AASP-THE PALYNOLOGICAL SOCIETY

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AASP 1967



Zygogynum (=Belliolum) pauciflorum (Baker f.) Vink by David Jarzen, FLMNH

NEWSLETTER



December 2009 Volume 42, Number 4

Published Quarterly by AASP — The Palynological Society



A.A.S.P. NEWSLETTER

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The American Association of Stratigraphic Palynologists, Inc. - AASP-The Palynological Society - was established in 1967 by a group of 31 founding members to promote the science of palynology. Today AASP has a world-wide membership of about 800 and is run by an executive comprising an elected Board of Directors and subsidiary boards and committees. AASP welcomes new members.

The AASP Foundation publishes the journal Palynology (annually), the AASP Newsletter (quarterly), and the AASP Contributions Series (mostly monographs, issued irregularly), as well as several books and miscellaneous items. AASP organises an Annual Meeting which usually includes a field trip, a business luncheon, social events, and technical sessions where research results are presented on all aspects of palynology.

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)

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The AASP Newsletter is published four times annually. Members are encouraged to submit articles, "letters to the editor", technical notes, meetings reports, information about "members in the news", new websites and information about job openings in the industry. Every effort will be made to publish all information received from our membership. Contributions which include photographs should be submitted a week before the deadline. Deadline for next issues of the newsletter is **February 15**. All information should be sent by email. If possible, please illustrate your contribution with art, line drawings, eye-catching logos, black & white photos, colour photos, etc. We <u>DO</u> look forward to contributions from our membership. A Message from the President

The Joy of Palynology.

By Joyce Lucas-Clark

In these days of diminishing memberships and hard times for Palynologists (along with almost everyone else), it is easy to lose track of some of the good stuff about palynology and The Palynological Society. Bertrand Russell in his book, <u>The Conquest of Happiness</u>, remarked that the scientist, in our society, has it pretty good in that he has prestige as well as enjoyable work.

Along those lines, there is a story from my life that I like to tell my students about Lynn Cox. Some of you may know who she is. Lynn Cox is arguably the greatest long distance swimmer of all time. By the time she was 15 she had swum to Catalina Island, a distance of 27 miles, and she swam the 32 mile English Channel breaking the men's and women's world records for that swim. What to do when you have achieved, as she said in her autobiography, your life's goal at 15? You swim the straits of Magellan. Among many other firsts, she swam the Bering straits to



Two great Presidents of AASP at Kingsport, TN, at the Business Luncheon as President Rich passes the gavel and "Robert's Rules" to President Lucas-Clark. Photograph by D.M. Jarzen

Russia from the US and swam to Antarctica in water so cold it would kill an ordinary person in 20 minutes.

I met Lynn when she had just completed the Straits of Magellan swim. She was a student at UCSB taking a geology class and going on a geology field trip. She was sitting next to Dr. Bill Wise in the carry-all vehicle and asking him about what he did. Dr. Wise is a mineralogist and told her about describing new minerals; microscopic minerals. And so after listening for a bit she asked him, "So why do you study these itsy bitsy crystals anyway?" (and I am thinking, why in heck do you swim the straits of Magellan??) But Bill Wise answered quite simply, "Because they're neat!" I've always remembered that because I use it whenever anyone asks me why I study those itsy, bitsy dinoflagellates or pollen and spores. Because they're neat!"

There is a longer quotation that tells again why we do what we do, this time from Stephen J. Gould, Evolutionary Biologist and Paleontologist. Once during a TV interview he was asked about his reasons for his many years of study of a very peculiar land snail of the Bahamas. And, although he spent some time telling specifically what the world could learn from that species of snail, he went on to tell his two more personal reasons:

"It is the single greatest joy of my intellectual life to know with intimacy the details of a part of nature. Even a tiny little part is almost inexpressible in the pleasure it gives. I freely admit that there may be only half a dozen other people in the world who care about this particular animal the way I do. But the other reason is purely personal. There is the joy of discovery. Finding something new is the most unsullied, the most precious kind of intellectual achievement, even if it's small. I mean, to say: I found this; nobody's seen it before; it's really new, even if small, but I found it."

That's how I feel about dinoflagellates that I have found. And what is really great is that no one can ever take that joy away from me.

For the last nine years my consulting in palynology has not brought in a living. I teach geology and paleontology to make a living and do palynology either as a small time consultant or on my own as an independent researcher. It is much the same story with many of you I suspect. But all of us know the joy of our science: know that inexpressible bit of pleasure that goes through you when you gaze at a really exquisitely preserved palynomorph under the microscope or with SEM or in 3-D confocal laser imagery. Furthermore, and not to be sneezed at, we know the other joy that comes with our coming together to share our joyful experience with good friends. That is what we do here in the AASP, The Palynological Society.



You may have heard the news that in mid 2009 the AASP Foundation decided to change the publishing arrangements for *Palynology*.

