

April, 1990  
VOLUME 23, NUMBER 2

President's Address .....	1
Report of Nominating Committee .....	3
Coming Events .....	5
Book Reviews .....	6
Parting Shots .....	11
Speakers Working Group Questionnaire .....	12
Annual Meeting Information .....	14
Abstract form .....	Attached

**AASP NEWSLETTER**  
DEPT. GEOLOGY AND GEOGRAPHY  
L.B. 8149  
GEORGIA SOUTHERN COLLEGE  
STATESBORO, GA. 30460  
Attn: F. Rich





# AASP NEWSLETTER

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

VOLUME 23: 2 April, 1990

ISSN 0732-6041 F.J. RICH, EDITOR

## Presidential Message

Dear AASP Members:

I have just returned from the AASP Board of Directors Mid-year meeting in Denver, Colorado. At this meeting your Board of Directors took a step into the future of Palynology by selecting a university for THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY. Seven very fine universities on our short list provided stacks of written documents to the selection committee (Ken Piel, Stephen Hall, and Norm Norton) before January 30, 1990. The selection committee studied all of the documents and wrote a report to the Board who then examined the proposals. Finally, each University sent their representatives to Denver to make a verbal presentation and answer the questions of the Board about their proposals and intentions regarding THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY.

For a "non academic" like your president, it was an interesting exposure to the business of running a university. I was surprised and delighted at the level of interest in teaching the science of palynology expressed by the universities. It is clear that the universities which were not chosen as the site of THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY now have members of their senior administrative staff who know of and understand the value of palynology. It is also probable that, through this initiative on the part of AASP, at least two of the universities that were not chosen to be the site of the CENTER will consider hiring palynological teaching staff.

The Board of Directors is pleased to announce that THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY will be located in the School of Geosciences, Louisiana State University. LSU has a long history of involvement in Palynology and the AASP. The very first annual meeting of the association was held at LSU. Indeed, the first major project of the AASP, the publication of a journal, was handled by LSU. The first seven volumes (1970-1976) of the proceedings of the American Association of Stratigraphic Palynologists were published as GEOSCIENCE AND MAN by the School of Geoscience Louisiana State University. Although GEOSCIENCE AND MAN was not dedicated exclusively to palynology, the first issue of that journal was pure palynology as were

Volume III (1971), Volume IV (1972), Volume VII (1973), Volume IX (1974), Volume XI (1975), and Volume XV (1976). After those seven years of nurturing by LSU, the AASP was ready to begin its own journal, PALYNOLOGY.

Louisiana State University has been the site of a school of palynology for over 25 years, thanks to the activities of Professor George Hart. The short courses in stratigraphic palynology at LSU, arranged by Dr. Hart, have long been a source of information and continuing education for palynologists in industry. Dr. Hart is now the Director of Research for the Louisiana Geological Survey and will not be directly involved in the new AASP CENTER FOR EXCELLENCE IN PALYNOLOGY.

THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY is not meant to minimize the superior work carried out at other centers of palynological excellence around the world. Penn State University, under the guidance of Dr. Al Traverse, the University of Toronto lead by Dr. Geoffrey Norris, the superb palynology school at Utrecht, to mention but a few, are shining jewels in this great crown of learning. I have just received a beautiful brochure from the new PALYNOLOGICAL RESEARCH CENTRE at Aberystwyth, Wales, UK. This new Centre (with Dr. David Batten, Dr. Warren Kovach, Dr. Henry Lamb and Dr. Bruce Tocher) offers Diploma courses, MSc, PhD and Postdoctoral research opportunities. THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY at LSU will complement the existing schools and add to the spectrum of basic training available to the bright young scientists of the future.

A fund drive, under the direction of Dr. Ken Piel, is under way. The Board of Directors of the American Association of Stratigraphic Palynologists, in consultation with Louisiana State University, is confident that funding for this new venture will be in place very soon and that advertising for the first chair in palynology at THE AASP CENTER FOR EXCELLENCE IN PALYNOLOGY will begin shortly.

Best wishes  
Judith Lentini  
President, AASP

## ABOUT THE TAXON PALYNOLOGICAL DATA SYSTEM

Since it was first advertised as available last fall, several dozen copies of the IBM-compatible TAXON palynological data system have been requested and dispatched. Response from those using it has permitted the discovery and correction of a few glitches in the menuing system, and suggestions of some possible improvements. In addition, it now seems timely to clarify some aspects of how the thing works and to comment on its current status.

The TAXON system is not, in the sense of a word processor or spreadsheet, a single integrated program (at least, not yet). It is rather a large collection of data files accessed through batch commands from the DOS command line. It is dependant only on DOS, but I've tried to devise menus that allow you to get along as much as possible without it.

The system consists of three groups of files: 1) commands, menu screens and index files; 2) literature references; 3) taxa files. The latter form the core of the system and occupy 90+% of its space, which currently is approaching 8 Megabytes.

The taxa files are arranged alphabetically by specific epithet. Locating information requires searching for matching character strings, which is done through commands explained on menus within the system. A standard species entry would look like this:

- [10563] *Periporopollenites polyoratus* (Couper) Stover, in Stover & Partridge, 1973; p. 272. \*
- [10563] *Caryophyllidites polyoratus* Couper 1960; p. 68, pl. 10, fig. 14.
- [10563] *Polyporina fragilis* Harris 1965; p. 95, pl. 29,
- [10563] *Chenopodipollis fragilis* (Harris) Krutzsch 1966; p. 35. Fig 20, 21
- [10563] Couper, 1960, Maast.-Dan., New Zealand
- [10563] Stover & Partridge, 1973, U. Cret.-Lower Eoc., SE Australia (N).
- [10563] Harris, 1965, Lower Tert., Victoria, Australia.
- [10563] Doubinger & Chotin, 1975, Paleoc., Chile.

