



A.A.S.P. NEWSLETTER

Published Quarterly by the American Association of Stratigraphic Palynologists Inc.

February 2001
Volume 34, Number 1

President's Message	-3-
Presentation of the candidates running for AASP offices	-4-
News from the UK	-8-
News from Northern Europe	-8-
American Geological Institute, Geotimes -'Highlights' Issue	-10-
PhD THESIS: by M.L Kloosterboer-van Hoeve	-10-
New books, reviews and summaries	-12-
Receive your newsletter electronically	-16-
New Members	-17-
Address Updates	-18-
Agenda	-20-



A.A.S.P.

American Association of Stratigraphic Palynologists Inc.

The American Association of Stratigraphic Palynologists, Inc. - AASP - was established in 1967 by a group of 31 founding members to promote the science of palynology. Today AASP has a world-wide membership of about 800 and is run by an executive comprising an elected Board of Directors and subsidiary boards and committees. AASP welcomes new members. The AASP Foundation publishes the journal *Palynology* (annually), the *AASP Newsletter* (quarterly), and the *AASP Contributions Series* (mostly monographs, issued irregularly), as well as several books and miscellaneous items. AASP organises an Annual Meeting which usually includes a field trip, a business luncheon, social events, and technical sessions where research results are presented on all aspects of palynology.

AASP Scientific Medal recipients

Professor William R. Evitt (awarded 1982)
Professor William G. Chaloner (awarded 1984)
Dr. Lewis E. Stover (awarded 1988)
Dr. Graham Lee Williams (awarded 1996)
Dr. Hans Gocht (awarded 1996)

AASP Board of Directors Award recipient

Dr. Robert T. Clarke (awarded 1994)

Teaching medal recipients

Professor Aureal T. Cross (awarded 1999)

AASP Honorary Members

Professor Dr. Alfred Eisenack (elected 1975)
Dr. William S. Hoffmeister (elected 1975)
Professor Leonard R. Wilson (elected 1975)
Professor Knut Faegri (elected 1977)
Professor Charles Downie (elected 1982)
Professor William R. Evitt (elected 1989)
Professor Lucy M. Cranwell (elected 1989)
Dr. Tamara F. Vozzhennikova (elected 1990)
Professor Aureal T. Cross (elected 1991)

AASP Distinguished Service Award recipients

Dr. Robert T. Clarke (awarded 1978)
Dr. Norman J. Norton (awarded 1978)
Dr. Jack D. Burgess (awarded 1982)
Dr. Richard W. Hedlund (awarded 1982)
Dr. John A. Clendening (awarded 1987)
Dr. Kenneth M. Piel (awarded 1990)
Dr. Gordon D. Wood (awarded 1993)
Dr. Jan Jansonius (awarded 1995)
Dr. D. Colin McGregor (awarded 1995)
Professor John H. Wrenn (awarded 1998)
Professor Vaughn M. Bryant (awarded 1999)

Awards at each Annual Meeting: Unocal Best Applications Paper Award, Best Student Paper Award, and Best Poster Award.

Student Scholarships to support studies in palynology. Currently up to two scholarships of \$1000 (U.S.) each annually. The qualification of the student, the originality and imagination evident in the proposed project, and the likelihood of significant contribution to the science of palynology are factors that will be weighed in selection of award winners. Previous winners of this award are eligible only if they are pursuing a different degree than the one they were pursuing when they received the previous award. AASP Scholarships are available to all students of palynology in all countries. Students need not be AASP members. Application forms appear in the January issue of the *AASP Newsletter*. Chairman of the AASP Awards Committee is Owen K. Davis (palynolo@geo.Arizona.EDU).

AASP Membership Application - Membership in AASP is for the calendar year. Dues are \$30.00 U.S. per year for individuals and \$40.00 U.S. per year for institutional members. All members of AASP receive *Palynology* which is published annually, the *AASP Newsletter*, which is mailed out four times a year, and an annual *Membership Directory*. Dues may be paid up to three years in advance. Overseas AASP Members (Individual or Institutional) who would like to receive their *AASP Newsletter* and *Palynology* by air mail, rather than book rate surface mail, need to include the applicable postage surcharge (noted below). Credit card users must pay a \$1.00 U.S. surcharge per transaction. Air mail surcharge (increased for 1995 and beyond): Europe & South America: \$12.00 U.S. per year. Africa, Asia & Australia: \$15.00 U.S. per year. Credit card surcharge \$1.00 per transaction.



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Marloes Kloosterboer van Hoeve, Editor

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The AASP Newsletter is published four times annually. Members are encouraged to submit articles, "letters to the editor", technical notes, meetings reports, information about "members in the news", new websites and information about job openings in the industry. Every effort will be made to publish all information received from our membership. Contributions which include photographs should be submitted a week before the deadline. Deadlines for next issues of the newsletter, are June 1, 2001 and September 1, 2001. All information should be sent on computer disks (preferably Word- Perfect) or by email. If possible, please illustrate your contribution with art, line drawings, eye-catching logos, black & white photos, colour photos, etc. We **DO** look forward to contributions from our membership.

PRESIDENT'S MESSAGE

by David Pocknall

Since this is the first newsletter of 2001 I would like to wish you all a prosperous and successful year in your palynological pursuits. There is always a great deal happening in the palynological world and I look forward to seeing many of you at meetings and hearing about some of your palynological research.

We received some wonderful news in late December that a sizable donation was made to the CENEX endowment fund from the estate of Paul Wesendunk, a palynologist who worked for Chevron for many years. With this donation we are now only about \$50,000 short of achieving our first fund raising goal of \$600,000 at which time AASP will be able to apply for \$400,000 in matching funds from the Louisiana State University Foundation. This is a significant step in the fund raising effort and the thanks of the membership are extended to Paul's family for his generosity, but at the same time at the loss of a brother and husband. In March a group of us will be visiting LSU to discuss the present status of CENEX; a report will be forthcoming, maybe as early as the next newsletter. All of us must remain on the lookout for fund raising opportunities and I would be pleased to hear from any of you who hear or know of any. We are nearly there. For those of you who are new to AASP, CENEX and the endowed chair was set up by AASP in association with LSU with the express purpose of having palynology taught in perpetuity at a university in the United States.

It will be a busy year for the executive of AASP, as it always is, and I would like to draw your attention to some of what is going on. The mid-year meeting this year will be held in Gainesville, Florida in late April. It is hosted by David and Sue Jarzen and gives the board an opportunity to see a possible future location for an annual meeting. We are always on the lookout for meeting venues. One of the issues on the agenda for the meeting will be the venue for the 2003 meeting. Watch this space for news of that.

Since Reno the organizing committee for the San Antonio meeting have been getting their act together under the expert guidance of your Secretary-Treasurer Tom Demchuk. Don Benson and I will be helping Tom offer an exciting meeting schedule at a superb location. Please take note of the announcement in this newsletter and put San Antonio on your calendar. For those of you who have not been there, San Antonio has a lot to offer in the way of Texas history, the famous river walk, and fine cuisine.

The Reno meeting in 2000 offered us an amazing opportunity to showcase our science to a wider geological community. A yearly article that appears in *Geotimes*, the

newsletter of the American Geological Institute, enhances this. This article highlights any significant new work published in the field of palynology and will be written again this year by Gordon Wood and Merrell Miller. A separate announcement appears in this newsletter.

At this time of the year we are faced with having to purge members from our membership list because they have not paid dues for the past 2 years. In many cases there are legitimate reasons for people leaving our association but also sometimes it has resulted from an oversight on behalf of the member. Take a look at the list published in this newsletter and if you can persuade anyone on that list to remain a member then the association as a whole benefits. There are always new members joining but sadly there are usually more leaving (purged) on an annual basis. This is obviously not a healthy sign for our association.

From a financial standpoint I urge you to consider having the newsletter sent by email. With the increase in postage and the improvement of computer graphics there is no reason why an emailed version should be inferior to the mailed hard copy version. What is more you will get the email issue much faster than that delivered by the US postal service. In the long run the more members we can communicate with via email the better and the longer it will be before we are faced with having to pass on additional postal charges.

PRESENTATION OF THE CANDIDATES RUNNING FOR AASPOFFICES

President elect

Henk Brinkhuis has been a senior lecturer at the Laboratory of Palaeobotany and Palynology (LPP), Utrecht University, The Netherlands, since 1997. He received a Ph.D. degree from Utrecht University in 1992 on the thesis "Late Eocene to Early Oligocene Dinoflagellate Cysts from Central and Northeast Italy" (under the supervision of Henk Visscher) and was involved in palynological consulting as a director of the LPP Foundation, also based in Utrecht, from 1988 to 1997, consulting for many oil- and gas-exploration companies. With backgrounds in palynology, sedimentology and organic geochemistry, he specialized in stratigraphy and paleoecology of Mesozoic-Cenozoic organic walled dinoflagellate cysts. He is the author or co-author of multiple papers in the field, always placing dinocyst records squarely in multi-disciplinary research, and emphasizing their significance for paleoenvironmental reconstructions. Together with Graham Williams, the late Lew Stover, Jonathan Bujak, Sarah Damassa, Rob Fensome, and Jamie Powell, he was involved in setting up and performing several specialist courses in the field, on many occasions and in different localities. These occasions have been apparently enjoyed by many AASP members. He was co-organizer of several scientific meetings and symposia, including



DINO 5, and a member of the scientific committee of interdisciplinary conferences such as the upcoming conference on "Climate and Biota of the Paleogene", which will be held next July in Powell, Wyoming, USA. He has also served on several IUGS subcommissions on Paleogene stratigraphy. You can read more about him and his activities at: <http://www.bio.uu.nl/~palaeo/Personeel/Henk.htm>.

