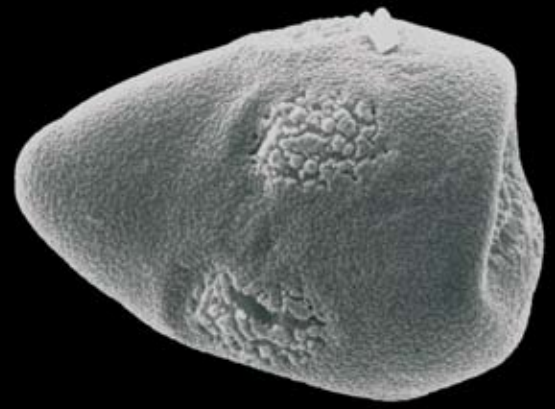


AASP- THE PALYNOLOGICAL SOCIETY



Carex microdonta
by Gretchen Jones

NEWSLETTER



December 2008
Volume 41, Number 4



A.A.S.P. NEWSLETTER

Published Quarterly by the AASP - The Palynological Society

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A.A.S.P.

The Palynological Society

The American Association of Stratigraphic Palynologists, Inc. - AASP-The Palynological Society - 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.

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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)
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Professor Barrie Dale (awarded 2004)
Dr. David Wall (awarded 2004)
Dr. Robin Helby (awarded 2005)
Dr. Satish K. Srivastava (awarded 2006)

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 Aural T. Cross (elected 1991)
Dr. Robert T. Clarke (awarded 2002)
Prof. Vaughn Bryant (awarded 2005)
Prof. Alfred Traverse (awarded 2005)

AASP Board of Directors Award recipient

Dr. Robert T. Clarke (awarded 1994)

Teaching medal recipients

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Professor Alfred Traverse (awarded 2001)
Professor Bill Evitt (awarded 2006)

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)
Dr. Donald W. Engelhardt (awarded 2000)
Dr. David T. Pocknall (awarded 2005)
Dr. David K. Goodman (awarded 2005)
Prof. Owen K. Davis (awarded 2005)



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Sophie Warny, 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. Deadline for next issues of the newsletter is **February 15**. All information should be sent 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 Frederich Rich

I find myself once again addressing you as the President of this organization, and cannot adequately express my gratitude for both the opportunity, and for your confidence in me as an individual. I've been an active member of this society for something like 30 years now, and have seen much come and go, but am greatly heartened by the fact that the organization, and I are still here.

Nine years ago, in the autumn of 1999 I was invested in this office at the annual meeting of the American Association of Stratigraphic Palynologists held in Savannah, Georgia. You might know that that is, essentially, my home base, and I was instrumental in organizing the meeting. That opportunity gave me some time to reflect on what it was that got me into palynology in the first place, and I prepared a few remarks that reflected my view of where this organization could, or should go as far as its planning and identity were concerned. At that time I was focused on our survival and, of course, greater and broader identity were key interests.

In any case, in 1999 I outlined a few things I thought we should consider. One of them was a belief I continue to hold - few people come to this science by design. For most of us it was happenstantial, or maybe even a mistake, but we liked what we saw as we took our first palynology class, and we stayed with it. This suggests that we make ourselves known not by being obtrusive or annoying, but by simply offering our expertise as it is appropriate; we are not selling insurance policies, but we are offering a truly interesting experience. At the time I said "We need to speak to our colleagues in other disciplines in order to show them that this is a science that meets many needs." I also suggested that we look at every situation not as though it is inherently to our advantage, or not, but as though it simply needs to be looked at carefully, and perhaps differently than would be permitted by our reflex reaction. If change is advisable, then consider changing. I also advocated getting more deeply involved with related organizations, not such that we might lose our identity within theirs, but so that we and they might benefit from complementary strengths and assets.

So, where did this organization go in the intervening nine years? What have we done that might have shown that my own outlook had some merit? I believe the simple fact that we met in Bonn, and I that I am writing to The Palynological Society speaks volumes, so I'll offer only a few more words.

The week before the Bonn meeting I compiled a brief semi-annual report to the American Geological Institute. Every fall they meet with the Geological Society of America, and as the AASP representative to AGI's committee of constituent societies, I am periodically obliged to tell them what we've been up to. In this year's fall report I told them our last Annual Meeting was held in the Republic of Panama, that the mid-year Board of Directors meeting was held in Niagara-on-the-Lake, Ontario, Canada, and that I would be addressing our Annual Meeting group this year in Bonn. Such a list of international venues does not appear in the history of most geological organizations I know of, so I'm satisfied that we have done our best to reach beyond the geographic limits of our place of origin.

Another bit of news I presented concerned the name change. Since 1967 we have been the American Association of Stratigraphic Palynologists, yet last year only about 37% of our individual members came from the U.S. As we debated the name change idea in Niagara-on-the-Lake, it became clear very quickly that, while the original name reflected the organization as

it was constituted at that time, the times changed, and so did the need for a more applicable name. Thus, The Palynological Society made its debut in Bonn, and nothing could have been more appropriate.

Additionally, I had to provide AGI with a list of officers of our organization, and even that made me stop to consider just what, and where we are, literally. A number of us still do reside in the States, including myself, Joyce Lucas-Clarke, Thomas Demchuk, Owen Davis, and Yow-yuh Chen. Francine is Canadian, however, as is our new Board member James White. Jim Riding, our Managing Editor, is from the UK, and Director-at-Large Stephen Louwye is at Ghent University, while Barrie Dale is at the University of Oslo. Simply developing a quorum has become a problem just because we are so widely scattered, but I see that as a problem that we can deal with. The point is, we bring many perspectives to our work, and we represent much more than an American point of view, whether we are talking public policy or stratigraphy.

I am certainly not the only President who has been interested in organizational well-being. This was recently demonstrated by out-going President McCarthy's address on the President's Page of the March 2008 Newsletter of our organization. Quoting Francine, "...the main thing I'd like to tackle during my presidency [is] trying to make sure that palynology gets better PR by exposing other scientists, especially other micropaleontologists, to palynology's potential." This is being done not only at meetings similar to the one held in Bonn, and the one in Panama City, but through the new distribution systems your Board of Directors have found for our publications. Electronic distribution of *Palynology*, our flagship publication is now available through GSW, BioOne, and Jstor, and it is indexed by ISI. All this has been enabled chiefly by the dedication of Jim Riding, Owen Davis, and Thomas Demchuk, though the entire Board has been involved to some extent. Additionally, even though we have had a website since 1995, it is now in the capable hands of Owen Davis, and it is constantly up-dated and has many functions that it never had before. In short, I think we have greater visibility and, to borrow a phrase from marketing, better market penetration than we ever enjoyed in the past.

