OCTOBER, 1987

VOLUME 20, NUMBER 4

AASP NEWSLETTER

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Telephone:

Nature of work (graduate student, exploration stratigrapher, etc.)

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AASP NEWSLETTER

Published Quarterly by the American Association of Stratigraphic Palynologists, Inc.

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J. H. WRENN, EDITOR

PRESIDENT'S MESSAGE

Congratulations to **Sedley Barss** and his busy crew of co-workers for putting on the Annual Meeting in Halifax. It was very well organized, there were many good papers, and the meeting was also fun; we had a good time. Good show! The special workshop and symposium on the first day were organized and chaired by **Greg Gaines** and **David Batten,** and both sessions were well attended; people said that they learned a lot from these sessions.

Jon Benson has left the affairs of the Association in excellent shape, and the new Board will endeavor to keep up the good work. Our main problem, the decrease in the number of members, is something we as an organization -- and we as members -- can do little about except to keep high the quality of papers published in Palynology and presented at the Annual Meetings, so that palynologists will consider it worthwhile to join our association and participate in our activities.

I look forward to playing an active role in AASP's affairs this year and to meeting as many of you as I can at our next Annual Meeting in Houston and at the 7th IPC in Brisbane. If you have remarks, observations, or complaints about the Association, send them to me or to John Wrenn -- he loves to get comments for the Newsletter!

Norm Frederiksen
President, AASP

POSITIONS AVAILABLE

Physical Science Technician (GS-7)

The United States Minerals Management Service is seeking an experienced palynological laboratory technician for its Alaska OCS Region office in Anchorage, Alaska. The successful candidate must be a citizen of the United States and preferably have some interpretive skills. The salary for this position is approximately $23,000 per year, 25% of which is tax free. Please contact:

Dr. Ronald F. Turner
949 East 36th Avenue, Room 110
Anchorage, AK 99508

Stratigraphic Palynologist

Union Oil Company of California is looking for an Operational Stratigraphic Palynologist to work in their Western Region Paleo Lab located in Ventura, California. The qualified candidate will work in an exploration environment on operational projects.

A Masters degree in Geology is required and experience would definitely be desired. However, recent graduates will also be considered. UNOCAL is an equal opportunity employer.

Send resume or letter of interest by December 15, 1987 to:

G. H. Blake
UNOCAL
P. O. Box 6176
Ventura, CA 93006

Paleoecologist

The Desert Research Institute is seeking applicants for the position of Paleoecologist to be involved in operation of a paleoecology laboratory, grant proposal and report writing, and to actively participate in the research of other members of the Social Sciences Center. Research emphasis is on semi-arid and arid climate areas. Qualifications include: Ph.D. with expertise in reconstruction of vegetation history and past climate through the study of fossil pollen and plant macrofossils; competence in problems relating to stratigraphy and dating; research experience in the Great Basin; and demonstrated ability to secure grant/contract funding. Previous research should indicate interest in relating changing environments of the past to human cultural adaptation. Some experience in eastern Mediterranean area is desirable. Salary commensurate with qualifications, excellent benefits. Applications must be received by December 11, 1987. To apply, send resume, list of personal references, and letter indicating academic and research strengths to:

Personnel Office
Desert Research Institute
P. O. Box 60220
Reno, Nevada 89506.

We are an Affirmative Action/Equal Opportunity Employer.

POSITION WANTED

Dr. Abolfazl Jameossanaie is seeking a career as an exploration geologist/palynologist in either the petroleum or coal industry. He is willing to consider opportunities with either domestic or international operations. He earned his BSc and MSc degrees in geology at Tehran University and his PhD at Michigan State University. He has two years of post-doctoral experience and is currently a Research Associate with Michigan State University. His research experience includes Permian and Jurassic palynology of Iran, Cretaceous palynology of New Mexico, and palynology of suspect terranes in California. Please contact Dr. Jameossanaie for a copy of his resume at:

Dr. Abolfazl Jameossanaie
5403 Mancelona Drive
Grand Blanc, MI 48439

It is customary to have two meetings of the Board of Directors in conjunction with the AASP Annual Meeting. The Board Meeting prior to the Annual Meeting is conducted by the outgoing board, whereas after the annual meeting the new Board of Directors meet for the first time. The meetings were held at the Chateau Halifax Hotel.

Board of Directors Meeting
Tuesday, October 6, 1987

Outgoing President **Don G. Benson, Jr.** presided over the first meeting of the Board of Directors. The agenda was:

1. Presentation of Agenda for Approval (Benson)
2. Minutes of 1987 Mid-Year Board of Directors Meeting, Houston, (Frederiksen)
3. Secretary's Report (Wood)
4. Treasurer's Report (Wood)
   a. Financial Summary
   b. L. R. Wilson Award Fund
   c. AASP Scholarship Fund
5. Managing Editor's Report (Nichols)
   a. Palynology
   b. Newsletter
   c. Book Reviews
   d. Membership Directory
   e. Items in Press
6. Old Business
   a. AASP Foundation Report (Clarke)
   b. AASP Foundation Publications (Hedlund)
   c. Public Relations Committee Report (Bryant)
   d. Archives Committee Report (Norton)
   e. Ballot Committee Report (Benson for Curry)
   f. Awards Committee Report (Wiggins)
   g. Dollar Value of 1987 L. R. Wilson Award (Board)
   h. IFPS Representatives Report (Nichols)
   i. ANAPS/NAPC V Report (Leffingwell)
7. New Business
   a. President's Report (Benson)

The detailed minutes of that meeting were kept by the then President-Elect, **Norman Frederiksen.** Interested parties may obtain a copy of the minutes by writing to the Secretary-Treasurer, **Gordon D. Wood.** A summary of selected portions of the meeting is presented here.

Secretary-Treasurer's Reports: Secretary-Treasurer, **Gordon D. Wood** presented the Annual Meeting financial summary, shown below.

Treasurer's Report
(as of October 1, 1987)

MBank Checking Account (#037 065)	$ 279.30
MBank Money Market Checking Account (#702 435)	84.84
MBank Money Market Checking Account (#702 438)	16,046.36
MBank CD (#6466, matures 12/3/87)	25,000.00
MBank CD (#6620, matures 11/20/87) (L. R. Wilson Best Student Paper Fund)	4,511.70
TOTAL	$45,922.20

Gordon emphasized that the total included $6,780 in prepaid dues for 1988 and 1989. Excluding these funds, the current balance is $39,142.10.

Expenditures since the last financial report was presented at the Mid-Year Meeting (April 2-3, 1987, Houston, Texas; see AASP Newsletter Volume 20, No. 2, page 1) were $4,378.01. Approximately half of this amount ($2,287.62) was spent on publishing and mailing the Newsletter.

The L. R. Wilson Best Student Paper fund balance was $4,511.70 whereas the AASP Scholarship fund balance stood at $486.00.

AASP membership was 945 members (816 individual and 129 institutional) as of October 1, 1987. This figure shows a decrease of 128 members since April 3, 1987, because the Board dropped from the AASP roster all members who had not paid their 1986 membership dues. The current membership total of 945 includes 145 members and 20 institutional members who have not paid their 1987 membership dues. **CHECK THE YEAR ON THE FIRST LINE OF YOUR MAILING LABEL.** That is the last year for which you are credited with having paid your dues. If it does read "87" or higher, you will not receive any further AASP publications or a new Membership Directory. If you are in arrears, send your check (20.00 for individual and $30.00 for institutional membership) to:

Dr. Gordon D. Wood
Secretary-Treasurer, AASP
Amoco Production Company
P. O. Box 3092
Houston, TX 77253

Managing Editor's Report: This has been a very busy year for the AASP Editorial Staff. Five issues of the Newsletter (including this one) have been published since October 1986. The use of photographs, begun by former Newsletter Editor **Bob Ravn,** has been continued. Innovations included a major change in the Newsletter format and the introduction of new columns reporting on Current Research, Job Openings (available and wanted), and Upcoming Presentations by AASP Members. Various graphics have been used, as well as humorous cartoons (or reputedly humorous cartoons) to lighten the tone a bit and to break up the text for easier reading.

Volume 11 of Palynology is nearing completion and should be distributed towards the end of November. The 268 page volume contains 14 articles, 42 photographic plates, 1986 meeting abstracts, the group photo from that meeting, biographical sketches of the authors and suggestions to authors.

The first paper for Volume 12 has been set in type. In addition, two revised manuscripts are in hand and two more have been received for review.

H. Steven Dittrich has had one of the most difficult jobs -- trying to keep track of people for the Membership Directory! The address changes seem to be endless, but Steve has put together a current listing that will be published in the near future. Keeping track of the AASP membership will be done in the future by **Judith K. Lentin.** Our thanks are extended to Steve for keeping us afloat in this stormy period of the Association's history.

AASP Foundation Report: AASP Foundation Trustee Chairman, **Norman J. Norton** requests that members forward to him all AASP materials that should be placed in the archives. It is his responsibility, as Chairman of the Archives Committee, to see that all AASP materials are sorted, assessed and properly packed for storage. However, Norm noted that he has received very little material in recent years. (This might be a great opportunity to clear out those over-stuffed closets or filing cabinets!) The AASP archives are accessible to all AASP members. Norm can provide the necessary details for those individuals interested in examining archived materials.

The Treasurer of the AASP Foundation, **Robert T. Clarke,** presented a detailed report on the activities of the Foundation. Publishing scientific papers for public consumption (with or without condiments) is one of the main responsibilities and expenses of the Foundation. The financial summary for the foundation (see below) shows a balance, as of September 28, 1987, of $34,382.86. However, Bob noted that this wealth is ephemeral because the cost of publishing and distributing Palynology 11 and Contributions Series numbers 18 and 19 will absorb most of these monies.

AASP Foundation
Annual Meeting Financial Summary
(January 1, 1987 - September 28, 1987)

BALANCE as of January 1, 1987		$20,577.47
INCOME		
Sale of publications	$ 9,152.73	
Page charges and reprints	$ 6,870.00	
Contributions	$ 1,000.00	
Interest	$ 607.44	
TOTAL INCOME	$17,630.17	$17,630.17
EXPENDITURES		
Cost of publications	$ 290.00	
Postage	$ 1,464.85	
Miscellaneous	$ 960.93	
AASP dues sent with pub	$ 69.00	
Refunds, sold-out pubs	$ 1,040.00	
TOTAL EXPENDITURES	$ 3,824.78	$ 3,824.78
BALANCE as of September 28, 1987		$34,382.86

AASP Foundation Trustee **Richard W. Hedlund** reported that AASP Contributions Series numbers 18 and 19 will be published in the near future. Number 18 is entitled "Analyses of Mesozoic and Cenozoic Organic-Walled Dinoflagellates, 1977-1985", and will cost $20.00 per copy. This 244-page volume by **Lewis E. Stover** and **Graham L. Williams,** analyzes dinoflagellate cyst genera published since 1977. The analyses of the new genera are illustrated by 83 line drawings. The three ring, loose leaf binding planned for Contribution Number 18 will facilitate updating the volume and allow users to sort the genera in whatever fashion they desire.