James B. Riding is a senior palynologist with the British Geological Survey (BGS), based in Nottingham, England. He works on a wide variety of projects, largely in the Mesozoic and Cenozoic, including biostratigraphical support to BGS mapping programs and the British Antarctic Survey, commissioned work and input into international research projects. Jim recently completed a work program on Australian Mesozoic dinoflagellate cysts at the Australian Geological Survey Organisation (AGSO), Canberra. The links with AGSO are being maintained and he is to head the European node of the Virtual Centre of Economic Micropalaeontology and Palynology (VCEMP). This is an AGSO initiative to



promote work by outside specialists on the biostratigraphy of Australia as it pertains to AGSO projects.

James studied geology at the University of Leicester and after graduating in 1979, pursued an interest in palynology developed largely as a result of the inspirational undergraduate teaching of Trevor Ford, John Hudson and David Siveter. This was the famous M.Sc. course in palynology at the University of Sheffield directed by Charles Downie, Roger Neves and Ted Spinner, from which Jim graduated in 1981. Upon leaving Sheffield, he joined the British Geological Survey at the northern England office in Leeds, West Yorkshire and worked closely with Ron Woollam on the Mesozoic palynology of onshore and offshore UK. He was awarded a Ph.D. degree by the University of Sheffield in 1986 for a thesis on the Jurassic dinoflagellate cyst floras of northern and eastern England. Jim's current interests include the Mesozoic-Cenozoic palynology of Europe, Australasia, Antarctica, West Africa, the Americas, Russia and the Middle East.

James has considerable experience in committee work, running scientific societies and organizing international meetings. He was Secretary of the Palynology Section of the British Micropalaeontological Society (BMS) in the mid-1980's. In 1988, Jim became Secretary to the main committee of BMS and held this position until 1995, when he was elected Treasurer, a post he still holds. He helped organize the North Sea Commission Internationale du Microflore du Paleozoique (CIMP) meeting at Nottingham in 1990 and is on the organizing committee of the joint AASP, BMS and North American Micropalaeontology Section (NAMS) meeting on Exploration Biostratigraphy, which is to be held in London during September 2002.

James joined AASP in 1979 and is currently a Director at Large, having been elected in 1999. He has consistently been a strong supporter of, and advocate for, the organization. Jim has had several articles published in *Palynology* over the years and was recently the lead author of a Contributions Series volume. In 1994, the then AASP Newsletter Editor, Martin Head, asked Jim to be the UK correspondent and contribute short articles to each issue on current news on the palynological scene in the UK and continental Europe. Ever since the August 1994 issue (Volume 27/3), each Newsletter has carried one of Jim's topical news reports. These included the Australian palynological scene between the fall of 1999 and fall of 2000 as a result of his transport to the colonies. The first Annual Meeting he attended was the 1982 Dublin symposium and he has since attended the meetings in Halifax (1987), Tulsa (1989), Houston (1996), Woods Hole (1997), Ensenada (1998) and Reno (2000). He is a firm believer in entertaining an audience; those present will surely remember Jim's tripping over the microphone wire, comedy routine during a presentation at the 1997 Woods Hole Meeting. At the 1998 Ensenada meeting, Jim presented a significantly less amusing, but nevertheless successful, one-day workshop on Jurassic dinoflagellate cysts.

If elected, Jim would seek to consolidate AASP's traditional strengths of inclusive, relevant and diverse annual meetings, coupled with our vigorous

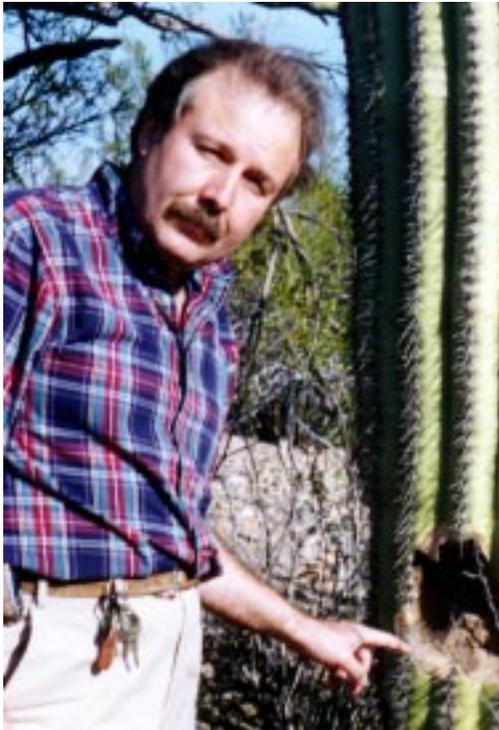
publishing commitment, while seeking to promote the science of palynology globally. He is supportive of a future meeting program, which includes both the traditional AASP annual meetings and joint symposia with other geoscientific organizations. A President resident outside the USA would hopefully heighten the profile of the organization outside North America. He gives a sincere commitment that, should he be elected, he would discharge the duties of President conscientiously and efficiently.

Secretary-Treasurer

Thomas Demchuk: I have performed several covert operations with the CIA and CSIS. I sleep once a week; when I do sleep, I sleep in a chair with my eyes open. While on vacation in Canada, I successfully negotiated with a group of terrorists who had seized a small bakery. The laws of physics do not apply to me. I balance, I weave, I dodge, I frolic, and my bills are all paid. On weekends, to let off steam, I participate in full-contact origami. Years ago I discovered the meaning of life but forgot to write it down. I have made extraordinary four-course meals using only a butter knife and a toaster oven. I breed prizewinning clams. I have won bullfights in San Juan, cliff-diving competitions in Sri Lanka, and spelling bees at the Kremlin. I have played Hamlet, I have performed open-heart surgery, and I have spoken with Elvis. I have made a working computer using only foil from gum wrappers and paper clips. I advise presidents, aid residents, and am a menace to society. I show great feats of strength by bending rubber bands, and leaping over ant hills in a single bound. I can play the Minute Waltz in 45 seconds. I have tangoed in the barrios of Buenos Aires, and played hockey on the same ice as Wayne Gretzky.

I am honored to continue as Secretary-Treasurer of AASP for my fourth term. I became an AASP member in the mid-1980's, and have truly enjoyed being a part of this wonderful association. I was Director-at-Large in the early 1990's, and was involved in the organization of the 1990 AASP meeting in Banff. I'm currently finalizing plans for this year's meeting in San Antonio, and I know many of you will attend and make it a great success. I have been a Geological Advisor of Biostratigraphy at Conoco Inc. in Houston since 1997. Prior to that I was employed almost five years at Amoco





(now BP). Thank you for the opportunity to continue in this position with AASP.

Managing Editor

Owen Kent Davis is a Professor in the Department of Geosciences, University of Arizona, where he is the Director of The Palynology Laboratory and of the Antevs Library. He teaches classes on Introductory Biology, Biogeography, Palynology, and Quaternary Ecology. He has written more than 200 publications. He was born March 13, 1949, in Nampa, Idaho, received his M.S. in Botany in 1974, and his Ph.D. in Ecology in 1981. Owen first attended an AASP meeting in 1974, and has been a member since 1982. He has been a member of the *Palynology* Editorial Board since 1995, and has been Managing Editor since 2000. Owen is on the Editorial Boards of *The Review of Paleobotany and Palynology*, *Radiocarbon*, *Aerobiologia*, and the internet journal *Conservation Biology*. He is President of the Arizona-Nevada Academy of Science, and Past-President of the International Federation of Palynological Societies.

Directors-at-Large

Nan Crystal Arens is assistant professor in Integrative Biology at the University of California, Berkeley, and curator of fossil plants at the U.C. Museum of Paleontology. She began her palynological studies as an undergraduate with Prof. Alfred Traverse at Penn State University. She completed a B.S. degree in Earth Science and M.S. degree in Geology in 1987 and 1988 respectively. She went to Harvard University to pursue a Ph.D. in the laboratory of Prof. Andrew H. Knoll. Arens' doctoral dissertation applied the palynological record to questions of plant community change in Pennsylvanian-



age clastic swamps. Today she applies similar techniques to study plant community structure change and diversity in latest Cretaceous plant communities in northeastern Montana. She has also worked on biostratigraphic and community structure questions in the Late Cretaceous of Colombia, South America. She believes that the AASP's greatest assets are the professional networking and exchange made possible by annual meetings, and the scholarship support the association provides for graduate research. Strengthening these programs and recruiting younger members into the association will be her goals as director-at-large.

Carlos Jaramillo: I am currently a postdoctoral fellow at the University of Missouri-Rolla. My research investigates the causes, patterns, and process of tropical biodiversity at diverse scales of time and space. I intend to address questions from a paleobiological perspective (mainly using pollen, spores and dinoflagellates), a point of view that is largely needed to understand and predict the



behavior of biota in tropical ecosystems. I am also very interested in developing techniques to increase the resolution of biostratigraphic zonations, and the biostratigraphy of tropical latitudes mainly during the Tertiary. I grew up in Bogotá, Colombia, received a B.S. degree in Geology at the Universidad Nacional de Colombia in 1993, M.S. degree at the University of Missouri-Rolla in 1995, and a Ph.D. degree at the University of Florida in 1999. I then held a postdoctoral position at the Paleobiology Department at the Smithsonian Institution in Washington, D.C. from January-December, 2000.

