AASP-
THE
PALYNOLOGICAL
SOCIETY

Galeacysta etrusca
by Shannon Ferguson

NEWSLETTER

September 2011
Volume 44, Number 3

Published Quarterly by AASP — The Palynological Society

A.A.S.P. NEWSLETTER

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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 (biannually), 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)
Professor Svein B. Manum (awarded 2002)
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 Aureal T. Cross (elected 1991)
Dr. Robert T. Clarke (awarded 2002)
Professor Vaughn Bryant (awarded 2005)
Professor Alfred Traverse (awarded 2005)

AASP Board of Directors Award recipient
Dr. Robert T. Clarke (awarded 1994)

Teaching medal recipients
Professor Aureal T. Cross (awarded 1999)
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)
Professor Owen K. Davis (awarded 2005)
Dr. Thomas Demchuk (awarded 2009)

A.A.S.P.
NEWSLETTER

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Volume 44, Number 3
Sophie Warny, Editor

Thank you to our new newsletter correspondents.

We are still looking for folks to cover some parts of the world such as South America, Australia, Eastern Europe, and Africa.

AASP NEWSLETTER CORRESPONDENTS

Niels E. Poulsen and Pi Willumsen	Nordic Countries
James B. Riding	United Kingdom
David M. Jarzen	United States
Mirta Quattrocchio	South America
Naresh Mehrotra	India
Petra Mudie and Elena Marinova	Black Sea region
Philippe Steemans	French-speaking Belgium
Stephen Louwye	Flemish-speaking Belgium

Note: Thank you to Mirta Quattrocchio for her long time services as correspondent. We will miss you!
We are looking for a new correspondent to take over the coverage of South America. Please email to swarny@lsu.edu if you are interested. Thank you.

AASP BOOK REVIEW EDITOR
Reed Wicander, reed.wicander@cmich.edu

AASP WEBMASTER
Owen Davis, webmaster@palynology.org, website: http://www.palynology.org

AASP NEWSLETTER EDITOR
Sophie Warny, swarny@lsu.edu, Department of Geology and Geophysics & Museum of Natural Science, Louisiana State University, E235 Howe Russell Geoscience Complex, Baton Rouge, 70803, Louisiana, USA.

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 two weeks before the deadline. Deadline for submission for the next issue of the newsletter is **November 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.**

A message from our President

By Paul Strother

In July I collected a bit of shale wedged between two stromatolitic horizons from The Nastapooka Group in the Richmond Gulf, adjacent to Hudson Bay in Canada. The age of this unit is between 2025 and 1875 Ma, which in round figures makes it about 1900 Ma. I don't usually collect a sample without checking in the field with a hand lens to confirm that there is particulate organic matter present, and this sample is no exception in that regard (The figure shows abundant organic fragments on the rock surface in addition to a larger carbonized fragment.) This sample is pretty close in age to what are probably the first demonstrable eukaryotes in the fossil record, large spherical and fusiform acritarchs from 1800 Ma Changzhougou Formation in north China (Lamb et al. 2009). My initial attempts to extract palynomorphs from the Nastapooka sample were unsuccessful. It turns out that what I thought were particulate bits of organic matter were instead clods of structurally amorphous organic carbon (kerogen) that was disseminated between prismatic mineral grains (possibility illite) forming organo-mineral complexes. Palynological processing, through acid maceration, is a very quick method of determining whether or not a sample contains structurally preserved organic matter. I use the term, "structurally preserved," to mean organic matter that represents the remains, degraded or otherwise, of individual cell walls or tissues derived from cells. But in any case, my nearly 2 billion-year-old sample is not palyniferous, it is lacking evidence of structurally preserved organic matter.

One might assume that the very presence of palynomorphs in a Precambrian sample would constitute *de facto* evidence of eukaryotic affinity. This is because the physical integrity of a cell wall or biological structure that is required to survive burial, lithogenesis and subsequent extraction from a siliciclastic rock are not characteristics normally associated with bacteria. But palynomorphs have been recovered from the 3.2 Ga Moodies Group (Javaux, Marshall & Bekker 2010) and from black chert from the ca. 3.0 Ga Farrel Quartzite in Australia (Grey, Sugitani 2009). In both cases the authors have confirmed the same microstructures found in maceration are also present in petrographic thin section of the same material. And, for a host of reasons I will not review, these samples should predate the origin of the eukaryote cell. Prior to the recovery of these vesicular Archaean palynomorphs, the only prokaryotic microfossils found in palynological preparations that were universally accepted to be prokaryotic were trichomes and/or sheaths of presumed cyanobacteria. These are common in many Proterozoic palynological assemblages (see (Jankauskas, Mikhailova & Hermann 1989) for examples). I suspect examples of non-Oscillatoriacian cyanobacteria will eventually be recognized in palynological preparations and the notion that the eubacteria are incapable of surviving fossilization and acid extraction will fade as a paradigm.

Emmanuelle Javaux (Liège) in a recent review of the early eukaryote record (Javaux 2011), points out that the acritarch assemblage from the Changzhougou Fm, includes *Valeria lophostriata*, a sphaeromorph with a distinctive striated wall structure that is universally accepted to be eukaryotic. It's certainly possible that some macroscopic carbonized compressions known as *Grypania* may be even older eukaryotes at 2.1 Ga, but their cellular nature has yet to be determined and some researchers have suggested that *Grypania* and similar forms may be bundles of bacteria, rather than macroscopic eukaryotic algae. In the case of the organic material from the Nastapooka Group, its non-structural character would seem to favor bacterial over eukaryotic affinity, even though the macroscopic size of the illustrated fragment would not normally be thought of as "bacterial."

Palynology is becoming an essential component in the arsenal of techniques that are now being applied to the study of Precambrian life.

Palynomorphs now constitute what are arguably the best microfossil (= direct morphological) evidence for the earliest true fossils and for the first occurrence of eukaryotic fossils. These are based on recent discoveries and research that is ongoing. Palynology is becoming an essential component in the arsenal of techniques that are now being applied to the study of Precambrian life. But the Precambrian world is more than a simple downward extension of the Phanerozoic and, as a discipline, we would do well to explore the 'pre-Phanerozoic" record with an open mind and not be tied too tightly to actualistic views which try to associate every Precambrian unknown palynomorph with a Phanerozoic homolog. I think it fair to say that the recent descriptions of Archaean palynomorphs have done our discipline justice by not jumping to conclusions about the systematic affinities of these most ancient microfossils. For now, it is sufficient to use palynology to help demonstrate the biological origin to structured organic matter recovered in Archaean sedimentary rocks.

Grey, K. & Sugitani, K. 2009, "Palynology of Archean microfossils (c. 3.0 Ga) from the Mount Grant area, Pilbara Craton, Western Australia: Further evidence of biogenicity", *Precambrian Research,* vol. 173, no. 1-4, pp. 60-69.

Jankauskas, T.V., Mikhailova, N.S. & Hermann, T.N. 1989, *Mikrofossilii Dokembriya SSSR [Precambrian Microfossils of the USSR],* Nauka, Leningrad.

Javaux, E. 2011, "Early eukaryotes in Precambrian oceans" in *Origins and Evolution of Life: An astrobiology perspective*, eds. M. Gargaud, P. Lopez-Garcia & H. Martin, Cambridge University Press, Cambridge, UK, pp. 414-449.

Javaux, E.J., Marshall, C.P. & Bekker, A. 2010, "Organic-walled microfossils in 3.2-billion-year-old shallow-marine siliciclastic deposits", *Nature,* vol. 463, no. 7283, pp. 934-938.

Lamb, D.M., Awramik, S.M., Chapman, D.J. & Zhu, S. 2009, "Evidence for eukaryotic diversification in the ~1800 million-year-old Changzhougou Formation, North China", *Precambrian Research,* vol. 173, no. 1-4, pp. 93-104.

Managing Editor's report

Volume 35, Part 1 of *Palynology* was published in June 2011, and all members should have received this issue by now. It includes six articles on widely differing areas of our science and the citation for the Distinguished Service Award given to Dr. Thomas D. Demchuk (see below). I really like the front cover of this volume, which is a light shade of yellow with a SEM photomicrograph of a superb specimen of the Late Jurassic dinoflagellate cyst *Gochteodinia villosa* kindly supplied by Ian Harding.

At the time of writing, we have six papers which are already typeset for *Palynology* Volume 35, Part 2 which will be published in December 2011. These are significantly over our page budget for this year, so the precise composition and running order for this part has yet to be formulated. However, *A review of the use of non-pollen palynomorphs in palaeoecology with examples from Australia* by Ellyn J. Cook, Bas van Geel, Sander van der Kaars and Jan van Arkel will be included because it just missed the cut for Volume 35, Part 1. Manuscript submission rates continue to be extremely healthy.

I have several more articles currently in production, so I am working with Taylor and Francis (T&F) to set up the inclusion of *Palynology* in 'iFirst', the T&F online publication system. We are presently discussion the streamlining of the production system to allow this to happen. T&F wish to change the citation style of references to a more 'standard' format; this will speed up the copyediting and proofreading process. The format for references that we used in *Palynology* prior to 2010 was significantly different to that used by the major publishers. It makes eminent sense to move to a more standard format, especially for authors. In summary, periods after initials will be removed, there will be no comma between the journal name and the volume number, and the journal titles will appear in Roman font and not italics. We will continue to quote journal titles in full. The online Instructions for Authors will be emended with these changes and I will send out a summary email to all members in the near future. An example of the new reference style is as follows:

Jaramillo, C A, Rueda, M, Torres, V. 2011. A palynological zonation for the Cenozoic of the Llanos and Llanos Foothills of Colombia. Palynology 35, 46-84.

Representatives of T&F will be at this year's Annual Meeting at Southampton and they will be pleased to discuss any aspect of publication with members. In particular they are very happy to receive feedback from the readership. We are fortunate indeed to have such an engaged and responsive publishing partner.

As ever, if you have any questions regarding the online manuscript submission system for *Palynology*, please address them to Daniel Jones at T&F (Daniel.Jones@tandf.co.uk), copying me in. If you need to speak to Daniel, his office telephone number is +44 (0)20 337 73602.

James B. Riding
Managing Editor – AASP – The Palynological Society
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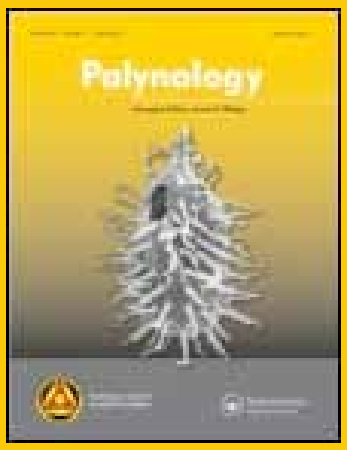
August 2010



Papers published in Palynology Volume 35, Part 1 (June 2011)

Distinguished Service Award – Dr. Thomas D. Demchuk, pp. 1-3.

Delabroye, A., Vecoli, M., Hints, O. and Servais, T. Acritarchs from the Ordovician-Silurian boundary beds of the Valga-10 drill core, southern Estonia (Baltica) and their stratigraphical and palaeobiogeographical implications, pp. 4-45.

