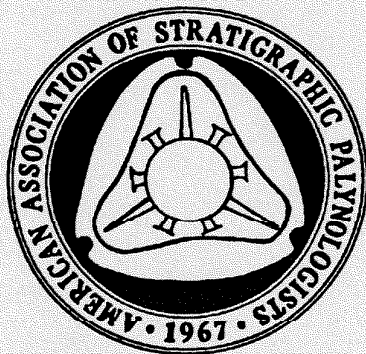


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Happy New Year!!

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Volume 25, Number 4
J.K. Lentin, Editor

AASP 25th ANNIVERSARY YEAR

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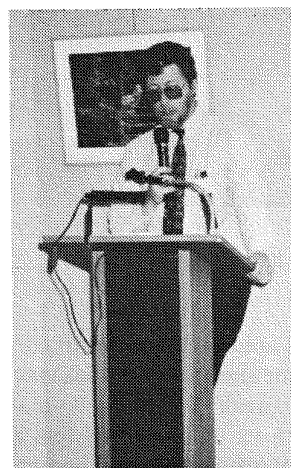
MESSAGE FROM THE PRESIDENT

AASP NEWSLETTER EDITOR:

Dr. J.K. Lentin
L.I.B. Consultants
Suite 700 - Dominion House
665 - 8th Street S.W.
Calgary, Alberta
Canada T2P 3K7

The AASP NEWSLETTER is published 4 times annually. Members are ENCOURAGED to submit articles, "letters to the editor", technical notes, information about "members in the news" and information about job openings in the industry. Every effort will be made to publish all information received from our membership.

Deadline for the next newsletter, the first in 1993, is Jan. 15. Please send all information on computer disk in ASCII or Word Perfect format, if possible, if not - send a typed manuscript. We look forward to contributions from our membership. 1992 has been our AASP Silver Jubilee - celebrating our 25th anniversary as an organization.



President Ravn

I would like to extend both personal and organizational thanks to the members of the Organizing Committee for the 8th IPC and Annual Meeting of AASP in Aix-en-Provence, France, and in particular Dr. Jean-Pierre Suc and Prof. Armand Pons, whose efforts and hospitality produced a thoroughly memorable and successful meeting. On our side of the Atlantic, Owen Davis, general chairman for the

AASP portion of the meeting, is to be commended for the smoothness with which all facets of AASP arrangements and integration with the IPC meshed seamlessly, as far as I could tell (Owen probably has some wry secrets about just

later date).

Prior to the meeting, many of us had a certain apprehension over how well attended the meeting would be. Were those ever buried! Dr. Suc planned for an expected attendance of about 600 for the joint meetings; I don't have the final exact figure, but it turned out to be approximately 850. Of those, some 230 plus were members of AASP, making it the best attended AASP Annual Meeting in our history. For many of our European members, the Aix meeting represented an opportunity not to be missed; the meeting was especially graced by the presence of Prof. Knut Faegri, for his first AASP Annual Meeting. The attendance of North American members was surprisingly strong, considering the current economic and employment climate. Many, doubtless, were attracted by the promise of glorious weather in Provence in September, and we were not disappointed. (We regret the unfortunate spate of severe weather that afflicted the region shortly after our visit, and the resultant destruction, and hope that none of our friends in the area experienced problems from it.) It already seems long ago, now, especially as I am looking out my window as I write this and watching snow fall horizontally.

The 8th IPC/ 1992 AASP Annual Meeting featured a vast variety of presentations, both oral and poster, on virtually every aspect of palynology. Despite the greater than anticipated attendance, which resulted in crowded presentation rooms for some sessions, organizers and particularly session chairpersons are to be commended for keeping presentations on schedule; it was simply the most on-time meeting I

have ever attended. Highlights are too numerous to cite in detail, but I must mention the memorable mid-week visit to the Camargue, the Mediterranean Rhône delta-marsh complex west of Marseille, with its unique ecosystem and cultural heritage, both of which are endangered and are a matter of concern. Perched on hay bails, we were presented to a group of fine black Camargue cattle, who examined us at some length before apparently passing approval, and permitting us to retire to gypsy guitars and vast cauldrons of paella. Away from the meeting activities proper, we had opportunities to see where Van Gogh painted his "Starry Night" and slashed his ear, where Cézanne worked, sit at the café where Zola and Cendrars



Past Pres. Wrenn presents Pres. Ravn his service award.

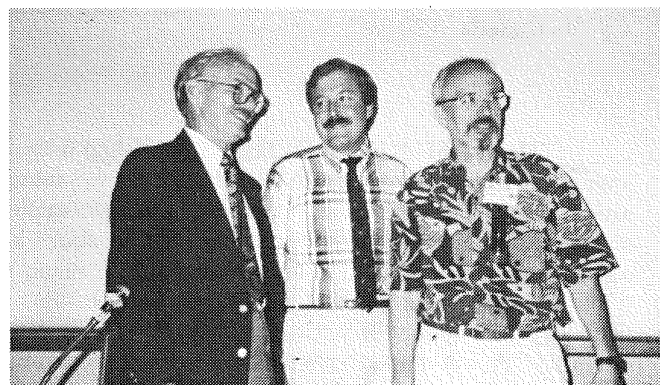
used to convene. And learn things about palynology, too. Merci beaucoup, nous amis, pour une convention très mémorable!



John Wrenn and Dave Goodman receive Dutch wine (in France?) from IFPS President Henk Visscher with AASP President Bob Ravn looking on.

A site was selected for the 9th IPC, to be held in 1996, in Houston, Texas. This will be the second IPC in the United States, and the third to be held in North America. Details of scheduling and arrangements are to be announced as they are solidified.

Two new AASP committees were appointed for the coming year to oversee nomination of candidates and election of AASP officers during 1993. The Nominations Committee consists of David Pocknall (chair), John Firth and Robert Wright, and they will be soliciting nominees during the next few weeks. Anyone interested in proposing someone for next year's slate of candidates should contact one of the committee members. The Ballot Committee, whose job it is to oversee the election itself, will consist of Lucy Edwards (chair), Norm Frederiksen and Ron Litwin.



The new officers of IFPS: President Jim Canright, Secretary-Treasurer Owen Davis, and Editor John Wrenn (in his best formal attire).

The following is an excerpt from the AASP Business Luncheon Presidential Address, presented in Aix-en-Provence by President Robert Ravn:

Over the past several years, it has become something of a custom for incoming presidents of AASP, my illustrious predecessor included, to discuss the gloomy job market and stress the need for such things as broadening our experience, addressing ourselves to the changing needs of employers, promoting interdisciplinary studies and so forth, in order to project palynology as a relevant, dynamic discipline worthy of continued support. Well, I concur with all those views, and can't really add much to them that everyone doesn't already know.

Fortunately, some other thoughts have come to mind that merit discussion. They aren't entirely unrelated to the difficulties we face in the employment market, but are perhaps a little more within our control. And the main concern here starts with head bumps.

Some years ago, when I worked in New Orleans, Louisiana, I discovered a wonderful bookstore in the French Quarter called Beckham's. This place was straight out of Charles Dickens, kind of dark and musty, with old creaky stairs leading to a loft, and enormous tall stacks of old books of every description. It was way atmospheric. On one trip there, I found on some shelves about twenty-five beautifully bound annual volumes dating from the 1860's to 1890's an apparently complete set of something called the Journal of Phrenology. I spent some time browsing through it.

Phrenology, as many of you may know, is the study of the shape of the skull and how it relates to the kind of person you are. Back a 100 years ago or so, phrenology and the related field physiognomy, which takes into account facial and other physical features, were considered an accurate means of determining "types" of people, such as "criminal types", "degenerates", "perverts", "Louisiana politicians", etc. This Journal of Phrenology contained nothing less than hundreds of scientific papers, written in exactly the kind of deadly prose most other scientific papers are, complete with charts and diagrams, detailing research into various aspects of the subject. God knows what would have been in it if they'd had computer spreadsheets and databases back in those days. Lifetimes of research must have been represented in this journal.

Sometime long about the end of the Nineteenth Century, some cataclysm happened to the "science" of Phrenology, which fell into disgrace and was dispatched to some science netherworld; the journal ceased to be published. Being a starving young palynologist in those days, with education loans to pay and groceries to buy, I couldn't afford the two hundred odd dollars it cost to buy this set of Journals, but I have always regretted it (and wondered who actually did buy the thing, for it was gone the next time I went into the shop). Surely it represents something valuable. Think of it! This subject generated enough serious interest that money was paid and great effort made to write, edit, typeset, bind, presumably mail it

out, and enter it into libraries.

The Journal of Phrenology lasted just about twenty-five years. And here we are, in the south of France, celebrating the twenty-fifth year of the American Association of Stratigraphic Palynologists. We have evolved during that time from being a primarily North American organization to one in which more than 50% of its members now reside outside North America. The ratio of new members entering AASP over the past five years or so has been much greater than that. Still, through all that quarter-century, one of the chief characteristics of our association has been an admirable consistency. We have held an Annual Meeting every year. We have published a journal since 1970, and under a primarily unvarying format with the name PALYNOLOGY for the past 15 years. We have published a newsletter four times a year for as long as I remember. We vote for officers and change them every year (consider what our legislators would think of those term limits). We've been doing the major things we do pretty well, for a long time, without great change. It's fair to say that the world around us that affects what palynologists do has changed a lot more than we have as an organization in that time.

So my point today is not to propose changes, but rather to raise questions. Another book I saw recently at a different bookstore was a book on corporate business strategy titled: "If It Isn't Broke, Fix It." I skimmed through the introduction to it, and its major point came out being that one of the main reasons American businesses were having trouble competing with newer ones on many other parts of the world was that the American businesses had been doing things right for so long that they were incapable of responding quickly enough to changing external conditions that made old practices irrelevant, or worse. Just because we had the right combination yesterday doesn't mean that combination will work today, even if we haven't messed it up. We have to be able to look into the murk ahead and at least know that we may have to change some of the things we do in a timely fashion. Waiting too long may make any decision irrelevant.