See www.aaspsite.com and www.tandf.co.uk/journals/TPAL

As of 2010, the journal will be published on behalf of the AASP Foundation by Taylor & Francis (T&F), joining other (perhaps familiar) titles such as *Alcheringa* (published on behalf of the Association of Australasian Palaeontologists) and *Grana* (published in association with the CPS). It will also move from a yearly publication to two issues a year, to be published in June and December. 'Very well', you may say of this change 'but what does this mean for me?'

From 2010, AASP members will not only continue to enjoy a preferential subscription rate to the journal but will be able to claim a 20% discount on all T&F / Routledge and Carfax books (go to www.tandf.co.uk/books to view our titles). It doesn't end there, we hope to offer AASP members a preferential subscription rate to **Grana**, in return allowing CPS members the opportunity to subscribe to **Palynology** at a reduced rate. The journal will further benefit from our global Sales and Marketing reach with the aim of increasing **Palynology**'s visibility within the global community.

T&F is committed to providing excellent publishing services to its society partners, providing the services of a commercial publisher (specialist typesetting and printing, rapid turnaround times, cutting edge publishing technologies and so on) with a personal approach. Each of our journals has a small team dedicated to its smooth and successful publication. In *Palynology*'s case we will maintain the high Production values that are in place at the moment, whilst providing added-value technologies such as our online early publication initiative, iFirst, and the ability for authors to add interactive materials to the online version of their articles. We have also taken the transition as an opportunity to revise the current style and referencing formats; you will notice that these are more similar to the standard formats employed by other journals and continue to be logical and easy for authors to follow. Over the coming years we hope to build upon the current excellent standards of the journal, working with the AASP Foundation to increase both the quality and visibility of the journal. As with any partnership, success depends upon the commitment of both parties, and their ability to work together as a team.

On that note, let's introduce the team: as well as myself (Managing Editor), *Palynology* has a dedicated Marketing Executive (Kristian Wilson), Production Editor (Jayne Kay), and will have a ScholarOne Manuscripts (formerly Manuscript Central) contact once this system is set up for Palynology. The journal will continue to benefit from the guiding hand of Jim Riding as editor and we are delighted to announce that Bob Clarke, longstanding Production Editor on *Palynology* and one of its founding members, will still play a vital role as copy-editor.

To return to ScholarOne Manuscripts or S1M; as you will have gathered by now, we are in the process of setting up an online submission and peer review site for *Palynology*, which will enable authors to submit papers online through the journal's website (and will also reduce the size of Jim's inbox!). Reviewers will have their own account and will be able to access the site from any computer terminal, making the review process a lot simpler and quicker for all involved. More information on S1M can be found at http://scholarone.com/products/manuscript/. As S1M is largely automated we hope that this will pave the way for more rapid review turnaround, combining with our online early workflow, iFirst, to enable authors to view their article online before its publication within an issue.

The transition is already well under way and we would like to make this as interactive as possible. As such, we would welcome your thoughts and feedback. If you have any comments please feel free to drop me an email at victoria.gardner@ tandf.co.uk – I look forward to hearing from you!



HESS HESS CORPORATION

LSU palynology student awarded 3d place at the Geology and Geophysics Department Graduate Student Poster Competition



The LSU Department of Geology & Geophysics hosted its second Rock Star Lagniappe poster contest on Friday, October 9, 2009. Dr. Annette Engel and Dr. Phil Bart came up with the idea for the event in an effort to give students an opportunity to showcase and share their research with their professors and peers. Of the fifty-four graduate students currently enrolled, eighteen entered posters. These posters were judged on content, organization, and overall visuals. First place honors were given to Clint Edrington, a PhD student, for his research on shoal deposition in the Gulf Coast. The second place was awarded to another PhD student, Amy Spaziani, for her sedimentological research in the Gulf of Mexico.

The third place went to a new master student, Sandra Garzon, who only recently moved to the U.S. in August 2009. She received her bachelor degree in Geology from a Colombian University called Universidad Industrial de Santander. She is working with Dr. Sophie Warny on the palynological analysis of Upper Cretaceous sequences from Northern South America. Her research focuses on taxonomy and biostratigraphy of organic-walled dinoflagellate cysts, pollen and spores. The aim of her study is to use paleopalynology as a tool for hydrocarbon exploration. This project is conducted in collaboration with Dr. Carlos Jaramillo of the Smithsonian Tropical Research Institute. Sandra's research is funded by the LSU Museum of Natural Science and the Colombian company ECOPETROL.

These posters were judged by an independent panels of jurists composed of a Dr. Jaye Gable, of faculty in the Department of Oceanography, Dr. Carol Wicks, the new Chair of the Geology and Geophysics department, and by Mr. Tim Kirst, from HESS Corporation. LSU thanks HESS for providing the funding for this contest. This endeavor has proven extremely valuable in encouraging healthy competition amongst our students, while building fundamental career skills.



AASP EMAIL DIRECTORY

The Email Directory is by FAR the most visited page on the AASP website.

Dr. Owen David have recently updated the email directory page http://www.palynology.org/portal/pandir.html on the AASP web page.

