

July, 1993
Volume 26, Number 3

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J.K. Lentin, Editor

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MESSAGE FROM THE PRESIDENT

AASP NEWSLETTER EDITOR:

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

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

Deadline for the next newsletter, the last in 1993, is Nov. 1, to allow for annual meeting news. Please send all information on computer disk in IBM - ASCII or Word Perfect format, if possible, if not - send a typed manuscript.

We look forward to contributions from our membership. FAX number for the AASP NEWSLETTER is as follows:

FAX: (403) 262-1629

OF MADONNA'S BOYFRIENDS AND OTHER RELATED MATTERS

The phone rang at five a.m. the other morning. It was somebody from a major credit card company whose name I shall not mention except to say that their standard card is green and with a picture of Hermes on it and that you shouldn't leave home without it. He was calling from New York and wanted to send me a new one. When I asked him if he knew what time it was he said, "Yeah, nine o'clock, we just opened. Why?"

As one of the finer recent products of the American school system, he doubtless could have recited a complete list of Madonna's hit records, movie roles and boyfriends for the last five years, in chronological order, but wouldn't have a clue where Alaska was on the globe. Of time zones, he had as much awareness as a squid does of bicycles. Then again, he was from new Yawk, so there is need of some charity on my part.

Anyhow, as I lay there unable to go back to sleep, planning the architecture of various hells for the geographical cognizance disadvantaged, I began to consider the increasing challenge the size and configuration of the planet poses for AASP (you knew this was going to get around to palynological relevance at some point). Our current Board of Directors dwells entirely in North

America, but North America is a big place. I live farther from Direct-at-large Sarah Damassa than she does from Geoff Eaton (Sarah probably considers this situation good, but, well, that is irrelevant to this commentary). Secretary-Treasurer Gordon Wood lives much closer to Javier Helenes than he does to me (I consider this situation . . . never mind). Managing Editor Dave Goodman now lives here in Anchorage near me, but likewise far from other Board members. The geographical scattering of Board Members has in this and other recent years led to some awkwardness in communications and conducting society business, despite the current advanced state of electronic communications.

One of the major trends of development for AASP almost throughout its history has been a steady increase in the proportion of members residing outside North America. The number of non-North American members now exceeds the number of North American members. By a big margin, most of our new members in recent years have come from outside North America. All signs point to a continuation and perhaps even acceleration of this trend. Yet throughout the society's history, we have only had two or three non-North American members of the Board of Directors. The historical reason cited for this has always been that we started as an American organization (hence the name), and that the need to meet twice a year to conduct specific organizational business would make it impossibly awkward for Board Members from outside North America to attend such meetings.

In recent years we have found it increasingly difficult to convene a convenient mid-year Board of Directors meeting, even with a completely North American Board membership. The argument for keeping the Board in North America seems to be weakening. The society will be facing a number of important questions concerning how we conduct our business in future years, as employer support for such things as travel to meeting continues to dwindle. In the light of the demographic trends of AASP membership and the increasing difficulty of Board logistics under the current bylaws, I'll ask some of them now:

Do we really need to have a mid-year Board meeting? Yes, I know we need to have one because the bylaws state that we must. That's not the question. Do we really need to hold one? Can we conduct the business at hand in a less expensive and more convenient way?

How can we best integrate non-North American members into more active participation in the society, as more committee members and potentially members of the Board of Directors?

How can we gain greater exposure to non-palynological earth scientists and the like? We have always cherished our independence of Annual Meetings, for a variety of reasons, but is this independence always an asset? What price do we pay for it? Do we risk becoming too parochial and inward-looking by continuing to hold our meeting away from those where larger segments of the earth science community are present?

I sense an increasing need to be less rigid from

year to year in how we conduct various society activities. I've been involved in a number of discussions about how to do things where the issues came down to what we could or could not do because of what the bylaws say we could or could not do. Somehow this kind of concern always seems rather artificial. Bylaws are meant to help us conduct our society's activities, not to hinder us from doing so. There ought to be reasons for doing or not doing things other than the bylaws don't allow it. Can we find ways to be more flexible when we could benefit from being so?

I don't know the answers to these questions. I do think we all need to consider them in the near future, because both the length and character of the farther future of AASP depend on how we address these issues. I also don't know the names of Madonna's last few boyfriends, but I do know where Alaska and New York are and what time zone each is in. I suppose that's useful, somehow.

LETTER TO THE EDITOR



The job of editor of a newsletter can be pretty lonely at times. Particularly when members of the association have nothing to say about their science.

Yesterday, I received a telephone call from a palynologist who, like many before him, has just been laid off. The shock and anger at the injustice of life was very near the surface. The cry of "...but, palynology is what I do" was heard again. It is sad, palynology may no longer be what people do, except as a hobby.

In years past, paleontology was the hobby of the gentry. Collectors continuously tried to find the biggest and the best fossils. They were not necessarily well educated but they were dedicated. For those who would study fossil pollen, spores, dinoflagellates, etc., the problem begins with the need for a microscope. But with all the major oil companies giving up their palynologists, there should be some real bargains in microscopes, if one plays their cards right.

In keeping with the above comments and with apologies (again) to Bill Elsik who presented the following poem for the last NEWSLETTER, I am delighted to present:

One Person's Dust is Another's Treasure: Celebrating a Silver Jubilee

Founding members, we have shared a place
Inside the front cover, honored in haste
Histories have been written, not all complete
Not all even factual, not all in good taste

All things even, some were as if not there
Some were more vocal, some were seldom heard
Some remember vividly, for some it fades away
Some comrades...gone to their reward

One faction said, "committees", hoping to delay
Others said, "Now! It's time", seizing the day
We know now it was done, seemed with a tight rein
Even the name, cracked hard, soothed over the 'in vain'

In Tulsa a decade later, first oral history
I listened in amazement, my name not mentioned once!
Were I to search the minutes, again for a name
My vanity precedes me, my arrogance the dunce

This little tippet, though not in a shoe
serves only to warn you, it takes more than glue
Life's interests are phenomenal, it has often been said
But the treasures among us, more often in our heads

Like the founding meeting, our Silver Jubilee
Will be treasured in pieces, individual authors you see
It seems right beforehand, quietly or blatantly
That we also consider, who nourished the tree

The editors blameless, will be blamed for our notes
The editors shameless, must consider the trunk
They slash, wheedle and beg, slipping the while
To gain one more chapter, segment or to debunk

Some of us early, some of us late
Some of us always ... with too much on the plate
Our writings are offered, treasured or not
This is the sum ... a quarter century of examining rot

Is this all there is, as money comes tight
Does doing without, allow shallow contrite
Do others amaze, at dust as they sneeze
In house or outdoors, from grass or green trees

Is dust to be banished, must we do without?
Can we have one more moment, to observe and shout
"I see a new species! It fortells Mapping Horizon B"
Or will the new management ... no longer see?

My dream was all fuzzy, now it is sharp
From room for expansion, to focused must be
Remember me please, as you sweep out your house
I'll take your dust, but I'll not have your louse!

Bill Elsik
Houston, 3/7/93



AASP ANNUAL MEETING - 1993-

OCTOBER 23-28, 1993
LOUISIANA STATE UNIVERSITY
BATON ROUGE, LOUISIANA

DEAD LINE: Abstracts Due July 31, 1993

REGISTRATION FEES GENERAL

Professional:	\$US 75.00
Student:	\$US 40.00

PLIOCENE SYMPOSIUM ONLY:

Professional:	\$US 30.00
Student:	\$US 20.00

LATE REGISTRATION FEE	\$US 10.00
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MEETING EVENTS

Pre-Meeting Field Trip
October 23 (Saturday)

The Mississippi Delta and Environs
Instructors: Dr. James Coleman & Shea Penland
Class Size: 35 people (maximum)
Cost: \$US 60.00

Short Courses
October 23-24 (Saturday and Sunday)

Short Course: Sequence Stratigraphic Concepts
Instructor: Dr. Macomb T. Jervy
Class Size: 22 people (maximum)
Cost: \$US 50.00

October 23-24 (Saturday and Sunday) cont.
 Short Course: Fungal Spores
 Instructor: Dr. Bill Elsik
 Class size: 30
 Cost: Professional: \$US 200.00
 Student: \$US 150.00

Technical Sessions

October 25 (Monday)

AM: "Facies Models and Sequence Stratigraphy"

PM: "General Sessions"

Evening: Ice Breaker

October 26 (Tuesday)

AM: "General Session"

PM: Symposium: "Palynology and Climate"

Evening: Cajun Dinner

October 27 (Wednesday)

AM & PM: Symposium: "Palynology, Climate and Sequence Stratigraphy of the Pliocene"

Business Luncheon

LSU Faculty Club

October 28 (Thursday)

AM: Palynology, Climate and Sequence Stratigraphy of the Pliocene

PM: Palynology, Climate and Sequence Stratigraphy of the Pliocene (Round Table Discussion)

Poster Session

October 25-27

Poster may be displayed from Monday morning through Wednesday afternoon.

Displays areas will be 4' X 8'.