Number 19 contains two papers on the palynology of northern South America. The first paper is entitled "*Jan-mullerpollis*, A New Pollen Genus From The Eocene Of Venezuela" by **Estela Di Giacomo** and **Anton W. Van Erve.** This is a memorial paper to the late **Jan Muller.** The second paper by Jan Muller, Estela Di Giacoma and Anton W. Erve occupies most of the volume; its title is "A Palynological Zonation For The Cretaceous, Tertiary and Quaternary of Northern South America". Contribution 19 will be 76 pages long, plus five plates and four large range charts contained in a separate envelope. This volume will be distributed to AASP members; additional copies may be purchased for $12.00.

Ballot Committee Report: The Ballot Committee (**Richard Curry,** Chairman, **Raymond Christopher** and **Howard Simpson**) reports that the following candidates were elected to the Board of Directors of A.S.S.P., Inc., for 1987-1988:

President-elect	**Harry Leffingwell**
Secretary-Treasurer	**Gordon D. Wood**
Managing Editor	**David K. Goodman**
Director-at-Large	**Robert Ravn**
	Loretta S. Satchell

In addition, **Harold V. Kaska** was appointed by President Don Benson to serve the second year of David K. Goodman's term on the Board. (Dave resigned from the Board in order to run for Managing Editor.) **Patricia G. Gensel** will serve the second year of her term as a Director-at-Large.

The committee mailed out ballots to individual members whose 1987 dues had been received by the Secretary-Treasurer, as of June 15. A total of 616 ballots were sent out; 225 ballots were returned or somewhat over one-third of eligible voters bothered to vote.

Awards Committee Report: Committee Chairman **Virgil D. Wiggins** informed the Board of Directors that **John A. Clendening** had been selected to receive a Distinguished Service Award for his many years of dedicated service to AASP. (See report elsewhere in this Newsletter.)

Two AASP Scholarship Awards were made during 1987. **R. Farley Fleming** and **David S. Shafer** were each awarded $250.00 to assist in their graduate research. (See Volume 20, Number 3 of the AASP Newsletter for details of the winning proposals.)

Board of Directors Meeting
October 9, 1987

The 1987-1988 Board of Directors and **President Norman O. Fredericksen** met for the first time at 7:00 p.m., October 9th in the Chateau Halifax Hotel. The agenda of the meeting was as follows.

1. Presentation of agenda for approval (Wood)
2. Appointment of newly elected officers for 1987-88 by the Board of Directors (Frederiksen)
3. 1987 Annual Meeting summary (Barss)
4. Reports on future annual meetings
   a. 1988 - Houston (Bryant)
   b. 1989 - Tulsa (Wrenn for Stein)
   c. 1990 - Banff (McIntyre)
   d. 1991 - New Orleans (Benson)
5. Designation of the 1988 Midyear Board of Directors Meeting - site and date (Frederiksen)
6. Appointment of Nominating Committee (Frederiksen)
7. Appointment of Ballot Committee (Frederiksen)
8. Appointment of the Awards Committee (Frederiksen)
9. Old business
10. New business

The detailed minutes of the meeting were taken by President-elect **Harry Leffingwell.** Secretary-Treasurer **Gordon D. Wood** can provide a detailed copy of the minutes to interested individuals.

1987 Annual Meeting Summary: **Sedley M. Barss,** Chairman of the 1987 Annual Meeting Organizing Committee, reported that 122 paid registrants attended the meeting, 12 of whom were students. The Organizing Committee projected that with 105 attendees, the meeting would break even financially. Consequently, it appears that the Halifax meeting was a financial success (as well as a scientific and social success). The final figures were unavailable because various bills had not been received by the time of the board meeting.

1988 Annual Meeting, Houston, Texas: The Organizing Committee for the 1988 Annual Meeting consists of **Vaughn M. Bryant** (Chairman), **John A. Clendening** and **Robert T. Clarke.** Their plans for the November 10-12, 1988 Annual Meeting in Houston, Texas sound like a prescription for an excellent meeting. Projected attendance is 150-200 people.

The meeting will be held jointly, in part, with The Society of Organic Petrologists (TSOP). Their annual meeting will be held on Monday and Tuesday (November 7th and 8th). On November 9th, a joint AASP-TSOP symposium will be held. Its title is "The Relationship of Temperature, Mineralogical Alterations and Related Phenomena in the Processes of Organic Maturation, Hydrocarbon Phases and Reservoir Creation and Destruction." The organizers anticipate more than 300 people will attend the symposium. Basic registration for the symposium will be $60.00 and includes the cost of a copy of the symposium paper.

The meeting will be held at the Westin Oaks Hotel, which is part of the huge Galleria Shopping Mall. The mall contains over 300 stores, an Olympic-sized skating rink, four cinemas, a 1/4 mile jogging track, tennis courts, swimming pools and more that 40 restaurants.

No field trip is planned. Instead, the First AASP International Golf Tournament will be held in conjunction with the meeting. The course and details of scoring for the tournament have not been set. A $50.00 tax deductible donation to AASP is the only entry fee for participation.

1988 Mid-year Board of Directors Meeting: The Mid-year Board of Directors meeting will be held in Denver, Colorado, sometime in March or April. (The agenda, date and location of the meeting will be published in the January issue of the Newsletter.)

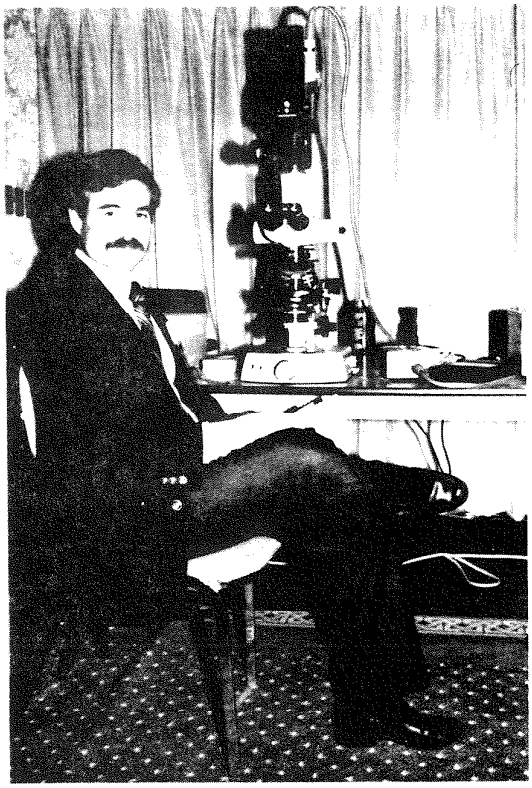
1987 AASP ANNUAL MEETING
HALIFAX, NOVA SCOTIA

The 1987 annual meeting was held at the Chateau Halifax Hotel, on October 7-9. This friendly, upbeat meeting was a resounding, enjoyable success. **M. Sedley Barss,** Chairman of the Organizing Committee, and his co-organizers, **Rob A. Fensome** and **Graham L. Williams,** are to be congratulated on the excellent planning and running of the 1987 Annual Meeting. All aspects of the meeting were well orchestrated and carried to successful fruition. (Murphy must have been on vacation during this meeting, because almost everything that could go wrong, didn't!)

Technical Sessions

The Annual Meeting and the Technical Sessions were opened by the Town Crier of Halifax, Peter Cox. Dressed in seventeenth century garb, Peter welcomed the members of AASP to Halifax. Peter observed that the purpose of our meeting was the exchange of knowledge and speculated that we would hear "...some learned comments, and some that were unlearned."

The technical sessions were held on Wednesday (October 7) through Friday (October 9). The "Programme and Abstracts" Volume prepared by Sedley Barss and Co. was innovative and convenient. The format of this volume is 4.5 by 8.5 inches, just the right size to slip into a coat pocket or a purse. The plastic spiral binding allows the book to be opened wide and to lay flat on a table or knee (or bar) for note taking. Such a handy format is worth the consideration of organizing committees for future annual meetings.



Greg Gaines presented a workshop on Living Dinoflagellates on Wednesday morning. His lectures covered the morphology and ecology of living dinoflagellates, including life cycles, sexuality, cyst formation, bioluminescence and red tides. The workshop was also entertaining because Greg showed a video tape of diverse dinoflagellates moving about and making a living, some by feeding on diatoms and other dinoflagellates. Their movements seemed to be choreographed to appropriate background music that ranged from straussian ayres to the Chattanooga Choo-Choo (for chain-forming dinos, of course)!

David J. Batten chaired a seminar on the "Paleobotany of Pollen and Spores" on Wednesday afternoon. The session was an interesting mixture of oral and poster presentations emphasizing the necessity to treat spores and pollen as botanic entities, rather than just morphological objects. The participants contend that such treatment will enhance evolutionary, paleoecological and biostratigraphic studies.

The technical sessions on Thursday and Friday contained a wide variety of papers. (See preliminary program published in the July issue of the Newsletter, Vol. 20, No. 3).

The Annual Business Luncheon:

The annual Business Luncheon was held October 9, in the Bluenose Room of the Chateau Halifax Hotel. This room was named after the famous Canadian racing schooner. Perched atop the Chateau Halifax, luncheon attendees enjoyed a spectacular view of Halifax Harbor. It was just the right setting for the dramatic entry by the Board of Directors, who were piped into the luncheon by a bonnie lass playing a bagpipe.

President **Don G. Benson, Jr.** presented the AASP Distinguished Service Award to **John A. Clendening** (see below) and the L. R. Wilson Best Student Paper Award to **Thomas D. Demchuk** (see below) during the luncheon.

Presidents Address
1987 Annual Luncheon

Once upon a time, a Prince of Palynology - **Vaughn Bryant** - told a fairy tale presenting an extinction scenario for the science of palynology and its practitioners (Vaughn Bryant's Presidential Address, 1985 AASP Annual Meeting, El Paso, Texas). Now, two years later, some of his fairy tale is a fact. Some scientists who were active palynologists have been laid off, offered and accepted early retirement or changed disciplines to preserve their income. Others still practicing the science of palynology are nearing retirement and are wondering if their early retirement package will be as good as, better, or worse than those offered in the past. Those not near retirement age sometimes wonder if they will get to retirement - as palynologists. And others who once considered palynology as a career choice are now in other fields of endeavor. We, as an organization, can do nothing to influence the price of oil and the hiring/firing practices of large corporations.