Jaramillo, C.A., Rueda, M. and Torres, V. A palynological zonation for the Cenozoic of the Llanos and Llanos Foothills of Colombia, pp. 46-84.

Baum, K.A., Rubink, W.L., Coulson, R.N. and Bryant Jr., V.M. Diurnal patterns of pollen collection by feral honey bee colonies in southern Texas, U.S.A., pp. 85-93.

Vega, A.J. and Dematteis, M. Pollen morphology of some species of *Vernonanthura* (Asteraceae, Vernonieae) from southern South America, pp. 94-102.

Moczydłowska, M. The early Cambrian phytoplankton radiation: acritarch evidence from the Lükati Formation, Estonia, pp. 103-145.

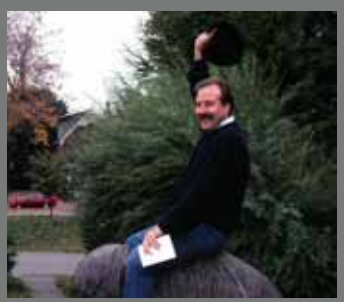
Overballe-Petersen, M.V. and Bradshaw, R.H.W. The selection of small forest hollows for pollen analysis in boreal and temperate forest regions, pp. 146-153.

Congratulations to the 2011-2012 AASP Board.

Thank you to all AASP members for voting!

AASP Secretary-Treasurer: Thomas D. Demchuk

Webmaster: Owen Davis



President Elect: Ian Harding

Palynology Editor: James B. Riding

Newsletter Editor: Sophie Warny

New Directors-at-Large:
(joining second-year DOL Susanne Feist-Burkhardt and Lanny Fisk)
Debra Willard and Rebecca Tedford

Graham Williams awarded the Billings Medal

Graham Williams of the Geological Surveys of Canada's Atlantic Division (GSCA) was presented with the Billings medal at the recent annual Canadian Paleontology Conference in Vancouver. The Billings Medal is awarded in recognition of an outstanding long-term contribution to Canadian paleontology or by a Canadian to paleontology. It is named in honor of Elkanah Billings, Canada's first professional paleontologist.

Graham began his study of dinocysts with Charles Downie at Sheffield in 1959. His 1963 doctoral thesis was one of the first detailed studies of Paleogene fossil dinoflagellates and, in its published form as part of the famous "DDSW" (Davey, Downie, Sarjeant & Williams 1966) monograph, fundamentally influenced later dinocyst studies. After graduation, Graham worked for Pan American Petroleum (later Amoco and now part of BP).

As part of his work for Pan American, Graham was assigned to study the biostratigraphy of offshore eastern Canada. So, when, in 1971 the Geological Survey of Canada opened an office on the east coast, in Dartmouth, Nova Scotia, it was natural that Graham would become its resident Mesozoic-Cenozoic palynostratigrapher. Graham's early work in Dartmouth culminated in a GSC Paper entitled "Palynological zonation and correlation of 67 wells, eastern Canada", of which Graham was the most significant contributor, having examined (each one in total) an amazing 44 of the 67 wells in about eight years. He was also the moving force behind several papers outlining the dinoflagellate zonation of offshore eastern Canada.

During that same decade, in spite of this exhausting pace, Graham started his collaboration with Judi Lentin in producing the "Lentin and Williams" indexes of fossil dinoflagellates. This index is a primary reason why fossil dinoflagellate taxonomy is in an organized state, unlike the taxonomy of many other microfossil groups; and it has set the standard for other indexes and for the Web re-incarnation of the Lentin and Williams Index, known as DINOFLAJ2. During the 1970s, Graham contributed chapters on dinoflagellates and related microfossils to two multi-authored textbooks and was the driving force behind two editions of a glossary on dinoflagellate and acritarch terminology. In 1980, he collaborated with Judi Lentin and Jonathan Bujak respectively in the publication of major monographs on fossil peridinioid dinoflagellates and Paleogene dinocysts of southern England. In the same period, Graham was also involved in three important conceptual papers on dinoflagellate evolution, diversity through time, and paleoprovincialism.

If you're not exhausted already just thinking about Graham's achievements in dinocyst studies, you will be when I tell you that Graham also spent several years (1978–1985) as a manager in GSC, and was co-editor (the one who did most of the work) of a major volume on the continental margin of eastern Canada in the *Decade of North American Geology* (DNAG) series. Indeed, Graham's contributions outside palynology are significant. He was a leading founder of the Atlantic Geoscience Society, he served for many years as a co-editor of the Society's journal, *Atlantic Geology*; and edited the Geological Association of Canada's newsletter, *Geolog* for several years. He has also been extremely active in outreach, with many and diverse achievements, not least as founding co-author and co-editor of the award-winning book *The Last Billion Years: A Geological History of the Maritime Provinces of Canada*, which is officially a Canadian best-seller, with over 8000 copies in print. He is currently co-initiator and co-editor of a similar book on the geology of Canada.

I could add much more, but these few paragraphs give you a sense of Graham's amazing achievements, undoubtedly worthy of the Billings Medal. And he continues to add to his laurels as a full time staff member at GSCA. It has been my great privilege to have worked in the next office to such an inspirational and energetic innovator as Graham … and look forward to continuing to share dinocyst and other adventures with him in the coming years.

Rob Fensome

AASP Honorary Membership Citation- Bernard Owens

Bernard Owens is a native of Darlington in the north east of England. From there he went to the University of Sheffield to undertake a BSc degree in Geology. He then continued for a PhD on Namurian spores from the English Pennines under the supervision of Roger Neves. Following graduation in 1963 Bernard spent a year in Canada with Colin McGregor which produced a major monograph on Mid/Late Devonian spores. On returning to the UK he joined the British Geological Survey where he spent his entire first career, rising to head the biostratigraphy group. Following retirement in 1997 he rejoined Sheffield University as Director of the Centre for Palynology. Bernard's formal publications total over 95 items and represent a sustained contribution to palynology through excellence in research. This includes the first systematic zonation of the Namurian in 1977 followed by its revision in 2004. In the intervening decades this Namurian zonation was extended and tested globally by engaging in projects in the USA, Eastern Europe, Russia and China.

As science internationalised from the 1960's Bernard would always be at the forefront of forging links with colleagues and helping build the international palynological community that we have today. Initially these links were with continental Europe in France and Belgium, a big step at that time. Subsequently Bernard tirelessly promoted palynology by organising symposia at conferences and then ensuring by a mixture of bluster, flattery and coercion that a conference volume was produced. This included major roles in the 1982 AASP conference in Dublin and the North Sea 90 meeting in Nottingham. He has been an editor for something like eight such conference volumes. One is normally enough for most scientists.

In addition, Bernard promoted and organised major international collaborative projects under the aegis of CIMP. Apart from presenting the excellent opportunity for palynologists to work and, most importantly, publish on the best material from commercially important regions, these projects very much brought together European palynologists as a coherent research group in a way that was not possible on their own research collections.

Outside of this publication list there are projects and initiatives that were not published or intended for publication. These include promotion and marketing to industry of major projects on the Jurassic and Carboniferous of the UK and contiguous offshore area. All of these enhanced the status of our discipline with sometimes reluctant commercial operators. Then we have the Bernard Owens single mount collection. Over decades Bernard has assiduously collected the very best palynological material from his own publications and those of others. He then spent his evenings picking single mounts. Many of these were for exchange and are valued in collections around the world. The bulk of these slides now form the Bernard Owens single mount collection at the BGS in Keyworth, England and available through *Taxonomy Online*. It was the collection of such material that led to the Carboniferous of Western Europe international zonation in 1977.

Bernard has always been involved in the supervision of research students despite a career spent in government service. Initially this was with collaborative students and then since 1997 as champion of the Sheffield MSc. He has always had the unusually facility of actively wanting to read taxonomy written by students. Bernard has also contributed tirelessly to the international organisation of Palaeozoic palynology through his long service to CIMP, being successively Treasurer, Secretary General and President, usually for more than one term. In addition he was a prominent early officer of the then British Micropalaeontological Society (now the TMS) being concurrently Treasurer and Secretary (the latter for 5 years) followed by a term as Chair.

John Marshall, University of Southampton
Charles Wellman, University of Sheffield
Maurice Streel, University of Liege

AASP STUDENT AWARDS

Two students have been selected to receive an AASP Student Scholarship for 2011 for their research

Kimberley Ball received an AASP Student Scholarship for her project on Late Cretaceous palynostratigraphy in the Yukon Territory.

Kimberley completed with distinction, a BSc (Honours) in Geology and a BSc in Environmental Science at the University of Calgary this spring. She has worked in the palynology group at the Geological Survey of Canada (GSC), Calgary as a student with Dr. Arthur Sweet for the past three years. During this time she has been involved in research regarding the biostratigraphic utility and phylogenies of the pollen genera *Wodehouseia* and *Pulcheripollenites* as well as the development of the detailed palynostratigraphy of Upper Cretaceous strata in the Bonnet Plume Basin. She is currently working with Dr. Sweet on the final stages of preparation of a co-authored manuscript titled "Late Campanian and Maastrichtian *Pulcheripollenites*: Its Taxonomy, Phylogeny and Biostratigraphic Utility, Western Canada". In 2008 she held a PURE (Program for Undergraduate Research Experience) award and completed a study titled "Palynostratigraphy of core BP-80-15, Bonnet Plume Basin". The results were presented as a poster at the 4th Annual Students' Union Undergraduate Research Symposium at the University of Calgary. She also completed an honours thesis titled "Palynostratigraphy of Campanian Strata, Bonnet Plume Basin, Yukon Territory", and the results were displayed as poster presentations in May 2010 at GeoCanada and in March 2011 at the Alberta Paleontological Society Annual Meeting.

Kimberley will be starting a thesis-based MSc program in geology at the University of Calgary this fall under the supervision of Dr. Len Hills and Dr. Charles Henderson. She will conduct this research at the GSC, Calgary with the goal of developing a biostratigraphic framework for Upper Cretaceous strata in the Eagle Plain Basin, Yukon Territory. By subdividing the strata into diagnostic zones based on floral assemblages, intra- and interbasinal correlations will be made that are independent of facies changes. Sections from central and northern Alberta that have previously established radiometric dates, ammonite zonations and palynostratigraphy will be used as age controls for fossil palynomorph assemblages in the Eagle Plain strata. Additional objectives of this project are to gain insight into the stratigraphy, sedimentation, tectonic history, paleoenvironment, geophytology and pollen phylogenies in this region of Northern Canada.

Andrea Price has been selected to receive an AASP Student Scholarship for 2011 for her project on Late Quaternary dinoflagellate cysts of the Gulf of California.

Andrea M. Price (pricea@uvic.ca) University of Victoria, BC, Canada

I began studying palynology as an undergraduate student at the University of Victoria. For my honours thesis I documented seasonal and inter-annual variability of organic-walled dinoflagellate cyst production in Saanich Inlet (BC, Canada), by analyzing sediment trap samples collected from 2007 to 2010[1].

