



Newsletter
Summer 2010
No. 77



A statue of Frédéric Chopin, born near Warsaw, Poland, where we will be holding our General Meeting this September.

Photo with permission of Marzena Oliwkiewicz-Miklasinska

Commission Internationale de Microflore du Paléozoïque

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Past President: Florentin Paris
Secretary General & Newsletter Editor: Gary Mullins
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MESSAGE FROM THE PRESIDENT

Greetings once again from CIMP. There are several important things to report.

The next meeting is being organised by our Polish colleagues this September in Warsaw. All the details are on the CIMP 2010 website and given elsewhere in this newsletter. Please do support our Polish colleagues by attending this meeting. It is still not too late to attend. We have released a sum from CIMP funds to help the organisers. Hopefully this will include some student sponsorship.

During the meeting in Warsaw I complete my term as CIMP President. Please think about likely successors. If you do want to nominate someone then please send in the name to Gary Mullins.

I hope to see you all in Warsaw.

John Marshall
CIMP President

MESSAGE FROM THE GENERAL SECRETARY

Not wanting to sound like a parrot in repeating everything that John has said in his message, but our General Meeting in Warsaw is almost upon us. It is still not too late to register if you haven't already done so. We also have to remember that John's term as CIMP President is coming to an end. In addition, Philippe Steemans has also indicated that he would like to stand aside as CIMP Webmaster. Therefore, please consider the request for nominations for these posts, which can be found towards the end of this newsletter.

Thank you,

Gary Mullins

gary.mullins@fugro-robertson.com

2010 CIMP GENERAL MEETING, WARSAW, POLAND SEPTEMBER 13th-19th, 2010



CIMP General Meeting Warsaw 2010 is coming soon. The final 3rd Circular is available at the conference website:

http://www.ing.pan.pl/CIMP-2010/index_cimp.htm

We hope that all of you have got the final circular by email. If not, please contact the Organizing Committee – we probably haven't got your e-mail address or your address is incorrect.

The final 3rd Circular contains the Final Reply Form. Although we received some details from you last year, this last form gives the possibility to confirm and modify your previous plans. We will be very grateful if you could send us back the filled forms by **August 31st** to: ndmiklas@cyf-kr.edu.pl or cimp2010@ing.pan.pl

The Organizing Committee received the financial support from the CIMP authority, so we can offer the refund of the conference fee for some people. We are still looking for more sponsors, so we hope to give a few small conference grants (100% fee discount). These grants will be preferably assigned to PhD and MSc students, retired palynologists and other participants who confirm contributions of meeting presentations. However, we cannot guarantee how many

grants we can afford. If you are interested in receiving the financial support, please fill in the Final Registration Form and send us back by **August 31st**.

We can also offer the cheap accommodation in guest rooms of the Institute of Geological Sciences, Polish Academy of Sciences. Because the number of rooms is limited, please contact organizers as soon as possible, no later than August 23rd.

For some details about Warsaw please have a look at:

<http://www.warsawtour.pl/en>

<http://www.e-warsaw.pl/2/index.php>

http://www.lotnisko-chopina.pl/en/passenger?cl=en&set_language=en

Because the climate of Poland is moderate, but very changeable, please check the weather forecast just before your travel:

<http://www.weathercity.com/pl/warsaw/>

We hope to see all of you in Poland!

Organizing Committee of the CIMP General Meeting Warsaw 2010

Dr Monika Masiak IGS PAS - mmasiak@twarda.pan.pl

Dr Marzena Oliwkiewicz-Miklasinska IGS PAS - ndmiklas@cyf-kr.edu.pl

Dr Marzena Stempień-Sałek IGS PAS - mstempie@twarda.pan.pl

FUTURE MEETINGS AND CONFERENCES



NOVA SCOTIA 2010: JOINT MEETING OF AASP-CPC-CAP

**Wednesday 29th September – Saturday
2nd October, 2010**

This is a friendly reminder of upcoming deadlines for the Nova Scotia 2010 meeting (a joint meeting of CPC, AASP-TSP and CAP) --- it will be a great meeting, both scientifically and socially.

Most imminent is the **ABSTRACT DEADLINE** on **20th August 2010**.

Deadline for **PRE-REGISTRATION** is **27th August 2010**.

Field Trip enrolment deadline (with payment) is **27th August 2010** --- we need to reach a minimum number to go ahead with the field trips by this date.

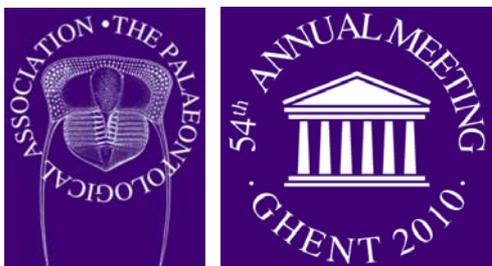
Hotel rates are guaranteed only until **29th August 2010**.

All forms and links can be found at <http://www.palynology.org/meetings/HalifaxAnMtg.html>

If you are planning to come, please register as soon as possible --- it will be a big help to the Organizing Committee. The

meeting events and sessions will start on the evening of 29th September, with technical sessions on the 30th September and 1st October and field trips on the 2nd October.

Nova Scotia 2010 Organizing Committee.