Field Trip

October 29 (Friday)

Louisiana Swamps and Marshes

Instructor: Harry Roberts

Class Size: 36 people

Cost: \$US 50.00

PLEASE FORWARD ALL COMMUNICATIONS CONCERNING THE 1993 AASP ANNUAL MEETING TO:

Dr. John H. Wrenn

Center for Excellence in Palynology

Department of Geology and Geophysics

Louisiana State University

Baton Rouge, LA 70803

The above summary of planned events, a Calendar of Events, and a Registration Form for the 1993 Annual Meeting of the American Association of Stratigraphic Palynologists, Inc. Were mailed separately to all of the members of AASP. More than 60 people have registered for the meeting thus far. The organizers anticipate 110-120 people for the entire meeting, as well as a number of additional attendees just for the Pliocene Symposium. Registrants are from Europe, Africa, South America, and

North America. To date, fifteen people have signed up for the Sequence Stratigraphic Concepts Short Course, 13 for the Fungal Spore Short Course, 11 for the Pre-Meeting Delta Field Trip and 20 for the Post-Meeting Field Trip to Louisiana Swamps and Marshes.

There are slots available for all of these events, though registrations are coming in daily, and more frequently as the meeting draws near. Don't delay in registering or you may find that special course or trip that you wish to attend has filled up. The field trips and courses will be excellent. These events will be run by very knowledgeable, well seasoned scientists (which you would expect in Cajun Country).

Over sixty papers and posters have been offered for the meeting and the two symposia are nearly full. The program can accommodate a few more oral presentations and, of course, there is always room for poster presentations. But contact us quickly if you wish to participate in what looks like a good program. The technical presentations will be varied and worth attending.

This will be a good meeting, on a beautiful campus and the weather will be nice in October. I hope to see you at the meeting.

John H. Wrenn



NOTICE

1995 AASP MEETING

Susan and David Jarzen will be the hosts of the 1995 AASP

Annual Meeting in Ottawa, Ontario Canada. See the meetings listings for all information.

EMPLOYMENT WANTED

Stratigraphic palynologist, M.Sc., 11 years experience with a major oil company. Experience with Mesozoic and Cenozoic pollen, spores and dinoflagellates. Some experience in the Paleozoic and with thermal maturation, depositional environments and sequence stratigraphic studies. Available for international assignments.

H. Steven Dittrich
203 Pineridge Ct.
Mandeville, Louisiana
U.S.A. 70448
(504) 626-8808

PALYNOLOGISTS IN THE NEWS

Dr. Robert M. Kosanke geologist-palynologist was awarded the Meritorious Service Award, the second highest honor given by the United States Department of the Interior for significant contributions to the earth sciences. Bob received recognition for his outstanding contributions in the study of fossil spores and pollen of Mississippian and Pennsylvanian age (290-360 million years ago) and their application to solving geologic problems, especially as a tool for coal exploration in the Appalachian and Illinois basins.

During his career, Bob has described more than 200 new plant microfossils and has demonstrated their value in the world-wide correlation of coal-bearing strata in Paleozoic (225-560 million years ago) basins. A native of Park Ridge, Ill., he received a bachelor of arts degree in botany (1940) from Coe College, a master of arts degree in paleontology and paleobotany (1942) from the University of Cincinnati and a doctorate in paleobotany and botany (1952) from the University of Illinois. He is a fellow of the Geological Society of America, from which he received the Gilbert Cady Award (1989) and the Distinguished Service Award of the Coal Geology Division (1991), and a member of the Society for Sedimentary Geology (formerly the Society of Economic Paleontologists and Mineralogists), the American Association of Stratigraphic Palynologists, the Botanical Society of America, and the Paleontological Society, and the Illinois Academy of Science. He and his wife Avalonne live in Lakewood, Colo.

Dr. Keith Ferguson (Deputy Keeper of the Herbarium and Head of the Palynology Unit) has been elected a Corresponding Member of the Botanical Society of America. In being awarded this high honour, Keith follows in the footsteps of such outstanding Kew botanists as Dr. J. Hutchinson, Dr. C.R. Metcalfe and Dr. R.E. Holttum.

Corresponding members are distinguished senior scientists who have made outstanding contributions to plant science and who live and work outside the USA. The Corresponding Membership consist of a group of no more than 50 distinguished members of the international botanical community.

Since 1970, Keith has developed Kew's Palynology Unit which, with its four staff members, is not only one of the largest concentration of professional pollen morphologists, but also through his guidance, one of the best centres for systematic palynology anywhere in the world. Keith's research using light, scanning electron and transmission electron microscopy is meticulously performed and he has made numerous significant contributions to angiosperm systematics, with especially important contributions to the understanding of relationships within the Leguminosae. In addition to over 100 research papers, Keith has co-edited two influential books on pollen: the 1976 book with Muller on the evolutionary significance of the exine and the 1986 book with Blackmore on form and function of pollen and spores.



COMPUTERS IN PALYNOLOGY

We urge the AASP membership to submit news and articles on computer application in biostratigraphy to our Newsletter. We are still interested in compiling a database on biostratigraphic software. Please contact any of the Committee members (Michael Farabee, Massoud Jameosanaie, Warren Kovach, Judith Lentin, or Pierre Zippi) if you like to share such information with your colleagues. We are looking forward to hearing from you!

[Editor's note: The following article is rife with "computereze", that is, terms which mean nothing to anyone except those who work with computers every day. With appologies to "the mother of all gophers", I ask my computer programmer to please explain what on earth all the jargon means - the answer wasn't clear, except to indicate that I need to update my communications skills. So, I will pass on the message as received. JKL]

GNUS: ANNOUNCEMENT - New Database Available Via MOP Gopher

From: Robg@fossil.Berkeley.EDU (Robert Guralnick)
Newsgroups: bionet.announce,sci.bio,sci.geo.geology,comp.infosyste.ms.gopher
Subject: ANNOUNCEMENT - New Database Available Via MOP Gopher
Keywords: Pacific Rim, Gopher, Biodiversity
Date: 19 Jun 93 01:03:15 GMT
Organization: Berkeley Museum of Paleontology

INTRODUCING: The Pacific Rim Biodiversity Catalog: The University of California Berkeley Museum of Paleontology, with the support of the Pacific Rim Research Program, are in the process of compiling a database on Pacific Rim biodiversity. We have sought information from nearly 200 natural history institutions throughout the world concerning the taxonomic, geographic and temporal composition of their Pacific Rim zoological and paleontological holdings. As of June 15, we had received over 40 responses to our survey. As completed survey forms arrive, we will periodically update the information provided on the Museum of Paleontology Gopher (unmpl.berkeley.edu or from the Mother of All Gophers, North America/USA/California/University of California - Museum of Paleontology. The index was set up by WAIS Index and can be searched using boolean parameters such as AND, OR, and NOT. Partial searches can be conducted as well by using '*'. For example, a search of "Echino* AND Triassic NOT Australia" would bring up all Pacific Rim collections of Echinoderms from the Triassic period except those from Australia. The survey consists of 20 matrices, each corresponding to one of 20 regions comprising the Pacific Rim.

1. Mexico
2. Central America
3. South America (North of Chile)
4. South America
5. New Zealand
6. East Australia
7. North Australia
8. West Australia
9. New Guinea
10. Philippines
11. Indonesia

12. Malaysia/Thailand
13. Vietnam
14. China
15. Japan
16. Korea/Russia
17. Central Pacific Islands
18. United States (Alaska)
19. Canada
20. United States (Contiguous)

Respondents provided information on 16 taxonomic categories.

1. Porifera
2. Cnidaria
3. Echinodermata
4. Brachiopoda
5. Annelida
6. Arthropoda
7. Mollusca
8. Other Invertebrata
9. Chondrichthyes
10. Osteichthyes
11. Reptilia
12. Amphibia
13. Aves
14. Mammalia
15. Protista
16. Plants/Algae

Collections material were also broken down into two groups, present or paleontological. For collections of organisms living in the present, respondents indicated the habitat category of the specimens.

1. Terrestrial
2. Intertidal Marine
3. Subtidal Marine

Palaeontological collections were categorized by geological time units.

1. Quaternary
2. Neogene
3. Paleogene
4. Cretaceous
5. Jurassic
6. Triassic
7. Permian
8. Carboniferous
9. Devonian
10. Silurian
11. Ordovician
12. Cambrian
13. Precambrian

In addition to the above information, we collected general information about the responding institutions.

1. Name and Address of Museum
2. Name of Parent Institution
3. Name, Phone, Fax, and E-Mail of Contact at Museum

The Pacific Rim Biodiversity Catalog is somewhat broad in nature, but should be of considerable use to interested scientists, conservationists and policy planners. Our aim is to increase the efficiency with which information on the Pacific Rim natural history is exchanged. To help us achieve this important goal, we would greatly appreciate being notified of additional Pacific Rim natural history collections. If you are with an institution that has Pacific Rim holdings and would like to receive a survey form, please contact Allen G. Collins at the address below. The survey will be made available through gopher in the near future. Please direct comments and suggestions to Allen Collins.

