



Arcritarch Subcommission Newsletter

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CIMP Acritarch Subcommission
Chairperson: Reed Wicander
Secretary: Catherine Duggan



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<http://www.cimp.ulg.ac.be>

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All web addresses listed in the text are also hotlinks

Front Cover: Thermally altered *Veryhachium* specimens (C. Duggan)

THE CHAIRMAN'S COLUMN

Greetings Fellow Acritarch Workers and Friends of Acritarchs:

I hope that you all agree with me that we have had another successful year in continuing to advance the frontiers of acritarch knowledge and that our members have been active in various areas of research on these interesting organic-walled microfossils as well as representing our fossil group at various international meetings. As I mentioned in last year's column, and it still holds true this year, that although we may be a small organization, we are very active at all levels in the scientific community, as well as in the various organizations to which we belong. Having said that, I encourage all of you to continue to research, publish, collaborate with other disciplines, and attend as many meetings as possible to spread the word on the usefulness and importance of this fascinating fossil group.

In terms of meetings, we had a most successful CIMP General Meeting during September 2-6, 2006 in Prague, Czech Republic. I would like to personally thank the organizing committee of Jiri Bek, Rainer Brocke, Jirina Daskova, Jana Drabkova, and Olda Fatka for all of their hard work in ensuring a smooth-running, scientifically stimulating, and overall excellent meeting. There were many acritarch talks and for those who were not able to attend, the full abstracts of the papers presented are reproduced in the latest CIMP Newsletter. If you did not receive the CIMP Newsletter by email, it can be accessed at:

<http://www.cimp.ulg.ac.be/>

Two other important meetings loom on the horizon for acritarch workers. The first is the joint meeting of the CIMP Spores/Pollen and Acritarch Subcommissions to be held in Lisbon, Portugal, September 24-28, 2007

(<http://e-geo.ineti.pt/CIMPLisbon07/>).

This meeting was originally suggested by Zelia Pereira, the newly elected chairwoman of the Spores/Pollen Subcommission. The organizing committee consisting of Z. Pereira, J. Tomas Oliveira, P. Fernandes, and N. Vaz have put together what should be an excellent program and post-conference field trip. The Acritarch Subcommission is also participating in this meeting because it makes sense to have both groups, which have many common interests, meet in one venue where we can concentrate on research and issues that cross both disciplines. Information on this meeting can be found elsewhere in the Newsletter. I hope to see many of you in Lisbon this fall.

The XIIth International Palynological Congress (IPC-XII 2008) will be held in Bonn, Germany, August 30-September 6, 2008. Just as in past IPC meetings, this is another excellent opportunity to showcase the research being done by our members. Information about this meeting can be accessed through the CIMP homepage at: <http://www.cimp.ulg.ac.be/>

In other news, the phytoPal homepage has been updated by Gary Mullins and contains everything you would want to know about the phytoPal project. A list of all of the taxa in the database as well as a list of references in the database was just updated in January, 2007. This is an excellent source of information and it can be accessed at:

<http://www.le.ac.uk/geology/glm2/phytopal.html>.

It also contains the abstracts presented by the members of the phytoPal group at the 2005 AASP meeting and the 2006 CIMP meeting.

Just as I had to report in my column last year on the passing of our colleague Tadas Jankauskas from Vilnius University, Lithuania, I must sadly note that this past year saw the passing of Michel

Vanguetstaine, honorary professor at the University of Liège, Belgium, on September 21, 2006. His obituary and photo appear later in this Newsletter.

Lastly, if you did not respond to our Secretary's call and my several reminders to send in your contribution, please consider doing so next year. Our Newsletter is one of the best ways to stay current on what your colleagues are doing as well as keeping up on changing affiliations and addresses. If you have students, please encourage them to contribute to the Newsletter. This is an excellent way for them to get to be known in the acritarch community and make important contacts. We received more news from students this year than last, and that is certainly gratifying to see.

I hope many of you will attend the joint Spore/Pollen and Acritarch Subcommissions meeting in Lisbon this fall and present the results of your research. As of this writing, Zélia Pereira informs me that only three acritarch workers have filled out the questionnaire indicating an interest in attending the meeting. As soon as you finish reading this newsletter, go immediately to the CIMP Lisbon'07 web site and fill out the questionnaire so that we know how many are planning to attend. The deadline for filling out the questionnaire and registering early is March 30, 2007. Please give serious consideration to attending this meeting. I hope to see many of you there.

My final words of this column are to welcome our new Secretary, Catherine Duggan. She was elected at the recent CIMP Business Meeting to succeed Marco Vecoli, who has moved over to the Spores/Pollen Subcommittee Secretary position. Thank you Marco for all of your hard work and contributions during the past four years as our Secretary. You helped make my job much easier. I know we all look forward to Catherine's

contributions during her upcoming four-year term, and I just want to say welcome aboard Catherine.

Reed Wicander

THE SECRETARY'S COLUMN

Dear colleagues and friends,

As you may or may not know, I was elected as the secretary of the Acritarch Subcommittee at the recent CIMP Meeting held in Prague this September. I was delighted to accept this position and only hope I can maintain the excellent standard set by Marco Vecoli, while adding my own touch to things. I would like to echo Reed's thanks to Marco for all his hard work over the last four years. It is only when I started to put this newsletter together did I truly understand all the work that goes into it.

For those of you who I haven't had the chance to meet, I am a graduate of Trinity College Dublin and I have just finished my Ph.D. at the same institution where I was supervised by Prof. Geoff Clayton. During my postgraduate education I was lucky enough to attend several palynological conferences in Europe and America and there is no doubt that the contacts and friends that I made there benefited my project greatly. I feel strongly that the success of the Acritarch Subcommittee and the CIMP as a whole depends on a continuous stream of young researchers, and it is vital that students have an opportunity to attend conferences and feel they are members of the greater palynological 'family.' Following the recent discussion of the finances of the CIMP at the Prague meeting, it seems clear to me that at least some of the funds available to the organisation should be used to encourage student participation at international meetings. Although it may not be possible to fully support a student, I

know from personal experience that every little bit helps.

As Reed has already mentioned, the CIMP Prague meeting held this past September was a great success - I know I thoroughly enjoyed myself. We decided not to reproduce the abstracts of the meeting in this newsletter as they have already been distributed in the recent CIMP general newsletter, however we have included the group picture. The next meeting of the Acritarch Subcommission will be held in conjunction with the Spore Subcommission in Portugal this coming September. More details about the conference are included at the end of this newsletter but, having met the organising committee on more than one occasion, I am sure it will be an extremely well run meeting, in beautiful surroundings, and good company. I hope to see plenty of you there.

I am grateful to all the workers who have sent in contributions for the newsletter. It would be impossible to produce it without them. Unfortunately, nobody sent any photographs, which I was a little disappointed by, because I was hoping to have a gallery of acritarch workers in the field (if only to show to all my die hard field geologists friends) but maybe next year.