**ANNUAL MEETING OF THE
PALAEOLOGICAL
ASSOCIATION**

**17th-20th December 2010, Ghent,
Belgium**

The 54th Annual Meeting of the Palaeontological Association will be held at Ghent University in Belgium, organised by members of the Department of Geology, in collaboration with the Department Géosystèmes of the University of Lille 1 (France), the University of Namur (Belgium), and the Royal Belgian Institute of Natural Sciences (KBIN – Brussels, Belgium).

Registration and abstract submission is now possible from online forms available on the Palaeontological Association website (<<http://www.palass.org>>).

Abstract submission will close on Monday **6th September 2010**. Registration from this date onwards will incur an additional administration charge. Final registration deadline is Friday **19th November**.



**L'ASSOCIATION DES
PALYNOLOGUES DE LANGUE
FRANÇAISE**

**Palynologie et Diversités : marqueurs,
milieux, méthodes, modèles, applications**

The Association des Palynologues de Langue Française will have their 22nd meeting in Meudon/Paris between the 20th and 22nd of September 2011. Full details can be found at <http://w3.laplf.univ-tlse2.fr/annonces%20conferences/1ereCirculaireSymposiumMeudon.pdf>



IPCXIII/IOPC IX 2012

**Palynology and Palaeobotany in the
century of the environment**

23rd-30th August 2012

Tokyo, Japan

The Congress will be held as the joint of IPC/IOPC on August 23rd-30th, 2012 at Chuo University, Korakuen Campus, Kasuga, Bunkyo-ku, central Tokyo.

Our world is changing dramatically. There are many urgent environmental issues, such as pollution, climate change, landscape and land-use changes, that have

affected ecosystem, biological diversity and human life. Palynology and Palaeobotany have provided baseline information on the past biological and environmental changes, which have in turn become critical for sustainable environmental management and nature conservation. In Japan and elsewhere more medical doctors are actively involved in Aerobiology and Palynology to prevent further spread of pollen-related allergies influenced by human-induced environ-

mental changes. Our disciplines now have wider implications and applications relevant to the modern society than ever. The main theme "Palynology and Palaeobotany in the Century of the Environment" is thus timely for the IPC/IOPC 2012 meeting in Tokyo, Japan. Please visit our web site (<http://wwwsoc.nii.ac.jp/psj3/>) for more detail information. Also, you can download the first circular from our web site.

CIMP at the IPC3
London, 28th June to 3rd July 2010

Firstly don't get confused. This is not a flashback to the rather better known 3rd International Palynological Conference held in Novosibirsk in 1971. It's the 3rd International Palaeontological Congress held in London in July 2010. This is a rather major conference covering all aspects of palaeontology and was attended by some 750 delegates who gave rather a lot of talks and posters. I will point out here that some International Palynological Conferences have had, from recollection, as many attendees.

Readers of this newsletter will know that we were invited by the organizers to organize a symposium. This we did on Palynology and the Palaeozoic Earth System. Unfortunately we had rather a lot of competition from sessions on Palaeozoic Climate, Ordovician Biodiversification, the Micropalaeontological Record of Global Change, Devonian Bioevents and Life on Land to mention a few. We managed to get eight contributions, and ended up as a workshop. This gave us a more relaxed time structure. The meeting took place on Thursday 1st July, workshop 10, and was attended by about 30 persons. The four talks were presented first followed by the four posters. The poster presenters each made an informal presentation in front of their poster. Thanks to everyone who contributed. Abstracts are as follows...

TERRIGENOUS DEVONIAN ZONAL MIOSPORE STRATIGRAPHY OF THE WESTERN PART OF THE PRECASPIAN DEPRESSION AND ITS FRAME (RUSSIA)

Mantsurova, Valentina N., LUKOIL-Volgograd NIPImorneft Inst., 96 Lenin Ave., Volgograd 400078, Russia e-mail: geo@t-k.ru

The terrigenous Devonian includes all the pre-Frasnian deposits. Stratigraphic study of these deposits is difficult because conodonts have not found here. Therefore, the zonal miospore assemblages are very important for their subdivision and correlation. These deposits have been attributed to several miospore zones (Avkhimovich et al., 1993, with modifications). The Eifelian deposits are characterized by miospores of the *Periplecotriletes tortus-Calyptosporites velatus* zone (Klintsov Horizon). The overlying *Rhabdosporites langii-Cirratriradites monogrammos* zone confirms to Mosolov and Chernoyar horizons. The most distinct changes in the palynocomplexes are recognised at the *R. langii-C. monogrammos* and *Geminospora extensa* (Ex) zone boundary. This level corresponds to the boundary between the Eifelian and Givetian stages. This boundary is one of the most precise in the whole

Devonian section. The Ex zone has been divided into three subzones. The uppermost part of the Ex zone is palynologically less distinct than the lower ones. The dominant changes in the miospore assemblages are mainly seen at species level. In upper part of Ex zone miospores appear which are characteristic species for the palynocomplex of the overlying *Contagisporites optivus-Spelaetriletes krestovnikovii* zone (Pashiya and Timan horizons). This zone is subdivided into the lower *Ancyrospora incisa-G.micromanifesta* and the upper *Acanthosporites bucerus - Archaezonotriletes variabilis insignis* subzones. By palynological data the upper boundary of Givetian stage should be defined on the *A. bucerus-A. variabilis insignis* subzone (the basis of Upper Timan subhorizon).