We, as individuals, however, are capable of creating a grass roots demand for our discipline. If each individual could help solve a specific problem for a co-worker in a related field, the word might be passed on such as:

> "Hey, that palynologist down the hall provided key information that saved us a bunch of money. That palynologist might be able to help you!"

Wouldn't it be great if you helped solve three or four problems! You might have more requests than you could handle and you might hear a supervisor tell a higher level boss -

> "Hey, we need another palynologist. We cannot properly evaluate this play without palynologic assistance in this basin."

Believe it or not, these comments are made from time to time - even in today's miserable economic environment. They are the result of hard work by palynologists who sell themselves and their science to their colleagues and managers. Get out of your office. Go look for some problems where you can make a contribution to their solution. This approach works - I've used it many times. If enough people get out of their offices, solve problems and create a demand for palynologic services, university programs will develop. I ask myself the following questions every two weeks or so:

1. Have I talked to a geologist recently?
2. Have I talked to a geophysicist recently?
3. Have I saved my organization any money or helped to steer them in the direction of a potentially profitable venture recently?

If I get two no's out of those three questions, I know its time to get out of my office and get more involved. I would urge a similar approach to each of you.

Thanks - I have enjoyed the honor of being President of this group.

Don G. Benson, Jr.
President, AASP (1986-1987)

John A. Clendening Receives Distinguished Service Award

John C. Clendening was presented with the AASP Distinguished Service Award by President **Don G. Benson, Jr.** The presentation was made at the Annual Business Luncheon, October 9 in the Bluenose Room of Chateau Halifax. The award read:

> "The American Association of Stratigraphic Palynologists bestows its Distinguished Service Award upon John A. Clendening for his sustained and dedicated service to the organization, providing outstanding leadership in a variety of executive offices and highly capable guidance to a broad array of committees."

Congratulations, John! And thank you.

Thomas D. Demchuk Wins the L. R. Wilson Best Student Paper Award

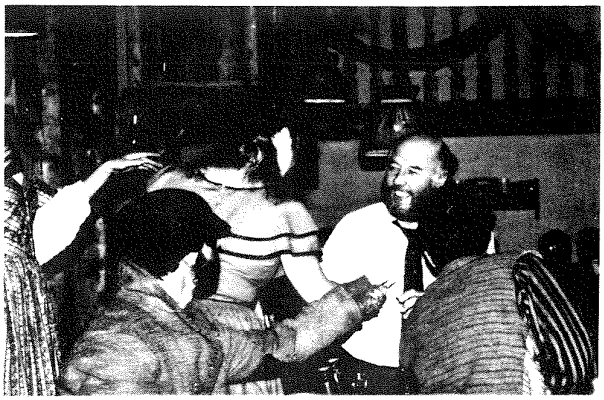
Thomas D. Demchuk of the Geology Department, University of Alberta, won the 1987 L. R. Wilson Best Student Paper Award for his presentation: "A Modified Momipites-Caryapollenites Palynofloral Lineage: Central Alberta Paleocene Zonation". The award was for $300 and was accompanied by a plaque. Congratulations, Tom.

Social Events

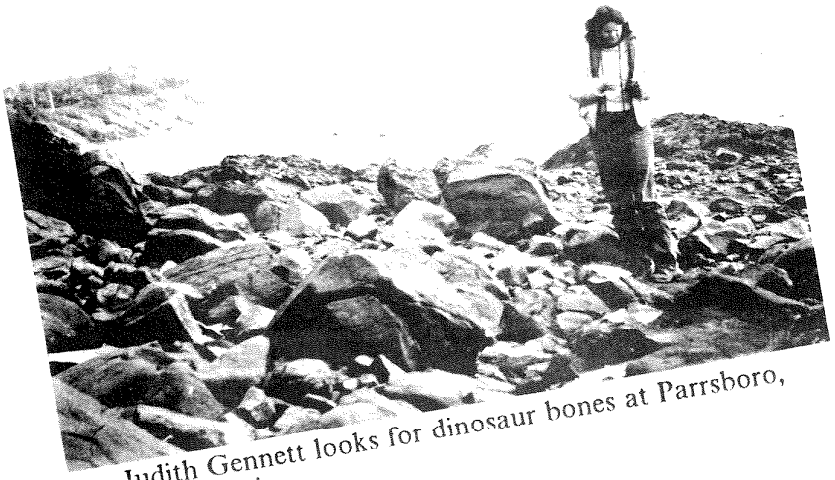
The social events of the meeting included an ice breaker, a cruise on Halifax Harbour and a lively dinner hosted by the Historic Feasts Company. All of these events were well organized and enjoyable. The cruise around Halifax Harbour on the motor launch Haligonian II started out in a moderate fog, but it soon cleared off and the evening became pleasant and almost crisp.

Dan Habib, Doug Nichols and Farley Fleming.

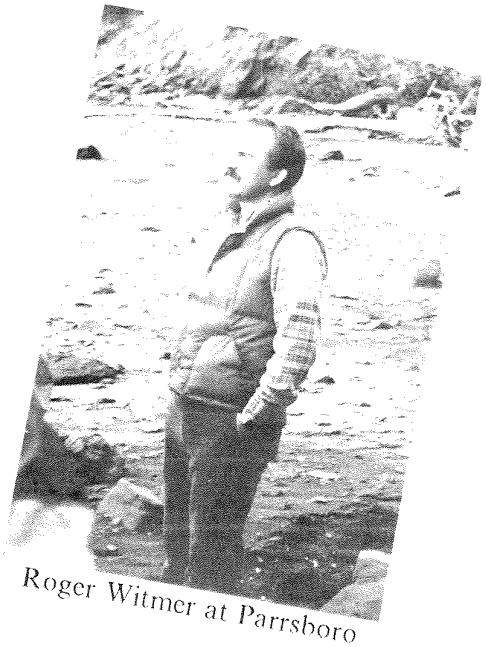
The cruise was followed by a feast and farce put on by the Historic Feast Company. The waiters and waitresses were also actors and actresses. They were dressed in historic costume of the last century and performed an entertaining farce that involved the audience in their plot. All the while, they served a five-course meal that included steak and lobster.



Geofrey Norris was selected from the diners to help conclude the play and did such a good job that some concern was voiced that he may throw off his career in palynology for a new life in the theater!



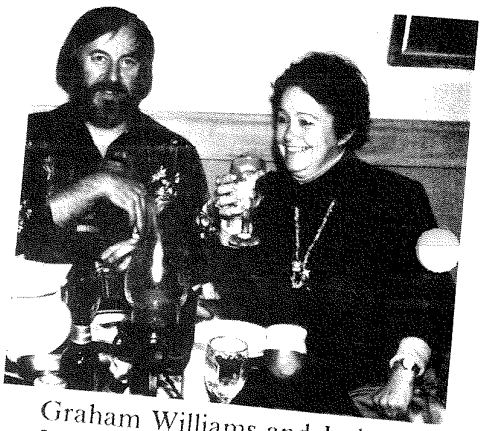
Judith Gennett looks for dinosaur bones at Parrsboro, Nova Scotia.



Roger Witmer at Parrsboro

Sedley Barss, telling another joke at the Luncheon.

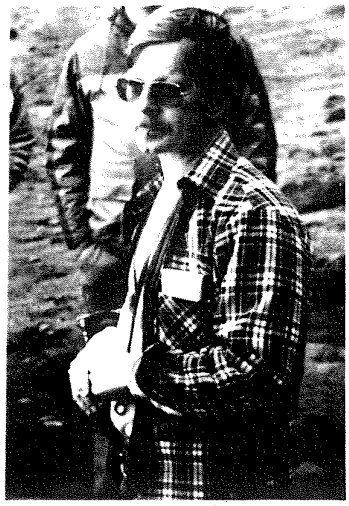
The waitress/actresses at the Historic Feast also gave neck massages, in this case to Martin Head. Roger Witmer returns the favor.



Graham Williams and Judy Lentin enjoying the Historic Feast.

Sarah Damassa, Halifax Town Crier Peter Cox and Mrs. W. R. Evitt discuss mass communication (for small masses!)

Loretta Satchell takes a break from the poster displays.



Bob Grantham.

The field trip was led by **Bob Grantham** (Nova Scotia Museum) and **Peter Hacquebard** (Geological Survey of Canada). It was a combined geologic-scenic tour of northern Nova Scotia. The leaves on the trees foretold the approach of winter with a fantastic mix of brilliant and muted colors, much to the delight of the 65 field trip participants.

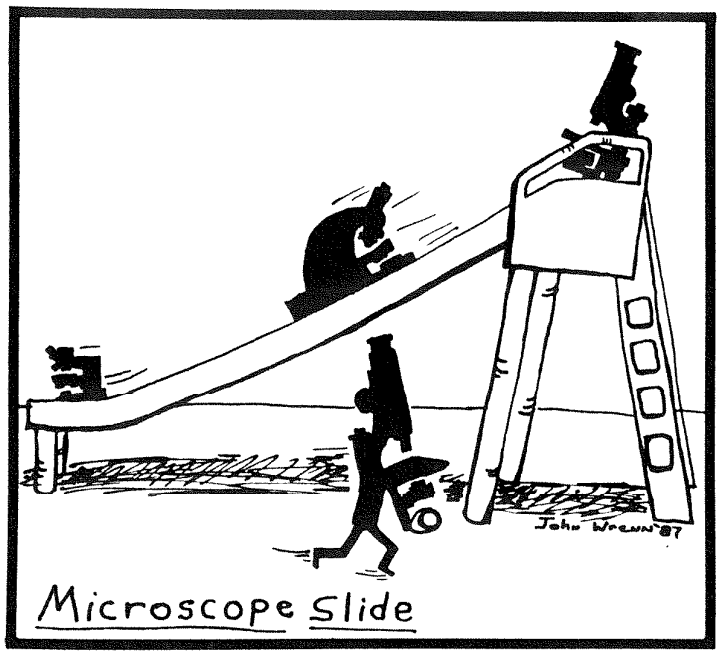
The first stop was the Triassic dinosaur locality near Parrsboro, on the Bay of Fundy. This locality has become famous for the abundant vertebrate fossils recovered from the Triassic-Lower Jurassic redbeds and volcanics (yes, volcanics!) in the Fundy Graben. (An interesting brochure on this locality entitled "Dawning of the Dinosaurs," is available from the Nova Scotia Museum, Halifax, Nova Scotia.)

The second stop was the famous Joggins locality, where the coal-bearing beds of the Pennsylvanian Cumberland Group are exposed. Cyclic sedimentation buried whole forests, and fossil tree stumps can be seen in growth position and scattered about bedding planes.

A trip down into a coal mine at Springhill was the third and final stop. The trip was led by a very colorful fourth generation miner who retired when the mines were closed years ago. The coal beds examined in the mine are also part of the Cumberland Group. (Everyone agreed that looking at coal samples and palynomorphs in the laboratory was a lot better than mining them! We all left with a high regard and sympathy for the hard life of the miners.)