Allen G. Collins
PacRim Coordinator
allenc@ucmpl.berkeley.edu
Berkeley, CA

Robert P. Guralnick
Museum of Paleontology Systems Administrator
Berkeley, CA (robg@ucmpl.berkeley.edu)



TECHNICAL NOTES

Palynology of the James Ross Island area

The James Ross Island area is recognized as one of the geological treasures of Antarctica. It exposes a section of over 6 km of Cretaceous and Tertiary marine sedimentary strata with an important content of reworked Upper Jurassic rocks near the base. This sequence has produced some of the most remarkable fossil finds in the Southern Hemisphere. The list is extensive and includes a

wealth of marine invertebrates, plesiosaurs, dinosaurs, land mammals and birds, giant penguins, whales, and fossil leaves and wood. The sediments record a long history of submarine fan, shelf and deltaic deposition in a back-arc environment, and the contained fossils provide valuable information on Cretaceous and Tertiary climates, and biological evolution at high palaeolatitudes.

Critical to the study of such a sequence is a firm biostratigraphical framework, in which palynology plays a major role. A Special Issue was published as the September 1992 part of *Antarctic Science*, has brought together a collection of papers, resulting from a joint research project by the British Antarctic Survey, the Centre for Palynological Studies of the University of Sheffield, and the British Geological Survey. The papers describe the palynology (mainly dinoflagellate cysts) of the Cretaceous (Aptian/Albian)-Eocene. The floras contain several new taxa, plus existing species known from other Southern Hemisphere localities, such as Australia and New Zealand. The collection of papers will be introduced with an overview by the Special Issue editors, A.M. Duane, D. Pirrie and J.B. Riding.

The Special Issue aims to establish the major elements of the Late Jurassic - Early Tertiary palynostratigraphy of the northern Antarctic Peninsula region. It is hoped that it will form an invaluable reference work for future stratigraphical studies in this key area.

ANTARCTIC SCIENCE

Volume 4, Number 3
Special Issue

Available from:

Blackwell Scientific Publications, Osney Mead, Oxford OX2 0EL, England. The price is £19.50 or \$US36.50. Payable by credit cards.

THESIS ABSTRACTS



No abstracts were received for this issue of the *NEWSLETTER*. Students are requested to send in abstracts. Teachers, remind them!

AQUILAPOLLENITES: CARVED IN STONE

In 1986 Public Works Canada embarked on a programme to produce a series of stone carvings to adorn the walls of the House of Commons Chamber, along the shoulders of archways (spandrels) enclosing the public galleries. Parliament later approved a series of fourteen carvings to represent the "Origin of Life in Canada." It was proposed that these carvings would acknowledge the internationally recognized work of Canada's paleontologists and provide the public with a view into Canada's prehistory.

The beautifully detailed carvings are the creations of Eleanor Milne and Maurice Joanisse, the Government of Canada's only professional stone sculptors. Maurice, a student of Milne's since 1971, is now carving the entire prehistory life series from Milne's meticulously detailed designs. Working patiently and researching each detail of the fossil organism that he creates in stone, Maurice spends about four months on each sculpture. Sculptures already completed include dramatic and detailed representations of *Smilodon*, *Triceratops*, trilobites, dragon-flies and *Eusthenopteron*, a primitive Devonian fish.

Of interest to AASP NEWSLETTER readers is the choice of *Aquilapollenites* as a candidate for one of the sculptures. Early in 1986 Dr. Dale Russell and I were approached by Eleanor Milne to provide subject material which she could incorporate into the Cretaceous-age carvings. Excited at the prospect of having palynology forever preserved in the Parliament buildings, I selected *Aquilapollenites* Rouse (*sensu lato*) as appropriate to represent a part of Canada's plant history. Eleanor Milne was delighted with the "bizarre" yet intriguing morphology of these "tiny architectural wonders."

A well-written and beautifully illustrated account of the work of Eleanor Milne and Maurice Joanisse is that of Dugas (1992) in which one of the color photographs (p.79) shows Maurice and Eleanor discussing the early stages of the *Aquilapollenites* sculpture.

One of the archway carvings to be installed during the summer of 1993 on the House of Commons walls is a representation of an ostrich dinosaur flanked above by leaves of *Gunnera* and below by a stylized rosette of four specimens of *Aquilapollenites*. The sculptures are carved in the fine-grained, nearly white, Indiana Limestone (Mississippian) since this rock material is easily carved and usually free of inclusions (including fossils) which may mar the appearance of the final work.

The specimens chosen for Maurice to carve were styled from SEM and LM photomicrographs of *Aquilapollenites* (*Integricorpus*) *clarireticulatus* recovered from the Lea Park and Foremost Formations (Campanian), Youngstown borehole, southeastern Alberta. Radforth and Rouse (1954) were the first Canadian palynologists to illustrate and describe specimens of *Aquilapollenites* (as *N*₁, *N*₂ "Not previously described") and later Rouse (1957,

p.371) provided the first validly published diagnosis of the new genus. In doing so Rouse noted that "The form genus *Aquilapollenites* has been formulated to incorporate two pollen forms of unknown botanical affiliation which occur in the Brazeau and Oldman formations and appear to be characteristic microfossils of these Upper Cretaceous formation."

The carvings of the four grains of *Aquilapollenites* are arranged in a cruciform pattern with the long axis (polar axis) aligned radially. Overall the four-specimen circle (rosette) measures about 30 cm in diameter. Even at this size, detail of the reticulate surface could not be carved onto the sculpture as the soft limestone tends to crumble when closely spaced, fine lines are required. Once in place, however, high above the floor of the House of Commons Chamber, the grains will, indeed, be recognizable as *Aquilapollenites*.

Certainly the importance of *Aquilapollenites* in Canadian Late Cretaceous biostratigraphy need not be stressed here; however, its inclusion in the Parliament buildings will assure its permanence as the only fossil pollen grain so honoured.

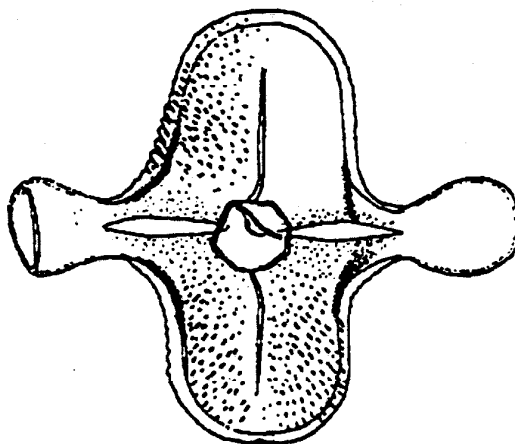
References

Dugas, G., 1992. Master Sculptor: Our history comes to life at the hands of Eleanor Milne; (with photography by Ron Devries). Canadian Geographic 113(1):68-77, Jan/Feb 1992.

Radforth, N.W., and G.E. Rouse, 1954. The classification of recently discovered Cretaceous plant microfossils of potential importance to the stratigraphy of Western Canadian coals. Canadian Journal of Botany 32:187-201.

Rouse, G.E., 1957. The application of a new nomenclatural approach to Upper Cretaceous plant microfossils from Western Canada. Canadian Journal of Botany 35:349-375.

David M. Jarzen
Canadian Museum of Nature
Ottawa, Ontario





MEETING NOTES

Canadian Association of Palynologists' Special Session
at the G.A.C./M.A.C. Meeting, Edmonton, Alberta

About 900 geoscientists gathered at the University of Alberta in Edmonton for the Geological Association of Canada/Mineralogical Association of Canada (G.A.C./M.A.C.) Joint Annual Meeting in May, 1993. This large assembly provided an ideal forum for the Canadian Association of Palynologists to hold a Special Session, entitled "Palynology in Canada: Paleoecological and Stratigraphic Applications". The session was organized by David McIntyre (Geological Survey of Canada), Bert Van Helden (Chevron Canada Resources), and Alwynne Beaudoin (Provincial Museum of Alberta). It consisted of an entire day, May 18th, of seventeen presentations (sixteen oral and one poster), arranged here in roughly geochronological order from Paleozoic to Present.

Elliott Burden (C.A.P. President) opened the session by discussing "Comparative Analysis of Thermal maturation Indices for Acritarchs, Spores, Graptolites and Vitrinite from Paleozoic Strata, Western Newfoundland" (Burden, Williams & Mukhopadhyay). David McIntyre continued with "Late Albian to Turonian Palynological and Microfaunal Assemblages, Lower Colorado Group, Southern Alberta" (McIntyre, Schröder-Adams & Graig). Andrew MacRae gave the first of two fine presentations, this one on "Species Succession and Morphoclines of the Fossil Dinoflagellate *Nyctericysta*: A Measure of Increasing Paleoenvironmental Stress and Proximity to Shoreline?" (MacRae & Hills). He suggested that the dinoflagellate showed variable morphology which, as in an extant taxon, might be related to distance from shoreline. Len Hills considered the "Palynological Re-evaluation of the Cretaceous Hassel/Kanguk Fms Boundary at Mt. Bridgemen, Ellesmere Is., Canadian Arctic Archipelago" (Hills, Nùñez-Betelu, Krause, & McIntyre). Also focused on the Arctic, Ramant Kalgutkar assembled a poster on "Fossil Fungal Spores and Fructifications from Iceberg Bay Formation, Kanguk Peninsula, Eureka Sound Group, Axel Heiberg Island, Northwest Territories."

