

OCTOBER, 1988  
VOLUME 21, NUMBER 4

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## AASP NEWSLETTER

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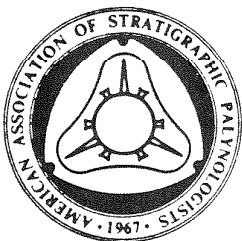
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# AASP NEWSLETTER

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

VOLUME 21:4 OCTOBER, 1988 ISSN 0732-6041

J. H. WRENN, EDITOR

## President's Message

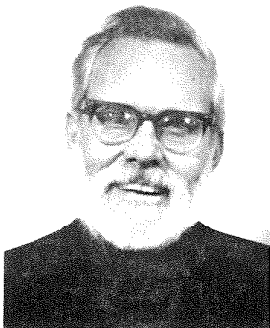
### 7th International Palynological Congress

7th IPC was held in Brisbane, Australia, during the end of August and the beginning of September. The final registration was about 300 people, but the pre-registration was small, which caused a lot of problems for the organizers, particularly with regard to cash flow and planning the field trips. The technical sessions were well planned and went very smoothly; the session conveners rigorously enforced time limits on talks, and the audio-visual arrangements were good. Most of the talks were informative and worth attending. The two evening banquets had large attendances, and everybody seemed to have a good time eating, drinking, and meeting people. As at all international conferences, the best part of the congress was getting to know new people, and especially having a chance to meet colleagues whom one has corresponded with but never met. The site of the meeting, the University of Queensland, is located in a suburb of Brisbane. Its pretty, spacious campus was an attractive place in which to take walks between sessions.

Several of the field trips, especially the more expensive ones, had to be cancelled or shortened because of low registration. However, the trips that took place were scientifically very interesting; the field trip leaders were outstanding. From my own point of view, the chance to see a variety of tropical forest types was the highlight of the entire congress.

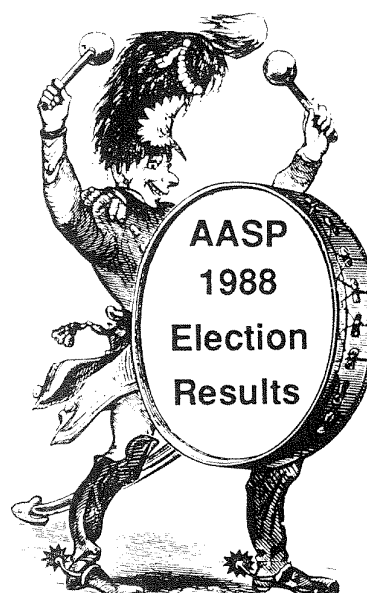
For most of us, this was a once-in-a-lifetime chance to see Australia, and we were not disappointed; everybody I talked with enjoyed it immensely.

The 8th IPC will be held in 1992 in Aix-en-Provence, France. The 8th IPC representatives held a slide show extolling the virtues of Aix as a really beautiful and interesting city, and they have planned what should be



scientifically and scenically very worthwhile geological and botanical field trips to various parts of France.

Norman Frederiksen  
President, AASP



The 1988 AASP Ballot Committee, consisting of Harold Kaska (Chairman), Tom Edison and Bill Evitt, have reported the following election results:

President-Elect:	Judith Lentin
Secretary-Treasurer:	Gordon D. Wood
Managing-Editor:	Dave K. Goodman
Directors-at-Large:	Owen K. Davis Stephen A. Hall George F. Hart

Owen Davis and George Hart will begin two-year terms. Steve Hall will serve one year in lieu of Bob Ravn, who is being transferred to England by his employer, Standard Oil Production Company. These newly elected officers will join with Harry Leffingwell (1988-89 AASP President) and Loretta Satchell (second year Director-at-Large) in governing AASP for the coming year.

The membership of AASP and Newsletter extend a hearty congratulations to the new officers, and wish them the best in discharging their responsibilities in the coming year.

## Palynological Research to be reviewed in Geotimes

Judith Lentin's letter to the editor of Geotimes (AASP Newsletter 21(2):11) concerning the lack of a year-end review of palynology has elicited a positive response from that magazine. The editor of Geotimes has invited AASP to prepare a column of 1500 words summarizing the important discoveries, advances, papers and meetings of 1988. (I suspect it will require an industrial grade trash-compactor to squeeze in all the pertinent material!!)

Because the field of palynology is so diverse, none of us are experts in all of its facets. Therefore, your help is solicited in identifying the most important items in your area of expertise to be considered for inclusion in the summary article for the February 1989 issue of Geotimes.

This is an opportunity to expose palynology to a broad geological and scientific audience. Most, but by no means all, items included in the review should be of interest to other geoscientists.

If you wish your opinions to be considered, you will have to move fast. I need your thoughts by November 14, 1988, or bring them to the Annual Meeting in Houston. (Sorry for the short deadline, but AASP was only notified about this opportunity in September.) If you write, please send your thoughts and suggestions for topics to:

John H. Wrenn  
Amoco Production Co.  
P. O. Box 3385  
Tulsa, OK 74102

We palynologists owe Judi Lentin a hearty "Thank you," for taking the time to bring our science to the attention of Geotimes. Here's mine Judi--Thank you.

## Dr. Singh Awarded Emeritus Status

Dr. Chaitanya Singh has been awarded emeritus status to continue his research in the area of Cretaceous palynology with the Geological Survey Department of the Alberta Research Council.

Dr. Singh is the second recipient of this honor. The first Research Officer-Emeritus, Dr. Karlo Schulz, was appointed in 1983 to continue his work in Electron Spin Resonance (ESR) spectroscopy.

Dr. Singh began his career with the Research Council in 1965. Over the past two decades, he has contributed internationally recognized research in the field of palynology--the study of fossil remains of spores and pollen and other microscopic organic remains.

"These minute remains carry enormous implications for the interpretation of earth history, providing insight into the age of sedimentary strata. This facilitates geological correlations on both regional and local scales, serving as clear indicators of the original environments in which the original sediments were deposited," says Dr. Jan Boon, Head, Geological Survey Department.

"Dr. Singh's investigations have had a major impact on a more global scale. Certain palynological zones defined by his research are found in the worldwide geological record, and the quality of his work and subsequent publications have been taken as the standard against which similar research has been measured in many different countries and institutions," Dr. Boon says.

Among his many publications are three Alberta Research Council Bulletins (Nos. 15, 28 and 44). Typical of the accolades arising from his work are comments received as a result of the 1983 Bulletin 44, "Cenomanian Microfloras of the Peace River Area, Northwestern Alberta"--"A beautiful piece of work which will have lasting scientific value and input...will be the standard reference...sets a standard which will be extremely difficult for others to follow."

