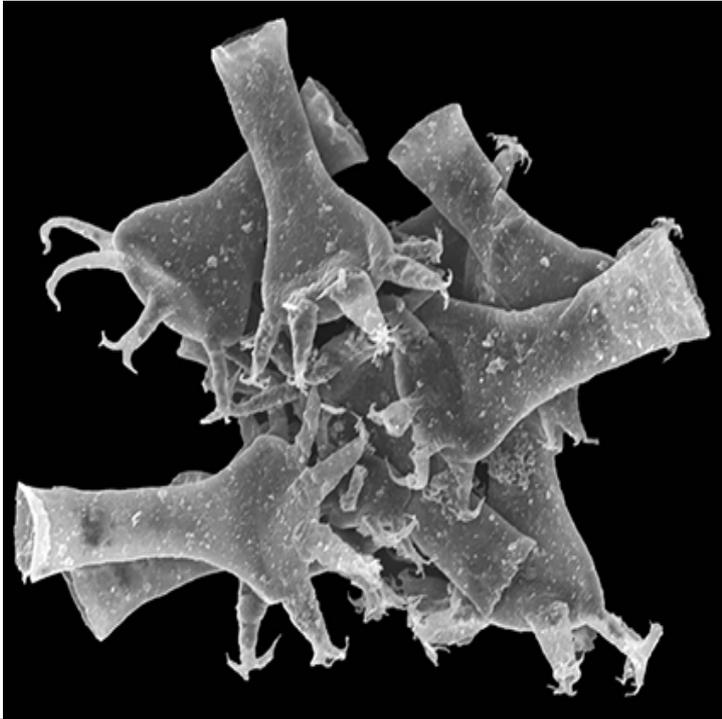




**Newsletter**  
**Summer 2009**  
**No. 75**



Chitinozoan aggregates from subsurface Lochkovian deposits of Poland.

Photo: Ryszard Wrona

**Commission Internationale de Microflore du Paléozoïque**

President: John Marshall  
Past President: Florentin Paris  
Secretary General & Newsletter Editor: Gary Mullins  
Treasurer: Philippe Steemans  
Webmaster: Philippe Steemans  
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CIMP homepage:  
<http://www.cimp.ulg.ac.be>

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### MESSAGE FROM THE PRESIDENT

Greetings once again from CIMP. This is normally our quiet time between last year's IPC meeting and our own CIMP meeting which next year is to be held in Warsaw. However, there has been the initiative by a group of members to hold a spore/pollen meeting in Faro, Portugal this September. This has been broadened to include microplankton. Please support it if you can.

Earlier this year we were contacted by the organisers of the other and junior IPC. This is IPC3 which is the 3<sup>rd</sup> International Palaeontological Conference to be held from June 28<sup>th</sup> to July 3<sup>rd</sup>, 2010 in London. (<http://www.ipc3.org/>). We were asked to organise a symposium. The decision to contribute, or not, was widely discussed by the CIMP officers and sub-commission chairs/secretaries. Our primary concern was not to compete with, and detract, from the 2010 meeting in Poland and particularly the efforts of our Polish colleagues. We concluded that we should contribute so that we could showcase Palaeozoic palynology to our other palaeontological colleagues. So, we have submitted a symposium on *Palynology and the Palaeozoic Earth System*. The intention is that this could include an element of review and would include CIMP members who would be likely to attend IPC3 or could easily do so. So, if this applies to

you then please think about making an exciting contribution to promote Palaeozoic palynology. This contribution should not necessarily be new research but should be new to our non organic-walled colleagues.

John Marshall, [jeam@noc.soton.ac.uk](mailto:jeam@noc.soton.ac.uk)

(Retiring in 2010, so think about nominations before the Warsaw meeting)

### MESSAGE FROM THE GENERAL SECRETARY

My call for news for this newsletter brought the following response from Tony Butcher at Portsmouth (UK): "perhaps the CIMP newsletter could start a 'top tips' style section, where people could briefly mention new bits of kit, techniques, adaptations etc that they've found helpful for paly processing/analysis?" Always happy to oblige the membership, you will find a new "Top Tips" section in this newsletter. Tony is also the first contributor, describing the methodology he employs to mount negative film on metal stubs for scanning electron microscope studies.