Questions we, as an organization will need to ask ourselves at some point in the future: Can we continue into the twenty-first century having an Annual Meeting? Can we continue to support our annual volume of the journal in the way we do? Can we continue to be exclusively a palynological society, or should we look to open ourselves to membership from other disciplines having similar interests, such as calcareous nannofossils, or forams, etc.? The present meeting notwithstanding, we haven't had a very satisfactory experience in trying to attach ourselves to larger organizations for joint or shared meetings; does that mean we curtail the option? At a deeper level, what services do we intend to bring to our members in exchange for their dues and other support? What can we expect in the way of support from employers and other corporate entities?

The back page listings in our directory now shows

7 1/2 pages of U.S. members, 3 pages of U.K. members, 1/2 pages of Canadian members, and 6 1/2 pages of members from the rest of the world. In rough percentages, that is 40 % U.S., 17 % U.K., 8 % Canadian, and 35% from the rest of the world. Are we still the American Association of Stratigraphic Palynologists? Is the word "American" accurate, or is it limiting? And what about the "Stratigraphic"? We have members interested in archaeology, thermal maturity, Pleistocene and Holocene glacial environments, honey and dung. Do we stack ourselves up with the oldest members at the bottom and the youngest ones on top, or is the word "Stratigraphic" misleading and limiting?

As I said, I'm not here to propose change. But I do think that no questions are unthinkable. Only by asking the hard questions will we know why we are here and be able to anticipate with any degree of success what the future will bring to our organization. I'd like to think that, in 2082, when I am 136 years old, I can go into Beckham's Bookstore in New Orleans (it will still be there because it's New Orleans) and not have to worry about seeing some younger folks in there thumbing through a full set of a journal called PALYNOLOGY, and shaking their heads, and muttering, "I thought these palynologists studied head bumps."

Robert Ravn,
President, AASP

LETTER TO THE EDITOR



Dear Editor,

I was most interested to hear from a colleague who receives the AASP Newsletter about Norrie Robbins' geological source book for young children. I am involved

in "Earth Science Outreach" and am interested in obtaining this book.

Pierrette Lemblay
Centre Géoscientifique de Québec

A quick telephone call to Norrie's answering machine brought me this FAX response (ed.).

Hiya,

Sorry I missed your call. Here's the Poop: Norrie Robbins and her educator sister, Penni Rubin, have written a free USGS activity-coloring book for 8-12 year olds (and their parents). It is called "What's Under Your Feet". You may write to the following address for your free copy:

Earth Science Information Center
U.S. Geological Survey
National Center MS 507
Reston, Virginia
U.S.A. 22092

Eleanora I. Robbins
USGS

Dear Editor

I am writing in response to a request that you made earlier asking for suggestions about ways to bring palynology more to the forefront.

Every year at the annual AAPG Convention there are several invited papers given under the grouping "Best of SEG". Possibly the AAPG, in association with the AASP, could have two or three of the best papers from the AASP meeting presented at the AAPG convention in a similar format. AASP papers that presented the results of how palynological techniques were used to solve specific exploration problems would be particularly relevant.

I believe the membership of both organizations would be served by showcasing a few of our best papers every year before a wider audience. As you are well aware, many explorationists today are younger and less experienced as companies continue to downsize by early retiring their older staff and "out-sourcing" their biostratigraphers. The results have been that the results coming back are simple age determinations. We have lost the critical interaction that occurs when the biostratigrapher is part of the exploration "team". Demonstrating the added value that comes from an integrated approach may spark renewed interest in today's explorationist in more fully utilizing the full suite of biostratigraphic tools and talents.

Leonard V. Moore
Exxon Exploration Company

Dear Leonard,

Back in the good old days, when I was president of AASP, rather than NEWSLETTER editor [I say good old days, because it was a lot less work!], Unocal set up a fund to award the "Best Applications" paper. Actually the award is a legacy of the 22nd president of AASP, Dr. Harry Leffingwell. He set it up, but the first award was given during my term of office.

The award was designed to be given to individuals presenting a palynology paper which illustrated the best use of palynology in a stratigraphic context. The fund was to be used to send the author of the paper to the AAPG to give the paper before that meeting of geologists. The first award was given at the Banff Meeting (1990). The selection committee was headed by Ken Piel of Unocal and the winner was "A shallow condensed section in the Cretaceous Shaftesbury Formation of Northern Alberta: an integrated study" by Dale Leckie and Chaitanya Singh. Dale Leckie subsequently presented this paper at the AAPG.

The second award was given in San Diego to David Goodman and Henri Posamentier for the paper "Biostratigraphy in a Sequence Stratigraphic Framework". The award was not given in Aix, but according to Roger Witmer of Unocal, the award will be given again this year at the 26th Annual AASP Meeting in Baton Rouge. Because the award is a Unocal award, the selection committee is appointed by Unocal and Unocal administers the award, not the AASP Awards Committee.

There is a small problem with this type of award, because the deadline for abstracts for the spring AAPG annual meeting always falls well before our meeting. This results in an almost two year lag time between presentation of AASP paper selected by Unocal at our meeting and the AAPG meeting. Most people who are interested enough to give papers have moved on to new and better things in two years. [Editor]

Dear Editor:

On return from sabbatical leave in July I found the AASP NEWSLETTER for April, 1992 (Vol.25, no.2) on my desk. In it appeared the letter from my honored colleague, Cal Heusser, regarding an error in the Traverse and Sullivan (1983) article in PALYNOLOGY about events leading up to the founding of AASP. Cal is apparently correct--I should not have credited Stanley Cain, but rather Cal, Paul Sears, and others at Yale, for organizing the First Palynological Conference. (I also had the name wrong, it was called in the program, "Palynology Symposium", but neither "Pollen" or "National" appeared in published references to the meeting.) Cal is also correct that my error involving the organizers was called to my attention some time ago by Dan Livingstone.

However, there is a little more to the story. First,

the NEWSLETTER Editor, Judith Lentin, did not consult with me about republishing the article in the January, 1992, number. Had she done so, I would have informed her about this matter, and also about a few other small errors of commission and omission, of which I was aware. None of them really affect the theme, that is, the basic story of the founding of the AASP, but it would have been appropriate to include a (very short) errata list with the republished version.

That I did not do anything about Dan Livingstone's admonition of some years ago requires explanation. I wondered then how it could be that I apparently knew nothing about the First Palynology Conference. My experiences seem to have begun with the Second (called Second National Pollen Conference), which was held in Boston late that same year (1953) as part of the Botanical Sciences program of AAAS. That conference was organized by Stanley Cain and had three sessions (cf. SCIENCE 118:525, 669, 670-71), at one of which I gave a paper. Somehow I got the Impression that the meeting at Yale earlier in the same year was also organized by Cain. There was certainly no intention on my part to glorify Cain over Cal (Heusser), Sears, or the others at Yale. My error was simply attributable to lack of information. My very complete files puzzlingly contain nothing about the first conference. In connection with the above mentioned correspondence with Livingstone (cited by Dr. Heusser), however, I discovered that a paper apparently presenting results of my Ph.D. thesis work (defended in May, 1951) was presented at that first conference by E.S. Barghoorn, but without listing me as co-author (cf. program published by Heusser, 1992; see also SCIENCE 117:623). This is very strange, because in 1953, the only significant research on the Brandon lignite palynoflora had been my thesis. Nowadays, at least at Penn State, omitting the name of the author who had done the research would be considered a serious infraction. In my correspondence files I find a letter to Barghoorn, dated 22 September, 1953, written on my letterhead as coal technologist for the U.S. Bureau of Mines, Grand Forks, North Dakota, somewhat poignantly inquiring how much of my thesis he had covered "...at the conference at Yale last winter". Apparently by then I had at least heard of the meeting. I have no way of knowing why I wasn't listed as co-author of that presentation, nor if it is related to my lack of information about the meeting. This explains why I was not eager to stir up these embers, so long after the fact. However, if the citation of the organizers of the First Palynology Conference is corrected, the palynological public also must be informed that "Pollen and Spores of the Brandon Lignite and their Paleoecological Significance", credited to and presented by Elso S. Barghoorn at the First Palynology Conference, was taken from the doctoral dissertation of Alfred Traverse (I wrote and published a very abbreviated precis of the thesis in 1953, listing ESB as courtesy junior author; the entire thesis was published as Traverse, 1955).

References

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- Traverse, A. and Barghoorn, E.S., 1953. Micropaleontology of the Brandon lignite, an early Tertiary coal in central Vermont. Journal of Paleontology 27:2:289-293.
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Dr. Alfred Traverse
Penn State University

Dear Al,

I can see that you are really cross with me for not consulting you before I reprinted the article by you and Herb Sullivan. I can see that because you signed your name "Alfred Traverse" rather than simply "Al" as in our usual correspondence. Perhaps I can save face by explaining that I did try to reach you in December, 1991 to see if you and Herb wanted to up date the old article about the origins of the AASP. I couldn't reach you by telephone, so I called Herb Sullivan who said he didn't have time to work on a revision. About the other comments in your letter, I have no comments except to say that in 1953 I was in 4th grade in a two room school house in rural Iowa and had no idea that such injustice occurred in the high world of pure science.

Years later I too discovered the hurt and disillusionment that occurred when a trusted mentor took my work and published it as his own, without mention of my name. I thought I had forgotten and forgiven, but hours after typing your letter, I found myself reliving those events instead of sleeping, as I should have been. Aside from the fact that theft of a students work is forbidden at most American Universities today, a mentor has a responsibility to those who look to him/her for guidance. As scientists, our most valuable belongings are our ideas. Now we have laws about intellectual property, but a young student who respects and sometimes fears his mentor has little chance of recompense for loss. It is up to the mentor to take the responsibility to give credit where credit is due. [Editor]

Dear Editor,

In an otherwise accurate and properly laudatory

review of *Pollen and Spores of Barro Colorado Island* by David W. Roubik and Jorge Enrique Moreno P., Vaughn Bryant says, "It represents the finest, and most extensive, collection of tropical pollen and spore photographs ever collected in one volume." (AASP NEWSLETTER 25:3:11-12) While this may be true for the Neotropics, it is not true globally.