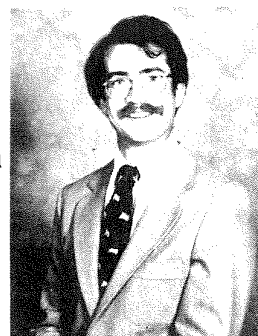
Dr. Boon says, "a glance at the dictionary tells us one meaning of the word emeritus--retired from a position after gaining professional recognition. Dr. Singh has indeed earned his recognition and his title."

(Reprinted by permission of Carmen Forster from: Newsline (Vol. 8, No. 7, 1987), Alberta Research Council. Our thanks to Judi Lentin and Dick Hedlund for calling this article to our attention.)

## New Editor for the AASP Newsletter

Frederick J. Rich, Chairman of the Geology and Geography Department at Georgia Southern College, will assume editorship of the Newsletter in January, 1989. Fred Rich received a B.S. in geology from the University of Wisconsin (Madison) in 1973. After spending one year at Southern Illinois University - Carbondale, he transferred to the Pennsylvania State University. There he received his Ph.D.

in geology, with a minor in botany in 1979. His dissertation dealt in large part with the palynology of peats from the Okefenokee Swamp. Fred taught at the South



Dakota School of Mines and Technology from 1979 to June 1988, where his research interests focused primarily on the petrography, palynology, and environments of deposition of coals from the Northern Great Plains. In 1982-83 Fred participated in the Distinguished Lecturer program of the American Association of Petroleum Geologists. He also served as editor of *Geology of the Black Hills, South Dakota and Wyoming*.

Fred has just moved to Statesboro, Georgia, where he is the Chairman of the Dept. of Geology and Geography, Georgia Southern College. He is truly pleased to be back in the southeast where he can resume his work on the ecology and paleoecology of the coastal swamps and marshes that still abound there. The move also takes him closer to Trail Ridge, an old shoreline sand body that has preoccupied his thinking for the last few years. He will also try to develop some new friendships among the Gulf Coastal Plain lignite workers. That work will, of course, have to be done when he is not enjoying the company of his wife, Sherry, who also is a geologist, and his children, Andrew (3 years) and Katie (1 year).

*Beginning immediately, all correspondence pertaining to and contributions for the AASP Newsletter should be directed to Fred. His address is:*

Dr. Fredrick J. Rich  
Department of Geology and Geography  
Landrum Box 8149  
Georgia Southern College  
Statesboro, GA 30460-8149



The AASP Awards Committee, consisting of Virgil D. Wiggins (Chairman), Lucy Edwards and Barbara Whitney, report that Myung S. Yi has been chosen to

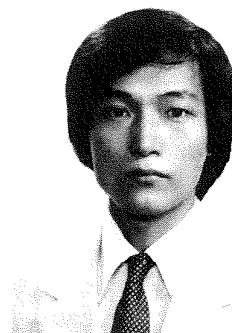
receive an AASP Student Scholarship Award of \$250.00. Myung holds a B.S. and an M.S. degree in geology from Yonsei University in Seoul Korea and is currently working on a Ph.D. in the Department of Geological Sciences at Michigan State University, under Aureal T. Cross. Myung was a Research Assistant at the National Science Research Center, Yonsei University, for two years after completing his M.S. degree. A summary of his dissertation research proposal is given below. Congratulations for your award Myung, from all the members of AASP.

### **Palynology and Paleoecology of Upper Cretaceous and Lower Tertiary Strata, Eastern Utah**

The proposed research is a palynological study of the Price River Canyon area of eastern Utah. Objectives are to demonstrate: the position of the Cretaceous-Tertiary boundary (located somewhere in the North Horn Formation); the sequence of floras that evolved through this important time period (Castlegate, Price River, and North Horn formations); the types of environments in which the sediments were deposited; the environmental factors that controlled their distribution mosaic; and to demonstrate the identity of the reworked palynomorphs and the patterns of their spatial and temporal relationships that indicate episodic rise and continuous denudation of the mesocordilleran highlands to the west.

I chose this topic to gain experience in techniques and concepts of analysis of palynofloras for interpreting biostratigraphic and paleoecologic conditions extant at the time of deposition of the sediments containing these fossils, and the evolutionary trends of plants through this time span. I wish to apply this type of knowledge to studies of comparable strata in Korea that are relatively widely distributed, but have been little studied, palynologically.

Field studies, preparation of samples, and preliminary examination and identification of palynomorphs has been completed. Some photographs are prepared. Identification and photography will be completed, brief descriptions will be written, and absolute and relative frequencies of occurrence of the palynomorphs will be calculated. Palynofloras will be compared both qualitatively and statistically with those reported from other pertinent study areas in western North America. I will try to determine the position of the Cretaceous-Tertiary boundary and the time represented by a stratigraphic hiatus, if present, and to apply the palynomorph zonation to the study area that has been



previously determined for comparable strata in the region.

Myung S. Yi  
Department of Geological Sciences  
Michigan State University

## Letter to the Editor

Dear John:

I am writing regarding the letter of Leonard Ford and Eileen Williams to the editor (*AASP Newsletter*, 21(3):3-4). All of their suggestions are good ones and definitely need consideration by AASP. Palynologists need a central palynological type collection, a current taxonomic dinoflagellate catalog and a library to contain palynological reprint collections. As mentioned, all these items would require substantial time and monetary commitment, but certainly would be worth the effort.

The idea of a computer-based dinoflagellate catalog containing both images and text is an especially interesting concept. There are other innovative methods using machine vision as an analytical tool that could be pursued by palynologists. Using an image analysis system with a digital television camera attached to a microscope and a storage device, whole assemblages could be recorded in a matter of minutes. Since the location, size and spatial distribution of each palynomorph is recorded, these could be saved and used as reference or training materials. Image analysis software could also be used to detect faintly defined plate boundaries or minute changes in surface features from specimen to specimen. Small features can be greatly magnified and displayed on a high resolution monitor. High quality images can also be output to plotters, and possibly used for publication purposes. It may even be possible to combine several variables using principal component analysis and shape factors to automatically pick out and count certain palynomorphs in an assemblage.

Other innovative technology currently available to palynologists is the use of voice recognition computers to speed up recording and tabulation of palynological data. The computer can be "trained" to recognize spoken words to keep track of quantitative data.

If anyone is interested in any of the above mentioned methods, I would welcome any comments or inquiries.

Sincerely,

Connie S. Cigler  
Everest Geotech, Co.  
10101 S.W. Freeway  
Houston, TX 77074  
(713) 981-9188



There has been considerable discussion during the past two or three years about the future of palynology, and what AASP or individual palynologists can do to affect its direction. As we all know, the precipitous drop in oil prices initiated the current, depressed (and occasionally depressing) employment market for palynologists. Even palynologists not involved in the oil industry are affected. Its certainly more difficult to rustle up oil company support for worthwhile "academic" research today than it was 5 or 6 years ago. Not impossible, but harder.