This has not been done since its inception by Martin Head in 1996, because its contents are donated and updated by the users and not taken from the AASP membership directory. However, several of the listings were for palynologists who had

passed away! So, after a lengthy process, Owen has eliminated about 1/3 of the addresses that were no longer valid.

We encourage our members to log in and double check the validity of their email address.



Algae and Pollen Grains Provide Evidence of Remarkably Warm Period in Antarctica's History

By Ashley Berthelot

For Sophie Warny, LSU assistant professor of geology and geophysics and curator at the LSU Museum of Natural Science, years of patience in analyzing Antarctic samples with low fossil recovery finally led to a scientific breakthrough. She and colleagues from around the world now have proof of a sudden, remarkably warm period in Antarctica that occurred about 15.7 million years ago and lasted for a few thousand years.

Last year, as Warny was studying samples sent to her from the latest Antarctic Geologic Drilling Program, or ANDRILL AND-2A, a multinational collaboration between the Antarctic Programs of the United States (funded by the National Science Foundation), New Zealand, Italy and Germany, one sample stood out as a complete anomaly.

"First I thought it was a mistake, that it was a sample from another location, not Antarctica, because of the unusual abundance in microscopic fossil cysts of marine algae called dinoflagellates. But it turned out not to be a mistake, it was just an amazingly rich layer," said Warny. "I immediately contacted my U.S. colleague, Rosemary Askin, our New Zealand colleagues, Michael Hannah and Ian Raine, and our German colleague, Barbara Mohr, to let them know about this unique sample as each of our countries had received a third of the ANDRILL samples."

Some colleagues had noted an increase in pollen grains of woody plants in the sample immediately above, but none of the other samples had such a unique abundance in algae, which at first gave Warny some doubts about potential contamination. Photo credit: Richard Levy

"But the two scientists in charge of the drilling, David Harwood of University of Nebraska – Lincoln, and Fabio Florindo of Italy, were equally excited about the discovery," said Warny. "They had noticed that this thin layer had a unique consistency that had been characterized by their team as a diatomite, which is a layer extremely rich in fossils of another algae called diatoms."

All research parties involved met at the Antarctic Research Facility at Florida State University in Tallahassee. Together, they sampled the zone of interest in great detail and processed the new samples in various labs. One month later, the unusual abundance in microfossils was confirmed.

Among the 1,107 meters of sediments recovered and analyzed for microfossil content, a twometer thick layer in the core displayed extremely rich fossil content. This is unusual because the Antarctic ice sheet was formed about 35 million years ago, and the frigid temperatures there impede the presence of woody plants and blooms of dinoflagellate algae.

"We all analyzed the new samples and saw a 2,000 fold increase in two species of fossil dinoflagellate cysts, a five-fold increase in freshwater algae such as Zygnemaceae (right page, top) and up to an 80-fold increase in terrestrial pollen such as *Podocarpidites* (right page, bottom)," said Warny. "Together, these shifts in the microfossil assemblages represent a relatively short period of time during which Antarctica became abruptly much warmer."



These palynomorphs, a term used to described dust-size organic material such as pollen, spores and cysts of dinoflagellates and other algae, provide hard evidence that Antarctica underwent a brief but rapid period of warming about 15 million years before present.

"This event will lead to a better understanding of global connections and climate forcing, in other words, it will provide a better understanding of how external factors imposed fluctuations in Earth's climate system," said Harwood.



"The Mid-Miocene Climate

Optimum has long been recognized in global proxy records outside of the Antarctic region. Direct information from a setting proximal to the dynamic Antarctic ice sheets responsible for driving many of these changes is vital to the correct calibration and interpretation of these proxy records."

These startling results will offer new insight into Antarctica's climatic past – insights that could potentially help climate scientists better understand the current climate change scenario.

"In the case of these results, the microfossils provide us with quantitative data of what the environment was actually like in Antarctica at the time, showing how this continent reacted when climatic conditions were warmer than they are today," said Warny.

According to the researchers, these fossils show that land temperatures reached a January average of 10 degrees Celsius – the equivalent of approximately 50 degrees Fahrenheit – and that estimated sea surface temperatures ranged between zero and 11.5 degrees Celsius. The presence of freshwater algae in the sediments suggests to researchers that an increase in meltwater and perhaps also in rainfall produced ponds and lakes adjacent to the Ross Sea during this warm period, which would obviously have resulted in some reduction in sea ice.

These findings most likely reflect a poleward shift of the jet stream in the Southern Hemisphere,

which would have pushed warmer water toward the pole and allowed a few dinoflagellate species to flourish under such ice-free conditions. Researchers believe that shrub-like woody plants might also have been able to proliferate during an abrupt and brief warmer time interval.

"An understanding of this event, in the context of timing and magnitude of the change, has important implications for how the climate system operates and what the potential future response in a warmer global climate might be," said Harwood. "A clear understanding of what has happened in the past, and the integration of these data into ice sheet and climate models, are important steps in advancing the ability of these computer models to reproduce past conditions, and with improved models be able to better predict future climate responses."

While the results are certainly impressive, the work isn't yet complete.