**Finally – it is 2009, please pay your subscriptions if you haven't already done so....thank you.**

Gary Mullins, [gary.mullins@fugro-robertson.com](mailto:gary.mullins@fugro-robertson.com)

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## FUTURE MEETINGS AND CONFERENCES

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**CIMP Faro'09**  
II Joint Meeting of Spores/Pollen and Acritarch Subcommissions

### CIMP FARO'09. II JOINT MEETING OF SPORES/POLLEN AND ACRITARCH SUBCOMMISSIONS

**September 20-24, 2009**

<http://cima.ualg.pt/eventos/cimpfaro09/home.html>

### MEETING

Devonian to Carboniferous Palynology: Contributions to Palaeogeography, Palaeoceanography, and Geotectonics of the Euramerica – Gondwana Collision  
**Venue:** University of the Algarve, Faro, Portugal.

The Spore/Pollen and Acritarch Subcommissions of the CIMP warmly invite you to attend the CIMP Faro 09

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

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

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

Hope to see you all in Faro.

The organising committee,

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

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**42<sup>ND</sup> ANNUAL MEETING OF THE  
AASP-THE PALYNOLOGICAL  
SOCIETY  
September 27-30, 2009**



Meadowview Convention Center,  
Kingsport TN  
Natural History Museum, Gray Fossil Site,  
ETSU

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

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

## CIMP Newsletter 74, Winter 2008

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

### MEETING SCHEDULE

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

Sunday 4th: Check-out, Last day of Storytelling Festival

### REGISTRATION

In January a website went active for registration and submission of abstracts. **A non-refundable deposit of \$250 is required at registration** although you can submit the entire amount at the time of registration. Abstracts were due by **August 10, 2009. The prices below are all inclusive.**

*All prices are "per person" rates*

### MEETING ONLY

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

Single: \$875, Double: \$775

Triple: \$650, Quad: \$625

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

Single: \$1000, Double: \$825

Triple: \$775, Quad: \$725

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

Single: \$1000, Double: \$825

Triple: \$775, Quad: \$725

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

Single: \$1125, Double: \$950

Triple: \$900, Quad: \$850

### WORKSHOP + MEETING

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

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

Single: \$1150, Double: \$1025

Triple: \$925, Quad: \$875

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

Single: \$1275, Double: \$1100

Triple: \$1050, Quad: \$1000

MEETING + FIELD TRIP

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

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

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

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

WORKSHOP + MEETING  
+ FIELD TRIP

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

**double their prices and most are booked well in advance.**

Friday Check-in to Thursday Check-Out

Single: \$1275, Double: \$1100

Triple: \$1050, Quad: \$1000

Looking forward to seeing you at the meeting!

Michael Zavada, East Tennessee State University, Department of Biological Sciences, Box 70703, Johnson City, TN 37614 USA, [zavadam@etsu.edu](mailto:zavadam@etsu.edu)

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**IAS MEETING, SARDINIA, ITALY**

**September 20-23, 2009**

Dear colleagues,

We would like to draw your attention to the session T5d - Sedimentology and diagenesis of organic matter-rich sediments: models, applications and perspectives (S. Cirilli, University of Perugia & P. Scotti, Eni Explor. & Prod. Division) at the next IAS Meeting 2009 in Alghero, Sardinia, Italy.

The session aims: a) to improve the understanding of the different parameters and processes influencing the accumulation of organic-rich sediments and formation of petroleum source rocks and b) to stimulate interest and promote research in organic matter among various scientific disciplines. All the main factors and their complex interactions controlling the deposition, preservation and maturation will be considered as well as the application of organic matter studies in the interpretation of modern and ancient depositional conditions, in sequence stratigraphy and biostratigraphy. In addition quantitative analyses of organic carbon burial and mass transfer from its source areas into the deeper sea are relevant also in other contexts, e.g. carbon-cycle, CO<sub>2</sub> calculations. The session will offer the opportunity to researchers from different branches of the Earth Sciences to

get together and share their knowledge on a wide range of issues and applications in organic matter studies.

We encourage you to submit oral presentations and posters.