Locating this information would be a matter of first determining which file contains it, which may be done through an INDEX command that produces a telephone directory-style list including the line:

P10--pollenisimilis-polypyrenus

This indicates that the P10 file alphabetically should include anything having a specific epithet of "polyoratus". The P10 file can then be searched for the string "polyoratus", which will retrieve all lines containing the string. The number in brackets is unique to each species,

and performing a second search for the number in the P10 file will retrieve the listing above. Proposed synonymies are fully cross-referenced. Looking in the F4 file for *Polyporina fragilis* Harris 1965, for example, would produce this listing:

[4709] *Polyporina fragilis* Harris 1965; see polyoratus

The asterisk indicates what is regarded in the system as the most appropriate published name (which may not always be valid, or the most desirable assignment). The (N) listing indicates that the reference given does not contain the illustration of the species. Several other symbolic codes are explained in the menus and help screens. Many taxa entries also include comments about taxonomic ambiguities or other germane matters. There are a variety of command routines for searching the reference list, for sending retrieved information to a specified file or to your printer, etc.

The menu and index screens are available in monochrome or in color versions; to use the color version, your operating system must have the ANSI.SYS device driver or some equivalent of it (check your directory and your CONFIG.SYS file for the line DEVICE=ANSI.SYS). It also now comes with an automated installation routine that will set everything up properly.

For those who obtained copies of the system in recent months and have encountered things that don't work properly, most of these (I think) have now been corrected as a result of comments returned to me. In addition, the cosmetic editing of the data files to a proper 80-character width display also is now complete. As of this writing, the number of species listed in the system is now approaching 24,000 including all palynomorph groups throughout the geologic column. Please feel free at any time to send (formatted) disks for an update. Although from my standpoint the system is being given away free, please be aware that, in the incomprehensible way of such things, you may get hit for a customs charge (a few U.S. dollars or equivalent outside of the UK) when it returns to your country.

The system is updated constantly. I'm always on the lookout for reprints or (especially) copies of older articles that are hard to come by. I'd be happy to borrow any of these for information not yet present in the system (anybody have copies of the Russian articles by Kara-Murza, for example?). If anyone needs more detailed information on TAXON, please write.

Robert L. Ravn  
BP Research Centre, Chertsey Rd.  
Sunbury, Middx., UK TW16 7LN

## Report of the Nominating Committee

The 1990 Nominating Committee has completed its work and submits the following list of candidates for consideration by the AASP membership. This year's committee included Sarah Damassa, Chris Denison, Bob Turner, Reed Wicander, and Loretta Satchell (Chair). Candidates and their brief biographies are as follows.

President-Elect: David M. Jarzen  
John H. Wrenn

Secretary-Treasurer: Gordon D. Wood (currently and unopposed for reelection)

Managing Editor: David K. Goodman (currently and unopposed for reelection)

Director-at-Large: Nairn R. Albert  
Richard G. Holloway  
Bruce A. Tocher  
V. Eileen Williams

Biographies of Candidates (in alphabetical order)

NAIRN R. ALBERT (Director-at-Large)

Nairn is a palynologist with Chevron U.S.A. in San Ramon, California. Before returning to school for graduate study in palynology he was, for eighteen years, a geologist at the U.S. Geological Survey in Menlo Park, California.

He presently serves on the AASP computer applications committee and on the technical specifications advisory committee to the computer software and catalog project of Micropaleontology Press. Last year he organized the Northern California Regional Group of AASP.

Nairn has B.A. (1971) and M.A. (1978) from San Jose State University and Ph.D. (1988) from Stanford University. His areas of specialization are Mesozoic and Cenozoic dinoflagellate biostratigraphy and dinoflagellate cyst morphology.

DAVID K. GOODMAN (Managing Editor)

Dave is a stratigrapher at the Arco research center in Dallas, Texas.

He has served as Assistant Editor (1985-86) and Journal Editor (1986-90) for *Palynology*, Director-at-Large (1986-87), and Managing Editor (1987-90). He is currently a member of the Paleontological Catalog System Development Committee.

Dave was chairman of the Fourth International Conference on Modern and Fossil Dinoflagellates at Woods Hole. He serves on the Editorial Board for *Marine Micropaleontology*, the Technical Advisory Committee

for the Micropress Paleontological Catalog Project, and the Technical Advisory Board for the *Treatise on Invertebrate Paleontology*.

His B.S. and M.S. are from Virginia Polytechnic Institute and State University, and his Ph.D. is from Stanford University. His research interests include dinoflagellate stratigraphy, the ecostratigraphy of depositional sequences, and computer applications in paleontology.

RICHARD G. HOLLOWAY (Director-at-Large)

Rick is an associate research professor in the biology department at the University of New Mexico.

He has served on AASP nominating committees and as a judge for the L.R. Wilson student paper award which is given at the annual meeting of AASP.

Rick did his M.S. (1978) and Ph.D. (1981) at Texas A&M in botany. His research interests are Quaternary/Holocene paleoecology, and the morphology, degradation, and statistical analysis of pollen.

DAVID M. JARZEN (President-Elect)

David is a research scientist and curator of fossil plants at the Canadian Museum of Nature in Ottawa, Canada.

He has served on the nominating committee of AASP (1981) and on the organization committee for the Toronto AASP meeting (1970). He was the secretary-treasurer of the International Federation of Palynological Societies (1984-1988) and the president of the Canadian Association of Palynologists (1980-1981).

David did his B.A. (1967) and M.A. (1969) at Kent State and Ph.D. (1973) at the University of Toronto. His research has been in Cretaceous/Tertiary angiosperm pollen with a particular interest in the evolution and botanical affinities of the angiosperms in western North America and Australasia.

BRUCE A. TOCHER (Director-at-Large)

Bruce is a lecturer in palynology at the Institute of Earth Studies, University College of Wales in Aberystwyth. He was recently appointed as course director for a new MSc course in palynology. Before moving to Aberystwyth he was a senior lecturer in palynology/stratigraphy at Plymouth Polytechnic.

He is a council member of the Geologists' Association.