Among the one-volume atlases in my laboratory are *Pollen des Savanges D'Afrique Orientale*, by R. Bonnefille and Guy Riollot, 1980 (Editions du CNRS, ISBN 2-22-02497-8) and *Pollen et Spores Tropicales*, edited by Cl. Caratini and Ph. Guinet, 1974 (Travaux et Documents de Géographie Tropicale, 16). These works contain 2259 and 1555 micrographs, respectively, as compared to 1210 in Roubik and Moreno. "Finest" may lie to some extent in the eye of the beholder, but I invite Dr. Bryant and his readers to examine the micrographs in the two French publications. They are not inferior to those of Roubik and Moreno.

My point is not to advance candidates for the Black Belt in palynography, but to gently remind my American colleagues that there is a vast and rapidly growing literature of pollen morphology, not all of which is published in English. The atlases and monographs of this literature are very helpful in leading to correct identification of fossils, though final identification should always rest on comparison with reference slides. I would also like to congratulate Roubik and Moreno on their splendid book, which moves us significantly closer to an adequate understanding of the pollen and spore morphology of living plants.

Dan Livingstone
Duke University

Dear Dan,

Thanks for the letter. I faxed it on to Vaughn Bryant for comments, which follow:

"All I can say is 'touche'. Dan is correct when he says that there are other atlases and photographic keys to tropical pollen, in addition to the recent one by Roubik and Moreno, that are as long and as excellent. I am familiar with the other atlases he mentions and they are also very good. However, when I wrote my review I had forgotten about those other atlases. I suspect that what I should have written in my review is "...one of the finest, and most extensive, collections of tropical pollen and spore photographs ever collected in one volume."

Best Regards,
Vaughn Bryant"

Dan, I hope you will be sending in an article or review the NEWSLETTER sometime in the near future. Writing

reviews and articles for the NEWSLETTER is a lot of work for little reward. Vaughn Bryant has been providing articles and information for the AASP NEWSLETTER for many years. You could say he has a Black Belt in contributions. Without his (and a few others like him) constant support, the AASP, the AASP Foundation and our NEWSLETTER would not be able to function. [Editor]



NOTICE

1993 MEETING IN BATON ROUGE

SCHEDULE AND CALL FOR PAPERS.

The meeting will be held from the 23rd through 28th October, 1993 at Louisiana State University, Baton Rouge, Louisiana. Conference Organizer: Dr. George F. Hart, LSU.

The theme of the SCIENTIFIC MEETINGS will be as follows.

Mon., 25th. Theme: FACIES MODELS & SEQUENCE STRATIGRAPHY.

Tues., 26th. Morning Theme: FACIES MODELS & SEQUENCE STRATIGRAPHY.

Tues, afternoon Symposium: Palynology and Climate (Organizer: Dr. Kam-Biu Liu)

Wed., 27th. Interdisciplinary Symposium: PALYNOLOGY CLIMATE & SEQUENCE STRATIGRAPHY OF THE PLIOCENE. (Organizer Drs. John H. Wrenn and Jean-Pierre Suc)

This is a call for papers pertinent to the conference theme covering facies analysis (paleoecology, paleoenvironments, paleogeography) and sequence stratigraphy (Walthers law, sequence stratigraphic applications, palynology/sedimentology associations, biostratigraphic applications).

Please send proposed titles to:

AASP Palynology Conference
C/O Libby Holt
Department of Geology
Louisiana State University
Baton Rouge, Louisiana 70803.

The following SHORT COURSES will be given:

SEQUENCE STRATIGRAPHIC CONCEPTS, by Dr. Macomb T. Jervy. COST: US\$120. Dates: Saturday and Sunday 23-24 October. There is a course limit of 22 people.

FUNGAL SPORES, by Bill Elsik. COST: US\$300. Dates: Saturday and Sunday 23-24 October. There is a course limit of 30 people.

The following PRE-FIELD TRIP will be available: The Mississippi Delta and Environs, taught by James Coleman and Shea Penland, LSU. COST: \$US50. Dates: Saturday and Sunday, 23-24 October. There will be a course limit but the exact number is uncertain and depends on boat availability. Probably limit of 38.

In the event of over subscription to the field trips and short course additional programs may be added as needed.

COCKTAIL PARTY. Monday Evening. 25th October. LSU Faculty Club. 1200 noon till 1:00 PM.

ACCOMMODATION: 59 rooms have been booked at Pleasant Hall. \$45 Continental breakfast, evening snacks, and airport shuttle, \$55 continental breakfast, evening snacks, airport shuttle and a suite. These rooms are both double and single. Please indicate that this is for the AASP Meeting when booking. Phone Missy at #(504)387-0297. In addition 15 rooms have been booked at the Faculty Club. Rates are \$42.00 regular and \$60.00 for suites (only two). Phone # (504) 388-2244. Additional accommodation (off campus is being negotiated).

TO: Libby Hold
Department of Geology & Geophysics
Louisiana State University
Baton Rouge, LA 70803.

FROM:

Name:

Phone #:

FAX #:

Internet address:

Address:

1. I wish to attend the AASP ANNUAL MEETING IN BATON ROUGE:

Yes No probably.

2. I wish to submit the following paper for presentation:
Title:

Author(s):

3. Please enrol me in the following:

- a) Short course on Sequence Stratigraphy: Yes No
- b) Pre-conference field trip on the Mississippi Delta: Yes No
- c) Post-conference field trip on the Louisiana Swamps & Marshes: Yes No.

4. Please book a room for me at Pleasant Hall for the following nights: 23 24 25 26 27

Please book a room for me at the Faculty Club for the following nights 23 24 25 26 27.

5. I will make my own accommodation arrangements Yes No.

Call For Papers

Palynology, Climate and Sequence Stratigraphy of the Pliocene

Sponsored By

The American Association of Stratigraphic Palynologists,
Inc.

October 27-28, 1993
Louisiana State University
Baton Rouge, Louisiana, USA

The American Association of Stratigraphic Palynologists (AASP) is sponsoring an international and interdisciplinary symposium on the biostratigraphy, sequence stratigraphy and climates of the Pliocene. This symposium will be held during the 26th Annual Meeting of the AASP at Louisiana State University, Baton Rouge, Louisiana, USA.

Purpose: The purpose of the symposium is to bring together researchers from around the world who are studying the geologic record of the Pliocene. Understanding the chronology of Pliocene geologic, biologic and climatic events, and the potential use of those events as analogs for future climate change, are key aspects of this symposium.

The symposium will concentrate on the:

Sequence Stratigraphic Framework: Detailed stratigraphic studies provide the physical framework that relates all other studies to each other. Our understanding, or lack of understanding, of these physical relationships constrains the reliability of our biostratigraphic, geochronologic, paleoenvironmental, and paleoclimatic interpretations.

Biostratigraphic Framework: Establishing the synchrony or the time transgressiveness of events documented in the global rock record is the prerequisite to reconstructing the world as it was during the Pliocene. A reliable Pliocene chronostratigraphic and biostratigraphic framework is the basis of using those events as an analog for potential Holocene climate change.

Evidence of Climatic Change: There appears to be significant evidence, worldwide, for dramatic climatic changes during the Pliocene. The similarity between Pliocene and modern fauna and flora, suggests that the Pliocene events documented in the rock record may serve as an analog for climate modellers seeking to predict future climatic changes.

Roundtable Discussion: The ultimate goal of the Symposium is to compare the research findings presented at the Symposium within a time and stratigraphic framework. Accordingly, a half-day discussion will follow the formal presentations. The focus of this discussion will be a summary chart, or charts, that the Co-Convenors intend to assemble, with the help of all participants, before the Symposium. (All participants will be contacted concerning the compilation of the summary chart(s) after their presentation has been accepted for inclusion in the Symposium.)

Types of Presentations: Oral and poster presentations detailing Pliocene research are sought for the symposium. Proposed papers addressing such topics as palynology, biostratigraphy, isotope geology, sequence stratigraphy, paleoclimatology, etc. will be considered.

Publication: The proceedings of the symposium and the discussion session will be published, possibly by the AASP as a dedicated Symposium Volume.

For further information, to express your interest, or to receive future announcements, please contact either of the Co-Convenors listed below:

Dr. John H. Wrenn
Amoco Petroleum Company
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253
USA

Telephone: 713-556-2297
FAX: 713-584-7468

Dr. Jean-Pierre SUC
C.N.R.S.
Laboratoire de Palynologie
Case 061
Universite de Montpellier II
F-34095 Montpellier
Cedex 5 (France)

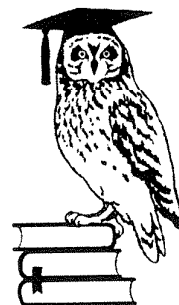
Telephone: 33-67-14-32-69
FAX: 33-67-04-20-32

AASP STUDENT SCHOLARSHIP AWARDS

The AASP Awards Committee is pleased to announce the winners of the 1992 Student Scholarships. R. Andrew MacRae and L. (Koldo) Núñez-Betelu are the 1992 winners of the AASP Student Scholarships.

These awards are made on the basis of the qualification of the student, the originality and imagination evident in the proposed project, and the likelihood of significant contribution in the field of palynology. This year, two scholarships in the amount of \$300 (US) each were given.