Finally, let me point out that we have not promoted change simply for the sake of change. You must recall that in 2000 James King and Owen Davis spear-headed the effort to have Ronald Kapp's book *Pollen and Spores* updated and published anew. It is, however, largely the same book that Kapp introduced to the world in 1969. Similarly, we offered at the Bonn meeting the second edition of Clair Brown's book, *Palynological Techniques*, the first edition of which appeared in 1960. Jim Riding and Sophie Warny were the muscle behind that effort, and they, like Owen, honored the original volume by keeping it largely intact. So, while we constantly strive to adapt to current needs, we also have learned to hold on to that which has served us so well in the past.

In concluding, then, I'd like to thank you all once again for permitting me to take this position, and I want to extend my gratitude to the Membership and the Board of Directors for showing what has seemed to me to be the greatest good judgment these last nine years. I think we're on the right track, and I look forward to seeing all of you next year in Tennessee. East Tennessee State University and Johnson City lie at the very foot of the folded Appalachians. Just as we were treated to German landscapes and culture in Bonn, you will find yourselves immersed in one of the most distinctively American landscapes there is. Whether you stop to admire a Tennessee Walking Horse, drink Tennessee whiskey, visit Roan Mountain, or treat yourself to Memphis-style pork barbeque, I am confident that you will enjoy the visit, and I hope to see you there.

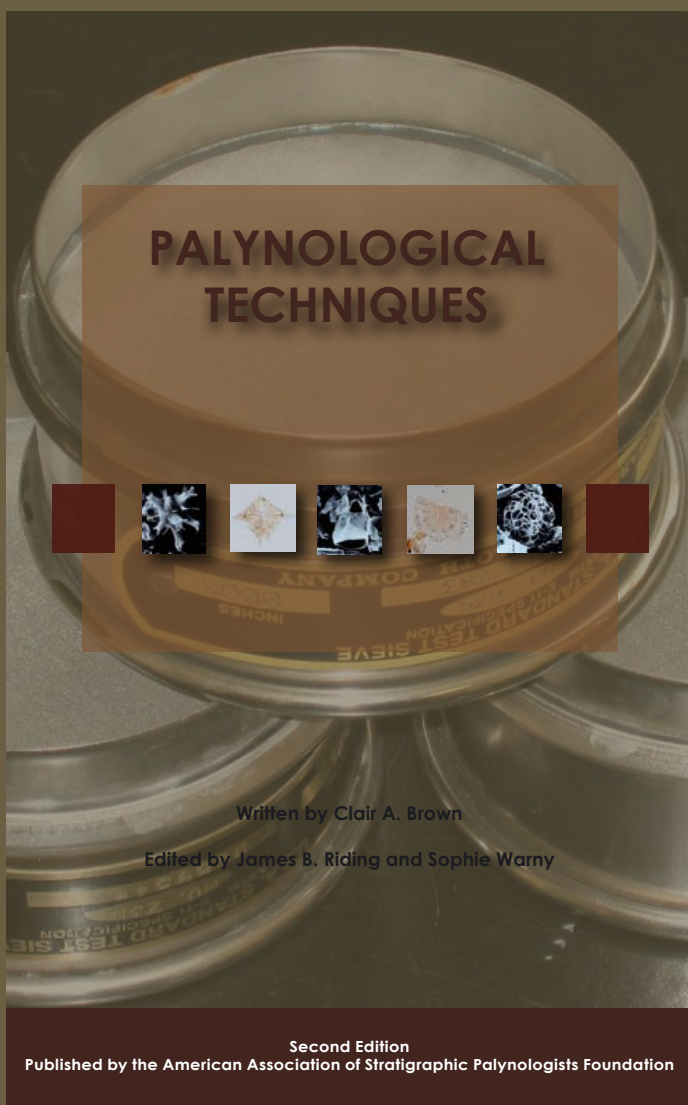
PALYNOLOGICAL TECHNIQUES

SECOND EDITION

Written by Clair A. Brown

Edited by James Riding and Sophie Warny

Published by the American Association of Stratigraphic Palynologists Foundation



I think that the best thing is that the young palynologists clearly continue to value the work done by pioneers like Clair Brown, who first published his 'Palynological Techniques' in 1960 after canvassing workers in labs around the world in order to accurately pass on techniques for getting palynomorphs out of all types of media.

Francine McCarthy

To order:

Palynological Techniques - BROWN

\$15.00

Palynological Techniques, by Clair A. Brown, Department of Botany, Louisiana State University, Baton Rouge, Louisiana, 70803, U.S.A. SECOND EDITION. Edited by JAMES B. RIDING and SOPHIE WARNY." 146 pages 0.5 x 8.5 inches, laminated soft cover ISBN 978-0-931871-07-8 LCCN: 2008932132. 2008. (\$ 15). (weight 0.75 lbs.)

Weblink:

https://payment.palynology.org/index.php?main_page=product_info&cPath=73&products_id=322

Two newly-available databases with Canadian connections: Palynodata and DINOFLAJ2

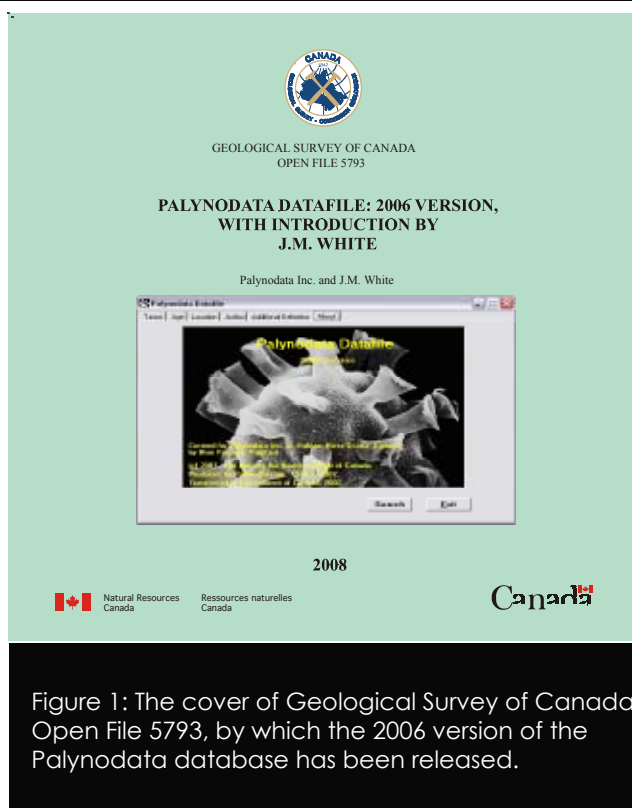


Figure 1: The cover of Geological Survey of Canada Open File 5793, by which the 2006 version of the Palynodata database has been released.

Many palynologists will be delighted to learn that two large and useful databases that have long pedigrees and are familiar to many are now available for free: Palynodata and DINOFLAJ2.

James White of the Geological Survey of Canada (Calgary) reports that the Palynodata database, 2006 version, is now available as Geological Survey of Canada Open File 5793 (Palynodata Inc. and White, 2008; Figure 1). Palynodata holds some 122,000 unique species names and 22,000 records from documents of pre-Quaternary palynological literature, comprising an outstanding database for palynostratigraphic, paleoenvironmental, evolutionary and geological studies.