Thanks are extended to Bob and Peter for a grand field trip.

Sharma Gaponoff on the Bay of Fundy.



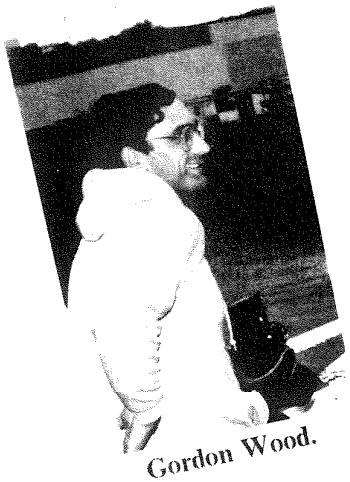
"Computer Show and Tell" - A Retrospective View

AASP's 20th Annual Meeting at Halifax provided the venue for an exciting informal workshop on palynological computing software and various hardware gadgetry. The workshop was held both at the Chateau Halifax Hotel and at the Bedford Institute of Oceanography. The Bedford Institute exhibits were seen by over 50 people while much additional interest was generated by exhibits in the poster session area. I was a little surprised that more contributors were not forthcoming and sensed an (unfortunate?) reluctance amongst people to exhibit something that worked but was not quite finished. The corollary of this was the very high quality of those exhibits that were offered. I have outlined below (in no particular order) some of my own impressions of the various exhibits.

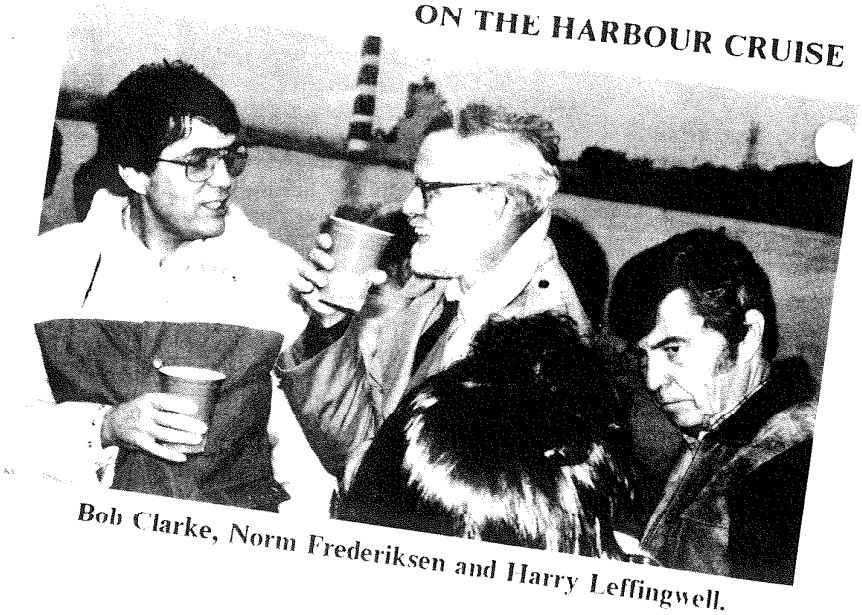
1. **Ray Christopher** gave a detailed presentation of the computerized data handling system which has recently been developed at ARCO Oil and Gas. It allows the micropaleontologist to enter data directly from the microscope and to then generate a variety of eye-catching range/distribution charts, paleologs, well summary reports, sample reports and so on. The micropaleontologist is spared much time consuming report writing and can spend more time at the microscope. Reports so produced have a standard format and are not prone to drafting and "secretarial" errors. Data is entered by an electronic pen and tablet, the latter having a printed overlay of species and options. The overlay is printed by the system and can be changed at will. Ray provided a 20 page hand-out showing examples of output.

2. **Felix Gradstein** (G.S.C) demonstrated various quantitative stratigraphic methods including Ranking and Scaling (See D'Iorio, M.A. et al., AASP Prog. and Abstr. Vol, p.48) and Graphical Correlation. For those of you who missed Felix's poster or computer presentation, a 17 page hand-out is available from him. Various IBM p.c. compatible programs and

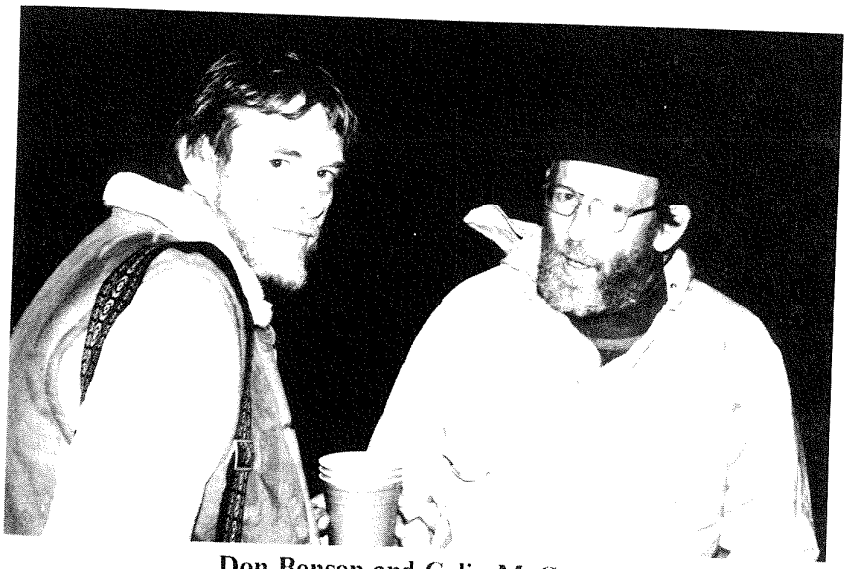
ON THE HARBOUR CRUISE



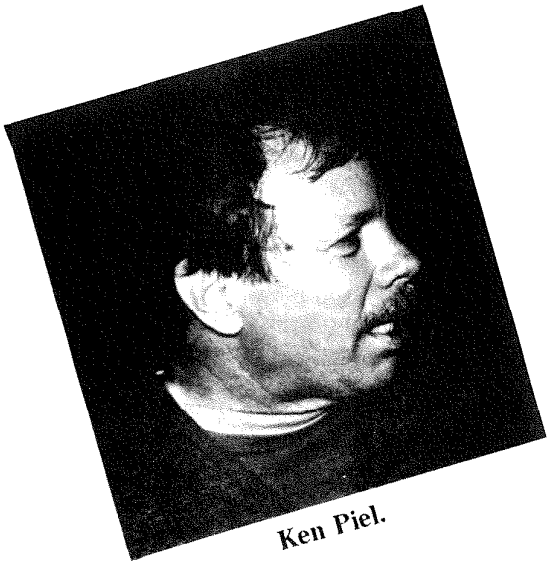
Gordon Wood.



Bob Clarke, Norm Frederiksen and Harry Leffingwell.



Don Benson and Colin McGregor.

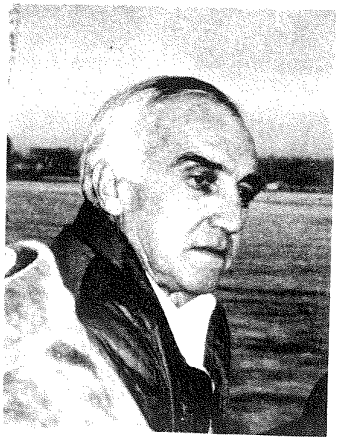


Ken Piel.

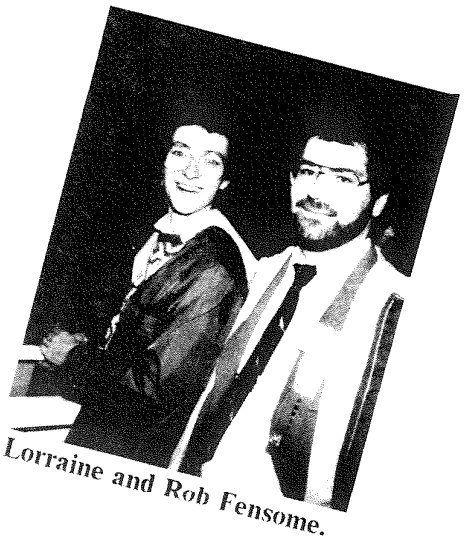
John Shane and Graham Williams decide on the course for the cruise. (Graham's the one with the trifurcate process!)

ON THE HARBOUR CRUISE

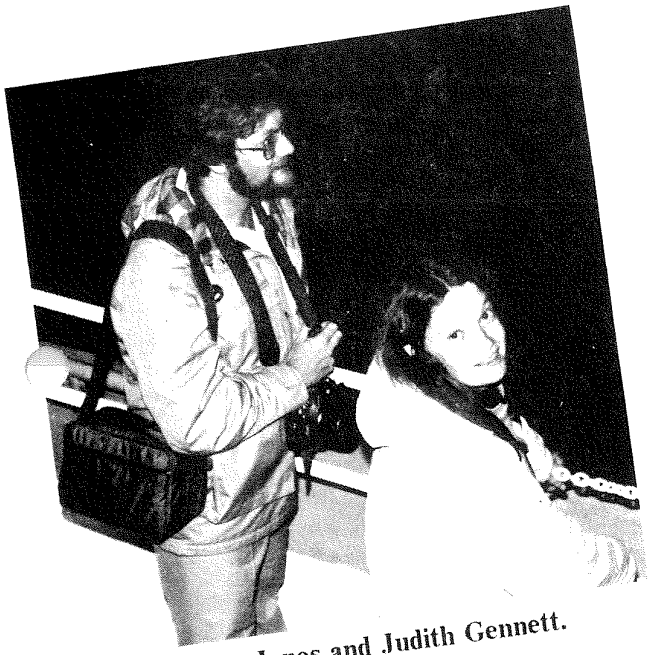
Bill and Mrs. Cornell.



