# International Organisation \_\_\_\_\_of Palaeobotany\_\_\_\_\_



## **IOP NEWSLETTER 113**

## June 2017

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## Letter from the president

#### Dear Colleagues,

I hope this season brings you some time to enjoy palaeobotanical research, whether field work, laboratory/museum investigations or participating in conferences. This is an active time for field work and conferences in many regions. I look forward to meeting with colleagues at the International Botanical Congress (IBC) in Shenzhen next month. Palaeobotanically themed symposia planned for IBC include: "Using fossil evidence to explore the plant evolution, diversity, and their response to global changes;" "New data on early Cretaceous seed plants;" "Ecological and biogeographic implications of Asian Oligocene and Neogene fossil floras;" "Plant conservation, learning from the past", and "The Origin of Plants: rocks, genomes and geochemistry." Details of presenters and scheduling of general symposia as well as invited keynote lectures are found at the conference website: http://www.ibc2017.cn/Program/. Please see the note below with details on the social gathering for paleobotanists at IBC.

We welcome Kelly Matsunaga (photograph by courtesy of Kelly), Graduate Student at University of Michigan as IOP Student Representative for North America, recently confirmed by Christopher Liu. She joins Han Meng (China), Emese Bodor (Hungary; see p. 3 in the newsletter), and Maiten A. Lafuente Diaz (Argentina) as current student representtatives. The excellence of these and other young members of IOP foretells a bright future for our discipline.

Hopefully, IOP will be also successful soon in searching for our next webmaster. Our organization urgently needs somebody who regularly maintains and updates our pages, making them attractive for the public and for moving palaeobotanists becoming IOP member.

With best regards, Steve Manchester (Gainesville, FL, USA)

## IBC 2017 Shenzhen (China): latest news

IOP Executive Committee is happy to announce the **IOP Social Dinner** during the International Botanical Congress in Shenzhen, China, will be held on 25 July 2017 (19-22 PM). Our informal associated meeting is organised by Dr. Xiaoyan Liu - many, many thanks to her! Please find more information about the IOP event on the congress website (http://www.ibc2017.cn/<u>Associateds/</u>). We will convene at the Foo Restaurant, Fourseasons Hotel Shenzhen, which is within walking distance of the IBC venues. Our IOP group will meet at the registration desk and walk together to the restaurant. For planning purposes we need a listing of those who wish to join us for this event. Please email a note of your intention to participate to Xiaoyan Liu (<u>lxy 0628@163.com</u>) and indicate whether you are IOP member, IOP student member or non IOP member (accompanying person). **Deadline for participation statements is July 7**<sup>th</sup>. Based on your registrations she will book the tables in the restaurant and pay a fee/deposit to the restaurant in advance. The latter means that your registration should be definite. Looking forward to meet you in Shenzhen!

**Costs for IOP Social Dinner**: Due to excessive bank charges for international credit card and check processing, each participant is requested to pay for the dinner in cash on-site, unless prior arrangements are made for payment with your regional representative. The costs are 495 Yuan (about 70 USD) for regular IOP members, 550 Yuan for non IOP members, and 250 Yuan for IOP student members. IOP secretary will provide receipts on-site for those who have the opportunity for reimbursements by their institutions.

All information about registration and booking opportunities for the IBC are available on http://www.ibc2017.cn



We look forward to greeting you at the XIX International Botanical Congress in 2017.

Snapshot of the IBC webpage

## Young Scientist Representative: Emese Bodor

Introduction to the members of IOP: Emese Réka Bodor, PhD, IOP Young Scientist Representative for Southern Europe.

I felt in love with the marvelous world of plants during primary and grammar school. When I started the university I was sure that I would like to work on plant fossils and evolution of the plants. I found my supervisor Dr. Maria Barbacka as a first year undergraduate student. My first topic was the Jurassic *Todites* and *Cladophlebis* fossil ferns from the Mecsek Mts (Hungary).

During my university studies I become interested in reproductive organs so I decided to work on them as a PhD topic. I also liked always the field work, so as an undergraduate student I started to work together with the Hungarian Dinosaur Expedition and as a member of this research group I work on the seeds and fruits of the Late Cretaceous Hungarian localities.