The database was started in 1966 by Gerhard Kremp, and in 1974 was taken over and subsequently maintained by Palynodata Inc., a consortium of oil and gas companies and scientific institutions. Ken Piel, President of Palynodata Inc., described the history of the database in Lentin et al. (1996). Amalgamation of companies and decline in supporting subscriptions led to the dissolution of Palynodata Inc. in 2007. With foresight, Palynodata's bylaws provided that, on dissolution its assets should be turned over to an institute of higher learning or to a non-profit agency (K. Piel, personal communication). The Geological Survey of Canada (GSC) had been

a member of Palynodata Inc. since 1974. To preserve the Palynodata database, the Earth Sciences Sector (ESS) of Natural Resources Canada (NRCan, a Canadian Federal Government department), the parent organization of the GSC, proposed to Palynodata Inc. that it take-over, house and make public the database. The rights to Palynodata were consequently transferred to the Government of Canada in July, 2007. ESS has agreed to make Palynodata available for at least 20 years, for free or at the cost of distribution. Initially, Palynodata has been released as GSC Open File 5793 (a free download from www.geopub.nrcan.gc.ca/index_e.php). When resources are available, the plan is to make it an online database.

Before the Open File was released, the GSC made some necessary technical modifications required for Palynodata to run on some recent personal computers — a cautionary example of how such a database could become inaccessible due to technological change. Cosmetic changes were made to Palynodata's search windows and three references were completed. Most importantly, the GSC has not undertaken to update Palynodata with information from new literature. Hence, each year the database will become a less comprehensive information source. Input by individual users is one way that Palynodata could be kept current, but verification of data entry would be required to maintain the database's integrity. The maintenance of Palynodata must be discussed within the palynological community in the future. Users need to be aware that Palynodata employs the out-of-date van Eysinga (1978) timescale.

Palynodata has been invaluable as a tool for taxonomic research and the compilation of indexes. It was a foundation, for example, for the acritarch index of Fensome et al. (1990). More recently, White and Jessop (2002) have proposed that Palynodata records be viewed as a sample that can approximate the distributions of fossils in time and space. These distributions can be recognized by binning and graphing Palynodata literature records using Palynoplot software. With user-selected bin-

ning options, Palynoplot creates three plot types by time, and by time and modern latitude of the study sites (Figures 2 and 3) and binned output files can be imported to spreadsheets, GIS systems and rotated plate modelling software. These plots enhance the ability to detect patterns and to refine and focus research effort in biostratigraphy, paleoenvironmental studies and taxonomy. In particular, the ability of Palynoplot to summarize palynomorph distributions in time and space provides new evidence that can be brought to bear on taxonomic questions. Palynodata and Palynoplot provide tools to pose good questions as well as to provide answers. With over 122,000 taxa in Palynodata, there is no lack of avenues to follow. Palynoplot can be purchased for \$400 (Canadian) from Jessop Scientific Software, who holds an exclusive Crown licence (www.scientificsoftware.ca.com).

The second major development from Canada is the digital publication of DINOFLAJ2 as AASP Data Series No. 1. Rob Fensome, Andrew MacRae and Graham Williams report that DINOFLAJ2 is an electronic database and website incorporating information from both the latest

Lentin and Williams Index of fossil dinoflagellates (Fensome and Williams 2004) and the comprehensive dinoflagellate classification of Fensome et al. (1993). In DINOFLAJ2 the two originally separate sets of data are now interconnected, with a few minor updates. DINOFLAJ2 is freely available as AASP Data Series no 1, accessible via the AASP website (<http://www.palynology.org/>). Included on the site is a downloadable PDF file in a similar document format to the Lentin and Williams Index. It is intended that future revisions of the Index will be released as PDF documents via updated versions of DINOFLAJ2. The ancestry of DINOFLAJ2 began with the very first Lentin and Williams Index in 1973 (Figure 4), a document published as a Geological Survey of Canada Paper. This first Index had a grand total of 176 small-format pages and just a few hundred entries. The 2004 Index (the 8th edition) ran to 909 letter-sized pages and contained over 10,000 entries and close to 2,000 references, clearly an unwieldy document. Fortunately, the data captured by the Index is well suited to modern forms of digital communication. A digital format also allows for ongoing updates, and to this end, we would like to have version 2 of DINOFLAJ2 available in late 2009 or in 2010, with subsequent new versions perhaps every year or two. Thus, DINOFLAJ2 will continue the tradition of the original Lentin and Williams Index, though ideally on a more regular basis. (Older versions will of course need to be archived and remain accessible, just as old versions of the Index are still useful in tracing the taxonomic and nomenclatural history of fossil dinoflagellates.) One drawback of the digital format is that taxonomic changes cannot yet be formalized under the International Code of Nomenclature, so such changes will need to be proposed in print elsewhere, perhaps as regular taxonomic notes in Palynology, in parallel with the digital releases.

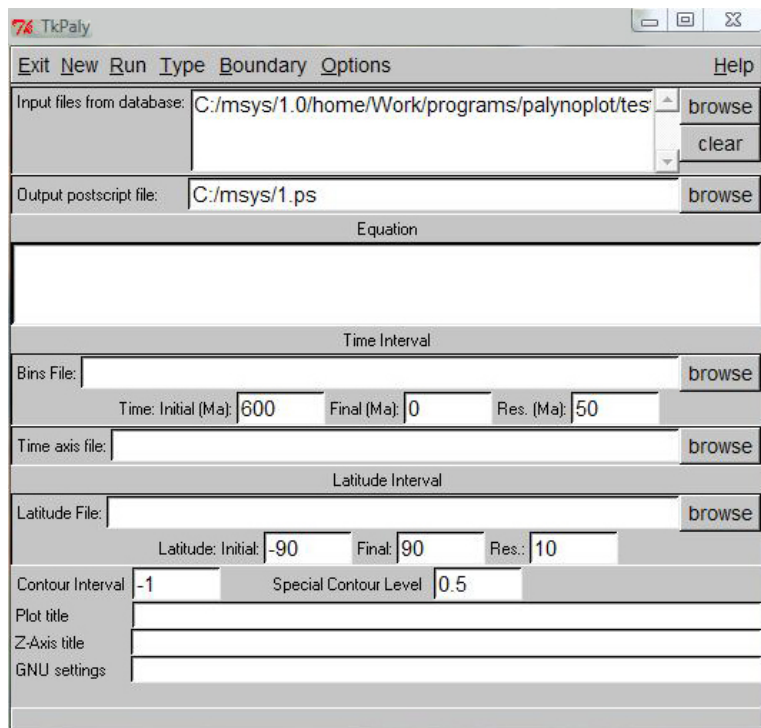


Figure 2: Main window of Palynoplot in which input and output file names, binning options for time and latitude axes, plot types and other options are chosen.