Low oil prices in 1984-86 led to low or no demand for more (and in too many cases, then current) palynologists. This led to a drop in the enrollment of students in palynology curricula and a decreased demand for professors to teach them. University training has been further crippled by the retirements of first, and some second, generation palynological professors (most of whom have not been replaced by another palynologist).

What can be done to increase the demand for palynologists and for palynological input to commercial enterprises, academic programs and government services? What can individual palynologists do? What can AASP do?

Don Benson pointed the way for individual action at the AASP Annual Luncheon in Halifax, Nova Scotia last October. (*AASP Newsletter*, 20(4):6, 1987.) Don exhorted us to get out from behind our microscopes, go forth and seek new customers where none had been before. "Go down the hall, see the geophysicists and the geologists, ask what you can do for them," he said. Show how you can solve problems for them: next time they will come looking for you.

Although Don was speaking with an oil company setting in mind, there is no reason aggressive marketing of palynology can't be fruitful in a university geology,

geography, anthropology, biology or whatever department. Ditto with government agencies. Certainly, many readers have done this for years. Still, Don's advice is sound advice for those who haven't been pushing their "product," and it is the easiest thing for each of us to do.

But on a grander scale it is important to raise "public" awareness and understanding of palynology. (By "public" I mean anyone who is not a palynologist.) After all, how many people ever heard of palynology? Don't forget, it's rumored that palynology is the science that the word "esoteric" (in the sense of "secret") was coined to describe.

Many geologists who know about dinosaurs and even forams, don't have any idea what palynomorphs are or what palynology can do for them. Certainly, the general populace has no idea. Don's advice, if applied, will help awaken the geologist to the gold mine of help we have waiting for him, but it won't reach the broader public.

You ask, "So what? Why should we want to reach the public at large?" For many reasons. First of all, that public includes the decision-makers who hold the purse strings and decide whether or not money will be spent on this thing called "palynology." (I know of one oil company in which its accountants group the palynologists in with the Services Section, which consists of grounds keepers, janitors, etc. That's a real image problem, my friend! Though, to be fair, it is true that we not only deal with dirt, like janitors, but we also get rid of it.) The point is, however, that people controlling funding should have as good an understanding of what palynology is, as they do of what geophysics, chemistry or computers are.

Second, it is from the general populace that the next generation of palynologists will be drawn. Imagine igniting the curiosity of a youngster about spores, pollen and dinoflagellates (of course) in the same way that children are today drawn to dinosaurs! Impossible, you say? It may be a bit harder, but not impossible. After all, dinosaurs are as much a marketing phenomenon as a paleontological fact.

I'm not advocating donning a bright, plaid sports coat, a glib tongue and sallying forth to sell palynology like used cars. I am advocating the broad, palatable dissemination of information on palynology. Education, if you will, but with a small "e."

Three possible steps to take are:

- (1) Simplified public, grass roots lectures.
- (2) AASP Distinguished Lecturers.
- (3) A Palynology Marketing Campaign

**First, the grass roots lectures.** Volunteer palynologists could offer generalized lectures on palynology to local groups. Such topics as what is palynology, what are spores, pollen and dinoflagellates, how do they affect every citizen, etc., could be put together into interesting, entertaining, but informative, talks. (Perhaps canned talks to be shared with other palynologists.) A well illustrated practical talk demonstrating the relationship of palynology to the average citizen might be just the ticket.

Rock and fossil collecting groups, Toastmasters, Kiwanis, etc., are always looking for speakers. At least some, if not all, of the audience would have some interest. A more technical, but still somewhat general, talk on the applications of palynology could be given to local geological societies.

**Second, AASP Distinguished Lecturers.** AASP could borrow a page from the operations manual of the AAPG and establish a Distinguished Lecturers Program. Speakers selected for the high quality of their scientific work and their ability to deliver an excellent talk could be "sent" out to specific audiences with a message. The message would, of course, depend on the audience.

A presentation demonstrating the uses of palynology in basin analysis, seismic stratigraphy, paleoceanography, etc., could be tailored to the AAPG, AGU or GSA. All such talks also could be presented at universities--to introduce the next generation of geologists and geophysicists to the synergistic possibilities awaiting them in collaborative studies with palynologists. Hopefully, speakers also would encourage students to pursue a career in some aspect of palynology.

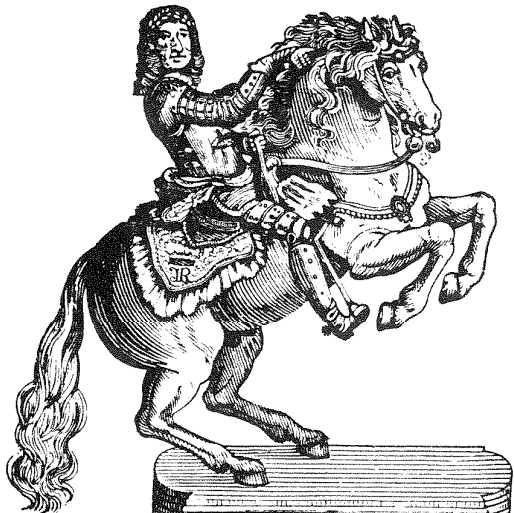
**Finally, marketing palynology.** We need a vigorous program to project palynology in the public eye. Not for any "palynocentric" reason, but to let people know what palynology is, how it relates to them, and explain its many facets. Why shouldn't we try to interest NOVA or the American Geographical Society in doing a special on palynology, or get Smithsonian Magazine or, again, American Geographical Society to publish one or more articles on the topic. Is palynology really any more obscure than volcanology, seismology or oceanography?

Palynology could easily make a "spot appearance" in almost any of the nature program seen on T.V. or in magazines. And yet it is almost never mentioned. Instead, the camera "pans" to yet another lion, stork or greater white shark.

These are just a few suggestions to heighten the "exposure" of palynology. There are others and I'm sure this topic will be discussed at future board meetings where you can express your views--get involved in the debate or write the Newsletter.

But make no mistake, we need to push palynology. AASP can be the coordinating force in such an effort. The future of palynology---is our responsibility.

John H. Wrenn  
AASP Newsletter Editor



## General Announcements

### Important Notice

There is a new "Dues Notice" form attached to the rear of the Newsletter. Please answer the question on the bottom of the form and send the sheet to Secretary-Treasurer Gordon Wood, at the address on the form. Even if your dues are currently paid-up, PLEASE SEND IN THE FORM WITH YOUR ANSWER. The Board is conducting an important survey--they need your answer.