For more information please contact: Simonetta Cirilli ([simocir@unipg.it](mailto:simocir@unipg.it)) or Paolo Scotti ([paolo.scotti@eni.it](mailto:paolo.scotti@eni.it)).

Here are the deadlines for the conference, which can be found on the web at <http://www.ias2009.com/>

April 30, 2009 - Deadline for submission of abstracts.

May 15, 2009 - Evaluation of abstracts and letter of acceptance mailed to authors.

May 15, 2009 - Deadline for payment of registration fees (conference and field trips), and reservation of accommodation through the IAS 2009 organisation.

July 15, 2009 - Confirmation to participants of registration and accommodation. Final program sent out to participants, containing all the information of the conference.

See you in Alghero!

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**7th Micropalaeontological Workshop  
MIKRO-2009**

**September 28-30, 2009**

Holly Cross Mountains locality Sw. Katarzyna, 28-30 September 2009: see <http://www.paleo.pan.pl/conferences/MIKRO2009.htm>

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**The Third International  
Palaeontological Congress**

**IPC3**

**June 28 to July 3, 2010**

There will be considerable Palaeozoic palynology interest at IPC3. Symposia include:

Palynology and the Palaeozoic Earth System (CIMP sponsored);

The micropalaeontological record of global change;

Microfossil contribution to understanding the tree of life;

The Great Ordovician Biodiversification Event: causes and consequences;

Devonian Bioevents - timing, palaeoecological and evolutionary patterns;

Modelling the climate of Palaeozoic Earth

The origin of life on land and its geological consequences;

Full details can be found on the website at <http://www.ipc3.org/index.html>.

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**IGCP 503**

**Ordovician Palaeogeography and  
Palaeoclimate**

**August 31-September 4, 2009**

The final meeting for IGCP 503 is taking place at the Geological Museum in Copenhagen between August 31<sup>st</sup> and September 4<sup>th</sup>. For more details see <http://sarv.gi.ee/igcp503/> and/or <http://snm.ku.dk/english/IGCP503>.

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**2010 CIMP General Meeting**

**Warsaw, Poland**

The 2010 CIMP General Meeting will be held in Warsaw, Poland, at the Institute of Geological Sciences of the Polish Academy of Sciences (with the co-operation of the other geological institutions). The meeting is planned to comprise three days of presentations (lectures and posters) and a two-day field trip to the Holy Cross Mountains to examine Palaeozoic deposits.

Organizing committee: Monika Masiak ([mmasiak@twarda.pan.pl](mailto:mmasiak@twarda.pan.pl)), Marzena Oliwkiewicz-Miklasinska ([ndmiklas@cyfkr.edu.pl](mailto:ndmiklas@cyfkr.edu.pl)), Marzena

Stampień-Salek  
([mstaempie@twarda.pan.pl](mailto:mstaempie@twarda.pan.pl)).

Hungarian Natural History Museum, the Hungarian Academy of Sciences, the Eötvös Lóránd University and the Hungarian Geological Society. The scientific sessions of the conference will cover all important issues of palaeobotany and palynology. For more details please see <http://www.palaeobotany.org/iop/meetings/35/>.

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**8<sup>th</sup> European Palaeobotanical and  
Palynology Conference  
Budapest, 2010**

The 8<sup>th</sup> EPPC will be held in Budapest, Hungary, and will be organized by the

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**BOOK REVIEW**

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A review of: STRATIGRAPHY TERMINOLOGY AND PRACTICE

French Committee of Stratigraphy, 2008

Jacques Rey & Simone Galeotti (Eds)

Editions TECHNIP 25 rue de Ginoux, 75015, FRANCE

With foreword by Felix Gradstein,

Chairman of the International Commission on Stratigraphy (ICS)

Stratigraphy, the “organisation of geological formations and...events in space and time...the history of the earth and its evolution...” is now a multi-disciplinary science and this book provides a detailed summary of the methods now at our disposal. These methods make optimal use of the available data to achieve the maximum permissible detail, so a sensible recommendation is made that the term ‘high resolution stratigraphy’ is now dispensed with.

The first technical chapter on lithostratigraphy takes the reader through a recap on the terminology and procedures in analysis of surface and subsurface units, boundaries, facies and genetic sequences. It also provides a useful summary of sequence stratigraphical methods and concepts using some good, simple, clear diagrams.