"The SMS Project Science Team is currently looking at the stratigraphic sequence and timing of climate events evident throughout the ANDRILL AND-2A drillcore, including those that enclose this event," said Florindo. "A broader understanding of ice sheet behavior under warmer-than-present conditions will emerge."

This story was published as the cover story of the October 2009 issue of the journal Geology.



CENEX Update

The March, 2008 Newsletter announced the attainment of our \$600,000 goal to trigger receipt of \$400,000 in matching funds from the Louisiana State Board of Regents, and the appointment of Dr. Sophie Warny as an assistant professor in the Department of Geology & Geophysics, with a joint appointment as Curator, Museum of Natural Science. Since that time events have moved rapidly and a great deal of progress has been made. This update will summarize those events and that progress.

In October, 2008, LSU published an announcement soliciting applications for 4 Endowed Chairs in the Department, one of which was the AASP Endowed Chair in Paleopalynology. To date several applications have been (and are still being) received for the AASP Chair, but as of this writing selection of interviewees and interview dates has not been finalized.

The AASP CENEX Committee, which I chair, is a permanent committee established in 2008 with a number of objectives, two of which are 1) to maintain and strengthen AASP's relationship with LSU; and 2) to continue to pursue additional funding for CENEX. In pursuit of these objectives, Committee Members Harry Leffingwell and David Pocknall joined me at Baton Rouge for a meeting on April 1 with Kevin Carman (Dean, College of Basic Sciences), Carol Wicks (Chair, Department of Geology & Geophysics), and Ann Marie Marmande (Director of Development) and Emi Gilbert (Associate Director of Development) for the College of Basic Sciences. During these meetings Sophie kindly gave the Committee a tour of the CENEX facilities.

We were enormously impressed with the renovation and reorganization that Sophie had brought to the facilities in such a short time--and with only a halftime appointment in the Department. Prominent among her accomplishments were:

CENEX

• her use of her startup funds to renovate a disused laboratory (to a graduate student research facility), purchase microscopes and furniture, and move collections of slides into the room (see below; also next page);

• the presence of graduate students at work in this facility, with more expected in Fall, 2009;

• her cleaning and reorganization of the library (next page, right) and microscope storage room, and cleaning in the processing laboratory and addition of countertop space (next page); future plans call for installation of "fumeless" sample processing equipment;

• her networking with the LSU Libraries Department to have the entire collection of technical literature evaluated, with an eye toward applying for a grant to fund a graduate student in library sciences to digitize the collection and place it in a searchable datafile.



New Microscope Facility: Research Area



New Microscope Facility: Collection Area



Reorganized library



Micropaleontology students learn to make slides of pollen and spores at the newly-installed island in the CENEX lab

Dean Carman discussed for us his issues in managing the simultaneous recruitment for 4 endowed chairs, and the impact of the economic downturn on the University and the College. Carol Wicks shared with us her perspective of *CENEX* within the Department.

With Ann Marie, Emi and Sophie we discussed funding priorities and ways to re-invigorate the development process. I thought it important that this progress was shared with the membership, so I proposed a 3-part effort: 1) I asked Sophie to make a presentation at the Kingsport Annual Meeting Luncheon to share this with attendees; 2) I asked Ann Marie to come to the meeting to make a Luncheon presentation on Planned Giving (bequests, retirement plan assets, appreciated property, life income plan, etc.); and 3) I would prepare a follow-up article for the Newsletter. When a meeting conflict prevented Sophie's attendance, Ann Marie and Sophie prepared the presentation together and Ann Marie volunteered to give the presentation.

Ann Marie's presentation also highlighted the following Department facts and initiatives:

- STUDENTS
 - 110 undergraduate Geology majors (~50 incoming freshmen)
 - o 36 M.S. students
 - o 14 Ph.D. students
- INCREASING ENROLLMENTS OVER THE LAST FIVE YEARS
 - Undergraduate majors up by over 100%
 - M.S. enrollments up by 29%
 - Ph.D. enrollments up by 27%
- STUDENT OPPORTUNITIES / PRO-GRAMS
 - URGE (Undergraduate Recruiting in Geology): Headed by Dr. Jeffrey Nunn; in the State of Louisiana Earth Sciences are not routinely taught past the 8th grade; this is an outreach program (in which Sophie is very active) to high school students to acquaint them with the possibility of a career in geology or one of its sub-disciplines;

- ADG (Applied Depositional Geosystems): A certificate program geared toward students who are aiming for a career in industry; taught in conjunction with Petroleum Engineering;
- GeoDE (Geology Diversity program): Made possible by a grant of \$900,000 from Marathon and its CEO, Clarence Cazelot, this program aims to increase the number of women / minorities in geology; Geology PhD students work in this program, receiving a stipend and research support; modeled after a similar and successful program in the Chemistry Department.
- DEPARTMENT STAFFING
 - o 16 Full-time Faculty
 - 8 Adjunct Faculty
 - o 1 Instructor
- DEPARTMENTAL RESEARCH FOCI:
 - Fluids in the Subsurface
 - o The Stratigraphic Record
 - o Geophysics
 - Petrology & Geochemistry