NEW MIDDLE CAMBRIAN ACRITARCHS FROM UPPER SILESIA, SOUTHERN POLAND

Jachowicz-Zdanowska, M. Polish Geological Institute, Upper Silesian Branch, 41-200 Sosnowiec, Królowej Jadwigi 1, Poland e-mail: monika.jachowicz@pgi.gov.pl

In the Upper Silesian Block, the Sosnowiec IG 1 borehole drilled 195 m of Lower Palaeozoic deposits beneath the Lower Devonian. The rocks, cut by an igneous intrusion, have been assigned to the Middle Cambrian on the basis of acritarchs and named as the Sosnowiec Formation. This formation is composed by clastic rocks which consist of alternating layers of sandstone and claystone. The Sosnowiec IG borehole did not reach the base of Sosnowiec Formation. According to Moczydłowska (1998) there is a transition from the Middle to Upper Cambrian and even Ordovician (Tremadoc) rocks are present. The recent palynological study resulted in the discovery of typical Mid Cambrian acritarch assemblages. In three samples taken from rocks overlying the gabbro diabase intrusions (3212 - 3204,5 m), new acritarch associations were documented. They are dominated by a new taxon which differs from typical Middle Cambrian genera such as *Celtiberium* or *Adara*. Acritarch assemblages from samples both underlying and overlying the previously mentioned depths are dominated by *Adara alea*, *Cristallinium cambriense*, *Heliosphaeridium notatum*, *Eliasum llanisum* and *Comasphaeridium longispinosum*. Therefore Upper Cambrian sediments have not been recognized, although their presence is very likely in the northern part of the Upper Silesian Block.

BIOSTRATIGRAPHIC CORRELATION OF PERMIAN STRATA FROM SE TURKEY AND AUSTRALIA – AND PALYNOLOGICAL SPECIES AS INDICATOR FOR CLIMATE

Stolle, Ellen¹ ¹*EP Research, Hoetmarer Straße 17, Ennigerloh-Westkirchen, Germany e-mail: ellen.stolle@yahoo.de

Deposits of the Kaş Formation of SE Turkey (northern Arabian Plate margin, palaeogeographic position 10°S-15°S, deposits dated previously by foraminifera to Tethyan stages) are in this study correlated with Australian strata (previously dated by brachiopod zonation to Russian and global stages). This long-distance, eastern Gondwana-wide biostratigraphical correlation is conducted for the first time in the Guadalupian epoch (Mid Permian). The lower and middle parts of the Kaş Formation, and the upper Muja and upper Collieburn members of the Collie Coal Measures (Western Australia, approx. 65°S in the Permian) are of late Wordian age, extending into the Capitanian.

On this basis, the palynological record of these units is now also chronostratigraphically related to the ICS international stages. Assemblages from the Kaş Formation are correlated with those of the upper *D. ericianus* Zone of Western Australia (former *P. rugatus* Zone,

Collie Basin). A similar Gondwana-wide Last Occurrence Datum of the distinctive miospore *Corisaccites alutas* Venkatachala and Kar 1966 has been observed. The comparison of the palynological record of the late Wordian of SE Turkey and Australia has also shown that about twenty species were common to both areas (Kaş Formation and upper Collieburn Member). Some species were obviously facies restricted to the respective regional and local depositional environments. From the palaeobiogeographical perspective, it may be concluded that certain species of parent plants probably co-occurred Gondwana-wide during the late Wordian, while the distribution of others was dependent on climate.

SPORES, LIFE, DEATH AND THE DEVONIAN EARTH SYSTEM

Marshall, John E. A.¹, Astin, Tim R.², Tel'nova, Olga P.³ ¹School of Ocean and Earth Science, University of Southampton, National Oceanography Centre, Southampton, U.K., SO14 3ZH, jeam@noc.soton.ac.uk. ²School of Human and Environmental Science, The University of Reading, Whiteknights, PO Box 217, Reading, RG6 6AH, UK. ³Institute of Geology, Komi Science Centre, Russian Academy of Sciences (Ural Division), Pervomaiskay St., 54, Syktyvkar, Komi Republic, Russia e-mail: jeam@noc.soton.ac.uk

When trying to understand the Earth System a crucial linkage is that between the marine and terrestrial environments. Perturbations in the Earth System are generally recognized within marine sequences through major changes in both sedimentary environment and biota. However, the terrestrial environment can give much more direct and easily interpretable changes in the climate system and how it interacts with the terrestrial biota. In reality, terrestrial biota means the spores of land plants as these are the only group present in both a sufficient abundance and through long stratigraphic sequences. An example is given from a thick (>1 km) terrestrial Frasnian/Famennian section from Ymer Ø, East Greenland. This gives a high resolution integrated record of spores and palaeoclimate. Productive palynological samples are quite rare but contain similar spore assemblages to those recorded from the Timan in Russia where they occur in well studied sections that also contain conodonts and goniatites thus enabling marine/terrestrial correlation. The East Greenland section shows a number of distinctive climatic events with successive intervals of seasonally much wetter climate followed by episodes of intense aridity. In the latest Frasnian there was a progressive and significant down-step in the diversity of terrestrial vegetation that matches these aridity episodes. The F/F boundary can be linked to sustained aridity driven by a particular combination of orbital cycles that can be interpreted as an increased sensitivity of the Devonian Earth System to particular climatic thresholds.