I am currently a M.Sc. student studying at the University of Victoria, in the School of Earth and Ocean Sciences, under the supervision of Dr. Vera Pospelova. The main objectives of my thesis are (1) to investigate high-resolution climatic changes during the Late Quaternary in the North Pacific and (2) to describe the response of primary production to abrupt changes in environmental conditions. I will document dinoflagellate cyst assemblages, total pollen and spores, microforaminiferal linings and other palynomorphs from a 63 m long sediment core (MD02-2515) collected from Guaymas Basin, Gulf of California (Mexico). A total of 156 sediment samples from the upper 30 m of the core have been processed using a standard palynological processing technique and analyzed using a light-transmitting microscope. Palynological data in conjunction with complementary geochemical proxies will be used to investigate centennial to millennial scale changes in climatic and oceanographic conditions during the last 22,000 years. The initial results show relatively high dinoflagellate cyst species diversity and concentrations.

[1]Price, A.M. and Pospelova, V. 2011. High-resolution sediment trap study of organic-walled dinoflagellate cyst production and biogenic silica flux in Saanich Inlet (BC, Canada). *Marine Micropaleontology* 80 (1), 18-43.

2012 AASP Student Scholarships

An early reminder that the deadline for applications for the AASP Student Scholarship is **March 31, 2012.**

Two AASP Student Scholarships, each worth US$1500, are awarded annually to support studies in palynology. Ordinarily, the scholarships will be offered to beginning graduate students, but advanced undergraduates may also apply. 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 the selection of award winners.

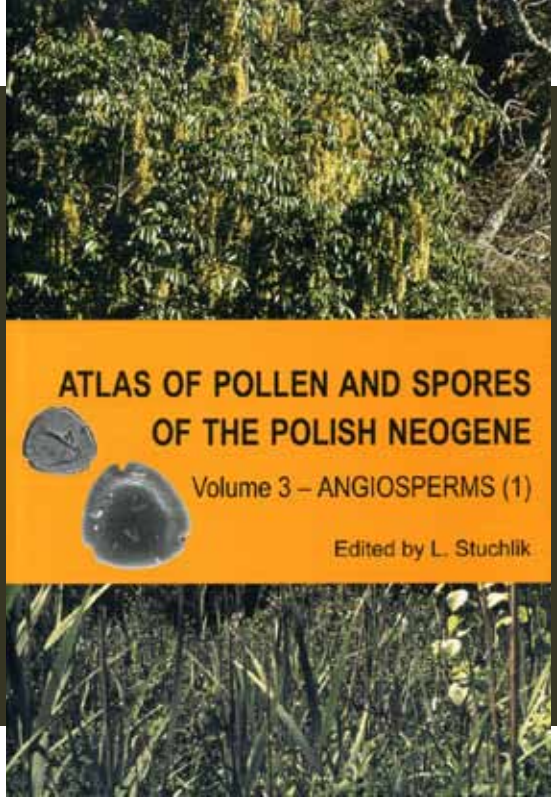
Previous winners of this award are eligible only if they are pursuing a different degree than the one they were pursuing when they received the previous award.

AASP Scholarships are available to all students of palynology in all countries and these students need not be members of AASP.

Application forms can be downloaded from our website at http://www.palynology.org/content/scholar.html

Additional comments will follow in the December newsletter.

Sincerely, Martin Farley



Books of palynologic and paleobotanical interest from the Polish Academy of Sciences

The following books are available from the W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, Poland.

Note that the *Atlas of pollen and spores of the Polish Neogene* Vol. 3 – Angiosperms (1) was reviewed by David Jarzen in the June 2009 (vol. 42, no. 2) issue of the *AASP Newsletter*.

Reed Wicander Book Review Editor

Atlas of pollen and spores of the Polish Neogene
The main goal of this series is to present a synthesis of palynological studies from the Polish Neogene carried out during the last 50 years. During this time, more than 300 pollen floras have been studied. Many of the results have been published in Polish and international scientific periodicals; many others remain in the archives of Polish geological institutions, mainly in the Polish Geological Institute in Warsaw, the Geological Department of Warsaw University, Museum of the Earth, Polish Academy of Sciences in Warsaw, the Institute of Geological Sciences of Wrocław University, and the Władysław Szafer Institute of Botany, Polish Academy of Sciences in Kraków. Most of the existing archival materials stored in these institutions have been studied and revised for this synthesis, and many previously unpublished original photographic materials have been used for the purposes of this contribution. Our intention is to give a complete overview of all identified pollen and spore taxa from the Neogene sediments of Poland. We hope, that this contribution will be of a great value for scientists dealing with stratigraphy and palaeobotany of European Neogene, as well as for the students studying palaeobotany, palaeoecology and palaeophytogeography.

Leon Stuchlik, Editor

Atlas of pollen and spores of the Polish Neogene
Vol. 1 - Spores
Edited by Leon Stuchlik

Authors: Leon Stuchlik, Maria Ziembinska-Tworzydlo, Aleksandra Kohlman-Adamska, Irena Grabowska, Hanna Wazynska, Barbara Slodkowska, Anna Sadowska

W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, Poland
ISBN: 83-85444-79-3

Format: A4, 158 pages, 41 plates, © 2001
Price: 45.00 EUR per one copy (postage included)

In the palynological literature published between the years 1950 and 1980, the predominant trend in the descriptions of pollen and spores was the morphological method, in which the creation of

new genera was based on morphological features of dispersed sporomorphs. Among the propagators of this approach were: Thomson and Pflug (1953), van der Hammen (1956), Krutzsch (1959-1971), Kedves (1961-1978), and several others. In general, this system did not provide much useful information about the botanical affinity of the taxa described. In the course of time, many palynologists have started to establish another type of descriptive style for new genera, in which the botanical affinity of the palynomorphs is taken into consideration. This idea was proposed, and then consequently carried into effect by Esther Nagy. In her papers from the years 1969 to 1985 she returned to the oldest descriptions of Tertiary palynomorphs made by Thiergart (1937), Raatz (1937), and particularly by Fotonié (1931-1970). Ziembińska-Tworzydło et al. (1994) have followed this idea and created a new rule "wherever it was possible to define the botanical affinity of spores, it is pointed out under the new created names of the fossil genera." Unfortunately, in many cases, the rules of the International Code of Botanical Nomenclature (ICBN 2000) have not been followed, and several new taxa (mainly genera) have been invalidly created in the series *Neogene Pollen flora of Central Europe, part I* (Ziembińska-Tworzydło et al. 1994). Thanks to critical discussions with Dr. Jan Jansonius (Institute of Sedimentary and Petroleum Geology, Calgary, Canada), further mistakes have been avoided; the authors are thankful for his instructive comments - mainly concerning nomenclatural problems - to the text of our manuscript. We also thank Professor Ryszard Ochyra (W. Szafer Institute of Botany Polish Academy of Sciences) for his instructive nomenclatural suggestions. In the present *Atlas*, most of the subgenera, earlier described as an important feature in the taxonomic classification, have been raised to the rank of genus. Fossil spores from the Polish Neogene have not been determined to lower taxonomic units than species, because of the small intraspecific variability. Most of the subspecies of spores created by Krutzsch (1962a,b, 1963a,b, 1967) have been included in our *Atlas* within the synonym lists for each species when the differences between subspecies were only in size and the general shape of spores. In cases where greater morphological differences exist, a subspecies has been raised to the rank of species. This concerns only taxa from Poland illustrated in the present *Atlas*.

Atlas of the pollen and spores of the Polish Neogene Vol. 2 - Gymnosperms
Edited by Leon Stuchlik

Authors: Leon Stuchlik, Maria Ziembinska-Tworzydlo, Aleksandra Kohlman-Adamska, Irena Grabowska, Hanna Wazumsla, Anna Sadowska
W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, Poland
ISBN: 83-85444-92-0
Format: A4, 238 pages, 82 plates, © 2002
Price: 48.00 EUR per one copy (postage included)

The Atlas of Pollen and Spores of the Polish Neogene volume 2 - Gymnosperms contains description of pollen grains of this group determined in the Neogene sediments of Poland. The main principle of this volume is the same as in volume 1 - Spores (Stuchlik et al. 2001). Approximately 100 taxa belonging to 20 genera have been distinguished. Seven new species and two new genera are described, and the diagnoses of four genera have been emended. Ali of the distinguished genera belong to eight families of the natural system. Our intention is to provide a general compendium of gymnospermous pollen following a gap of more than 30 years since the publication of Krutzsch's Atlas (1970, 1971). In this current volume, new taxa have been described according to the rules of the International Code of Botanical Nomenclature (ICBN, Greuter et al. 2000), and following the idea that "wherever it was possible to define the botanical affinity of pollen grains, it is pointed out under the new created name of the fossil genera". Most of the taxa described are at the same taxonomic rank in the present volume as they were placed by previous authors, except the classification by Krutzsch (1961, 1970) of the genus *Ephedripites*. Bolkhovitina (1953) created the genus *Ephedripites* and this was subsequently divided by Krutzsch (1961) into two subgenera: *E.* (*Ephedripites*) and *E.* (*Distachyapites*). Because of a very clear morphological differentiation of these two subgenera and because of their overall accordance with the pollen types of recent Ephedra, in the present work the subgenus *Distachyapites* Krutzsch 1961 has been raised to generic rank.

According to the International Code of Botanical Nomenclature (ICBN 2000 article 34.2) several alternative names of taxa created mainly by Krutzsch (1971) were not validly published. Our goal was to

systematically revise these taxa and to validate their publication.

Detailed studies of the alveolar infrastructure of sacci in podocarpoid pollen grains gave the possibility to distinguish them from pollen grains of the new described genus *Cathayapollis*. Podocarpoid pollen grains have the alveolar infrastructure of sacci built by open alveolae with torn muri, swollen at the ends, forming a pearl-like structure.

Detailed studies of the attachment axis of sacci in the alatus and microalatus groups of coniferous pollen grains gave the possibility to assign several species of the genera *Abietineaepollenites*, *Piceaepollenites*, and *Pityosporites* to the new described genus *Cathayapollis*.

Some critical revisions and a new outlook on the inaperturate pollen group is proposed in this volume. Detailed studies by the use of SEM provided the possibility to distinguish a new genus *Taiwaniapollis*, and also permitted more precise morphological description of fossil pollen grains belonging to the genus *Cunninghamiaepollenites*. Thanks to a rich polliniferous material of *Cunninghamiaepollenites* in sediments of the Polish Neogene, it has been possible to recognize detailed distinguishing features between the genera *Cunninghamiaepollenites*, *Inaperturopollenites*, and *Cupressacites*. *Cunninghamiaepollenites* differs from *Inaperturopollenites* pollen grains by the ectexine loosely connected with the endexine, forming numerous, thick, secondary folds, and it differs from *Cupressacites* by the presence in the centre of leptoma, of an aperture up to 2 μm in diameter.

Detailed SEM studies made it possible to distinguish three types of exine sculpture in *Sequoiapollenites* pollen grains.

Type 1 - Surface rugulate, rugae 2-3 μm long and 0.1-0.2 μm broad - in *Sequoiapollenites rotundus*.

Type 2 - Surface rugulate-verrucate, rugae 3-4 μm long and 0.3 μm broad, built of fused, densely spaced verrucae, about 1 μm in diameter - in several species.

Type 3 - Surface microgemmate, microgranules very densely spaced, single or fused into microgemmae, 0.5-0.7 μm in diameter - in several species.