I am very enthusiastic about our recent progress and highly optimistic about the future of CENEX. A number of members responded favorably to our earlier requests for support, some as long as nearly 20 years ago. I ask that as many of the members as possible consider responding once more. Especially if your employer provides matching gifts, we ask that you consider giving to the extent you are able. You can obtain more information by contacting Ann Marie Marmande (225-578-4906; annmarie@lsu. edu) or me (214-504-0703; kpiel@the-mip.com). If you would consider Planned Giving, please contact Ann Marie, or any of the following: Gwen L. Fairchild (225-615-8915; gfairchild@lsufoundation.org), Jane M. Henslee (225-615-8913; jhenslee@lsufoundation. org), or Mona Becnel (225-615-8914; mbecnel@ Isufoundation.org).

Ken Piel



I have lived and worked in Florida now for 12 years, and during that time I have visited Walt Disney World® but once–a short visit to Epcot Center. However, during that same time frame, I have managed a dozen or so visits to the Fairchild Tropical Botanic Garden and/or the Montgomery Botanical Center in Miami. On my last visit there in June of this year, I browsed through the gift shop/bookstore and spotted the eye-catching photograph on the cover of *Genera Palmarum*. I had promised myself that someday I would purchase the volume, and that day I did.

I can still recall with much fondness visiting with Professor Hal Moore at the Liberty Hyde Bailey Hortorium, Cornell University in the mid and late 1970's. I was studying what I suspected as being fossil palm pollen from the late Cretaceous of the western interior of Canada, and needed the advice of Dr. Moore. During my visits there I met with Natalie Uhl, a student and research collaborator of Dr. Moore's, and learned

Genera Palmarum. Evolution and Classification of the Palms.

A book review by David M. Jarzen Florida Museum of Natural History Gainesville, Florida

of their project to complete the vision of Liberty Hyde Bailey to publish a volume of the world's palms, complete with descriptions and systematics. That goal came to fruition after the death of Professor Moore (1980) with the publication of *Genera Palmarum* in 1987 (Uhl & Dransfield, 1987).

The current edition of *Genera Palmarum* is not really a "second edition," as it bears a different title emphasis "the evolution and classification of palms." Its contents are much expanded and include many newly discovered species, completely rewritten descriptions of the genera, new information as supplied by DNA analysis, chemistry and, of special interest to palynologists, an entire chapter devoted to palm pollen. Indeed the book is, as much as any book may hope to be, up to date, so much so that the new genus of palms, *Tahina* Dransfield & Rakotoarinivo, was incorporated into the manuscript as it was in its final stages of preparation for publication!

Following an introduction, acknowledgements and a section on "How to Use This Book," the remainder of the 732 pages in the book are devoted to chapters covering the structure of palms, palm pollen, chromosomes and cytogenetics, chemistry of the palms, the fossil record, phylogeny and evolution, biogoegraphy, natural history and conservation, and the largest chapter within the book, Chapter 9, the classification of the palms.

Genera Palmarum. Evolution and Classification of the Palms.

John Dransfield, Natalie W. Uhl, Conny B. Asmussen, William J. Baker, Madeline M. Harley and Carl E. Lewis. Second Edition. Kew Publishing, Royal Botanic Gardens, Kew, UK, 978-1-84246-182-2 (Hardcover), \$180.00, 2008.



Frond of *Livistona rigida* Becc., at the Mount Cootha Botanic Gardens, Brisbane, QLD, Australia. Photo: DMJ

The chapter on pollen, contributed by Madeline Harley, introduces the reader to the basics of pollen morphology and the significance of some pollen features, such as the systematic distribution of aperture types, to phylogenetics. The chapter is replete with photographs and tables which illustrate or enhance the discussion of pollen features. Likewise a discussion of the systematic distribution of palm pollen ectexine types is shown, in Table 2.4, to bear strong phylogenetic relationships. Recently I have had an interest in palm pollen bearing spines. As I searched the literature for fossil forms bearing spines, *Nypa* Steck of course was common, yet there are several other forms in the fossil record which bear spines (e.g. *Mauritia* L.f., *Wallichia* Roxb.).

The chapter on pollen indicates a total of 19 genera of palms are known to have intectate or tectate spinose (echinate) pollen forms.

The bulk of the book is devoted to the classification of the palms, covering all living genera alphabetically, within each of the five subfamilies. Within the subfamilies the taxa are arranged by tribes, and then by genera. An introduction to the systematics, to familiarize the reader with palm family (Arecaceae) classification allows the reader to understand the descriptions and placement of genera that follow. Each description of a genus is complete with an indication of the type species and reference to the original publication. The generic diagnosis is often very detailed and requires a firm knowledge of palm morphology to be thoroughly appreciated. Accompanying the descriptions are beautifully drawn illustrations of the flowers and/or fruits of the genus under discussion. I found the additional information following the description to be of great value in my studies. The authors have added information on the distribution and ecology of each genus, references to the anatomy and relationships, and taxonomic account. When known, details of the fossil record are given, complete with appropriate references. Finally, a section on the common name(s) and economic value or use of the genus is provided. With each generic entry, photographs of the pollen, including LM, SEM and often TM, are provided. This may well be the only complete source of pollen photographs, using LM, SEM and TEM for one family.

