VOLUME 19, NUMBER 2

AASP NEWSLETTER

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Send to: Dr. Gordon D. Wood
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AASP NEWSLETTER

VOLUME 19, NUMBER 2 APRIL, 1986

R. L. RAVN, EDITOR ISSN 0732-6041

A ROSE BY ANY OTHER NAME . . .

In keeping with the numerous changes of location, changes of position, etc., that have been announced in recent issues of the Newsletter, I find it necessary once again to announce a couple of changes that affect correspondance to the Newsletter. The company for whom I toil tirelessly, without complaining and so forth, has decided to change its name. My address is now Standard Oil Production Company, Lincoln Centre 1, 5400 LBJ Freeway, Dallas, Texas 75240. And as if that weren't enough, they installed a superduper new computerized telephone system, which, of course, necessitated changing everyone's phone number. My new phone number is (214) 701-4329. The chairman of the board and the president of the corporation were both removed from their posts as well, although I don't know if any connection exists among all these events. In any case, my condolences to anyone who has been trying in vain reach me during the past month or so (Ed.)

NOMINEES FOR THE BOARD OF DIRECTORS

The Nominating Committee has submitted the following slate of candidates for the 1986 election of AASP, Inc.:

PRESIDENT-ELECT.	Norman O. Frederiksen (U.S. Geological Survey, Reston, Virginia) Jocelyne A. Legault (Dept. of Earth Sciences, University of Waterloo, Waterloo, Ontario)
SECRETARY-TREASURER:	Gordon D. Wood (Amoco Production Company, Houston, Texas) unopposed
MANAGING EDITOR	Douglas J. Nichols (U.S. Geological Survey, Denver, Colorado) unopposed
DIRECTORS-AT-LARGE (2 to be elected):	Susan L. Duffield (Amoco Production Company, New Orleans, Louisiana) Patricia G. Gensel (Biology Dept., University of North Carolina, Chapel Hill, North Carolina) David K. Goodman (Arco Oil & Gas Company, Dallas, Texas) John H. Wrenn (Amoco Production Company Research Center, Tulsa, Oklahoma)

Members are reminded that Article 7.03 of the AASP Bylaws states that: "Additional nominations may be made by any member in good standing by submitting a petition, signed by at least nine (9) other members in good standing, to the Secretary-Treasurer by June 15," for inclusion on the ballot to be submitted to the membership.

BIOGRAPHICAL SKETCHES OF NOMINEES

President-Elect

Norman O. Frederiksen is employed at the U. S. Geological Survey in Reston, Virginia, where he has been active in research on Cretaceous and Tertiary spores and pollen, especially of the Atlantic and Gulf Coast regions. He joined AASP in 1970, and was a Councilor from 1977 to 1978. He served on the Nominating Committee in 1973, the Ballot Committee in 1978 and 1984 and the Awards Committee from 1981 to 1984. He was co-leader for the Annual Field Trip in 1973, Newsletter Editor from 1981 to 1983, and was General Chair for the AASP Annual Meeting in Arlington, Virginia in 1984.

Jocelyne A. Legault is a professor of Earth Sciences at the University of Waterloo, Waterloo, Ontario, Canada. She joined AASP in 1969 and served as Councilor from 1978 to 1979 and as a Director-at-Large from 1982 to 1984. She served on the Nominating Committee from 1976 to 1977, the Annual Meetings Guidelines Committee from 1984 to 1985, and the Awards Committee from 1984 to the present. Her major research interests are on Lower Paleozoic acritarchs and chitinozoans.

Secretary-Treasurer

Gordon D. Wood is employed by Amoco Production Company in Houston, Texas. He joined AASP in 1972, and has served as chairman of the 1984 Nominating Committee, and as technical editor for Paleozoic papers in Palynology and the AASP Contributions Series. He is presently interim Secretary-Treasurer, having been appointed by the Board of Directors in January to fill the unexpired term left vacant by the resignation of Ken Piel. His major research interests include Lower and Middle Paleozoic acritarchs, chitinozoans and spores.

AASP Newsletter is published quarterly by American Association of Stratigraphic Palynologists, Inc.

Managing Editor

Douglas J. Nichols is employed at the U. S. Geological Survey in Denver, Colorado. He joined AASP in 1968 and has served as Managing Editor since 1983. He also served as President-Elect in 1981-1982 and President in 1982-1983, as well as on the Nominating Committee, 1979-1980, the Annual Meeting Committee, 1980, and as Newsletter Editor from 1979-1981. Since 1985, he has been one of two AASP Councillors to the International Federation of Palynological Societies. His major research interests are in Cretaceous and Lower Tertiary palynostratigraphy with special interest on angiospermous pollen distributions across the Cretaceous-Tertiary boundary.

Director-at-Large

Susan L. Duffield is a palynologist with Amoco Production Company in New Orleans, Louisiana. She joined AASP in 1980, and her major research interests are with Paleozoic acritarchs and early land-plant spores.

Patricia G. Gensel is a professor in the Biology Department at the University of North Carolina, Chapel Hill, North Carolina. She joined AASP in 1972 and her major research interests are in Devonian paleobotany and spore affinities.

David K. Goodman is employed by Arco Oil and Gas Company in Dallas, Texas. He joined AASP in 1975 and has served on the Best Student Paper Committee in 1981, and as a reviewer for Palynology since 1979. Beginning in 1985, he has served as assistant editor for Palynology. His major research interests are in Lower Tertiary dinoflagellate cyst morphology, taxonomy and stratigraphy.