For making stratigraphic distributions of taxa more understandable, a stratigraphic table including all Neogene stages has also been added to this volume. The table contains chronostratigraphic and lithostratigraphic scheme of the Paratethys area (Watycha 1977) and Polish Lowland (Piwocki 1998).

Atlas of pollen and spores of the Polish Neogene
Vol. 3 - Angiosperms (1)
Edited by Leon Stuchlik

W. Szafer Institute of Botany, Polish Academy of Sciences; Kraków, Poland
ISBN: 978-83-89648-74-7
Format: A4, 225 pages, 67 plates, © 2009
Price: 55.00 EUR per one copy (postage included)

The pollen and spores atlas of the Polish Neogene volume 3 - Angiosperms (1) contains descriptions and photo documentation of the following groups of pollen: inaperturate, monoporate, diporate, triporate, zonoporate, and pantoporate. The layout of this volume, morphological descriptions, and illustrations of pollen were made in the same way as in the preceding volumes (Stuchlik ed. 2001, vol. 1 - Spores; 2002, vol. 2 - Gymnosperms).
This elaboration comprises palynofloras from 65 localities of Polish Neogene from various stratigraphical units (Fig. 1). Stratigraphical position of palynological profiles is presented in Table 1, including all Neogene stages. The table contains chronostratigraphic and lithostratigraphic scheme of the Paratethys area (Watycha 1977) and Polish Lowlands (Piwocki 1998). In the present study published materials as well as these, remaining in archives of the W. Szafer Institute of Botany Polish Academy of Sciences in Kraków, Polish Geological Institute, and Museum of the Earth Polish Academy of Sciences in Warszawa, and the Warsaw and Wrocław Universities have been taken into consideration. All described pollen taxa are illustrated in 67 plates with photo documentation of pollen grains made in the last 60 years, as well as newly prepared microphotographs especially using the Scanning Electron Microscope (SEM).

All hitherto described taxa were verified according to the rules the International Code of Botanical Nomenclature (ICBN, McNeil et al. ed. 2006) including comprehensive synonym lists. Two new

genera, *Pteroceltipollis* and *Thalictrumpollis*, and 14 new species were described. For nine taxa diagnoses were complimented and new nomenclatural combinations described. Altogether, 108 fossil species belonging to 49 fossil genera from 31 recent families have been described and verified. The verification of fossil genera was made according to the Genera File of Fossil Spores (Jansonius & Hills 1976-1992, Jansonius et al. 1998, 2002).

Atlas of the Pleistocene vascular plant macrofossils of Central and Eastern Europe - Part 2: Herbaceous Dicotyledones

W. Szafer Institute of Botany, Polish Academy of Sciences; Kraków, Poland
ISBN: 978-83-89648-73-0
Format: 17.5 x 24.5 cm, hard cover, 380 pages, 126 plates, © 2008
Price: 49.00 EUR per one copy (postage included)

After the first part of the *Atlas of the Pleistocene vascular plant macrofossils of Central and Eastern Europe* (Velichkevich & Zastawniak 2006) covering pteridophytes and monocotyledons was completed, work was commenced on the second part of the *Atlas* dealing with the macroscopic remains (mainly fruits and seeds) of dicotyledonous herbaceous plants.

The selection of fossil fruits, seeds, leaves, and flowers for the second volume of the *Atlas*, excluding fruits of the genus *Trapa* L., was done by Felix Yu. Velichkevich. They originate from those localities of fossil floras in Central and Eastern Europe, which had been studied by Felix Yu. Velichkevich. The information about occurrence of these species in Poland is based on materials stored in the Palaeobotanical Museum of the W. Szafer Institute of Botany, Polish Academy of Sciences, Kraców (KRAM-P) identified or revised by F. Yu. Velichkevich. He is the author of the descriptions and illustrations of taxa from the families Urticaceae to Rosaceae (except for some species of *Ranunculus* and *Dryas* L.).

The work on the second volume was interrupted by the unexpected death of F. Yu. Velichkevich on August 1, 2006.

The descriptive part of the *Atlas* (families Linaceae to Asteraceae, some species of *Ranunculus* and *Corispermum nitidum* Kit. ex Schult.) was completed by Krystyna Wasylikowa (W. Szafer Institute of Botany, Polish Academy of Sciences, Kraców). The genus *Trapa* L. was investigated and described by Jan J. Wójcicki (W. Szafer Institute of Botany, Polish Academy of Sciences, Kraców). The photographs in Plates 89-150 were taken by Katarzyna Cywa (W. Szafer Institute of Botany, Polish Academy of Sciences, Kraców).

In the second volume, assigned to herbaceous plants, are included the shrub *Dryas octopetala* L. and taxa from the Ericaceae. The fossil remains of other shrubs, trees and climbers known from the Pleistocene floras of Central and Eastern Europe were to be described in the planned third volume of the *Atlas*. According to F. Yu. Velichkevich's intention these would comprise the following taxa: Pinaceae (*Abies* Mill., *Larix* Mill., *Pinus* L., *Picea* Dietr.), Taxaceae (*Taxus* L.), Cupressaceae (*Juniperus* L.), Betulaceae (*Betula* L., *Alnus* Gaertn., *Carpinus* L., *Corylus* L.), Fagaceae (*Quercus* L.), Myricaceae (*Myrica* L.), Salicaceae (*Salix* L.), Cannabaceae (*Humulus* L.), Rosaceae (*Cotoneaster* Medic., *Crataegus* L., *Padus* Mill., *Prunus* Mill., *Rosa* L., *Rubus* L.), Empetraceae (*Empetrum* L.), Aceraceae (*Acer* L.), Rhamnaceae (*Frangula* Mill.), Tiliaceae (*Tilia* L.), Cornaceae (*Cornus* L.), *Oxycoccus* Hill. from the Ericaceae, and Caprifoliaceae (*Sambucus* L., *Viburnum* L.).

The layout of the second part of the *Atlas* mirrors that of the first, so that information contained in the General remarks refers also to this volume. The map of localities for the second part of the Atlas (see Illustrated fossil remains localities) includes the 137 localities of the Pleistocene floras of Poland and Eastern Europe from which the species described in the second volume of the *Atlas* originate. The list of localities provided at the end of the volume, data on their age, and references, refer only to the taxa described in this part of the *Atlas*.

Late Glacial and Holocene history of vegetation in Poland based on isopollen maps

Edited by Magdalena Ralska-Jasiewiczowa and Małgorzata Latałowa, Krystyna Wasylikowa, Kazimierz Tobolski, Ewa Madeyska, Herbert E. Wright Jr. and Charles Turner

W. Szafer Institute of Botany, Polish Academy of Sciences; Kraków, Poland
ISBN: 83-89648-23-7
Format: A4, 444 pages, © 2004
Price: 98.00 EUR per one copy (postage included)

This book presents the migration histories of all main trees and some selected shrub and herb taxa on the territory of Poland during the last 14,000 14C years BP (ca. 15,500 cal years) based on isopollen maps. The area is particularly interesting in this respect due to its location in the transition zone between the Atlantic and Continental climate of Europe crossing with the southern and northern climatic influences.

The isopollen method was first proposed by Professor W. Szafer, a famous Polish botanist, palaeobotanist and plant geographer, 70 years ago (Szafer 1935). The method was, however, long forgotten due to the difficulties with dating and correlating pollen sequences. In the last few decades, the development of dating methods and enormous advances in numerical techniques allowed Szafer's isopollen maps to be turned into a precise tool to study the vegetation dynamics and make syntheses in the field of historical plant geography.

Twenty-seven Polish Holocene palynologists have contributed to the preparation of the book. It presents dot and colour isopollen maps of 24 taxa of trees and shrubs and 14 herb taxa. The sets of maps for each taxon are described and analyzed, and supplemented with the short information about their present-day distribution in Europe and in Poland, their ecological requirements, pollen production and dispersal, and expansion in Europe during the Late Glacial and Holocene. The summary chapters discuss the processes of vegetation changes during the Late Glacial, Early Holocene, Mid-Holocene, Late Holocene, and the youngest section of the Late Holocene showing the increasing human pressure.

The book is very useful not only for palaeoecologists and plant geographers, but also for archaeologists, forestry specialists, geographers and other representatives of the earth sciences. It may help in mapping the potential natural vegetation and planning the recultivation of areas changed by human impact.

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News from ASTM: Reflectance measurement for dispersed vitrinite

A new American Society for Testing and Materials (ASTM) standard test method for measurement of the reflectance of vitrinite dispersed in sedimentary rocks has been developed by an international committee of technical experts from government agencies, academia, industry, and consultancies. This product grew from the efforts of the International Committee for Coal and Organic Petrology (ICCP) Identification of Primary Vitrinite Working Group, and is the result of an international partnership between members of ICCP, ASTM, The American Association of Petroleum Geologists, and TSOP. The new consensus standard is available for purchase from http://www.astm.org/Standards/D7708.htm and is included in the 2011 Annual Book of ASTM Standards, v. 05.06, Gaseous Fuels; Coal and Coke, which can be obtained as a free yearly benefit to ASTM members.

Development of the new test method (ASTM D7708-11) began in 2008 with a survey of common practices used in laboratories that routinely measure the reflectance of dispersed vitrinite in shales. The test method writing committee was identified from among the survey respondents, and the existing ASTM coal vitrinite reflectance standard (ASTM D2798) was used as an outline for the new test method. Significant changes from the coal standard include: 1) specialized terminology to include recycled vitrinite, zooclasts, solid bitumens, and marine algae; 2) discussion of potential for vitrinite suppression and retardation in certain conditions; 3) inclusion of fluorescence observation and resulting changes to equipment description and procedure; and 4) addition of reporting requirements, including type and quality of sample preparation, observation of fluorescence, and consideration of supporting data and information.

The new standard was successfully balloted through the subcommittee and D05 main committee levels of the ASTM vetting process with no negative votes received. However, users of the standard and other interested parties can bring comments and concerns to the attention of ASTM subcommittee D05.28, Petrography of Coal and Coke, which is responsible for the maintenance and revision of this and other ASTM petrography standards. Interested AASP members who would like to contribute to consensus standards development within subcommittee D05.28 are encouraged to contact Paul Hackley, U.S. Geological Survey (phackley@usgs.gov), for additional information.

Anticipated users of the new D7708-11 standard include government, academic, and service laboratories. The standard will be used as the prescribed method for the dispersed vitrinite reflectance accreditation program of the ICCP, which currently includes approximately forty laboratories worldwide. The test method is predicted to be most relevant for shale gas plays where precise information concerning thermal maturity is considered key to successful basin analysis. Anticipated future improvements to the standard include the creation of quantified reproducibility and repeatability values through inter-laboratory round-robin exercises, and the development of a supplemental online image atlas of dispersed organic matter in sedimentary rocks to aid in the identification of indigenous vitrinite.

Pictured above is an example of dispersed vitrinite in the Upper Cretaceous Eagle Ford Shale, Maverick Basin, south Texas. Article submitted by Paul Hackley, U.S. Geological Survey, MS 956 National Center, Reston, VA 20192 ph: 703-648-6458, fax: 703-648-6419

Palynological news

White House honey analyzed

Sweet stuff sent to Texas A&M to discover where bees are scoring their pollen at the world's most famous address.