Bismarkia nobilis Hildebrandt & H. Wendl. at the Fairchild Tropical Botanic Garden. Photo: DMJ



The liberal use of color photographs of various parts of a palm plant, its habit, or habitat, provides even more enjoyment and information for the reader. The book is packed with photography of the highest quality. The authors have done very well in the selection of illustrative material.

In the chapter covering the fossil record of palms, both macrofossil and microfossils are considered. Caution seems to be the theme in this chapter, and rightfully so, inasmuch as the identity of suspect palm specimens below the family level is often quite difficult. Many leaf or frond macrofossils having a costapalmate structure are indiscriminately placed in the fossil genus *Sabalites*, suggesting affinity with the modern genus *Sabal* (photo next page: Portion of a fossil frond of a *Sabal*-type plant from the Miocene Alum Bluff in the panhandle of Florida. Photo: DMJ). There are many palms with costapalmate leaves, and placement in Sabalites may not be the best determination for the fossil material. Likewise the genus Arecipites is used for a variety of simple, monosulcate, palm-like dispersed pollen forms that may or may not be related to the Arecaceae. Of special value to palynologists are the tables contained within the chapter covering the fossil record. These detailed tables, four in all, summarize the accepted, occurrence of macro- and microfossil reports from the Cretaceous, the Tertiary of southern England, the Tertiary of Central Europe, and the Tertiary of India. These tables present in collected form the fossil taxon, the reported age, the provenance, the type of fossil (fruit, leaf, stem etc.), and the authors of the report. I found these tables to be of great value in searching for reports of a specific fossil form or when searching for fossil palm taxa from a given region. For palynologists, this feature of the book is reason enough to purchase a personal copy.

In the chapter on biogeography the reader will soon realize that the distribution of palms is not simply restricted to the lowland wet tropics. The palm family is widely distributed around the world, reaching latitudes of about 44° North and South, in desert environments and to altitudes of 3600 meters (Ecuadorian Andes). Finding palm pollen in palynological preparations is not an automatic indication of "wet tropics." Again caution must be exercised in the interpretation of palm environments as the family is widely distributed through an impressive variety of habitats. The American tropics outnumber the Malesian tropics in number of genera, but the latter certainly outnumbers the former in number of species with a total of 992 species! The richness in number of taxa in these two regions of the world still need more detailed studies to fully appreciate their total palm flora.

The book also includes several additional features which greatly enhance the usefulness of the volume. A geographical listing of all genera is provided following the main text. A glossary of terms used throughout the book, including palynological terms, is well written and easily understood. This glossary is critical to an understanding of the



generic descriptions. Of real value in this glossary are the illustrations that accompany some of the terms, or concepts. This greatly enhances the reader's ability to "see" the features being discussed. It may well be the most complete glossary of terms I have ever seen. The page size at 28.8 x 23.6 cm allows for larger drawings and photographs, providing detailed images of flowers, fruits and other structures. The literature cited is, of course, as would be expected in a volume covering such a broad perspective, extensive. The book closes with three indices, including scientific names, common names and a subject index.

My recommendation is clearly in favor of having this book in my personal library; and I suspect that anyone with an interest in palms, whether modern or fossil, should own this book. It is the most complete coverage of the family available. The price I paid of \$180.00, is the street price established by the Fairchild Tropical Botanic Garden. I have seen it listed from Kew Publishing for as little as \$130.00 (\pounds 79.00).

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James B. Riding and François G. Schmitt

The famed micropaleontologist and palynologist Georges Victor Deflandre (1878-1973) was a prodigious talent who has 313 publications to his name (Verdier, 1975). Amongst this exceptional body of work, Deflandre's books and papers will be particularly well known to palynologists who specialise in acritarchs and dinoflagellate cysts (see one example of Deflandre's line drawings to the left: *Rigaudella aemula*).

Georges Deflandre visited and sampled the Upper Jurassic (Oxfordian) strata of Villers-sur-Mer, in Normandy, northern France during the 1930s. These outcrops are immediately to the west of Villers-sur-Mer, a classic small French seaside town near Auberville. They are magnificent sea cliff sections, locally known as *les falaises des vaches noires* (= the cliffs of the black cows), and represent the most complete and extensive Lower-Middle Oxfordian succession in France (Bigot, 1957; Rioult et al., 1991; Riding, 2007). The Jurassic succession of between Villers-sur-Mer and Auberville has had a long history of study; early studies include those of Raspail (1901), Bigot (1928), and Urbain (1937). The name *falaises des vaches noires* is derived not from the cliffs themselves, which are actually reminiscent of the ruins of ancient castles, but from the supposedly cow-shaped blocks of Chalk that frequently slump down the cliffs of Jurassic strata onto the beaches between Villers-sur-Mer and Houlgate.