Emese Bodor (photograph by courtesy of Emese Bodor)

I am mainly interested in innovative methods of examination instead of a specified taxonomic group. The main research problems I like to (and used to) deal with are evolution of plants and the reconstruction of ancient environment and paleogeography based on plant remains.

I'm a member of the committee on Palaeontology and Stratigraphy Section in the Hungarian Geological Society since 2015 and in the year 2017 I coordinate the "Fossil of the year" and "Mineral of the year" programs in Hungary. According to these projects we organise several educational programs.

I'm very interested in working for the aims of the IOP.

Emese Bodor bodor.emese@mfgi.hu

## **Obituary of Prof. Manju Banerjee**

"Let bow down my head under the dust of thee feet" Our madam Prof. Manju Banerjee has fought her last battle.

Madam Prof. Manju Banerjee, FNASc., Former Professor in Botany, University of Calcutta completed her untiring journey on 1<sup>st</sup> May, 2017. But she cannot be mentioned as 'Late Prof.', as her presence within us is eternal. The renowned palaeobotanist and an eminent pathfinder for the future generation around the globe need no introduction. Her long-time involvement as Regional Representative (India) in International Organization of Palaeobotany and in other different esteemed bodies has influenced and included the budding workers like me. A disciple like me has no guts to say about the utter knowledge, thirst for the new, depth of the subject of a Preceptor like her. By age, she was like my grandmother. So, as a grandson, I was not only introduced by her in the arts of palaeobotany, but also got her affectionate touch to be bloomed. I saw a motherly guide, a true philosopher and an enthusiastic young within her. She was much more aware of the day to day scientific progress and engaged herself to formulate innovative ideas. The Indian palaeobotanical work got a new shape by her dynamic and intense activity. Her research works along the Bengal basin and other part of India till her last breath gave a new dimension to the research activity regarding palaeosciences in India and made our country proud in the arena of the world of palaeobotany and palynology. She always provided the opportunity to the new generation to come forward and her expertise helped to bring many experts up around India and also outside the country. The Indian lady with the baton of palaeobotany reigned the world in 1970's and 1980's, expanded her work through students in 1990's and millennium and her inquisitiveness for the unknown till her last day on the earth made us privileged to think progressively. Her dedication as a great Teacher, as a Researcher, as a palaeobotanist and more over as a man of great heart would live within us forever.

Argha Sarkar Lecturer in Botany Bankim Sardar College P.O- Tangrakhali, South 24 Parganas West Bengal, India

## Prof. David L. Dilcher awarded by the Indiana University in 2016

INDIANA UNIVERSITY



THE PRESIDENT

September 29, 2016

David L. Dilcher, Ph.D. Emeritus Professor Geological Sciences S209 Geology IUB

Dear David,

It is my very great pleasure to inform you that I wish to confer the President's Medal upon you for sustained academic excellence over your long and distinguished career at the annual Celebration of Academic Excellence dinner on Thursday, October 20, 2016. The dinner will be held at the Indiana Memorial Union in Alumni Hall. The evening will begin with a reception at 6:00 p.m. followed by dinner at 6:30 p.m.

You will receive a formal invitation to the dinner soon, but I write now to confirm that it is my intention to present the medal to you at what is now, one of our most important ways of recognizing academic distinction of the highest order. I look forward to the opportunity to honor your achievements and contributions to Indiana University on October 20 with the highest honor that the President of Indiana University can bestow.

Yours sincerely,

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Michael A. McRobbie President

MAM/sbt

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David Dilcher in his office (by courtesy of D.L. Dilcher)

## 34<sup>th</sup> Midcontinent Paleobotanical Colloquium, 2017

MPC-34 was held at the University of Michigan May 12-14, 2017, with two full days of exciting activities and a full-blown good time for all. Selena Smith, Robyn Burnham and their great crew (John Benedict, Kelly Matsunaga, Molly Ng, et al.) did a magnificent job of organizing a really stimulating and satisfying event. Robyn provided access to the University of Michigan Paleobotanical Collections before and during the conference, and Selena made her lab available for microscopy and photography.