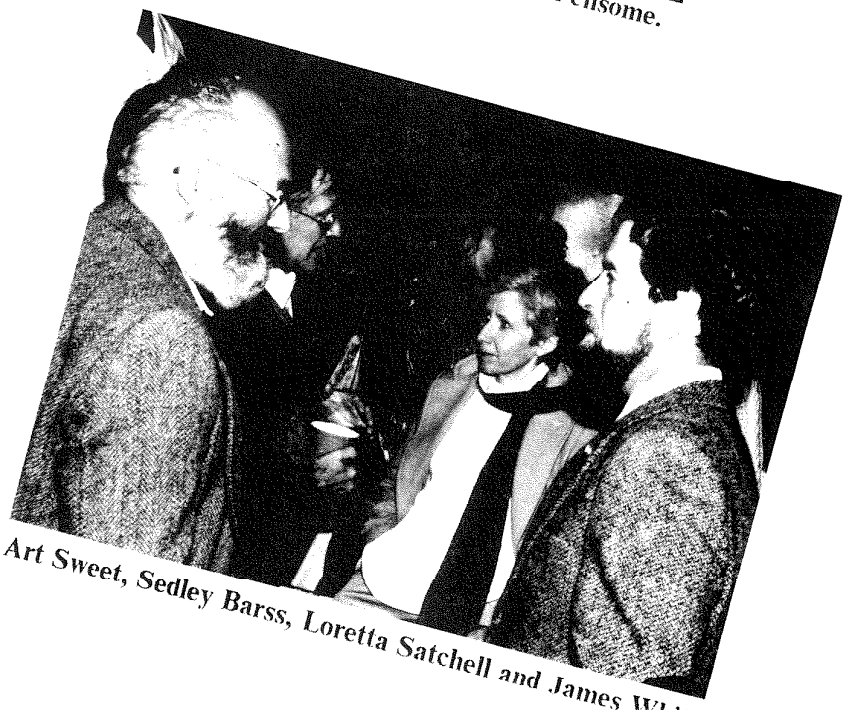
John Bennett.



Lorraine and Rob Fensome.



John Jones and Judith Gennett.



Art Sweet, Sedley Barss, Loretta Satchell and James White.

Pierre Zippi, Bob Ravn and Jeff Stein.

corresponding cookbooks on how to do Ranking and Scaling (RASC), Graphical Correlation (GRACOR), Correlation and Scaling in Time (CASC), and Burial and Subsidence History (BURSUB) are available from the Geological Survey of Canada at nominal charge. Contact Felix Gradstein (G.S.C., Atlantic Geoscience Centre, Bedford Institute of Oceanography, P. O. Box 1006, Dartmouth, Nova Scotia, B2Y 4A2; or phone (902) 426-4870) for details on these.

3. Additional Ranking and Scaling and other statistical packages for micropaleontological data handling, were also ably demonstrated by Alethic Software Inc. (52 Parkhill Road, Halifax, N.S. B3P 1R5; phone: (902) 423-9860).

4. **Pierre Zippi** (Univ. of Toronto) demonstrated a useful graphical ternary plotting program - "Ternary Plot" - for the Macintosh which has applicability both to palynology and geology at large.

5. **Lou Maher** (Univ. of Wisconsin) demonstrated various graphical displays of pollen data using an IMB AT p.c. (with enhanced graphics, i.e., EGA card). Lou showed how dissimilarity matrices could be converted into color maps to enable easy visual recognition of spatial patterns. Quite clearly graphic matrix maps have an important utility in zoning and correlating cores. Lou's other message, that the personal computer rather than the mainframe is the way to go for most of our computing tasks, was underscored by the fact that all contributions to the "show and tell" were developed for personal computer use.

6. **Geoff Norris** and **Martin J. Head** (Univ. of Toronto) presented methods for range charting and bibliographic filing on an Apple Macintosh computer. Both the accompanying poster (graphics and all!) and those of Pierre Zippi (U. of T.) were easily generated with Apple Macintosh personal computers and laser printer. It was shown that while the "Macintosh Plus" is not a heavy duty number-cruncher, its low cost, user-friendly interface, flexibility and professional quality graphical output make it a tempting investment for the palynologist.

7. **Peta Mudie** (G.S.C), using a video presentation in conjunction with her poster, demonstrated a versatile computerized microscope system (developed by Mudie, Saunders and Dabros -see Prog. and Abstr. vol, p.122) that can automatically count sporomorphs (especially useful for slides which are saturated with palynodebris), can perform shape analysis (possible applications for studying Normapolles pollen as an aid to classification?) and do many other things. The system gets a little confused with very spiny or hairy cysts, sometimes treating them as solid objects. However, its recognition of a poorly orientated bisaccate pollen sitting amongst a mass of palynodebris was most impressive. This is achieved because the system can recognize shapes hierarchically, according to their different optical densities. The software is small enough to run on a p.c. I am sure Peta would be happy to send further information on her automated microscope system upon request.

The concept of a Computer Workshop evolved during discussions with Geoff Norris. It would not have reached fruition without the support of Rob Fensome and Sedley Barss of the Organizing Committee. Technical support at the Bedford Institute was provided by Art Jackson. Both access to computing facilities at the Bedford Institute and organizational support were provided by Felix Gradstein, to whom I am especially grateful. Finally, all contributors deserve high praise for the exceptional quality of their presentations.

I think it is most important that palynologists keep abreast of technological advancements, especially as we enter a new era of cheap computing, photonics and LASER technology. If anyone feels they would like to see another computer/technology workshop in, say two years time, or has any ideas concerning such a venture, I would greatly appreciate their views.

Martin J. Head
Organizer, AASP Computer Show and Tell
University of Toronto

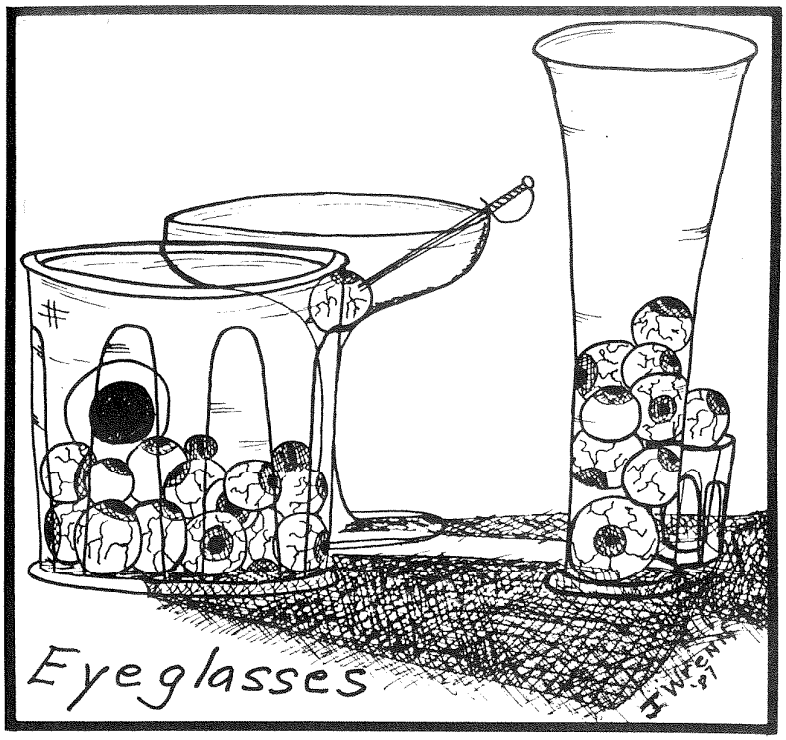
TRAVEL SUPPORT FOR THE 7TH INTERNATIONAL PALYNOLOGICAL CONGRESS BRISBANE, AUSTRALIA, 1988

An ad hoc committee of AASP Board members (Chairman Norm Frederiksen, Pat Gensel, and Bill Cornell) has submitted a travel grant proposal to the National Science Foundation (NSF) asking for $30,000 in financial support for airfare of AASP members traveling to the 7th IPC in Brisbane during August/September 1988. Enclosed in this issue of the AASP Newsletter is a Travel Grant Application Form for submission to the AASP Peer Review Committee (PRC). The PRC will evaluate the individual applications. The Committee is chaired by Don Benson (ex-President of AASP) and will include American and foreign AASP members who are not themselves candidates for support from the NSF grant. Details for applying are spelled out on the Application Form at the back of this Newsletter.

Following is the timetable for the proposal to NSF and applications from individual AASP members to the PRC:

Grant proposal due at NSF	August 15, 1987
Deadline for NSF decision on grant proposal	December 31, 1987
Deadline for RECEIPT of application forms by the PRC	February 1, 1988
Decision reached by PRC on individual grant applications; AASP Board of Directors is notified of the results	March 31, 1988
Board of Directors ratifies decisions of the PRC and sends out letters to individual applicants	April 15, 1988

The January 1988 AASP Newsletter will include a notice as to whether or not the AASP was awarded the NSF grant. However, if you do not get your copy of the Newsletter before you have to send off your proposal to the Peer Review Committee, you can call Norm Frederiksen to find out the NSF decision: 703-648-5277. An application form to AASP for travel funds to attend the 7th IPC is attached at the rear of this Newsletter.



CURRENT RESEARCH

The University of Arizona, Tucson, Arizona

The University of Arizona has had an active palynology program since the early 1960's. The first International Pollen Conference met at the University of Arizona on April 23-27, 1962. At that time, the palynology laboratory was housed on Tumamoc Hill on the west side of Tucson. **Paul Martin's** text, The Last 10,000 Years, A Fossil Pollen Record of the American Southwest, was published the next year, and **Gerhard O. W. Kremp** had finished nearly 20 volumes of The Catalog of Fossil Spores and Pollen. Kremp and Martin were not the only palynologists on Tumamoc Hill. **Jane Gray** had published three papers in Science on pollen in southwestern sediments, and **Lucy Cranwell Smith** had joined the faculty as Research Associate in 1961.

Other books by University of Arizona palynologists include Morphologic Encyclopedia of Palynology, by G. O. W. Kremp (1965); The Spores of the Pteridophytes, by G. O. W. Kremp and T. Kawasaki (1972); Pollen Flora of Argentina, by V. Markgraf and H. L. D'Antoni (1978); and Late Quaternary Vegetation and Climates of the American Southwest, by B. F. Jacobs, P. L. Fall, and O. K. Davis (1985).

Emphasis shifted toward Pleistocene and Holocene palynology after Professor Kremp retired to devote full-time to Palynodata and Jane Gray accepted a faculty position at the University of Oregon. Pollen analysts at the University have always specialized in nonstandard sediments. Although the faculty and students at the University of Arizona have produced many diagrams from lakes and bogs, their investigations have frequently concerned archeological material, alluvial sediment, cave deposits, the dung of extinct animals, and most recently packrat (Neotoma) middens.

Currently, the University of Arizona is the home of six palynologists:

Owen K. Davis' (Geosciences) research interest are the Quaternary vegetational and climatic history of arid North America.

Gerhard O. W. Kremp (Geosciences, emeritus) is Director of Public Relations for PALYNODATA.

Paul S. Martin (Geosciences) now devotes his time to Pleistocene megafaunal extinctions. His book, Quaternary Extinctions, was published in 1984. Paul is working on another book dealing with packrat middens.

Lucy Cranwell Smith (Geosciences) is currently studying the Quaternary palynology of bogs in Hawaii.

Stephen L. Buchmann of the Carl Hayden Bee Research Center offers a course on pollination ecology.

Mary Kay O'Rourke's (Arizona Health Science Center) research interests include atmospheric pollen, mould, and their relationships to respiratory disease.