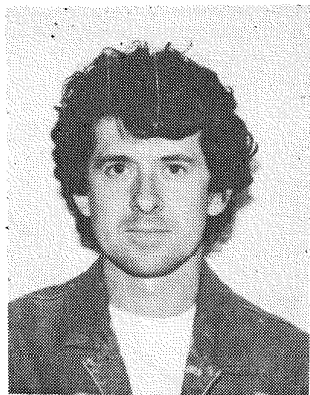
R. Andrew MacRae is completing his M.Sc. and continuing with his Ph. D. at the University of Calgary, under Dr. L.



V. Hills. Andrew received his B.Sc. from Dalhousie University in 1990. His winning proposal is entitled "Palynology of the Hassell, Bastion Ridge, Strand Fiord, and lower Kanguk Formations (Lower to Upper Cretaceous), western Axel Heiberg Island, N.W.T., Canada."

Andrew's project will integrate the palynology, sedimentology, and ichnology of Lower to Upper Cretaceous formations on Axel Heiberg Island. He will use sedimentology and ichnology as independent evidence of depositional environment to test whether control on a sequence of species of *Niktericysta* is evolutionary, paleoenvironmental, or both. He hopes his biostratigraphic data will form an important base for future study in the Arctic region.

Koldo Núñez-Betelu is working on his Ph. D. at the University of Calgary under the guidance of Dr. L. V. Hills. Koldo completed his 5-year B. Sc. in Geology (specialty in paleontology and stratigraphy) at the University of the Basque Country in 1986. He taught geology and Basque language in high school for a year before moving to St. Andrews (Scotland) to work with Professor E. K. Walton. In 1988, he moved to Calgary and worked for a petroleum geoconsulting company before starting his M. Sc. under Len Hills. He completed his M. Sc. in June, 1991, and decided to expand the research and continue to work for his Ph. D.



Koldo Núñez-Betelu

Koldo's proposal "Regional palynology, stratigraphy, sedimentology, and hydrocarbon potential of the Kanguk Formation (Upper Cretaceous), Canadian Arctic Archipelago" will use palynology to assess the age, rhythmicity, paleoecology, and latitudinal variations of palynomorph assemblages. He will combine palynology, stratigraphy, sedimentology, and

organic-matter analysis to establish a regional sequence stratigraphic model for the Kanguk Formation and to make a paleogeographical reconstruction of the Sverdrup Basin during the formation of the Kanguk to evaluate its potential for hydrocarbon generation.

Koldo informs the Awards Committee that the scholarship funds were used to help defray the cost of a trip to the Book Cliffs, Utah, to study the Upper Cretaceous rocks there.

Lucy E. Edwards
Chair, AASP Awards Committee



TWENTY FIFTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS

Aix-en-Provence
Sept. 6-12, 1992

Ahh, what food, what wine, what dancing, what bull fights, what science! WHAT A MEETING! And all because of a decision made at the AASP Board meeting in Houston in 1988. There were two possible locations for the 1992, Silver Anniversary Meeting -- in France with the Eighth International Palynological Congress, or, I think it was Lubbock, TX. The board choose France.

Naturally, I volunteered to go to southern France to check out the facilities, and report back to the board. The French Organizing Committee for IPC 8 was all too happy to show me around. For them, the direct participation of the largest palynological society of the world guaranteed success (AASP is 3 times bigger than #2). For the AASP Board, however, the meeting in France held several uncertainties. (1) Were the meeting facilities in the small French town adequate for the Luncheon, Business Meetings, Talks, and Posters of our annual meeting; (2) Were the surroundings suitably festive for our Silver Anniversary; and (3) would the costs be low enough for AASP members would attend? I answered affirmative to all 3.

It wasn't until the Business Luncheon, Thursday, Sept. 10, that I realized how right I had been. We were in the ballroom of the Hotel Pullman Roi René. The cuisine was excellent, the service outstanding, and the attendance was 230 persons -- the largest in the 25 year history of AASP. And not all of the AASP members at IPC 8 were in attendance. Several members tried to sign up late and were turned away because the maximum seating for the room had been reached.

Two special persons were able to get in late at the Business Luncheon -- two of the students who had

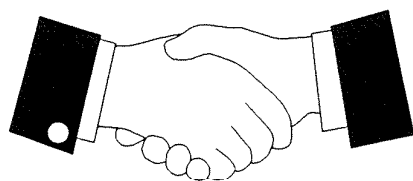
received AASP travel grants to attend the meetings: Margaret Kneller and Sarah Fowell. They attended as guests of AASP. Five members of the French Organizing Committee also were in attendance as AASP guests. President John Wrenn awarded each a plaque and a certificate of appreciation for their efforts in our behalf.

The Board Meetings were held in the conference headquarters, the University Law School. The meeting rooms were comfortable, but the first meeting had to be re-convened on the steps after the custodians threw them out and locked the door. (I never learned what they were doing). Some of the meeting rooms proved less than satisfactory. The problem was the number of attendants. The target IPC attendance had been 650 persons, the largest IPC in the past. The final number of *registered* participants for IPC 8 was over 850 persons; and some of the rooms just weren't up to the numbers. If the windows were closed the room was sweltering; if they were open, you couldn't see the slides.

The AASP best poster award this year went to Sue Feist-Burkhardt and Eric Montiel: "New species of the dinoflagellate cyst genus *Dissiliodinium* DRUGG 1978 emend. nov." The award was made at the Gala Dinner and Dance the night (until 2:30 AM) of Friday, September 11. We were unable to make "Best Student Talk" awards this year. We planned to identify AASP students as persons attending the luncheon who were staying in the student dorms. Neither criterion was accurate. Some people at the AASP luncheon were 25 years in arrears, and some people in the student dorms had received their Ph.D.'s before that. Since we had no way to identify the AASP students giving talks, we couldn't make the awards.

Oh, the bull fights? Wednesday was a all-day trip to Arles and the Camargue. This included touring the Roman colosseum and theater in Arles, lunch on the Beach, a tour of the wildlife refuge, and bull fights in the evening. You thought only Spain had bull fights? Well the French are quite sensitive. In France, the bulls win!

Owen K. Davis
AASP Organizing Committee
25th Annual Meeting



AASP

IFPS

I.P.C. Field Excursion Paleozoic of Western Brittany

By Dr. Gordon D. M. Wood

Drs. Florentin Paris (Rennes University) and Alain Le Hérisse (Brest University) are to be congratulated for organizing and leading an enjoyable field trip to the Crozon Peninsula (presqu'île de Crozon). The excursion centered on Lower Paleozoic of Northern Gondwana with special reference to organic-walled microphyto-plankton of the Armorican Massif. The field party began with a visit to the newly opened Océanopolis in Brest where several interesting exhibits, particularly one concerning the uses of algae (i.e., thalassotherapy - the medicinal use of alginates) were on display. The international group of participants who collected samples during the Brittany low-tides included S. Al-Hairji (Saudi Arabia), V. Baudu (France), M. Ghavidel-Synooki (Iran), Y. Grahn (Sweden), Da Hoa Phuong (Vietnam), P. Steemans (Belgium), P. Strother (U.S.A.), G. van Grootel (Canada via The Netherlands), J. Vernier (Belgium) and E. R. Wicander (U.S.A.).

This excursion focused primarily on several classic Lower Paleozoic sections of Brittany including the type localities of J. Deunff's *Aremorcainium* and *Veryhachium*. Tilted, often deformed, beds were usually viewed in shoreline declivities and beautifully framed by blue water and sky (my film record resembled more "vacation shots" than actual "rock shots" - not the type of prints to share with a spouse under the guise "I was working").

Many exposures extended for fair distances along beaches and our visits were dictated by the "tide table". High-tide often coincided with: 1) lunch (an enolophiles dream); 2) in proximity to Norman ruins or fortifications from World War II to visit, or; 3) near places of geological interest such as "La Maison des Minéraux" - a mineral museum in St. Hernot (where several palynologists were photographed and pictures published in the French newspapers "Ovest France" and "Le Télégramme").

Participants were able to collect samples from palyniferous Ordovician through Devonian sections. Although tectonically disturbed, they have been painstakingly studied and palynomorphs, albeit not pristinely preserved, are extremely useful in zoning this sequence. The leaders usually illustrated the assemblages macerated from the sections and tied the sequences to other areas for a "big picture" overview. The best preserved palynomorphs were located in the tidal exposures often replete with recent Phaeophyta (*Fucus*, *Laminaria*) - introduced to us during our visit to the Océanopolis. Of extreme historical interest was the visit to the actual beds for the types of *Veryhachium* and *Aremorcainium*. The former entailed a visit to a rather secluded part of the Veryhách beach where an unfortunate amorous couple was quickly encircled by a throng replete with geological hammers, flailing arms gesticulating at the rocks and speaking in unison in several languages.

Ample time was given for sampling (or devouring several bushes of their edible berries) and the leaders graciously offered to send the samples to participants (mine have been received). In fact Josephine Paris (Florentin's wife), planned an exquisite picnic-lunch on the last full field day. Macrofossil experts from the University of Brest, Drs. Jean LeMenn (crinoids) and Rémy Gourvennec (brachiopods) also accompanied us to the field and answered our questions concerning paleoecology and local geology. The members of the field excursion are indebted to Florentin and Alain for their generosity, planning, helpfulness and attempting to mollify the Crozon Hotel Moderné management for the cacophonies from Room 33. This was an extremely enjoyable field trip to collect from classic sections and set the stage for a pleasurable week at the 8th International Palynological Congress.



UNIVERSITIES IN THE NEWS

THE UNIVERSITY OF MISSOURI-ROLLA DEPT. OF GEOLOGY AND GEOPHYSICS

The Department of Geology and Geophysics at the University of Missouri-Rolla (formerly Missouri School of Mines) recently started undergraduate and graduate courses in palynology. Senior undergraduates can now conduct undergraduate research funded either by the university or faculty research grants while they are encouraged to pursue graduate work in palynology. General requirements for graduate studies towards a Master's degree include 30 hours of course work and thesis, and an additional 60 hours for the doctoral degree. Teaching assistantships are available for students who are interested in pursuing graduate studies in palynology. An ongoing American Chemical Society (ACS-PRF) funded, project on the palynostratigraphy and paleoclimatology of the

Oligocene Vicksburg Group in the eastern Gulf Coast, includes a funded position for a Master's student, starting January 1993. Interested students should contact Dr. Francisca E. Oboh at the University of Missouri-Rolla.