To view the rest of this article, please log on:
http://www.palynology.org/news/PalynoD_Dinofl2_111708.pdf

Palynological and related Publications

compiled by Sarah de la Rue

Note the new address: University of Idaho, Dept. of Geological Sciences
Moscow, ID 83844 (sarah.delarue@vandals.uidaho.edu)

Please send me your "in press" and published citations! Let others know what you've been working on!
My sincere "Thank You" to our members who kindly emailed me their citations.

Merry Christmas!

Book Reviews:

Schoenwetter, J., 2008. Review of "Pollen and Micro-Invertebrates from Modern Earthen Canals and other Fluvial Environments Along the Middle Gila River: Implications for Archaeological Interpretations" by Karen R. Adams, Susan J. Smith and Manuel Palacios-Fest, Anthropological Research Papers 1. Gila River Indian Community, Sacaton, Arizona. *SAS Bulletin: Newsletter of the Society for Archaeological Sciences* 31(3).

Dinoflagellates:

De Schepper, S. and Head, M.J., 2008. Age calibration of dinoflagellate cyst and acritarch events in the Pliocene of the eastern North Atlantic (DSDP Hole 610A). *Stratigraphy* 5 (2): 137-161.

De Schepper, S. & Head, M.J., 2008. New dinoflagellate cyst and acritarch taxa from the Pliocene and Pleistocene of the eastern North Atlantic (DSDP Site 610). *Journal of Systematic Palaeontology* 6 (1): 101-117. [Online 6/7/2007]

De Schepper, S., M.J. Head, and **S. Louwye**, 2008. Pliocene dinoflagellate cyst stratigraphy, palaeoecology and sequence stratigraphy of the Tunnel-Canal Dock, Belgium. *Geological Magazine*, Cambridge University Press, pp. 1-21. [Online <http://journals.cambridge.org/action/displayAbstract?aid=2347572>]

Gallardo Rodríguez, J.J., Asterio Sánchez Mirón, María del Carmen Cerón García, El Hassan Belarbi, Francisco García Camacho, Yusuf Chisti and Emilio Molina Grima, *in press*. Macronutrients requirements of the dinoflagellate *Protoceratium reticulatum*. *Harmful Algae*.

Ghasemi-Nejad, E., **Martin J. Head** and Mehrangiz Naderi, *in press*. Palynology and petroleum potential of the kazhdumi formation (cretaceous: albian–cenomanian) in the south pars field, northern persian gulf. *Marine and Petroleum Geology*.

Helbling, E.W., Anita G.J. Buma, Willem van de Poll, M. Verónica Fernández Zenoff and Virginia E. Villafañe, 2008. UVR-induced photosynthetic inhibition dominates over DNA damage in marine dinoflagellates exposed to fluctuating solar radiation regimes. *Journal of Experimental Marine Biology and Ecology* 365 (2): 96-102.

Kodrans-Nsiah, M., Gert J. de Lange and Karin A.F. Zonneveld, 2008. A natural exposure experiment on short-term species-selective aerobic degradation of dinoflagellate cysts. *Review of Palaeobotany and Palynology* 152 (1-2): 32-39.

Persson, A., Smith, B.C., Wikfors, G.H., and Alix, J.H., 2008. Dinoflagellate gamete formation and environmental cues: Observations, theory, and synthesis. *Harmful Algae* 7 (6): 798-801.

Richerol, T., André Rochon, Steve Blasco, Dave B. Scott, Trecia M. Schell and Robbie J. Bennett, 2008. Distribution of dinoflagellate cysts in surface sediments of the Mackenzie Shelf and Amundsen Gulf, Beaufort Sea (Canada). *Journal of Marine Systems* 74 (3-4): 825-839.

Spilling, K., and M. Lindstrom, 2008. Phytoplankton life cycle transformations lead to species-specific effects on sediment processes in the Baltic Sea. *Continental Shelf Research* 28 (17): 2488-2495.

Strom, S.L., and K.A. Fredrickson, 2008. Intense stratification leads to phytoplankton nutrient limitation and reduced microzooplankton grazing in the southeastern Bering Sea. *Deep Sea Research Part II: Tropical Studies in Oceanography* 55 (16-17): 1761-1774.

- Vilanova, I., G. Raquel Guerstein, Rut Akselman and Aldo. R. Prieto, 2008. Mid- to Late Holocene organic-walled dinoflagellate cysts from the northern Argentine shelf. *Review of Palaeobotany and Palynology* 152 (1-2): 11-20.
- Wang, G., T.-G., Wang, B.R.T. Simoneit, Z. Chen, L. Zhang, and J. Xu, 2008. The distribution of molecular fossils derived from dinoflagellates in Paleogene lacustrine sediments (Bohai Bay Basin, China). *Organic Geochemistry* 39 (11): 1512-1521.
- Zhu, H., R. Wicander, and J.E.A. Marshall, 2008. Biostratigraphic and paleogeographic significance of a palynological assemblage from the Middle Devonian Ulusubasite Formation, eastern Junggar Basin, Xinjiang, China. *Review of Palaeobotany and Palynology* 152 (3-4): 141-157.

Geochemistry:

- Eglinton, T.I., and G. Eglinton, 2008. Molecular proxies for paleoclimatology. *Earth and Planetary Science Letters* 275 (1-2): 1-16.
- Meyers, P.A., J.-G. Yum, and S.W. Wise, *in press*. Origins and maturity of organic matter in mid-Cretaceous black shales from ODP Site 1138 on the Kerguelen Plateau. *Marine and Petroleum Geology*.
- Sri Widodo, S., Wilhelm Püttmann, Achim Bechtel and Komang Anggayana, *in press*. Reconstruction of floral changes during deposition of the Miocene Embalut coal from Kutai Basin, Mahakam Delta, East Kalimantan, Indonesia by use of aromatic hydrocarbon composition and stable carbon isotope ratios of organic matter. *Organic Geochemistry*.

Miscellaneous Member Publications:

- Belkin, H.E., S.J. Tewalt, J.C. Hower, J.D. Stucker, and J.K. O'keefe, *in press*. Geochemistry and petrology of selected coal samples from Sumatra, Kalimantan, Sulawesi, and Papua, Indonesia. *International Journal of Coal Geology*.
- Mardon, S.M., James C. Hower, Jennifer M.K. O'Keefe, Maria N. Marks and Daniel H. Hedges, 2008. Coal combustion by-product quality at two stoker boilers: Coal source vs. fly ash collection system design. *International Journal of Coal Geology* 75 (4): 248-254.

Miscellaneous Topics: Climate, OMZs, and Glacial Refugia

- Hay, W.W., 2008. Evolving ideas about the Cretaceous climate and ocean circulation. *Cretaceous Research* 29 (5-6): 725-753.
- Paulmier, A., and D. Ruiz-Pino, *in press*. Oxygen minimum zones (OMZs) in the modern ocean. *Progress in Oceanography*.
- Peyser, C.E., and Christopher J. Poulsen, 2008. Controls on Permo-Carboniferous precipitation over tropical Pangaea: A GCM sensitivity study. *Palaeogeography, Palaeoclimatology, Palaeoecology* 268 (3-4): 181-192.
- Provan, J., and K.D. Bennett, 2008. Phylogeographic insights into cryptic glacial refugia. *Trends in Ecology and Evolution* 23 (10): 564-571.
- Tabor, N.J., and C.J. Poulsen, 2008. Palaeoclimate across the Late Pennsylvanian–Early Permian tropical palaeolatitudes: A review of climate indicators, their distribution, and relation to palaeophysiographic climate factors. *Palaeogeography, Palaeoclimatology, Palaeoecology* 268 (3-4): 293-310.