POSTERS

AGE AND REGIONAL CONTEXT OF THE CARBONIFEROUS-PERMIAN GLACIGENIC TOBRA FORMATION (SALT RANGE, PAKISTAN)

Jan, Irfan^{1, 2} and Stephenson, Michael³ ¹Department of Geology, University of Leicester, University Road Leicester, LE1 7RH, UK. ²National Centre of Excellence in Geology, University of Peshawar, Pakistan ³British Geological Survey, Keyworth, Nottingham, NG12 5GG, UK e-mail ij21@le.ac.uk

Until now the precise age and nature of the glaciogene Tobra Formation (Salt Range, Pakistan), and its relationship to palaeogeographically nearby sequences in Arabia and the Middle East have been uncertain. However a new detailed survey of samples from a 125 metre thick

interval of the Tobra Formation at Zaluch Nala, western Salt Range, yielded 37 palynomorph taxa including the stratigraphically important spores *Converrucosisporites confluens*, *Microbaculispora tentula* and *Horriditriletes* spp., abundant monosaccate pollen, including *Plicatipollenites malabarensis*, *Barakarites* cf. *rotatus* and *Cannanoropollis janakii*, and rare taeniate and non-taeniate bisaccate pollen. Taxa representative of the *Converrucosisporites confluens* Oppel zone occur in the upper part of Tobra Formation suggesting a probable Gzhelian to Asselian age (see Stephenson 2009; Palynology vol. 33). This upper part of the Tobra is also correlated to the 2165B to 2141A biozones of south Oman based on the presence of *Converrucosisporites confluens*, *Microbaculispora tentula* and *Horriditriletes* spp. This indicates that the Tobra Formation in Zaluch Nala is equivalent to the middle part of the Al Khilata Formation of Oman (PDO production units lower P1 and P5), and that the upper parts of the Arabian and Middle Eastern deglaciation sequence are absent in Zaluch Nala. The Tobra Formation is unconformably overlain by the 'Speckled Sandstone' of the Warchha Formation in Zaluch Nala, whereas in the eastern Salt Range the Tobra Formation is succeeded conformably by the Dandot Formation. This suggests that the Dandot Formation may represent a deglaciation sequence, though until now it has proved to be palynologically barren.

ANIMAL AND PLANT CUTICLES FROM THE LOWER DEVONIAN OF POLAND

Filipiak, Paweł¹ and Zatoń, Michał¹ ¹Department of Earth Sciences, University of Silesia, Będzińska 60, 41-200 Sosnowiec, Poland, e-mail: filipiak@us.edu.pl

Palynological investigation of Lower Devonian clastic sediments from the Dyminy IG2 and Klucze 1 boreholes (central Poland), revealed the presence of both plant and animal cuticles. The investigated intervals are dated as late Pragian and Emsian (the *polygonalis-emsianensis* and *douglastownense-eurypterota* miospore zones). Apart from abundant miospores, only a few acritarchs have been found in the samples.

Among plant tracheids, long tubes classified as *Porcatitubulus* are quite frequent. In addition, the enigmatic *Nematothallus* and *Cosmochlaina* cuticles are also present, together with some unrecognised cuticles of higher plants with stomata.

More complex cuticles of animal origin are also present. Fragments of very well-preserved respiratory organs (Kiemenplatten), belonging to eurypterids have been recognized. The other associated remains consist of fragments of both pitted and unpitted cuticles with wavy surfaces, possessing setation. They may belong to eurypterids and/or scorpions. Isolated spines interpreted as eurypterid in origin, are also present in the samples. Apart from the cuticles of eurypterid/scorpion origin, some single enigmatic arthropod cuticles occur as well, but their origin is problematic.

This is the first report of such plant/animal cuticle assemblages in the Lower Devonian deposits of Poland. The presence of land plant and arthropod components, with a simultaneous rarity of acritarch species may point to marginal-marine or even an alluvial depositional environment.

HIRNANTIAN ACRITARCHS FROM ANTICOSTI, CANADA (LAURENTIA) AND VALGA, ESTONIA (BALTICA): BIOSTRATIGRAPHIC IMPLICATIONS

Delabroye, Aurélien ¹, Vecoli, Marco ¹, Hints, Olle ², Servais, Thomas ¹ ¹Université de Lille 1, FRE 3298 du CNRS Géosystèmes, SN5, Cité Scientifique, 59655 Villeneuve d'Ascq, France ²Institute of Geology at Tallinn University of Technology, Ehitajate 5, 19086 Tallinn, Estonia, e-mail: aurelien.delabroye@etudiant.univ-lille1.fr

Palynological investigations of key Ordovician-Silurian boundary sections from Anticosti, Canada (Laurentia) and Valga, Estonia (Baltica) revealed several acritarch species that show high potential for local as well as long-distance biostratigraphic correlations. Due to facies differences on Anticosti, the correlations of the Hirnantian Ellis Bay Formation between the more offshore carbonate-dominated sections in the west and nearshore siliciclastic-dominated sections in the east have been problematic. However, definition of seven local acritarch biozones in the upper Vauréal, Ellis Bay and lower Becscie formations (uppermost Katian to lowermost Rhuddanian), suggests that the upper Ellis Bay Formation *sensu* Long & Copper (1987) in eastern Anticosti (Prinsta and Lousy Cove members) correlates with the upper Vauréal Formation (member 5) and the Ellis Bay Formation (members 1 to 6) *sensu* Petryk (1981) in western Anticosti. The acritarch-based biozonation largely confirms the recent correlations based on chitinozoans and indicates that the base of the Hirnantian as identified at the Vauréal-Ellis Bay transition in western Anticosti should be drawn in the mid-Ellis Bay Formation in eastern Anticosti.