Dale Leckie presented work, undertaken with Elliott Burden, on the "Geology of Middle to Late Albian Unconformities in the Alberta Basin: Correlation of

Basin-wide Erosion Surfaces." Bert Van Helden discussed "Palynostratigraphy and Depositional Environments of Jurassic Sequences in the Western Canada Basin," emphasizing the value of palynology for hydrocarbon exploration. Andrew MacRae gave his second presentation, on "Dinoflagellate Diversities, Extinctions and Sea-level Curves" (MacRae, Fensome & Williams), describing a large palynological computer database and its potential for assessing species abundance and diversity. Graham Williams (C.A.P. Past President) demonstrated, in the "Palynological Delineation of Third Order Sequences, Scotian Margin" (Williams, Wade, Fensome, McLean & Stover), the use of palynology in a multidisciplinary approach to stratigraphic analysis. Moving somewhat closer to present, James While showed us "Middle and late Miocene "Snapshots" of Vegetation and Climate in Northwestern Canada and Alaska, and Biostratigraphic Implications" (White & Ager). He showed a Middle Miocene assemblage, from along the Porcupine River, containing thermophilous taxa that implied a mean annual temperature of possibly 9°C. In contrast, the thermophilous taxa were absent from a Late Miocene assemblage, which James estimated to represent a mean annual temperature of perhaps 0°C, suggesting a gradual decline in temperature in this high-latitude area. The final paper of the morning session, entitled "Dinoflagellate Cysts as Sensitive Signals for Neogene Cooling in the North Atlantic and Contiguous Seas: Ecostratigraphic Analysis of Deep-sea and Shelfal Assemblages" (Head, Norris, de Verteuil, Anstey, Kolev & Newmann), was cancelled because, due to funding constraints, none of the authors were able to attend the conference. This was unfortunate but, luckily, this was the only paper of the session to be cancelled.

In the afternoon session, Ian Campbell opened the proceedings with "Late Holocene Disequilibrium Forest Caused by Rapid Climate Change" (Campbell & McAndrews). Ian concluded that Neoglacial cooling had a significant impact on forest composition of southern Ontario, leading to demise of thermophilous *Fagus*, followed by expansion of *Quercus*, and then an increase in more cold-tolerant *Pinus strobus*. Glen MacDonald (C.A.P. President-Elect) described "A Fossil Pollen Based Reconstruction of Regional Variation in Treeline History in the Western Interior of Canada" (MacDonald & Szeicz). By collating information from many sites across northern Canada, Glen showed that Holocene treeline movements were not synchronous and may be related to a complex suite of underlying factors, including the position of the arctic front. Bob Vance examined "Climatic and Hydrogeological Implications of Holocene Paleolimnological Studies in the Southern Canadian Prairies". He suggested that plant macrofossils, specifically seeds, provided a more sensitive register than pollen for drought sequences at Chappice Lake. Daryl Fedje presented "Palynology, Micropaleontology and Sea-level Changes in the Southern Queen Charlotte Islands, British Columbia". His study involved using multiple indicators to

try and establish the location of early Holocene shorelines. These then act as a guide for archaeological site survey. Charlie Schweger explored "Quaternary Paleoecology of Beringian Tephra", highlighting the importance of the tephras as regional chronostratigraphic markers, allowing pollen assemblages to be examined from a wide area at a specific time horizon. Finally, bringing the session to a close, I gave a presentation on "Multivariate Statistical Analysis Applied to Modern Pollen Data from the Sunwapta Pass Area, Jasper National Park."

The session was well-attended, with between 24 and 41 people listening to the papers. Although many listeners were members of the Association, papers did attract an audience from outside the organization. Thus one main objective for the session - to showcase Canadian palynology to our geoscience colleagues - was amply met.

I thoroughly enjoyed the day. It was a pleasure to hear some diverse and well-prepared papers and I much appreciated the opportunity to meet many of my colleagues from the Association. As a Quaternary palynologist, I was particularly interested to hear about the research of my colleagues in stratigraphic palynology. For me, the session re-emphasized the breadth and complexity of the discipline.

It was the general consensus that the day was a resounding success. I hope it will be possible to arrange similar sessions at future conferences.

Alwynne B. Beaudoin
Archaeological Survey
Provincial Museum of Alberta
1245-102nd Avenue
Edmonton, Alberta T5N 0M6, Canada

[Editor's Note: After a great deal of pressure, Alwynne has finally joined the AASP. Welcome Alwynne!]



Conference Report
Fifth International Conference on
Modern and Fossil Dinoflagellates
"Dino-5"

April 19-25, 1993
Zeist, The Netherlands

University of Toronto

The beautiful Woudschoten Conference Centre, set in spacious woodlands with deer, rabbits and other furry creatures roaming freely, provided a secluded and tranquil environment for discussions on latest advances in dinoflagellate research. This was "Dino-5", the fifth olympiad in the calendar of dinoflagellate conferences, an eclectic event where biologists and paleontologists could mingle and find out just why their research is so important to others. The apt theme of this conference was "Dino-5 is alive". A considerable slant towards ecology and the living was, I believe, appreciated by all, especially industry palynologists who urgently need detailed (paleo)ecological information for sequence biostratigraphic modelling.

Conference presentations were mainly posters and this facilitated a relaxed schedule of talks and panel discussions. The auditorium - a converted chapel with stained glass windows and functioning organ - gave a sense of drama. Many performances were praiseworthy but I was awed by the keynote address by Joann Burkholder (University of North Carolina) on her discovery, widely reported in the popular press, of the "phantom" killer dinoflagellate and its many disguises. The life cycle of this ichthyotoxic dinoflagellate, which includes at least 15 stages, most of them not remotely fossilizable, has sobering ramifications for those who reconstruct the past from fossil cysts. Yet fossil cyst studies do work and this was amply demonstrated by, for example, the close correspondence of byst signals with environmental perturbations in the Mediterranean Pliocene (Gerard Versteegh of The State University of Utrecht) and the utility of dinoflagellates for sequence stratigraphic analysis in the Belgian Oligocene (Yow-yuh Chen et al. Exxon, Houston).

The midweek excursion took us to, among other things, the nearly completed and utterly faithful reconstruction of a 1628 three-masted East-Indiaman, the "Batavia". Begun as a make-work project to train youngsters in the skills of woodworking and 17th century boatmaking, the project is now a money-spinning tourist attraction. A witty motto "culture drives the economy" above the entrance to the site reminds all of this project's twist in fortunes. From the "Batavia" we went on an evening boat trip through the canals of a (dare I say touristy rather than quaint) little fishing village and ended up at a canalside restaurant for the conference barbecue. It was very good fun.

The sporting highlight of the conference was a indoor five-a-side soccer tournament. Four teams - England, Germany, CanScan (Canada and Scandinavia), and The Netherlands - took up the challenge. Dazzling skills and fierce tackling, usually for the ball, kept the audience enthralled. Youth held the promise of ascendance, but it was the gritted determination of a veteran CanScan team that carried the day. *[Editor's Note: our reporter, Martin Head - a member of the winning team is being characteristically modest. The Dino-4 soccer match was carried on out of doors - with mud. The Dino-5 games were held in a gym, with bright lights and very hard wooden floors. The squeeks of shoes on the floor along with the grunts of the*

"still young in spirit" palynologists clearly filled the ears of the gallery. The most amazing performance was given by Dave Renshaw (on the winning team), who must have had some difficulty in the past trying to decide whether to be a pro-footie player or a palynologist. Happily palynology and the CanScan Team got Dave.]



The CanScan Team: Top - Martin Head, Dave Renshaw, Laurent De Verteuil; bottom (no pun intended) - Barrie Dale, Rob Fensome and Arnfinn Rømuld.

The Conference closed with two final-day events, an excursion to the type Maastrichtian (which I missed and can't comment on) and the Third Workshop on Neogene Dinoflagellates. This workshop brought together a mix of neophycologists, paleophycologists, and somewhere around 50 holotypes with their authors often in attendance. It made for an instructive morning of microscopy and served as a reminder that careful morphological analysis and taxonomic precision are the cornerstones of our science. A roundtable discussion followed and an edited transcript is to be published in the conference proceedings volume which will appear as a special issue to Review of Palaeobotany and Palynology. *[Editor's Note: Although I also missed the field trip to the type Maastrichtian, I was given chapter and verse of a wonderful, very long, day by those who attended.]*

In closing, "Dino-5" was a smoothly organized, quality event, tapping the synergy that predictably flows when biologists and paleontologists interact. If there was a weakness, it was that the schedule of oral presentations was a bit too leisurely. The Organizing Committee worked hard not just to make the conference a success for those with the budgets to attend, but raised funds and attracted sponsors to assist delegates with financial difficulties. "Dino-4" at Woods Hole, Massachusetts in 1989 was a hard act to follow. "Dino-5" now is too. Good luck to Bruce

Tocher and colleagues at Aberystwyth who have gallantly volunteered to host "Dino-6", in the Land of Our Fathers, in 1997.