I have been a member of AASP since 1994. Palynology is an exciting field, but unfortunately the number of paleopalynologists has been steadily declining in the last decade. Fewer young people go into the field of palynology and there are even fewer professors teaching palynology at the graduate school level. We must analyze these disturbing trends and develop strategies to reverse the situation. We could start applying many new analytical techniques that have been developed in last 15 years for other fossil groups to the palynological record. I also think we must start developing public databases of the pollen/spore/dinocyst/fungi/acritarch record. Plethora of new information, questions to be answered, models to be tested, and new lines of research will be produced if the immense published paleopalynological record is summarized in workable databases. The field of palynology has many things to offer to the scientific community; we just need to show it! This is my vision for the future direction of AASP and how it can attract younger people to study palynology.

Peta Mudie is a Senior Research Scientist and head of the Geological Survey of Canada-Atlantic Quaternary Paleooceanography program. She has 20 years experience in palynological studies of the history of Climate Change in the North Atlantic and Arctic Oceans, using dinoflagellate cysts as tracers of paleoproductivity, and simple box models to determine the taphonomy of pollen and spores in high latitude shelf environments. In 1981, Peta initiated the use of paleoecological transfer functions for quantitative reconstruction of past changes in sea surface conditions using dinocyst assemblages in Quaternary shelf and deep sea sediments. The importance and success of this work and her contributions to the Late Miocene-Holocene paleooceanography of Ocean Drilling Program cores from the North Atlantic was recognized in 1989 when she was



awarded a Fellowship in the Science Academy of the Royal Society of Canada. At present, Peta is studying the Holocene history of dinoflagellate red tides on an annual-decadal scale, and she is using marine palynology to research the history of Noah's Flood in the Black Sea. She is an adjunct professor at Dalhousie University, Halifax, and also teaches Palynology at other Nova Scotian universities.

Patricia Núñez-Pérez received a B.S. degree in Biology from the Universidad Autónoma of Baja California (1995), and a Ph.D. degree in Botany from the Universidad of Granada (Spain), (1998). She has been a Postdoctoral associate at CICESE (Centro de Investigación Científica y Educación Superior de Ensenada) since October of 1999. She taught a laboratory on plant physiology in the Faculty of Science at Universidad Autónoma of Baja California (1999). Her research experience has also included a short stay in the Laboratory of Vascular plants, Facultad de Ciencias, UNAM México, D. F. (February-June, 1994). She received fellowships from the Agencia Española de Cooperación Internacional for Ph.D. studies from October 1995 to September 1998, and CONACYT for a postdoctoral fellowship (October 1999-September 2000). Her research interests include actuopalynology (pollen morphology, taxonomy, ontogeny in *Cactaceae*) and paleopalynology (palynology and paleoclimatic signals in laminated sediments from the margins of La Paz, Baja California Sur, México). She has published several articles on her work.



NEWS FROM THE UK

By Jim Riding
February 2001

The big and unhappy news from the UK this quarter is that the current academic year, 2000-2001, will be the last ever presentation of the famed University of Sheffield MSc course in palynology. The body which funds the grants to UK-based students, the Natural Environment Research Council (NERC), reviewed all MSc courses which it supported late last year. I hear that the terms of reference were to seek to increase funding of certain biological courses and topics at the expense of others which, NERC felt, should be funded industrially. The Centre for Palynology at Sheffield was informed just before Christmas 2000 that NERC were to withdraw their grant funding of UK students at Sheffield as of September 2001. They decided to discontinue the course, rather than to persevere with the MSc course for fee-paying students only. The Sheffield palynologists, headed by Professor Bernard Owens, will continue to offer PhD programs and selected short courses. This means that the only MSc program which includes palynology in the UK is the generic Micropalaeontology course at University College London. Only a few years ago it was possible to do an MSc in palynology at Aberystwyth, Sheffield or Southampton. This sharp downturn in the provision of palynologists trained to MSc level will severely restrict the supply of new palynologists in Europe. Inevitably, the supply of PhD students is far more sporadic. Apparently three consultancy companies in the UK are currently looking for palynologists, making the closure of the Sheffield course look extremely ironic in its timing.

For the record, the Sheffield course was established in 1966 and has produced hundreds of graduates. Many of these palynologists have progressed on to long and distinguished careers in the subject. Clearly the course has changed markedly over the years, not least because staff have moved on. In the early 1980s, when your correspondent was a boyish, bright-eyed student in the Steel City, the late Charles Downie, Roger Neves and Ted Spinner ran the MSc. Visiting teachers such as Rex Harland and Wolfgang Wille were introduced later in the decade and now the course is in the charge of David Jolley, Bernard Owens and Charles Wellmann. There has always been a significant element of taught class (lecture/practical) work and each student has to research an individual project on palynology which is written up as a dissertation. These projects have ranged from Lower Palaeozoic to Quaternary and many have been published. Perhaps the best known of these is Stanley Duxbury's dissertation on dinoflagellate cysts from the Speeton Clay (Lower Cretaceous) of the Yorkshire coast, which was published by *Palaeontographica Abteilung B* in 1977.

I very much doubt if there is, or has ever been, another MSc course which has contributed so many graduates into their vocation on a per capita basis. Ted Spinner

gave a comprehensive account of palynology at Sheffield in volume 8.4, pp. 222-227 of the *Journal of the Sheffield University Geological Society*. I knew instinctively that, in mentioning the UK delegates individually who attended the AASP/GSA 2000 Reno meeting in the last Newsletter, I would get it wrong. Apologies to the max to Jennifer Greenhalgh of University College London who not only attended, but presented a poster on her research on the Palaeogene palynology of Seymour Island, Antarctica.

In the last issue, I mentioned the British Micropalaeontological Society (BMS) Memorial Fund in honor of Professor Charles Downie of the University of Sheffield. Through the great generosity of Charles's ex-students, this fund is now up and running. The inaugural award will be for 2000 and presented at the Annual General Meeting this November. If any BMS member has had a paper published in 2000 based on postgraduate work on any aspect of micropalaeontology, send a copy for consideration to BMS Secretary, Jamie Powell, at DinoSystems, 105 Albert Road, Richmond-Upon-Thames, Surrey TW10 6DJ. If you knew Charles and wish to make a donation to the fund, please contact me at j.riding@bgs.ac.uk with your credit card details.

The first meeting of the Spore-Pollen Subcommittee of the Commission Internationale du Microflore du Paleozoique (CIMP) will be held at University College Cork, Ireland from the 3rd to the 7th September 2001. Contact Duncan McLean at the University of Sheffield (d.mclean@sheffield.ac.uk).

The joint AASP, BMS and NAMS meeting in London will be held at University College London between the 11th and 13th of September 2002. The theme of the symposium will be 'Exploration Biostratigraphy'. A circular will be produced soon and expressions of interest should be sent to the BMS Secretary, Jamie Powell at ajp@dinosystems.co.uk.



NEWS FROM NORTHERNEUROPE

by Niels Poulsen, GEUS, nep@geus.dk
Februari 2000

* Recently I received a announcement of a new sister organisation to AASP, the International Society of Environmental Micropaleontology, Microbiology and Meiobenthology, and was asked to join. I have gratefully volunteered to join as a vice-president (in the starting period until a proper election) of a Danish Branch, perhaps a Scandinavia or Nordic Regional Branch, depending on the interest in this new professional organization.

Do we need yet another professional organization? Yes! When seen in a historical context, the International Society of Environmental Micropaleontology, Microbiology and Meiobenthology (abbreviation ISEMMM) is forming at exactly the right time. Driven by concerns ranging from pollution to global climate change, the last decade has seen increasing emphasis on the environmental sciences. Academic departments in the earth, chemical, engineering, and biological sciences are reorganizing in response to this trend, and many researchers have shifted their emphasis in response to new funding and employment opportunities presented by these changes.

The result is a rapidly expanding field in need of an organizational framework. ISEMMM can provide that framework according to the opinion of many scientists who attended the two International Conferences "Application of Micro- and Meioorganisms to Environmental Problems".

Prof. Valentina Yanko-Hombach (Avalon Institute of Applied Science, Winnipeg, Canada, and President of ISEMMM) has recently announced that the ISEMMM has officially been founded. The society has a newsletter, it will have its own scientific journal, and it will continue the series of international conferences which have already been held.

The next conference will be the ISEMMM Congress. It will be held on September 1-6, 2002, and our host will be the Paleontological Institute, Vienna, Austria, with Dr. Johann Hohenegger as president.

Introduction

The ISEMMM was established after the Second International Conference "Application of Micro-and Meioorganisms to Environmental Problems", which was held in Canada (Winnipeg) in 2000. It was the second in a series of conferences. The first was held in Israel (Tel Aviv) in 1997.