John H. Wrenn is employed at the Amoco Production Company Research Center in Tulsa, Oklahoma. He joined AASP in 1980, and served in 1984 on the Nominating Committee. He is presently a member of the Local Committee for the 1986 Annual Meeting in New York City. His major research interests are in Tertiary dinoflagellate cyst morphology, taxonomy and stratigraphy.

MID-YEAR BOARD OF DIRECTORS MEETING

The 1986 AASP Mid-Year Board of Directors Meeting was held April 3-4 at the Union Plaza Hotel in Las Vegas, Nevada. All Board members were present (President Ray Christopher, President-Elect Don Benson, Secretary-Treasurer Gordon Wood, Managing Editor Doug Nichols, Directors-at-Large Reed Wicander, Judi Lentin, Bill Cornell and Barbara Whitney). Also present were AASP Foundation Secretary-Treasurer Bob Clarke and Foundation Trustees Norman Norton and Virgil Wiggins, 1986 Annual Meeting General Chairman Dan Habib, and Newsletter Editor Bob Ravn.

Membership and financial reports presented at the meeting indicate that AASP continues to grow and remains solvent. As of April 3, 1986, AASP had 1,041 members (912 individual and 129 institutional), a net increase of 13 since the date of the last membership report presented at the Annual Meeting in El Paso in October, 1985. The Treasurer's report indicated a net worth for the society of $37,347.28 as of April 3. Bill Cornell, as Local Committee Chair for the El Paso meeting, reported a net profit of $111.16 from the meeting.

The AASP Foundation report, presented by Bob Clarke, likewise indicates a sound financial condition. As of December 31, 1985, the Foundation had a balance of $19,988.49 in the bank. This balance is down from the slightly more than $26,000 balance reported one year previously, but Bob reported a significant number of outstanding invoices for publications that had not been collected at the time the report was compiled. It was a banner year for Foundation publication efforts, with the first two hard-cover books appearing, which contributed to an unusually high cost for publications, as well as a high projected income as they continue to sell.

Despite the healthy financial outlook, a significant problem for the Society is an unacceptable level of outstanding dues from members. Secretary-Treasurer Gordon Wood reported a list of 19 single-spaced pages of members who had not yet paid dues for 1985. In keeping with practices of past years, the board moved to drop 1985 delinquents from AASP rolls by May 1, 1986; members dropped for unpaid dues a year in arrears will no longer receive Newsletters or other AASP publications until dues are paid. In this regard, members should also take notice of two items regarding their dues. Dues checks must be made payable to AASP, Inc., not personally to the Secretary-Treasurer or to other AASP officers. U.S. members should also note that dues are tax-deductible. Contributions may be made either to AASP, Inc., or to the AASP Foundation; contributions to AASP Foundation are also tax deductible, but contributions (other than dues) to AASP, Inc., are not. Contributions can be designated for special purposes such as the Student Scholarship Fund, for which a blank is provided on the Annual Dues Notice that accompanied volume 18, number 4 of the Newsletter.

The report of the Nominating Committee generated a good deal of discussion, centering on the historical precedents and bylaws concerning candidate selection. Several members stressed that there were no objections to any of the candidacies proposed by the Nominating Committee, but concern over the historical tradition of nominating single candidates unopposed for the offices of Secretary-Treasurer and Managing Editor was expressed by some Board members. The importance to the society of having continuity over a multi-year period in each of these important and time-consuming positions was also voiced, and cited as the historical reason behind the tradition of unopposed nominations. The possibility of electing these two officers to terms longer than a single year was suggested, but the Board noted that this change in procedure would require a change in the organizational bylaws. Ultimately the Board moved to recommend that the Nominating Committee not arbitrarily limit nominees for these two posts to only one when no incumbents are running. The Board also wished to point out that the membership may nominate candidates other than those selected by the Nominating Committee, by obtaining a total of ten signatures of members in good standing and presenting the nominee to the Ballot Committee no later than June 15, as noted on the preceding page of this Newsletter. The Nominating Committee's report was accepted on a 6 to 1 vote.

Public Relations Committee Chairman Reed Wicander presented a report on the outlook for palynology that can only be termed disturbing. It is detailed and worthy of close scrutiny by all AASP members, and its major points appear later in this Newsletter. Further discussion of the matters addressed in Reed's report are solicited from members.

The Managing Editor's report, presented by Doug Nichols, noted that volume 10 of Palynology is in preparation. Five papers already have been reviewed, edited, revised and accepted for publication; six others have been accepted pending revision, and seven more are presently out for review. Not all of these will make it into volume 10, and papers accepted to fill the volume will be dependent on date of return of acceptably revised manuscripts and space considerations. Deferred manuscripts will be scheduled for volume 11 (1987). Thanks are due to Assistant Journal Editors R. Farley Fleming, who assisted on Palynology 9 as well as the forthcoming issue, and Dave Goodman, who is presently at work arranging for reviews for volume 10.

An index volume, titled "Annotated Indexes to Publications of the American Association of Stratigraphic Palynologists 1970-1984" continues in preparation. Judith Lentin is editing the compendium, which involves the use of a computer program written at her own expense to make data entry much more rapid and efficient. The volume will be published as an AASP Contributions number, and will contain a complete list of titles with alphabetical indexes by author, stratigraphy, geography and taxonomy.

The report of the Awards Committee, chaired by Lew Stover, contained two important recommendations regarding the L. R. Wilson Student Paper Award. The first is that the competing papers be presented in a single session, as early in the meeting as practical. The second is that scientific content of the papers be a formal criterion to be taken into account by the judges, with an appropriate alteration of the judging form for this purpose (in previous years, the criteria for judging of papers have centered on the presentation). Students intending to present competing papers for the L. R. Wilson Award in New York this year should be aware of this change.