When White House carpenter Charlie Brandt installed the first beehive on the White House South Lawn in 2009, he probably had little idea how famous his bees and their honey would become.

Since the first harvest of just more than 134 pounds in 2009, the sweet stuff has been served at official state dinners, used in recipes by White House chefs, and beautifully presented as gifts to foreign officials and other dignitaries.

And now, it's gone under the microscope to see where exactly the bees are sourcing their pollen — and what might be done to make it even better.

Konrad Bouffard, owner of Round Rock Honey in Texas, recently sent samples of the White House honey to Texas A&M University for analysis. Bouffard regularly tests his own hives to identify where bees are sourcing the pollen that make up his honey and to ensure the absence of pollutants.

According to Austin360, Dr. Vaughn Bryant, a scientist at Texas A&M, discovered that White House bees are sourcing the majority of their pollen from clover but that the honey overall has a very low count of the powder. “This suggests that over the winter, the bees may have been fed sugar water, thereby reducing the final pollen concentration value of the produced honey,” he told the site.

Honey bees are often fed sugar water during the late winter months to assist in building up the colony, which often is reduced to several thousand bees (from a height of 60,000-70,000 in the summer) due to winter die-off. It's also a means to get the bees through a cool spring (like the one we just experienced) when they've exhausted their honey stores. It's likely that the fall crop (generally harvested in early September) will show a honey that is much higher in pollen, but Bouffard recommends that the White House should also allow some lawn to grow wild near the South Lawn vegetable garden for even better results.

“Patches of un-manicured lawn are more important to producing quality honey than even herb and vegetable gardens,” he told Austin360. “Increasing the diversity of grasses and flowering weeds gives the bees more foraging options and helps maintain and preserve the natural pH and the humidity of the soil.”

The Texas A&M test also revealed pollen from dogwood, cherry, crepe-myrtle, elm, magnolia trees, honeysuckle and even poison ivy. Texas A&M Press Release Article.

Info for Lycopodium tablet customer:

The Lund University is happy to announce that they will now start to sell the new *Lycopodium* tablets, batch 1031 (2011). They have worked with a new manufacturer in Sweden. The new tablets are made from a new formula, because the former producer in Denmark refused to give out theirs. The tablets are harder and bigger, but should be treated as before with HCl that is subsequently washed out of the sample. Each tablet contains 20848 Lycopodium spores (+/-3457). The new circumstances have enforced them to raise the price. One bottle of 250 tablets costs 500 SEK + postage.

They appreciate comments about the *Lycopodium* tablets to this address: asa.wallin@geol.lu.se. They would like to know if there is a wish for smaller tablets (same size as earlier batches) and for batches with different number of spores.

To order, send an email to asa.wallin@geol.lu.se and state number of bottles, name, delivery address, invoice address and very important, your VAT number (otherwise we must charge extra for taxes). They accept payment by VISA and MASTERCARD online.

Best wishes

Prof. Svante Björck and Åsa Wallin (technician) for the Dept. of Quaternary Geology, Lund University, Sweden

Some new papers of interest from our board of directors:

Note: members are welcome to send some info on their papers if they would like them featured here.

Current carbon release to the atmosphere is 10 times faster than during the Paleocene-Eocene Thermal Maximum

The present rate of greenhouse carbon dioxide emissions through fossil fuel burning is higher than that associated with an ancient episode of severe global warming, according to new research. The findings were published online this summer by the journal *Nature Geoscience*.

Around 55.9 million years ago, the Earth experienced a period of intense global warming known as the Palaeocene–Eocene Thermal Maximum (PETM), which lasted for around 170,000 years. During its main phase, average annual temperatures rose by around 5°C.

Scientists believe that the warming may have been initially triggered by an event such as the baking of organic-rich sediments by igneous activity that released the potent greenhouse gas, methane. This initial temperature increase warmed ocean bottom waters which allowed the break down of gas hydrates (clathrates) which are found under deep ocean sediments: this would have greatly amplified the initial warming by releasing even more vast columes of methane. As the methane diffused from the seawater into the atmosphere it would have been oxidised to form carbon dioxide, another potent and longer-lived greenhouse gas.

Investigations of the PETM are usually done using core samples from deep sea sediments. These cores contain layers of calcium carbonate from marine organisms that can show whether the carbon in the carbonate came from organic or inorganic sources, but when large amounts of greenhouse gases (such as CO_2 or CH_4) are in the atmosphere, the oceans become more acidic, and the calcium carbonate can be dissolved.

"Deep sea records" said Harding, " are therefore not the best to study as they usually only preserve an incomplete record of the event, which makes the warming appear more abrupt."

Adam Charles (right) working in the core store with Tim White of Penn State

Harding and his colleagues therefore studied samples deposited in a shallow water marine basin in the Arctic. During a Worldwide Universities Network expedition to train graduate students from Penn State, the University of Southampton, University of Leeds, University of Utrecht and University of Oslo in the protocols of how projects develop, the researchers visited Spitsbergen, in the Svalbard archipelago. They uncovered a supply of rock cores curated by a forward-thinking young coal-mining company geologist, Malte Jochmann.

Adam Charles and his PhD supervisor, Dr Ian Harding, both palaeoceanographers at the University of Southampton's School of Ocean and Earth Science (SOES) based at the National Oceanography Centre, Southampton, co-authored the Nature Geoscience report that resulted from the study of these samples. Dr. Harding said: "The PETM has been seen by many as a natural test bed for understanding modern man-made global warming, despite it not being a perfect

analogy. However, the total amount of carbon released during this climatic perturbation and its rate of release have been unclear. but this core from Spitsbergen is important because it records the entirety of the PETM, from its initiation to through the recovery period, and as such is the most complete record of this warming event so far known in high northern latitudes .

Based on their carbon isotope measurements and computer simulations of the Earth system, the researchers estimated that the rate of carbon emission during the PETM peaked at between 300 million and 1,700 million metric tonnes per year, which is much slower than the present carbon emission rate.

"Our findings suggest that humankind may be causing atmospheric carbon dioxide to increase at rates never previously seen on Earth, which would suggest that current temperatures will potentially rise much faster than they did during the PETM," concluded Dr Harding.

The authors of published report published by *Nature Geoscience* are Ying Cui, Lee Kump, Christopher Junium, Aaron Diefendorf, Katherine Freeman and Nathan Urban (Pennsylvania State University), Andy Ridgwell (University of Bristol), and Adam Charles and Ian Harding (SOES). This research was supported by The Worldwide Universities Network, Pennsylvania State University, and the US National Science Foundation.

Cui, Y., Kump, L. R., Ridgwell, A. J., Charles, A. J., Junium, C. K., Diefendorf, A. F., Freeman, K. H., Urban, N. M. & Harding, I. C. Slow release of fossil carbon during the Palaeocene–Eocene Thermal Maximum. Nature Geoscience (Published online, 5 June 2011). DOI: 10.1038/NGEO1179

http://www.nature.com/ngeo/journal/vaop/ncurrent/abs/ngeo1179.html

Below: Core shed in Spisbergen where the core material was collected.

Fossilized pollen reveals climate history of northern Antarctica

Analysis of direct climate record shows Antarctic tundra persisted until 12 million years ago

A painstaking examination of the first direct and detailed climate record from the continental shelves surrounding Antarctica reveals that the last remnant of Antarctic vegetation existed in a tundra landscape on the continent's northern peninsula about 12 million years ago. The research, which was led by researchers at Rice University and Louisiana State University, appeared online this summer. An SEM photomicrograph of pollen grains of *Nothofagus fusca* are featured on the cover of the July 12 issue of the Proceedings of the National Academy of Sciences.

The new study contains a detailed reconstruction of the climatic history of the Antarctic Peninsula, which has warmed significantly in recent decades. The rapid decline of glaciers along the peninsula has led to widespread speculation about how the rest of the continent's ice sheets will react to rising global temperatures.

"The best way to predict future changes in the behavior of Antarctic ice sheets and their influence on climate is to understand their past," said Rice University marine geologist John Anderson, the study's lead author. The study paints the most detailed picture to date of how the Antarctic Peninsula first succumbed to ice during a prolonged period of global cooling.

In the warmest period in Earth's past 55 million years, Antarctica was ice-free and forested. The continent's vast ice sheets, which today contain more than two-thirds of Earth's freshwater, began forming about 38 million years ago. The Antarctic Peninsula, which juts farther north than the rest of the continent, was the last part of Antarctica to succumb to ice. It's also the part that has experienced the most dramatic warming in recent decades; its mean annual temperatures rose as much as six times faster than mean annual temperatures worldwide.

"There's a longstanding debate about how rapidly glaciation progressed in Antarctica," said Sophie Warny, a Louisiana State University geologist who specializes in palynology (the study of fossilized pollen and spores) and led the palynological reconstruction. "We found that the fossil record was unambiguous; glacial expansion in the Antarctic Peninsula was a long, gradual process that was influenced by key tectonic, atmospheric, and oceanographic changes."

Warny, her students and colleague Rosemary Askin were able to ascertain the exact species of plants that existed on the peninsula over the past 36 million years after a painstaking, three-year examination of thousands of individual grains of pollen that were preserved in muddy sediments beneath the sea floor just off the coast.

"The pollen record in the sedimentary layers was beautiful, both in its richness and diversity," Warny said. "It allowed us to construct a detailed picture of the rapid decline of the forests during the late Eocene -- about 35 million years ago -- and the widespread glaciation that took place in the middle Miocene -- about 13 million years ago."

Obtaining the sedimentary samples wasn't easy. The muddy treasure trove was locked away beneath almost 100 feet of dense sedimentary rock. It was also off the coast of the peninsula in shallow waters that are covered by ice most of the year and beset by icebergs the rest. Anderson, a veteran of more than 25 research expeditions to Antarctica, and colleagues spent more than a decade building a case for the funding to outfit an icebreaker with the right kind of drilling equipment to bore through the rock.

In 2002, the National Science Foundation (NSF) funded the project, which was dubbed SHALDRIL. Three years later, the NSF research vessel Nathaniel B. Palmer left on the first of two drilling cruises.

"It was the worst ice year that any of us could remember," Anderson said. "We'd spend most of a day lowering drill string to the ocean floor only to pull it back up to get out of the way of approaching icebergs."

The next year was little better, but the SHALDRIL team managed to obtain enough core samples to cover the past 36 million years, thanks to the logistical planning of marine geologist Julia Wellner and to the skill of the drilling crew. By end of the second season, Anderson said, the crew could drill as much as a meter every five minutes.

Reconstructing a detailed climate record from the sample was another Herculean task. In addition to the three-year palynological analysis at LSU, University of Southampton palaeoceanographer Steven Bohaty led an effort to nail down the precise age of the various sediments in each core sample. Wellner, now at the University of Houston, examined the characteristics of the sediments to determine whether they formed below an ice sheet, in open marine conditions or in a combined glacial-marine setting. Other members of the team had to count, categorize and even examine the surface texture of thousands of sand grains that were preserved in the sediments. Gradually, the team was able to piece together a history of how much of the peninsula was covered by glaciers throughout the past 36 million years.

