the post-HF material was very choked with clay. I'd like to try another round of macerations before I try to really report on anything. Never enough time!

Elsewise all goes really well. I've set up housekeeping here now-- my apartment address is: JC Cawley  
750 Tall Oaks Drive #2800G  
Blacksburg VA, 24060

I'm taking Biostratigraphy courses, and am playing with amounts of Biostatistics-- and (as my extra-curricular activity) am taking the scientific glassworking course given here by the Chem department. In Spring semester I taught Paleontology labs -- three sections. Over the summer I taught Historical Labs (and entertained the students with melodramatic stories about Sedgwick and Murchison...). And this semester I'm teaching three sections of Physical Geology labs. Enough to keep me busy.

I hope all is well with you. I've been reading some of Olsen's Triassic stuff, and note the various Traverse references. So I assume the Triassic work continues unabated. Take care, and know that you are thought of.

Sincerely -  
Jon C Cawley

Syllabus  
Physical Geology Laboratory  
Autumn, 1994

Name: Jon C. Cawley  
Office: Derring 3051  
Office Hours:  
Office Phone: 231-8828

Materials Needed for Laboratories

You will need to purchase lab packets from the ground level of the bookstore (these packets are NOT housed in the texts' section). The packet includes the cost of reproducing the lab exercises (\$5.00) and a laboratory fee (\$5.00) in addition to materials--a notebook, a hand lens, a protractor/ruler, 6 colored pencils, a mechanical pencil and pencil eraser. Inserted within each notebook is a piece of paper indicating that you have paid your lab fees. You must sign and submit this piece of paper to your TA in order to receive credit for the course. This is the only way we will know that they have paid the lab fee.

We will not be using a published lab manual this year; students should consult their text for the reading assignments and additional information as well as bring it to class.

Missed Laboratories

Attendance of all laboratories is mandatory. The ONLY acceptable absences from lab are illness or a severe personal disruption.

Mini Field Trips

Some of the labs require going outside (mini field trips). Unless the weather is really impossible, we will try to keep with the schedule. Please dress appropriately for two hours of outdoor activity if your next lab will be out of doors. An announcement will be made the previous week. (For the evening lab section, we will work this out when we get there.)

Lab Assignments

*Lab assignments will be completed in class and handed in at the end of the two-hour lab period.* Lab Assignments will make up 50% of your final grade.

Term Project

A term project will be required for successful completion of this course. A detailed handout will be provided concerning the project. This should be thoroughly read. The term project will count for 35 % of your final grade

Quizzes

There will be two of these. Quizzes, Attendance, and General Participation will count for 15% of your final grade.