Please forward this newsletter to any new students who may not already be on this mailing list, or any other workers who have been omitted. Wishing you nothing but good things, productive samples, and well preserved specimens for the coming year,

Catherine Duggan

MEMORIAL: MICHEL VANGUESTAINE



Michel Vanguetaine, honorary professor at the University of Liège, passed away on Thursday 21 September 2006. He had retired, one year earlier, as head of the Paleobotany, Paleopalynology and Micropaleontology (PPM) unit in the Geology Department of the University of Liège, after an academic life devoted to the study of marine palynomorphs, especially Paleozoic acritarchs.

Curiously enough, however, he started his research activity in the Mesozoic, studying pollens and spores, dinoflagellates and acritarchs in the Late Cretaceous of the Meuse Valley, north of Liège. It was not a mainly detailed work on the systematic of these palynomorphs but a first approach of their quantitative behaviour in a rather narrow stratigraphic sequence. He demonstrated the accuracy of the palynological method to solve local stratigraphic problems.

He obtained his “licence en sciences géologiques” in 1966 and became soon “Aspirant du Fonds National de la Recherche Scientifique”.

Soon also, he started to study a bright new field of research in Belgium: the systematic and the stratigraphy of Cambrian acritarchs, built a new acritarch-based zonation and got spectacular stratigraphic results like the existence of a recumbent fold in the deep strata of the Grand-Halleux Borehole. After his PhD in 1973, he went immediately for a supposed prolonged research stay with the NIOC (Oil Company) at Teheran (Iran), a stay

soon interrupted by the changing political situation in this country.

“Assistant” and “Chef de travaux” in the Liège University, he pursued his researches on Cambro-Ordovician acritarchs, not only in Belgium but also in different countries of the world and collaborated with several foreign scientists. He was the first to recognize the interest of reworked acritarchs in the Lower Devonian of Belgium. He was also interested in the application of microfossils to archaeology. He established a new acritarch-based zonation of the transitional Frasnian-Famennian strata in Belgium which was applied, in collaboration with students, to different parts of the Dinant, Namur and Vesdre Synclinoria in Belgium and France. He also studied late Famennian acritarchs.

“Chargé de cours” in 1995, he became head of the PPM unit after M. Streele’s retirement in 1995 and taught to the students in Biology, Geology, Oceanography and in the Interuniversity Master in Applied Paleontology. He published more than 80 scientific papers and received various prizes and scientific distinctions.

Messages received in his former research unit underline his kindness, humbleness and commitment. Others stress the meticulous way in his scientific work. Those who attended his teaching remember an enlightened scientist but also a man who liked to talk about his family, particularly about his three daughters, and gave the feeling that one can be a thoughtful parent as well as a researcher.

E. Javaux, P. Steemans and M. Streele
(Photo courtesy of P. Steemans)

CONFERENCE REPORT: IGCP 503, GLASGOW

The Annual Meeting of the IGCP 503 project (Ordovician Palaeogeography and Palaeoclimate) took place at the University of Glasgow, Scotland, U.K., from 30 August to 1 September 2006. The main emphasis of the conference was on palaeogeography and palaeobiogeography, but other topics were discussed as well, such as palaeoclimatic reconstructions and modelling, plankton evolution, Ordovician sea-level changes and sequence stratigraphy, and sedimentary cyclicity. Concerning palaeontology, numerous talks were given on the application of several fossil groups to stratigraphic/palaeogeographic reconstructions such as trilobites, conodonts, echinoderms, gastropods, fishes (Agnata), and graptolites. It was good, then, that palynology too was represented, including various talks on chitinozoans, acritarchs, and one contribution on cryptospores. One session, chaired by Jacques Verniers (1 September) was devoted to "Biodiversity change in the plankton" and included four talks. Two talks directly concerned the acritarchs: the one presented by Gary Mullins (University of Leicester, U.K.) on "The Ordovician phytoplankton database," and the other one presented by Marco Vecoli (University of Lille, France) on "An assessment of acritarch diversity changes and biostratigraphy across the Ordovician-Silurian boundary."

The remaining two talks considered the evolution of oceanic plankton in Ordovician times, from the consumer's perspective ("Planktotrophy and its impact on the Ordovician biodiversification" by Alexander Nützel, University of Erlangen, Germany), and the second one from the perspective of the (so far) missing "Ordovician nannoplankton" (Axel Munnecke, University of Erlangen, and

Thomas Servais, University of Lille, France).

Gary Mullins showed the main diversity trends of Ordovician acritarchs which result from his comprehensive analysis of the timing, extent and nature of biodiversity fluctuations from the base of the Cambrian through the P-T boundary. Gary's results tend to confirm in a more rigorous way, a trend more or less known by acritarch specialists, showing an acritarch diversity increase from the Tremadocian to a peak in the Darriwilian, before a net decline towards the end of the Ordovician. What is new in Gary's picture is the extent of the Darriwilian peak, which seems to represent the maximum known diversity in the whole of the Palaeozoic phytoplankton fossil record. Gary Mullins also discussed the implications of his analysis on the relationships between primary producers and consumers, and the possible impacts of phytoplankton density/diversity fluctuations on the global ecosystem.

The talk by Marco Vecoli focused on acritarch biodiversity changes across the end Ordovician glacial event, and the Ordovician-Silurian boundary and their relevance for palynostratigraphy and acritarch palaeoecology. An updated palynostratigraphic scheme valid for the northern Gondwana margin from the Hirnantian to the basal Silurian and tightly correlated with the chitinozoan zonation was proposed, and the main extinction-radiation event occurring in the same time interval defined and discussed. The analysis by Marco Vecoli showed that acritarch assemblages remained on the whole relatively unaffected by the palaeoenvironmental perturbations (glaciation and related changes) at the end of the Ordovician, suggesting that the basic trophic resources were not affected by a major discontinuity throughout this time period. It was finally suggested that the term "end Ordovician turnover" should be

used instead of "end Ordovician extinction event," concerning the acritarchs.

Axel Munnecke and Thomas Servais suggested that a so far undescribed variety of calcareous micro- and nannofossils abundantly preserved in Silurian calcareous rocks from Gotland, Sweden, may represent or be related to calcareous cysts of dinoflagellates or similar microplanktonic organisms, thus constituting an important part of the Early Palaeozoic microplankton together with the acritarchs.

Finally, Alexander Nützel showed that the origin of planktotrophy in gastropods is to be placed near the Cambrian-Ordovician transition, when there is for the first time, fossil evidence of the widespread presence of free-swimming gastropod larvae which fed on photoautotrophic plankton (i.e., the acritarchs in Early Palaeozoic times). Obviously, this coincides also with the "Great Biodiversification Event" and the important rise in diversity of acritarchs in early Ordovician times (cf. the talks by Gary Mullins). It seems therefore plausible that these events may be causally linked to each other. Alexander Nützel suggested that an increasing nutrient supply and availability of photoautotrophic plankton (again, the acritarchs in this case...) in the world's oceans could have facilitated both planktotrophy and suspension feeding.