Additionally, comparative taxonomical study of the palynoflora of Anticosti and that of the Pirgu-Porkuni strata (Jelgava, Kuldiga and Saldus formations) of the Valga drill core, Estonia, revealed new acritarch species that are common to Laurentia and Baltica. This updates the potential of acritarchs for Upper Ordovician long-distance correlations between the two palaeocontinents. Noteworthy species belong to the genera *Oppilatala*, *Evittia*, *Ammonidium* and *Helosphaeridium*. Future acritarch investigations from Estonian sections should considerably improve these first observations and consequently refine low-latitude Hirnantian acritarch biostratigraphy.

POLYCHAETE JAWS IN SILURIAN OF THE PRAGUE BASIN (CZECH REPUBLIC)

Tonarová, Petra ¹, ². ¹Czech Geological Survey, Geologická 6, 152 00 Prague 5, Czech Republic, ²Charles University, Institute of Geology and Palaeontology, Faculty of Science, Albertov 6, 128 43 Prague 2, Czech Republic, e-mail: tonarova@natur.cuni.cz

Polychaete worms represented by jaws - called scolecodonts - are relatively common fossils in the Upper Silurian of the Prague Basin (Barrandian area, Czech Republic). The previous reports on the occurrences of these fossils described only specimens found on the bedding surfaces of shale (Šnajdr, 1951). The first conclusion of the revision of this material was published in Tonarová (2008). The present research is focused on isolated specimens recovered from residua (from limestone, tuffaceous limestone and shale). The following genera has been determined: *Kalloprion* Kielan-Jaworowska, 1962, *Kettnerites* Žebera, 1935, *Lunoprionella* Eisenack, 1975, *Mochtyella* Kielan-Jaworowska, 1961, *Oenonites* Hinde, 1879, *Pistoprion* Kielan-Jaworowska, 1966, *Protarabellites* Stauffer, 1933, *Rakvereprion* Mierzejewski, 1978, *Symmetroprion* Kielan-Jaworowska, 1966, *Tretoprion* Hints, 1999 and *Vistulella* Kielan-Jaworowska, 1961. These new results have confirmed the presence of genera common to other regions which brings the possibility of comparison of Perunica (peri-Gondwana) with Baltica.

Šnajdr, M. 1951. O errantních Polychaetech z českého spodního paleozoika. *Sborník Ústředního ústavu geologického*, 18: 241-292.

Tonarová, P. 2008. Revision of *Kettnerites* ŽEBERA, 1935 (Scolecodonta, Silurian of the Barrandian area, Czech Republic): preliminary results. *Acta Musei Nationalis Pragae, Series B, Historia Naturalis*, 64 (2-4): 185-192.

In addition there were a much larger number of talks and posters with Palaeozoic palynological content given in other symposia. Here are some listed (in no particular order) as edited from the conference programme. Apologies for any that I have missed. The abstracts for all are still available on the IPC3 website <http://www.ipc3.org/>

Thijs R.A. Vandenbroucke, Howard A. Armstrong, Mark Williams, Florentin Paris, Jan A. Zalasiewicz, Koen Sabbe, Jaak Nolvak and Thomas J .Challands **Chitinozoan biotopes, climate belt contraction and Polar Front shift towards the Hirnantian (440 Ma) glaciation.**

Tatyana K. Dimitrova and Ellen Stolle **Tracking palynological species as climate indicators in the latest Permian of Bulgaria and NW Turkey.**

M. Vecoli and P.K. Strother **Changing atmospheric CO₂ and the evolution of Palaeozoic phytoplankton: causes and consequences**

Aurelien Delabroye, Marco Vecoli, Axel Munnecke, Andre Desrochers, Michael Joachimski and Paul Copper **Phytoplankton dynamics during perturbations across the Ordovician-Silurian transition of the low latitude carbonate platform from Laurentia (Anticosti Island, Canada).**

Hanna Matyja, Krzysztof Malkowski, Katarzyna Sobien and Marzena Stempien-Salek **Devonian – Carboniferous boundary in Poland: conodont and miospore successions and event stratigraphy.**

John E. A. Marshall **The Late Devonian and Early Carboniferous terrestrial climatic record.**

Aleftina L. Jurina and Marina G. Raskatova **Effect of the Kačák event (Middle Devonian) in the Central Barrandian area on the development of the highest plants.**

Rainer Brocke, Stanislava Berkyova, Petr Budil, Oldrich Fatka, Jiři Fryda and Eberhard Schindler **The early Middle Devonian Choteč Event in the Barrandian area (Czech Republic): new insight from a phytoplankton bloom.**

Emmanuelle J. Javaux, Craig P. Marshall and Andrey Bekker **Large organic-walled microfossils in Mesoarchean shallow-marine siliciclastic deposits.**

Liu Feng, Ouyang Huaicheng and Zhu Shu **Late Carboniferous–Permian palynology and biostratigraphy of Baode in Shanxi Province, North China.**