Bruce did his B.Sc. at Aberdeen University and Ph.D. at London Polytechnic. His research interest has been Cretaceous dinoflagellates and their use in stratigraphic and paleoenvironmental interpretation, particularly oceanic anoxic events. He is setting up collaborative

research efforts with industry.

V. EILEEN WILLIAMS (Director-at-Large)

Eileen is a palynologist at the research center of Union Oil Company in Brea, California.

She has served on the AASP ballott committee and presently serves on the public relations committee. She is a member of the organizing committee/abstract chairman for the 1991 annual meeting in San Diego. She was an organizer of the Southern California Palynological Society. Eileen has edited the newsletter of the Society for Organic Petrology (1988 and 1989), and is co-editor of the proceeding volume for Dino IV conference.

Her B.A. and M.A. are from Western Washington University and Ph.D. from the University of British Columbia. Her areas of research are Cretaceous/Tertiary palynomorphs, palynofacies, and kerogen.

GORDON WOOD (Secretary-Treasurer)

Gordon Wood is still a familiar name in AASP circles. He has been a member since 1976 and is in his fifth year as our Secretary-Treasurer. He received a B.S. in geology from the University of Michigan, and a Ph.D. from Michigan State University.

His interests include Paleozoic spores, acritarchs, and chitinozoans, and he is currently employed as a Paleontological Associate with Amoco in Houston.

JOHN H. WRENN (President-Elect)

John is a palynologist at the research center of Amoco Production Company of Tulsa, Oklahoma.

He has served on the AASP nominating committee, is on the publicity committee, and is chairman of the education and workshop committee. He was chairman of the organizing committee for the 1989 annual meeting in Tulsa, and a member of the 1986 and 1987 annual meeting committees. He has also organized a short course and a symposium in Neogene dinoflagellates and edited the symposium volume. John edited the AASP newsletter from 1986 to 1989.

His B.A. and M.A. are from Northern Illinois University and Ph.D. from Louisiana State. His research interests are dinoflagellate morphology and biostratigraphy, spore-pollen biostratigraphy, computer imaging and workstation development.

Submitted by  
Loretta Satchell  
(Chairman)

## PALYNOLOGIST RETURNS TO PROMISED LAND

Leonard 'Rip' Ford has recently relocated to Richmond, Virginia, where he is working as an environmental geologist and consulting paleontologist. The move has delayed editorial work on the Proceedings of the Fourth International Conference on Modern and Fossil Dinoflagellates; however, Rip would like to assure all authors that editorial work has resumed.

Leonard N. Ford, Jr.  
BioSpectrum Research  
9516 Skyview Drive  
Richmond, Virginia 23229  
(804) 273-9372

## Attention Please!

The Public Speakers Working Group is soliciting responses through the attached questionnaire in an attempt to identify interested speakers, their field(s) of expertise, geographic area where they live, and their availability to give one or more lectures to interested academic institutions (high schools, colleges, universities, etc.). Please complete the enclosed form and return it to Mike Farabee. Your prompt response will enable us to have several talks scheduled this Fall.

Michael J. Farabee

## In Memorium

Dr. Ronald O. Kapp, aged 55, died Saturday, March 24, 1990, in Alma, Michigan, from a malignant, inoperable brain tumor. Dr. Kapp had been employed at Alma College since 1957, teaching biology until 1969 when he was appointed provost and academic vice president. He held that position until November, 1989, when he resigned upon learning of his illness. Dr. Kapp is the author of the well known book **How To Know Pollen and Spores** published by W.C. Brown in 1969.

Reed Wicander  
Mt. Pleasant, Michigan

## Announcing the availability of the

**Sixieme Index bibliographique sur la  
morphologie des pollens d'Angiospermes**

**Sixth bibliographic index to the pollen  
morphology of Angiosperms**

In the series of bibliographic indexes to the pollen morphology of Angiosperms, the sixth volume has just

been published.

This volume contains bibliographic references from 930 palynological publications covering 3253 genera, of which 518 were not cited in the previous volumes.

It consists of three parts: generic index, family index, and bibliographic references. The presentation is similar to the earlier volumes.

**Generic index:** The name of each genus is immediately followed by one or more numbers (1 to 5) representing the volume where the genus has already been treated.

Under each genus is given a brief guide of bibliographic references (author and year of publication) to which the reader may refer at the end of the volume. The year is followed, depending on the case, by the letters L (light optique), S (scanning) or T (transmission) indicating the kind of illustration used in the article.

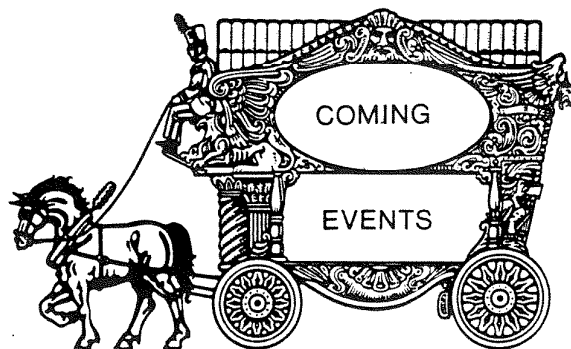
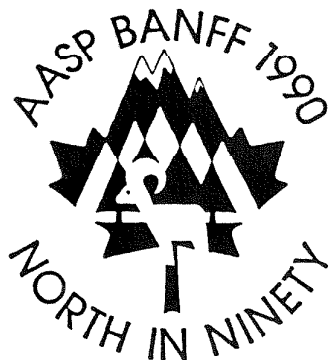
**Family Index:** At the end of the volume is given an alphabetical list of families to which all the genera cited since the beginning of this series belong. Each genus is followed by one or more numbers corresponding to the volumes where they are treated.

**Bibliographic references:** With the addition of 930 references, the number of palynological works cited in the six volumes of the Index has risen to 6548.

Order from:

INSTITUT FRANCAIS  
Service des Publications  
B.P. 33  
PONDICHERRY 605001  
(India)  
120FF/Rs270

Billing will accompany the books; Payment in US\$, French Francs, Rupees or other currency at the prevailing exchange rate at the time of ordering.