RESEARCH AND SUPPORTING FACILITIES

The Department of Geology and Geophysics is located in the new McNutt Hall which houses offices, classrooms and laboratories for six of the seven departments in the university's School of Mines and Metallurgy. The palynology laboratory is attached to two geochemistry labs and has a fume hood, sinks, balances, a centrifuge, hot plates, mechanical shakers and large counter top work areas with shelving and cabinets. Attached to the laboratory are office spaces for students, a computer, telephones and tow storage rooms for chemicals and equipment. McNutt Hall also has a large sediment core storage room and several computer laboratories for students who have access to the campus network. A graduate research microscope laboratory, for students in the department, is equipped with Zeiss and Nikon microscopes configured for polarized light, fluorescence, infra-red, cathodoluminescence and fluid-inclusion microscopy. The laboratory is also equipped for photomicroscopy. There are additional microscopes in the paleontology and sedimentology laboratories and one faculty Nikon microscope with Normarski interference contrast for student's use. The School of Mines and Metallurgy has one transmission electron microscope and two JEOL scanning electron microscopes equipped with energy dispersive and wavelength dispersive spectrometry and computer automated image analysis capabilities.

RESEARCH

The new palynology program is directed by Dr. Francisca E. Oboh (Ph.D. 1990, Cambridge) whose research interests include Mesozoic and Tertiary palynology and paleoenvironments, paleoclimatology, palynofacies and its application to sequence stratigraphy. She has done eight years of multidisciplinary research (trace fossils, diagenesis, spore coloration, palynofacies, spore and pollen palynology) on Tertiary sediments in the Niger Delta. Her current research emphasis is on the eastern Gulf Coast, the Boot Heel of southeastern Missouri and the Book Cliffs of east-central Utah. Collaborative research activities with other faculty in petroleum geology and carbonate petrology as well as with faculty in the life sciences department are possible.

For more information contact Dr. Oboh at the Dept. of Geology and Geophysics, 125 McNutt Hall, Rolla, Missouri 65401.

Telephone: (314) 341-4616

Fax: (314) 341-6935

E-Mail: FOBOH@UMRVMB.UMR.EDU

AASP CENTER FOR EXCELLENCE IN PALYNOLOGY

A number of individuals have been working very hard towards the completion of the facilities for palynological laboratories at Louisiana State University where the AASP Center for Excellence in Palynology (CENEX) is located. The University has hired the new director of the CENEX, but his/her name will not be announced until January, 1993. Look for a lot of news about CENEX in the January AASP NEWSLETTER (Vol.26, no.1).

In the meantime, dozens of companies have been contacted regarding physical as well as financial support. Any AASP member working for an oil company should propose that the company donate surplus equipment of any type (microscopes, computers, printers, lab equipment, field collecting gear, literature, etc.) to CENEX. To support your requests, feel free to quote from the following list of contributors. Bill Ventress is responsible for Chevron's donation of two Leitz microscopes which have already been delivered to LSU. Bob Ballogg with Unocal has been working to arrange the transfer of two fume hoods, a scrubber and cabinetry to the CENTER. They should be shipped in early November. John Steinmetz at Marathon is working on the contribution of some small laboratory items. At Amoco, Vernon Peeples, Manager of Technical Services and Alvin Gabriel, manager of the Amoco Rock Laboratory, are responsible for the donation of the fume hoods, microscope desks, centrifuge, cabinets and counter tops that Amoco is donating.

Naturally, there is also a strong push to continue fund raising for the CENEX. Ken Piel is in charge of the campaign to raise more dollars for the CENTER. In the January NEWSLETTER we will provide updated information on the funding of the CENTER. If you have any information regarding potential donors - either corporate or individual, please **contact Ken Piel at (413) 746-6931.**

WHERE ARE THEY
NOW

25 YEARS LATER

Many members of the AASP recognize the names of most of the founding members of AASP from the

literature and may be curious about what they are doing now and what they look like now. Each of the founding members of the AASP has been invited to send a photograph and write a short discourse on their current life styles - 25 years post-Tulsa. During our 25 year celebration - the "Where are they now" column features the founding members.

KEN PIEL

Ken Piel had been employed at Unocal for just two months when he travelled to Tulsa to attend the meeting which concluded with the founding of AASP. As the newest professional in the room, he for the most part listened as he sat in awe of those palynologists whom he had previously known only by name.



Dr. Kenneth M. Piel

Ken, as with a number of other industry palynologists began his career with projects in the Alaskan Tertiary -- including a study of fossil leaves from an Alaskan Peninsula field party, and in 1969 and 1972 participating in field parties. Subsequent work in the Gulf Boast Tertiary was followed in 1975 by the first of three seasons of field work in the British Jurassic as a prelude to a research study of the Middle Jurassic in support of Unocal's exploration in the North Sea. Transferred to London in 1986, he provided on-site biostratigraphic expertise to Unocal's Irish Sea, North Sea, Middle East and Africa Divisions. In 1987 he hired his replacement and in 1988 returned to the US.

Ken has served AASP as President (1975), Councillor (1976) and Secretary-Treasurer (1982-1986). He

was General Chairman of the 1973 Annual Meeting, and a member of the Local Committee for the 1991 Meeting. His committee work has included the Bylaws and Nominating Committees; and Chairmanship of the Chair-in-Palynology, AASP CENEX, and AASP CENEX Finance Committees. In 1990 he received the AASP Distinguished Service Award.

Ken opted for an early retirement from Unocal, and is now in the process of selecting a new career. Residing now in Massachusetts, he watches the gold, orange and red leaves -- the colors of fall -- adorning trees and drifting past the window while writing this biography.

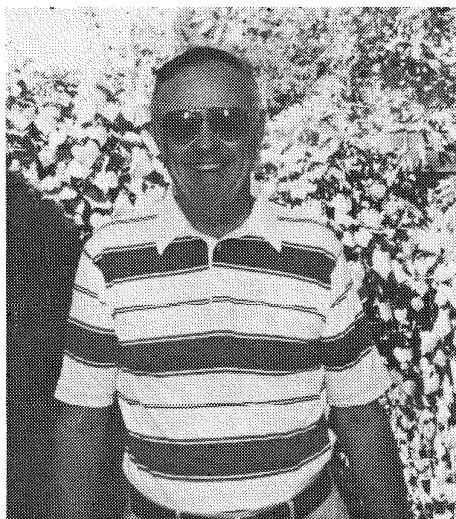
Ken's new address:

*53 Eton Street
Springfield, Mass. 01108
Telephone: (413) 746-6931*

MEL THOMPSON

In 1967, I was working as a laboratory technician for Chevron Oil Company, and taking palynology courses from Dr. L.R. Wilson at the University of Oklahoma. Paul Nygreen was my supervisor. I continued working for Chevron until my retirement in 1986.

In 1971, I was transferred to Denver, Colorado and have remained in Colorado since that time. As a retiree, I am active in the Chevron Retirees Association, Weston Lodge AF&AM, Denver Consistory, and the Order of the Eastern Star. I have done some travelling, work in the yard and garden, and thoroughly enjoy the freedom to do whatever the mood strikes.

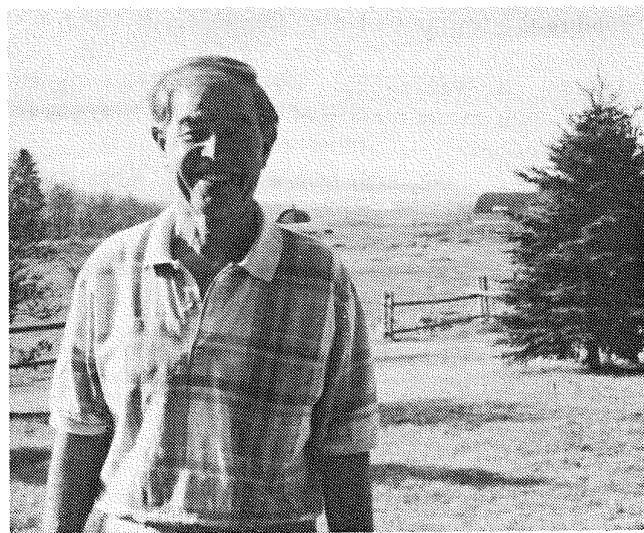


Mel W. Thompson

I am proud to have been a founding member of AASP, and treasure the friendships and associations I made through the organization. May AASP continue to grow and contribute to the sciences.

HERB SULLIVAN

In December 1968 I was working at Amoco's Tulsa Research Center where the founding meeting was held. Shortly afterwards, I was presented with the opportunity to work on projects unrelated to my palynological training and delved into the emerging technology of plate tectonics and utilized those concepts to define possible exploration plays in the Pre-Jurassic of the Gulf Coast Basin and an interpretation of what might lie beyond and beneath the Tertiary sedimentary wedge of the Gulf of Mexico. These studies kindled a desire to seek a position in an operational office and I transferred to Amoco Canada in August 1971. I spent the next seventeen years in Calgary learning the skills of oil and gas exploration and experienced the exhilaration of the boom days of the industry followed by the frustration of the economic doldrums created by excessive government taxation and then the collapse of oil prices. For the last five years I was Amoco Canada's Chief Geologist and was involved with Frontier drilling in the Arctic and East coast as well as the participating in the mature exploration phase of the Western Canada Basin. In June of 1988 I was Houston bound having been asked to assume a position as Manager of Exploration Technical Services responsible for providing technical support for the worldwide exploration program. I thoroughly enjoyed the challenge of international operations and the management of a diverse interdisciplinary group which applied their specialized skills to projects in some forty countries. Accepting an incentive early retirement program in early 1992, marked the end of my twenty eight year career with Amoco Production Company. I have returned to Calgary to plan the next phase of my life which will involve selective consulting, indulging my grandchildren and a possible business venture in a totally new field.