### Palynology Manuscripts Requested

There is room for a number of manuscripts in Volume 13 of Palynology, to be published in late 1989. Dave Goodman, Journal Editor, is seeking quality papers on any aspect of palynology and requests that authors follow the Palynology format. Authors should refer to a recent issue of Palynology as a useful guide in the preparation of manuscripts, paying particular attention to the section entitled "Instructions for Authors" in the back of each volume (pages 266-268 in Volume 11). Manuscripts to be considered for publication should be sent to Dave at the following address:

Dr. David K. Goodman  
ARCO Oil and Gas Company  
2300 West Plano Parkway  
Plano, TX 75075 U.S.A.  
Telephone (214) 754-6504

Remember, Palynology is published yearly and, believe it or not, time is running short to have your paper appear

in next year's volume of your A.A.S.P. journal. SUPPORT YOUR LOCAL JOURNAL - PUBLISH IN PALYNOLOGY! The Editorial Staff appreciates your support.

### Translations Exchange Proposed

Few of us are masters of all languages in which palynological data are published. All right, probably none of us are. Consequently, we all must rely on translations, and they ain't cheap. I would imagine that many important palynology papers have been translated in various parts of the English speaking world more than once. Why should three oil companies, NSF, the Geological Survey of Canada and four universities all pay to have the same paper translated? I can't think of a good answer. (Of course, I'm not a translator getting paid to write-in-tongues.)

What is needed is an organized means of "translation exchange," in order to cut costs and translation redundancy. Would it be possible to use the Newsletter as a bulletin board to list translations available for exchange or the cost of duplication? Would it be legal or would copyright laws be violated? Not only those protecting the original publisher and author, but the translator as well? (Are there laws protecting the work of the translator from free exchange?)

I don't know, but these are a few of the questions that would arise and need to be answered before establishing a "Translation Bulletin Board" or whatever broad-based exchange mechanism.

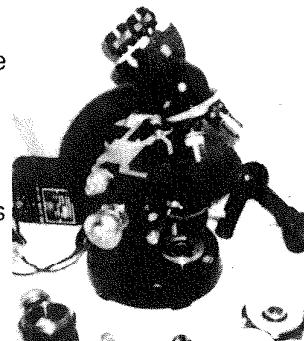
If you are interested, please drop a line with your thoughts, ideas or suggestions to the Newsletter Editor (see note concerning the new Editor, Fred Rich, elsewhere in this Newsletter). If you plan to attend the Annual Meeting in Houston, please come to the Board meeting and speak your piece when the topic is raised.

John H. Wrenn  
Editor, AASP Newsletter

### Microscope and Palynological Literature For Sale

#### Microscope:

Zeiss Standard Compound Microscope  
1970 Vintage  
8.5X and 12.5X eyepieces  
Microscale  
Optovar 1.0X, 1.6X, 2.5X, PH  
Zeiss 35 mm Camera with attachments  
Objectives 2.5X, 10X, 40X, 130x Oil  
Packing Cases



#### Literature:

Most volumes of Geoscience and Man, Palynology, AASP Contributions and Kremp File books.



Interested parties should contact:

Jim O'Hara  
P. O. Box 439  
PYOTE, TX 79777  
(Telephone: 915-389-5544)

### **Rip van Salamander, on Ice**

Reminiscent of Washington Irving's story of Rip Van Winkle is this story from the Times of India newspaper, New Dehli (September 13, 1988). An Asiatic Salamander has been unearthed (or is it uniced) from below 11 meters of ice and snow in the Soviet Far East. The gold miners who made the discovery were startled when they realized it was still alive, after being buried almost 100 years!

The Magadan Institute of Northern Biology conducted radiocarbon analysis on the Salamander and determined that it was incorporated into the permafrost about 90 years ago. The Asiatic salamander normally has a life span of about 10 years, but the gold miners' salamander is well over 90 (doesn't look a day over 2 or 3) and is well rested after nearly a century of uninterrupted sleep.

(We thank Dr. Arun Kumar of Silchar, India for sending this article. Aran suggested that our Russian colleagues might conduct a copropalynological analysis to see what the Salamander's diet had been. Could it have been buttercups, a la the Siberian mammoths?)

### **Two Useful Publications for Quantitative Stratigraphy**

[Martin Head (Department of Geology, University of Toronto) draws our attention to the following useful publications, and they are free! Thanks, Martin.]

**Bibliography and Index of Quantitative Biostratigraphy.** Thomas, F. C., Gradstein, F. M., and Griffiths, C. M. Special Publication No. 1, Committee on Quantitative Stratigraphy, May 1988: 58 pp.

This publication lists and indexes 637 references on quantitative biostratigraphy and as stated in the introduction, is a first attempt to assemble in one place, the more important publications on this subject. The Bibliography and Index began as a GEOREF (Geological Reference File) computerized library search (with 1970 as a cut-off date), with further references gleaned from recent literature, including:

Birks, H. J.B., and Gordon, A. D., 1985 - Numerical methods in Quaternary pollen analysis; Academic Press, London.

Cubitt, J. M., and Reymont, R. A. (Eds.), 1982 - Quantitative stratigraphic correlation; John Wiley and Sons, Chichester.

Gradstein, et al., 1985 - Quantitative stratigraphy; UNESCO, Paris and D. Reidel, Dordrecht

Additional references were gleaned from colleagues such as Lucy Edwards of the U.S. Geological Survey, who provided palynological input.

Individual titles are arranged alphabetically by author (without subject annotation, however), and are linked to an index containing 24 categories, many of which should be of interest to the palynologist. There are, for example, 34 references listed for quantitative biozonations using palynomorphs. Many other references describe techniques which can be readily applied to palynomorph data, and there is a section on computer programs including those which have been developed by Gradstein (Bedford Institute of Oceanography, Canada) and associates, and which run on a PC.

Felix Gradstein (address below) would greatly appreciate being informed of any errors or omissions for future updates of the Bibliography and Index.

**Newsletter of the Committee on Quantitative Stratigraphy.** Newsletter No. 2 (July 1988), of the newly formed Committee on Quantitative Stratigraphy (CQS) contains assorted information (both of the quantitative and qualitative variety) over about 40 pages. Past, present and upcoming events are profiled; there are book reviews, notices of short courses and even poetry. To give an example of the prose, I note under "current activities" that W. Riedel (Scripps Oceanographic Inst.) is presently circulating drafts of programs (for the PC) that utilize artificial intelligence (Prolog) in taxonomy and stratigraphy. This comes with a document entitled "Cor Expert: Prolog program to assist in stratigraphic and paleoenvironmental interpretations." The Newsletter also has a useful appended directory of CQS members.