Chemostratigraphy is dealt with in the next chapter with a detailed consideration of principles in terms of palaeogeographical and palaeoenvironmental determination. This leads into its application in stratigraphical age dating using correlatable and independently dated chemical ‘events’ and known ratio trends of various elements over geological time, with mention of the ‘multi-proxy’ approach now widely used commercially in the oil sector.

The chapter on magnetostratigraphy explains very well the history of the science and principles behind the development of the geomagnetic polarity timescale (GPTS), based on isochronous and cross-facies reversals of the earth’s magnetic field and includes some basic mathematics for those not too frightened off by such.

The chapter on biostratigraphy deals rather garrulously with the variety of concepts and types of biozones biostratigraphers, have come up with over the years, (e.g. oppel zone, phylozone, cenozone, ecozone, acrozone, retrozone, continuous biochronological series, occurrence biozone, range biozone, abundance biozone, interval biozone, lineage zone, taxon range zone, concurrent range zone, overlap zone...to name but a few). This is a rather inordinate and academic presentation of terminology that is difficult to follow in places, probably due to adaptation from the original French. But biostratigraphers can be exacting boffins, prone to making sticks to beat themselves with.

Most biostratigraphers use the single term biozone and there is little on the practical procedures of biostratigraphy in a commercial petroleum sector setting and the contribution of biostratigraphy to genetic sequence, sequence boundary and flooding surface identification. Never-the-less the chapter provides an up to date summary of the various approaches (classical, logical/unitary and statistical) to biostratigraphy and chronostratigraphy that have been devised by microfossil and macrofossil specialists and protocols to be followed according to the ICS.

Isotope Geochronology can provide a very high degree of accuracy of age dating, and the chapter following provides a most succinct and state of the art summary of the available isotopic procedures. The vagaries of various sampling and analytical methods are dealt with for sedimentary, metamorphic, plutonic and volcanic rocks at various age scales.

This chapter is closely followed by a consideration of 'Specific Stratigraphies' – how and whether to consider as lithostratigraphical units plutonic and metamorphic bodies. The problem of dating the Precambrian using geochronometric units, plus the stratigraphy of the various categories of surficial sediments, (given that these can include deposits as old as Cretaceous). The chapter has a concise section on Quaternary stratigraphy and concludes with a rather wordy section on the stratigraphy of volcanic rocks.

Rounding off is a chapter on chronostratigraphy and an excellent complimentary final chapter on the current state of play with the global geological time scale. Recent refinements of "golden spike" absolute radiometric age dates (including the recent Rhenium-Osmium shale geochronometer) have now been completed for many stage and system boundaries.

The book is translated from its original French by a team of technical translators. Precision and clarity of the text is therefore quite variable dependent on individual translator. There are fairly frequent spelling and grammatical errors throughout suggesting that it would have benefited from a final read through by a native English speaking geologist. Some sections have strong allusion to French geology for a generalist text, (which can be forgiven with a gallic shrug). The book is very well illustrated with clear freshly drawn and coloured diagrams where appropriate.

The book would benefit any general geologist as well as specialist stratigraphers requiring more detailed knowledge of complimentary disciplines to their own and for asset geologists confronted with an exotic or frontier basin and unaccustomed rock unit where a cost effective analytical program needs to be devised. A copy should be a part of any good academic geology library, including operator and consultant offices in the petroleum sector.

Overall rating: 3-4 (good – very good).

Dr Jim Cole, Tie-Point Geoscience, July, 2009

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## NEWS FROM THE MEMBERSHIP

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**Ryszard Wrona** is continuing to work on the chitinozoan palaeobiogeography and biostratigraphy of the Ordovician up to Devonian outcrops in the Holy Cross Mountains and from the subsurface of the southern Poland. He is also continuing a Polish-Ukrainian project on the environmental changes at the Silurian/Devonian boundary in the Dnestr Basin of Podolia, in southern Ukraine.

Results have been presented at the Palaeontological Conferences in 2008: (Wrona, R. 2008. Chitinozoa of the Silurian-Devonian transition in the Dnestrove section (Podolia, Ukraine). *9th Czech-Slovak-Polish Paleontological Conference, Warszawa*, 101-102) and will be presented in 2009: "Chitinozoan palaeoecological dynamics across the Silurian-Devonian transition in the Dnestr

Basin, Podolia, Ukraine” at the 7th Micropalaeontological Workshop MIKRO-2009 (see “Future Meetings” for information).