THE  
CANADIAN PALEONTOLOGY  
AND BIOSTRATIGRAPHY SEMINAR  
+  
PANDER SOCIETY MEETING  
UNIVERSITY OF BRITISH COLUMBIA  
AUGUST 24-25, 1991

(Pre-meeting, Trans-Cordilleran Field Trip, Aug. 19-23, 1991)

You are invited to the 1991 joint meeting of the Canadian Paleontology and Biostratigraphy Seminar and the Pander Society to be held at the University of British Columbia. The meeting will be organized by Paul Smith (U.B.C.) and Mike Orchard (G.S.C.) and sponsored by the Paleontology Division of the Geological Association of Canada. Papers on any aspect of paleontology, paleobiology and biostratigraphy are welcome. An award will be presented for the best student paper. Anticipated keynote speakers will be Des Collins on the Burgess Shale fauna, Dick Aldridge on the conodont animal, and Anita Harris on conodonts as paleothermometers. Des Collins (R.O.M.), and Jim Haggart, H. Geldsetzer, Barry Richards, J.W.H. Monger, and H.W. Tipper (all of the G.S.C.) will contribute their expertise to the field trips which will include a visit to the Burgess Shale site.

A tentative schedule is as follows:

**August 19-23:** A trans-Cordilleran field trip from Calgary to Vancouver looking at Paleozoic and Triassic rocks of the craton margin and allochthonous terranes. Visits to the Burgess Shale site, Ordovician basinal rocks, a Devonian reef complex, autochthonous Carboniferous strata, and allochthonous Permo-Triassic limestones and radiolarian chert are planned. There will be ample opportunity for collecting macrofossils (except at the Burgess site) and conodont samples, as well as enjoying the magnificent scenery. Places will be limited.

August 24-25: University of British  
Columbia-oral sessions, posters,  
workshops, business meetings.

August 26-27: A post-meeting field trip to  
examine Jura-Cretaceous successions of  
the southern Coast Mountains and the  
beautiful Gulf Islands. Richly  
fossiliferous Cretaceous sections of the  
Nanaimo Basin will provide an opportunity  
to collect both micro-and macro fossils.

Contact: Paul L. Smith, Geological Sciences, U.B.C.,  
6339 Stores Road, Vancouver, B.C., V6T 2B4 Canada

CANADIAN PALEONTOLOGY  
&  
BIOSTRATIGRAPHY SEMINAR  
QUEENS UNIVERSITY  
KINGSTON, ONTARIO

Sept, 28-Oct. 1, 1990

The second circular has been mailed. Interest in the  
"Workshop of Precambrian Fossils" has been particularly  
high, with talks scheduled from Canadian, American,  
German, Australian and Soviet scientists. Two keynote  
addresses from opposite ends of the geologic time scale  
are also planned, as is a one day field trip to the Kingston  
area.

Abstracts for oral and poster presentation are due June  
15, 1990 and, due to commitments during the latter half  
of the summer, no extensions can be granted. Contact  
Dr. Guy Narbonne at the following address:

Dr. Guy M. Narbonne  
Department of Geological Sciences  
Queen's University  
Kingston, Ontario K7L 3N6  
Canada

## XV International Botanical Congress Tokyo

Request for information and other questions and  
comments may be sent to the Secretariat at: XV  
International Botanical Congress, Tokyo, Department of  
Botany, Faculty of Science, The University of Tokyo,  
7-3-1 Hongo, Bunkyo-ku, Tokyo 113, JAPAN.



## Book Reviews

Atlas Pollinico de Andalucia Occidental, 1987. B.  
Valdes, M.J. Diez, and I. Fernandez (Editors). Instituto de  
Desarrollo Regional No. 43. Universidad de Sevilla, Spain.  
450 pp.

This substantial, multi-authored book is largely devoted  
to descriptions and illustrations of pollen grains of plants  
that grow in the western Andalusian provinces of Huelva,  
Cadiz, Sevilla and Cordoba. It is aimed to be used  
primarily as a point of reference for studies on pollen  
from other areas of the Iberian Peninsula as well as from  
northwest Africa. Altogether, not far short of 600  
types of pollen are dealt with. Among the omissions are  
representatives of the Cymodoceaceae, Hydrocharitaceae  
and Zosteraceae, for which it was not possible to obtain  
any grains suitable for study.

The introduction to the volume is eight pages long and  
includes a paragraph on material, a slightly longer  
section on methods, and observations on some of the  
characters of pollen grains and the terms used to  
describe them; these are arranged under the  
headings-polarity, symmetry, form, size, exine and  
apertural system. The next "chapter" consists of a  
lengthy key (39 pages) to the pollen types described and  
illustrated in the 346 pages in double-column format  
(unlike the rest of the book) which follow it. It is  
necessary to read the introduction to the volume before  
it is possible to understand the meaning of the  
abbreviations used in the descriptions and in the captions  
for the transmitted light photographs (e.g., c.o.m. for  
corte optico meridiano). These figures, which are mostly  
positioned in pairs occupying the width of a column, are  
generally good, but some are very pale. The scanning  
electron micrographs are mainly twice as big and range  
in quality from poor (variously out of focus, grainy, too  
bright, too dark, no contrast) to excellent. Among the  
best are some at high magnifications showing sculptural  
and apertural details, and wall structure. Morphological  
information is inevitably lost from micrographs that are  
of poor quality. This not only reduces their value but  
also frustrates the reader who knows that with better  
instrumentation or technique, more satisfactory images  
could have been produced.

These criticisms should not, however, put off potential  
purchasers. I have not regretted buying my copy. The  
large number of pollen-types covered (albeit from less  
than a quarter of the species of higher plants known from  
western Andalusia and including only four of  
gymnospermous origin), the combination of transmitted

light photographs and scanning electron micrographs, the useful descriptions, and the extensive bibliography make this a valuable addition to the literature. I recommend it not only to palynologists who are concerned primarily with extant plants but also as a useful reference for those who work on fossil angiosperm pollen.