Nicholas J. Butterfield **Multicellular plants in deep time: developmental constraints and coevolutionary motors.**

Leila Battison and Martin D. Brasier **Ecological adaptation of algal communities in billion-year-old lake basins.**

Charles H. Wellman **The origin of land plants and its impact on the environment of planet Earth.**

Zbigniew Szczepanik and Wiesław Trela **Upper Ordovician acritarch assemblages from the Southern Holy Cross Mountains (Poland).**

Amalia Spina and Marco Vecoli **Palaeovegetational and palaeoclimatic trends across the Silurian-Devonian transition by palynological data from Southern Tunisia.**

Marco Vecoli, A. Delabroye, A. Spina and O. Hints **Cryptospore assemblages from the Hirnantian of Anticosti Island, Quebec, Canada, and from Valga-10 borehole, Estonia: palaeophytogeographic and palaeoclimatic implications.**

Thomas Servais, David A. T. Harper and Axel Munnecke **Climate, sea-level, trophic chains: what happened in the Ordovician oceans?**

Nikolay V. Sennikov, Olga T. Obut and Elena V. Bukolova **Ordovician graptolites and chitinozoans and their leading role in formation of complicated Palaeozoic pelagic biota structure.**

John Marshall

jeam@noc.soton.ac.uk

4th August 2010

NEWS FROM THE MEMBERSHIP

Dr. Mercedes di Pasquo

Dr. Mercedes di Pasquo- From 2010 she has been working at the CICYTTP - CONICET, Diamante, Entre Ríos, Argentina, on the Late Palaeozoic Palynofloras from Argentina, Bolivia and related areas. Find more information on this institute at the website: <http://www.cicyttp.org.ar>. If you want to know more about her work please go to the following websites:

<http://www.cicyttp.org.ar/mdipasquo.htm>

<http://palino.com.ar>

To download her pdf's you will need to use: username= palino, password= palino2005)

Dra. Mercedes di Pasquo
Palinoestratigrafía (Palynostratigraphy)
Investigadora Independiente (Senior Res.)
CICYTTP- CONICET
Dr. Matteri y España
Diamante - CP E3105BWA
Entre Ríos, Argentina
medipa@gl.fcen.uba.ar

Yngve Grahn

I am still alone in doing chitinozoan work in Brazil. This last year I have concentrated on the Paraná Basin in southern Brazil. Together with Paula Mendlowicz Mauller (spores at Universidade do Estado do Rio de Janeiro) and colleagues from Universidade Estadual do Ponta Grossa, I have made integrated palynological studies and studies of palynomorphs in a larger context (see publication list). Together with colleagues from Ponta Grossa I am now finalizing a monograph to honour the distinguished Brazilian palaeontologist Frederico Waldemar Lange on the occasion of the centenary of his birth. This memorial will contain biographic, chitinozoan, scolecodont, and acritarch essays. Hopefully this opus will be published next year.

Mendlowicz Mauller, P., Grahn, Y. & Machado Cardoso, T. R. 2009. Palynostratigraphy from the Lower Devonian of the Paraná Basin, south Brazil, and a revision of contemporary

chitinozoan biozones from Western Gondwana. *Stratigraphy*, 6, 313–332.

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Yngve Grahn

yngvegrahn@gmail.com

Palynological news from Liège (Belgium)

Emmanuelle Javaux is professor, head of the PPM (Paleobotany, Paleopalynology and Micropaleontology) research unit and chair of the Geology Department at the University of Liège (Belgium).

Several axes of research are developed in the lab regarding the evolution of the marine and terrestrial biosphere through the whole geological timescale.

Philippe Steemans ("Maître de recherche FNRS") and Philippe Gerrienne ("Chercheur Qualifié FNRS") are

interested in the terrestriation processes and the early evolution of land plants using, respectively, microscopic (spores and cryptospores) and macroscopic (plant compression) fossils.

Emmanuelle Javaux is a micropalaeontologist whose research focuses on the evolution of the early biosphere in the Precambrian in relation to environmental changes (oxygenation, impacts, glaciations, tectonics). She is also coordinating, with Veronique Dehant (Royal Observatory of Belgium), Astrobiology-related research and activities in Belgium and abroad.

Kevin Lepot is a French postdoc who joined the lab after finishing his PhD thesis, in Pascal Philippot's lab in Paris, on the characterization of Archean stromatolites. Kevin is working with Emmanuelle and collaborators from the University of Liège and University of Ghent on a 4 year FNRS interdisciplinary project on the evolution and fossilization of cyanobacteria. Recently he was awarded a new 3-year FNRS position to pursue his research and develop new early life projects.

Other members of the lab include the retired, but very active, professors Maurice Strel (Palaeozoic spores and Holocene pollen) and Emile Roche (Tertiary and Holocene pollen), the French researcher Elodie Petus (Devonian and Carboniferous spores), the technician Marcella Giraldo, and several Masters and PhD students.

The lab comprises all the facilities needed to prepare Precambrian to Holocene samples for palynology (please contact EJ.Javaux@ulg.ac.be for commercial preparation). The lab is now equipped with a microscope coupled to an IR spectrometer, which is used to analyze the chemical composition of organic-walled microfossils to possibly elucidate their biological affinities. This approach has been successful for the study of Proterozoic acritarchs (e.g. Marshall et al.,

Precambrian Research, 2005; Javaux and Marshall, RPP 2006), and recently of spores and cryptospores (Stemans et al., 2009; in press - see ref. below). Another new research theme developed by the lab and collaborators is the use of testate amoebae and pollen as paleoenvironmental proxies in the Holocene peat bogs of the Haute-Fagnes.