The samples collected by Deflandre were prepared using a very safe and simple method. A small quantity of the rock material was flaked into a relatively large vessel of water. Immersion caused the rock to disaggregate to mud, which was sieved using silk of various mesh sizes. Deflandre found that the palynomorphs were concentrated on his sieve number 20. The dinoflagellate cysts were further concentrated by swirling the aqueous residue in a saucer. When the saucer was gently rocked (or "panned") so as to impart a rotary movement of the liquid, the palynomorphs went into suspension, particularly at the periphery of the saucer. The denser and larger fraction, including carbonized plant material and mineral grains, were concentrated in the center, normally at the base. When maximum separation was achieved, the palynomorphs were repeatedly extracted from the margins of the saucer using a pipette. This technique was later described as "swirling" by, for example, Funkhouser and Evitt (1959) and Traverse (2007, p. 645-646). The success of this straightforward method is largely due to the highly palynologically-productive nature of the Callovian and Oxfordian mudstones exposed at Villers-sur-Mer.

The residues were studied, and the subsequent paper, Deflandre (1938), is a major publication on the taxonomy of Jurassic dinoflagellate cysts. It was issued by the French publication *Travaux de la Station zoologique de Wimereux*. This work is a landmark study because it

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represents the first major text on Jurassic dinoflagellate cysts. Within its pages many 'classic' species were described including Adnatosphaeridium caulleryi (Deflandre 1938) Williams & Downie 1969, Endoscrinium galeritum (Deflandre 1938) Vozzhennikova 1967, Endoscrinium luridum (Deflandre 1938) Gocht 1970, Gonyaulacysta eisenackii (Deflandre 1938) Górka 1965, Gonyaulacysta jurassica (Deflandre 1938) Norris & Sarjeant 1965, Korvstocvsta pachvderma (Deflandre 1938) Woollam 1983, Nannoceratopsis pellucida Deflandre 1939, Rhynchodiniopsis cladophora (Deflandre 1938) Below 1981, Rigaudella aemula (Deflandre 1938) Below 1982, and Scriniodinium crystallinum (Deflandre 1938) Klement 1960. These species are all prominent, well-known taxa and are used routinely in applied geology projects all over the world. The correct date of publication is 1938, and not 1939 as suggested by Fensome and Williams (2004).

Contemporary palynologists may well keep papers from the 1930s and 1940s, but would not normally use them in their day-to-day work. This is principally because the standard of illustrations at that time is not comparable to the levels of today. Deflandre (1938), however, is an exception. There are light photomicrographs of very good quality, but the majority of the illustrations are excellent line drawings. Even after 70 years, palynologists still check their specimens against the exemplary line drawings of Deflandre's material from Villers-sur-Mer.

Wimereux is a small seaside town on the Cote d Opale, halfway between Calais and Boulogne-sur-Mer. The zoological station at Wimereux was founded in 1874. The *Travaux de la Station zoologique de Wimereux* was mainly intended for publishing PhD theses and other monographs undertaken at the station: Eight volumes were published between 1878 and 1900, including a special issue dedicated to the work of the founder, Alfred Giard. A further special issue was published in 1925 to commemorate the 50th anniversary of the station's foundation. Two other issues were published in the 1930s. Deflandre (1938) was published in a volume to mark the seventieth birthday of Maurice Caullery, who was the director of the laboratory at that time. The dinoflagellate cyst species Adnatosphaeridium caullervi (Deflandre 1938) Williams & Downie 1969 was named after Maurice Caullery. Now the marine station at Wimereux is associated to a CNRS laboratory, the Laboratory of Oceanography and Geoscience (http:// log.univ-littoral.fr/Telecharger-de-la-documentation). This is the laboratory that Deflandre was associated with, but not the same buildings. The original buildings were unfortunately destroyed during the Second World War in 1942. The present director, Dr. François G. Schmitt, has scanned this paper at high resolution; the pdf file can be made available to the AASP membership and any other interested parties. It is available for free download at http://log.univ-littoral.fr/docs/ Deflandre1938.pdf.

A visit to the delightful town of Villers-sur-Mer is highly recommended. There is a small geological museum located inside the Tourist Information Office, on Place Mermoz on the seafront (see: http://www. villers-sur-mer.fr/). The Tourist Information Office can be easily located by the unusual topiary dinosaurs in a small park close to the building. The museum displays a wide collection of fossils collected locally, and is open every day except December 25th and 1st January. A local French group, *L'Association Paléontologique de Villers-sur-Mer* (APV), run fieldtrips and scientific meetings. The APV can be contacted by email on: asso. paleo.villers@wanadoo.fr. This society has produced an excellent 25-page field guide to the Jurassic of the Calvados Coast (*Le Jurassique de la Côte Calvados*).



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Above: Topiary dinosaurs on the seafront at Villers-sur-Mer close to the Tourist Information Office and the Geological Museum.