Quoting from the prophetic introductory message of CQS chairman, Felix Gradstein - "Future emphasis on stratigraphy in the earth sciences will be less in novel data processing and independent applications, and more on integration with detailed quantitative and dynamic models of sedimentary (and oceanic) basin evolution. The largest pool of information that addresses local changes in the earth record is probably found in well logs [e.g., as produced by the Ocean Drilling Program]. Quantitative integration of well log and biostratigraphic information, for example on computer workstations, is an important goal and one in which CQS would like to participate."

The Bibliography and Index of Quantitative Biostratigraphy, and the Newsletter of the Committee on Quantitative Stratigraphy are available without charge from:

F. M. Gradstein (Chairman, CQS)  
 Geological Survey of Canada  
 Bedford Institute of Oceanography  
 P. O. Box 1006  
 Dartmouth, Nova Scotia, Canada B2Y 4A2

### Red Tide Newsletter

A newsletter dedicated to the dissemination of information on red tides and algal blooms was initiated in January, 1988 by the Sherkin Island Marine Station, County Cork, Ireland. Editor Matt Murphy hopes that the Red Tide Newsletter will be an organ for the timely exchange of information between the aquaculture industry, the scientific community and government agencies.

Volume 1, Number 1 of the Red Tide Newsletter contains data on widely separated toxic algal blooms. Just to name a few, there is a report on the 1987 bloom of Prorocentrum minimum along the coast of Maine, the Ptychodiscus brevis bloom off California (November 1987), a review of the Gyrodinium aureolum blooms off Norway during the past 20 years and a summary of the Alexandrium minutum red tide that colored the ocean off Adelaide, South Australia. In addition, abstracts of recent papers on red tides and announcements of upcoming meetings were also given.

The subscription for the quarterly published Newsletter is £8.00 or \$12.00 U.S. It certainly is an interesting Newsletter, and if you have an interest in these fascinating algal blooms it might be worth supporting Matt Murphy's goal of the rapid distribution of red tide data. The Red Tide Newsletter can be ordered from:

Matt Murphy, Editor  
 Sherkin Island Marine Station  
 Co. Cork, Ireland  
 (telephone 028 20187)

### Lycopodium spore tablets available

**Production, Distribution, Payment.** Pollen tablets for calibration of pollen analyses have earlier been produced and distributed by Mr. Jens Stockmarr, Copenhagen. In October 1980 this business was taken over by the Laboratory of Quaternary Biology in Lund. Tablet production is performed as an official commission approved by the University of Lund. In 1987 a new batch was produced, and tablets are now available.

The pollen tablets are produced at Dansk Droge A/S, Ishøj, Denmark. Lycopodium tablets will be distributed in plastic bottles with 500 tablets per bottle. The price is, in Swedish currency, SEK 150/1000 tablets, including packing and postage. (One SEK ≈ 0.16¢ U.S.)

A university invoice will be enclosed with each package, or, if so requested, sent separately to the receiver of the tablets or to the purchase office. Please, follow the instructions for payment given on the invoice.

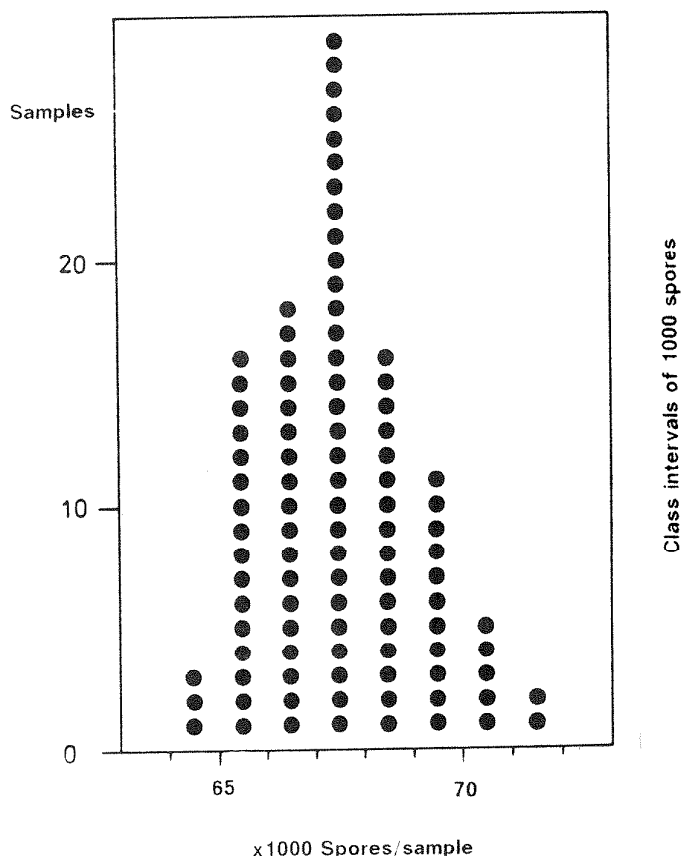
Please note that production and distribution of tablets is done at cost price, which makes it necessary to reduce administration to a minimum. Therefore, the machinery of payment must be as simple as possible so, please, follow our instructions and try not to impose too many administrative duties on us, which will only result in delayed deliveries. (An order form is attached at the rear of this Newsletter.)

Lycopodium Spore Tablets (Batch 307862). 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 by 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). One hundred samples of five tablets each taken from different places in the batch were prepared by dissolving the tablets in 0.9% NaCl solution in 100 ml flasks. Twenty counts each of 0.5 ml were made on each sample.

Result:  $\bar{X} = 67,498$ ,  $s = \pm 1543$ ,  $V = \pm 2.3\%$

For one tablet:  $\bar{X} = 13,500$



The distribution of the samples is shown in the figure above.

Bjorn E. Berglund  
Thomas Persson

Department of Quaternary Geology  
Tomavagen 13  
S-223 63 Lund, Sweden

#### **New Micropaleontology Consultant Group**

AASP member Delbert W. Edelman and Stephen F. Percival, Jr. have formed EDELMAN, PERCIVAL & ASSOCIATES, a biostratigraphic consulting group based in the Dallas/Ft. Worth, Texas area. Personnel include Delbert W. Edelman (palynology), Stephen F. Percival, Jr. (calcareous nannofossils), Charles L. McNulty (planktic and benthonic foraminifera), Paul R. Krutak (foraminifera and ostracodes), and Nien Jen Wang Sheu (calcareous nannofossils). The group offers worldwide expertise in multidisciplinary biostratigraphy to both domestic and international petroleum exploration companies. For more information contact either Del Edelman or Steve Percival at:

EDELMAN, PERCIVAL & ASSOCIATES  
2419 West Kiest Blvd.  
Dallas, TX 75233  
(214) 576-2692 (214) 775-2284

#### **A Thoughtful Holiday Gift**

Gordon Wood has suggested a unique holiday gift for the palynologist who has everything (or the homeowner who has problems). What scientist wouldn't want to receive the following "coffee table book" for that special holiday.