Part of the lab is working on specific projects related to the following general research themes dealing with early biosphere evolution, in collaboration with international teams:

-Determination of the biological affinities of microfossils: morphological, ultrastructural and micro-chemical approaches using micron- and nano-scale analyses.

-Palaeobiology, palaeoecology, origin and evolution of early eukaryotes, and diversification of prokaryotes, in particular cyanobacteria.

-Geobiology: interaction microbes-sediments in siliciclastics from recent extreme environments (Antarctica) to the Precambrian.

-Artificial fossilization of microorganisms (prokaryotes and protists) and preservation of biosignatures (diagenesis, metamorphism).

-Characterisation of biosignatures at micron- and nano-scale for palaeobiology and astrobiology.

Here is a non-exhaustive list of published (2009-2010) articles on the early biosphere:

Stemans, P., Lepot, K., Le Hérisse, A. and Javaux, E. J., FTIR characterisation of the chemical composition of Silurian cryptospores from Gotland, Sweden. RPP (in press).

El Albani, A., Bengtson, S., Canfield, D. E., Bekker, A., Macchiarelli, R., Mazurier, A., Hammarlund, E., Boulvais, P., Dupuy, J. J., Fontaine, C., Fürsich, F. T., Gauthier-

Lafaye, F., Janvier, P., Javaux, E., Ossa, F., Pierson-Wickmann, A. C., Riboulleau, A., Sardini, P., Vachard, D., Whitehouse, M. and Meunier, A. 2010. Large colonial organisms with coordinated growth in oxygenated environments 2.1 billion years ago, *Nature*, 466, 100-104.

Javaux, E. J. and Dehant, V. 2010. Habitability from stars to cells. *Astronomy and Astrophysics Reviews*, 18, 383-416.

Javaux, E. J., Marshall, C. P. and Bekker, A. 2010. Organic-walled microfossils in 3.2-billion-year-old shallow-marine siliciclastic deposits, *Nature*, 463, 934-938.

Javaux, E., and Benzerara, K. 2009. Microfossils. *Comptes Rendus Palevol.*, 8(7), 605-615.

van Hengstum, P., Scott, D. and Javaux, E. 2009. Foraminifera in elevated Bermudian caves provide further evidence for +21 m eustatic sea level during Marine Isotope Stage 11. *Quaternary Science Reviews*, 28(19-20), 1850-1860.

Stemans, P., Javaux, E., Breuer, P., Le Hérisse, A., Marshall, C. and de Ville de Goyet, F. 2009. Description and microscale analysis of some enigmatic palynomorphs from the Middle Devonian (Givetian of Libya). *Palynology*, 33, 101-112.

Lepot, K., Benzerara, K., Rividi, N., Cotte, M., Brown, G. E. and Philippot, P. 2009. Organic matter heterogeneities in 2.72 Ga stromatolites: alteration versus preservation by sulphur incorporation. *Geochimica et Cosmochimica Acta*, 73, 6579-6599.

Lepot, K., Philippot, P., Benzerara, K. and Wang, G. Y. 2009. Garnet-filled trails associated with carbonaceous matter mimicking microbial filaments in Archean basalt. *Geobiology* 7, 393-402.

Philippot P., Van Kranendonk M., van Zuilen M., Lepot K., Rividi N., Teitler Y., Thomazo C., Blanc-Valleron M. M., Rouchy J.-M., Grosch E. and de Wit M. 2009. Early traces of life investigations in

drilling Archean hydrothermal and sedimentary rocks of the Pilbara Craton, Western Australia and Barberton Greenstone Belt, South Africa. C. R. Palevol., 8, 649-663.

Emmanuelle Javaux
ej.javaux@ulg.ac.be

PALYNOLOGICAL SLIDES FOR STUDENTS ARE NEEDED

Dear colleagues,

I have been invited to give two lessons on palaeopalynology for botanical students of the Biological Faculty, Lomonosov Moscow State University, during the spring 2010 semester, on the General Palynology course. For this purpose, I would be more than happy if any of you could spare some palynological slides to show to these students. This will be the only moment during their education when they will be given an impression about palaeopalynology and palynological assemblages of all geological epochs. I feel that it is important, on the one hand, to show them that a huge, promising, and very interesting branch of palynology exists, and, on the other hand, not to scare them. What I need are several (e.g. five) identical slides containing a palynological assemblage with numerous, diverse and well-preserved miospores, which could serve as an example of a particular geological epoch, and your paper dealing with this assemblage (the latter is for me, to be better informed than the students). If you can send me some suitable slides and reprints please contact me via e-mail: zavial@mail.ru. I would be very thankful for your help.