These talks presented at the IGCP 503 meeting show how acritarch research can be relevant for a wide range of topics, not only in palaeontology but also in the Earth Sciences in general. I would recommend a more massive participation of acritarch workers to meetings which are outside the usual "palynological circle" in order to get more visibility and get in contact with specialists of other disciplines. This cannot be other than most beneficial for all of us.

Marco Vecoli

A MESSAGE FROM THE MANAGING
EDITOR OF THE AASP JOURNAL
PALYNOLOGY

Palynology publishes high-standard scientific research of interest on all aspects of organic microfossils (i.e., palynomorphs: spores, pollen, dinocysts, acritarchs, fungal spores, chitinozoans, etc.). We encourage submissions not only in the traditional areas of stratigraphic biostratigraphy and paleoecology/paleoenvironments, but also those utilizing palynomorphs together with the collateral disciplines of sequence stratigraphy, geochemistry, organic petrology, etc. Short notes on preparation methods, taxonomy, storage problems, etc., are welcomed as well. If increased numbers of high quality submissions are received, AASP (a volunteer-based non-profit society) would consider publishing two issues per year.

Palynology is a premiere, peer-reviewed journal for the palynological sciences published annually by the American Association of Stratigraphic Palynologists (AASP). It is listed in the Thomson Scientific's Institute for Scientific Information (ISI) abstracting service, and is available through Geoscience World (GSW), BioOne, and JSTOR. Visit our web site for further information about other AASP publications (www.palynology.org).

Cheers,

JAMES B. RIDING
EDITOR@PALYNOLOGY.ORG

NEWS FROM ACRITARCH WORKERS

ROBERTO ALBANI (albani@dst.unipi.it),
GABRIELLA BAGNOLI (bagnoli@dst.unipi.it),
AND **CRISTIANA RIBECAL**

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Pisa (Italy)

The Pisa group (Roberto Albani, Gabriella Bagnoli, and Cristiana Ribecai) is working on Cambrian and Ordovician acritarchs. We have almost completed our research on Cambrian acritarchs from the Cantabrian zone of Spain, and our study of the Ordovician acritarch assemblages from this area is still continuing.

We have all just begun to investigate Furongian acritarchs and conodonts from North China, and future research will include the Upper Ordovician of Spain.

RICHARD J. ALDRIDGE (ra12@le.ac.uk)

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I continue to have a strong vicarious interest in Palaeozoic phytoplankton, mostly fulfilled through research students, research fellows and friends. The phytoPal project officially finished in 2006, but work generated under its umbrella continues; a diversity graph has been generated by Gary Mullins from the accumulated data and subjected to various tests for biases – it will see daylight via a multi-author publication in due course.

AURÉLIEN DELABROYE
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Laboratoire de Paléontologie et
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PHD. THESIS PROJECT:

Biostratigraphy and biodiversity of the microplankton at the Ordovician/Silurian

boundary in Anticosti Island (Québec), and relationships between phytoplankton palaeoproductivity and glaciation

Supervisors :

Marco Vecoli and Thomas Servais

For a long time, Anticosti Island competed with Dob's Linn in Scotland in order to become the Ordovician-Silurian boundary stratotype. Finally, latter locality was preferred despite the presence of highly fossiliferous strata including major invertebrate and microplanktonic fossil groups from lowermost Asghill (upper Upper Ordovician) to uppermost Telychian (upper Llandovery). Numerous studies have been done on Anticosti macrofossil (brachiopods, trilobites, stromatoporoids, corals, algae) and microfossil fauna (conodonts, ostracods, graptolites, chitinozoans), but the acritarchs remain poorly known.

The objectives of this PhD thesis are: 1) acritarch taxonomy and biostratigraphy of Ordovician low tropical latitudes (Anticosti Island was situated 10-15 degrees south of the equator during Ordovician time); 2) correlations with existing Anticosti chitinozoan zonation and with well established acritarch zonation of high latitudes (Gondwana); 3) Upper Ordovician acritarch palaeobiogeography understanding; and 4) response of acritarchs to glaciation.

In this purpose, precise samplings of Anticosti formations have been done. Palynomorph mountings will be studied qualitatively, and quantitatively using a marker-grain method. Then, a palynofacies study and additional geochemical analysis (carbonate productivity, $\delta^{13}\text{C}$, $\delta^{18}\text{O}$, magnetic susceptibility) will be performed and compared.

Results expected:

- To show how the palaeophytoplankton (acritarchs) from Ordovician low latitudes reacts against palaeoenvironmental variations (glaciation): crisis or turnover?
- To quantify the palaeoproductivity by means of absolute palynomorph counting and to control these results with other productivity proxies (*i. e.* carbonate productivity).

Eventually, all these data could be interesting to get a better comprehension of the origin of the Ordovician crisis. Why a supposed-rapid glaciation seems to take place during a period of greenhouse? Could an increased bioproductivity be responsible of that? Or are other hypotheses, *i.e.* an increasing of silicate weathering, more convincing? I hope these next three years will be fruitful concerning all these questions.

CATHERINE DUGGAN

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In September 2006 I successfully defended my Ph.D. thesis (**Acritarch and prasinophyte colour as thermal maturity indicators**) in Trinity College Dublin. Since then I have been employed by the Exploration and Mining Division of the Irish Government, which unfortunately calls for no knowledge of acritarch colour at all. I had planned to continue in research, but following a change of heart that surprised me more than anyone else, I am now actively seeking employment in the oil industry.

Despite this change in direction, I still hope to attend the Spore and Acritarch Subcommittee meeting in Portugal this September. In addition I am just completing a paper which I hope to submit for publication by the end of the month (finally...).

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2006 was a busy year for Kath Grey with numerous visitors to the Geological Survey of Western (GSWA) Australia and four months leave that allowed an extended trip to Europe and visits to various colleagues. As usual, my time was divided between managing the GSWA fossil collection, digitizing the catalogue data, handling loans and export issues, and studies of Precambrian stromatolites and microfossils from a variety of ages, and follow-up work on Ediacaran and Cryogenian biostratigraphy. At the last count, I had 29 publications or abstracts in press or in preparation, although hopefully, some of these should be completed in the near future.

While on my travels, I attended the 'Palynologists and Plant Micropalaeontologists of Belgium (PPMB) one-day meeting in Liège, Belgium, the Meteoritics and Planetary Science meeting on 'Impact craters as indicators for planetary environmental evolution and astrobiology' in Östersund/Lockne, Sweden, the Snowball Earth conference in Ascona, Switzerland and the Acraman Impact field workshop in Wilpena, South Australia. I also gave lectures at Leiden University and the Naturalis National Museum in Holland and paid my annual visit to Monash University to deliver a second year course on Precambrian Paleobiology.