"Sewage Organisms: A Color Atlas" by J. C. Fox, P. R. Fitzgerald and C. Lue-Hing (ISBN 0-87371-031-2). This earthy volume contains 326 color photomicrographs of 136 different organisms recovered from sewage. Included among these are parasitic helminths, parasitic protozoa, algae, free-living protozoa, mites, cladocerans, giardia (Rocky Mountain campers take note!), rotifers, tardigrade (water bears), copepods, eggs, pollen grains, and cysts. (Surely not dinocysts!!)

The atlas describes concentrating, staining, filtering and counting techniques for sewage organisms. Originally published by the City of Chicago in 1981, it can be ordered by calling, toll free, 1-800-525-7894. (Price \$79.95)

We thank Gordon for this suggestion and for the opportunity to plumb the depths of his holiday reading interests.

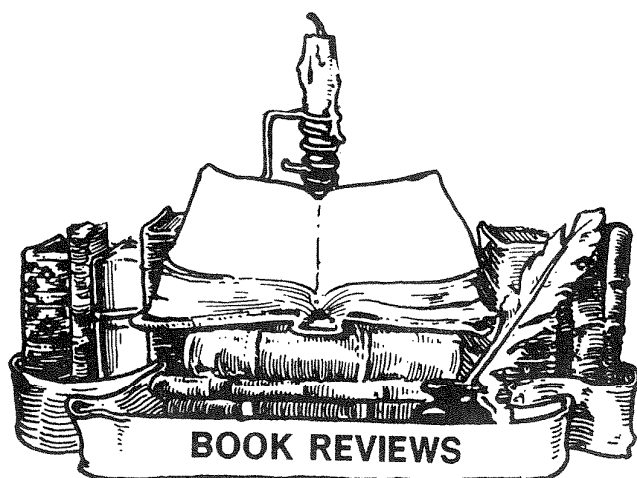


This issue of the AASP Newsletter concludes my tenure as its editor. It has been an honor to carry the responsibilities of that position for the past two years. The labors involved in organizing, printing and distributing each issue are as nothing compared to the rewards of being editor. Chief among these is the opportunity to meet and talk with many more members of AASP than would have been the case otherwise.

My initial ignorance of editing a newsletter was partially offset by the valuable, sound advice generously offered by seasoned editors such as Doug Nichols, Bob Ravn, Susan Duffield, Hugh Hay-Roe, and Vaughn Bryant. (Through no fault of theirs, even their vast pool of knowledge and experience could not keep me completely out of trouble!) The mechanics of producing a camera-ready copy of each issue were greatly simplified by the assistance of Karen Bushyhead and Phyllis Thornton of Amoco Production Company--many thanks ladies.

Editing the Newsletter has been a fruitful experience in that I have developed an empathy for professional, full-time editors (though I am concerned about their sanity--who could remain sane on a steady diet of rounding up misplaced punctuation or hunting down typos. Brrr!) Still, I would recommend the job to anyone wishing to serve the AASP, one of the stellar palynological associations in this sector of the Milky Way.

John H. Wrenn  
Newsletter Editor



## Book Reviews

### ATTENTION POTENTIAL BOOK REVIEWERS:

The following is a list of the books I have received this summer. If you are interested in reviewing any of these books for the Newsletter, please call me at 517-774-3179. In return for a timely (60-90 day) review, you may keep the book.

Reed Wicander  
Book Review Editor

#### Triassic-Jurassic Rift-Basin Sedimentology, History and Methods

by John C. Lorenz, Van Nostrand Reinhold Company, 1988.

#### Tide-Influenced Sedimentary Environments and Facies

by P. L. de Boer, A. van Gelder, and S. D. Nio (editors), D. Reidel Publishing Company, 1988

#### Encyclopedia of Paleoherpertology

initiated by Professor Dr. O. Kuhn, Muchen and Edited by Dr. P. Wellnhofer, Muchen, Gustav Fischer Verlag, 1988.

#### Early Permian Fusulinids from the Owens Valley Group, East-Central California

Special Paper 217, by Robert T. Maggini, Calvin H. Stevens, and Paul Stone. Geological Society of America, 1988.

#### Late Jurassic and Early Cretaceous Palynology of the Perth Bn, Western Australia

by John Backhouse, Geological Survey of Western Australia, 1988.

#### Handbook of Paleichthyology

edited by Prof. Dr. H.-P. Schultz, Lawrence, Initiated by Prof. Dr. O. Kuhn, Muchen, Gustav Fischer Verlag, 1987.

#### Late Quaternary Climate, Tectonism, and Sedimentation in Clear Lake, Northern California Coast Ranges.

Special Paper 214 edited by John D. Sims. Geological Society of America, 1988.



#### The Origins of Angiosperms and Their Biological Consequences

E. M. Friis, W. G. Chaloner, and P. R. Crane (Editors). Cambridge University Press, 510 North Ave., New Rochelle, NY 10801, 1987, 358 pp., \$44.50.

This book is concerned with two problems, the climatological and biological circumstances under which the angiosperms arose, and the kinds and timings of co-evolutionary interactions between angiosperms and other kinds of plants, and with various kinds of animals (dinosaurs, mammals, birds, insects) that have acted as pollinators, seed and fruit dispersers, and herbivores.

The 10-chapter book also includes a useful outline of plant and animal classification, with special reference to taxa mentioned in the text; a table that shows ages of stratigraphic units mentioned in the text; and a 20-page glossary of botanical and zoological terms.

Chapter 1, by Friis, Chaloner, and Crane, briefly describes reproductive and other features that angiosperms have in common. In Chapter 2, "The Origin of Angiosperms: A Cladistic Approach," Doyle and Donoghue conclude that angiosperms are morphologically (and presumably genetically) closest to Bennettitales, Pentoxylon, and Gnetales. Chapter 3, by Parrish, reconstructs the paleogeographic and paleoclimatic settings in which the angiosperms originated and evolved through early Tertiary time. Chapter 4, by Upchurch and Wolfe, reconstructs the mid-Cretaceous to early Tertiary vegetation and climate of North America on the basis of leaf and wood evidence. In Chapter 5, Crane discusses changes in the composition and structure of vegetation during the Cretaceous and Paleocene with emphasis on changes in proportions of species of five major plant groups: pteridophytes, cycadophytes, conifers, "other seed plants," and angiosperms. In Chapters 6 and 7, Friis and Crepet review the known fossil records of angiosperm flowers and insect groups. Based on these records, and sequential appearances of pollen types, they reconstruct the co-evolution of

entomophilous angiosperms and insects during the Cretaceous and early Tertiary. Chapters 8 (by Wing and Tiffney), 9 (by Coe, Dilcher, Farlow, Jarzen, and Russell), and 10 (by Collinson and Hooker), deal with interactions between and co-evolution of angiosperms and vertebrates (mainly dinosaurs and mammals).