With best wishes,

Natalia Zavialova

zavial@mail.ru

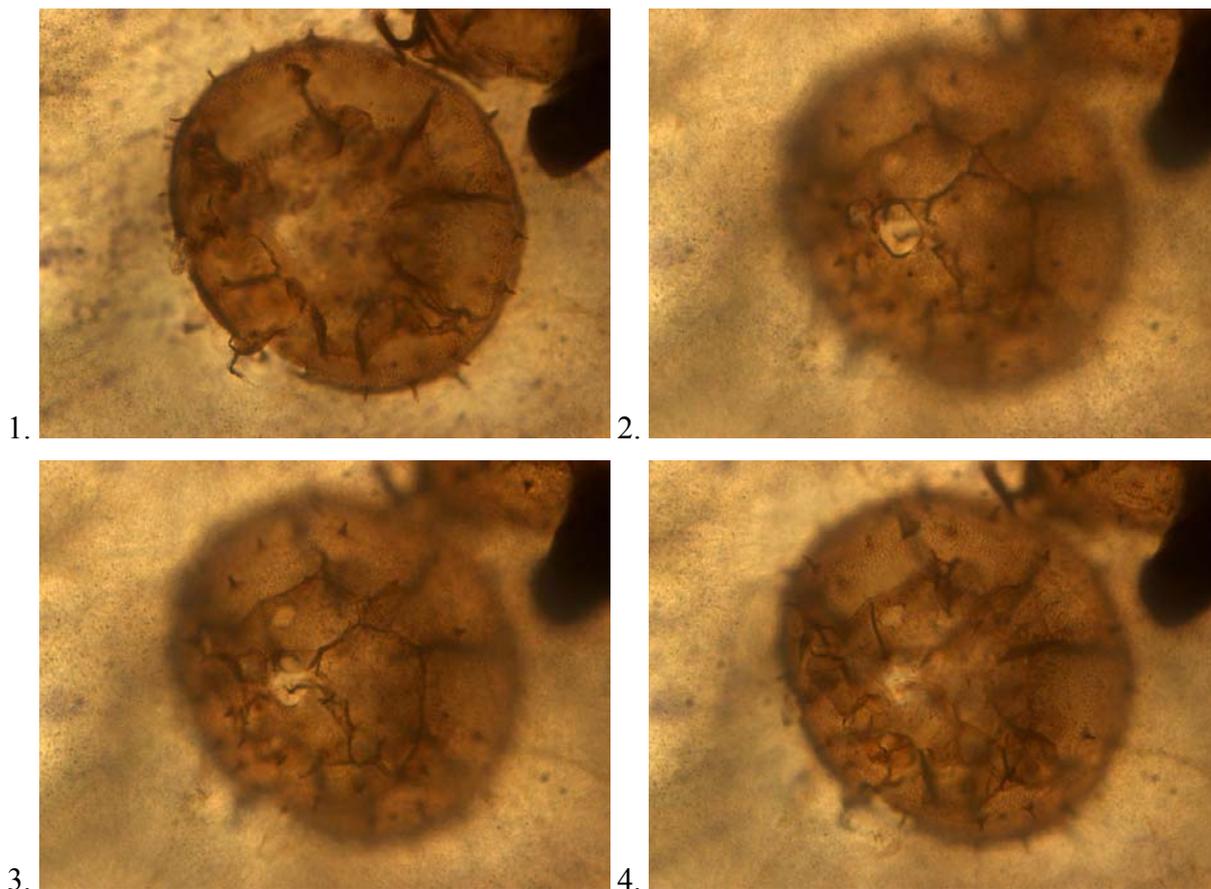
UNUSUAL *IN SITU* CARBONIFEROUS POLLEN

Michael Krings of the Staatssammlung für Paläontologie und Geologie in Munich recently sent me some images of *in situ* Carboniferous pollen. These are near-spherical structures up to 150 µm in diameter (see illustrations: four different focal planes of the same structure). They occur in the pollen chamber of several permineralized medullosan seeds from the Upper Pennsylvanian Grand-Croix cherts of France. To date they have only been discovered in these pollen chambers, but not in the surrounding chert matrix despite the fact that the matrix usually is loaded with dispersed spores and pollen grains. They have previously been interpreted as the pollen grains belonging to *Stephanospermum*-type obules/seeds by Renault and Oliver, among others, based on the fact that they repeatedly have been found within the pollen chamber of this seed type. On the other hand, some *Stephanospermum* also have Monoletes-type grains.

Any help in identifying this material as dispersed forms would be greatly appreciated. Please let Michael (and me) know your thoughts.

Michael Krings, Bayerische Staatssammlung für Paläontologie und Geologie, Richard-Wagner-Straße 10, 80333 München, Deutschland.

e-mail: m.krings@lrz.uni-muenchen.de



Duncan McLean

d.mclean@mbstratigraphy.co.uk

NOMINATIONS FOR CIMP PRESIDENT AND WEBMASTER

As many of you will be aware, the post of CIMP President is held for a period of four years. Although it seems like only yesterday that John Marshall was voted President, his term in office is now almost complete. As noted by John earlier in this newsletter, this will be during our General Meeting in Warsaw this September. Needless to say that we all owe John our thanks for his time, energy and hard work during his tenure as CIMP President. We must also now elect another President, so please consider this post and submit your nominations to Gary Mullins as soon as possible.

In addition, Philippe Steemans has been very ably fulfilling the role of both CIMP Treasurer and Webmaster for a number of years. However, he now feels that it's time to stand aside as Webmaster, so we are looking for someone else to take on the responsibility of managing our very professional looking (many thanks Philippe!) CIMP webpages. Again, please submit your nominations as soon as possible.

Thank you.

Gary Mullins

gary.mullins@fugro-robertson.com