Six graduate students are currently engaged in palynological research at the University of Arizona, and one has recently completed his study.

R. Scott Anderson recently completed his doctoral dissertation on the vegetation and climate history of the southern Sierra Nevada and has accepted a faculty position at Northern Arizona University. Scott is the fifth palynology student to graduate in as many years.

Faith L. Duncan, doctoral candidate in Anthropology, is studying three lakes in Marin County, California.

Patricia Fall, doctoral candidate in Geosciences, is studying late-Glacial and Holocene vegetation change in the Colorado Rockies.

Suzanne K. Fish, doctoral candidate in the Department of Arid Lands, is analyzing pollen from several archeological sites near Tucson.

Nancy Giggy, masters student in Geosciences, is studying pollen in Neotoma middens from Picacho Peak, California.

Jenal Kailey, masters student in Geosciences, is studying a 7.5 m core from Mono Lake California.

David Shaffer, doctoral candidate in Geosciences, is studying the history of the Arizona Monsoon through the analysis of several sites in the Southwest.

In 1984, the Department of Geosciences established the Cranwell Smith Award in palynology. This award is given once a year to graduate students at the University of Arizona whose theses or dissertations are concerned with one of the various aspects of palynology.

In 1986, the palynology laboratory moved into the newly-completed Gould-Simpson Building. The facilities now include a walk-in cooler for lake sediment storage, a two-room preparation laboratory with positive pressure and filtered air, and a microscope facility with references and pollen collection.

Owen K. Davis
Department of Geosciences

Palynology at the University of Queensland St. Lucia Queensland, Australia

The Department of Geology and Mineralogy is well equipped for palynological research. There are two preparation laboratories and an outstanding research library (the Dorothy Hill Geology Library). The University's Electron Microscope Centre nearby provides all requisite facilities for scanning and transmission electron microscopy.

Husband and wife team, **Geoffrey Playford** and **Mary Dettmann**, have been associated with the development of palynology at the University of Queensland since 1963. They met in Cambridge in the late 1950s while conducting research for their doctorates under the supervision of Norman Hughes. They owe their initial palynological interests to prior studies with pioneering Australian palynologists, Basil Balme, and the late Isabel Cookson, at the University of Western Australia and the University of Melbourne, respectively.

Geoffrey Playford (Department of Geology and Mineralogy) is engaged in a range of Paleozoic and Mesozoic projects dealing with miospores and acritarchs. **Donna Satterthwait** (Senior Research Assistant) and **Marshall Butterworth** (Laboratory Assistant) are assisting him on a major Carboniferous research project.

Jean-Pierre Schmitt, a postdoctoral fellow from Strasbourg, is studying the palynology of coals and associated sediments of the Jurassic Walloon Coal Measures near Brisbane.

There are three graduate students currently conducting palynological research in the Department. **Barry Millsteed** (PhD candidate) is working on Upper Carboniferous-Permian palynology of the Galillee Basin. **Stephen McLoughlin** (PhD candidate) is studying the Permian paleobotany of the Bowen Basin. **Linda Frew** (MSc) is working in the youngest part of the section. She is studying the Tertiary oil shales of coastal Queensland.

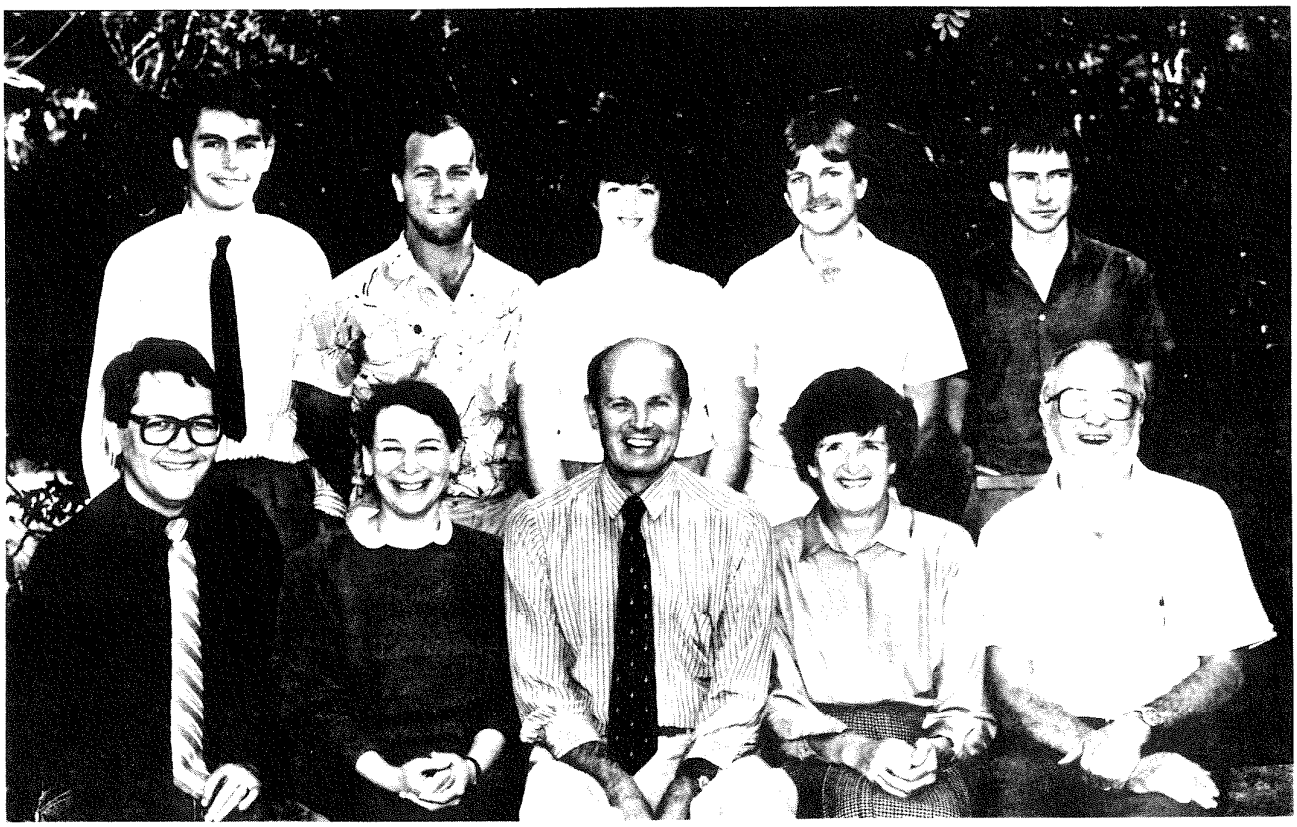
Mary Dettmann is a Research Associate in the Department of Botany and is continuing her Mesozoic-Tertiary palynological studies. Mary and **Professor Trevor Clifford** are exploring the history of Australian ferns using extensive fossil and extant material.

David Jarzen (National Museum of Natural Sciences, Ottawa) is visiting the Department on a 12 months sabbatical leave from the museum. He is undertaking a joint project with Mary Dettmann on latest Cretaceous-early Tertiary palynofloras.

Other recent visitors have included Reed Wicander (Central Michigan University) and Andrew Scott (University of London).

The scenic subtropical setting of the University of Queensland campus is the venue for the forthcoming 7th International Palynological Congress (August 23-September 3, 1988). Geoffrey Playford is Congress Co-Chairman (with Noel de Jersey) and Mary Dettmann is Programme Convener. (See other information on the 7th IPC elsewhere in this Newsletter.)

Geoffrey Playford



Palynolgoical/paleobotanical researchers at the University of Queensland. Front row (left to right): David Jarzen, Donna Satterthwait, Geoffrey Playford, Mary Dettmann, and Trevor Clifford. Back row (left to right): Jean-Pierre Schmitt, Marshall Butterworth, Linda Frew, Barry Millsteed, and Stephen McLoughlin.

MEETINGS OF INTEREST

7th International Palynological Congress
Brisbane, Australia (August 28-September 3, 1988)

Preparations for the 7th IPC are now well advanced. Based on the encouraging number of responses to the First Circular, there is every expectation that the Congress and its attendant excursion program will be an outstanding success.

The Second Circular has now been distributed, and Congress registration/field trip bookings may be made on the registration form enclosed therein. Although the deadline for payment of advance registration and excursion deposits is June 28, 1988, persons particularly interested in any of the listed excursions are advised to register/book as early as possible. This may prevent disappointment, as the number of places on each excursion is limited.

Moreover, the 7th IPC has to compete with World Expo '88 and the Australian Bicentennial celebrations for accommodation and other tourist related services. Consequently, some excursions, notably those running to popular tourist areas, may have to be cancelled, unless their financial viability can be established at a stage early enough to secure (by payment of deposits) the tentative bookings already made for accommodation, transport, etc.

All inquiries should be addressed to:

7 IPC
UniQuest, Ltd.
University of Queensland,
ST LUCIA, QLD 4067
AUSTRALIA

Telex: AA40315 UNIQLD
Telephone: (07) 377 2733
International: 61-7-377-2733

A CALL FOR PAPERS
Correlation in Hydrocarbon Exploration
Bergen, Norway (October 3-5, 1988)

The Norwegian Petroleum Society (NPF) is planning a three day conference concentrating on all aspects of correlation in hydrocarbon exploration. Keynote speakers invited to the conference include:

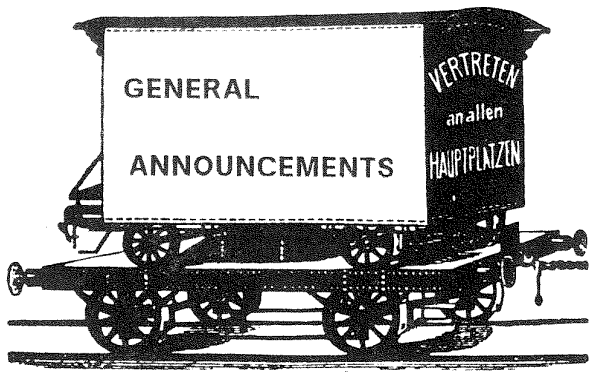
J. F. Dewey (Oxford)
A. Embry (Calgary)
P. Vail (Houston)
F. Surlyk (Copenhagen)
L. Riley (London)

Contributed papers are sought for this meeting. Oral presentations will be 20 minutes long, and the organizers intend to publish the papers after the meeting. Abstracts 500 words or less are due no later than February 1, 1988.

Additional information may be obtained from the:

Norwegian Petroleum Society (NPF)
P. O. Box 1897-Vika
0124 OSLO 1,
Norway
Attn: Elisabeth Holter

Telex: 77 322 nopet n
Telefax: 02/207211



I was trying to get Harry Leffingwell!

Those of you who have tried to reach President-Elect Harry Leffingwell at the extension published in the AASP Directory (X375) know that that is not his extension. You can, however, reach Harry at (714) 528-7201, X1375.