D.J. Batten  
Institute of Earth Studies  
University College of Wales, Aberystwyth  
University of Wales  
Aberystwyth, U.K.

Originally published in CAP Newsletter  
Vol. 13, No. 1

**Paleoethnobotany: A Handbook of Procedures.**

1989, Deborah M. Pearsall, Academic Press, Inc., New York, vii + 470 pp., index, references. \$59.95 hardbound, ISBN 0-12-548040-7.

This publication is oriented toward the paleoethnobotanical student, and, in fact, is organized according to the same class taught by Pearsall at the University of Missouri-Columbia. The text for this purpose is excellent, and particularly due to its organization and content, I would recommend it to all instructors of paleoethnobotany as well. The book provides a wide variety of information that is useful to the "informed" paleoethnobotanist, particularly a review of the different flotation devices and their positive aspects, costs, and limitations, as well as a good discussion in Chapter 6 on the integration of paleoethnobotanical material for dietary and paleoenvironmental studies.

Archaeological Palynology is covered in Chapter 4. Geological palynology is not discussed; however, many of the same techniques are applied to both geological and archaeological palynology. The only portions of the chapter which would be considered "weak" for geological palynologists are the discussions on the history of pollen analysis and the section on interpretation of results. The history of pollen analysis is covered and includes both the work done in the Old and New Worlds, with the historical base set in pollen analyses of peat bogs rather than archaeological samples. Pollen sculpturing and aperturation, nomenclature, dispersal, and preservation are covered next. This discussion is mainly limited to the typical pollen types since the text is an overview of paleoethnobotany with pollen analysis as one portion, rather than a text specifically related to palynology.

Next Pearsall mentions a variety of sampling strategies including samples taken from floors, coprolites, soil, ground artifacts, and pit features. She does not, however, include the importance of sampling pollen

washes (from bowls, jars, and basketry), samples from possible agricultural fields, and the most prevalent form of archaeological pollen sampling, that from a stratigraphic column at a site. Although most of these are mentioned in the section on how to take pollen samples, their importance is not revealed. Pearsall also includes three different processing techniques used by archaeological palynologists in order to remove carbonates, silicates, clays, and organics from pollen samples, as well as information on coprolite processing and modern floral extraction.

The last sections of Chapter 4 include basic information on mounting slides, relative and absolute pollen counts, pollen identification, and the construction and interpretation of different pollen diagrams. The construction and interpretation of pollen diagrams section includes diagrams constructed using both archaeological and geological data, although the examples do not include the wide range of diagrams that have been used by archaeological and geological palynologists for their data presentation. Pearsall's discussion in this section mainly includes zonal, vegetational, and climatic interpretations. Pearsall cursorily discusses pollen concentration and accumulation under absolute pollen counts although the importance of such techniques should extend beyond mere counts. Neither pollen influx nor the importance of pollen data in interpreting diet were discussed. In fact, Pearsall states the "pollen data are of little utility in determining contributions of plant foods in the diet beyond what information simple presence or absence or percentage presence data can yield" (pp. 447). This is a grim view of the importance of pollen in determining dietary and medicinal intake.

The rest of the book focusses on the other portions of paleoethnobotany. Chapter 1 contains a review of the history and development of paleoethnobotany, the rapid development that the field has gained through recent Contract Resource Management (CRM) work, and the importance of interdisciplinary research. Pearsall also cursorily discusses the three primary types of paleoethnobotanical data, including; macroremains, pollen, and phytoliths. The entire book is organized around these three data bases.

Chapter 2 contains information on macroremains as the most widely applied paleoethnobotanical data base. In this chapter Pearsall covers in situ collection, differential screening, and sampling strategies. The most prevalent component of this chapter is a discussion of the different flotation methods employed by paleoethnobotanists. I feel that this subject was overemphasized, although the importance of flotation in the evolution of paleoethnobotany is well known. Pearsall discusses the building, operation, cost efficiency, recovery rates, drawbacks, and advantages of a large number of flotation methods.



In Chapter 3 Pearsall discusses the identification and interpretation of macroremains, starting with the initial processing steps of such material, different sorting methods, and how to build a comparative collection. The identification of seeds, the variety of quantitative analyses, and simple statistical techniques available are also mentioned.

Chapter 5 is an excellent overview of phytolith analysis and its increasing importance in vegetational and climatic reconstruction. This chapter contains abundant phytolith pictures in order to help researchers become aware of what these tiny crystals are and their different characteristics. Pearsall begins the chapter by discussing the basic divisions of phytoliths, and the history and development of the field. This chapter is the most intricately detailed because of the relative "newness" of the field as compared to other paleoethnobotanical data bases.

The last chapter is a unique coverage of the integration of paleoethnobotanical material. It includes a "broader view" of paleoethnobotany than has usually been revealed in the past. The strengths and weaknesses of each paleoethnobotanical data base are discussed, although it is not revealed how one data source can help alleviate the weaknesses of another. Case examples from Rio Alto (pollen and phytoliths) are presented.

This book is an excellent source of information for all students and instructors of paleoethnobotany. Contrary to the title, the book contains much more information than just procedural data. The most significant contribution of this book is the importance of recognizing the strengths and weaknesses of each paleoethnobotanical data base, as well as the importance of integration in determining diet and paleoenvironment. Due to the excellent organization and the pertinent case studies, this book is interesting to read, as well as being full of information.

Kristin D. Sobolik  
Department of Anthropology  
Texas A&M University  
College Station, TX 77843

**The Greening of Gondwana**, 1986, Mary E. White, Reed Books Pty Ltd., 2 Aquatic Drive, Frenchs Forest NSW, Australia 2086. 256 pp. \$49.95.

Mary White has produced a wonderfully written and superbly illustrated book that is probably one of the best kept secrets outside of Australia. In this profusely illustrated oversized book, Dr. White tells the 400 million year story of Australia's plants.

The book is divided into two parts. The first part covers Australia's geological background and Gondwanan inheritance. Here a brief overview of Australia's geological history is given, as well as a review of the

earliest living organisms. This is followed by a short discussion of how plants are fossilized and a section on palynology.