Paleobotany:

- Booi, M., I.M. van Waveren, J.H.A. van Konijnenburg-van Cittert, and P.L. de Boer, 2008. New material of *Macraethopteris* from the Early Permian Jambi flora (Middle Sumatra, Indonesia) and its palaeoecological implications. *Review of Palaeobotany and Palynology* 152 (3-4): 101-112.
- Cleal, C.J., 2008. Palaeofloristics of Middle Pennsylvanian medullosaleans in Variscan Euramerica. *Palaeogeography, Palaeoclimatology, Palaeoecology* 268 (3-4): 164-180.
- Galtier, J., 2008. A new look at the permineralized flora of Grand-Croix (Late Pennsylvanian, Saint-Etienne basin, France). *Review of Palaeobotany and Palynology* 152 (3-4): 129-140.
- Tschan, G.F., Thomas Denk and Maria von Balthazar, 2008. *Credneria* and *Platanus* (Platanaceae) from the Late Cretaceous (Santonian) of Quedlinburg, Germany. *Review of Palaeobotany and Palynology* 152 (3-4): 211-236.

Yang, X.-J., 2008. A male cone of *Pseudofrenelopsis dalatzensis* with *in situ* pollen grains from the Lower Cretaceous of Northeast China. *Geobios* 41 (5): 689-698.

Paleovegetation:

- Bercovici, A., J. Wood, and D. Pearson, 2008. Detailed palaeontologic and taphonomic techniques to reconstruct an earliest Paleocene fossil flora: An example from southwestern North Dakota, USA. *Review of Palaeobotany and Palynology* 151 (3-4): 136-146.
- Danielsen, R., 2008. Palaeoecological development of the Quiaios–Mira dunes, northern-central littoral Portugal. *Review of Palaeobotany and Palynology* 152 (1-2): 74-99.
- DiMichele, W.A., Hans Kerp, Neil J. Tabor and Cynthia V. Looy, 2008. The so-called “Paleophytic–Mesophytic” transition in equatorial Pangea — Multiple biomes and vegetational tracking of climate change through geological time. *Palaeogeography, Palaeoclimatology, Palaeoecology* 268 (3-4): 152-163.
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Pollen Corona Over Trier, Germany

Referred by: Eva Seidenfaden
(www.paraselene.de?uk:118688)

This spectacular pollen corona was observed above Trier, Germany on May 12, 2008. It occurred after a long period of warm, dry weather when there was considerable pollen in the lower troposphere. It's thought that the pollen grains are from pine and fir trees.

As with the case for water droplets or very small ice particles, airborne pollen grains can also produce diffraction coronae. A clue to the fact that this corona was formed from pollen is its peculiar oblong shape -- irregularly shaped pollen will produce non-circular corona. Pollen corona are more apt to be seen if pollen counts exceed 2,000-4,000 particles per cubic meter.



AASP CHAIR IN PALEOPALYNOLOGY DETAILS AT WWW.GEOL.LSU.EDU



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The Department of Geology & Geophysics at LSU announces a multiple year search to fill four endowed chair positions. For each position we seek an outstanding individual with an internationally recognized scientific reputation who will develop a strong, externally-funded research program. We invite inquiries, nominations, and applications for:

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JOHN FRANKS ENDOWED CHAIR IN THE DEPARTMENT OF GEOLOGY AND GEOPHYSICS: We seek an individual with research interests in the broadly defined field of Earth materials and solid Earth processes. Potential areas of research include, but are not limited to, mineralogy, petrology, geochemistry, geophysics, and tectonics. Two interdisciplinary research clusters at LSU, in materials science and high performance computing, offer immediate opportunities to establish links with other high-level programs on campus.

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Required Qualifications: Ph.D. in geological sciences or other relevant disciplines; a strong record of published research; demonstrated ability to attract funding. **Responsibilities:** supervises graduate student research; publishes in highly ranked journals; teaches undergraduate and graduate courses in his or her area of specialization. Chair appointments would normally be made at the rank of Full Professor. However, exceptional candidates at the Associate Professor level will be considered.

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An offer of employment is contingent on a satisfactory pre-employment background check. Application deadline is **January 2, 2009** or until candidates are selected. Nominations or inquiries should be directed to Endowed Chair Search Committee, at **225-578-3353** or geology@lsu.edu. Applicants should send a copy of their curriculum vitae (including e-mail address), a statement of their research and teaching interests, and the names, addresses, phone numbers, and e-mail addresses of at least three references to: **Endowed Chair Search Committee, Department of Geology and Geophysics, Louisiana State University, Ref: Log #2013, Baton Rouge, LA 70803.**

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MANAGING EDITOR'S REPORT

Volume 32 of *Palynology* is being printed as I write. It is one of our largest ever, and comprises 15 articles plus the proceedings of the 40th Annual Meeting in Panama City held during the fall of 2007. The contents are reproduced below. The latter includes the abstracts of talks presented at this meeting, and the group photograph. My sincere thanks go to our Production Editor, Bob Clarke, for his superb production of this volume. I would also like to thank all the many reviewers I have used during 2008, and Assistant Editor Fabienne Marret. This volume will be mailed during December 2008.

The 2009 issue of *Palynology* (i.e. volume 33), is already in an extremely healthy state at the time of writing. Specifically, I have four manuscripts for final editing, three back with the authors for revision, and five with referees.

The second edition of the book *Palynological Techniques*, originally privately published in 1960 by Clair A. Brown, was published during August 2008. This edition was edited by Sophie Warny and myself, and is available at the bargain price of US\$15 plus postage and packing via the website.