From the Neoproterozoic point of view, Clive Calver and I submitted a paper on Ediacaran correlations (drawing heavily on acritarch biostratigraphy) in Australia for the Geological Journal IGCP 493 special issue. Nick and Carolyn Eyles and I completed a paper (accepted for Precambrian Research) on diamictites in

drill cores from Australia (the palynology was less than exciting, as might be expected) and Peter Haines, Roger Hocking and I re-examined the Vines 1 drillcore (GSWA Record in prep.). Palynological results from this drill hole remain ambiguous (hardly surprising as diamictite is not my choice of lithology to produce meaningful biostratigraphic results), but it seems that both a Sturt Tillite equivalent (the proposed Pirrilyungka Formation) and an Elatina Formation equivalent (the Wahlgu Formation) are present in this drill hole.

Małgorzata Moczyłowska-Vidal, Sebastian Willman and I continue work on Ediacaran acritarch biozonation. Results from Murnaroo 1 were published (Willman et al., 2006) and work continues on a paper reviewing global distributions of Ediacaran acritarchs (paper in prep.). I spent a couple of weeks at Uppsala University and Sebastian spent a month in Perth examining the type collection. He and I are finalizing a paper on the taphonomy of Australian specimens. In Adelaide, Sebastian and I joined forces with Andrew Hill to do additional sampling on some of the South Australian drill holes and we were able to identify the position of the Acraman impact ejecta layer in SCYW 1a and Munta 1. Results still fit with the acritarch diversification recorded in Grey (2005).

Late in 2006, Roger Hocking and I helped John Gorter put together a detailed well-log correlation of drill holes in the Australian Neoproterozoic that John presented at the Infracambrian conference in London. Andrew Hill, Clive Calver, Sebastian Willman, Małgorzata Moczyłowska-Vidal and I are trying to complete a manuscript on correlating the Cryogenian succession of Australia. The end of the year saw a month-long visit from Zhou Chuanming from the Nanjing Institute of Palaeontology and an attempt to compare Australian and Chinese

Ediacaran acritarchs. We began work on a manuscript discussing the comparison between the Doushantuo Formation and the Australian succession.

On the stromatolite front, Stan Awramik visited Perth twice during the year and we continued work on the Stromatolite Handbook (GSWA Report in prep.). Progress is slow because we both have so many other commitments. Noah Planavsky and I submitted a paper on branching in stromatolites. I continue working on a manuscript on the complex morphology of the conical stromatolites from the Archaean Strelley Pool Chert, and I am trying (with several co-authors (including Kenichiro Sugitani) trying to tidy up a paper describing what we believe are microfossils from a slightly younger stratigraphic unit in the Pilbara. I'm still trying to finalize a paper on the Mesoproterozoic string of beads fossils with Misha Fedonkin, Ellis Yochelson and David Martin for Alcheringa, and a field guide to the stromatolites of Lake Thetis (GSWA Record) is nearly complete.

SARAH HEALE (healse@tcd.ie)

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I am currently working on my Ph. D, 'Palynological correlation of Mississippian (Carboniferous) stage boundaries in Western Europe and the USA,' supervised by Prof. Geoff Clayton. My fieldwork, undertaken during summer 2005 and 2006, has taken me to the classic Mississippian sections along the Mississippi River Valley, Midwest USA. Preliminary results have turned up an interesting miospore and acritarch assemblage from the Earliest Carboniferous, and I hope to have a paper published on this later this year.

ALAIN LE HERISSE

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Brest University, France

I am currently focusing on the Ordovician-Silurian boundary interval from several sections and core sequences. In 2006, I was working for example on the Thijs Vandenbroucke's material from Dob's Linn, unfortunately with very few results on acritarchs. More interesting is the cyclic signal found in the core material from North Africa (Algeria and Chad for example), accompanying the deglaciation period, on which papers are in preparation. Two papers will be available in few months: one is a synthesis on the chitinozoa and acritarchs from the Ordovician of southern and southeastern Turkey (Paris et al. *Revue de Micropaléontologie*); the second concern some environmental changes (high frequency trends) reflected by palynomorphs in the early Middle Ordovician from Saudi Arabia (Le Hérisse et al., *Revue de Micropaléontologie*).

I was also very busy this to supervise the PHD of Miguel-Angel Perez Leyton, on the Siluro-Devonian of Bolivia, and Benson Modie on the Permian of Botswana. Short abstracts of these studies can be found in their respective sections of this newsletter.

Other topic concern the multidisciplinary approach of evolution of phytoplanktonic associations, integrating morphological and biogeochemical analysis.

Collaboration with Emmanuelle Javaux from Liege and Craig Marshall from Sidney, bring very good arguments to defend relationship between acritarchs and dinoflagellates and definitively ranged *A. antiquus* as a non-dinoflagellate. Some multiple collaborations are engaged with Philippe Steemans and students in Liege, with Claudia Rubinstein from Mendoza, José Henrique di Melo from Rio, Gary

Mullins and Ken Dorning from Leicester and Sheffield, Reed Wicander from Mount Pleasant, etc., for fundamental or applied research in the Silurian and Devonian.

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During 2006 I continued working on IGCP 503. In June, I participated in the 2nd International Palaeontological Congress in Beijing, and with Thomas Servais, I co-chaired the T4 session “Ordovician world: temporal and spatial changes in physical and biotic environments (IGCP 503)” of the congress and gave several talks. In August I visited Lille to work with Thomas Servais. At the beginning of September, I participated in the 3rd annual meeting of IGCP 503 in Glasgow and gave a talk as well. Apart from being busy with research, I continue, with my colleague’s help, in organizing the 10th ISOS, 3rd ISSS, and IGCP 503 conference 2007, Nanjing. The 2nd circular of the conference, and the call for papers, has been sent to colleagues via email. If any colleagues want the information, please contact me, or download it from the following websites:
<http://www.ordovician.cn/home.asp>;
<http://www.silurian.cn/home.asp>;
<http://sarv.gi.ee/igcp503/>.

GIL MACHADO (machadogil@gmail.com)

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The following is an overview of the work underway and planned for my PhD thesis which is on its second year.

The main objective of this project is to characterize the tectonostratigraphy and palynology of Devonian and Carboniferous metapelitic basins associated with the Porto-Coimbra-Tomar shear zone (W

Portugal), focusing on a multidisciplinary approach with palynostratigraphy, organic petrology and clay mineralogy.

A metamorphic belt from Porto to Tomar (Chaminé, et al. 2003) comprises several tectonostratigraphic units, relative autochthonous and parautochthonous of low- to high-grade metamorphic rocks (where the metapelitic units are included), as well as allochthonous units, of middle- to high-grade, assumed of upper Proterozoic times (e.g. Beetsma, 1995; Chaminé, 2000 and references therein). These metapelitic units are interpreted as being deposited in pull-apart basins, included in the Ossa-Morena Zone (OMZ), formed along the Porto-Tomar shear zone which separates the OMZ (in the west) from the Central Iberian Zone (CIZ) to the East (Chaminé, 2007).