Micropaleontologists, microbiologists and meiobenthologists from about 70 countries participated in both conferences. The goal of these conferences was to present innovative multidisciplinary research in micro- and meioorganisms (e.g., bacteria, foraminifera, ostracoda, radiolaria, diatoms, calcareous nanoplankton, dinoflagellates, pollen and spores); to demonstrate their significance in solving environmental/paleoenvironmental problems in the fields of biosciences, geosciences, environmental sciences, and agriculture; and to bridge the technology gap between science, industry, and regulators. Many participants expressed an interest in forming a joint society, in which specialists in geology, biology, agriculture, etc., would be able to coordinate their scientific activities, forums, journal publication, training programs, projects, etc., in the application of traditional micropaleontology, microbiology and meiobenthology to environmental issues and problems, to this end, an Ad Hoc founding committee was formed; it comprises a group of internationally known scientists - the founders of

ISEMMM.

The ISEMMM was incorporated as a professional non-profit organisation in 2001, registered in Winnipeg, Canada. As a not-for-profit organisation, all of the ISEMMM activities are performed by members in a voluntary capacity, with support from a small professional staff.

Objectives

The main objectives of ISEMMM are:

- To encourage innovative multidisciplinary research on recent and fossil micro- and meioorganisms, addressing environmental/paleoenvironmental problems in the biological, geological, and environmental sciences, as well as in agriculture and industry.
- To bring together specialists with biological and geological backgrounds for the enhancement of professional and public educational programs and research benefiting the environment, human health and welfare.
- To increase public awareness of the importance and value of recent and fossil micro- and meioorganisms in the environmental sciences, in order to bridge the gap between science, industry, and regulatory environmental agencies.

It is hoped that ISEMMM, by having its own scientific journal, newsletter, professional and public training programs, continuing education, and biannually convening congresses, will advance and stimulate multidisciplinary research and education in environmental microbiology, micropaleontology and meiobenthology (EM3 disciplines) as well as encourage public interest and support. ISEMMM will promote relations with governments and other professional bodies worldwide in support of its members and the EM3 professions.

Structure and activities

The International Council manages the scientific work of ISEMMM, helps determine its direction, and monitors its activities and objectives. ISEMMM has Regional Branches in various countries.

Each Branch organises professional and public lectures by national and international scientists, workshops and other scientific activities and social events. The Regional Branches send regular newsletters to their members, providing information on their activities and local micropaleontological, microbiological and meiobenthological issues.

The ISEMMM official journal Environmental Microbiology, Meiobenthology and Micropaleontology (ISEMMM Journal) will be published once in 2001, twice in 2002, and quarterly starting in 2003. The ISEMMM journal contains scientific papers, technical notes, book reviews, conference information, data on new products and services in EM3 disciplines as well as the ISEM activities.

The ISEMMM Newsletter is published twice a year in

2001, and quarterly starting in 2002. Every two years ISEMMM will carry out a Scientific Congress in various countries across the world.

ISEMMM has several Special Interest Groups (SIGs), which cover the major fields of EM3 disciplines such as the industrial applications of micro- and meioorganisms (MM); MM in activated sludge, biofilters and composting; MM as indicators of pollution, background assessment, impact, environmental monitoring, and recovery; pathology of soft tissue and shells of MM; MM as indicators of recent and past environments, and the chemical ecology of MM, among others.

Members within the different SIGs organise meetings according to their needs, and help to plan symposia and workshops for the ISEMMM Congresses. Categories of membership of the Society are Honorary Life Member, Fellow, Member, Associate, Student, Corporate and Library members. The membership fee will be US \$60 per year with 50% discount for students. The membership will include the Newsletter, the new journal Environmental Micropaleontology, Microbiology and Meiobenthology, reduced registration fee for all events of the ISEMMM, etc.

A new ISEMMM webpage will be available on the Internet very soon at <http://www.isemmm.org> where also the Subscription Form for the ISEMMM membership will be available.

* Our colleague Lucia Roncaglia has started again at GEUS, now in my department (Dept. of Environmental History and Climate Change) where she is working as post on a project on Holocene climate change in the Arctic: 'A study of palynodebris and dinoflagellate cysts in Holocene sediments from Greenland and Faeroe Islands fjords, and North Atlantic deep-water sites.'

The aim of the research is to elucidate palaeohydrographic changes in the Holocene of the North Atlantic by systematically documenting for the first time the distribution of particulate organic debris (in particular dinoflagellate cysts) in well-dated sediment cores from south-west and west Greenland fjords, the south-east Greenland shelf, Reykjanes Ridge and the Faeroe Islands.

(see <http://www.geus.dk/departments/environ-hist-climate/project-phds/env-cli-phds-uk.htm>)

AMERICAN GEOLOGICAL INSTITUTE, GEOTIMES- 'Highlights' Issue

AASP is a member of the American Geological Institute (AGI). Every year AGI publishes an issue of Geotimes that 'Highlights' recent research in the fields of member societies. Merrell A. Miller and Gordon D. Wood have been asked by AASP to write the article for this years issue. If you have published a paper that you believe might be subject for the 'highlights' issue, please contact Merrell A. Miller or Gordon D. Wood. Anything published

between February 2000 and March 2001 is fair game. The length of the Geotimes article is at the discretion of the AGI editors (we always make the article longer than their maximum in case other authors submit short reviews-we will take their unused space). Everything is considered-particularly research that may be of interest to a wide breadth of geoscientists. Emails with brief descriptions of a published work and a complete reference are OK. Reprints, photocopies are preferable. If you are not the author of a document (paper, newspaper article, Web Page citation, etc.) that you would consider a candidate please send a complete reference or URL.

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PhD THESIS: cyclic changes in the late Neogene vegetation of northern Greece, a palynological study by M.L. Kloosterboer-van Hoeve. Defended on October 23, 2000.

Copies of the thesis can be ordered at M.L.vanHoeve@bio.uu.nl

General introduction and synopsis

Truly accurate climate records are available from the past decades, while useful physical measurements go back only 150 years. Consequently, such records are unsuitable for the analysis of long-term climate changes. However, insight in the mechanisms and effects of long-term climatic oscillations can improve our understanding of climate variability and predictability. By analysing physical, chemical and biological proxy data, geological archives provide the possibility to extend the instrumental climate record back in time.

Throughout the world, the potential of various geological archives for recognition of long-term climatic oscillations, covering a wide range of periodicities, is consistently confirmed by high-resolution studies performed on sedimentary successions and polar ice sheets representing the past 300 kyr. These studies not only note the prominent role of internal (feedback) mechanisms related to the present 'icehouse world', but also recognise effects of external forcing.

The alternations of cold (glacial) and warm (interglacial) periods of the Quaternary have been linked to the periodic variations in the Earth's orbital geometry, which affect the distribution of incoming solar radiation (insolation) by latitude and season. In addition to signatures that reflect orbital eccentricity (400 and 100 kyr), obliquity (41 kyr) and precession (21 kyr) forcings, Quaternary research increasingly substantiates the prominent role of millennium-scale climatic cyclicity. Well-documented examples are the Bond cycles, occurring with periodicities of 6-10 kyr, the Dansgaard

Oeschger events with periodicities of 1-3 kyr, and the recurrent Holocene cooling events with an average periodicity of about 1500 yr. The forcing mechanisms of millennium-scale cycles are poorly understood. Although there is a clear association with changes in the Atlantic thermohaline circulation, a central point of controversy remains the question to what extent their ultimate cause is externally determined by variation in solar activity.

It is generally appreciated that unambiguous detection and evaluation of effects of long-term sun-climate relationships, either related to orbital geometry or solar emission, are hampered by effects of internal glacial-interglacial climate dynamics on the Northern Hemisphere. New insights should therefore rely on the study of time-intervals preceding the onset of major Northern Hemisphere glaciation, 2.75 million years ago. Because of accurate, high-resolution astrochronological age-control, notably multi-proxy records from late Miocene-early Pliocene marine deposits in the Mediterranean region have already provided a wealth of highly relevant paleoceanographic and paleoclimatic information. However, to date, accurate information from coeval terrestrial successions, required for establishing integrated land-sea-atmosphere climatic relationships, is virtually absent. In an ongoing multidisciplinary research program, directed at the University of Utrecht, it is emphasized that the late Miocene-early Pliocene sedimentary of the Ptolemais Basin in northern Greece provides an excellent geological archive for generating paleoenvironmental and climatic information, relevant to an evaluation of long-term climatic cyclicity. Well-exposed in a series of open-pit lignite mines, the Ptolemais succession exhibits a distinctive cyclicity. Organic-rich and carbonate-rich deposits alternate in a regular pattern. As part of the Ptolemais research program, cyclostratigraphic and magnetostratigraphic analysis, in combination with $^{40}\text{Ar}/^{39}\text{Ar}$ dating, has resulted in an accurate astrochronologically calibrated time frame for other research components.

As a sequel to the thesis of van Vugt ("Orbital forcing in late Neogene lacustrine basins from the Mediterranean, a magnetostratigraphic and cyclostratigraphic study", Utrecht University, 2000), the present thesis employs palynology as a primary tool to recognize short- and longer term changes in the terrestrial ecosystem of the East-Mediterranean borderlands, and to reconstruct associated climatic oscillations. Palynological data represent the most widely available quantitative biorecord of past climate. Temporal and spatial distribution patterns of palynomorphs (including pollen, spores, dinoflagellates, algae and fungi) can be explored for a wide variety of proxy variables indicative of terrestrial environmental change, such as land temperature, precipitation, soil moisture, runoff, lake levels, lake surface temperature, and nutrient availability.