Part two which makes up the majority of the book traces the history of Australia's fossil flora from the Cambrian to the Quaternary. Each of the ten chapters in this section of the book includes a paleogeographic map and geologic overview of Australia for the time period being covered. This is followed by a discussion of the flora for that time period, including its important members and its evolutionary history and significance.

One of the strengths of this book is the way that Dr. White combines the geologic history of Gondwana with the evolutionary history of Australia's flora. This history is vividly brought to life by over 400 beautiful color photographs of Australia's fossil and living plants and diagrams showing their evolutionary history and relationships. In addition to the photographs are the excellent paleogeographic maps that provide a global perspective to the discussion.

This is by far one of the most beautifully illustrated books I have seen, particularly in regard to the fossil plant photographs. This is due in part to the oversized page format and high quality paper used in its printing. The photographs by themselves are enough to recommend this book, but combined with a clearly written and concise text, this book should be in the library of every geoscientist.

At a price of \$49.95 U.S., which includes shipping, **The Greening of Gondwana** is probably one of the best bargains around. The publishers will accept a personal check for \$49.95 U.S. or Visa and Mastercard. If you choose the latter be sure to include your name, card number, and expiration date.

Reed Wicander

**Roadside Geology of Utah**, 1990. Halka Chronic. 335pp., \$12.95

**Roadside Geology of Idaho**, 1989. David D. Alt, and Donald W. Hyndman. 403 pp., \$14.95  
Both published by Mountain Press Publishing Company, 2016 Strand Avenue, PO Box 2399, Missoula, Montana 59806

The above two books are the newest in the continuing series that is part of the excellent roadside geology series published by Mountain Press Publishing Company. As I have stated in past reviews of these books, they are general guides to the geology of each state as it might be encountered by the traveler on the major state and interstate highways. Both of these books are profusely illustrated and contain a wealth of information that will make any drive through these states more interesting.

Reed Wicander

**Textbook of Pollen Analysis**, 1989. Knut Faegri, Peter Emil Kaland and Knut Krzywinski. John Wiley & Sons, Inc., 1 Wiley Drive, Somerset, New Jersey, 08875-1272. 328 pp., \$109.00

Although Johannes Iversen died in October, 1971, this, the fourth edition, as well as the third edition published in 1975, still bears his name within the title. Respect, credit and continuity are valid reasons for this tradition.

When I began my review, I collected in front of me the four English editions and began a comparison in an attempt to see how palynology, especially Quaternary pollen analysis, has changed since the publication of the first edition in 1950. The fourth edition has been greatly enlarged, revised, and provides many more illustrations than previous editions.

The 12 chapters are basically new, inasmuch as the approach and arrangement provide for the reader a progression from pollen production and dispersal, how pollen becomes a part of organic deposits, how it is recovered, laboratory techniques, presentation of results, and interpretation and applications. As in the third edition, pre-Quaternary pollen analysis has been left out, inasmuch as recent textbooks now treat that subject in greater detail.

The chapter on archaeopalynology, pollen analysis and human impact (Chapter 9) is new to this edition and brings the discipline of pollen analysis up to recent times. The literature citations are current works, providing examples from old and new world cultures.

"What pollen is and does: Form and function of the pollen grain", (Chapter 11) has been revised to include a brief discussion of gymnosperm pollen and cryptogam spores. Fungal palynomorphs as well as algae, diatoms, tissue fragments and even animal remains (e.g. rhizopods, sponge spicules) are noted, albeit briefly, in Chapter 10.

Of much value to the Quaternary palynologist is the expanded and fully illustrated key for the northwest European pollen flora (Chapter 12). The key works well (on two tries), is easy to follow, and use of detailed illustrations guides the user to logical choices. New to this key is the inclusion of SEM observations when this information is crucial for an understanding of light microscope interpretation. The key, however, is still based (as it should be) on LM data, and is meant for practical pollen-analytic purposes. Faegri notes "Even the best key is inferior to a preparation". The authors have published the key (Chapter 12) as a separate publication, available from Wiley at 5 British Pounds /\$10.00 US per copy.

All four editions of **Textbook of Pollen Analysis** (the first edition was titled **Textbook of Modern Pollen Analysis**) have been dedicated to giants or pioneers of pollen analysis including in order, Lennart von Post, Knud Jessenm, Johannes Iversen, and with this latest edition, Gunnar Erdtman. Faegri himself notes that this last dedication "may cause some astonishment" in light of the numerous disagreements between Erdtman and Faegri in several areas, especially terminology matters. The reader is referred to Faegri, 1973, **Pollen et Spores** 15:5-12 for a better understanding.

The references (all cited at the back of the book) are extensive and current, but still include the earlier classic literature necessary for the new student of pollen analysis (e.g. Ehrenberg, 1838; Fritzsche, 1837; von Post, 1916). Citations are written in the language and alphabet of the author(s) and appear error free and consistent in format, facilitating library searches. A glossary of morphological terms, and indices to identification keys, plant names and general topical terms complete the book.

Overall, the book has a new, fresh appearance. With its larger format (19 x 24.5 cm page size), clean white paper and clear typeface in two columns, the book is easy to read.

On a final note it may be of interest to some that the cost of each of the editions may somehow reflect our changing times (1-\$3.00, 2-\$6.25, 3-\$25.20, 4-\$109.00). Even considering this price increase, I recommend this newest edition to students and professionals alike. It still remains the classic Quaternary pollen analysis text.

David M. Jarzen  
Canadian Museum of Nature  
Ottawa, Canada

**Four Dimensional Analysis of Geological Maps**, 1989. Clive A. Boulter. John Wiley & Sons, One Wiley Drive, Somerset, New Jersey 08876-9977. 296 pp., with 204 illustrations, paper, \$41.95.