Dan Habib, general chair for the Local Committee for the 1986 Annual Meeting in New York City, presented a progress report indicating that preparations are going smoothly. Considerable interest has been shown in the several symposia tentatively scheduled for the meeting, and with the joint meeting of C.I.M.P. in New York, a large number of abstracts for presentations and poster sessions is anticipated. A heavier-than-normal number of submitted abstracts may make necessary a concurrent session or two, a departure from the practices of recent Annual Meetings. More information relative to the New York meeting and associated functions appears later in this Newsletter.

The selection of future Annual Meeting sites was discussed in some detail. Although the 1987 site (Halifax, Nova Scotia) and the 1988 site (Houston, Texas) have been chosen, sites for the 1989 and subsequent meetings have not been selected. Suggestions from the membership concerning potential sites for these future meetings are solicited. Several members of the Board noted that, although the "Local" organizing committee traditionally has been "local" to the site selected, it is not entirely necessary that this be so. Several members of this year's "Local" Committee, for example, reside in places far removed from New York City. The increasing interest and expertise of hotel management people in hosting conventions such as our Annual Meeting allow important arrangements to be made without the need for the continuing physical presence of a local AASP organizer at the meeting site. This ability to arrange meetings in absentia opens many new possibilities for meeting sites in places not previously considered.

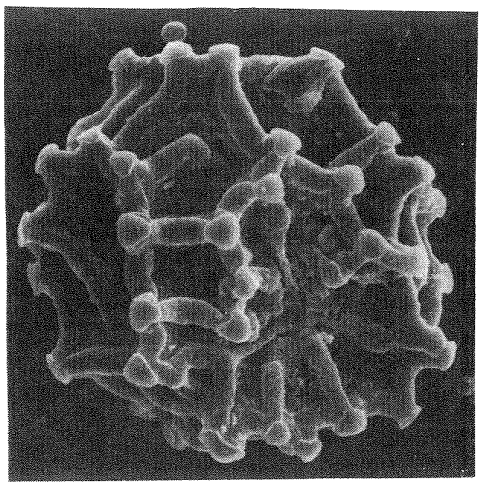
The letter to the editor from Lynn Brant that appeared in the preceding issue of the Newsletter drew considerable comment. In the letter, Lynn suggested the possibility of allying at least some of our future Annual Meetings with the conventions of a larger society such as the Geological Society of America, to permit greater attendance from people who are restricted to a single meeting per year. Considerable sympathy for this idea was expressed by various Board members. Judi Lentin mentioned the possibility of allying our 1989 Annual Meeting with the International Geological Congress in Washington, D. C. A check of the dates for this meeting revealed that its July, 1989, date conflicts with AASP bylaws which require that the Annual AASP Meeting be held after August 15, when the ballots for AASP elections are counted.

In other matters, the Board moved that new members be provided with "care packages" by the Secretary-Treasurer. This introductory packet of material will include a copy of the bylaws, Newsletter issues for the year, a list of available publications, any free publications issued during the year, a directory, AASP Foundation and Century Club information, and information on the various AASP committees. The Board also moved to provide letters of recognition to the supervisors of AASP members who serve on committees or in other volunteer capacities with the society; a motion was also made to provide some sort of symbolic award for such service, but after discussion, it failed on a unanimous vote.

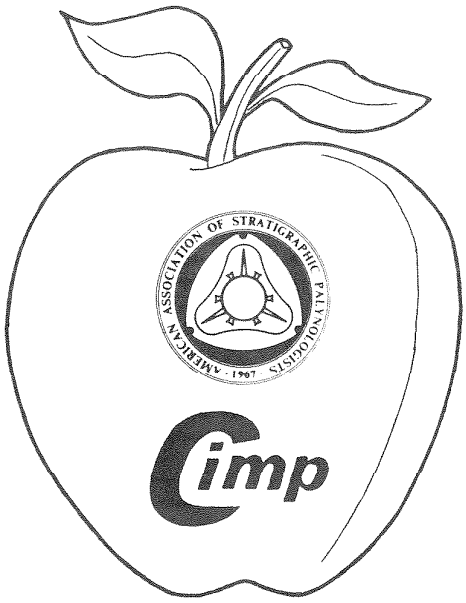
The Mid-year Board meeting closed on an upbeat note, when Secretary-Treasurer Gordon Wood hit a $500 jackpot on a 25-cent slot machine, demonstrating one of the essential qualities a secretary-treasurer must possess: Dumb luck. In regard to this event, it is necessary to note that the Newsletter Editor tried to prevent Gordon from messing around with the one-armed bandits by enticing him into the piano bar at the hotel, but failed to catch him before he got to the elevator. I presume some form of recognition for this service will be forthcoming.

All AASP members are reminded that the Board of Directors will meet, as usual, at the Annual AASP meeting in New York City. This meeting is open to all members, and everyone is encouraged to attend.

Bob Ravn.



Corbylosporites papillatus (Naumova) Playford and Satterthwait 1985, Morrowan (Westphalian A) of Iowa (750X).