Dr. Herbert J. Sullivan

I wish the society every success as it embarks on the next twenty five years. I believe few of the founding members will be surprised at the vitality of the present organization and its commitment to the goals defined at the inaugural meeting. The AASP has an increasingly important role to play in attracting new talent to the field and to capitalize on the unique opportunity afforded to us by the rigorous application of palynology within the framework of basin analysis and sequence stratigraphy. The accomplishments of the past will pale in comparison to the diversity and scale of future contributions.

Herb's new address:

*Box 41, Site 13
RR 4
Calgary, Alberta
CANADA T2M 4L4
Telephone: (403) 241-1761*

COLIN McGREGOR

Although a lot of years have gone by since that proto-AASP meeting in Tulsa, some things have not changed much in my life: same job (Geological Survey - where for 35 years I have "managed" to avoid becoming a manager); same city (Ottawa); same house at the edge of the green belt; and the same wife of 33 years (and I hope, 33 more). Our children (Robin, Bonnie, and Ian) have grown up and are having children, and, to our surprise, are all living within 10 km of us.

But some things have changed: the grey beard (then brown - kept after my first Arctic Islands field work the year after AASP started; a couple of crooked fingers (bicycle accidents); revival of a childhood hobby (collecting "Big Little Books" of the '30's and '40's); singing bass in the church choir; and a general disinclination to work at the pace I used to 25 years ago.



Dr. Colin D. McGregor

The AASP was a prominent part of my life back then - as it probably was for most of the original 32: Vice-President, Councillor (twice) Awards Committee, Nominating Committee, International Affairs Committee, ICP representative. And, many of us remember well the wrangling over the various drafts of the AASP constitution. My formal involvement has ceased, but I still have high regard for people I worked with in those years to help ease (or sometimes add to!) AASP's growing pains.

Since Tulsa 1967, my job has taken me to Western Europe (several times), North Africa, Turkey, the USSR, China, Bolivia (1 year), and Australia (1 year). Travel is still fun, but I like it better if there are no meetings to go to, no presentations to make, and no committees to chair. I discovered the Himalayas two years ago, spent 3 weeks trekking around Annapurna, and plan to go back in 1993, maybe to Kanchenjunga or the Everest base camp. No plans (or "encouragements") to retire yet - at least until Jan Jansonius and I finish Palynology and Stratigraphy - but it's looking more and more attractive.

BUD SIMPSON

At the time of the organizational meeting of AASP, Bud was employed by Sinclair Research Company as a palynologist in Tulsa, Oklahoma. His research was



Howard (Bud) Simpson

primarily concentrated in the Gulf of Mexico area and in South Alaska basins. After the merger of Atlantic Richfield Company (ARCO) and Sinclair Oil Corporation he was transferred to the Dallas area and worked as a research palynologist in ARCO's Geoscience Department. Since the department supported the exploration efforts of the domestic and international companies, his projects

included strata of all ages in basins from all over the world; although, much of his efforts involved South Alaska. Bud's involvement with Alaska became fulltime when he was transferred to ARCO Alaska, Inc. in Anchorage in 1982.

Bud and his wife, Faye, enjoyed this assignment and hoped that he could remain in Alaska until retirement. However, in 1985 he was transferred back to the Dallas area, where he continued to do South Alaska studies. Then again, in 1988, he had the good fortune of being transferred back to Alaska to carry out his South Alaska studies. This worked out well as he and Faye were able to pretty much pick up where they had left off; such as, getting back the same house (and phone number) with mostly the same neighbors. Bud and Fay appreciate the opportunity to live in Alaska and enjoy having their daughter and grandchildren visit and take in the Alaska experience.

Ed's note: The photo of Bud actually shows beautiful mountains in the background - but they got lost in translation to black and white. Bud also sent photos of a black bear and a moose in his garden - he must have a wild life.

THESIS ABSTRACTS



ABSTRACT

POLLEN EVIDENCE OF PREHISTORIC FOREST MODIFICATION AND MAYA CULTIVATION IN BELIZE

TEXAS A & M UNIVERSITY (December 1991)

John Glendon Jones, B.A. Youngstown State University
M.A. Texas A&M University

Chairman of Committee: Dr. Vaughn M. Bryant, Jr.

Eighty three soil samples from Cobweb Swamp, Belize, were examined for fossil pollen content. These samples, from a series of cores and an excavation profile,

were examined in an attempt to establish a basic paleoenvironmental sequence for northern Belize, and to document the earliest arrival of humans into the site area, as well as to identify any evidence of prehistoric forest modification.

Pollen data revealed that, prior to around 6000 BC the climate in northern Belize was probably hotter and drier than today. The subsequent development of the tropical forests was also documented in the pollen record. The earliest evidence of humans in the Cobweb Swamp/Colha area was dated to around 2500 BC, and is clearly marked in the pollen record by deforestation and increases in the frequency of disturbance vegetation.

Evidence of Maya cultivation was recorded by fossil pollen grains from maize or corn (*Zea mays*), probable cotton (*Gossypium* sp.) and chilis (*Capsicum* sp.). A pollen grain from manioc (*Manihot* cf. *esculentum*) was found in an early Maya context and was radiocarbon dated to 1003 BC. To date, this is the first paleobotanical documentation of this plant in the Maya lowlands.

Data from this study revealed that pollen analysis can offer information normally unavailable through conventional archaeological means. Clear evidence of early settlement, cultivation, forest modification and site abandonment was obtained from the pollen data. Archaeologists must consider the benefits that palynology can offer in interpreting prehistoric subsistence economies.

Ed's note: John's current address is:

Smithsonian Tropical Research Institute
P.O. Box 2072
Balboa, Republic of Panama
Telephone: (507) 52-5539
FAX: (507) 62-5942

ABSTRACT

PALYNOLOGY, PETROGRAPHY AND GEOCHEMISTRY OF THE ARDLEY COAL ZONE AT WABAMUN, ALBERTA, CANADA.

Ph.D. Dissertation

Thomas D. Demchuk 1992,

Department of Geology and Geophysics,
The University of Calgary,
Calgary, Alberta, Canada; 342p.

The Wabamun and Wetaskiwin mining areas of the central Alberta Plains provide an excellent opportunity to investigate local and regional geological aspects of the Ardley coal zone. From cores and outcrops, these coals are accessible in the Highvale, Whitewood and Genesee at where they are mined as thermal feedstock. From

palynological, petrographical and geochemical investigations it is revealed that these coals were deposited in varied wetland (mire) environments. Also, there are recognizable trends in the variations of these coal characteristics, which are a reflection of the influence of fluvial activity (or lack of) on the deposition of these coals.

In the Highvale area, stratigraphically lower and thinner seams are bright in nature and are huminite-rich. In contrast, the overlying thicker seams are inertinite-rich and are megascopically duller. At Whitewood and Genesee, correlative thicker seams are bright and huminite-rich reflective of higher groundwater levels, deposition in predominantly topogenous environments, possibly proximal to fluvial activity. In the Highvale area distal of this fluvial activity, peat accumulated to an appreciable thickness and an ombrogenous situation was achieved. Consequently, peat was susceptible to oxidation and degradation during periods of lowered groundwater levels, droughts, and fires.

A correlation is illustrated between coal lithotype and maceral content in that bright coal contains abundant huminite, and inertinite content increases with increasing dullness. Fibrous (fusain) coal contains the highest percentage of inertinite. Bright coals are a product of wetter depositional conditions, and duller coals for the most part, are a product of drier environments. Utilizing Diessel diagrams, bright coals display higher gelification/tissue preservation indices indicative of wetter, forested environments whereas duller and fibrous coals display lower gelification/tissue preservation indices indicative of drier environments with herbaceous vegetation. Also, brighter coals contain higher percentages of *Taxodiaceapollenites hiatus* pollen (taxodiaceous vegetation) are relatively lower in ash content. Duller coals exhibit higher percentages of pollen/spore other than *T. hiatus*, and are relatively higher in ash in comparison to bright coals. Other palyniflora include *Laevigatosporites* spp. (Polypodiaceae), *Stereisporites* spp. (mosses including *Sphagnum*), varied bisaccate pollen (Pinaceae) and *Osmundacidites* sp. (Osmundaceae).

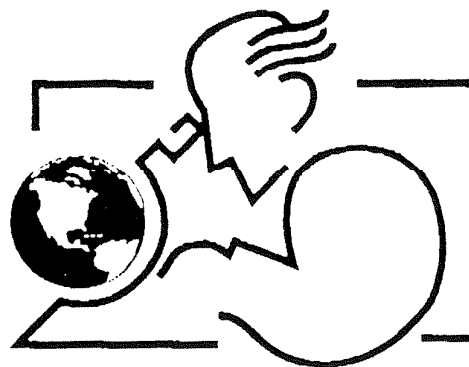
Ombrogeny in the Highvale area is determined from criteria which on their own are not unique, but collectively lead to a conclusion of an ombrogenous environment. The occurrence of *Stereisporites* spp. (fossil mosses including *Sphagnum*), in conjunction with increasing inertinite content and associated fibrous coal, are indicative of peat accumulation in an acidic environment above the influence of local groundwater. The increasing percentages of inertinite, especially inertodetrinite, towards the top of a coal seam with fibrous coal suggests the original peat was susceptible to oxidation and degradation, and that such oxidative events were frequent. A genetic relationship may be suggested between inertodetrinite, and *Stereisporites* spp. and other low-stature, stunted vegetation common to an ombrogenous bog.

The presence of kaolinite in low-temperature ash residues from the Highvale area, may be further indicative of ombrogeny. Detrital minerals incorporated into the peat, were subsequently dissolved in the acidic environment.