In his memoirs F.J. Pettijohn deplores the fact that "geologic mapping has fallen out of favor in some quarters; it is regarded as a routine activity, not oriented to the solution of some problem or the answer to a significant question." Clive Boulter repeats this sentiment, commenting in the preface to his book that the increased emphasis on quantitative disciplines in earth science education has resulted in a decrease in the amount of time spent on more traditional branches of geology, including mapping. Boulter emphasizes that mapping is interpretive and it is an evolving science. He stresses that new interpretations, often aided by new technology, can result in significant changes to previous mapping. The rationale behind the book is to underscore

the interpretive nature of geologic mapping while guiding the reader through mapping techniques. Paleontologists should appreciate this rationale. How many biostratigraphers have struggled to explain to management or in a grant proposal that a reinterpretation of fossil successions can yield valuable information?

Boulter's view of mapping as interpretive provides the focus for the book. The broad scope of the book is achieved by Boulter's acknowledgment that mapping integrates data collected from a wide variety of sources. These sources include remote sensing, stratigraphy and chronology (the fourth dimension of the title), deformation styles, igneous and metamorphic rocks, and unconformities. The book deals with each of these sources in separate chapters.

Preceding the chapters describing the diversity of information which can be contained in a geologic map are chapters explaining mapping methodology. These chapters include discussions of scale, strike and dip, contours, and the relationship of outcrop to topography. Applying the techniques explained in these early chapters and integrating the diverse data from various branches of geology leads to geological map interpretation, the subject of the final chapter. This final chapter provides a blueprint for writing a report on a geologic map, including both description and interpretation. Several points made in this chapter would apply to any geologic reporting. In particular, Boulter warns that facts should be clearly separated from inference and that data leading to an interpretation should be readily available for possible alternate interpretations.

The book, then, is well organized, starting with techniques, moving through the integration of data, and ending with the synthesis of all the data into an interpretation of the geologic history of an area. That this much information is covered in less than 300 pages shows that, although considerable detail is provided, the topics are not described in depth. Boulter's heavy reliance on illustration accounts in part for the brevity of the text. Another reason for the brevity is inherent in the design of the book; Boulter's intent, as stated in his preface, is to provide an introduction to various branches of geology. These disciplines, generally taught as one or more university courses with laboratories, are dealt with in single chapters in the book. Paleontologists might find the section on biostratigraphy brief and overly cautious, but they should applaud the inclusion of biostratigraphic concepts in the book.

The information covered in the book might be considered introductory, but the treatment is not simplistic. Considered within the sections on field and structural geology, for example, are the methods for determining thickness from outcrop width, three-point problems, strain ellipsoids, and, in an appendix, stereographic

projections. Therefore, although Boulter sees his audience as first-year students ("though [the book] may be of use to those in the last year or so of secondary education"), this application would depend greatly on a student's background, interest, and ability.

The book would not serve as a text for the introductory historical and physical geology courses generally taught to first-year students in U.S. schools. Some previous training in geology would be necessary for a student to use the book for mapping. For example, although sedimentary rocks are considered in the chapter on stratigraphy, no explanations of classification systems or of rock descriptions are supplied. Effective use of Boulter's book would require some background in geologic terminology, some experience in visualizing three-dimensional configurations from two-dimensional representations, and some familiarity with the fourth dimension, geologic time.

The book would be an excellent reference for geology majors (undergraduate and graduate) and a valuable source book for students doing mapping projects for field camps or summer employment. Geologists who are involved in any type of mapping in their employment would also find the book a useful reference and a source of current information. Instructors of field courses and field camps could benefit from Boulter's insights and from the wealth of illustrations in the book.

#### Reference

Pettijohn, F. J. 1984. *Memoirs of an Unrepentant Field Geologist*. Chicago: The University of Chicago Press. 250 p.

Susan L. Duffield  
10823 Elmdale Drive  
Houston, TX 77070

#### The Encyclopedia of Solid Earth Geophysics.

1989. edited by D.E. James, 1328 pp.

#### The Encyclopedia of Igneous and Metamorphic Petrology, 1989. edited by D.R. Bowes. 666 pp.

Both published by Van Nostrand Reinhold, 115 Fifth Avenue, New York, New York 10003.

Both of these books are part of the continuing Encyclopedia of Earth Sciences Series published by Van Nostrand Reinhold. Both feature contributions from experts in the different fields covered by that particular volume. In addition, each entry includes a current bibliography for additional information.

#### **The Encyclopedia of Solid Earth Geophysics**

contains 160 articles covering such new and diverse subjects as seismic tomography, current theories on the magnetic field of the earth, and recent advances in understanding convection and plumes in the earth. This book draws together into one comprehensive and

up-to-date volume the results of the past 20 years of research in seismology, geodesy, gravity, paleomagnetism, and tectonophysics as well as such related topics as physics, oceanography, and exploration geophysics. This book is a very readable and is an excellent reference source for anyone who needs to know solid earth geophysics.

**The Encyclopedia of Igneous and Metamorphic Petrology** features over 250 entries from more than 100 contributors. This book covers the present state of knowledge of igneous and metamorphic petrology such as the chemical, mineralogical, and textural characteristics of igneous and metamorphic rocks, and the current theories on their genesis and distribution. In addition, there are numerous lists of commonly and little used terms as well as an extensive bibliography.

Reed Wicander

**Bryozoan Evolution**, 1989. F.K. McKinney and J.B.C. Jackson. Boston, Unwin Hyman. 238 pp., \$45.00.

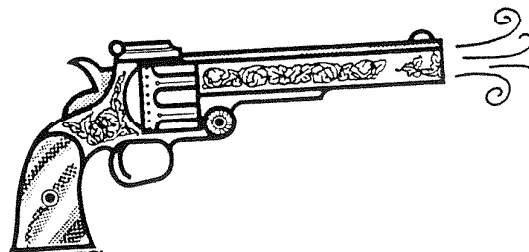
One would expect a book entitled "Bryozoan Evolution" to be about the fossil remains of bryozoans, about genetic and morphological differences among living groups, and about how modern bryozoans evolved from ancient ones. Instead, this book is mostly about functional morphology and population t-testing of modern erect versus encrusting colonial forms of Caribbean bryozoans.