1986 AASP ANNUAL MEETING REMINDERS

As plans for the 1986 Annual Meeting of AASP in New York City continue to progress, we have several reminders for prospective attendees. The deadline for receipt of abstracts, as specified in the preceding issue of the Newsletter, is June 2. Abstracts are to be prepared as camera-ready copy on the official abstract form, which was attached to the last Newsletter. Extra copies of the form may be obtained from Dan Habib, Lucy Edwards, John Wrenn or Newsletter Editor Bob Ravn. A meeting pre-registration form, a hotel reservation form, and the schedule of events for the meeting will appear in the July Newsletter. Professional registration for the meeting (which includes one drink ticket, admission for the Icebreaker, the group photo and one ticket for the Business Luncheon) is $60 for pre-registration, $65 on site; student registration is $20 for pre-registration, $25 on site. The official meeting field trip, titled "Stratigraphy of the Devonian and Triassic/Liassic," costs $45 which includes transportation, the guidebook and lunch; it is limited to 44 persons. Questions or requests for information should be directed to Dan Habib, Earth and Environmental Sciences, Graduate Center, 33 West 42nd Street, New York, NY 10036-8099.

A second field trip to be held in conjunction with the meeting is being organized by the Chitinozoan Subcommission of C.I.M.P. Sections of the fossiliferous Middle Devonian Hamilton Group and Middle Ordovician Trenton Group will be visited during the five-day trip, beginning November 2 and ending November 6 (this trip does not conflict with the Devonian and Triassic/Liassic trip mentioned above, which is scheduled for November 1). The Chitinozoan Subcommission field trip is being held in conjunction with the C.I.M.P. meeting and is open to all interested individuals. Collecting chitinozoans from these sections will be emphasized; however, other palynomorph groups are present and the stratigraphy of these classical North American reference sections will be reviewed. Dr. Carlton E. Brett, a specialist in Middle Devonian stratigraphy and paleontology, will assist with the Devonian part of the trip. Mr. Charles Hart, an M.Sc. student at the Ohio State University, will assist with the Trenton chitinozoans; he is currently completing his thesis on Trenton chitinozoans from the type area.

Final details for this trip will be completed in mid-July. Hotel costs are estimated between $40 and $50 per night per room (rooms can be shared to cut cost if desirable). Vehicle rental charges will be divided among participants. An illustrated AASP field guidebook is planned. This trip will be limited to 15 participants. The final deadline for registration for the trip is September 15. For further information, contact Merrell A. Miller, Amoco Production Company Research Center, P.O. Box 3385, Tulsa, OK 74102.

In addition to these two field trips, there may be a separate post-meeting trip to Sterling Forest, Tuxedo, New York, to investigate a 12,000-year-old *Sphagnum* bog and/or a tour of Lamont-Doherty Geological Observatory, Palisades, New York.

Prospective attendees and participants also are reminded of the several symposia scheduled for the New York meeting: A symposium on Triassic-Jurassic Palynostratigraphy, a symposium on Paleozoic Palynology (in collaboration with C.I.M.P.) chaired by Steve Jacobson of Chevron in Denver, Colorado, and a symposium on Neogene Dinoflagellate Cyst Biostratigraphy chaired by John Wrenn of Amoco in Tulsa, Oklahoma. In addition, Norrie Robbins of U.S.G.S. in Reston, Virginia, is interested in organizing a symposium on the Palynology of Ore Deposits; persons interested should contact Norrie at the U.S. Geological Survey, National Center, MS956, Reston, VA 22092.

POSITION AVAILABLE

Biostratigrapher, Kansas Geological Survey. Full-time position on the University of Kansas Staff. Requirements: Master's degree (Geology) with five years experience; Doctorate in Geology is preferred. Duties involve research in stratigraphic paleontology or paleoecology of Paleozoic strata in the Mid-Continent region. Knowledge and interest in using subsurface data is desirable. Send letter, resume, college transcripts and three references to:

Personnel Manager, Kansas Geological Survey, 1930 Constant Avenue, University of Kansas, Lawrence, KS 66046-2598. Phone (913) 864-3965. Applications must be received on or before June 6, 1986. The Kansas Geological Survey is an equal employment opportunity and affirmative action employer.

ACRITARCH NEWSLETTER

Acritarch Newsletter is produced by the Subcommission on Acritarchs of the Commission Internationale de Microflore du Paleozoique (C.I.M.P.). The worldwide scope and coverage includes information on the abundant and diverse Precambrian and Palaeozoic acritarch microflora (microphytoplankton) and acritarch records from the Mesozoic and Cenozoic. Volume 2 (1986) includes a listing of 127 recent publications. A limited number of copies are available to individual members of AASP. on request to the editor, Ken J. Dorning, Pallab Research, International Palynological Consultants, 58 Robertson Road, Sheffield S6 5DX, England. Regular copies of Acritarch Newsletter and Chitinozoan Newsletter are mailed to members of C.I.M.P.; membership details are available from the Secretary General, Dr. Geoffrey Clayton, Department of Geology, Trinity College, Dublin 2, Ireland.

Ken Dorning.

THE OUTLOOK FOR PALYNOLOGY

The AASP Public Relations Committee, chaired by Reed Wicander, with members Dick Baker and Virgil Wiggins, has just concluded gathering information from government agencies, industries and consultants concerning the future outlook for palynological employment. Questionnaires designed to measure various aspects of the employability of palynologists in the near future were sent to 25 government agencies, 21 consultants and more than 120 industry offices. To be blunt, the results are not encouraging.

Of the 25 questionnaires sent to the government offices, 10 were returned. The overall trend of these responses indicated that new palynologists should get a broad background in geology, and not over-specialize. In general, there is a government hiring freeze and no new palynologists are being hired. Four respondents, however, did say they expected to hire one new palynologist during the next five years.