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

UNIVERSITIES IN THE NEWS



PALYNOLOGY IN ST. JOHN'S

Palynology in the Earth Sciences department is occupied with a diverse range of topics spanning Cambrian through recent strata. Elliott Burden, Henry Williams and P.K. Mukhopadhyay are presenting some results of a thermal maturation study of the Cambro-Ordovician strata of western Newfoundland at the GAC Meeting in Edmonton *[see report of that meeting above]*. The western Newfoundland region holds promise for significant hydrocarbon reserves. The study explores the relationship of Acritarchs and Graptolites to fluid inclusion, paleotemperatures, and Conodont Alteration Indices to identify prospective source and reservoir rocks.

Farther afield, Burden is still chipping away at upper Jurassic and lower Cretaceous strata in the Western Interior Basin of Canada. Some of this work will be presented in Edmonton in a joint paper with Dale Leckie on Albian unconformities in southern Alberta. South of the border in the USA, Burden has recently completed a study for Peter DeCelles on the Morrison and Cloverly formations in Wyoming. Burden's contribution in dating these rocks has helped DeCelles model basin dynamics during orogenesis. This work is to be published later this

year.

Buren's Arctic research on Cretaceous-Tertiary rocks on Bylot Island has moved from field exploration to laboratory analysis and synthesis. Hundreds of samples have been collected over the last several years; Kerry Sparkes, James Waterfield, Philip Benham and Terry Wiseman have each completed field studies on parts of the depositional basins. A paleomagnetism study with Joe Hodych is designed to provide independent evidence for the age of these beds.

Quaternary sedimentary strata from Newfoundland are being analyzed by Brian Sears and Terry Christopher. Brian's thesis study is directed towards understanding glacial and recent marine deposits along the west coast of Newfoundland. Terry's thesis, co-supervised with Dr. Peter Davenport, is a multidisciplinary study of the palynology and geochemistry of St. John's watersheds. One of the surprising observations from this work lies in the paradox of heavy metals and the environment. St. John's watersheds contain clean waters hosting some of the healthiest, fastest growing trout in North America. In contrast, the sediment deposited in ponds during the last 200 years contain very high concentrations of heavy metals (i.e., 600 ppm lead). Terry's work is directed towards understanding the history and mechanics of urban pollution.

Across campus in the Geography department work continues on late Glacial and Holocene lake sediments from the island of Newfoundland. Joyce Macpherson has recently presented a paper showing widespread evidence of fire disturbance and change in forest composition during the Holocene. At a local scale Macpherson has recently completed a synthesis of early post-glacial inshore marine and lake sediment records from the northeastern Avalon Peninsula, including work by former students Gillian Mellars and Sheila Vardy. The radiocarbon, pollen and sedimentary records shed light on the mode and timing of deglaciation; "early post-glacial" in this part of Newfoundland means "early Holocene."

Deborah Butler's thesis study in Terra Nova National Park, eastern Newfoundland, undertaken to reveal evidence of regional Holocene vegetation history, especially the former extent of red pine, has had an unexpected bonus in the discovery of evidence of a late-glacial climatic oscillation, equated with the Younger Dryas. This evidence will appear in a forthcoming publication with Alex Wolfe (Queen's University) who examined the diatoms.

Many research projects incorporating palynology, sedimentology and environmental studies are available to students interested in attending Memorial University. Partial to complete financial support is provided on a competitive basis to students with good to excellent grades.

Joyce Macpherson
Elliot Burden
St. John's, Newfoundland



ON THE LIGHTER SIDE

DOCTOR CREATES GIANT ALLERGENS DECOR

The giant pollen grains and oversize mold spores looming in Dr. James Crisp's allergy clinic, in Lubbock, Texas are nothing to sneeze at. In fact, the lively allergens found hanging on the walls and from the ceilings of Crisp's waiting rooms are supposed to make patients feel better. These magnified plant pollens are user friendly - they don't cause runny noses, watery eyes or itchy skin. The constructions are only clay replicas of the irritating pollens that give fits to many West Texans.

Crisp came up with the idea for his signature office decor, and Lubbock artist Jeanie Jones made the dream a reality. Through clay, the potter transformed grains the size of a small dot into concise pieces that allergy patients can see and touch.

The pottery collection includes large grain and spore replicas mounted on wood and smaller pieces linked by barley rope. The 50 or so models, some in full relief and some in half relief, have been hanging in the allergy clinic for the past eight months.

The one-of-a-kind pieces, which Jones intricately constructed from photographs of the grains and spores as seen under a microscope, are labeled by name to show the characteristics of the individual allergens to adult and child patients.

"I thought it would be a fun and interesting way to show our patients what is giving them the allergies," said Crisp, who began work on the pottery project with Jones more than two years ago. "Because I deal with chronic disease, my patients are with me for a long time. I wanted to create an atmosphere that is conducive to waiting and to not minding shots."

Crisp had been pondering the pottery idea for several years, he said, but without an artist to do the work, he had no way of moving forward with the plan. Jones, who has bachelor's degrees in fine arts, all-level art and elementary education from Texas Tech University, is owner and teacher at the School of Art.

Though she has taken on some unusual tasks through the years, she said, the medical illustrations she designed for Crisp turned out to be "the most interesting and exciting project I've ever done." The hard clay replicas, some of which are glazed and others of which are raw, show the detailed textures and texture mixtures, the odd shapes and other unique characteristics of the various pollens and spores.

For example, the large replica of grass pollen

depicts the fuzzy texture of the grain and the shiny globule structures sprinkled throughout the nucleus's central portion; the Western Water Hemp structure shows a thick grouping of large looplike structures that resemble locks of curly hair, which are combined with deep, round indentions; and the ragweed replica features a large nucleus with long pointed branches extending from its center in a sunburstlike manner.

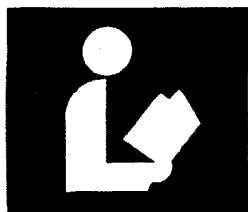
Other of the large and small figures depict the pollen plants such as cherry, cattail, maple, sunflower, corn, walnut, lambsquart and ash. "I did research, and Dr. Crisp gave me photographs and textbooks - I wanted to have everything that could help me," Jones said. "These had to be medically correct. Dr. Crisp knew exactly what he was talking about, and he wanted me to convey that in clay."

However, capturing the unusual characteristics of the pollens and spores in clay took some innovation on Jones' part. To get a porous texture on the model of careless weed, she used a hairbrush. To depict the flowery like design of pigweed, she used the tip of a Phillips screwdriver and the handle of a drill key. For other replicas, she used antique tools given to her by her grandfather, parts of her hands and fingers and even cake decorating tools.

"There are no tools for making spores. I had to improvise," Jones said, adding that while the pieces serve as informative decoration, they definitely are art. However, she doesn't deny the scientific aspect of the pieces. "It's explaining through art what happens when you get one of these stuck in your nose," she said jokingly.

The clay used to construct the pieces is from the West Texas area, and most of the replicas are of plant pollen and molds common to the region. Jones also solicited the help of a mathematician in sizing and proportioning the pieces.

from *The Houston Chronicle*
4/5/93



BOOK REVIEWS

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

The Phanerozoic Geology of the World I: The Paleozoic, A,
Edited by M. Moullade and A. E. M. Nairn, 1991. Elsevier

Science Publishers, P.O. Box 211, 1000 AE Amsterdam, The Netherlands and Elsevier Science Publishing Co., Inc., P.O. Box 882, Madison Square Station, New York, NY 10159, U.S.A. ISBN 0-444-87384-8, 429 p., \$164.00.

This first volume in the *Phanerozoic Geology of the World* series covers the Paleozoic rocks of portions of the former Gondwana continent. The book is divided into seven chapters written by 12 authors, with each chapter containing a comprehensive bibliography of the region discussed.

Chapter 1 by B. R. Turner covers the subcontinent of southern Africa which includes all or portions of the countries of Botswana, Lesotho, Namibia, South Africa, Swaziland, and Zimbabwe. Most of this chapter is devoted to the stratigraphy, paleontology, and paleogeography of the three major Paleozoic stratigraphic units in this region: the Pre-Cape Paleozoic rocks composed of the Nama Group and Klipheuwel Formation; the Cape Supergroup; and the Karoo Sequence. The Pre-Cape and Cape rocks are Early Paleozoic in age, and are unconformably overlain by the Late Paleozoic (Late Carboniferous to Early Jurassic) aged Karoo Sequence.

Chapter 2 is written by V. J. Gupta and M. E. Brookfield and covers India. This chapter discusses the Paleozoic stratigraphy and paleontology from three structural settings: the High Himalaya and its lateral extensions which encompasses the entire Paleozoic; the Lesser Himalaya and its lateral equivalents which includes the Cambrian-Early Ordovician and the Carboniferous-Permian; and the Late Paleozoic aged grabens that formed during the Carboniferous on the Indian shield.