High-resolution documentation and analysis of late Neogene terrestrial ecosystems may contribute to a better understanding of the mechanisms that determine regional climatic response to variations in solar radiation

at contrasting time-scales. Established terrestrial climatic reconstructions may be correlated with records derived from marine sequences, to generate integrated land-sea-atmosphere relationships. The combined information will serve as reference for climatic conditions pertaining to a world with a relatively ice-free Northern Hemisphere.

Chapter 1 is focusing upon the analysis of the palynological record from ten consecutive lignite-marl cycles of the upper part of the Ptolemais Formation. Lithological cyclicity is controlled by orbital precession and can be accurately correlated with the astrochronological timescale computed for the early Pliocene. The studied cycles comprise the time-interval between 4.36 and 4.16 Ma. The palynological record reveals significant responses of mountainside vegetation to orbital forcing. Apart from the strong impact of precession, frequency analysis indicates eccentricity as well as weak obliquity signals. Cyclic trends in the relative abundance of colline and montane components are considered to express periodic variations in soil-moisture availability, resulting from changes in orographic wintertime precipitation. These changes may reflect a North Atlantic climatic teleconnection during early Pliocene times.

The concept of a North Atlantic teleconnection is elaborated in **Chapter 2** on the basis of pollen assemblages from seven cycles of the upper part of the underlying Komnina Formation. Orbital tuning suggests an astrochronological age between 5.44 Ma and 5.23 Ma for the cycles, so that the studied interval spans the Miocene-Pliocene transition. Again, the pollen record reveals significant changes in vegetation that are primarily caused by precession-controlled fluctuations in precipitation. At present, rainfall variation in the East Mediterranean borderlands is largely related to meridional shifts of the trajectories of precipitation-laden cyclones that are associated with the North Atlantic Oscillation (NAO). It is likely that this relation is also responsible for the reconstructed long-term variation in precipitation.

Superimposed on precessional cycles, sedimentary and palynological time-series data reveal a higher-order climatic cyclicity with periodicities of 10, 2.8 - 2.5, and 1.5 - 1.2 kyr (**Chapter 3**). Climatic oscillations involve fluctuations in wintertime precipitation in the East-Mediterranean borderlands. The cyclicity is similar to the millennium-scale climate oscillations inferred from Quaternary records, but occurs during times when Northern Hemisphere glaciation was generally restricted. Their persistent occurrence over at least 5 Ma, as indicated by the Ptolemais records, corroborates the concept that the cyclicity is ultimately forced by variation in solar activity.

Analysis of oxygen-isotope profiles and records of foraminifera has revealed occasional cooling phases in the overall warm early Pliocene climatic conditions in the Atlantic and Mediterranean. Two of the most pronounced of these early Pliocene 'glacial stages', Si6 and Si4, are

dated at 4.485 Ma and 4.465 Ma, respectively. In order to assess the nature and effects of the cooling events on land, in **Chapter 4**, the corresponding time-interval is palynologically analysed from the continental Ptolemais section. For comparison, also the time-equivalent interval of the marine Singa section in southern Italy is studied. Apart from anomalously dry conditions during Si6, the palynological data reflect increased winter cooling in the northeastern Mediterranean borderlands during Si6 and Si4.

Chapter 5 presents further evidence for occasional early Pliocene cooling events. The information is derived from a distinctive clay-rich layer in the otherwise regular succession of alternating lignites and marls of the Ptolemais Formation. This so-called 'dinolayer', dated at 4.205 Ma, is the only horizon in which freshwater dinoflagellate cysts are encountered. Two co-occurring species reflect that surface water temperatures of the lake must have been remarkably low for early Pliocene mid-latitudes. Also the pollen record points to slightly cooler conditions during deposition of the 'dinolayer' in comparison with conditions just below and above the 'dinolayer'. An anomalously low winter-temperature is proposed as a possible cause for the recorded short-term (<900 yr) phenomena.

For comparative purposes, a high-resolution cyclostratigraphy and magnetostratigraphy is presented for the late Miocene (Messinian) lacustrine Lava section from the Servia Basin in NW Greece (**Chapter 6**). The section contains fifteen distinct sedimentary cycles of alternating dark and light-colored marls, while the gamma-ray attenuation record reveals an additional five to six cycles. Magnetostratigraphic time control indicates an average duration of the cycles corresponding to orbital precession, and the studied cycles comprise the time-interval between 6.9 and 6.2 Ma. The astronomical origin of the cycles is confirmed by the results of spectral analysis of gamma-ray and susceptibility time series and by the palynological analysis. Palynological assemblages point to continuously wet and warm-temperate climatic conditions. Yet, subtle changes in relative abundance of montane elements enable the interpretation of the lithological alternations in terms of periodic changes in humidity. The light marls correspond to humid periods, the dark marls represent somewhat dryer phases.

In **Chapter 7** it is emphasised that the investigated late Miocene-early Pliocene continental Ptolemais succession includes the Messinian 'Lago Mare' phase. To analyse the effect of this phase on regional climate, the results of palynological studies of the specific intervals studied in Chapters 1, 2 and 6 are compared. It is shown that the interval corresponding to the 'Lago Mare' phase can be readily distinguished from preceding and succeeding periods by (1) a very pronounced temporal pattern of precession-controlled changes in precipitation, and (2) relatively low winter temperatures. It is noted, however, that, for unknown reasons, a return to less pronounced precession controlled precipitation changes and warmer

conditions does not coincide with the initial Pliocene flooding of the Mediterranean Basin.

NEW BOOKS (REVIEWS AND SUMMARIES)

* **Ronald O. Kapp's Pollen and Spores, Second Edition.** Ronald O. Kapp, Owen K. Davis and James E. King, editors, American Association of Stratigraphic Palynologists Foundation Publication, 2000, 279pp. ISBN 931871-05-0. \$15.00 (U.S.).

Reviewed by David M. Jarzen, Florida Museum of Natural History, University of Florida, Gainesville, Florida.

"... the work has withstood the test of time and remains the only work of such geographic breadth --yet with the insightful simplicity of line drawings"

With these words, the revised, improved, enlarged and much needed second edition of Ronald Kapp's "Pollen and Spores" has been published. Davis (University of Arizona) and King (Cleveland Museum of Natural History) have continued the work of the late Ronald Kapp, and have provided palynologists, botanists, allergists and others, with a pictorial key of pollen and spore types from North America. Kapp had earlier begun a revised second edition of his work; but his efforts were cut short by his untimely death in 1990. Many of us have used the first edition of this guide for many years and have found it to be one of the "standards" we keep near our microscopes.

This second edition continues the tradition of an easy-to-use, keyed guide, to the pollen forms found in Quaternary deposits. It has been improved by expanding the original key with several new illustrations, providing a consistent format for each taxon which includes Latin binomial, parent plant common name, size (in micrometers), geographical range, and notes regarding details of pollen morphology.

The introduction to the revised edition includes information about the study of palynology since the publication of the first edition (1969), specifically noting the proliferation of pollen keys and illustrated guides which cover specific areas of the United States and/or Canada. Additions to this edition include a section titled "Unusual palynomorphs and microfossils that might be confused with pollen" and include a brief description and illustration of some pre-Quaternary pollen forms (e.g. *Normapolles*), algae, dinoflagellates, chitinozoans, forams, diatoms and phytoliths. A well-illustrated glossary, bibliography and a systematic list of illustrated species are found at the end of the guide. I found the glossary especially helpful.

Despite a dozen or so typographical, grammatical or spelling errors, and despite the fact that some of the line drawings are less sharp than those illustrated in the first edition, the guide remains useful and, considering the

price, a worthy purchase.

The American Association of Stratigraphic Palynologists Foundation has published the 2000 edition, and has managed to keep the price, at \$15.00, reasonable for students to purchase. The book is spiral bound, with a glossy, plastic cover that folds back to allow the guide to open flat on a desk surface. Copies of this excellent publication may be ordered from The AASP Foundation. Contact: Vaughn M. Bryant, Palynology Laboratory, Texas A&M University, College Station, TX 77843-4352, U.S.A. (FAX 979-845-4070; vbryant@NEO.tamu.edu).

* **Pollenanalyse.** *Van der Ham, R.W.J.M., Kaas, J.P., Kerkvliet, J.D. and Neve, A.*, Stichting landelijk Proefbedrijf voor Insektenbestuiving en Bijenhouderij Ambrosiushoeve. (1999) Hilvarenbeek, Netherlands. 156 pages, 17 B&W plates, 3 plates of color pollen photomicrographs. Cost: \$16.00 US. (For best results send \$20 US in cash to cover the cost of the book and mailing charges. Do not send checks or credit cards. Send your order to: Ambrosiushoeve, Ambrosiusweg 1, 5081 NV Hilvarenbeek, The Netherlands, e-mail: ambrosiushoeve@wxs.nl)

Reviewed by: Vaughn M. Bryant, Jr., Palynology Laboratory, Texas A&M University

This comprehensive examination of honey types found in The Netherlands is an extensive study, a valuable reference source, and it is a bargain for its modest price. The book is written in Dutch, which will be a drawback for some readers. Nevertheless, for those who can read a bit of French or German, or who are able to guess the general meaning of technical statements that contain many words that appear familiar or similar in spelling to ones used in English, you will gain much from trying to read this book. I found many of the chapters fairly easy to comprehend (in fairly general terms). For a few critical chapters that covered topics of special interest, I found a colleague who could read Dutch and was willing to translate those portions of the book precisely. Perhaps the best feature of the book, aside from the valuable pollen data on the composition of various types of Dutch honey, is the 20+ page section containing 204 excellent drawings of pollen types found in Dutch honey. These pollen drawings are alphabetically arranged beginning with types in the ASTERACEAE and ending with genera in the VIOLACEAE. There are three additional pages of color micrographs showing pictures of 30 pollen taxa and types of spores and phytoliths sometimes found in Dutch honey. The book also has a useful bibliography and index.