Eight consultants responded to the questionnaires. Only two of them hire or train new palynologists. Most are individual consultants or subcontract work out to specialists when they need them. In general, consulting firms hire by advertising, "networking" or from oil companies. Two companies expect to hire in the next five years. Most of the respondents hope there is a trend toward using consultants; this hope is based on attrition and restructuring in the oil industry. One respondent said business was flat. Most of the consultants said that experience or training in the Mesozoic would be the most useful, followed by the Cenozoic; only one indicated a preference for the Paleozoic. The responses here also indicated that students need a broad geologic background and should not specialize in a particular area. One respondent thought we needed only a few schools in North America to turn out palynologists and that the professors there should be very active in the field.

Approximately half of the industies to whom questionnaires were sent returned responses, many of which were detailed and accompanied by personal letters. Again there was a consensus for a broad general background in geology plus some computer familiarity and mathematical skills. Communication skills were also deemed important.

Most industry respondents said they were not actively interviewing. Those that did express a preference for schools from which to interview prospective palynology students listed Stanford, V.P.I., L.S.U., Oklahoma, Michigan State and a few others. Most companies indicated they had not hired any palynologists during the last three years, and that they did not expect to hire any during the next five years. Some were more optimistic, indicating they might, if the hiring freezes were lifted. In terms of attrition, most companies foresaw no retirements during the next year, some retirements during the next five years, and many retirements during the next decade. Most respondents said they would replace these retirees with new palynologists if they were allowed to replace them at all.

Asked if there was a trend for oil companies to use consultants, the respondents were divided. Because many companies have a hiring freeze, some have had to use consultants and expect to continue using them for the foreseeable future. Others indicated they did not prefer to use consultants because they wanted to maintain continuity within their own company system. Similarly to the response of the consultants, industry respondents indicated that students entering the field of palynology would be most attractive to industry if they were trained in the Mesozoic, with secondary preference for the Cenozoic, and little preference for the Paleozoic.

According to Virgil Wiggins, who compiled the responses from the industry questionnaire, the vast majority of respondents wrote notes and expressed a general lack of optimism for the future of palynology in industry. Most said a new palynologist cannot be a specialist, but must have a broad background. Several said today's palynologist must be flexible and adept at kerogen, source rock and even geochemical analyses.

In the report submitted at the Mid-Year Board of Directors Meeting, Public Relations Committee Chairman Reed Wicander concluded with the following summary:

Several trends came through loud and clear. First, the short term outlook is not good for palynologists. Secondly, today's palynologist must be more than a "pure" biostratigrapher. He/she must be familiar with and even possess the ability to perform other functions such as kerogen analysis. Thirdly, the schools that have traditionally turned out palynologists will no longer be doing so as those positions are being filled with non-palynologists.

Among the comments from the Board of Directors in response to this report was a consensus that palynologists individually must work harder to become more constructively visible in their positions of employment. In these times of economic retrenchment in industry, government and academic institutions, an "ivory tower" approach toward the profession is less acceptable than ever before. This report is an eye-opening look at how our discipline is viewed by those who employ us. We need to understand how and why those views came to be, and we need to do what we can to keep palynology a viable scientific tool of use to industry, government and academia. The survey summarized here only accentuates the comments made by Vaughn Bryant in his presidential address to the El Paso Annual Meeting, reprinted in the Newsletter, volume 18, number 4; it bears rereading.

Bob Ravn.

THE NAME GAME

Revelation of 29- and 30-letter taxonomic horrors in palynology in the past few issues of the Newsletter has prompted a couple of replies. Inspired apparently by the challenge, Bill Cornell has attempted to find the longest binomial combination, and reported to me one totalling 38 letters. My own research, however, has uncovered no less than two palynomorphs whose generic name and specific epithet totals 41 letters: *Microreticulatisporites trigonoreticulatus* and *Tricolporopollenites caesalpiniaceaeformis*. These were discovered in a cursory look through some literature; I'd be amazed if some creative soul out there with nothing better to do doesn't come up with something worse.

Mike Boulter has offered a challenge for the most unpronounceable name: *iszkaszentgyoergyi* (specific epithet for the new genus *Diporoconia*, transferred from *Diporites* by Frederiksen et al., in Palynology 9 [1985], original author Kedves, 1965). Mike notes Recommendation 23B(b) of the ICBN: "To avoid epithets which are very long and difficult to pronounce in Latin." The Newsletter eagerly awaits the efforts of AASP members to rise to these challenges.

Bob Ravn.

BOOK REVIEWS

Aspects of a Stratigraphic System: The Devonian, by D. L. Dineley. John Wiley and Sons, New York, NY, 1985. 223 pp., $34.95.

According to the preface, this book is intended for "the interested but not very advanced student of historical geology". There are no photographic illustrations and the numberous line-diagrams are largely hand-lettered, giving the volume a curiously dated appearance.

This work is essentially a text on basic stratigraphic practice and the various methodologies that are used to unravel the complexities of past geological events. Unlike most previous authors in this field, Professor Dineley has opted to illustrate the concepts he deals with, solely by examples from a single System, viz. the Devonian. He gives no convincing rationale for treating his subject this way and the justification is not obvious. For example, Figure 3.5, illustrating the variety of sedimentary basin types, is an admission that the chosen format is inadequate. This diagram includes Mesozoic and Tertiary examples simply because some basin types are not known from the Devonian.

Even if the reader accepts the concept of using the Devonian as a case history, this volume is less than satisfactory. The arrangement of chapters is confusing. Why, for instance, should one have to read through Chapter 3, "Stratigraphy and the World Tectonic Model", before reaching a precis of the history of the Devonian System and the De La Beche - Sedgwick/Murchison controversy? This should surely have come in the introductory chapter to provide some background for the uninitiated reader.