Because Gupta is the coauthor of this chapter and is either the sole author or coauthor of 29 of the 127 references listed at the end of the chapter, I feel obligated to mention the recent controversy concerning the validity of many of Gupta's more than 400 publications on Himalayan geology during the past 25 years (Lewin, 1989; Talent, 1989a, 1989b; Talent *et al.*, 1988; Webster, 1991). According to Talent and his colleagues, "The database for the Silurian and Devonian of the Himalaya has become so extensively marred by error, inconsistency and implausibility as to throw grave doubts on the scientific validity of any conclusions that might be drawn from it" (Lewin, 1989, p. 279). Until the validity of Gupta's data can be independently verified, stratigraphic and paleobiogeographic conclusions based on that data would seem to be suspect and should not be unequivocally accepted. It should also be noted that these comments apply only to Gupta and not his coauthors. As Webster (1991, p. 1006) stated "A small part of the field studies and the included descriptions and systematics in the Gupta papers were conducted by co-authors and are vouched for by the co-authors, although this division of responsibility may not be specifically stated in the paper. Many of the papers containing Gupta fabricated locality information include

systematics honestly done by co-authors, who accepted the locality information."

Chapter 3, coauthored by M. J. Khan and M. Humayun looks at the Paleozoic of Pakistan. The authors have divided the Paleozoic of Pakistan into four groups based on stratigraphic relationships. Except for the Salt Range in the Potwar Kohat Plateau, all of the Paleozoic rocks of Pakistan are variably metamorphosed, ranging from very low to high grade. The stratigraphy of each of the four groups is discussed, followed by a section on Paleozoic igneous activity and the Paleozoic geologic evolution of Pakistan.

Chapter 4 deals with the Late Precambrian and Paleozoic rocks of Iran and Afghanistan, areas in which geologic reviews have not been readily available. This chapter was written by H. Wensink. The chapter provides a geologic overview and history of each region, followed by a detailed discussion of the stratigraphy of the two countries for individual time-stratigraphic intervals. These include the Upper Precambrian, Eocambrian and Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permian systems. Each system section begins with a general introduction, followed by the formations for the various regions in which they occur, e.g., Northern Iran, Central Iran, Northern Afghanistan, etc. The chapter concludes with an extended discussion of the paleogeography, tectonic, and volcanic history of the region. Like the last section, this section is divided on the basis of time-stratigraphic intervals and a paleogeographic map of the area is provided for each Paleozoic system discussed.

Chapter 5 covers China, another area in which there has been a lack of synthesized information. This chapter was coauthored by Zhang Shouxin and Zhen Yongyi. Following an informative introduction to the Paleozoic of China, the chapter is divided into sections devoted to the stratigraphy and paleogeography of China during each of the Paleozoic periods. Thus for the Cambrian, a general statement is made as to where Cambrian strata are found, followed by a discussion of the various Cambrian formations in the various Chinese provinces. Each section also contains paleogeographic maps for the period as well as a map of the stratigraphic provinces and cross sections for the discussed time period.

Chapter 6 discusses the Paleozoic of Australia and was written by R. H. Findlay, J. C. Aitchison, P. G. Flood, and J. D. Kleeman. As the authors state in the Introduction, "Australia may be viewed with extreme simplicity (Fig. 1) as composed of two geologic entities." The western and central cratonic region of Australia consists of large intracratonic basins and sub-basins in which sedimentation occurred throughout the Paleozoic. The eastern third of Australia constitutes the Tasman Orogenic Zone. Within this zone three cycles of sedimentation and deformation occurred during the Paleozoic. In this volume these three cycles of the Tasman Orogenic Zone and the extensive Paleozoic granitoids and associated volcanics are discussed. The history of the western and central cratonic region will be covered in *The*

Palaeozoic, B of this series.

The final chapter, written by R. H. Findlay, covers Antarctica. Antarctica consists of two distinct geographic regions, West and East Antarctica, which are separated by the transcontinental Transantarctic Mountains which formed as part of the Early Paleozoic Ross Orogeny. The chapter is divided into two major parts. The first covers the Cambrian-Ordovician developments, emphasizing the sedimentation and deformation of the Ross Orogeny. The second part covers the Devonian-Late Triassic/Early Jurassic time period. Also included in this section is the ?Paleozoic-Mesozoic evolution of the Antarctic Peninsula which formed a subduction complex and fore-arc basin along the Panthalassic margin of Gondwana before its breakup. Each section contains much stratigraphic information as well as many maps and tables relating events and stratigraphy of the region.

Overall, I found this to be a useful introduction and reference book for the Paleozoic of some of the Gondwana continents. Each chapter was generally well written and included an extensive bibliography for the region. Like many books of this nature, the price is high, which will probably keep it from being as widely distributed as it should be. It certainly fills a need in providing a good review of the geology of the various Gondwana regions covered as well as providing numerous references for more detailed information. While its price will preclude many individuals from buying the book, it should be part of the collection of every geology library.

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Reviewed by:
Reed Wicander
Department of Geology
Central Michigan University
Mt. Pleasant, Michigan 48859

Paleozoic Palaeogeography and Biogeography, edited by W. S. McKerrrow and C. R. Scotese, Geological Society of London Memoir No. 12, 1990. The Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, Avon BA1 3JN, United Kingdom. 435 p., \$140.00.

The 40 papers in this volume are the results of a symposium on Paleozoic biogeography and paleogeography sponsored by the Geological Society of London, the Palaeontological Association and the International Lithosphere Program that was held at the Department of Earth Sciences, at Oxford University in August, 1988. The aims of this symposium and volume were "to produce a revised set of world maps that will provide a common framework, not only for reviewing Palaeozoic biogeography, but as a contribution towards the future overall understanding of Palaeozoic plate motions and tectonics" (p. 1). That goal has been accomplished in this volume in that Scotese and McKerrrow provide a set of 20 revised paleogeographic world maps for the Paleozoic in the introduction. Along with the maps, Scotese and McKerrrow provide a description of what constitutes each Paleozoic continent and microcontinent, as well as a chronological review of continental movement and the results of those movements for each of the Paleozoic systems. The introduction concludes with a discussion of Paleozoic climates.

The rest of the volume is divided into five sections: *Palaeomagnetism and Palaeoclimates* (6 papers), *Early Palaeozoic Biogeography* (9 papers), *Silurian-Devonian Biogeography* (13 papers), *Carboniferous-Permian Biogeography* (6 papers), and *Palaeozoic Geology* (5 papers).

The papers in the first section on *Palaeomagnetism and Palaeoclimates* discuss recent refinements in the paleomagnetic data for the Paleozoic and how this affects the current continental reconstruction during this time interval. A particularly interesting paper by B. J. Witzke titled *Palaeoclimatic constraints for Palaeozoic palaeolatitudes of Laurentia and Euramerica* uses lithologic evidence to infer general paleoclimatic patterns at the series or stage level for Laurentia and Euramerica during the Paleozoic. Lithologic evidence can provide an independent means to test paleolatitudinal interpretations based on paleomagnetic data. Witzke found there was general agreement between paleoclimatic and paleomagnetic interpretations, but there were some discrepancies, especially for the Devonian and Early Carboniferous that warranted further study.

The second section deals with *Early Palaeozoic Biogeography*. The first paper by L. R. M. Cocks and R. A. Fortey titled *Biogeography of Ordovician and Silurian faunas* demonstrates that the new paleogeographic maps used in this volume correlate very well with the majority of Ordovician and Silurian faunal data, which includes trilobites, brachiopods, and graptolites. Furthermore, as the authors point out, the distribution of these faunas

confirms the importance of paleolatitudes in controlling faunal distribution. Conodont and graptolite biogeography and provincialism for the Early Paleozoic are discussed in three papers by S. Bergstrom, S. C. Finney and Chen Xu, and B. Rickards, S. Rigby, and J. H. Harris. Other papers in this section discuss *The biogeographic affinities of East Asian corals* and *Brachiopod zoogeography across the Ordovician-Silurian extinction event*.

The third section, *Silurian-Devonian Biogeography* contains the most papers. It begins with a general review of *Silurian biogeography* by A. J. Boucot. In this paper Boucot discusses some of the problems in correlating Silurian biogeography with Silurian paleogeography, illustrating this by plotting the Upper Silurian marine level-bottom biogeography on the Symposium base map for the Ludlow. This contribution is followed by various papers on bryozoa, stromatoporoids, ostracodes, corals, and gastropods. Three papers are of particular interest to palynologists. The first by G. K. Colbath on *Palaeogeography of Middle Palaeozoic organic-walled phytoplankton* discusses the potential of Paleozoic acritarchs in paleobiogeographic reconstructions, with examples from the Ordovician, Silurian, and Devonian. *Constraints on Silurian and Early Devonian phytogeographic analysis based on megafossils* by D. Edwards discusses the problems in delineating phytogeographic patterns in Silurian and Early Devonian land vegetation. In addition to the usual stratigraphic and preservational problems associated with plant fossils, Edwards also points out that during this time plants were undergoing rapid evolutionary radiations, had simple axial organization, and that convergence must have been widespread, making it difficult to detect floristic patterns. The final palynologically related paper in the section is by M. Streel, M. Fairon-Demaret, and S. Loboziak, titled *Givetian-Frasnian phytogeography of Euramerica and western Gondwana based on miospore distribution*. In this paper they show that western Gondwana and southern Euramerica Givetian and Frasnian miospore distribution patterns indicate uniform vegetation prevailing from the polar to tropical regions during this time interval.