Position in Biostratigraphy

Due to an unsuccessful attempt to fill the position of Professor in Biostratigraphy earlier this year, the Geosciences Department, University of Oslo, intends to re-advertize the position soon – this time possibly opening it up for applicants at the Associate Professor level. Younger palynologists/ micropaleontologists with experience in pre-Quaternary biostratigraphy and a keen interest in developing cooperative research with industry are encouraged to apply. Potential candidates interested in receiving further information as it becomes available may contact me:

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

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

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

We are planning exciting field trips, including one to Joggins World Heritage site where you can see some of the most spectacular fossil tree trunks and the world's earliest reptiles.

Other field trips will possibly include locations such as the Paleoindian site in Debert, the Cobequid-Chedabucto fault, the North Mountain Basalt, Arisaig, and the unique Windsor gypsum cliffs at St Croix. Impressive drumlin fields and glacial deposits are found throughout Nova Scotia, especially around Old Town Lunenburg, a UNESCO World Heritage Site.

And let's not forget that the Bay of Fundy has the largest tides in the world!







Photos : Pablo Etchevers

SYMPOSIUM ON THE PALEOGENE OF SOUTH, CENTRAL AMERICA AND THE CARIBBEAN La Plata, Argentina, 20-24th September, 2010

A symposium on the Paleogene of South and Central America will be held at the X Argentinean Congress of Paleontology and Biostratigraphy and VII Latin American Congress of Paleontology (La Plata, Argentina, 20-24th September, 2010).

The aim of the symposium is to have an overview of research related to the Paleogene of South and Central America, facilitating the exchange of information and integration of results from different disciplines and regions.

Participants are invited to submit abstracts on all aspects of the Paleogene of South and Central America/Caribbean, particularly on stratigraphy, biostratigraphy, paleogeography, paleontology, paleoecology, and paleoclimates. Contributions on global aspects of the Paleogene and from other regions of the world are also welcome.

Details and deadlines for submission of abstracts will be at **Congress's** the web page. (http://www.congresospaleo2010.fcnym.unlp.edu.ar). For details on please contact Carlos the symposium, Jaramillo (jaramilloc@si.edu) or Carolina Nañez (carolina.nanez@yahoo.com).



The Society of Ethnobiology

The Society of Ethnobiology invites papers for our 2010 conference "The Meeting Place: Integrating Ethnobiological Knowledge", to be held 6-10 May, 2010, in Victoria, British Columbia. This year's conference theme celebrates the potential of ethnobiology to bridge disciplines, ideas, and communities, and to foster an understanding of the connections between the biological and cultural worlds. Please visit the Society of Ethnobiology website for details: http://www.ethnobiology.org/node/249.

MASTER CLASS ConocoPhillips "Terrestrially-Derived Fossil Palynoflora: Subsurface Application to Petroleum Geology" August 16-20, 2010 Utrecht, The Netherlands

Course Outline:

General Pollen/Spore Morphology and Taxonomy Concepts and Applications Paleozoic Spore Chronostratigraphy and Paleoecology (with special focus on Middle East plays) Mesozoic Spore/Pollen Chronostratigraphy and Paleoecology (Australia, N.W. Europe, North America) Cenozoic Pollen Chronostratigrpahy and Paleoeceology (North and South America) Special Focus on Neogene Pollen Chronostratigraphy and Paleoeceology (West Africa, Southeast Asia) Quaternary/Holocene Palynostratigraphy and Paleoeceology Fieldtrip: Type-Maastricht

Confirmed Instructors include:

Guy Harrington, Carlos Jaramillo, Andy Lotter, Robert Morley, Doug Nichols, Michael Stephenson, w/Thomas Demchuk, James Eldrett TNO Personnel: Oscar Abbink, Timme Donders, Dirk Munsterman, Roel Verreusel Additional instructors will be announced in future advertisements

The Aims and Deliverables of the Class will be:

* Provide instruction on basic pollen/spore/algal taxonomy as an aid in identifying and classifying varied terrestriallyderived palynoflora

- * Provide a general background into terrestrial palynomorph morphology, taxonomy, chronostratigraphy, paleoecology and paleoclimate through the Phanerozoic.
- * Provide case studies of standard and innovative Industrial applications of terrestrially-derived pollen/spore/algae to subsurface problem solving, including calibration to sequence stratigraphic modeling (systems tracts): Middle East - Paleozoic; Southeast Asia - Cenozoic; Offshore Nigeria - Neogene

Each of the age-specific topics and lectures will be accompanied by extensive microscope workshops This week long course will also include a half-day fieldtrip to the Type-Maastricht in the southern Netherlands, an

opening evening Icebreaker, and mid-week Dinner Maximum enrollment with be 35-40 participants

Maximum enrollment with be 35-40 participants.

Course fees are anticipated to be: 500Euros (Students), 750Euros (Academic/Consultant), 1100Euros (Industry) * It is hoped that sufficient corporate funding will be obtained to reduce these fees, especially for students

For additional information regarding this course, please contact either: Thomas D. Demchuk (Thomas.D.Demchuk@ conocophillips.com) or James Eldrett (James.Eldrett@Shell.com) Please visit the AASP website (www.palynology.org) and read future issues of the AASP Newsletter for additional information

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by Thomas Demchuck (Thomas.D.Demchuk@conocophillips.com)

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