The book contains a bit of information for almost anyone interested in pollen. One of the early chapters, written by J.P. Kaas, includes a brief history about the development of the microscope, the emergence of pollen morphology studies during the 1600s, the beginning history of melissopalynology in 1895 with the research conducted

by Pfister, and the emergence of pollen statistics resulting from the studies by von Post in 1916. There are also short sections discussing the applications of pollen data in studies of allergy, archaeology, paleoenvironments, and forensics. Van der Ham has a chapter on the development of plant systematics, that includes a detailed discussion of pollen morphology and pollen classification systems. Kerkvliet's chapter discusses the internal contents of pollen and looks at the nutritional value and importance of various chemical, vitamin, and mineral components in pollen. Neve's chapter on nectar sources, extra-floral sources of honey (honeydew), and on the role of nectar components in the production of honey is informative.

One of the longest and most detailed chapters is written by Kerkvliet on the types of pollen found in Dutch honey. He discusses the role of airborne and insect pollen types, the importance of using pollen concentration values in honey studies, and the current system used in the classification of unifloral honeys. He also briefly discusses the development of pollen coefficient values and notes their use to verify major types of Dutch honey produced by floral sources that are commonly under-represented by pollen in relative counts. His discussion includes various tables and lists classifying honey types. He also discusses the previous, comprehensive study conducted by Martens *et al.* (1964) which examined 2,674 honey samples in order to produce a list of dominant and minor floral sources used in the production of Dutch honey.

Later in the book, a chapter by Kaas looks at the correct use of microscopy and then discusses the use, roles, and importance of light, SEM and TEM studies in pollen work. The next chapter, written by Kerkvliet, discusses how to prepare raw honey for melissopalynology studies, but the chapter offered nothing new. In fact, it continues to stress the use of water-honey dilution methods that have been in vogue for years, but have been shown by recent studies to produce inaccurate pollen data. Newer extraction methods emphasize the advantages of using either filtration or ETOH-honey dilution techniques (Lutier and Vaissiere 1993; Jones and Bryant 1998). Kaas' chapter on pollen sources found in honey is a good summary, and it is informative. He discusses how bees determine which pollen and nectar sources to seek, how far bees generally venture from the hive in search of new nectar or pollen sources, which pollen types they prefer to collect, how beekeepers can determine the types of honey being produced in their hives by watching returning bees and by collecting a few of the bees to study the pollen stuck to their bodies, and the resourcefulness of honeybees in their search for new nectar and pollen sources. He also notes that in some cases a honeybee must visit over 500 flowers on a single trip before being able to collect enough pollen (up to 15 mg) to return to the hive. The final section of the book contains a brief pollen key of major pollen types found in Dutch honey.

Would I recommend this book? Certainly, without question! The modest cost, the pages of useful data, the

beautifully drawn illustration of pollen types, the pollen key, and the book's bibliography make it a valuable reference source for anyone interested in, or working within, the field of honey production, melissopalynology, or even other fields of palynology.

When I first learned of this book I thought I would find it exceeding difficult to obtain because I could not find it for sale in any local bookstores or even for sale on a web site. Nevertheless, the research lab that publishes the book (Ambrosiushoeve) was very helpful when I contacted them by email. They send instructions and then promptly sent me a copy by "air mail" once I had sent them a \$20 bill.

Like all good books written about pollen, this edition was produced in a limited quantity and it may not be available for long. If you are serious about trying to buy a copy, don't hesitate, order it today. It may soon be out-of-print.

References

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* **Synopsis of fossil fungal spores, mycelia and fructifications**, R.M. Kalgutkar & J. Jansonius. Published by the American Association of Stratigraphic Palynologists, Foundations contributions series number 39, December 2000

SUMMARY (submitted by J. Jansonius)

In this Synopsis we bring together some 950 validly published names of species, attributed to some 230 genera (plus some 70 names of extant genera, as well as many nomina nuda, and junior synonyms and homonyms). We propose twelve **new genera**: *Axisporonites*, *Biporipsilonites*, *Disparidicellites*, *Hilidicellites*, *Kumarisporites*, *Mathurisporites*, *Mossopisporites*, *Multicellites*, *Ramasricellites*, *Saccisporonites*, *Trihyphites* and *Varmasporites*. We propose one **new species**: *Ctenosporites sherwoodiae*.

Transfers of species to more appropriate genera resulted in 31 junior homonyms, for which we provided the following **nomina nova**: *Dicellaesporites largelongatus*, *D. perelongatus*; *Dictyosporites paradkarii*; *Didymoporisporonites gigas*; *Diporicellaesporites macellus*, *D. minifusiformis*; *Diporisporites pergranulatus*; *Dyadosporites antarcticus*, *D. neoconstrictus*;

Fusiformisporites duenasii; *Hilidicellites dubius*, *H. trivedii*; *Hypoxylonites kumarii*; *Inapertisporites clarkei*, *I. edigeri*, *I. neopunctatus*, *I. triporatus*; *Kutchiathyrites canadensis*; *Monoporisporites doubingerae*, *M. mathurii*, *M. nemagnus*, *M. neoglobosus*, *M. persilatus*, *M. singularovalis*; *Multicellaesporites? songii*; *Pluricellaesporites cooksoniae*, *P. edigeri*, *P. malevisus*, *P. mexicanus*; *Scolecospores modicus*; *Staphlosporonites billelsikii*. The names of one genus and several species, not validly published in their respective protologues, are here validly published "**ex Kalgutkar & Jansonius**": *Asterinites* Doubinger & Pons (with *A. colombiensis*, *A. tellezii*), *Biporipsilonites bellulus* (Ke & Shi), *Cercosporites torulosus* (Trivedi & Verma), *Dicellaesporites longus* Trivedi & Verma, *Diporisporites planus* Martínez-Hernández & Tomasini-Ortiz, *Microthyriacites baqueroensis* Martinez, *Palambages colonica* Trivedi & Verma, *Pluricellaesporites dentatus* Trivedi & Verma, *P. minutus* Trivedi & Verma and *P. planus* Trivedi & Verma.

Our transfers also resulted in some **350 new combinations**: too many to list in this abstract.

While we tried to include all papers of interest particularly to (paleo)palynologists, this Synopsis will also be of benefit to mycologists who find the literature on fossil remains not easily accessible. The latter also may appreciate a brief survey of megascopic remains reported in the literature. Still, we did not cover many of the earlier (nineteenth century) publications.

We give a summary introduction into paleomycology, as well as some mycological fundamentals, for palynologists; a brief section on palynological practices may be of benefit to mycologists. The discussions dealing with the morphology of fungal spores are concluded with a section "**Description of fungal spores**," which provides a checklist of features to be observed and reported on. Technical terms are explained in a Glossary.

The main part of this Synopsis is the systematics section, where the descriptions of genera and species are given in alphabetic order; junior synonyms and homonyms are included, with cross-references to new names or combinations. The types of nearly all species are illustrated with a line drawing. In an Appendix we list all specific epithets together with, in capitals, the names of genera to which they are now attached, and those used in earlier binomials, in lower case.

Organization of this Synopsis

In this volume we compile the more recent worldwide literature on fossil fungal remains, as far as known to us. Although some papers as old as the beginning of the 19th century have been consulted, we have no illusion that our survey is complete (see below).

We document the wide diversity of all those fossil fungal palynomorphs, mycelia and fructifications, of which the names had, or have, been validly published. For a small number of genera and species their names are here

validly published for the first time. We include a small number of generic nomina nuda, that have been (or might be) considered as validly published.

This publication provides an immediate and quick reference to the names of genera and species, furnished with descriptions and figures. It aims to stimulate the interest of mycologists in the ancestral forms of living fungi, as well as to guide palynologists to a better understanding of the morphology, classification and biostratigraphic application of fossil fungi.

We do not include forms described in "open nomenclature" (e.g. "*Inapertisporites* sp. A," or "*Pluricellaesporites* sp. 2"). Superseded binomials are listed, and are provided with cross references to the correct names. For the species, only the locations of types are cited, except in instances involving synonymy or emended/enlarged concepts.

For each taxon, we cite the original diagnosis (for genera) or description (for species), as well as later emendations. We also cite supplementary comments of the original authors, generally verbatim (without changing the nomenclature they used, into the rationalized nomenclature presented in our Synopsis). For some entries, we provide a "diagnosis as here emended," and/or add "our remarks"; we always clearly identify our own opinions or contributions.

Because we did not see most of the original material, we refrained from emending species concepts. However, the grouping of species into (more or less artificial) genera is a more subjective exercise. We have rationalized some past practices, which makes for more coherent generic circumscriptions and groupings. Nevertheless, we have not split these groupings farther than absolutely necessary; that task will remain for future mycologists/palynologists, after they have studied the original (or additional new) material.