The ten chapters include coverage of a variety of topics as diverse as Biostratigraphy, Carbonates and Evaporites, Paleogeography and the Expanding Earth. In general, a good introduction to each topic is provided, although they are dealt with in a limited, sometimes cursory fashion. The text includes numerous instances of vague statements that simply are not explained. For example, on page 67: "The unicellular organisms have a poor record in the Devonian rocks, but the taxa present indicate a wide range of types and modes of life." This seems a self-contradictory statement. The reader is left asking what is meant by "a poor record"? I suspect what the author means is that we currently have little knowledge of this broad group of microfossils. If so, he might have added that this is probably not because of an intrinsically poor fossil record, but is largely a function of the minimal amount of research that has been done.

Many of the diagrams in the body of the text seem unclear, irrelevant, or even misleading. Figure 8.3 is so simplified as to be almost meaningless. Figure 9.6 suggests erroneously that everything from the Cambrian to the Famennian is included in the Kaskaskia Sequence of Cratonic North America. Figure 2.4 is a classic and shows three graphs of salt, evaporite volume and potential oil generation against time; the Figure explanation stresses the three coincident peaks that occur in the Devonian, inferring that they are somehow linked, but failing to explain how. Further, the author chooses to ignore the fact that throughout the rest of geologic time, no other peaks or troughs appear in juxtaposition, so that the Devonian plots might well be interpreted as being literally coincidental. One sympathizes with the geologically unsophisticated reader trying to interpret the significance of such graphic "aids."

Perhaps the greatest criticism of this book is that it consists entirely of facts, concepts and models taken directly from the existing literature, with no real attempt to synthesize the mass of information presented. Throughout, the reader is faced with a stream of often conflicting evidence, drawn from disparate sources and disciplines and is given little help in assessing the value of these data. There is nothing new here and after finishing the book, I was left wondering what the point of it was. I am afraid that after reading it, the author's hypothetical "student of historical geology" would, alas, be not much further advanced.

Robert E. Turner, Amoco Canada Petroleum Co., Ltd., Calgary, Alberta, Canada.

Continental Rifts, edited by A. M. Quennell. Van Nostrand Reinhold Company, New York, NY, 1985. 349 pp., $44.50.

Continental Rifts, Volume 90 in the Benchmark Papers in Geology Series published by Van Nostrand Reinhold Company, Inc., consists of a collection of classic papers dealing with rifts formed in continental rocks on various continents and in differing geologic settings. If you have lost track of what has been happening in the world of rifting, this may be the catch-up source you have been seeking.

The volume is divided into eight sections, each consisting of two or three papers. Each section deals with a specific geographic area or continent, and, for the most part, with a particular geologic "style" of rifting well illustrated in that area. Each section has an "Editors' Comments" paper which discusses the papers contained in that section, pointing out the significance of the papers and something about why they were selected for inclusion over other papers. The papers date from 1841 to 1981, only three papers being published prior to 1965. I found the volume interesting because it deals exclusively with the rifting of continental rocks, whereas much of the plate tectonics literature concentrates on rifting in ocean basins.

The Introduction explains the philosophy followed in the volume and clarifies the definitions of critical terms used in the papers that follow. Though very useful, it was at times terse and required anyone not closely following the field to read other references to understand some point raised. For example, the discussion on pages 2 and 3 regarding the setting aside of the "inductive method" in science raises the issue but refers one entirely to literature references to learn about the "new understanding." The twenty-five references cited cover a broad spectrum of literature.

Part I deals with the theory involved and with general terminology and concepts that apply to rifting. The five papers here are a complete mix. They tend to be papers which provide classifications of rifts, illustrate mechanisms, and introduce concepts. Some, such as those by Milanovsky, involve approaches outside present concepts of plate tectonics, their value lying in definitions of terms and classifications of rifts. In this part, as well as each of the other parts, the references cited in the various papers are an important and valuable part of this volume.

Parts II through VIII deal with different geographic areas and the rifts found there. These are the classical rift areas: Africa/Arabia, Europe, Asia, North America, South America, Australia, and New Zealand. Most of the papers were written after plate tectonics was proposed.

A few older papers are included for their classic descriptions of geologic features. As one would suspect, the style of the various authors varies, but the papers are interesting and appropriate for the volume.

The eight "Parts" are followed by a Bibliography of 22 references dated from 1965 through 1983. These are symposium volumes and include selected papers. There is good geographical coverage. An Author Citation Index follows and is in turn followed by a Subject Index and by a brief biography of the editor.

The organization of the volume is good in that it guides one to the areas of special interest to the reader. By first reading the Introduction and the Editor's Comments on the various papers, one can obtain quickly a feel for the subject and thus move promptly to the papers of special interest. Need to upgrade your understanding of rifting on continents? This volume, Continental Rifts, provides an efficient way to catch up!

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Unfinished Synthesis, Biological Hierarchies and Modern Evolutionary Thought, by N. Eldredge. Oxford University Press, New York, NY, 1985. $24.95 (hard cover).

In Unfinished Synthesis, Niles Eldredge has outlined his views concerning the formal structure of the theory of evolution, and how this structure differs from that of the original authors of the "modern synthesis." The first half of the book consists of an analysis of four books which Eldredge considers the cornerstones of the modern synthesis: Dobzhansky's Genetics and the Origin of Species (1937 and 1941 editions), Mayr's Systematics and the Origin of Species (1942), and Simpson's Tempo and Mode in Evolution (1944). The second half of the book presents a detailed discussion of areas in which Eldredge thinks these esteemed authors fell short, followed by a brief discussion of the evolutionary implications of such a change in viewpoint.