"SHALDRIL gave us the first reliable age constraints on the timing of ice sheet advance across the northern peninsula," Anderson said. "The rich mosaic of organic and geologic material that we found in the sedimentary record has given us a much clearer picture of the climatic history of the Antarctic Peninsula. This type of record is invaluable as we struggle to place in context the rapid changes that we see taking place in the peninsula today."

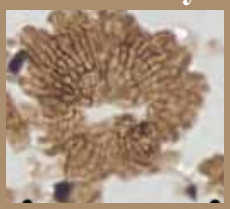
The study was funded by grants from the NSF's Office of Polar Programs to Anderson and Warny. Study co-authors include Wellner; Askin; Bohaty; Alexandra Kirshner, Tyler Smith and Fred Weaver, all of Rice; Alexander Simms and Daniel Livsey, both of the University of California, Santa Barbara; Werner Ehrmann of the University of Leipzig; Lawrence Lawver of the University of Texas at Austin; David Barbeau of the University of South Carolina; Sherwood Wise and Denise Kulhenek, both of Florida State University; and Wojciech Majewski of the Polish Academy of Sciences.

The PNAS study was posted online during the week of June 27 at:
http://www.pnas.org/cgi/doi/10.1073/pnas.1014885108

VIDEO is available at:
http://youtube/R0Z7Ir8ZN00
DESCRIPTION: Rice University scientist John Anderson discusses what researchers have learned from studying the first direct and detailed climate record from the continental shelves surrounding Antarctica, and he describes the years of effort that went into obtaining it.

CREDIT: Office of Public Affairs/Rice University.

A new study on Miocene coals!



Check out this study "*Petrographic, geochemical, and mycological aspects of Miocene coals from the Novaky and Handlova mining districts, Slovakia*" written by AASP director-at-large Jen O'Keefe, and her colleagues Hower, J.C., Finkelman, R.F., Drew, J.W., Stucker, J.D. The study was published in 2011 in the *International Journal of Coal Geology* 87, 268-281.

Abstract

Fungi have once again become a topic of interest to coal scientists in their roles as agents of maceral formation. Recent works have demonstrated that fungi occur in association with woody remains, resins, and cuticles in coalified materials of a variety of ages, in addition to coal-balls and compression–impression fossils, where they are already well known. These forms, however, have only been viewed as cross-sections along a polished plane. Assigning the fungi to family, much less determining which fungi they represent is very difficult in this orientation. Fungal identifications are necessary to the continuance of this research into the origin of coal macerals because of the need to know if macrinite begins to form prior to incorporation into the peat, which could be demonstrated by its association with symbiotic and parasitic, rather than saprophytic fungi. This study examines the fungal remains recovered from eight coal samples from Miocene-age coals in the Nováky and Handlová mining districts of Slovakia with the aim of making this distinction. These samples were collected in Slovakia as part of the US Geological Survey's World Coal Quality Inventory program and provided to the authors. The samples were processed using the O'Keefe technique for subbituminous coals and mounted for observation in transmitted light. Forms were identified using published works and consultation with a modern mycologist. Forms recovered through palynologic processing were compared to and correlated with forms seen in cross-section under reflected light.

Reminder

Short Course on Micropalaeontology offshore UK, Norway and Canada

Felix Gradstein is holding his 1 week 'Short Course on Micropalaeontology offshore UK, Norway and Canada' at the BGS on 26th – 30th September 2011 .

The organizers are now looking for participants from both the oil industry and academia. The course will run Monday to Friday, and include both lectures and microscope work.

The fees will be £1,500 for industry participants, and free for academic. For the course to run we need approx. 10 paying people.

Another approx. 5 places will be held for academic participants, with priority going to PhD students associated with the BGS in some way.

How to: receive emails alerts when new content is published online

How to: access content when it is published online

This document explains how you can:

- sign up to receive email alerts whenever new content is published online
- access journal content using your InformaWorld username and password

1) You should have been contacted via email by support@informaworld.com with a unique username and password for you to access journal content. Firstly you need to click on the 'voucher' link within the email message to activate your access.

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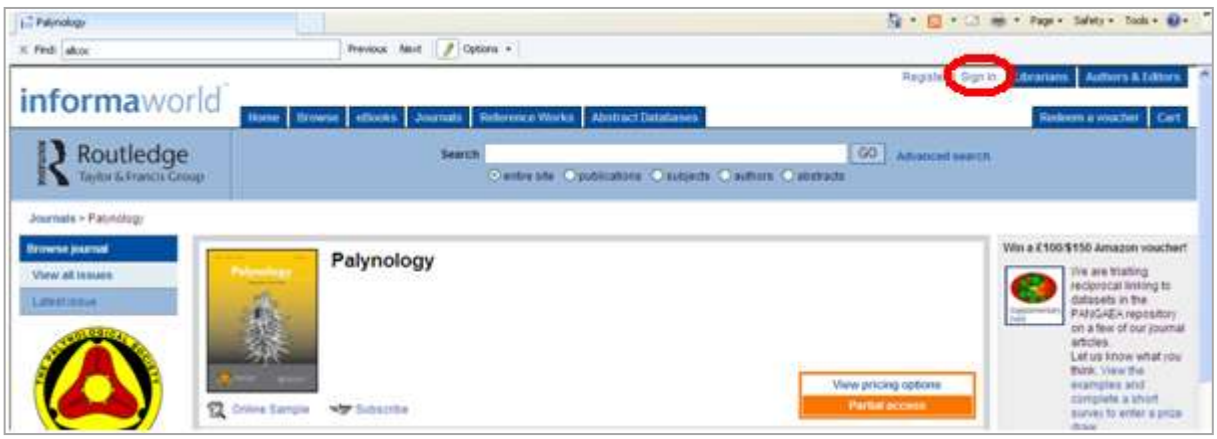
2) Go to your journal's homepage: www.informaworld.com/TPAL

3) Click on 'Sign In':



4) This opens out a space at the top of the page for you to enter your username (usually your email address) and password. If you have forgotten your password please click on 'forgotten password'; this will generate a prompt to your email address.

5) Once you're signed in you will be able to:

i) Access all back content:

ii) Sign up for alerts (click on 'Alert me'):

6) If you sign up for alerts, you will automatically receive an email when new issues are published online:

New Address for the Jarzens!

David and Susan Jarzen pictured here standing at the Cleveland Museum of Natural History, Cleveland, Ohio.

David was recently appointed as Research Associate in Paleobotany and Palynology at this institution. David will continue with his current interests in Cenozoic to Recent palynological studies from North and South America.

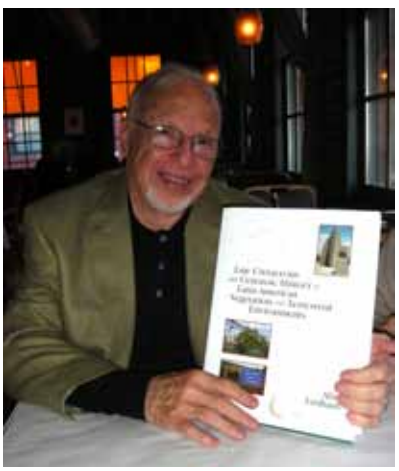
David may be reached at:

David M. Jarzen, Ph.D.
Paleobotany and Palynology
Cleveland Museum of Natural History
1 Wade Oval Drive, University Circle
Cleveland, Ohio 44106-1767

CONGRATULATIONS!

Alan Graham received the Botanical Society of American Paleobotanical Section's Award for 'valuable contributions to paleobotany, service, and outstanding scholarship' at their national meetings Botany 2011, St. Louis, Missouri, July 12, 2011.

He is pictured to the right with his book entitled *Late Cretaceous and Cenozoic History of Latin American Vegetation and Terrestial Environments*. published by Missouri Botanical Garden Press in 2010 (photo credit David Jarzen).



TED Ideas worth spreading

Two websites of interest (PG 13) shared with us by AASP past president, Carlos Jaramillo

http://www.ted.com/index.php/talks/jonathan_drori_the_beautiful_tricks_of_flowers.html

http://www.ted.com/talks/jonathan_drori_every_pollen_grain_has_a_story.html

Coring at Lake Prespa is going to reveal the vegetation and climate change of the Balkans for the last 80 ka

Principal investigators: Konstantinos Panagiotopoulos[1], Anne Aufgebauer[2], Frank Schäbitz[1], Bernd Wagner[2]
[1] Seminar of Geography and Education, University of Cologne, [2] Institute of Geology and Mineralogy, University of Cologne

In the period of mid Mai-June 2011 fieldwork at Lake Prespa, a transboundary lake of tectonic origin situated at an altitude of approximately 849 m asl, took place between November and October 2009. Two cores (Co1215 15,75 m and Co1216 5,74 m long) were successfully retrieved from a floating platform (UWITEC Co.). The longest core (Co1215) was investigated using geophysical (magnetic susceptibility, XRF), geochemical (CNS), ostracod, and pollen analyses. For the determination of the core's age, bulk material was sampled along with plant, shell, and fish remains. In addition to the ^{14}C dates, distinct tephra layers recognized throughout the core were used in order to establish a robust chronology. According to our age-depth model, the record from Lake Prespa reaches back to ~ 80 kyr cal BP, and therefore includes the entire last glacial period. The Balkans are one of the key locations-gateways in the eastern trajectory of modern human migration to Europe. The Prespa record can therefore provide valuable information regarding the environmental factors that facilitated or hindered the expansion of modern humans out of Africa.

The fieldwork is part of panel B2 of collaborative research center **"Our Way To Europe",** which concerns the history of mankind. We specifically intend to approach this with a combination of geoscientific and archaeological methods. Population dynamics and dispersal processes contributed essentially to the transmission of ideas, techniques, cultural behavior and the formation of human societies. Major events in the history of mankind resulted due to dispersal processes. Human agency, climate and environment were certainly among the principal factors driving population mobility. Explanatory models require data, indicating to which extent single events of migration and dispersal were either supported or limited by environmental conditions in the source areas, corridors and target areas of population movements (Please see link: www.sfb806.de).

Top: Floating platform (UWITEC Co.) anchored at the jetty.
Bottom: Panoramic view of Lake Prespa from the southwest. Photos: Konstantinos Panagiotopoulos.