Cations were leached away by rainwaters, leaving authigenic quartz and kaolinite to mineralize. Detrital minerals present at Whitewood and Genesee include quartz, feldspar and mica. Montmorillonite is the common clay mineral as an alteration product of volcanic ash. Epigenetic minerals consist of pyrite and calcite which are present in the cleat network of these Wabamun coals.

Current address of author:
Amoco Production Company
P.O. Box 3092
Houston, Texas 77253-3092
Telephone: (713) 556-2993
FAX: (713) 556-2404

EDITOR'S NOTE: Recent graduates of either M.Sc. or Ph.D. programs are urged to submit their abstracts for publication in the AASP NEWSLETTER. Professors are urged to urge their students to submit abstracts for publication in the AASP NEWSLETTER.



THE WEIRD AND WONDERFUL WORLD OF DINOFLAGELLATES

Ed's note: I received 13, yes, thirteen separate copies of this story from AASP NEWSLETTER readers. Only two of the stories were identical, most were abstracted from the original article in WASHINGTON POST (Monday, August 17, 1992). That article is quoted below, but unfortunately the line drawing of the life cycle of the critter did not copy.

**Look! In the Water! It's a Plant! It's an
Animal, It's a Toxic Creature**

by Boyce Rensberger

Life on Earth takes many shapes, and surely one of the strangest is a newly discovered species whose ability to change bodily form is so dramatic that some biologists express disbelief when they first hear about it.

Sometimes, the aquatic creature seems to behave like a green plant, calmly photosynthesizing in the sun, even as - unplantlike - it spins on its axis and swims through the sea. But if predators threaten, these organisms can transform themselves into gigantic monsters, swelling within minutes into a bloblike form at least 100 times bigger. Prey turns predator and swallows enemies whole.

In its free-swimming phase, the organism feeds on fish flesh, but if the supply vanishes, the creature simply goes into suspended animation, forming a protective shell around itself and dropping to the bottom where it can wait for years. When more fish happen along, the creature senses their presence, breaks out of its shell and swims free again.

The species would be little more than a scientific curiosity, a marvel of nature, were it not for one fact. When the organism detects fish and hatches out, it produces a powerful toxin that kills the fish, often within minutes, sometimes by the millions.

The species, an alga discovered only recently, was reported last month to be the cause of several major fish kills in North Carolina's Pamlico Sound, which lies inside the Outer Banks, and possibly to be present in the Chesapeake Bay, where it may kill crabs too.

Marine biologists say it is likely that the creature has been killing fish along the Atlantic coast for years and may account for much of the increasingly prevalent blooms of toxic algae, some called "red tides," that are causing major fish kills worldwide.

Scientists suspect that this organism has become more common because of increasing pollution dumped in the water, especially phosphates, which seem to encourage the organisms's proliferation.

"We know it has at least 15 stages in its life cycle, and we think there are six more that we haven't proven yet," said JoAnn Burkholder, an algae specialist at North Carolina State University, who is leading a major research effort to understand the organism and its effect on fish populations. "When I give talks on this, people don't believe me -- until they see our videos".

Burkholder and her graduate student, Howard Glasgow, have used a camera mounted on a microscope to videotape the organism changing forms in minutes.

'Dinos Are Definitely Weird'

The newly recognized but not yet named organism belongs to a curious class of algae called dinoflagellates. Dinos, Greek for whirling, refers to the creature's spinning on its axis as the result of one of its two flagella. One flagellum wraps around the body and undulates, making it spin and move forward; the other trails behind to steer.

Dinoflagellates are officially considered plants because in some phases of their life cycle they have chloroplasts and carry out photosynthesis. But they are equally qualified to be animals. For example, after killing fish with its toxin, the cell attaches to chunks of fish flesh

with a stalk, secretes digestive juices through it and then sucks up the now-liquefied fish.

"Dinos are definitely weird," Burkholder said. "I like to think of them as being in a twilight zone between plants and animals."

This dino was discovered accidentally by Edward J. Noga, an N.C. State scientist who works on fish farming technology. One of his students was raising tilapia, a very hardy fish, in tanks when they started dying mysteriously. Noga did microscopic examinations of the dead fishes' gills and "saw this little dinoflagellate swimming around. I sent them to various people for identification, including JoAnn, and nobody knew what it was."

Before its nature could be established, the dino accidentally spread to nearby tanks, killing thousands of fish. Noga speculated that the creature entered the first tank with some fish caught from the Pamlico Sound.

"They must have been lurking around for some time before they got exposed to sufficient numbers of fish to turn them on," Noga said. "Just about nothing kills this thing when it's in the cyst stage."

This is the stage, Burkholder's experiments have found, when the dino is dormant and extremely durable. The cyst is not damaged by strong acids or bases nor by at least 35 days of being out of water and dry. Put the cysts in water, and they just sit there. But, as Burkholder and Glasgow have found in experiments in five-gallon aquariums in a specially isolated "biohazard" room, put a fish in the tank, and within hours the cysts crack open.

The exact trigger is a mystery, although the prime suspects are substances that living fish exude into the water and that somehow pass through the cysts's shell. Water from a tank that contains living fish will produce the same effect. Out swim the "toxic vegetative cells," spewing some unknown toxin or toxins.

In another few hours, a fish begins moving spasmodically, turns sluggish and soon dies. Those effects suggest that the dino has produced a nerve toxin. But autopsies show additional effects perhaps caused by other toxins. The fish's kidney's are damaged, its immune system is weakened and its skin sloughs off in small bits. It is these fragments to which the dinos attach and upon which they feed.

In this stage, the creatures reproduce sometimes simply by dividing, making two duplicates of the original, and sometimes by making two gametes, sex cells analogous to sperm and egg. These, which look like miniatures of the adult, swim about, fertilize one another and become a much larger form called the planozygote.

The Phantom Fish Killer

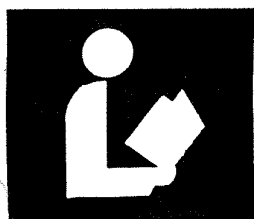
In major fish kills in nature, scientists have counted as many as 175,000 of these organisms in a single teaspoonful of water. In aquariums, they have killed fish in concentrations of as little as 1,500 per teaspoonful.

The algae continue to reproduce and to feed until the last fish dies. Then, deprived of whatever it is that live fish exude, the dinos sound retreat. Both the little vegetative cells and the big planozygote go back into hiding. They disappear from the "water column" so quickly that Burkholder is planning to give them a scientific name that is Latin or Greek for "phantom fish killer".

Sometimes, they become cysts, and sometimes they change into amorphous blobs, called amoebas, that crawl over bottom sediments. Although they share the name, these are not the same as the amoebas that are protozoans -- a very different form of life often classified as true animals.

Dinoflagellate amoebas come in at least three sizes, depending on their life history. The biggest is the "monster" that arises if predators threaten other life stages. The predators are protozoans and, if they pose too great a threat, some of the dinos suddenly swell to enormous proportions and gobble up the protozoans.

"Apparently," Burkholder quipped, "there's a line you don't cross with these guys."



BOOK REVIEWS

Book Review Editor - Reed Wicander
Department of Geology
Central Michigan University
Mt. Pleasant, Michigan 48859

Pollen Analysis, Second Edition

P.D. Moore, J.A. Webb and M.E. Collinson
Blackwell Scientific Publications Inc.,
Three Cambridge Centre, Cambridge, MA
02141; 1991, 216 pages, 1976 illustrations, ISBN 0-632-02176-4; \$78.95 US.

This book, although bearing a new title, is a second edition of **An Illustrated Guide to Pollen Analysis** published in 1976 by the first two authors. This new version, modified from the earlier edition through 12 years' use in teaching undergraduate classes in Quaternary paleoecology, provides new techniques and data learned over the past decade.

The text is divided into eight chapters covering the

basic concepts and/or practices of: Basis and Applications, Sources of Fossil Pollen, The Collection of Samples, The Treatment of Samples (including extraction, slide preparation and microscopy), Pollen Grains and Spores (a brief 20-page introduction to pollen and spore morphology and terminology), Illustrated Pollen and Spore Key with Glossary, Assembling Pollen Data, and Interpreting Pollen Data.

Perhaps the real value of this book lies in the magnificently illustrated key which comprises the largest section (84 pages) of the text. The key has been expanded from the earlier version and provides about 1000 black and white transmitted light photomicrographs comprising 58 plates. Thirteen plates are devoted to SEM photography and include some of the finest photomicrography I have seen. Margaret Collinson was asked to join the other authors with the mandate to update and expand the key to include a wider geographical (covering nearly all of temperate North America) and taxonomic coverage and to manage all of the photography. Collinson is to be congratulated for performing this task with excellence.

The dichotomous key follows the basic precepts or rules adopted to facilitate usage and counter awkwardness. In some areas, the key becomes rather detailed, using somewhat finer details making the choice between characters a bit difficult. Collinson has, however, provided detailed notes and clarification points within the text of the key to assist the user in selecting the proper character. All couplets read as positive statements further facilitating proper selection. Imbedded within the text, at appropriate locations, are line drawings which again aid the reader and render choices a bit easier. The illustrations of generalized equatorial views of the Lactuceae (Asteraceae) are especially valuable.

The text ends with an extensive up-to-date bibliography covering all aspects of pollen analysis including the recent and important northwest European pollen flora texts published by the *Review of Palaeobotany and Palynology* journal.

Students and professionals working in Quaternary palynology, paleontology, paleoecology and botany will applaud this book as a necessary research tool.