The Devonian Times

Those of you working in the Devonian may be interested The Devonian Times (not be confused with the news organ with a similar name in New York). The goal of The Devonian Times is to keep Devonian workers (though you do not have to be that old to read this newsletter) in touch with each other.

The issue that Editor **Skip Roy** sent me (Vol. 1, No. 4, April 1987) contained reports on current research in Belgium, Canada, China, France, Ireland, Poland, West Germany, and the U.S.A. Skip also reported on a mammoth bibliographic project whose goal is to compile a complete master bibliography of Devonian studies.

The Devonian Times is published six times per year, cost $15 U.S. per year (U.S. and Canada, $18 U.S. elsewhere) and can be ordered from:

Dr. Skip Roy, Editor
The Devonian Institute
Alaska Pacific University
Anchorage, Alaska 99508
U.S.A.

PALYNOLOGY AT THE NANJING INSTITUTE OF GEOLOGY AND PALEONTOLOGY, PEOPLE'S REPUBLIC OF CHINA

Last year, I had the opportunity to spend three and one-half months at the Nanjing Institute of Geology and Paleontology working on an Upper Devonian spore and acritarch flora with Dr. Lu Li-chang. My research was funded by the Committee for Scholarly Communication with the People's Republic of China and gave me the chance to spend time at one location where I could get to know the individuals better and experience Chinese palynology first hand. In addition to my work at the Institute, I also had the opportunity to do some field work for possible future collaborative research.

My primary research project was to compare the Upper Devonian acritarchs from a section in northwest China to those described elsewhere in the world. Unfortunately, the material I had to work with was not very well preserved. However, it was still usable and compared favorably with assemblages in North America and Europe. The spores were in even worse condition, and not much could be done with them.

The facilities were adequate although probably much different than most western palynologists are used to. For example, there were only two microscopes with camera attachments, so you did not take pictures as you worked. Also, it seemed as if everyone had a different brand of microscope. Consequently, it was necessary to circle the specimens to be photographed or to work out a conversion scale that calibrated the different microscopes.

Chinese black and white film tends to give a grey picture without sharp definition. Being aware of this property of Chinese film, I took my own Kodak film, which gave a wider range of tones and finer grained images.

The library facilities at the Institute were quite good, and almost all the major journals were available. What was not available was generally easily procured from someone's reprint collection.

The palynologists and paleobotanists I met were, for the most part, eager to learn about western palynology and palynological techniques and they were willing to share their knowledge and expertise. Most spoke some English, and I really did not have much trouble communicating with them, considering I did not speak Chinese. The emphasis, particularly among the post-graduate students, was on proficiency in English and on getting an opportunity to study abroad.

There is a tremendous amount of basic palynologic work to be done in China and not enough palynologists to do it. Most of the work involves describing the palynomorph assemblages and correlating sections, and while not always glamorous work, it is the foundation of biostratigraphic palynology.

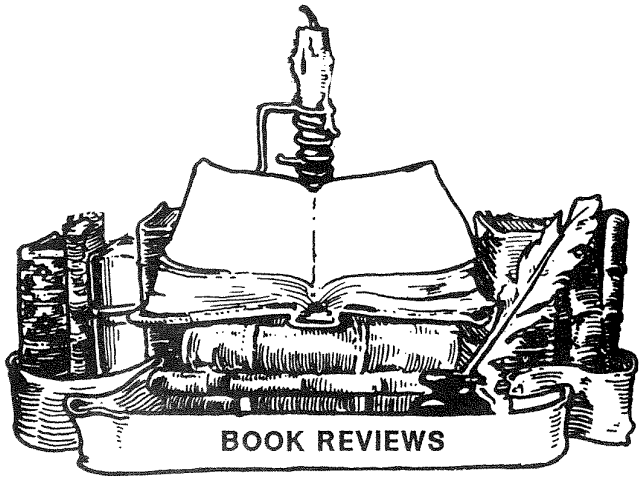
Overall, the experience was worthwhile from both a scientific and personal standpoint. The people I met were extremely friendly and helpful, and they went out of their way to make sure my stay was pleasant and productive. I enjoyed getting to know them and look forward to seeing them again.

Reed Wicander
Department of Geology
Central Michigan University
Mt. Pleasant, MI 48859

UPCOMING PRESENTATIONS BY AASP MEMBERS

If you are presenting a paper at an upcoming meeting, other than the AASP Annual Meeting, let your associates know. Send the pertinent data, as exemplified by the following announcement, to the Newsletter editor.

> **Dating the mid-Cretaceous Une Formation, Central Colombia, by means of sporomorphs and its relation to the African-South American microfloral province. The ASA province updated.**
>
> **Duenas-Jimenez, H. and Herngreen, G. F. W.** (Bioss Ltda., Apartado Aereo 52514, Bogota D. E., Colomia and Geological Survey of The Netherlands, P. O. Box 157, 2000 AD Haarlem, The Netherlands)
>
> This paper will be presented at the International Symposium on Circum-Mediterranean Palynology, April 19-23, 1988, Utrecht/Zeist, The Netherlands.



Dinoflagellates,
Edited by D. L. Spector, Academic Press, Inc., Orlando, FL, 1984, 545 pp., $75.00.

Botanists, zoologists, microbiologists, paleontologists, physiologists, geneticists, biochemists, morphologist, systematics, and others seem to find these numerically, ecologically, and evolutionary important unicells fascinating and rewarding objects of study. For many years now,

dinoflagellate biology has suffered because of it. Too many researchers from too many disciplines have been studying them from their own perspectives without recognizing pertinent other aspects of dinoflagellate biology. The relationship of fossil cysts and living cells is one example of this. There have been no comprehensive treatises on the whole subject to give researchers in one field a context in which to think about dinoflagellates in general. Schiller's impressive volumes are almost exclusively systematic and now severely out of date, having been written 50 years ago. Sarjeant's 1974 volume, Fossil and Living Dinoflagellates, was the first attempt to treat fossil and living forms together but was premature and incomplete. Dinoflagellates is intended to fill the need for a "comprehensive and up-to-date compendium."

The editor is best known for his ultrastructure work, especially of dinoflagellate chromosomes. In addition to writing an introductory chapter that briefly describes dinoflagellate cell structure and introduces topics discussed in more depth in other chapters, he is the author of chapters on dinoflagellate nuclei and unusual cellular inclusions. The nuclei chapter is the most thorough review of this subject to date and abundantly illustrated with electron micrographs and helpful drawings. The inclusions chapter is more superficial, dealing only lightly with what surely must be two of the most unusual inclusions in dinoflagellates: the ocelli of the Warnowiaceae and the peduncles and other extensible organelles of free-living and parasitic forms.

The chapter on culturing dinoflagellates, by Guillard and Keller, is the most comprehensive and useful treatment to date of this subject, which for many is an arcane form of artistic expression. After reading this chapter, a researcher would require more than incompetence to be unable to culture at least the more commonly cultured forms -- he would need malice.

Other particularly noteworthy chapters are those by Netzlel and Durr on the cell cortex, by Beam and Himes on genetics (although both of these chapters are difficult) and by Steidinger and Baden on toxic marine forms. All of the chapters are written by internationally recognized authorities and cover taxonomy, the cell cycle and mitosis, sexual reproduction, physiology and biochemistry, circadian rhythmicity, and cysts and evolution. Thus, the entire range of knowledge of dinoflagellate biology seems to be covered.

However, covering the subject is not enough to be truly comprehensive. Topics must be covered evenly and in depth, which this book does not do. More topics should have been discussed in as much detail as the chapter on nuclei and culturing. Ecology is lightly scattered in a handful of chapters with the deepest treatment found in the chapter on toxic forms. Very little is said concerning adaptive morphology. These are particularly serious omissions for paleontological readers. The parasitic forms are scarcely mentioned. The extensive research on photosynthetic physiology (Prezelin, et al.) is entirely overlooked. Almost nothing is said of the freshwater forms, except as examples of sexual reproduction and phagotrophy. In short, the book has chosen only certain topics to cover well.

The editing is somewhat inconsistent. For example, the names vary from chapter to chapter (e.g., *Gonyaulax* or *Protogonyaulax*). Also, two different systematic schemes are presented: One in Dodge's chapter on taxonomy and a different one in Loeblich's chapter on evolution. Neither author explains the differences between them or even refers to the other.

More confusion is added in some of the writing. In the chapter on taxonomy, it is implied that the Kingdom Protoctista (=Protista) was proposed to contain only dinoflagellates (p. 18). It would, in fact, contain all eukaryotic unicells (i.e., what are commonly called protists). The chapter on the cell cortex begins inauspiciously with a very confusing use of the term "theca" (p. 44). Conventionally, "theca" is used to refer to the cellulosic contents (when present) of cortical (=amphiesmal) vesicles, not to the pellicle. The chapter on toxic forms may leave the mistaken impression that all blooms are toxic. The chapter on unusual inclusions implies a continuum of eyespot complexity (p. 372). In fact, there are two distinct classes: eyespots (*sensu stricto*) and ocelli. Ocelli are not really eyespots but complex structures apparently analogous to vertebrate eyes.

The discussions of dinoflagellate taxonomy and evolution are contradictory and confusing. Loeblich's evolutionary scheme differs from those of other dinoflagellate taxonomists. For example, in Figure 1, the athecate Zooxanthellae are grouped with the tecate forms rather than the rest of the athecate forms. This is contrary, for example, to the organization in Dodge's taxonomy chapter. The pattern of dinoflagellate evolution is inferred largely from similarities between the aberrant *Oxyrrhis* and the aberrant, parasitic Syndiniophyceae. One could make equally strong cases for neither being dinoflagellates at all. Loeblich's scheme requires an intricate sequence of developments, reductions and losses of thecal plates, the cingulum and chloroplasts. In addition, neither he nor Dodge seem to have understood that both Eaton's and Taylor's models are idealized templates, which may or may not actually have been ancestral but are meant to be formal, heuristic guides to discovering plate homologies. The traditional Kofoid system was developed for another purpose entirely: the empirical description of plate morphology. The reader is advised to treat these chapters with caution.

The chapter on dinoflagellate cysts may be useful to those fossil workers who are not at all familiar with what is known about the living cysts. Otherwise, the treatment is rather elementary.

Finally, Dinoflagellates is not up-to-date. No comprehensive work on dinoflagellates can hope to be up-to-date; the field moves too quickly because of the large number of researchers and the great interest in these organisms.

All of this means that despite the best efforts of the eminent editor and authors, this book does not fulfill its objectives. Nevertheless, it is a valuable volume for what it does contain and will certainly be an important first resource for workers on fossil and living forms.