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The contents of *PALYNOLOGY* volume 32 (2008):

1 *A detailed protocol for the preparation and orientation of single fossil dinoflagellate cysts for transmission electron microscopy*

Gabrielle M. Kennaway, Geoffrey L. Eaton, and Susanne Feist-Burkhardt

2 *New species of angiosperm pollen from the Dakota Formation (Cenomanian, Upper Cretaceous) of Minnesota, U.S.A.*

Shusheng Hu, David M. Jarzen, and David L. Dilcher

3 *Palynostratigraphy of the Hannibal Shale (Mississippian) of northeastern Missouri (U.S.A.), and correlation with western Europe*

Sarah Heal and Geoff Clayton

- 4 *Santonian to ?earliest Campanian (Late Cretaceous) fungi from the Milk River Formation, southern Alberta, Canada*
Ramakant M. Kalgutkar and Dennis R. Braman
- 5 *Late Jurassic and Cretaceous palynostratigraphy of the onshore Rovuma Basin, northern Mozambique*
Morten Smelror, Roger M. Key, Richard A. Smith, and Fernando Njange
- 6 *Pollen from the exoskeletons of stable flies, Stomoxys calcitrans (Linnaeus), in Gainesville, Florida, U.S.A.*
David M. Jarzen and Jerome A. Hogsette
- 7 *A history and overview of the American Association of Stratigraphic Palynologists (AASP)*
Thomas D. Demchuk and James B. Riding
- 8 *Upper Cretaceous to Neogene palynology of the Melut Basin, southeast Sudan*
Ali Eisawi and Eckart Schrank
- 9 *New dinoflagellate cysts from the Miocene of the Porcupine Basin, offshore southwest Ireland*
Stephen Louwye, Kenneth Neil Mertens, and Dries Vercauteren
- 10 *Spore morphology and ultrastructure in species of Salvinia from southern South America*
Paula Gardenal, Marta A. Morbelli, and Gabriela E. Giudice
- 11 *Spores and pollen from the Middle and Upper Gharif members (Permian) of Oman*
Michael H. Stephenson
- 12 *The Red Hills Mine palynoflora: A diverse swamp assemblage from the Late Paleocene of Mississippi, U.S.A.*
Phillip E. Jardine and Guy J. Harrington
- 13 *A new Cambrian acritarch from the Nolichucky Shale, eastern Tennessee, U.S.A.*
Paul K. Strother
- 14 *A high resolution palynozonation for the Al Khlata Formation (Pennsylvanian to Lower Permian), south Oman*
Randall A. Penney, Michael H. Stephenson, and Issam Al Barram
- 15 *Correlation of the Late Eocene-Early Oligocene Izúcar de Matamoros evaporites (Cuayuca Formation) in Mexico, based on parsimony analysis of endemism*
Elia Ramírez-Arriaga, Enrique Martínez-Hernández, Hilda Flores Olvera, Helga Ochotorena, and Mercedes B. Prámparo

Building the Case for Paleontology

Martin B. Farley

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Roy Plotnick and Carrie Schweitzer have recently discussed paleontology in these pages, primarily from an academic, invertebrate paleontology perspective. I would like to contribute some thoughts on paleontology from a different point of view, primarily that of micropaleontology and industry biostratigraphy. My thoughts include the problem of paleontology without paleontologists, poor communication within the discipline, importance of new ways to apply paleontology to “outside” problems, and suggestions on the way forward.

“without biostratigraphers, the effective application of biostratigraphy is not possible.”

Farley and Armentrout (2002)

Current Situation

In the petroleum industry, biostratigraphy refers to any use of paleontology. This came about to emphasize problem-solving rather than the fossils themselves. From 1985-2000, the number of U.S. paleontologists employed by oil companies fell from more than 300 to 30 (Farley and Armentrout, 2000). Since then, the number has more or less stabilized, but this is only relatively good news, because the population is still very low. This change represents not only loss of employment opportunities, but a reduction in direct and indirect support for academic micropaleontology.

Parallel effects have occurred in academic micropaleontology. The vast majority of U.S. pre-Quaternary palynologists received their graduate training at a handful of universities. As the palynologists at these schools retired, most were not replaced at any doctoral-level institution. Consequently, training of new palynologists with expertise in most of the geologic column has nearly stopped. This is not a problem of a narrow specialty: we routinely see fossils of three kingdoms in single samples and all five kingdoms can be found as palynomorphs. This has negative implications for academia, industry and other paleontological disciplines that might need our results.

A different mechanism has had similar effects elsewhere in micropaleontology. Because of limitations in paleontological research funding, there has been a shift of calcareous microfossil specialists to what I call the “plop, plop, fizz, fizz” school of paleontology (i.e., stable isotope analysis) because of greater funding opportunities available in NSF’s oceanography program. Some foram micropaleontologists have expressed concern to me that the resulting emphasis on destroying forams in order to study them has led to diminished expertise in taxonomy, another example of the issues described by Schweitzer (2008).

At the most recent BSA meeting I attended, I was disconcerted to hear a prominent molecular systematist proclaim that morphology is now obsolete as a systematic or phylogenetic tool. Paleobotanists were fighting this narrow perspective that could put NSF systematics funding at risk for paleontology, but this threat to paleontology’s basic data doesn’t seem to have received much notice in the broader paleontologic community.

As pointed out by Plotnick (2007), lack of discipline unity is a key weakness of paleontology. Earlier in this decade, I noted that many industry paleontologists were unaware of academic developments in multivariate statistical analysis or even paleontological input into molecular clocks (Farley, 2002). Meanwhile,

non-micropaleontologists in academia have been unaware of approaches to biostratigraphy (in the narrow sense) in the Ocean Drilling Program or the petroleum industry. As an example of the latter, BP paleontologists at the Marine Micropaleontology Research Group meeting last spring at AAPG/SEPM summarized their Neogene zonation that includes about 250 biostratigraphic events (thus, average resolution of 93 ky) with local Miocene resolution down to 27 ky. Reasons for this accomplishment include the enormous database (thousands of wells for just the Gulf of Mexico) and the resolution even ditch cuttings provide because of the high sedimentation rates in petroleum-prospective basins. Industry paleontologists now recognize that oil companies need to be better at making these results public so the entire community can benefit, and many examples have already been published (e.g., Jones and Simmons, 1999).

Late in my industry career, I met a geological new hire who expressed surprise that Exxon had any paleontologists because it was obvious to him that invertebrate fossils would be ground up by the drill bit. So while he had learned about invertebrate paleontology somewhere in his undergraduate or graduate experience, he had never been clued in that there were such a thing as microfossils. This mirrored my teaching experience in Exxon's sequence stratigraphy course that new hires of the late 1990's had never heard of the Ocean Drilling Program generally, let alone its wealth of (micro)paleontologic data. Paleontological instruction needs to include information on the complete spectrum of the field.

Building a Case For Paleontology

The lack of internal cohesion in the field means that we have not effectively promoted the value of paleontologic approaches applied to problems outside "traditional paleontology." In the broadest perspective, the U.S. government funds science because it has benefits to society. Although we love fossils for themselves and for the paleobiological problems we can solve with them, I believe solving new non-traditional problems can make the most compelling case to external funders that paleontology is worth merits much greater support.

Some of these approaches are not far removed from traditional paleontology. One example is the success in using micropaleontology to understand the history of the "dead zone" in the Gulf of Mexico. As a geologist, I commonly wonder if some current environmental discovery is really a new phenomenon or if we have now merely noticed something that has been there all along. Reports such as Sen Gupta, et al. (1996) and Osterman, et al. (2005) demonstrate that the dead zone has become more prominent over the period marked by increased anthropogenic input to the Gulf of Mexico. Environmental micropaleontology (see Martin, 2000, for other examples) represents applying deep time techniques to very shallow time, which is highly relevant to society.