Exploratory palynostratigraphy (Fernandes et al. 2000, 2001) showed that the sampled black shales units extend from Middle Devonian (Givetian) up to Early Carboniferous (Tournaisian). Recent work (Machado & Vavrdová in prep.) has identified early Devonian assemblages in nearby sequences, but reworking is a common feature in the area and further work is necessary to properly characterize the sequences. Organic petrology and clay mineralogy (e.g. Chaminé et al. 2003, 2007) suggests that these units’ maturation ranges from weak catagenesis up to low-grade metamorphism. Uphoff et al. 2002 reports oil finds in Triassic sandstones of the nearby Mesozoic Lusitanian basin and interprets them as having a Palaeozoic source rock which suggestive for hydrocarbon potential studies.

The major difficulties found are related with the strong deformation and hydrothermal silicification and mineralization. These are irregular features: sometimes they are almost absent so that sequences and sedimentary characteristics can be easily described and

palynomorphs are fairly preserved but it can also be “where the hell has bedding gone!?” and palynomorph assemblages are scarce and very poorly preserved if present at all (Machado, et al. 2006). As parautochthonous tectonostratigraphic units the original geometry is difficult to establish and long continuous sequences are hard to find.

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I am working on Lower Cambrian acritarchs from Baltoscandia, (Sweden), the East European Platform (Poland, Estonia), and South Australia attempting to use them biostratigraphically to recognize stages and series for the Cambrian subdivision. This is a part of the International Subcommittee on Cambrian Stratigraphy project, aiming to designate the GSSP's for series and stages. I am involved in the research of the Working Group of the Cambrian Stage Subdivision, and a Vice-Chair Person of the Group, interested in the acritarch-based global correlation of the Lower Cambrian strata. I am helping in the organizing committee of the Field Conference of the Group to prepare the trip to Siberia 2008, to review the proposed stratotype sections for the Cambrian Series and Stages.

I am also bound to the Ediacaran acritarchs, their radiations and use for biostratigraphy, as well as the evaluation of the environmental stress during the Snowball Earth epochs (Neoproterozoic) and survival of phytoplankton and bacteria.

A project with Sebastian Willman, who is doing his Ph.D., is progressing well and includes some very nice work on TEM studies of the organic wall ultrastructure of some Ediacaran acritarchs from Australia (in collaboration with Dr. Kath Grey, Perth), and comparative studies on the wall ultrastructure of the Tertiary dinocysts (collaboration with Dr. Caroline van Mourik, Stockholm). The crux of this study is to figure out if the Ediacaran acritarchs are dormant/sexual cysts of phytoplankton, as dinocysts are, or something else. We are also trying biomarker analyses on these microfossils and biogeochemical composition of the wall.

BENSON MODIE (bmodie@gov.bw)

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Geological Survey of Botswana

I am finishing my PHD under the supervision of A. Le Hérisse in Brest, on the Late Carboniferous to Permian palynostratigraphy and palynofacies of the Karoo supergroup, Kalahari Karoo Basin, Botswana. These strata, rich in coal and coalbed methane resources, contains also abundant palynomorphs for biostratigraphic applications. Taxa described from eight of the nine coreholes sampled comprise 165 miospores and pollen species, 11 acritarchs species, seven prasinophytes and 1 chlorophyte species. The broader depositional environment transformed from glacial sub-environments, during deposition of the Dwyka Group, into a relatively wider basin punctuated by some rare marine incursions in the early Ecca Group (well identified by

acritarchs), and ultimately developing into a deltaic system.

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I continue to work on acritarchs from Lower Palaeozoic successions, mostly in the U.K. and the Middle East, mostly addressing problems of stratigraphic correlation. Future plans, which may or may not come to fruition, include looking at patterns of acritarch diversity in relation to sequence stratigraphy.

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During the past three years a project funded by the Leverhulme Trust and colloquially known as "phytoPal" has been underway. The principal aim of this project has been to document the diversity changes of the Palaeozoic phytoplankton and to examine their relationship with changes in the metazoans and climate. This has been achieved through the collaboration of an international team of experts who are each an authority on different parts of the Palaeozoic fossil record, namely Dick Aldridge, Gary Mullins, Ken Dorning, Alain Le Hérisse, Malgorzata Moczydlowska-Vidal, Stewart Molyneux, Thomas Servais, and Reed Wicander. The project has also involved the participation of numerous other scientists during the annual phytoPal workshops which have been held at the University of Leicester (2003), Granada (2004), Université des Sciences et Technologies de Lille, France (2004), St Louis, USA (2005), and Prague (2006).

To determine the diversity of Palaeozoic phytoplankton, as preserved in the fossil record, the first essential task has been to document all of the species described in the last 80 years of their study.

This information has been collated to build the 'phytoPal database,' which provides the fundamental resource on which all other aspects of the programme are based. This is also intended to serve as a continuing resource for the phytoplankton scientific community. The database has been designed in a relational format so as to preserve as much of the original information as possible and, in total, it documents 1025 genera and 6172 species and subspecies of mainly acritarchs, Prasinophyceae, Zygnemataceae, and Hydrodictyaceae. It is important to note that the database also includes many Precambrian and post-Palaeozoic taxa as well. The data recorded include taxonomic information, synonymies, and the first and last documented appearance of each species. Importantly, these first and last appearances are supported by the reported occurrences of each species in the published and unpublished literature, and the database contains nearly 17,500 such records.

We have succeeded in our goal of producing a critically-evaluated overview of biodiversity patterns in the fossilized Palaeozoic phytoplankton. The final papers are in preparation, but phytoplankton diversity can be related to, among other things, shifts in the global climate and changes in seawater chemistry. In addition, as with any project, we have also highlighted specific parts of the phytoplankton record that are in need of, or deserving of, closer analysis, and have identified targets for more detailed research projects. For those who want more information, we have also made some resources from our project meetings and database available on the WWW at <http://www.le.ac.uk/geology/glm2/phytopal.html>."

My research focus in 2006 was a revision and completion of my study of the acritarch and chitinozoan assemblages and their usefulness in interpreting and

establishing, in the geotectonic context, the Cambrian/Ordovician boundary of the metamorphic Arsita Rea (Tg.4) Formation of the Tulghes Group, East Carpathians, Romania.

My future research will involve revising and completing all acritarch and chitinozoan assemblages in the other boundaries from the metamorphic formations studied in the East Carpathians of Romania.

I had one paper published this past year and I am supervising four PhD students.

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PhD students:

DANIEL TABARA – Palynological study of the Basarabian and Kersonian stages of Moldavian Platform, Romania.

OVIDIU BATA – Palynostratigraphical study of metamorphic formations from the Putna Valley Basin (Bistrita Mountains), East Carpathians, Romania.

CARMEN TEODORA POPESCU – Palynological and microfaunistic study of the Badenian stage from Moldavian Platform and South Dobrogea, Romania.

ALINA CARMEN LAZAR – Palynological and biostratigraphical study of the Devonian stage from North Dobrogea, Romania.