The book is well written, generally easy to read and scientifically first-rate. Some of the material has previously been published elsewhere by the respective authors, but this does not detract from the value of the book. Several of the chapters provide previously unpublished tables of raw data on which the authors based their conclusions. The chapters together give a well-rounded view of the topic, especially with regard to co-evolution between angiosperms and other biological groups, and I recommend it highly.

Norman Frederiksen  
U.S.G.S. National Ctr., Stop 970  
12201 Sunrise Valley Drive  
Reston, VA 22092

#### **Geochemistry and Sedimentology of the Mediterranean Sea**

by E. M. Emelyanov and K. M. Shimkus. D. Reidel Publishing Company, Dordrecht, The Netherlands, 553 pages, ISBN 90-277-1598-X, Cloth \$89 U.S., £60.95, Dfl. 220,00

E. M. Emelyanov and K. M. Shimkus have synthesized in this book almost 25 years of Soviet lithologic and geochemical research in the Mediterranean Sea. Much of this major Soviet work on the Mediterranean Sea appears here in English for the first time.

The book is predicated on the proposition that the present is the key to the past. Consequently, Recent sediments are first examined in detail in "Geochemistry of Recent Sediments." This section is based on two major studies of Recent sediment and water analyses in the Mediterranean. These are "Geochemistry of the Mediterranean Sea" (Emelyanov, et al., 1979) and "Bottom Sediments of the Mediterranean Sea" (Emelyanov, 1975). This 229 page section constitutes well over one third of the volume and establishes the basis for the authors' discussion of more ancient deposits.

The Mediterranean Basin is characterized physically and, to a lesser extent, biologically. Seventy-five figures and 47 tables document the area, volume, depth, circulation, rainfall, sediment supply (volumes and major components), annual phytoplankton production, distribution and abundance of sediment types, size fraction, mineralogical composition (micas, illite, montmorillonite, kaolinite, chlorite, quartz, feldspars, clinopyroxenes, hornblends, zircons, carbonates, etc.) and biogenic components (diatoms, forams, biogenic carbonates, and bones). Particular attention is given to the distribution of elements and organic components, such as organic carbon, calcium carbonate, and silica, in the water

column and the sediments. This is a very valuable summary to anyone working on the modern sediments of the Mediterranean Sea.

The second section, "The Geochemistry of Quaternary Sedimentogenesis and Diagenesis," is based in large part on the book by Shimkus (1981), "Sedimentation of the Mediterranean Sea in Late Quaternary Time." The third section, "Geochemistry of the Late Cenozoic Sedimentation and Diagenesis of the Sediments," derives primarily from DSDP research of the authors and that reported in the literature.

As with the section on Recent sediments, abundant useful charts, maps and tables show the geographic and vertical distribution of sediment types (e.g., calcareous, terrigenous, biogenic and volcanogenic). DSDP data, especially biostratigraphic data, is successfully integrated with Soviet-generated data. The discussion of the composition, distribution and genesis of sapropelic and diatomaceous sediments will be of interest to all palynologists who work with marine sediments. The only criticism of this discussion is that it is too short.

The final section is a window to Soviet marine geochemical and sedimentological thinking, at least as of the late 1970's. Entitled "Main Features of the Geochemistry and Sedimentology of the Mediterranean Sea," it is the synthesis, the distillation of almost 25 years of research. The early changes in sediments during and soon after deposition, and lithification and diagenesis of late Cenozoic sediments are discussed and related to volcanism, tectonics, the hydrodynamics of the Mediterranean Basin and the climate. Sedimentation is discussed and classified into a number of Lithological-Geochemical Zones differentiated on the basis of depth, hydrodynamic conditions, fossil remains, type of sedimentation and geochemical characteristics of the deposits. A brief discussion of the basin history, its geochemical evolution and abnormalities of sedimentation conclude the discussion of the Mediterranean Basin.

Palynologists and other micropaleontologists interested in the Mediterranean and neighboring basins will benefit from a careful reading of this synthesis. Research ideas for integrated palynological, geochemical and sedimentological projects are there for the taking. For example, is there any relationship between the distribution of spores, pollen, dinocysts and sediment types, minerals or elements in Recent sediments? Can diatoms, foram or dinocyst concentrations be related to sediment types or mineralogy in areas of upwelling? Are certain dinocyst types associated with sapropels or deltaic deposits in the eastern Mediterranean Basin?

Only minor drawbacks were noted in this book. For example, the map on page 235 is upside down, the captions for Figures 81 and 82 are interchanged, and a hand lens may be required by some senior scientists to read some figures (i.e., Figure 120). The apparently

camera-ready manuscript could have used a bit more line editing. Sentence structure is occasionally awkward but usually does not obscure the intent of the authors. Particularly vexing was the flush-left format of the figure captions and the entries in the Reference List. This editorial oversight makes the reader work far too hard to extract the information sought, especially after paying \$85.00 for the book!

On the whole though, Geochemistry and Sedimentology of the Mediterranean Sea will be a useful book to anyone working in the Mediterranean Basin.

John H. Wrenn  
Amoco Production Co.  
P. O. Box 3385  
Tulsa, Oklahoma

#### References

- Emelyanov, E. M.  
1975. Bottom sediments of the Mediterranean Sea. In: Sedimentation in the Atlantic Ocean. Kaliningrad: Kaliningradskaya Pravda: 309-426 (in Russian).
- Emelyanov, E. M., Mitropolsky, A. Yu, Skimkus, K. M. and A. A. Moussa  
1979. Geochemistry of the Mediterranean Sea. Kiev: Naukova Dumka: 132 p. (in Russian)
- Skimkus, K. M.  
1981. Sedimentation of the Mediterranean Sea during late Quaternary time. M. Nauka, 240 p. (in Russian).