I am interested in living bryozoans, because I observe their colonies on kelp collected on my annual trek to the Pacific Ocean during Christmas. Seeing that the focus is on living bryozoans, I carried the book along to see if it would help with collection and identification techniques. However, explanations were never adequate enough to explain how to differentiate either between the two major marine classes whose larvae settle on kelp, or between erect, rigid bryozoans and look-alike corals. Better photographs or drawings would have helped this book immensely.

There is some useful information for palynologists in this book. Bryozoans produce organic-rich fecal pellets out of their unarmoured phytoplankton diet. Also, organic-walled bryozoans and statoblast resting bodies are not coated with calcite, so their remains might show up in palynomorph preparations, particularly in fossil hashes. It would be interesting to process a bryozoan fossil hash and publish photographs of distinct tissues so that others could compare them with unknowns in palynological preparations. Other than these few tidbits for palynologists, perhaps scientists working on

predation may also find some useful information in the discussion on predation strategies of bryozoans against fish, sea urchins, and limpets.

Eleanor I. Robbins  
U.S. Geological Survey  
956 National Center  
Reston, VA 22092



## PARTING SHOTS

### HEAVIEST ELEMENT DISCOVERED

The heaviest element known to science was recently discovered at the Lawrence Livermore National Laboratory. The element, tentatively named Administratium (Ad) has no protons or electrons, thus it has atomic number 0. It does, however, have one neutron, 75 associate neutrons, 125 deputy associate neutrons, and 111 assistant deputy associate neutrons. This gives it an atomic mass of 312. The 312 particles are held together in the nucleus by a force that involves the continuous exchange of meson-like particles called memo-ns. Since it has no electrons, Administratium is inert. Nevertheless, it can be detected chemically because it seems to impede every reaction in which it takes part. According to Dr. M. Langour, one of the discoverers of the element, a very small amount of Administratium made one reaction that normally takes less than a second, take over forty days to go to completion.

Administratium has a half-life of approximately 3 years, at which time it does not actually decay. Instead, it undergoes an internal reorganization in which associates to the neutron and assistant deputy associates to the neutron all exchange places. Some studies have indicated that the atomic mass actually increases after each reorganization.

Source unidentified, though he does work for the USGS in one administrative position or another, or both.

# NEW AASP FOUNDATION PUBLICATION

## Contributions Series Number 23

Fossil Dinoflagellates from the Jurassic, Cretaceous, and Paleogene Deposits of the  
USSR: A Re-Study

by

Judith K. Lentin and Tamara F. Vozzhennikova

### Abstract

In 1960, 1963 and 1967, Professor T.F. Vozzhennikova published papers and a monograph on the morphology of fossil dinoflagellates from the Jurassic, Cretaceous and Tertiary of the USSR. These publications have become classics in the field of palynology in general and dinoflagellate studies in particular. In recent years the improvement in photographic and printing techniques, as well as newly evolving morphological and taxonomic concepts emphasized the need to re-examine the material upon which these early publications were based.

All of the surviving holotypes from the Vozzhennikova collection have been re-examined and photographed. The resulting new descriptions are presented in both English and Russian. A glossary of morphological terminology and a bibliography of Soviet publications on dinoflagellates are also presented in both English and Russian.

There are three new genera in the family Gymnodiniaceae, *Alisogymnium* gen.nov., *Amphigymnium* gen.nov. and *Yolkinigymnium* gen.nov. which result from a comprehensive study of all fossils in the family Gymnodiniaceae. Line drawings of all species within this group are presented in Appendix A. The new genus *Arvalidinium* gen.nov. is erected for two species formerly in the genus *Chatangiella* which exhibit distinctive parasutural ridges. A fifth new genus, *Sokolovidinium* gen.nov., is erected for species similar to *Microdinium* but which have distinctive long gonial spines and a precingular archeopyle. Five genera, *Smolenskiella*, *Soaniella*, *Uvatodinium*, *Imbatodinium* and *Rhiptocorys*, have been emended. There is 1 new species, *Batioladinium daviesii* sp.nov., erected for forms previously attributed to *Imbatodinium kondratjevii* from the Canadian Arctic. There are 26 specific emendations, 16 expanded specific descriptions, 1 change in rank, 11 species considered to be junior synonyms, and 24 new combinations.

232 pages, 16 photographic plates. (\$12.00).

### ORDER FORM

### ORDER FORM

### ORDER FORM

Ship \_\_\_\_\_ copies of Contributions Series No. 23 @ \$12.00 \$ \_\_\_\_\_

(Postage will be added to invoiced orders) Postage \$ \_\_\_\_\_

TOTAL \$ \_\_\_\_\_

Name: \_\_\_\_\_

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

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

Make check (in U.S. funds) payable to: AASP Foundation.

Mail to: Robert T. Clarke, Treas. AASP Foundation, Mobil Research - DRL, P.O. Box 819047,  
Dallas, Texas 75381-9047 (May, 1990)

QUESTIONNAIRE FOR AASP PUBLIC SPEAKERS WORKING GROUP

1. Name: \_\_\_\_\_
2. Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Phone: \_\_\_\_ (\_\_\_\_) \_\_\_\_\_
4. Position: \_\_\_\_\_
5. Affiliation (if different from #2): \_\_\_\_\_  
\_\_\_\_\_
6. Are you interested in presenting one (or more) talks of general interest or in your specialty?  
  
\_\_\_\_\_ yes                      \_\_\_\_\_ no                      \_\_\_\_\_ undecided
7. Please indicate possible titles, subject areas and special audio-visual needs in the spaces below:

8. How far would you be willing to travel to give such a talk? \_\_\_\_\_
9. Do you need any special letters or permissions to be absent to present such a talk?  
Specify \_\_\_\_\_
10. Please list any professional honors/offices held, or other distinguished data that would be of use to a department deciding to bring you in as a speaker:

Please return as soon as possible to:

Dr. Michael Farabee  
AASP Public Speakers Working Group  
Dept. of Math/Science  
Gordon College  
Barnesville, GA 30204 USA

Any questions please call (404) 358-5066