The crux of Eldredge's argument is that evolution involves interaction of units ("individuals") at distinct levels of two separate hierarchies. The genealogical hierarchy includes units linked by ancestry: Genes, chromosomes, organisms, demes, species, and monophyletic taxa. The ecologic hierarchy is defined by economic interaction, and includes molecules, cells, organisms, populations, communities, and regional biotas. Processes may operate on higher levels within a hierarchy which are not predictable from lower level phenomena, although the mere existence of higher levels does not require such processes.

Key to the argument is a shift in what Eldredge calls the "ontological" status of species (the dictionary definition of ontological is "metaphysical" -- surely a better word could be used here). Are species to be regarded as "classes" (entities arbitrarily carved out of a continuum by human observers), or as "individuals" (entities with discrete boundaries in space and time)? Eldredge opts for the latter definition (the genealogical hierarchy falls apart otherwise), and goes on to briefly argue for inclusion of the other levels in his parallel hierarchies.

Although Eldredge's argument will not be compelling to the unconverted (his treatment of communities as individuals is particularly superficial), it is thought-provoking. Of particular interest is his assertion that punctuated equilibria can be accepted as a valid description of the pattern of evolution without necessarily requiring new notions of process. Thus punctuated equilibria need not involve "species selection." In fact, Eldredge argues that because species are genealogical rather than ecological units, and may contribute populations to a number of different communities, species selection is unlikely to be a significant evolutionary mechanism.

Mass extinctions provide perhaps the most concrete example of the value of hierarchical thinking in evolutionary theory. Natural selection acting on local populations is unlikely to prepare a species to face the consequences of an asteroid impact (or whatever mass extinction mechanism one might favor), and thus species survival might be dictated by processes at a distinctly higher level than that traditionally treated by population genetics.

Coming from the senior author of the original paper on punctuated equilibria, the book is surprisingly circumspect, and refreshingly free of polemics. Early on (p. 6) we read that "... the synthesis is not so much incorrect as incomplete." Such writing involves careful consideration rather than strong reactions, and is to be commended. The informal conversational style makes easy reading for the most part, although in places Eldredge bogs down in jargon borrowed from the philosophers of science.

The book is sparsely illustrated with line diagrams. Some of these are superfluous, as the argument is essentially a verbal one.

Palynologists working in industry will find little of interest in Unfinished Synthesis. The chief value I see for the book is as a teaching tool. It would make an excellent starting point for a graduate seminar in evolution, for example.

Unfinished Synthesis is unlikely to become a "must read" classic, but it is sufficiently thoughtful to warrant serious consideration by students of evolution.

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Elements of Micropaleontology, by Gérard Bignot. Graham and Trotman, Ltd, Sterling House, 66 Wilton Road, London SW1V 1DE, England, 1985. 217 pp., £25.00 (hard cover), £9.95 (paper); prices do not include postage.

With the English translation of Professor Bignot's book (first published in France in 1982) a new source is available to students for the systematic study of micropaleontology. The 6½" by 9½" format is almost handbook in size. It is visually appealing with a false color SEM adorning the cover of (presumably) *Cyclococcolithina*, a Recent coccolithophore comprised of coccolith shields. While the remainder of the book lacks photographs, it is generously supplied with 143 crisp black-and-white figures of drawings of individual microfossils, illustrations depicting paleoenvironmental and paleogeographic relationships, and graphs and tables.

In his preface, Bignot states that a simple and relatively exhaustive study of micropaleontology has never been published and that this book intends to present the reader with a synopsis of the current state of knowledge. The book is well-organized and effectively carries out this goal. He lends support to the idea that biostratigraphy, while an important and early endeavor of micropaleontology, is now joined by other disciplines such as paleoclimatology, paleoecology, paleobiology and

taphonomy. The first half of the work treats the categories of microfossils -- forams, ostracodes, calpionellids, mineralized plant and animal remains, calcareous nannofossils, siliceous microfossils, conodonts and palynomorphs and in this way is similar to Microfossils by M. D. Brasier (1980), which also considers each microfossil type in a separate chapter with notes on the classification and evolution. But Bignot goes farther than Brasier in the second half, which is a synthesis, providing relevant examples from current research, and information on the potentials and limitations of all types of microfossils (i.e., what each type can and cannot tell you) for interpretations of biostratigraphy, paleoecology and paleogeography. In addition, the section on how to collect and prepare microfossils is helpful, especially when dealing with unfamiliar types. The annotated bibliography (although brief) at the end of each chapter complements the work.

This book has been conceived and laid out in a way to benefit a classroom schedule for advanced undergraduate or postgraduate levels. The volume could be used effectively along with Introduction to Marine Micropaleontology, edited by Haq and Boersma (1978), as the latter contains numerous SEM micrographs. For advanced workers wishing to learn more about aspects of micropaleontology outside their own specialty, the volume will certainly become a standard reference.

Perhaps the weakest portion of the book is a brief section on evolutionary trends in which the author embraces orthogenesis, a concept espoused by anti-Darwinian paleontologists to refer to evolution proceeding in straight lines toward a goal, in which natural selection has no regulating capacity. He also secures his belief as a recapitulationist on the same page (p. 162) by stating the "biogenetic law" (ontogeny recapitulates phylogeny) and his reference to palingenesis (not pollen germination but essentially equivalent in meaning to recapitulation). Unfortunately, these ideas are not developed or defended in light of current knowledge of evolutionary theory. It is no wonder then that topics of evolutionary taxonomy and cladistic taxonomy are not mentioned in this discussion.