The fourth section, *Carboniferous-Permian Biogeography* begins with a somewhat lengthy paper on *Late Palaeozoic provinciality in the Marine Realm* by R. K. Bambach in which he plots the geographic distribution of eight common invertebrate groups for the Carboniferous and Permian periods. The distribution of these groups are used to recognize between 12 and 18 provinces within 4 or 5 realms for the Early and Late Carboniferous and Early and Late Permian. Bambach concludes from his study that "the recently stated view that the Late Palaeozoic was a time of increasing provinciality is related to a decrease in the average range of regionally distributed genera, not an increase in either endemism or in the number of recognizable biogeographic units."

Five papers follow in this section covering brachiopods, crinoids, blastoids, and bryozoans. This section concludes with a paper by A. M. Ziegler on

Phytogeographic patterns and continental configurations during the Permian Period.

The final section of this volume, *Palaeozoic Geography* contains five papers whose topics range from *Early and Late Permian reconstructions of Pangaea* to *Devonian palaeogeography and palaeobiology of the Central Andes*.

This is a book that anyone with an interest in Paleozoic paleogeography and paleobiogeography will want to own. Unfortunately, its high price will undoubtedly limit its distribution mainly to libraries. In general, I found this book to be an excellent reference for my own work on the Paleozoic and one that I am continually consulting for paleogeographic reconstructions. The editors have done a fine job in maintaining high standards of writing and consistency of style throughout the book, and typographical errors are minimal.

Reviewed by:
Reed Wicander
Department of Geology
Central Michigan University
Mt. Pleasant, Michigan 48859

POLLEN OF THE HIGH ANDEAN FLORA by M. Wingenroth and C.J. Heusser, 1985, Publisher: Instituto Argentino de Nivologia y Glaciologia (Ianigla). Mendoza, Argentina. ISBN 950-9683-01-9. Price unknown.

Given the substantial logistical and administrative obstacles that Monica Wingenroth must have faced in publishing in Argentina such a high quality compendium of regional pollen micrographs she has to be congratulated for her admirable effort, and outstanding result. 74 pollen taxa from 27 families are illustrated by scanning and lightmicrophotographs of highest photographic and reproductive quality, pollen morphological description and size measurements, cross references to other sources of illustration, pollen morphological keys, a glossary of terms and an index, accompany the photos. The pollen types reproduced probably represent only a small part of the flora of the high central Andes in Argentina. Also the criterion for their selection appears to be more related to floristic considerations (an illustrated flora, containing many of the same taxa has been published in Spanish by Monica Wingenroth and Jorge Suarez. IANIGLA. Mendoza, 1984), than to paleopalynological considerations, because most pollen type are from insect-pollinated plants, and are less likely to find their way into sediments and fossil pollen preparations. On the other hand, pollen floras are used in many other fields, such as plant evolution, and pollination research. This, coupled with the high quality of reproduction justifies that this pollen flora reach a wide audience, not only the specialists working in South America.

Review by:
Vera Markgrar, Research Professor
Institute of Arctic and Alpine Research
University of Colorado, Boulder, Co. 803091.

O POLEM NO MEL BRASILEIRO. Ortrud M. Barth Schatzmayr, 1989, Conselho Nacional de Desenvolvimento Cientifico e Tecnológico, Instituto Oswaldo Cruz, Caixa Postal 926, 20.001 Rio de Janeiro, Brazil, 150 pages, 18 B&W plates, \$36(US).

This book represents one of the few pollen atlases available that concentrates exclusively on floral types found in South America. To my knowledge, the only other ones are: Pollen and Spores of Chile (Calvin J. Heusser, 1971, University of Arizona Press, Tucson, Arizona) and Pollen Flora of Argentina (Vera Markgraf and Hector L. D'Antoni, 1971, University of Arizona Press, Tucson, Arizona).

The Brazilian pollen atlas was produced mainly as a guide to the identification of pollen found in types of Brazilian honey. The book contains 16 B&W photographic plates that illustrate 86 different pollen taxa. There are two additional plates of line-drawn figures that are used to explain and illustrate pollen morphological features (i.e., ornamentation, exine wall structure and aperture types) discussed in the text. The pollen taxa in the text represent plants known to be important sources of pollen and nectar used by Brazilian bees in honey production. All of the photographs are taken of fresh pollen, as they would appear in an unacetolyzed honey sample.

The text portion is written in Portuguese and consists of three parts. Part I contains three chapters and discusses the pollen contents of the honey samples. The first chapter contains a brief discussion of previous studies, goals of the current study, and an explanation about how the honey samples were processed, counted and analyzed. The second chapter discusses a few of the more important pollen types found in their honey samples and notes which types reached dominant or secondary levels of importance in some of the samples. The third chapter contains a brief description of the morphological features and measurements of each of the 86 pollen type selected for this study.

Part II discusses the contents of the honey samples. Chapter 4 covers the significance of the pollen data, and chapter 5 compares and contrasts the pollen from each of the three different honey-producing regions of Brazil covered by this study. The last chapter discusses the contents of the honeydew samples used in this study.

The final part of the book, Part III, discusses the chemical contents of Brazilian honey samples and contains a glossary of terms used in the text. The final portion of the book contains a listing of all pollen species discussed, including their family name and common name, and a bibliography of the literature cited.

I don't recommend that every palynologist should rush out and purchase this book. First, unless you can read and understand Portuguese, you will have a difficult time interpreting the contents of this book. Even a reading knowledge of Spanish will not suffice; the two languages are not similar enough for most Spanish speakers to comprehend the full meaning of most chapters. Second, the pollen grains that are shown in the plates are not acetolyzed. This makes the surface patterns and pollen wall structures of most types difficult to discern. Third, I found the book's cost of \$36 a bit high considering it has only 150 pages and a limited number of plates.

On the other hand, palynologists working in the field of melissopalynology, palynologists working with modern pollen samples from regions of South America, and those who believe that "any" pollen atlas from a region is better than "no" pollen atlas, will want to include this book on a shelf in their research library.

Reviewed by:

Vaughn M. Bryant, Jr.
Dept. of Anthropology
Texas A & M University
College Station, Texas

MASS EXTINCTIONS: PROCESSES AND EVIDENCE.
Stephen K. Donovan [Ed.], 1989, Columbia University Press, New York. (\$40.00)

Mass extinctions: Processes and Evidence provides a refreshing change from advocacy books for a particular mechanism. During the last decade research on Phanerozoic mass extinctions has been intense, with many authors attempting to relate major extinction horizons to an impact scenario similar to that inferred for the Cretaceous-Tertiary boundary. It is a pleasure to find a thought provoking book on extinctions in which the authors were obviously free to maintain a scientific detachment from the existing K-T boundary feeding frenzies. Each author appears to have examined extinction events without presupposing an extraterrestrial causal event.

Mass Extinctions starts with Hoffman's review of changes in paleontological views on mass extinction. Hoffman concludes by postulating that it is the coincidence in geological time of two or more contributing processes that results in mass extinction rather than any causal mechanism acting in isolation. The book includes three background chapters on the characterization of mass extinctions followed by nine chapters which detail the physical and biological parameters of mass extinctions starting with a Late Precambrian event and concluding with the extinction of large terrestrial mammals in the Late Pleistocene. Such a compilation of examples of mass extinction from throughout geological time, free from predetermined constraints on the assumed causal

mechanism, provides a view of the interaction of environmental factors that are required for an extinction event to become global in scope.

As an example of what can be learned from this book, the pattern of the selective extinction of large terrestrial vertebrates at the end of the Pleistocene appears to be an event comparable to the selective extinction of large vertebrates at the end of the Cretaceous. Barnosky relates this selection to the lower numbers and greater resource requirements of large vertebrates as compared to small vertebrates, making them more vulnerable to changes that stress the biota. Can not this same principle be applied to the K-T extinctions?

As one familiar with the often exaggerated hype associated with the Cretaceous-Tertiary extinction event example, I find this book has great value in providing many different perspectives from which to examine any single mass extinction event. For his influence in developing the strategy for this book, Stephen Donovan should be congratulated. Even though it was published some five years ago, **Mass Extinctions** remains current and is recommended reading for any serious worker on extinctions.

Reviewed by:

Art Sweet
Geological Survey of Canada
3303 - 33rd Street NW
Calgary, Alberta CANADA T2L 2A7

OTHER BOOKS



POLLEN AND SPORES: PATTERNS AND DIVERSIFICATION. S. Blackmore Ed. 1991, 400 pp. Oxford Science Publications, Walton Street, Oxford, England.

MICROSPORES: EVOLUTION AND ONTOGENY, S. Blackmore and R.B. Knox, 1990, 347 pp. Academic Press.

THE BIOLOGY AND EVOLUTION OF FOSSIL PLANTS. T. Taylor and E. Taylor, 1992. Prentice Hall-Neodata, P.O. Box 11073, Des Moines, Iowa 50336-1073, Phone (515) 284-6761, Fax: (515) 284-2607.