**Teodoro Palacios** ([medrano@unex.es](mailto:medrano@unex.es), Área de Paleontología, Facultad de Ciencias, Extremadura University, 06071 Badajoz, Spain).

Currently, my research focuses on Ediacarian-Tremadoc acritarchs in several areas.

Northern Spain. Middle and Upper Cambrian of the Cantabrian Mountains, with preliminary results published in Palacios (2008), and a full description in preparation; A rich material of Middle - Upper Cambrian acritarchs from the Iberian Chains and Demanda Mountains is currently under study.

Southern Spain. In the Tentudia Fm. I have found poorly preserved Ediacaran acritarchs. I have completed studies on the Lower-Middle Cambrian acritarchs of Vallehondo and Playon fms. (Palacios et al., 2006, and a paper in preparation).



*Pirea orbicularis* Volkova, 1990. MacLean Brook Formation, southeastern Cape Breton Island, Nova Scotia, Canada. Lower Furongian. Slide MB-1N-2, England finder location F-29-1-2 (photo: Teodoro Palacios)

In 2007 I began a collaboration with Sandra M. Barr (Dept. of Earth & Environmental Science, Acadia University), Chris E. White (Nova Scotia Department of Natural Resources) and Randall F. Miller (New Brunswick Museum, Saint John), to study Cambrian-Tremadocian acritarchs in several areas of Nova Scotia and New Brunswick, Canada. Results of great interest have emerged from sections that previously had no information on organic-walled microfossils.

Nova Scotia - Meguma terrane. In 2008 the Goldenville and Halifax groups were sampled. Samples from the Goldenville Group are barren but abundant Tremadocian acritarchs have been recovered from various levels of the Halifax Group, actually under study (Palacios et al. 2009b-c)

Nova Scotia - Mira terrane. The most complete Cambrian succession in Avalonian Nova Scotia crops out in a synclinal structure in the Mira River area on Cape Breton Island. We have obtained acritarchs from all of the main Cambrian lithostratigraphic units in this area and their study is in progress (Palacios et al. 2009a-c). Cambrian and Tremadocian strata further north in Cape Breton are also under study.

New Brunswick. In 2008 were sampled the Cambrian-Ordovician units in the Saint John-Hanford Brook area. Among the results can be noted abundant and diverse assemblages of Lower and Middle Cambrian acritarchs from the classical Hanford Brook section (Palacios et al. 2009b-c, and papers in preparation).

Recent abstracts and papers:

Palacios, T., Jensen, S. & Apalategui, O. 2006. Bioestratigrafía de acritarcos en el Cámbrico Inferior y Medio del Margen septentrional de

Gondwana (Area de Zafra, Suroeste de la Península Ibérica). Libro de resúmenes, XXII Jornadas de Paleontología, Leon, pp. 156-161

Palacios, 2008. Middle Cambrian acritarch zones in the Oville Formation and their correlation with trilobite zones in the Cantabrian mountains, Northern Spain. In I. Rábano, R. Gozalo and D. García-Bellido (Eds.), *Advances in trilobite research*. Cuadernos del Museo Geominero, nº 9. Instituto Geológico y Minero de España, Madrid, pp. 289-295

Palacios, T., Jensen, S., Barr, S. M. & White, C. E. 2009a. Acritarchs from the MacLean Brook Formation, southeastern Cape Breton Island, Nova Scotia, Canada: New data on Middle Cambrian–Lower Furongian acritarch zonation. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 273, pp. 123–141.

Palacios, T., Jensen, S., Barr, S. M., White, C. E. & Miller, R.F. 2009b. Preliminary results from an ongoing study of acritarchs in Cambrian and Lower Ordovician rocks of Nova Scotia and New Brunswick. Poster presentation, Atlantic Geoscience Society 35th Colloquium and Annual Meeting, Moncton, NB, Feb- 6-7. *Atlantic Geology*, v. 45 in press.