Chapter 10 on palynology is adequately handled for a survey work of this sort with sections on spores and pollen grains, dinoflagellates, acritarchs, chitinozoans and minor groups (scolecodonts, unicellular and colonial algae, microforams, etc.). Carefully drawn range charts depicting the appearance of major palynomorph types are included along with notes on morphology, ecology and classification. Minor flaws here and elsewhere in the text include inaccurate translations from the French -- "advanced" or "highly evolved" should replace "evolved" (from the French evolue) and "colporate" should replace "colporous". Occasional typographical errors were noticed such as "tricolpatece", "Kramer", "indecators", "*Phyllocladittites*", and "Silarian". Both Bignot and my local television weather forecaster agree that the plural of pollen is pollens, but as a collective noun the plural of pollen is pollen (or in certain contexts pollen grains reads better). Finally, the erroneous notion that pollen is largely transported by wind is perpetuated in figure 16.1.

While a glossary would be helpful for an introductory text such as this, all new introduced terms are set in bold-face and so can be accessed with the general index. Bullets serve to highlight key ideas and points throughout. In conclusion, Elements of Micropaleontology will make a valuable addition for many as a reference work or a general text for a micropaleontology course.

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COMPUTER SOFTWARE AVAILABLE

MVSP, a MultiVariate Statistical Package, is a program written for the IBM PC and close compatibles. It is geared towards simple analyses of small to medium sized data sets. It is also available for only the price of a disk and postage.

This package contains procedures to perform various ordination and clustering analyses. These procedures include: Principal components analysis, reciprocal averaging, many similarity and dissimilarity measures, average linkage cluster analysis, and diversity indices. This program is menu-driven and easy to use, with all possible options being presented to you at each step. The data files may be created and maintained using any database, spreadsheet, or word processor program which creates plain ASCII files.

A copy of this program may be obtained from the author by sending a formatted, double-sided floppy disk and the cost of return postage to the address listed below. You may also simply send a check to cover the cost of a disk, mailer and postage ($5 total).

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BOOK REVIEW

A Research on Cenozoic Palynology of the Longjing Structural Area in the Shelf Basin of the East China Sea (Donghai) Region, by Song Zhi-Chen, Guan Xue-ting, et al. Cenozoic-Mesozoic Palaeontology and Stratigraphy of East China, vol. 1, 209 pp., 55 pls. Nanjing Institute of Geology and Palaeontology, Academia Sinica, Chi-ming-ssu, Nanjing, P. R. China. $14.00 U.S. post paid (airmail $6.00 extra); prepayment required.

This volume is the first in a new series. It deals with a study of three Tertiary borings in the shelf basin of the East China Sea. The text is in Chinese, but an English summary (p. 165-172) highlights the main conclusions and lists the characteristics of the seven palynological zones ranging in age from (Late) Eocene to Pleistocene. Both terrestrial and marine forms are described. Of 172 genera, 6 are new; of 443 species, 74 are reported as new. The nomenclature is in Latin, and diagnoses of the new genera are included in the English summary. Also, many new combinations are validly proposed. The book is printed on good paper, and the plates are of good quality (but not printed on the most modern equipment); I spotted relatively few typos.

The book appears to represent good value for the money, and would be a required item for all those involved with stratigraphic or systematic palynology in that part of the world.

The information necessary to order a copy of this book is given above; I copied it from one of a sheaf of order forms that I received with a complimentary copy. This indicates that enough copies are printed to satisfy orders from abroad. I will pass these order forms on at request.

Jan Jansonius, Esso Resources Canada Ltd., Calgary, Alberta, Canada.

NEWSLETTER LABELS

Secretary-Treasurer Gordon Wood wishes to inform all members that they should disregard at present the standard information on the AASP mailing labels that indicates last date of dues paid. In the transition of information from Ken Piel to Gordon which took place earlier this year, some matters are still being corrected, among them the dues dates on the mailing labels. The Newsletter will carry an appropriate announcement when these label notices are up-to-date again.

YELLOW RAIN REBUTTAL

Some issues back, the Newsletter carried an item from the general news media that the controversial "Yellow rain" phenomenon causing illnesses and deaths in Southeast Asia had been determined by some researchers to be nothing more than bee feces full of pollen. In the interest of balanced information, it is necessary now to report that the Canadian government is about to release a study concluding that "Yellow rain" is indeed the result of a chemical weapon. The evidence supports U.S. charges that the Soviet Union and allies have used a deadly chemical toxin in Southeast Asia. A detailed report on this story appears in the March 31, 1986 issue of the Wall Street Journal.

POLLEN VS. ASTEROIDS

Slump in employment of palynologists or no, we continue to make the news now and then. A New York Times article recently cited AASP Managing Editor Doug Nichols and unnamed colleagues for their work on Cretaceous-Tertiary boundary strata in Saskatchewan. Specifically, the article noted that the pollen record across the boundary indicated that plants similar to species living in the tropics today survived the boundary "event", even though dinosaurs did not. The pollen evidence suggests that an asteroid-impact "nuclear winter", often cited these days as the proximal cause of the demise of dinosaurs, did not last long enough to destroy these warm-climate plants, if it did occur. Thanks to Dan Habib for noticing the article.

POSTDOCTORAL FELLOWSHIP

A Quaternary research group studying sedimentology and history of fresh and saline lakes of Canada invites applications for a postdoctoral fellowship. Expertise in palynology is required; diatom expertise is desirable. Send vita and names of three referees by May 31, 1986, to J. Teller, Department of Earth Sciences, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

THIS ISSUE'S BEST QUOTATION

"One company hired three people, the other hired two palynologists."

From the Preliminary Report of the Public Relations Committee of the AASP Concerning the Outlook for Palynology.