David M. Jarzen
Canadian Museum of Nature
Ottawa, Canada

Editor's Note: A number of new books are available from Cambridge University Press. Some which may capture the interest of palynologists are listed on the following page:

Origin and Geography of Cultivated Plants

N.I. Vavilov

Formerly of the Institute of Plant Industry, Leningrad

Translator

A.A. Filatenko

The work of Nikolai Ivanovich Vavilov has formed the basis of much of the study of plant genetic resources that is carried out today. In recognition of his contribution to plant science, and to commemorate the centenary of his birth, a collection of Vavilov's major works on the origin and geography of cultivated plant species was published in Russian in 1987. This English translation sees the publication of many of these seminal papers in their original form, but not original language, for the first time ever. The structure of the book, with papers arranged in chronological order from 1920 to 1940, provides a unique opportunity to retrace both the development of Vavilov's theories on cultivated plants and his gradual creation of a definite terminology.

192/c. 570 pp./33 halftones/28 line diagrams/14 tables.
Cambridge University Press: 40427-4/Hc/List:\$120.00+

Jurassic and Cretaceous Floras and Climates of the Earth

V.A. Vakhrameev

Geological Institute, USSR Academy of Sciences

Editor

N.F.H. Hughes

University of Cambridge

Translator

Ju.V.Litvinov

Foreword and Postscript by

M.A. Akhmetiev

Geological Institute, USSR Academy of Sciences

"Readers will benefit greatly from this fascinating, objective study.... This book belongs in your library, and in every college and university which has this discipline in the course of study."

Leonard T. Boyer, Paleontological Notes.

"Serious students of Mesozoic seed plants and paleobotanists will find this text to be of most interest."

Biological Abstracts

This book is a translation of a unique Russian study of fossil plant distributions in the Jurassic and Cretaceous world. The core of the work is the description and assessment of floras of the USSR, China, and Japan, the

largest land area on Earth. Information on the floras of this extensive and productive region has hitherto been available only in scattered and sometimes unobtainable Russian journals. Vakhrameev also summarizes the more familiar Western work and divides the continents into regions and provinces illustrating the paleolatitudinal climatic arrangement of floras. The work deals first with megafossil plants in strictly stratigraphic order, but in many cases also with land plant palynomorphs. The time covered from 200 to 65 million years ago ranges both before and immediately after the main angiosperm radiation from about 130 to 100 million years ago.

1991/338 pp./45 halftones/20 line diagrams/3 tables
Cambridge University Press. 40291-3/Hc/List:\$99.50

Now in paperback...

The Origins of Angiosperms and Their Biological Consequences

Editors

E.M. Friis

Niels Bohr Fellow, University of Aarhus

W.G. Chaloner

Royal Holloway and Bedford New College, London University

P.R. Crane

Field Museum of Natural History, Chicago

"... an up-to-date, comprehensive look at early angiosperms and their interactions with the biota." American Scientist

1987/358 pp./5 halftones/42 line diagrams/16 tables.
Cambridge University Press
31173-X/Pb/List: \$32.95

INFORMATION ON SPORE TABLETS

Dr Martin Head from the University of Toronto recently sent the following information, indicating that this important source is back on line.

Lycopodium spore tablets (batch 710961)

Lycopodium spore tablets can be dissolved in water or in HCl, but not in NaOH. They have been prepared in a slightly different way compared to that described

Stockmarr (1971, 1973). The tablets are thus based mainly on sodium bicarbonate together with polyvinylpyrrolidone and polyethyleneglycol, which must be carefully washed away with water and finally with diluted HCl before further treatment. The spores are acetolysed.

The spore concentration has been determined with an electronic particle counter, Coulter Counter ZB (cf. Stockmarr 1973), tube size 14 μ m. 100 samples of five tablets each taken from different places in the batch were prepared by dissolving the tablets in Isoton II NaCl solution in 100 ml flasks. 20 counts each of 0.5 ml were made on each sample.

Result:

$X = 69,556$; $s = +1541$; $V = +2.2\%$

For one tablet: $X = 13,911$

Production, distribution, payment

Spore tablets for calibration of pollen analyses have earlier been produced and distributed by Dr. Jens Stockmarr, Copenhagen. In October 1980 this business was taken over by the Laboratory of Quaternary Biology at the Department of Quaternary Geology in Lund. It is performed as an official commission approved by the University of Lund. A new batch is now produced and calibrated and tablets are available. The tablets are manufactured at Dansk Droge Import A/S, Øshøj, Denmark.

Lycopodium tablets will be distributed in plastic bottles with 500 tablets per bottle. The price is, in Swedish currency, SEK 200/1000 tablets, plus postage. Examples of current postage (airmail/surface mail): USA, Canada, 500-5000 tabl. SEK 145/100; 5500-10000 tabl. SEK 190/115. U.K. 500-5000 tabl. SEK 115/100; 5500-10000 tabl. SEK 135/115. Germany, 500-5000 tabl. SEK 105/89; 5500-10000 tabl. SEK 120-98. South-America, Australia, 500-5000 tabl. SEK 215/105; 5500-10000 tabl. SEK 315/125. Surface mail is often very slow. If nothing stated in an order we send airmail.

A university invoice will be sent separately to the receiver of the tablets or to the purchase office. Please, follow the instructions for payment given on the invoice. Please note that production and distribution of tablets is done at cost price, which makes it necessary to reduce administration to a minimum. Therefore, the machinery of payment must be as simple as possible - so, please, follow our instructions and try not to impose too many administrative duties on us, which will only result in delayed deliveries.

Björn Berglund and Thomas Persson

Department of Quaternary Geology, Tornavägen 13, S-223
63 LUND, Sweden
Tel: 46-46-107880 Fax: 46-46-104830

Heaviest Element Discovered

Thomas G. Kyle

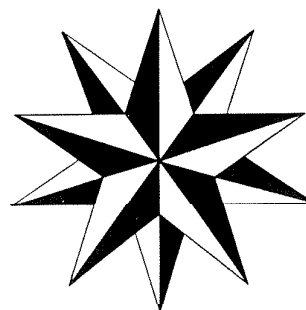
Los Alamos, New Mexico

from: *Journal of Irreproducible Results*

The heaviest element known to science was recently discovered at one of the national laboratories. The element, tentatively named administratium (Ad), has no electrons or protons, thus having atomic number zero. It does, however, have one neutron, 75 associate neutrons, 125 deputy associate neutrons, and 11 assistant deputy associate neutrons. This gives it an atomic mass of 312. The 312 particles are held together in the nucleus by a force that involves the continuous exchange of mesonlike particles called memoöns.

Since it has no electrons, administratium is inert. Nevertheless, it can be detected chemically because it seems to impede every reaction in which it takes part. According to Dr. M. Languor, one of the discoverers of the element, a very small amount of administratium caused one reaction that normally occurs in less than a second to require over four days to go to completion.

Administratium has a half-life of approximately 3 years, at which time it does not actually decay. Instead, it undergoes an internal reorganization in which associates to the neutron, deputy associates to the neutron, and assistant deputy associates to the neutron all exchange places. A tendency has been observed for the atomic mass to actually increase during each reorganization.



PEACE ON EARTH

AND

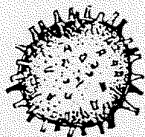
GOOD WILL TO ALL

MEN AND WOMEN

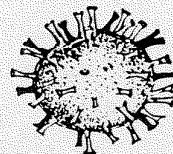
OF THE WORLD

Very best wishes for the NEW YEAR.....

THIRD WORKSHOP ON NEOGENE AND QUATERNARY DINOFLAGELLATES



Zeist, The Netherlands
April 24, 1992



Under the auspices of the
Fifth International Conference on Modern and Fossil Dinoflagellates—Dino-5

History: The First Workshop on Neogene Dinoflagellates was held during the 19th AASP Annual Meeting in New York. The atmosphere was informal and nearly the entire cast of participants was squeezed into two New York taxi cabs. The Second Workshop on Neogene Dinoflagellates was held during the Fourth International Conference on Modern and Fossil Dinoflagellates (Dino-4: Woods Hole, MA, April, 1989) with over sixty palynologists in attendance. Participants compared holotype and other materials under the microscope, viewed 35 mm photo-slide presentations and videotape recordings, and discussed species concepts. A round-table discussion, held in the afternoon, focused on more than 35 taxa considered to be in some way problematical.

The Third Workshop: The Third Workshop will be held on Saturday, April 24 under the auspices of Dino-5, Zeist, The Netherlands. The atmosphere will be informal. A morning session will focus on examination of materials brought by participants. A variety of microscopes, photo microscopes, video equipment etc. will be available for use. In the afternoon a round-table discussion of problematical taxa will be held and a transcript of this discussion drawn up for possible publication. The Workshop is free to all conference participants. A Conference field trip to the Maastrichtian type section will run concurrently with the Workshop: you make the choice.

Philosophy: To enable "Quaternary and pre-Quaternary palynologists, and neophycologists, to see dinoflagellates and their cysts through the eyes of each other" (Head and Wrenn, 1992, p. 27: AASP Foundation).

What to bring: Microscope slides, photos, videos, etc. of any upper Cenozoic cyst taxa, and film for photo microscope. Cysts from modern sediments especially welcome, as are cysts from excystment studies, freshwater cysts, acritarchs, and any holotype and topotype specimens. If possible, bring extra slides, sediment, or residue for exchange with colleagues. You might plan using an England Finder™ to quickly relocate specimens at the Workshop.

Funding: Funding agencies sometimes favor participation at hands-on workshops over conferences. It might be shrewd to list participation at this Workshop when applying for a grant to attend Dino-5.

Organizer: Martin J. Head
Department of Geology
University of Toronto
22 Russell Street
Toronto, CANADA M5S 3B1

Tel. (416) 978-5080 or 3022 FAX (416) 978-3938 Email head@mica.geology.utoronto.ca

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In order to receive future Workshop mailing please return fully or partly completed form to Martin J. Head.

I hope to attend the Workshop: _____ and bring the following materials: _____

I suggest the following taxa be slated for round-table discussion: _____

(continue overleaf if desired)

Special hardware needs: _____

Name and address: _____

Fax _____ Tel. _____ Email _____