Palacios, T., Jensen, S., Barr, S. M., White, C. E. & Miller, R.F. 2009c. Acritarchs in Cambrian and Lower Ordovician Rocks of Nova Scotia and New Brunswick, Canada: New Constraints on Correlations and Paleogeography. *Eos Transactions, American Geophysical Union* v. 90, no. 22, Joint Assem. Suppl., Abstract U21A-03.

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**Omer Babiker Abdel Rehim** (B.Sc. Applied Geology, Damascus University, Syria. M. Sc. Geology (Palynology), University of Khartoum) would like to publicise his forthcoming PhD on the “Palynostratigraphy and paleoecology of the Late Cretaceous to Tertiary strata of Kaikang Trough, Muglad Rift Basin, Central South Sudan”.

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### **ORACLE (Ordovician Radiation and Climate)**

Thisj Vandembroucke, Mark Williams, Howard Armstrong, Jan Zalasiewicz, Florentin Paris, Koen Sabbe, Jaak Nõlvak and Jacques Verniers are the people behind ORACLE. The main objective of this project is to produce Ordovician palaeobiogeographical and climate belt maps, using zooplankton. The project website is now up and running and includes news updates, data and information on publications.

<http://web.me.com/thijs.vandembroucke/Oracle/Welcome.html>

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## TOP TIPS

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**A QUICK METHOD FOR PREPARING PALYNOLOGICAL SEM STUBS USING NEGATIVE FILM** by Anthony Butcher, University of Portsmouth, UK.

Exposed, processed black and white negative film has proved to be a useful medium upon which to mount palynological specimens for scanning electron microscope (SEM) analysis (e.g. Whittaker & Hodgkinson 1991; Collinson 1999). When mounted emulsion-side up it allows the placement and adhesion of specimens in a drop of water without the cracking effect experienced when using conductive adhesive pads, while providing strong adhesion. Previous descriptions for preparing such stubs have suggested using ‘Araldite’ or similar adhesives to attach the film to the aluminium stub, but described below is a quick and easy method that the author has utilised with success for routine SEM analysis of various palynomorph groups. The method described relates to the preparation of 12 mm Jeol-type pin stubs, though could conceivably be adapted for other types and sizes.

A 12 mm diameter circular craft punch was sourced, and used to neatly cut circles from exposed and processed negative film (either bought specifically, or taken from the ends of old negative strips). The emulsion side appears matt (non-reflective), and can be more easily

determined on the cut discs by drawing lines on the opposite, reflective side of the film with a marker pen prior to cutting. These discs of negative film are carefully placed emulsion-side up onto an SEM stub that has been prepared with a 12 mm diameter conductive adhesive pad stuck to the surface, pressed down firmly (especially around the edges) using a soft lint-free cloth, and blown clean of particles using a non-aerosol air duster. The stubs are now ready to receive specimens, either by placing palynomorphs onto the stub in a droplet of water, or by lightly wetting the entire surface for larger specimens, though in both cases care should be taken not to allow liquid to infiltrate between the film disc and the adhesive pad. The stubs should be left to dry thoroughly (usually overnight), and coated in the normal way. To aid identification of the stubs, a fine needle may be used to mark the surface of the film prior to specimen mounting, in addition to labelling the underside of the stub itself. In order to aid the location of small palynomorphs on a stub, a sharp scalpel may be used to very lightly score a cross into the surface of the film, and to mark each quadrant at the edge using 'I, II, III, IV' - this allows accurate stub maps to be drawn and individual specimens to be mapped on (especially useful for strew mounts).

The use of conductive adhesive pads appears to hold the negative film disc to the surface of the stub very firmly (as can be seen when trying to lift or remove with a scalpel or needle), and allows for good electrical conduction once coated. The author's experiences with Araldite and other adhesives (such as 'Superglue' liquid and gel) proved effective in most cases, though often the surfaces of the stubs and non-emulsion side of the negative film had to be lightly roughened, as otherwise the film disc could easily be flicked off if caught with a needle or stub tweezers, etc. The stubs also had to be prepared at least a day prior to mounting, in order to allow the adhesives to dry thoroughly.

It should be stressed, however, that the long-term properties of this film disc-adhesive pad mounting technique have not yet been observed, as the author has only been utilising the method described above for around six months, though no major issues are foreseen.