In the heading of each species we cite the page and figure number of the type specimen, in the original paper (protologue). Centered on the next line, we give, in bold, the plate and figure number of our own illustration of the species. A professional illustrator made the majority of line drawings in the Synopsis. These were augmented by illustrations borrowed from the Genera File of Fossil Spores (Jansonius & Hills, 1976 et seq.); those too simplistic for the present purpose were upgraded by Jansonius. All drawings were scanned, and then sized by computer to a uniform magnification. Most spores are at 700x magnification, some small forms at 1000x. Most microthyriaceous fruiting bodies are at 500x; others at a variety of magnifications. Computer-produced scales allow a quick resolution of the actual, and relative, sizes.

We received slides, negatives and photographs from some authors whose original descriptions seemed to be at odds with their original photographs, or whose published illustrations did not sufficiently show the necessary detail. Descriptions adjusted as a result of

that, have been so identified.

The plates are arranged in a morphological order: first the inaperturate unicellate (aseptate) spores, which are followed by mono-aperturate, di-aperturate and multi-aperturate amerospores. Next the inaperturate dicellate spores, the mono-aperturate ones, etc. Then, *mutatis mutandis*, the same for pluricellate spores, where curvature of linear forms, and manner of aggregation of non-linear forms play a role. These are followed by the spherical aggregations, and aggregations with more than one axis. Next are the sporangia of the mycorrhizal fungi, the fruiting bodies of the microthyriaceous fungi and those of the Paleozoic *Sporocarpion* group, as well as a miscellany of various fruiting structures, including some mushrooms. Some late additions had to be accommodated onto the last two plates.

The "Glossary" may help palynologists to better understand the mycological descriptions. Our comprehensive "Bibliography" may include references not directly cited in our text. We do not provide references to the works in which modern genera were published to which fossil species have been assigned; neither do we cite the diagnoses of such modern genera.

* **Synopsis of fossil fungal spores, mycelia and fructifications** R.M. Kalgutkar and J. Jansonius, 2000,. The American Association of Stratigraphic Palynologists Foundation, Dallas, 423 pages, 36 plates of line drawings, 3-ring notebook binder. Available through Vaughn M. Bryant, Jr., Secretary AASP Foundation, c/o Palynology Laboratory, Texas A & M University, College Station, Texas 77843-4352, U.S.A. (fax: 979-845-4070; e-mail: vbryant@neo.tamu.edu). \$33.00.

Review by William C. Elsik, wmcelsik@txcyber.com, 7 February 2001

At last there is an updated/modern compilation of fossil fungal palynomorph names. The authors present a compendium of most of the microscopic fungal parts described in the literature. In the abstract, the author's claim to bring together some 950 validly published names: there are 1008 specific epithets in Appendix II. They have 'gone the extra mile' in validating the nomenclature. Their effort is commendable. Kalgutkar and Jansonius have definite impressions of where the taxa should be classified "OUR CLASSIFICATION:", but the systematics section does not reflect any classification scheme. Rather, the genera are presented in alphabetic order, which is good since there is no index.

I was personally involved in the early stages of this compilation. Contrary to the authors' acknowledgments (p. 17), Kalgutkar was solely responsible for the conception and original scope of the effort. Kalgutkar intended a simple catalog, simple but enormous in scope in terms of the amount of published literature available on the subject of fossil fungal palynomorphs.

Jansonius has imparted his particular preciseness in putting everything in its place in terms of nomenclature. Both authors deserve our thanks for the years of effort that went into this project.

Everyone interested in fossil fungi or fossilizable modern fungi will want this compilation on their desk or at hand in their reference/academic library. At \$33.00 this synopsis is a bargain, but bulky in its format. One wishes the day it is in CD format is near at hand: the 3-ring binder doesn't balance well in one hand at the microscope or computer.

There is an alphabetical list of species, but no list of genera. There should be a separate list of genera, or at least a comprehensive index. There are 423 pages of mostly double-column text and no index! The combination of lack of an index or page headings, and using initials instead of generic names in the specific epithets leads to a plethora of confusion throughout the text for this reader, especially in those portions of the text treating the larger genera.

At least one of their gen. nov. is not NEW. In the case of *Multicellites*, the authors chose to use the name from shortcourse manuals (Elsik, 1992, 1993a-b) and validate sans 'ex' Kalgutkar & Jansonius in spite of my disclaimer (1993a).

Elsik, W. C. 1992, The morphology, taxonomy, classification and geologic occurrence of fungal palynomorphs *with* References to fossil and selected extant fungi; including keywords and a few annotations. The American Association of Stratigraphic Palynologists, Inc., Shortcourse, February 26-28, Houston, unpublished manual, 190 + 97 p., 88 text-fig., 1 pl., 100 35mm color transparencies.

Elsik, W. C. 1993a, The morphology, taxonomy, classification and geologic occurrence of fungal palynomorphs. The American Association of Stratigraphic Palynologists, Inc., Short Course, October 23-24, Baton Rouge, unpublished manual, 236 p., 88 text-fig., 1 pl.

Elsik, W. C. 1993b, Genera of fungal palynomorphs illustrated. Color photomicrographs. The American Association of Stratigraphic Palynologists, Inc., Short Course, October 23-24, Baton Rouge, unpublished supplement, 30 p., 14 pl.

Unfortunately the authors' have chosen to use only an initial for the genus in specific epithets throughout the systematic portion (p. 19-311). Perhaps this was done during initial 'input' to save time. Perhaps it was done during editing to conserve space. Unfortunately, the result is a publication now replete with unacceptable species epithets, e.g.:

H. africanus Salard-Cheboldaëff, hoc loco

H. ater (Kumar) comb. nov.

H. ellipsoideus Salard-Cheboldaëff, in hoc loco

H. kumarii nom. nov.

H. xylarioides Salard-Cheboldaëff, in hoc loco

This is going to be a nightmare for future workers when genera/species are reshuffled and lists of synonymy are created.

There is no mention of Locquin's (e.g. 1983) numerous proposed form genera, nor is the paper listed in the bibliography.

Locquin, M. V. 1983, Classification phonémique, calculable et descriptive des Mycota, sporae dispersae. 105 Congr. nat. Soc. sav., Caen, 1980, fasc. 1, p. 255-269, 7 pl.

There are undoubtedly other minor irritations than the few I noticed. There is a problem with the consistent spacing of species headings, e.g. page 292 there is no space between lines 19 and 20 from the bottom of column 1. Elsik et al. (1983) on p. 338 was NOT "a short course presented under the auspices of The American Association of Stratigraphic Palynologists." It WAS the work of an official AASP Workgroup.

Buy the synopsis. Have a go at it. Like me, you will be impressed with the content.

*** For Sale: American Association of Stratigraphic Palynologists (AASP) Publications:-** Geoscience & Man (vol #1 to #7) and Palynology (volumes #1 to #23) all 30 volumes for US\$ 200.00

- Out of print volumes of Geoscience & Man (vol.9 1974, & vol.15 1976), Palynology vol.#3, #4, #5, #6 (1979 to 1982), Contributions Series vol. #4 (1975). All all seven publications for US\$ 45.00

- Contributions Series (16) #1, #3, #5A, #6, #7, #9, #10, #12, #13, #15, #16, #17, #19, #21, #22, #23. All 16 publications for US\$ 30.00 Shipping at buyer's expense. Contact: Bert van Helden (403) 258-2874, e.mail vanheldb@telusplanet.net

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AGENDA

2001

January 10-11 2001. **Fungal Spores and other microfossils in Quaternary Palaeoecology**. Queen Mary College, University of London, UK. Details: Jeff Blackford (J.J.Blackford@qmw.ac.uk)

March 19-24 ,2001, St-Petersburg, Russia, an International Seminar: "**Pollen as indicator of environmental state and paleoecological reconstructions**". Questions concerning the seminar can also be sent to: Seminar Secretariat, VNIGRI, Liteiny ave., 39, St.-Petersburg, Russia, 191104. Account Name : Svetlana I. Zharkova Fax: (812) 275-57-56 Phone: (812) 272-36-77 E-mail: confer@vnigri.spb.su with a mark "Palinolog".