Other examples are truly different from traditional paleontology. One is the use of palynology techniques to understand the life cycle of agricultural pests, such as the corn earworm or boll weevil, in order to improve pest management (see, for example, Jones and Coppedge, 2000 or Jones, et al., 2007). Traditional agricultural approaches concentrated on the pest's activity on the crop and ignored the life of the moth that the larval pest ultimately became. When the USDA decided the moth's life was worth understanding too, palynology was applied to help determine what the moth eats and how it migrates. To determine how large an area the moth covers, *Lycopodium* (club moss) spores, stained as for microscopy, were used in moth feeders as markers. Early successes led the USDA to hire a palynologist to pursue this. The work had feedback for systematic palynology because a synoptic atlas of modern pollen of the southeastern U.S. proved necessary. This atlas was published and became a resource for the broader community.

The Way Forward

Whether we solve traditional questions or contribute to new outside areas, we need to communicate our successes. We cannot expect that the broader scientific community will pay attention and learn from us just because they ought to. A most effective way to bring our contributions to the broader community is by infiltration. In infiltration, individual paleontologists present their work to others in their arena. The others may be other fields of paleontology or scientists in quite different fields. This may mean giving presentations in

unfamiliar sessions at familiar meetings or venturing to completely unfamiliar settings. Besides alerting the outsiders about the value of your approach, this is also an effective mode for gaining ideas from them that will benefit you. Don't underestimate the value of conducting infiltration by convenience by appearing at meetings that are coincidentally occurring in your city.

An outplacement specialist asked me, in assisting with my post-Exxon job search, "Does paleontology have a society?" As we all know, "a society" doesn't begin to cover it. Our societies have reasons for existing, but they have allowed groups of paleontologists to act as if all the others don't exist. Infiltration by individuals within the field can help overcome the fragmentation of disparate societies, while the societies get their act together.

Some improvements have already occurred. The inclusion of many paleontological journals in "Geoscience World" where their papers are instantly available to all subscribers is a major plus. Interaction among micropaleontological societies has increased with a number of coordinated meetings (2002, 2005, 2009) involving NAMS, AASP, Cushman, and TMS. This is interdisciplinary and international and is easier as societies like AASP now have a majority of members from outside North America.

The PS-organized sessions at GSA are now usually arranged by the problem addressed rather than the fossil group used. This is a wholesale form of infiltration. Still, there is little connection at this annual meeting between PS, Cushman, and AASP, which now meets with GSA on a recurring schedule. Thus, there is still work to do at this single meeting to improve connectedness of the field.

Beyond meetings, some fairly obvious links are missing. Many paleontological societies have programs to support student research, but there is no union list to ensure students learn about all the opportunities that might benefit them.

I like to think that PS is the obvious umbrella society, but it has not fulfilled this role yet. Infiltration means that individual paleontologists can act without waiting for the ponderous machinery of our societies to swing into action. We need to avoid the disturbing prospect of a world of valuable paleontological knowledge and techniques without paleontologists to use them. Paleontology can become better integrated so we all know what has been accomplished and benefit from the insights throughout the field. This will improve our external contributions and demonstrate our merit to the broader community.

Acknowledgments

A large number of paleontologists have contributed to my thinking about these subjects over time including John Van Couvering, the late Garry Jones, Ron Waszczak, Bob Fleisher, Tom Dignes, and John Armentrout. Pete McLaughlin and Ron Martin provided helpful comments on the manuscript. None of them are responsible for how their ideas have turned out.

Note

Glossary of society abbreviations: BSA=Botanical Society of America, which includes the Paleobotanical Section; PS=Paleontological Society; AASP, the Palynological Society; Cushman Foundation, NAMS=North American Micropaleontology Section of SEPM; TMS=The Micropaleontological Society.

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42nd Annual Meeting of the AASP-The Palynological Society Meadowview Convention Center, Kingsport TN

The 42nd Annual Meeting of the AASP-The Palynological Society is being held in the Appalachian Mountains of east Tennessee, bordering Virginia, and North Carolina. Start making plans to attend now! Plans for a pre-conference workshop and post conference field trips are being made. In addition, thematic sessions on forensic palynology and in honor of Ronald Kapp are underway. Three general lectures are planned, featuring David Pocknall: Palynology and Petroleum: Supplying Americas Energy Needs, Vaughn Bryant: Pollen, Much More than a Sneeze, and Owen Davis: Climate Change in Arid Regions, and will be open to the public.

I also want to remind every member and non-member, whether attending the meeting or not, that you are welcome to submit your best artistic photographs that depict any aspect of palynology (including industry, organic petrology, ultra-structure, etc.) for a display that will be presented at the Natural History Museum and Gray Fossil Site. The exhibit opens on the night of the ice breaker September 27, 2009 and will run about 2 months. We will also take suggestions for the name of the exhibit. Send an electronic version of the photograph(s) or a high quality photograph on paper to Michael S. Zavada, Department of Biological Sciences, Box 70703, Johnson City, TN 37614 or electronically to zavadam@etsu.edu. The museum will mount and label the photographs, and will be returned at the end of the public display. Immediately following the meeting is the International Storytelling Festival in nearby Jonesborough, TN. This festival annually attracts tens of thousands for down-home fun, and includes crafts, music, and showcases the rich folklore and oral traditions of the Appalachian and international peoples.

The 42nd Annual Meeting will be held at Meadowview Resort (<http://www.bookmarriott.com/329/index.html>) at the foot of Bay's Mountain, in the Tri Cities (Bristol-Kingsport-Johnson City), which offers a stunning setting with swimming, golf (18 holes only \$45 with cart) and local tourist attractions (including Barter Theatre, and all that Ashville, N.C., Pigeon Forge and Gatlinburg have to offer less than 90 minutes away). It is especially fun for children. The airport is located just a few miles from the resort (<http://www.triflight.com/>). In addition, the cost of the meeting is all inclusive. This means the prices include the entire meeting package, i.e., meeting registration, resort hotel accommodations, food (outstanding Breakfast, Lunch & Dinner buffets), Icebreaker with music by The Bearded (<http://www.thebearded.org/mnuHome.htm>), Tuesday Evening Banquet with music by the ETSU Music Department Jazz Ensemble, transportation to and from events, the Wednesday business luncheon, and workshop (if applicable). Field trip or attendance at the International Story Telling Festival is separate. The costs are very reasonable for students and for international attendees.

Meeting Schedule

Friday	September 25	Check-in if attending workshop
Saturday	September 26	Workshop "Understanding Pollen and its Application to Forensic Palynology"
Sunday	September 27	Check-in & Meeting Registration, Icebreaker at Museum of Natural History and Gray Fossil Site
Monday	September 28	Sessions, Public Lecture
Tuesday	September 29	Sessions, Public Lecture, Evening Banquet
Wednesday	September 30	Sessions, Business Luncheon, Public Lecture
Thursday	October 1	Field trip
Friday	October 2	Field trip, Storytelling Festival
Saturday	October 3	Field trips return to Meadowview, International Storytelling Festival
Sunday	October 4	Check-out, Last day of Storytelling Festival

Registration

In January a website will go active for registration and submission of your abstract. A Non-Refundable deposit of \$250 is required at Registration although you can submit the entire amount at the time of registration. Abstracts are due by August 10, 2009. The prices below are all inclusive.