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MVSP, A user-supported software package

by Warren L. Kovach, Department of Geology and Mineralogy, Manischal College, University of Aberdeen, Aberdeen, Scotland, AB9 1AS, United Kingdom.

You may have noticed a small item in one of last year's AASP Newsletter offering a multivariate and diversity software package for the princely sum of $5. Five dollars! When commercial packages run $750-1500? What's the catch?

Figuring an investment of $5 was a no-lose proposition; I sent off my money expecting to receive an amateurish and barely usable piece of software. What I got instead is one of the slickest pieces of programming for a personal computer I have seen.

And the catch? There isn't one, at least not much of one. Kovach has requested a modest voluntary contribution of $25 from users who are satisfied with the program, in exchange for being put on the mailing list for updates.

MVSP is designed to run on IBM personal computers and compatible clones. The system is menu-driven and requires little more than a single keystroke from the user to accomplish fairly sophisticated manipulation of data and output files. A major strength of the system is the simplicity of the input file format. Files can be created using data base, spreadsheet, or word processing programs and are identified for MVSP by the addition of single line at the top of the file. The only strict requirement is that the data matrix must be complete, that is, all zeros must be filled in (rather than left blank). labels up to eight characters long can be included for both the rows and columns, a feature which I find particularly handy.

The program is capable of carrying out computations divided into five subroutines:

1. Principal Components Analysis.

   Capable of handling a 55 x 55 data matrix, allows logarithmic transformation of the data with a single keystroke. Prints out loadings for all significant eigenvectors, plus the original data matrix sorted according to the results of the analysis. Scatter plots are also printed out at the discretion of the user.

2. Reciprocal Averaging.

   Options as above, but limited to 45 x 45 data matrix.

3. Similarity/Dissimilarity Coefficients.

   Allows transformation of the data as above, and will switch rows and columns at the user's option. Six different coefficients can be calculated.

4. Cluster Analysis.

   Uses matrix generated by C above or matrix in correct format provided by user. Maximum size 95 x 95. User has choice of weighted/ unweighted pair group/centroid methods. Output file includes order and level of clustering but does not include dendrogram.

5. Diversity Indices.

   Calculates E. H. Simpson's, Shannon's, and Brillouin's diversity indices at the touch of a button. Output file also includes the number of species in a given sample, plus the species evenness value.

Other options include a HELP file and various drive and program default options. The document file is included separately and contains sufficient information to get the novice user off to a flying start.

The greatest strength of MVSP is its ease and flexibility. Although churning out a principal components analysis of a 50 x 50 data matrix on a microcomputer may take more than an hour compared to a few seconds on a mainframe computer, the time is easily made up in the data editing and program initiating phase. The diversity calculation program alone is worth the price of admission, reducing a tedious and uncertain task using a hand calculator to a single keystroke.

The greatest drawback is the relatively small size of the data matrix accepted by the principal components and reciprocal averaging programs. The size limit is apparently not a function of the computing power of the machines but rather a limitation of the programming language which Kovach used. According to the document file, Kovach is working on getting around this limitation, and the problem may be solved by the time this review goes to press. If he can allow the user to include on the order of 100-200 samples in the analysis, the range of application of the program will be greatly expanded.

Other additions which Kovach plans are the inclusion of detrended correspondence analysis among the multivariate ordination programs, and a dendrogram plotting program for the cluster analysis. Detrended correspondence analysis is recommended for many purposes by mathematical ecologists because it introduces less distortion into an ordination plot than either principle components analysis or reciprocal averaging when the data set is noisy. The inclusion of a dendrogram in the cluster output file will greatly increase the utility of that program, and both of these additions will considerably enhance the value of MVSP. I would also like to see percent similarity added to the list of options in the similarity/dissimilarity package.

As it stands, MVSP is a very good piece of software. If Kovach succeeds with his ambitious plans for improvement, I would upgrade my evaluation to excellent. Anyone who relies on a microcomputer and has even a slight interest in multivariate analysis or diversity measures should get a copy of MVSP. For the price, you simply cannot beat it.

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Cities of Clay: The Geoarchaeology of Tells,

Arlene Miller Rosen, 1986, The University of Chicago Press, Prehistoric Archaeology and Ecology Series, $22.00 (hardbound), $9.00 (paperback).

Geoarchaeology is the subdiscipline of archaeology that treats the application of geological concepts and methodologies to archaeological research. Geoarchaeology is concerned with the interpretation of sediments, soils, and landforms at and around a site in order to understand the processes of site formation (how a site was created and later modified) and to place the site within its landscape context. Arlene Rosen's geoarchaeological discussion of tells (anthropogenic landforms common in the Middle East) demonstrates the value of geoarchaeological investigations and the degree to which geoarchaeological interpretations can sharpen traditional archaeological interpretations of tells.

The book is well organized and follows a logical progression in its discussion of tells. Chapter 1 is a short discussion of previous geoarchaeological research on tells. Chapter 2 is concerned with a general discussion of tell formation, its composition, stratigraphy, and structure, and the importance of sedimentological, chemical, and biological studies. The third chapter discusses tell denudation by natural processes and how this affects the archaeological record of a mound. A case study of Tell Lachish, located in Israel, is discussed in Chapter 4. In this chapter, Rosen places the tell within its larger landscape context by interpreting the local alluvial chronology. Chapter 5 is concerned with the textural analysis of mudbricks , and illustrates how these analyses may provide information on the environments close to the site, the social organization, and the social importance of different structures. The sixth chapter describes the results of the microscopic analysis of refuse and floor sediments to elucidate the function of structures. The concluding chapter is a brief summary and stresses the importance of geoarchaeological investigations of tells. Rosen argues that tells are unique archaeological sites, cities built on cities over thousands of years. As such, they are accumulations of refuse, fallen and disintegrating structures, and some natural sediments. As Rosen states, these mounds are artifacts themselves that can provide unique insights into human behavior that should be investigated by geoarchaeologists. Three appendices of specific textural data from tell sediments, a useful bibliography, and an index follow.

The major objectives of this book, according to Rosen, were to: (1) illustrate the processes of tell formation and modification and (2) demonstrate the potential information that could be extracted from tell sediments. Both these objectives have been effectively realized through general discussions and specific case studies. Technically, the text is well written and concise. The illustrations are clear and appropriately supplement the text. However, a few photographs would have been a nice addition.

Cities of Clay is an indispensable reference for any archaeologists involved with tell research. The value of geoarchaeological investigations of tells is clearly shown and tell studies will be incomplete without such investigations. Arlene Rosen's book is a valuable contribution to archaeology and will be so for many years to come.

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Dinoflagellate Cysts from Upper Cretaceous-Lower Tertiary Sections, Bylot and Devon Islands, Arctic Archipelago,
by N. S. Ioannides, 1986, Geological Survey of Canada Bulletin 371, 99 pp., 24 pl.: order from Canadian Government Publishing Center, Supply and Services Canada, Ottawa, Canada K1A 0S5. Catalogue No. M42/371E, ISBN 0-660-12198-0. $9.00 in Canada; $10.80 (Canadian dollars) all other countries.

Few palynologists can look through a new publication and refrain from raising their eyebrows in askance about some of the names given to the specimens illustrated. One of the great things about this paper is the high quality of the 24 plates. They leave little doubt about the morphological criteria used in nomenclatural decisions. One can only ponder about decisions made for reasons other than morphology. In what is essentially a taxonomic work, continued use of the name *Chlamydophorella (?) grossa* for a form with a precingular archeopyle, when the genus requires an apical archeopyle, is one example. If enough specimens were present to make a statistical analysis, surely enough were present to place the species in a genus more appropriate to its morphology.

There is nothing profound about this bulletin. It is simply good, solid work on the dinoflagellates of the Arctic. For those who work on the Arctic and the western interior (same floral province), it offers little that is new and is simply another good picture-book. It would be wonderful if someone examined and illustrated the pollen and spores which dominated most of the samples used for this study (as indicated by Text-Figure 7). The good age control provided by the dinoflagellates would certainly complement the spore-pollen data, which is in such short supply for the area.

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CANADA

FOR YOUR BOOK SHELF

Palynology and age of South Hospah coal bearing deposits, McKinely County, New Mexico,
A. Jameossanaie, 1987. New Mexico Bureau of Mines and Mineral Resources, Bulletin 112, 65pp., 17 pl. ($7 plus postage and handling).

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AASP TRAVEL GRANTS

Applications for AASP-distributed National Science Foundation travel grant funds consist of two parts:

1. An anonymous application form requesting certain data.
2. A packet or envelope containing supporting documentation, including the non-AASP FUNDING CERTIFICATION FO... (see below).

FIVE SETS OF APPLICATION FORMS AND PACKETS OF SUPPORTING DOCUMENTS MUST BE SUBMITTED TO THE AASP PEER REVIEW COMMITTEE at the address given below.

These materials should be sent to AASP Peer Review Committee Chairman Don G. Benson, Jr. Don will separate the application forms from the packets of supporting documentation. He will then forward a set of the anonymous application forms to each Peer Review Committee Member to be assessed. He will retain the supporting documentation for future reference, after the initial assessment has been made. Don will not make any assessment of the applications for travel funds. He will oversee and manage the assessment process. The purpose of these elaborate measures is to ensure an unbiased assessment of each application. Any questions concerning the judging process should be directed to Don Benson at the address given below.

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b. If possible, a letter from the 7th IPC committee stating that your talk or poster has been accepted for presentation
c. If you are convener of a technical session, a letter from 7 IPC attesting that you are a convener and specifying the title of the session.
d. A self-addressed mailing label so that the AASP can notify you of the evaluation results.
e. If you are a graduate student, have your supervising professor send a separate letter of endorsement to the Peer Review Committee.

The Peer Review Committee will evaluate the 7 IPC abstracts to determine whether they are well written, informative, and have scientific significance on an international scale. (On writing a good abstract, we recommend the following article. Landes, K. K., 1951, A scrutiny of the abstract: American Association of Petroleum Geologists Bulletin, Vol. 35, p. 1660.)

A portion of the awards will be reserved for graduate students; students' abstracts will be evaluated using the same criteria as for professionals.

I understand that this AASP Travel Grant must be used only for travel expenses to and from Australia to attend the 7th International Palynological Congress and that in order to apply for an AASP Travel Grant, I must be a paid-up individual or honorary member of AASP.

Send five copies of the anonymous application form and of the packet of supporting documents to:

Dr. Don G. Benson, Jr.
AASP Peer Review Committee
Amoco Production Company
P. O. Box 50879
New Orleans, LA 70150

These forms and packets must be RECEIVED by the Peer Review Committee by February 1, 1988.

NOTE: Because this grant is funded by the U.S. National Science Foundation, U.S. airlines must be used for travel to and from the Congress, if at all possible.

- -

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I certify that I will not receive more than the amounts specified in item 7 of the Application Form to defray costs of attending 7 IPC.
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