April 8-12 2001. **EUG (European Union of Geosciences) conference**. Strasbourg, France. Includes a symposium on 'Late Quaternary floodplains: sedimentary records of environmental change'. For details of this symposium contact: Dr. Philip E.F. Collins, Environmental Change Research Group, Department of Geography & Earth Sciences, Brunel University, Uxbridge UB8 3PH, United Kingdom, E-mail: philip.collins@brunel.ac.uk. Website: <http://eost.u-strasbg.fr/EUG/>

May 27-30 2001. **GAC/MAC Joint Annual Meeting**. St John's, Newfoundland. Details: St. John's 2001, c/o Department of Mines and Energy, Geological Survey Division, Regional Geology Section, P.O. Box 8700, St John's Newfoundland, A1B 4J6, Canada, Tel: (709) 729-2301, Fax: (709) 729-3493, E-mail: dmp@zeppo.geosurv.gov.nf.ca. Includes a CANQUA (Canadian Quaternary Association-sponsored symposium on "Quaternary Geology of the Northern North Atlantic Region". Also include NAMS (North Atlantic Minerals Symposium). See <http://www.gov.nf.ca/nams/>. Website: <http://www.geosurv.gov.nf.ca/stjohns2001>

May 29 - June 2 2001. **Canadian Association of Geographers (CAG) Annual Meeting**. McGill University, Concordia University and Université de Montréal, Montreal, Canada. A joint event arranged by the three Montreal universities in celebration of the 50th anniversary of the founding of the CAG. Details: Tim Moore (moore@felix.geog.mcgill.ca), Patricia Thornton (thorpat@vax2.concordia.ca), André Roy (royandre@ere.umontreal.ca)

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on 'Late Quaternary floodplains: sedimentary records of environmental change'. For details of this symposium contact: Dr. Philip E.F. Collins, Environmental Change Research Group, Department of Geography & Earth Sciences, Brunel University, Uxbridge UB8 3PH, United Kingdom, E-mail: philip.collins@brunel.ac.uk . Website: <http://eost.u-strasbg.fr/EUG/>

June 13-18 2001. **Millennial-scale events in the North Atlantic region during Termination 1**. University of Ulster, Northern Ireland. Details: Dr Jasper Knight, Lecturer, Glacial and Coastal Geomorphology, Glacial Research Group, School of Environmental Studies, University of Ulster, Coleraine, Co Londonderry, Northern Ireland, BT52 1SA, UK Tel +44 (0)28 7032 3179 (direct), Tel +44 (0)28 7032 4428 (Dept. office), Fax +44 (0)28 7032 4911, E-mail: j.knight@ulst.ac.uk. Website: <http://www.ulst.ac.uk/termination1.html>

June 17-23 2001. **12th Symposium of the International Workgroup for Palaeoethnobotany (IWGP)**. Sheffield, England, UK. Details: IWGP, Department of Archaeology and Prehistory, University of Sheffield, Northgate House, West Street, Sheffield, S1 4ET, England, UK. E-mail: iwgp@sheffield.ac.uk Website: <http://www.shf.ac.uk/uni/academic/A-C/ap/conf/iwgp/iwgp.html>

July 10-13 2001. **Global Change Open Science Conference**. Amsterdam, The Netherlands. Sponsored by the International Geosphere Biosphere Programme, along with the World Climate Research Programme and the International Human Dimensions Programme. Website: <http://www.sciconf.igbp.kva.se>

August 20-24 2001. **CANQUA (Canadian Quaternary Association) meeting**. Whitehorse, Yukon. Details: John Storer (jstorer@gov.yk.ca). Website: <http://www.mun.ca/CANQUA>

August 23-28 2001. **5th International Conference on Geomorphology**. Tokyo, Japan. E-mail: 5icg@cc-linkage.ca.jp. Website: http://www.soc.nacsis.ac.jp/jgu/icg_hopa/indexicg.html

September 18-22 2001. **PAGES - PEP III Conference**. Le Centre de Congres, Aix-en-Provence, France. PAGES - PEP III is concerned with studies of past climate variability in Europe and Africa. Key aims are to assess variability on different time-scales, to assess the impacts of past climate change on natural ecosystems and human society, and to provide a firm basis for the verification and testing of climate models. There will be a number of plenary lectures from invited speakers plus a series of poster sessions open for all participants, plus a post-conference excursion to the Massif Central, France (subject to interest). Details: Dr Catherine E. Stickley, Environmental Change Research Centre, University College London, 26 Bedford Way, London, WC1H 0AP, England, UK E-mail: C.stickley@ucl.ac.uk. Website: <http://www.geog.ucl.ac.uk/ecrc/pep3>

September 22-24 2001. **11th Canadian Paleontology Conference (CPC-XI)**. London, Ontario. Details: Jisuo Jin, Chair, CPC Organizing Committee, Department of Earth Sciences, University of Western Ontario, London, Ontario, Canada, N6A 5B7, Tel. (519) 661-4061, Fax (519) 661-3198, E-mail: jjin@julian.uwo.ca

September 23-26, 2001 **The Society for Organic Petrology (TSOP)**, 18th Annual Meeting,, Houston, Texas, USA. Information: Dr. Coleman Robison, Texaco Group, Inc., E & P Technology Div., 3901 Briarpark Drive, Houston, Texas 77042 USA; Phone: (713)-432-6828; Fax: (713) 838-4628; E-mail: robiscr@texaco.com; Further details: <http://www.tsop.org>. Includes special session co-sponsored by Houston Organic Geochemical Society (HOGS) on "Geochemistry of the Deep-Water Gulf of Mexico".

TSOP also offers an annual \$1000 graduate student fellowship. Application deadline is 3/31/01. Details and application available at www.tsop.org. The new student grant contact person is Dr. Suzanne Russell, Shell E&P Technology Co., Bellbird Technology Center, 3737 Bellbird Blvd., Houston, TX 77025, Tel: 713-245-7603, Fax: 713-245-7599, E-mail: srussell@shellus.com

November 5-8 2001. **Geological Society of America, Annual Meeting**. Boston, Massachusetts, U.S.A. Details: GSA HQ, Box 9140, 3300 Penrose Place, Boulder, Colorado 80301, U.S.A. Tel: (303) 447-2020, X133, E-mail: meetings@geosociety.org

2002

August 29 - September 2 2002. **6th European Palaeobotany - Palynology Conference**. Athens, Greece. Details: Prof. D. Evangelos Velitzelos, Organizing Committee, 6th European Palaeobotany-Palynology Conference, Department of Historical Geology-Palaeontology, Faculty of Geology, University of Athens, Panepistimioupolis, Zografou, 157 84 Athens, Greece. Tel./Fax: +30-1-7274162, E-mail: velitzel@geol.uoa.gr

September 5-7 2002. **CIMP Symposium and Workshops**. Lille, France. Details: Thomas Servais (thomas.servais@univ-lille1.fr) or Ludovic Stricanne (ludovic.stricanne@univ-lille1.fr), University of Lille

September 11-13, 2002, **AASP-BMS-NAMS JOINT MEETING**, University College London, England The American Association of Stratigraphic Palynologists (AASP), the British Micropalaeontological Society (BMS) and the North American Micropaleontology Section of SEPM (NAMS) are holding a joint meeting in September 2002 at University College London, England.

One of the themes of this international meeting will be recent developments in applied biostratigraphy, and will not be restricted to palynology alone. Contributions will be invited on four main topics: 1. Sequence biostratigraphy.2. Deep-water exploration.3. Reservoir/Development studies.4. Outcrop analogue studies.

The vision for the meeting is to encourage trans-Atlantic exchange of ideas, ultimately to seed new research initiatives. In particular, we aim to develop an integrated multidisciplinary approach in both the academic and industrial realms. There will be no taxonomic or geographical restriction on contributions. Posters will be invited on any micropalaeontological, nannopalaeontological, palynological or biostratigraphical theme. Post-meeting excursions are planned to the Dorset Coast (Jurassic - Cretaceous), the Isle of Wight (Cretaceous - Paleogene), Kent and Essex (Paleogene), and Suffolk (Neogene). A circular giving details of the meeting, costs and abstract form will be issued to interested parties early in 2001. The deadline for abstracts and early registration will be 31st March 2002. Expressions of interest should be addressed in the first place to the BMS Secretary, address below. Contact convenor: Dr James Powell, 105 Albert Road, Richmond, Surrey TW10 6DJ, England, UK (Tel: +44 20 8948 6443; Fax: +44 20 8940 5917; Email: ajp@dinosystems.co.uk).

October 27-30 2002. **Geological Society of America, Annual Meeting.** Denver, Colorado, U.S.A. Details: GSA HQ, Box 9140, 3300 Penrose Place, Boulder, Colorado 80301, U.S.A. Tel: (303) 447-2020, X133, E-mail: meetings@geosociety.org

2003

March 29 - April 2 2003. **3rd International Limnogeology Congress**

Tucson, Arizona. Theme session proposals to Andrew Cohen, General Chair of the Congress (acohen@geo.arizona.edu). Field trip proposals to David Dettman, field trip coordinator for the Congress (dettman@geo.arizona.edu).

November 2-5 2003. **Geological Society of America, Annual Meeting.**

Seattle, Washington, U.S.A. Details: GSA HQ, Box 9140, 3300 Penrose Place, Boulder, Colorado 80301, U.S.A. Tel: (303) 447-2020, X133, E-mail: meetings@geosociety.org

THE TROPICAL DINOCYSTS WG NAMING AND LOGO COMPETITION

You can vote by sending a letter to the address below. You have two votes, one vote for a name and one for a logo. Most votes wins and in case of a tie the steering committee will decide. Send your vote immediately before you forget but at the latest a postmark March 30th will be accepted. After I counted the votes all ballots will be sent to the steering committee for a second handcount, and in the next newsletter the winners will be announced as well as on our homepage where you can see the logo's in colour: " <http://dinowg.free.fr>"

The proposed names:

- A. DILL (Dinoflagellates in Low Latitudes),
- B. DITS (Dinocysts in the Tropics and Subtropics),
- C. Coco Dinos,
- D. Tropical dinocysts,
- E. TDWP (Tropical dinoflagellates working group)

The proposed logo's



I.

II. The same logo as I but with the voted new name



III

IV. The same logo as III but with the voted new name

Send your vote (favourite name: A, B, C, D or E) and favourite logo: I, II, III or IV) a.s.a.p. to Caroline van Mourik, Stockholm University, Department of Geology, S-106 91 Stockholm, Sweden. (Last sending / postmark date March 30th)