#### For Your Book Shelf

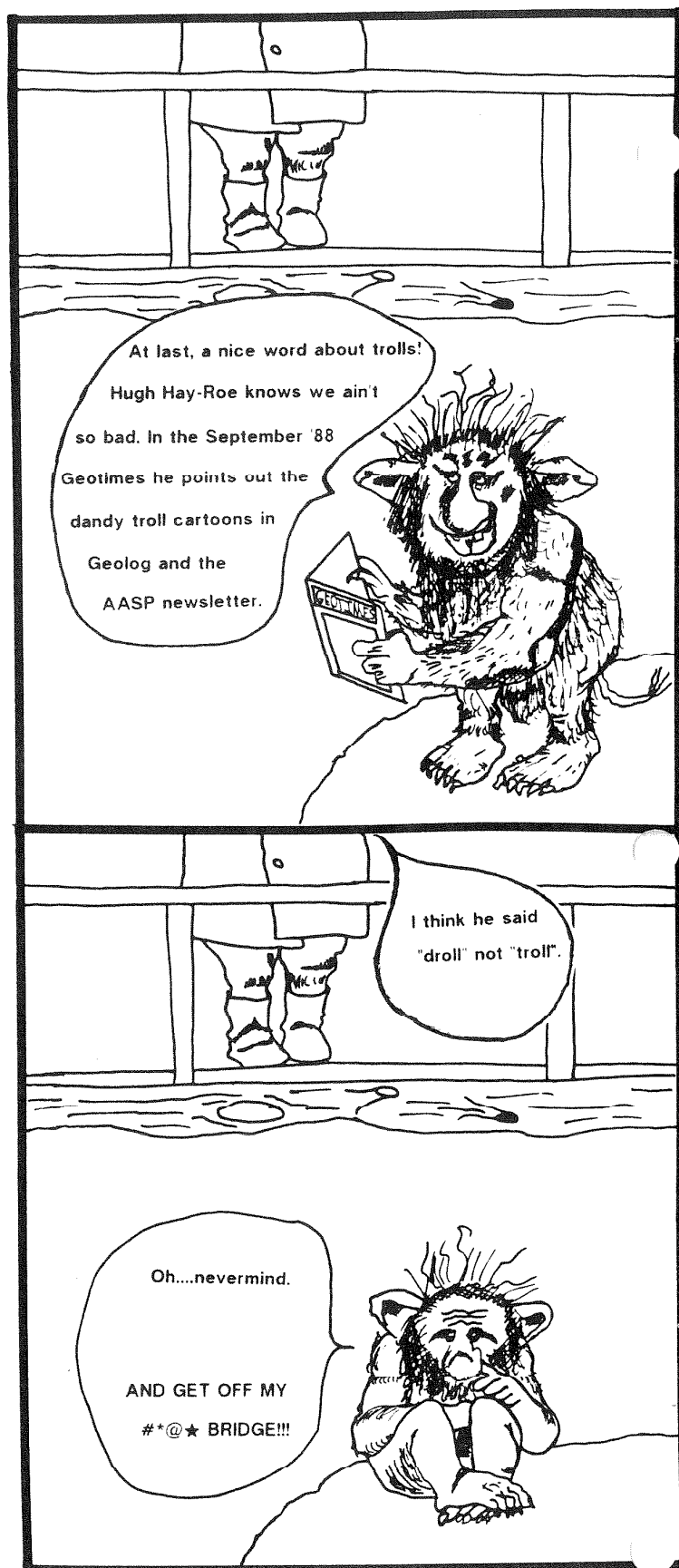
Palaeontographica Canadiana No. 5, "Early Ordovician (Arenig) graptolites of the Cow Head Group, western Newfoundland, Canada" by S. Henry Williams and Robert K. Stevens, 1988. (\$30.00 Can + mailing and handling, \$4.50 (Can) in Canada; \$6.75 (Can) outside Canada)

Order from:

Canadian Society of Petroleum Geologists  
#505, 206-7th Avenue S.W.  
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Canada

or

Geological Association of Canada Publications  
Department of Geological Sciences  
Memorial University  
St. John's, New Foundland A1B 3X5  
Canada



## ORDER FORM

### Lycopodium Spore Tablets

Orders for Lycopodium spore tablets should be sent to:

Laboratory of Quaternary Biology  
Tornavaðgen 13  
S-223 63 Lund, Sweden

We order \_\_\_\_\_ tablets

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Country \_\_\_\_\_

## American Association of Stratigraphic Palynologists Student Scholarship

The American Association of Stratigraphic Palynologists is pleased to announce its program of Student Scholarships to support studies in palynology. Currently, two such scholarship for \$250 (U.S.) each may be awarded annually. Ordinarily the scholarships will be awarded to graduate students, but advanced undergraduate students may also apply.

Basis of Awards - The qualification of the student, the originality and imagination evident in the proposed project, and the likelihood of significant contribution to the science of palynology are factors that will be weighed in selection of award winners.

To Apply - Part A of this form is to be filled out by the student and Part B by the student's faculty supervisor. The faculty supervisor will send both forms together to the address given at the end of Part B. Scholarship applications must be received no later than March 1, and awards will be announced by March 30.

### PART A - Application for A.A.S.P. Student Scholarship

Student's name:

Address:

Universities or other institutions attended (earliest listed first). Include the institution that you will be attending during tenure of the scholarship, the degree you will be seeking, and the anticipated completion date:

Institution	Degree	Beginning Date	Completion Date
-------------	--------	----------------	-----------------

What is your background in palynology?

Professional experience:

Previous awards or honors:

Summary of institutional or other support for your project (specify whether granted or applied for):

Title of proposed investigation:



Project supervisor:

Summary of the investigation (250 words or less, on an attached sheet); include objectives, why you selected this problem and its significance, and how you plan to approach and carry out the investigation.

I agree that the recommendation I am requesting from my faculty supervisor will be held in confidence by officials of my institution, and I hereby waive any rights I may have to examine it.

yes \_\_\_\_\_ no \_\_\_\_\_

Date: \_\_\_\_\_ Applicant's signature: \_\_\_\_\_

Part B - Endorsement by Faculty Supervisor

1. Ranking of the applicant versus other students you have known who are pursuing the same degree:

lower 50% \_\_\_\_\_ upper 50% \_\_\_\_\_ upper 25% \_\_\_\_\_ upper 10% \_\_\_\_\_ upper 5% \_\_\_\_\_

2. Did the idea for the project originate from student? yes \_\_\_\_\_ no \_\_\_\_\_

3. Can you verify the student's statements as to other awards, honors, or financial aid received or applied for? yes \_\_\_\_\_ no \_\_\_\_\_ Comment: \_\_\_\_\_

4. Please provide a brief summary (100 words or less, on an attached sheet) or your assessment of the applicant's project and his or her potential to attain the objectives. Among other traits, please comment on the student's native intellectual ability, ability to express her(him)self, perseverance, imagination and the probable creativity, and the value of the project.

Faculty supervisor's name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Position: \_\_\_\_\_ Institution: \_\_\_\_\_

Address: \_\_\_\_\_

Please return Parts A and B to: Barbara L. Whitney  
Union Oil Co. of California  
P. O. Box 76  
Science and Technology Division  
Brea, California 92621