In other news, the 6th National Paleontological Symposium of the Romanian Paleontologist Society will be held in our Geological Department from September 21-23, 2007. I am extending an invitation to the Executive President and

all colleagues to present your scientific contributions to this meeting. After review, all contributions may be published in *Acta Palaeontologica Romaniaae*, no. 6. You will receive in January, 2007, the First Circular letter, and details can be found at the following e-mail address: simpozion_iasi@yahoo.com

MIGUEL ANGEL PEREZ LEYTON

(Brest University, France)

I am finishing my PhD under the direction of A. Le Hérissé in Brest and co-direction of P. Steemans in Liege, on the siluro-Devonian palynostratigraphy of the sub-andean zone in Bolivia. This study of spores, acritarchs and chitinozoa, is in relation with exploration on the gas reservoir and source rocks made by TOTAL company. A majority of the results are confidential but a paper is in preparation with A. Le Hérissé and F. Paris on the siluro-Devonian of the Boomerang area. In the thesis 220 species of acritarchs, 102 species of spores and 72 species of chitinozoa are described. The joined study of the 3 groups appears very complementary, and the succession of biozones and bioevents, are very useful for local and regional correlations as well as to resolve geological problems.

GEOFFREY PLAYFORD

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Geoff Playford reports on a range of palynological researches, including acritarch studies, being conducted in the Earth Sciences Department of the University of Queensland (UQ).

MARCO QUINTAVALLE, originally from the University of Pisa, has successfully completed his PhD dissertation on Ordovician palynostratigraphy (acritarchs and chitinozoans) of the Canning Basin, Western Australia, resulting in a two-part monograph (Quintavalle and Playford, *Palaeontographica Abt B*, v. 275 (1-3), p. 1-88 + v. 275 (4-6), p. 89-131; 2006); a further paper is currently in press with *Revue de Micropaléontologie*.

DANIEL MANTLE (a graduate of Trinity College Dublin) was recently (December 2006) awarded the PhD degree, based on his dissertation on Jurassic palynomorphs (principally dinoflagellate cysts, also spores-pollen and acritarchs) and biostratigraphy of the Timor Sea, offshore northern Australia. Daniel's dissertation, supervised by Geoff and Robin Helby (consultant, Sydney), received high commendation from his PhD examiners, and is currently being prepared for publication.

EMMA MSAKY, another doctoral candidate under Geoff's supervision, is researching Upper Jurassic-Lower Cretaceous palynology and stratigraphy of Tanzanian coastal basins, with support from her employer (Tanzanian Petroleum Corporation, Dar es Salaam). Emma is a graduate of Dar es Salaam and Oslo universities. A manuscript incorporating preliminary results of her UQ research has been accepted for publication by *Paleontological Research*, and she will be addressing an East African petroleum conference in April.

FELIPE GONZÁLEZ, a postdoctoral fellow from the University of Huelva (Andalucia, Spain), is working with Geoff for two years at UQ on the biostratigraphy of Devonian-Carboniferous spore and acritarch assemblages of the Iberian Pyrite Belt in Spain and Morocco. This extends research already published on this topic (e.g., González, Playford, and Moreno,

Palaeontographica Abt B, v. 273 (1-3), p. 1-51; González, Moreno, and Playford, v. 273 (1-3), p. 53-86; 2005). The IPB project, formulated and headed by Carmen Moreno (sedimentology/stratigraphy professor of the University of Huelva and Felipe's former doctoral supervisor), is funded by the Spanish Government, and involves collaboration with a number of other Spanish geoscientists. Geoff, accompanied by Felipe, is scheduled for a second visit to Huelva late this year or early next year to assess and integrate results from the ongoing research.

In association with John Rigby (Queensland University of Technology), Geoff is researching the Permian palynoflora and megaf flora of the Aiduna Formation of West Papua. The palynomorphs are predominantly spores and pollen (mostly of Gondwanan affinity), and, not unexpectedly considering the age of the formation, acritarchs are very infrequent and seemingly of mainly nonmarine derivation.

Geoff's longstanding research collaboration with Reed Wicander, spanning 25 years and involving successive reciprocal sabbatical visits to the University of Queensland and Central Michigan University, has resulted in a series of publications focusing on United States and Australian Ordovician-Devonian acritarch assemblages. The latest of these is *Oklahoma Geological Survey Bulletin* **148** (116 p., 2006) monographing the microphytoplankton of the Upper Ordovician Sylvan Shale, southern Oklahoma. A further paper, on a correlative Upper Ordovician sequence in Michigan, has been accepted for publication by *Revue de Micropaléontologie*.

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Recent research (2006):

Current research involves Lower Palaeozoic marine and terrestrial palynomorphs (Ordovician, Silurian & Devonian) from western Argentina. I am working together with T. Servais, F. Paris and M. Vecoli on Ordovician palynomorphs of the Gondwana margin, including biofacies, paleogeography and paleoclimate, in the frame of a scientific cooperation project between France and Argentina (ECOS-SECYT). I continue the collaboration with P. Steemans on Silurian-Devonian strata from the Precordillera (Argentina) and Brazilian basins.

Plans for future research:

I will keep up the same projects for the next years. Some of the manuscripts in collaboration, to be sent in 2007, deal with the presence of the *messaoudensis-trifidum* assemblages in north-west Argentina; Darriwillian palynomorphs from the Sierras Subandinas (north-west Argentina) and Lower Tremadocian acritarchs from North Africa.

THOMAS SERVAIS

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Université des Sciences et Technologies de Lille

I continue my work on the Ordovician biodiversification of the phytoplankton and the interpretation of the marine trophic chain, despite the fact that 2006 was a hectic year with participation in too many meetings as well as several additional intercontinental business trips (unfortunately, not in business class).

Since January 2006, I have been overwhelmed with administration (too much!), being head of the department (UMR 8014 CNRS), but also president of the French Palynologists (APLF) and vice-president of the French Palaeontologists (APF), and I continue being leader of IGCP 503 (with 250 scientists involved).

Work on the Chinese diversification of the acritarchs continued with Li Jun and Yan Kui (Nanjing), with submission of a manuscript before the end of 2006 (with a Chinese diversity curve).

A new French-Argentinian research project started (in collaboration with Claudia Rubinstein, Mendoza), with a special focus on the Cambrian/Ordovician and Ordovician/Silurian boundaries (together with Marco Vecoli) and on the Tremadocian/Floian boundary.

Work with Axel Munnecke (Erlangen) also continues, but it is focused on the calcareous plankton ("calcispheres": the calcareous equivalent of acritarchs).

I am currently working here at Lille with Gerard Versteegh (Hamburg University) on the interpretation of the wall chemistry of the "galeate" acritarchs. Gerard is an invited professor at Lille for three months. This exchange brings me back into palaeobiological discussions: what are acritarchs and who wants to eat them?

Collaboration with Lena Raevskaya will continue in 2007 with trips scheduled to St. Petersburg, and a new project with Estonian colleagues will also begin.

Of course, most of the research is in collaboration with Marco Vecoli, who is in the same department at Lille. We are really lucky to both be at the same place! And now, we are even three. Aurélien Delabroye started his PhD on the O/S boundary in October, 2006.