AASP SESSIONS AT GSA: An Update!
Palynological-related sessions

Sunday am

Paleontology I: Paleoecology and Environment. Minneapolis Convention Center Room 205AB

T54. Multidisciplinary Approaches to Studying the Causes and Consequences of Mass Extinction: Geochemistry, Paleoecology, and Paleoenvironments I (Paleontological Society). Minneapolis Convention Center Room 200H-J

T59. New Ideas on Studying Exceptionally Preserved Fossils: What to Do Next? (GSA Geobiology & Geomicrobiology Division; Chinese Academy of Sciences; State Key Laboratory of Palaeobiology and Stratigraphy; Nanjing Institute of Geology and Palaeontology). Minneapolis Convention Center Room 205CD

Paleontology (Posters) I: Ecology and Phylogeny. Minneapolis Convention Center Hall C

Sunday pm

T54. Multidisciplinary Approaches to Studying the Causes and Consequences of Mass Extinction: Geochemistry, Paleoecology, and Paleoenvironments II (Paleontological Society). Minneapolis Convention Center Room 200H-J

T55. New Horizons in Precambrian Palynology and Paleobiology (GSA Geobiology & Geomicrobiology Division; AASP - The Palynological Society; Paleontological Society). Minneapolis Convention Center Room 205CD

T61. Phylogenetic Approaches to Paleobiology: Diversity, Rates, and Trends (Paleontological Society). Minneapolis Convention Center Room 205AB

T66. Advances in Terrestrial Paleoclimatology and Paleoecology: Geochemical Techniques and Examples Using Inorganic and Organic Molecules in Fossil Soils, Plants, Invertebrates, and Vertebrates I (GSA Geobiology & Geomicrobiology Division; Paleontological Society; Geochemical Society; GSA Archaeological Geology Division). Minneapolis Convention Center Room 200FG

Monday am

T52. Species and Speciation in the Fossil Record I (Paleontological Society; Society of Vertebrate Paleontology; Cushman Foundation; Paleontological Research Institution). Minneapolis Convention Center Room 205CD

T53. The Triassic: Turning Point for Phanerozoic Life (Paleontological Society; GSA Geobiology & Geomicrobiology Division). Minneapolis Convention Center Room 205AB

T66. Advances in Terrestrial Paleoclimatology and Paleoecology: Geochemical Techniques and Examples Using Inorganic and Organic Molecules in Fossil Soils, Plants, Invertebrates, and Vertebrates II (GSA Geobiology & Geomicrobiology Division; Paleontological Society; Geochemical Society; GSA Archaeological Geology Division). Minneapolis Convention Center Room 200FG

Paleontology (Posters) II: Extinction and Environment. Minneapolis Convention Center Hall C

Monday pm

Paleontology II: Paleobotany and Behavior. Minneapolis Convention Center Room 205AB

T52. Species and Speciation in the Fossil Record II (Paleontological Society; Society of Vertebrate Paleontology; Cushman Foundation; Paleontological Research Institution). Minneapolis Convention Center Room 205CD

Tuesday am

T50. Applications of Bio-, Chemo-, and Lithostratigraphy to Sequence Stratigraphy (Paleontological Society; GSA Sedimentary Geology Division). Minneapolis Convention Center Room 200H-J

T60. Lessons from the Living: Paleontological Investigations Using Modern Analogs I (Paleontological Society). Minneapolis Convention Center Room 205AB

Paleontology (Posters) III: Biogeography, Biostratigraphy, and Taphonomy. Minneapolis Convention Center Hall C

Tuesday pm

T47. Coal Systems: Sedimentation, Petrology, Natural Resources, and Environmental Sustainability (GSA Coal Geology Division). Minneapolis Convention Center Room M100FG

T58. Whole Organism Paleoecology: Exploring Ecology through Time II (Paleontological Society; GSA Geobiology & Geomicrobiology Division). Minneapolis Convention Center Room 205CD

T60. Lessons from the Living: Paleontological Investigations Using Modern Analogs II (Paleontological Society). Minneapolis Convention Center Room 205AB

Paleontological Society Reception and Awards Ceremony, Tuesday, October 11, 5:30 - 8:30 p.m., MCC Ballroom A

Wednesday am

Paleontology III: Diversity, Extinction, and Origination. Minneapolis Convention Center Room 205AB

Paleontology IV: Morphology and Phylogeny. Minneapolis Convention Center Room 205CD

T62. Frontiers in Foraminiferal Research I: Biology/Ecology/Paleoecology (Cushman Foundation for Foraminiferal Research; SEPM (Society for Sedimentary Geology); SEPM North American Micropaleontology Section; Paleontological Society; GSA Geobiology & Geomicrobiology Division). Minneapolis Convention Center Room 200H-J

T50. Applications of Bio-, Chemo-, and Lithostratigraphy to Sequence Stratigraphy (Posters) (Paleontological Society; GSA Sedimentary Geology Division). Minneapolis Convention Center Hall C

T52. Species and Speciation in the Fossil Record (Posters) (Paleontological Society; Society of Vertebrate Paleontology; Cushman Foundation; Paleontological Research Institution). Minneapolis Convention Center Hall C

T55. New Horizons in Precambrian Palynology and Paleobiology (Posters) (GSA Geobiology & Geomicrobiology Division; AASP - The Palynological Society; Paleontological Society). Minneapolis Convention Center Hall C

T66. Advances in Terrestrial Paleoclimatology and Paleoecology: Geochemical Techniques and Examples Using Inorganic and Organic Molecules in Fossil Soils, Plants, Invertebrates, and Vertebrates (Posters) (GSA Geobiology & Geomicrobiology Division; Paleontological Society; Geochemical Society; GSA Archaeological Geology Division). Minneapolis Convention Center Hall C

Wednesday pm

Paleontology V: Biostratigraphy and Taphonomy. Minneapolis Convention Center Room 205AB

T57. Hard Substrate (Sclerobiont) Community Ecology and Evolution through Mass Extinctions (Paleontological Society). Minneapolis Convention Center Room 205CD

AASP-The Palynology Society
44th Annual Meeting - Southampton
September 4-7, 2011

Sunday September 4th to Wednesday September 7th, 2011
National Oceanography Centre, University of Southampton, England

Conference website (live 1st April 2011): www.southampton.ac.uk/aasp2011

This year's AASP Annual Meeting will be held at the National Oceanography Centre, University of Southampton, England, and will be a joint meeting with *The Palynology Group* of *The Micropalaeontological Society*. The National Oceanography Centre, a collaboration between the Natural Environment Research Council and the University of Southampton is the largest institution of its kind in Europe, a £50m purpose-built centre which opened in 1995.

Southampton is located centrally on the south coast of England, and is within easy reach of both Heathrow and Gatwick airports (both around an hour and a half away). Southampton Airport (www.southamptonairport.com) is a hub for the European regional airline Flybe (ww.flybe.com), with direct connections to many European Cities. The city is just over an hour from London by train and the Eurostar Terminal from Europe.

The AASP meeting will run consecutively after *Dino 9* at the University of Liverpool (http://pcwww.liv.ac.uk/~dino9).

Costs (in UK pounds sterling): pre-registration will be £75, students £45. On-site registration will be £125, students £75.

Delegates will be responsible for booking their own accommodation for the conference, from the selection of student residences, hotels, etc., listed on the conference website.

Deadlines: for pre-registration, abstract submission and field trip bookings - 1st August 2011.
Online pre-registration, abstract submission and fieldtrip booking will be available by the beginning of April 2011.

Technical Sessions. The two day technical program (Monday 5th- Tuesday 6th September) will accommodate more than 60 talks (in two concurrent sessions), including keynotes. Two themed sessions are currently planned, and suggestions for additional sessions are welcomed:

1. Industrial applications of palynology
2. Palaeozoic palynology symposium

Poster sessions will be convened during tea and coffee breaks.

Ice-breaker, Sunday 4th September: there will be a pre-conference welcome reception with refreshments and nibbles, followed by a keynote invited lecture.

Conference dinner, Tuesday 6th September.
The conference dinner will take place on board *HMS Warrior*, the second and largest iron-clad warship in the world, commissioned in 1861, and now berthed at Portsmouth Historic Naval Dockyard (www.hmswarrior.org).
After being piped aboard and welcomed with a tot of rum, delegates will have dinner on tables placed between the cannon on the gundeck. There may be an opportunity to visit the *Mary Rose* Museum (Henry VIII's flagship raised from beneath the Solent) prior to the meal.

AASP Business Luncheon: this will take place on Tuesday 6th September at a local restaurant, and will cost approximately £20.

Field Trips. Two field trips are planned:

Field trip 1. Pre-conference: Isle of Wight, Sunday 4th September. This trip will visit classic areas of English geology, ranging from non-marine Wealden (Cretaceous: Hauterivian/ Barremian, which has yielded some of the earliest well-dated angiosperm pollen), through the marine middle Cretaceous (e.g. Atherfield Clay), to the Chalk and into the Paleogene succession of Whitecliff Bay (left: Eocene-Oligocene). These successions have been extensively studied in terms of their palynology.

Costs will be about £40, inclusive of transport, lunch and entrance fee to the *Sandown Dinosaur Museum*.
Field Trip 2. Post-conference:

UNESCO World Heritage Jurassic Coast of Dorset (see picture above), Wednesday 7th September. This trip will take in the world-famous localities of Lulworth Cove and Stair Hole, developed in Upper Jurassic to Upper Cretaceous sediments and including the Lulworth Fossil Forest. Other localities to be visited will include Kimmeridge Bay (above), the type locality of the Kimmeridgian Stage, and the Middle Jurassic of Osmington Mills.
Costs will be about £40, inclusive of transport and lunch.

The host city: Southampton

The city of Southampton has a long involvement with the sea, as both the *Titanic* and the D-Day armada sailed from here. Even today the arrival of a cruise liner like *Queen Mary II* is a noteworthy local event. The city is big on history – you can walk around the beautifully preserved Norman city walls which date from the 1100's – or visit the Archaeology or Maritime museums, the Tudor House Museum, or the Solent Sky aircraft museum (the Spitfire, the most famous World War two fighter aircraft was designed and first flew in Southampton, and many flying boats were also built here). There are two trails around the city which visit places of historic importance related to the *Titanic* and to Jane Austen, who resided in Southampton from 1807-9. (For more information visit www.visit-southampton.co.uk).

After the conference you might also wish to explore the nearby Hampshire villages, the New Forest (where William II was murdered in 1100), or the historic cathedral cities of Salisbury (close to Stonehenge) and Winchester (former capital of England) only a few minutes drive away.

For more information, visit:
www.visit-hampshire.co.uk

For more information, contact:
John Marshall (jeam@noc.soton.ac.uk)
or
Ian Harding (ich@noc.soton.ac.uk)

45th Annual Meeting of AASP – The Palynological Society

University of Kentucky, Lexington, KY

July 21 – 25, 2012

Conference Co-Hosts

Cortland F. Eble, *Kentucky Geological Survey*

Jennifer M.K. O'Keefe, *Morehead State University*

Devonian – Carboniferous Symposium in Honor of Geoff Clayton and Ken Higgs

Co-chaired by Zélia Pereira and Reed Wicander

Geoff

A CIMP-sponsored symposium will be convened at the Lexington meeting in honor of Dr. Geoffrey Clayton and Dr. Kenneth Higgs. For more than three decades, Geoff and Ken have made tremendous contributions to our understanding of Late Paleozoic palynology. Lexington, surrounded by Late Paleozoic age strata, is a perfect venue to celebrate their contributions to late Paleozoic palynology!

Ken

Pre-Meeting Field Trip, July 21, 2012

A pre-meeting trip to Natural Bridge State Resort Park (www.parks.ky.gov/findparks/resortparks/nb), located approximately 80 miles SE of Lexington is planned. This will provide attendees a chance to enjoy one of Kentucky's most scenic areas. The centerpiece of the park is a "natural arch" of Early Pennsylvanian sandstone that has been undercut by erosion. The park is transected by several well-maintained walking trails that afford easy access to this beautiful area. The park also has a very comfortable lodge and restaurant.