All prices are "per person" rates

Meeting Only

Option 1 – Sunday Check-in to Wednesday Check-out

Single	Double	Triple	Quad
\$875	\$775	\$650	\$625

Option 2 – Saturday Check-in to Wednesday Check-out

Single	Double	Triple	Quad
\$1000	\$825	\$775	\$725

Option 3 - Sunday Check-in to Thursday Check-out

Single	Double	Triple	Quad
\$1000	\$825	\$775	\$725

Option 4 – Saturday Check-in to Thursday Check-out

Single	Double	Triple	Quad
\$1125	\$950	\$900	\$850

Workshop + Meeting

Includes cost of the workshop (Transportation will be provided to and from Meadowview and ETSU)

Option 1 – Friday Check-in to Wednesday Check-out

Single	Double	Triple	Quad
\$1150	\$1025	\$925	\$875

Option 2 – Friday Check-in to Thursday Check-out

Single	Double	Triple	Quad
\$1275	\$1100	\$1050	\$1000

Meeting + Field Trip

Add the approximate cost of the field trip or event to Options 3 or 4 for "Meeting Only"

Appalachian Habitats: Flora, Bears, and Birds, Organizer: Fred Alsop (add approximately \$450). Includes food, transportation, accommodation, guides, and materials. Minimum 10 participants

Tennessee Ball Clays, Collecting the Clairborne, Organizers: Liu and Zavada (add approximately \$450). Includes transportation, accommodation, light breakfast, a visit to the Courthouse and Museum in Dayton, TN, the site of the Scopes Monkey Trial (<http://www.law.umkc.edu/faculty/projects/FTrials/scopes/scopes.htm> or <http://www.bryan.edu/1990.html>), and fossil collecting near Paris, TN. Does Not include lunch and dinner Thursday-Saturday. Minimum 10 participants

International Storytelling Festival, Jonesborough, TN (\$120 each additional night at Meadowview (all inclusive) + the cost of the ISF Tickets see <http://www.storytellingcenter.net/festival/about-fest.htm>). Meeting participants can continue their stay at Meadowview for this international event that begins on Friday October 2 and ends Sunday October 4 in the oldest town in Tennessee, Jonesborough. Attend one, two, or all three days of the festival.

Workshop + Meeting + Field Trip

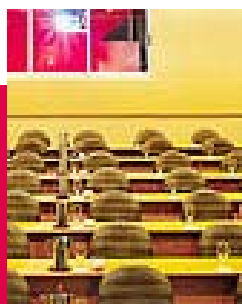
For the best value, add the approximate cost of your chosen field trip to the following choices if you want to participate in the Workshop and attend the entire meeting. Those attending the ISF should add \$120 for each additional night at Meadowview and the cost of the ISF tickets. NOTE: During the International Story Telling Festival local Motels double their prices and most are booked well in advance.

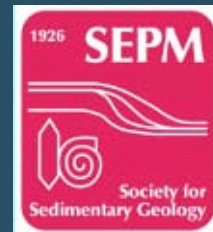
Friday Check-in to Thursday Check-Out

Single	Double	Triple	Quad
\$1275	\$1100	\$1050	\$1000

Looking forward to seeing you at the meeting!

Michael Zavada,
East Tennessee State University,
Department of Biological Sciences, Box 70703, Johnson City, TN 37614 USA
zavadam@etsu.edu





GEOLOGIC PROBLEM SOLVING WITH MICROFOSSILS II MARCH 15-18, 2009 UNIVERSITY OF HOUSTON, HOUSTON, TEXAS, USA

Conference Web Site: <http://sepm.org/activities/researchconferences/microll/microllhome.htm>

The North American Micropaleontology Section (NAMS) of SEPM invites you to attend the 2nd international conference on Geologic Problem Solving with Microfossils.

"Microfossils II" builds on the success of the March 2005, Microfossils I and will again bring together a diverse range of geoscientists to showcase the problem-solving power of microfossils across a broad variety of geologic settings, and will stimulate the "cross-fertilization" of ideas that result when a diverse group of scientists gather in a common venue.



2010 AASP-CAP-CPC joint meeting, Halifax Nova Scotia September 29-October 1st, 2010

Please mark you calendars and plan to attend the joint AASP-CAP-CPC meeting in Halifax, Nova Scotia, September 29-October 1st. The meeting will be held at the Harbourview Holiday Inn, just minutes from the ferry terminal and with spectacular views of the Halifax Harbour.

Rob Fensome, Peta Mudie and Graham Williams are the Local Organizing Committee.

We are planning exciting field trips, including one to Joggins World Heritage site where you can see some of the most spectacular fossil tree trunks and the world's earliest reptiles. Other field trips will possibly include locations such as the Paleoindian site in Debert, the Cobequid-Chedabucto fault, the North Mountain Basalt, Arisaig, and the unique Windsor gypsum cliffs at St Croix. Impressive drumlin fields and glacial deposits are found throughout Nova Scotia, especially around Old Town Lunenburg, a UNESCO World Heritage Site. And let's not forget that the Bay of Fundy has the largest tides in the world!



INVITATION

MEETING

Devonian to Carboniferous Palynology: Contributions to Palaeogeography, Palaeoceanography, and Geotectonics of the Euramerica – Gondwana Collision

Venue: University of the Algarve, Faro, Portugal

Date: 20 to 24 September 2009

The Spore / Pollen and Acritarch Subcommissions of the CIMP warmly invite you to attend the CIMP Faro 09 meeting on Devonian to Carboniferous Palynology: Contributions to Palaeogeography, Palaeoceanography, and Geotectonics of the Euramerica – Gondwana Collision.

This reunion builds on the general CIMP meeting held in 2007 in Lisbon and will bring together palynologists and other geoscientists with the aim of stimulating discussion regarding the utility of palynomorphs in the reconstruction of the Euramerica – Gondwana collision. We are seeking presentations in which palynomorphs contribute significantly to palaeogeographic, palaeoceanographic, and geotectonic models. Studies that integrate palynology with stratigraphy, sedimentology or other disciplines, are also welcome.

A two-day technical session will be followed by a two-day fieldtrip to the key outcrops of the Upper Devonian to Carboniferous Southwest Sector of the South Portuguese Zone. Due to difficulties relating to safe access of the outcrops, the fieldtrip will be limited to the first 25 participants. However, the technical sessions will not have any restrictions as to the number of participants.

We will very soon be including on the CIMP web page a link with all the information regarding this meeting.

Hope to see you all in Faro.

The organising committee,

Paulo Fernandes, Zélia Pereira, Tomás Oliveira, Geoff Clayton, and Reed Wicander