PETRA TONAROVÁ (tonarova@natur.cuni.cz)

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The goal of my thesis, **Morphological variability of selected species of Cambrian acritarchs**, (proceeded in 2005-2006) was to revise the Middle Cambrian acritarch assemblage of the Jince Formation (Příbram-Jince Basin, Barrandian area) and to evaluate morphological variability of four selected acritarch genera (*Adara* Fombella 1977, *Cristallinium* Vanguetaine 1978, *Eliasum* Fombella 1977, and *Timofeevia* Vanguetaine 1978) within large populations.

The thirteen samples (V-1, V-2, J-47, J-50, J-51, V-3, V-4, V-5, J-53, V-6, J-54, J-55, and J-57) were collected from a continuous section at the Vinice Hill locality near Jince. This is a classic locality with numerous natural and artificial outcrops of the richly fossiliferous Middle Cambrian sediments of the Jince Formation. The lower part of the formation, namely the *Onymagnostus hybridus* Trilobite zone, was sampled because of the well diversified acritarch assemblages and good to very good preservation.

The thesis consists of the following introductory parts:

1. A short review of sedimentology and fossil content of the lithostratigraphic units in the Příbram-Jince Basin with a special focus on the Jince Formation.
2. A review of the Middle Cambrian acritarch taxa, including their synonymy, established in the Czech Republic (Skryje-Týřovice Basin and Příbram-Jince Basin).
3. Detailed synonymy and review of the four selected genera.

Finally, the analyses focused on three of the selected genera: *Adara*, *Eliasum*, and *Timofeevia*, because of taphonomic complications in recognition of specimens

of the genus *Cristallinium*. From three to six different parameters (length and width of the central body, length of processes, etc.) were measured for 60 to 240 specimens for each genus. These parameters were statistically evaluated and scatter diagrams and histograms were produced. In all of the analyzed samples, the following species have been discriminated: *Adara alea* Martin 1981, *A. ? longispinosa* Fatka 1989, *Eliasum llaniscum* Fombella 1977, *Timofeevia lancarae* (Cramer et Diéz 1972) Vanguetaine 1978 and *T. lancarae-phosphoritica* plexus Vanguetaine 1978.

Such data could be used for comparison of morphological variability of these genera in other regions, including taxonomic evaluation and hopefully could prevent proposals of new taxa (species) based on a limited number of specimens.

A manuscript for publication is in progress.

MILADA VAVRDOVÁ (midla@gli.cas.cz)

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I am presently working on samples and thin sections from the Menin - 1 borehole, which has yielded very well preserved Vendian acritarchs such as *Arctocellularia tetragonala*, *Obruchevella valdaica*, *Podolina minuta*, *Primoflagella speciosa*, and *Satka elongata*. Another 30 species have been recovered, and the assemblage indicates a Vendian age. The cell walls are light yellow and elastic, evidently without postdiagenetic thermal alteration. Irrespective of their origin (autochthonous, recycled, ?), the recovered microfossils document the existence of extensive marine Proterozoic sedimentation within the southern part of the Brunovistulicum. A close relationship of recovered microfossils to coeval assemblages from Southern Poland, Baltic area, and Arctic Canada is clear.

Publication: Vavrdová, M. (2006): Two benthic microbial assemblages from the Menin-1 borehole (Early Cambrian, Czech Republic). *Bulletin of Geosciences*, 81(2), 115-121.

A sheltered depositional environment enabled the preservation of planar and chain-like algal coenobia and intra-cellular structures. (reprints are available)

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Université des Sciences et Technologies de Lille

My main acritarch-related research projects during 2006 were as follows:

1) Acritarch dynamics and biostratigraphy across the Ordovician-Silurian boundary. This included a restudy and reevaluation of several Ordovician-Silurian boundary sections in the subsurface of North Africa (paper in press to be published soon in *Review of Palaeobotany and Palynology*), and a field trip to Anticosti Island, Québec, Canada, with extensive and high-resolution sampling of two section at the eastern and western ends of the island (subject of a PhD Thesis of which I am supervisor together with Thomas Servais). These results were presented at the European Geosciences Union General Assembly in Vienna (2-7 April 2006), at the IGCP 503 Annual Meeting in Glasgow (30 August - 1 September 2006), and at the Earth Sciences Meeting 2006 (RST 06) in Dijon (4-9 December 2006).

2) Cambrian acritarch stratigraphy of the subsurface of Algeria in collaboration with Florentin Paris, Rennes (paper in preparation).

3) Ordovician through Early Devonian acritarch and miospore high-resolution biostratigraphy in the North Sahara Platform: a long-term project. Amalia

Spina, from the University of Perugia, Italy, will spend a 12-month postdoctoral stay in Lille working on this project and focusing on one interesting borehole section in southern Tunisia.

4) Re-evaluation of acritarch dating of the phyllitic basement of the Eastern Alps in Italy (collaboration with the University of Padova, Italy: paper submitted).

5) The start of a collaboration with Claudia Rubinstein on a joint project aiming at the comparative study of Ordovician acritarch dynamics and biostratigraphy along the margin of Gondwana: this project is funded by the program ECOS from the education ministry of France, and led by Thomas Servais. For this project, I spent and enjoyed a two week stay in Mendoza, Argentina, visiting the palynological laboratory of Claudia Rubinstein. Several papers are in preparation or in the process of being submitted.

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I am continuing my work on Ordovician and Devonian acritarchs from various locations. Two Ordovician papers were published in 2006 and one is in press. Presentations included a keynote talk and another paper at the CIMP General Meeting in Prague, Czech Republic. I am still continuing my collaboration with Thamer Al-Ameri on the Ordovician Khabour Formation in Western Iraq. I expect to present the results of this at a meeting this year. Other research involves finishing up some manuscripts on Ordovician and Devonian acritarchs that have languished far too long.

Because no one stepped forward to run for Chairman of our subcommission, I was reelected by acclamation at the CIMP business meeting. I am happy to serve one **final** term, but someone else will need to run for this office the next time elections are held.

SEBASTIAN WILLMAN

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I have now completed three years of my PhD work focusing on Ediacaran acritarchs from the Officer Basin in Australia. The first results were published in the special issue of *Review of Palaeobotany and Palynology* in 2006 (following the International Palynological Congress in Granada, Spain in 2004). Continuing research involves palynological documentation of additional boreholes and critical intervals, as well as TEM-work.

The last years I have been lucky to travel quite a lot. I participated in a graduate course called International Geobiology, which took us to such places as the Bahamas, California and Nevada. Two meetings in China made me aware of the problems and prospects of some of the successions there (and the fact that you can buy almost everything for virtually nothing in dark alleys). At the International Palaeontological Congress in Beijing I presented the results from my TEM-research.

My collaboration with Dr Kathleen Grey at the Geological Survey of Western Australia resulted in me spending five excellent weeks in various parts of Australia. Highlights included participation in the Acraman workshop and a field trip to the Flinders Ranges and a week of drillcore sampling as well as experiencing 20 degrees and sun in the middle of winter. Thank you Kath!