View from the natural bridge in early fall

Post-Meeting Trip, July 25, 2012

The post-meeting trip will explore several world-class outcrops that expose Devonian and Carboniferous strata, focusing primarily on the Devonian "black shales." These shales are the principle source of natural gas production in Kentucky, and are being studied for their potential as a reservoir for CO_2 sequestration and enhanced gas production. The shales were deposited during a time of explosive land plant expansion and diversification. From the Middle to Late Devonian, we see the emergence of all the major plant groups that would later contribute to the vast coal accumulations deposited during the Pennsylvanian. Both macro- and micro- fossils are common and collecting is encouraged.

Devonian Shale Outcrop at Vanceburg, KY

Draft Meeting Schedule

Saturday, July 21, 2012 – Pre-meeting field trip to Natural Bridge State Park. Depart 8 AM, return 4 PM.

Sunday, July 22, 2012 – Meeting Ice-Breaker at the University Faculty Club, 6 PM – 9 PM.
Optional afternoon trip.

Monday, July 23, 2012 – General Presentations/posters, 8 AM – 12 PM,
Devonian – Carboniferous Symposium 1 PM – 5 PM.
"Walking tour" of the campus for spouses/guests.
Meeting Banquet at the University Faculty Club, 6:30 PM – 9:30 PM.

Tuesday , **July 24, 2012** – Presentations /posters, 8 AM – 12 PM, 1 PM – 5 PM.
Business Luncheon at the University Faculty Club, 12 – 1 PM

Wednesday, July 25, 2012 – post-meeting field trip, Devonian and Carboniferous Strata. Depart 8 AM, return 6 PM.

Lexington, Kentucky

The 2012 Annual Meeting of AASP – The Palynological Society will be held in Lexington, Kentucky, U.S.A., on the campus of the University of Kentucky. Lexington is located in the heart of the Bluegrass, an area known for its gently rolling terrain and numerous horse farms. The meeting will be held on the University of Kentucky campus. It is co-hosted by the Kentucky Geological Survey (KGS), which is a research/public service institute of the University of Kentucky, and the Department of Earth and Space Sciences at Morehead State University. Morehead State University is located an hour to the east in the midst of the hills and mountains of the "Knobs," surrounded by exposures of Devonian and Mississippian-age rocks.

Lodging

Lexington is a city for everyone's budget! It has more than 50 motels/hotels, including a Hilton and a Hyatt Regency, with prices ranging from $42 - $200. In addition, lodging in the Towers dormitories will be available (estimated cost $25/night). All rooms in the Towers have private baths, and the dormitory structure is located within easy walking distance (10 minutes) to/from the KGS.

Arrival/Departure

Air

Lexington, Kentucky is serviced by several major airline carriers, including Delta, United, Continental, and U.S. Airways, via Bluegrass Airport (www.bluegrassairport.com). Lexington is an easy hour's drive from two larger airports, the Cincinnati - Northern Kentucky International Airport (www.cvgairport.com), and the Louisville International Airport (www.flylouisville.com). Note: there is no public transit between either of these airports and Lexington.

Ground

Lexington is located at the juncture of two major U.S. Interstate highways, I-64 (E-W) and I-75 (N-S), and is within easy driving distance from several major U.S. cities. Greyhound bus lines also has service to/from Lexington (www.greyhound.com).

Additional Meeting Information

Please visit the Palynological Society website (www.palynology.org) for updates on the 2012 meeting in Lexington. Kentucky!

CONICET MENDOZA

Host Institution:
Centro Científico Tecnológico
CONICET - Mendoza

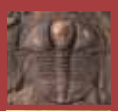
Darwin and the highest Andes

4th INTERNATIONAL PALEONTOLOGICAL CONGRESS

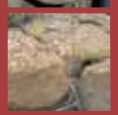
The history of life: a view from the Southern Hemisphere

Mendoza, Argentina, September 28th – October 3rd, 2014

The **4th IPC** will be an International Congress reflecting the directions of paleontology in the 21st century. The meeting will be held in Mendoza, Argentina, an attractive and easily accessible city, that offers a wide range of opportunities to participants of all backgrounds. Mendoza is renowned for its location, at the foot of the Andes with many tourist attractions to explore, and for being one of the most famous wine-producing regions in the world.



A Paleozoic journey through the Argentine Precordillera



A Cretaceous marine odyssey in the Neuquén Basin

A continental Triassic voyage

Dinosaurs of the Neuquén Group

Ichnology throughout the Paleozoic in the Atuel Canyon

Late Cretaceous dinosaur tracks and littoral biota

Local organizers are planning a comprehensive congress with an intellectually motivating scientific program. The congress will create opportunities for participants to present and share experiences, explore new directions and debate topics among specialists from across the globe. A varied array of meeting styles with a combination of keynote lectures, special symposia on leading issues, interactive workshops, technical sessions, and short courses promises to hold sessions of interest to all paleontologists.

Delegates will have the opportunity to enjoy a wide range of conference excursions to rich and well-known Argentinean paleontological sites involving a combination of scientific and touristic attractions. The schedule of field trips covers superbly exposed sedimentary successions, representing a great diversity of marine and continental palaeoenvironments, and encompasses near the whole stratigraphic record.

IPA
International Palaeontological Association

CICTERRA CONICET U. N. CORDOBA

IANIGLA CONICET U.N.CUYO GOBIERNO DE MENDOZA GOBIERNO DE SAN JUAN

ACADEMIA NACIONAL DE CIENCIAS Córdoba, República Argentina

Asociación Paleontológica Argentina

Asociación Latinoamericana de Paleobotánica y Palinología

AAS

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Chair:
Claudia V. Rubinstein
IANIGLA. Centro Científico Tecnológico. CONICET Mendoza

Co-Chairs:
Beatriz G. Waisfeld
CICTERRA. CONICET. Universidad Nacional de Córdoba

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IDEAN. CONICET. Universidad de Buenos Aires

Secretary General:
François Pujos and **Esperanza Cerdeño**
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Short Courses, Workshops and Symposium Committee

Chair:
Gabriela Mángano
University of Saskatchewan, Canada

Field Excursion Committee

Coordinator:
Marcelo Carrera
CICTERRA. CONICET. Universidad Nacional de Córdoba

IPC XIII / IOPC IX 2012

Tokyo, Japan

Palynology and Palaeobotany in the Century of the Environment

It is important that all tentative titles are sent
to Dr. Torres or Dr. Paterson by October 10, 2011.

Descriptive title	Palynological processing in the 21st Century: innovative, safer, non-acid based techniques for processing palynology samples
Key words of discipline	hydrofluoric acid, dispersants, palynology processing techniques, palynomorph recovery
Organizer(s)	[1]Vladimir Torres, [1]Niall W. Paterson, [1]Yow-Yuh Chen, [1]John H. Carter, [2]James B. Riding, [3]Jen O'Keefe. [1] Biostratigraphy Core Group, ExxonMobil Exploration Company, 233 Benmar Drive, CORP-GP3, Houston, TX 77060 [2] British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, UK, NG12 5GG [3] Department of Earth & Space Science, Morehead State University, 404A Lappin Hall, Morehead, KY 40351, USA
Contact email address	vladimir.torres@exxonmobil.com, niall.w.paterson@exxonmobil.com,
Purpose	The purpose of the proposed symposium is to discuss recent advances in the processing of palynology samples, especially those related to laboratory safety improvements and the use of environmentally friendly chemicals. Traditionally, palynological processing has relied upon the use of inorganic chemicals, such as hydrofluoric acid (HF), nitric acid (HNO_3) and hydrochloric acid (HCl). Recent publications have demonstrated that palynomorphs may also be extracted by the use of various alternative techniques and chemicals, obtaining comparable or superior palynomorph recovery. Globally, increasingly strict environmental safety regulations create the incentive for transition towards alternative methods which mitigate the exposure of lab personnel to hazardous chemicals and reduce their impact upon wildlife and communities. We welcome contributions for methods applicable to recent and fossil material of all ages.

IPC XIII / IOPC IX 2012

Tokyo, Japan

Palynology and Palaeobotany in the Century of the Environment

We cordially invite proposals again for symposia for IPC XIII / IOPC IX 2012, the joint meeting of the 13th International Palynological Congress and 9th International Organization of Palaeobotany Conference to be held on August 23-30 2012 at Chuo University in Tokyo, Japan, as previously planned (http://wwwsoc.nii.ac.jp/psj3/ipc13japan/Announcement_June2010/index.htm).
A call for pre-proposals of symposia went on early this year, but only a limited number of applications have arrived by the deadline on
31 May 2011.
Now we invite pre-proposals again with the deadline until 31 August 2011.

The theme of the IPC/IOPC 2012 is "Palynology and Palaeobotany in the Century of the Environment".
Proposed symposia could come from various disciplines such as Palaeobotany, Palaeoecology, Palaeoclimatology, Biostratigraphy, Plant taxonomy, Plant morphology, Cell biology, Aerobiology, Allergology, Melissopalynology, Forensic palynology, etc.
We also welcome symposium proposals including leading-edge techniques.

If you are interested in organizing a symposium, please prepare a "pre-proposal" that briefly describes the symposium in English.
This pre-proposal should include the followings.
Please use the attached file to submit the pre-proposal.
1. A descriptive title
2. One or two paragraphs explaining the purpose of symposium 3. A tentative list of speakers (unconfirmed), their institutions or affiliations, and preliminary presentation titles
We will accept only one symposium proposal from each individual.
Please send the pre-proposal to the program committee (program.ipc.iopc.2012@gmail.com),
and use the subject heading: IPC/IOPC 2012 Symposium proposal.
The program committee will review the pre-proposals and may make suggestion in view of organization of whole symposia.
For example, the committee may request merging of proposed symposia with similar topics.

We also welcome workshop proposals.
More information about the IPC/IOPC 2012 is available at http://wwwsoc.nii.ac.jp/psj3/ipc13japan/call_for_symposia/index.htm
We are preparing for a call for applications of Symposium Proposals, which will start in July. We would like ask you the application by two steps:
1st step: pre-proposal (dead line 31 August, 2011) 2nd step: proposal (dead line 31 October 2011)
We look forward to receiving your contributions.

Best wishes

Organizing committee
Program committee
IPC XIII / IOPC IX 2012
program.ipc.iopc.2012@gmail.com

Doctoral student in Environmental Science – Climate variability and human impact on the Baltic Sea (NPA 2011/391)

A fully funded four-year Ph.D. position is available at the Department of Earth and Ecosystem science, Lund University, Sweden.

This is an exciting new project where we want to study changes in nutrient levels, temperature, and salinity in the coastal areas of the Baltic Sea over the last two millennia.

The focus of the project is to estimate when and to which degree human expansion resulted in increased nutrient loading on the Baltic Sea's coastal ecosystem.

Read more about the project and apply on: http://www.lunduniversity.lu.se/o.o.i.s?id=24914&Dnr=411346&Type=EU

Deadline 2011-10-14

Contact person: Dr Helena L. Filipsson, email: helena.filipsson@geol.lu.se
Dept. of Earth and Ecosystem Sciences, Lund University

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I support WINGS http://www.lu.se/wings

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