PALYNOLOGY OF ARID LANDS. A. Horowitz, 1992, 568 pp. Elsevier Science Publishers, P.O. Box 211, 100 AE Amsterdam, The Netherlands.

THE SILVER JUBILEE VOLUME

PALYNOLOGY: PRINCIPLES AND APPLICATIONS

Editors: J. Jansonius & D.C. McGregor

The editors, with assistance of members of the editorial committee, have reviewed many possible names suggested for the "Silver Jubilee Volume" also previously known by the working title "Palynology and Stratigraphy". The above title was selected by the editors as it reflects best the intentions and contents of the book.

Tremendous progress has been made in the last quarter. We now have a total of 72(73) (sub)chapters, organized in 29(30) chapters. Of these, 8 are typeset, and being proofed by their authors and the editors. Another 18 have been sent to Bob Clarke and are being typeset; and another half dozen are ready to send to Bob. That means that nearly half of the book has been written! Lately, the finished manuscripts were coming in as fast as we could process them. However, we are just about caught up, and ready for more. Of the remaining (sub)chapters, many are in an advanced stage, or essentially ready for a formal review. Only 12 (sub)chapters are lagging somewhat; one was cancelled. We intend to wind up the writing phase by the end of this year.

Jansonius will have to vacate his present premises at Esso Plaza; the ESSO palynological library and collections will be taken over by the Geological Survey of Canada (ISPG), and Jansonius has been offered a small working space at the ISPG. The actual move will take place around 1 November 1993. Changes of address, fax and telephone numbers, etc., and when they will become effective, will be announced later. However, it would enormously simplify things if the chapters of our book are all finished before this move and the massive reorganization involved with it. If you are an author of one of the outstanding chapters please give it an extra effort at your earliest convenience - surprise us! - JJ

COMING EVENTS

1993

July 7-9: **First European Palaeontological Congress.** Lyon, France. Theme: "Organism - Palaeoenvironment Interactions". Details: Mireille Gayet or Bernard Courtinat, Université Claude-Bernard-Lyon 1, 43 boulevard du 11 novembre, 69622 Villeurbanne cedex, France. Tel: 72 44 83 98 or 72 44 85 72, FAX: 72 44 84 36.

July 31 - August 7: **"The Gross Symposium".** Göttingen, Germany. Joint Meeting between IGCP Project 328: Palaeozoic Microvertebrates and the Subcommittee for Devonian Stratigraphy. Symposium marks the 90th anniversary of the birth of Prof. Walter Gross (1903-1974). Emphasis on biochronology and marine/non-marine correlation. Details: Prof. Otto H. Walliser, Institut und Museum für Geologie und Paläontologie, Goldschmidtstrasse 3, D-3400 Göttingen, Germany. Tel: 010-49 551-397950, FAX: 010-49 551-397996.

August 15-19: **Carboniferous to Jurassic pangea: A Global View of Environments and Resources.** Calgary, Alberta. Canadian Society of Petroleum Geologists Annual Convention. Details: B. Beauchamp or A. Embry, Inst. of Sed. and Pet. Geology, 3303-33rd Street NW, Calgary, Alberta, T2L 2A7. Tel: (403) 292-7190 FAX: (403) 292-4961.

August 28-September 3: **15th International Botanical Congress.** Tokyo, Japan. Details: M. Furuya, Frontier Research Programs, The Riken Institute, Wako City, 351-01, Japan.

October 2-3: **3rd Canadian Paleontology Conference (CPC-3).** Sudbury, Ontario. Theme: "Paleozoic Paleogeography and Shallow Marine Shelf Communities of Infracratonic Basins and Shield-Fringing Areas." Registration fee \$25. Details: Paul Copper, 3rd Canadian Paleontology Conference, Department of Geology, Laurentian University, Sudbury, Ontario, P3E 2C6.

October 17-24: **Non-marine Triassic Symposium.** New Mexico museum of Natural History, Albuquerque, New Mexico, U.S.A. Symposium follows Annual Meeting of the Society of Vertebrate Palaeontology to be held in Albuquerque, October 13-16, 1993. Details: Spencer G. Lucas and Michael Morales, c/o New Mexico Museum of Natural History, 1801 Mountain Road NW, Albuquerque, New Mexico 87104, USA.

October 19-22: **American Association of Petroleum Geologists International Meeting.** The Hague, The Netherlands. Theme: "New Views on Old World Oil-Technology Leads the Way". Details: AAPG Meetings, Box 979, Tulsa, Oklahoma 74101, USA. Tel: (918) 584-2555, FAS: (918) 584-0469.

October 25-28: **26th Annual Meeting of American Association of Stratigraphic Palynologists (AASP).** Baton Rouge, Louisiana. Theme: "Facies Models and Sequence Stratigraphy". Symposia: "Palynology and Climate" (organizer John Wrenn and Jean-Pierre Suc). Details: George F. Hart or John H. Wrenn, Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803, USA. Tel: (504) 388-3353, FAS: (504) 388-2302.

1994

May 16-18: **G.A.C./M.A.C. Joint Annual Meeting.** Waterloo, Ontario. Details: Alan V. Morgan, Department of Earth Sciences, University of Waterloo, Waterloo, Ontario. N2L 3G1. Tel: (529) 885-1211, Ex. 3231, FAX: (519) 746-2543.

June 12-15: **American Association of Petroleum Geologists Annual Meeting.** Denver, Colorado. Details: AAPG Meetings, Box 979, Tulsa, Oklahoma 74101, USA. Tel: (918) 584-2555, FAX: (518) 584-0469.

September: **4th European Palaeobotanical-Palynological Congress.** Heerlen, The Netherlands. Details: Dr. G.F.W. Herngreen, c/o Geological Survey, P.O. Box 157, 2000 AD, Haarlem, The Netherlands.

1995

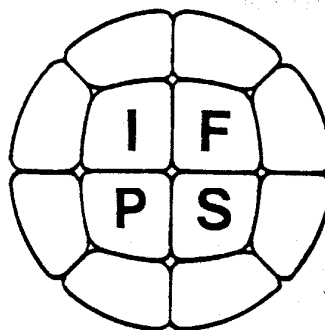
March 5-8: **American Association of Petroleum Geologists Annual Meetings.** Houston, Texas. Details: AAPG Meetings, Box 979, Tulsa, Oklahoma 74101, USA. Tel: (918) 584-2555, FAX: (918) 584-0469.

August 28-September 2: **XIII International Congress on Carboniferous-Permian.** Kraków, Poland. Topics: Global syntheses: palaeogeography, plate tectonics, palaeoclimate; Stratigraphy and palaeontology, biostratigraphic global correlations; Sedimentology, analysis and reconstruction of sedimentary basins; Tectonics and magmatism; Post-depositional transformations of organic substance, coal petrology and geochemistry; Economic geology; coal, coalbed methane and hydrocarbons; Ecological impact of coal mining and related industrial activities. Details: Prof. dr. hab. Sonia Dybowa-Jachowicz, Państwowy Instytut Geologiczny, Oddział Górnośląski, 1 Królowej Jadwigi, 41-200 Sosnowiec, Poland. Tel: 48 32, 66 20 36 (38), FAX: 48 32, 66 55 22.

October 10-14: **28th Annual Meeting of the American Association of Stratigraphic Palynologists.** Ottawa, Ontario, Canada. Symposia, Technical Sessions, Posters, Field Trip. Details: Ms. Susan A. Jarzen, Canadian Museum of Nature, P.O. Box 3443, Station "D", Ottawa, Ontario, Canada K1P 6P4, FAX: (613) 954-4724.

1996

June 22-29: **9th International Palynological Congress.** Houston, Texas. Symposia, Technical Sessions, Posters, Field Trips. Details: Prof. Vaughn M. Bryant, Jr., Texas A & M University, College Station, Texas 77843-4352. Tel. (409) 845-5242. Fax: (409) 845-4070



IFPS

**SPECIAL
NOTICE**

MINI-COUNCIL MEETING OF IFPS

There will be a brief (not more than one hour) meeting of the IFPS Officers and Councillors attending the AASP meeting at Louisiana State University in October.

Tentatively, this IFPS meeting will be held following the completion of the afternoon general session on Monday, October 25. Final confirmation of the time, date and meeting site will be available at the registration desk. All interested palynologists are invited to attend.



FROM THE EDITOR'S DESK

You really would not want anything from the editor's desk this month. The pile is too deep. There is the manuscript to finish for the Silver Jubilee Volume, the paper for the symposium on the Biostrat of the former USSR, and the paper for AASP partially written; the paper for the DINO-5 volume should be back from reviewers soon, as should the long, long awaited *Sumatradinium* paper. My giant project on the geology of Kazakhstan is nearly finished, with several hundred pages of text in the computer. Somewhere in this mess are two articles for the next newsletter issue. PLEASE SEND MORE - they won't get lost - just "matured" on my desk.

DO NOT FORGET THE GOLF GAME AT THE AASP MEETING - Contact me or Vaughn Bryant.