Finally I want to take this opportunity to invite you all to the Palaeontological Association meeting to be held in Uppsala on the 16-19th of December 2007. Where else would you want to be?

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I am a PhD student of Li Jun, and have spent 2006 working on my PhD thesis. Specifically, I have prepared my thesis samples and am now concentrating on the statistical aspects of the assemblages. My goal is to understand how different acritarch taxa react to environmental change. Furthermore, I am applying statistical analysis to understanding acritarch palaeogeography. Acritarch recovery from the Middle-Late Ordovician in South China is very poor. However, I have samples from the Middle/Late Ordovician (*H. teretiusculus*-*N. gracilis* graptolite biozone) boundary, that will help in understanding acritarch stratigraphy and palaeogeography during that time interval. In June, I participated in the second International Palaeontological Congress, and presented a talk.

I will finish and apply for my PhD thesis in 2007.

YIN LEIMING (leimingyin@yahoo.com.cn)

Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, China

During 2006, one of my monographs, "Acritarch study in China" was published by Science Press of China. In the monograph, representative acritarchs and acritarch assemblages of different geological ages in China are summarized.

Based on known acritarch data obtained from Precambrian and Paleozoic strata in China, combined with the evolution of the microplankton and the close relationship between microplankton and the physical environment, the following conclusions can be made: (1) Fossil specimens of single eukaryotic organisms are preserved in late Archean-age sedimentary rocks. (2) The multi-layer differentiation of the cell wall (or vesicle wall), cytoskeletal architecture, excystment structure of cytoplasm, all of which are characteristic of eukaryotic organisms, had been accomplished in the Mesoproterozoic Period; a known possible primitive dinoflagellate form (e.g., *Shuiyousphaeridium*) and the form *Spiromorpha segmentata* show that sexual reproduction had already occurred. (3) During Neoproterozoic glacial time ("snow ball" event), there still were cyanobacteria and a few eukaryotic protists, which multiplied in the stressed environment controlled by anomalous salinity and low temperature. (4) After glaciation ("snow ball" event), following an oceanic temperature rise, nutrition with rich phosphorus promoted rapid and extraordinary development of microplankton, and the Doushantuo microbiota converged with micrometazoa and micrometaphytes to dominate the marine microplanktonic aspect of the terminal Precambrian. (5) Just before the "Cambrian explosion," the abundance and diversity of acritarchs dramatically declined and large acanthomorphic acritarchs did not occur during the terminal Precambrian Dengying Period (late Ediacaran). (6) Early Paleozoic acritarchs are one of the most important microfossils used for regional and continental biostratigraphy, and for reconstruction of paleogeography.

During 2007, my colleagues and I will continue our work on the Proterozoic, especially Ediacaran microfossils and acritarchs.

CIMP LISBON 2007

We are glad to invite you to the CIMP Lisbon'07, the Joint Meeting of Spores/Pollen and Acritarch Subcommissions, which is to be held in Lisbon, Portugal, from 24 to 28th September 2007, organized by INETI (Portuguese Geological Survey). This meeting will involve 3 days of scientific sessions followed by a 2 days post-meeting field trip to Southern Portugal. The venue is at the Portuguese Geological Survey headquarters. CIMP Lisbon'07 will be a forum for specialists interested in Palaeozoic Palynology aiming the discussion of current progresses, future developments and applications.



You are strongly encouraged to participate and submit papers to the CIMP Lisbon'07. The official working language is English and you are most welcomed to visit the web page is at <http://e-geo.ineti.pt/CIMPLisbon07>, for further information. Lisbon, the capital of Portugal, is known all over the world as the city of sun, located near the Atlantic Coast and it is a well recognised place to hold international events.



We hope to see you in Lisbon in September 2007.

Committees of CIMP Lisbon'07



(G. Clayton, P. Fernandes, J. Tomás and Z. Pereira)

Organizing Committee

Z. Pereira (LNEG-LGM, Portuguese Geological Survey)
J. Tomas Oliveira (LNEG-LGM, Portuguese Geological Survey)
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P. Steemans (University of Liege)
R. Wicander (Central Michigan University)

Location



The Portuguese Geological Survey headquarters are in Alfragide, near Lisbon, just in front of the Lisbon Camping Park, on the west side of the Lisboa-Cascais highway. It contains a 300-seat auditorium and all the facilities required for scientific meetings. There is also a cantina where the conference lunches will be served. About 300m from the Laboratory are bus stops to the city centre.





**American Association of Stratigraphic Palynologists
40th Annual Meeting
Panama
September 8-12, 2007
<http://striweb.si.edu/aasp07>**

Hosted by the Smithsonian Tropical Research Institute

- a division of the Smithsonian Institution
- one of the world's leading centers for basic research on the ecology, behavior and evolution of tropical organisms.



Events

- Opening mixer
- Pre-meeting field trip to Barro Colorado Island or to the Canopy Crane at Metropolitan Park in Panama City
- Tour of the Miraflores Locks at the Panama Canal



Guidelines

- Contributions accepted until July 5
- Student Financial Aid available
- Hotel rooms reserved at discount rate at the Hotel El Panama
- Additional information at <http://striweb.si.edu/aasp07>
- Contact us at aasp2007@si.edu



University „Al. I. Cuza” of Iași
and
Paleontologists Society from Romania

Preliminary registration

Name.....
First name.....
Institution / Company.....

Address.....

I intend to present an oral paper a poster (please indicate with X).

Preliminary title:

Theme.....

My participation is sure probably.

I am interested (yes / no) to participate in the post-symposium field trip. Probably, this will take place in Piatra Neamț - Târgu Ocna – Slănic Moldova area.



**6th NATIONAL SYMPOSIUM
ON PALEONTOLOGY
21 – 23 september 2007**

FIRST CIRCULAR



Iași, Romania

The 6th National Symposium Paleontology will be held in Iași, between 21 – 23 september 2007 under the auspices of „Al. I. Cuza” University and Paleontologists Society of Romania.

Symposium themes:

1. New tendencies in Paleontology
2. Invertebrates and vertebrates paleontology
3. Micropaleontology
4. Paleobotany and palynology
5. Paleocology and paleogeography
6. Taphonomy and ichnology
7. Biostratigraphy
8. Sedimentology of paleontological sites
9. Diagenesis of fossils
10. Paleontology and environment.

The languages of the Symposium will be Romanian, English and French. Simultaneous translations will not be available.

More details on Symposium will be specify in the Second Circular. Please, answer to First Circular because it is the only way to receive the second one.

The attached preliminary registration form must be sent back no later then February 1st 2007 at one the following addresses: • simpozion_iasi@yahoo.com

• Lecturer **Paul Țibuleac** Ph. D.: Tel: 0232 / 201492; E-mail ptib@uaic.ro

• Teaching Assistant **Daniel Țabără** Ph.D: E-mail tabara_d@yahoo.com

University „Al. I. Cuza” Iași,
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Collection of Paleontology, University „Al. I. Cuza” of Iași



Paleontological sanctuary “Repedea Hill” Iași



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