This year we were delighted to have 42 participants, who ranged from enthusiastic undergraduate researchers to several of our most senior colleagues. Senior scientists such as David Dilcher, Patrick Fields, Charles Good, Ruth Stockey, Peter Crane, and Gar Rothwell contributed historical context, while several active undergraduate researchers and productive graduate students provided exciting evidence of the bright future that plant paleontology has in store. The Saturday program follows; it features 29 contributions, including two keynote speakers, one after dinner presentation, 20 contributed talks, and 6 posters.

#### **Oral Presentations by:**

Chris Poulsen (Keynote Lecture) - Paleo-plant physiological forcing of past climate
Rebecca Koll - Unravelling the relationships of Permian gigantopterids *Zeilleropteris*,
*Gigantopteridium*, and *Cathaysiopteris* of Cathaysia and western equatorial Pangea
Allison Buiser - Diversity of fossil fungi in fossilized roots from the Early Cretaceous of Mongolia

- **Brian Atkinson** Expanding our understanding of early asterid evolution: a new cornalean taxon from the Late Cretaceous Raritan flora of eastern North America
- Kelly Matsunaga Palm fruit diversity and new morphotypes from the Deccan intertrappean beds of India
- Andrew Flynn Early Paleocene Tropical Forest from the San Juan Basin, New Mexico, USA Li Long - Petrified woods from new Paleocene and Eocene sites in Wyoming

Camila Martinez - Fossil angiosperm fruits and seeds from the late Eocene of Colombia

Misti Corris - The Stomach Contents from the Grandfield Mammoth

- AJ Harris The first maple seeds and the last dinosaurs: mericarps of *Acer* L. (Sapindaceae) from the latest Cretaceous of South Dakota
- **Fabiany Herrera** The presumed ginkgophyte *Umaltolepis* has seed-bearing structures resembling those of Peltaspermales and Umkomasiales
- Stacy Welker Enigmatic four-chambered fruits from the Neogene Gray Fossil Site, eastern Tennessee
- **Chris Dick** (Keynote Lecture) GeoGenomics: reciprocal illumination on the development of the Andean- Amazon flora
- **Nathan Jud** Flowers from the Danian (earliest Paleocene) of Patagonia, Argentina provide new data on the evolution and biogeography of Cunoniaceae
- **Regan Dunn** How dense were Paleocene forest canopies? A new proxy for measuring leaf area index using leaf cuticles
- Charles Good -The first coal ball collection from the state of Ohio 1949
- **Steve Manchester** -Floristic inventory of the Deccan Intertrappean Beds in central India based on silicified fruits and flowers
- Patrick Fields The Ponderosa Flora, an early middle Miocene megafossil assemblage from Payette Lake, Valley County, Idaho
- Liz Hermsen Progress and pitfalls in understanding the fossil record of the water clover family (Marsileaceae)

Peter Crane - Musings on Ginkgo

**Peter Wilf** - The fossil flip-leaves (*Retrophyllum*, Podocarpaceae) of southern South America **Gar Rothwell** - Confronting the confusing conundrum of Cretaceous cupressaceous conifers **Tony Reznicek** (Dinner Lecture) - The Hidden Past of our Modern Michigan Flora

#### **Posters Presented by:**

- **John Benedict** Seeing through the chert: using  $\mu$ CT to non-destructively survey fossil chert floras
- **Katie Loughney** Paleoenvironmental reconstruction of the Barstow Formation (middle Miocene), southeastern California, through the Middle Miocene Climatic Optimum
- Han Meng New fossil fruits of *Stephania* (Menispermaceae) from the Palaeogene of North America and East Asia
- **Molly Ng** Investigating anatomical and physiological changes in *Taxodium distichum* along an environmental gradient

Bekah Stein - Stable isotope ecology of modern Thuja occidentalis and paleoclimate implications

Xiao Tan - New materials of Ginkgoales from the Middle Jurassic of Daohugou, Inner Mongolia, and its implication on the paleo-CO<sub>2</sub> reconstruction Abstracts with complete authorships are available at the MPC 34 web site <u>https://sites.google.com/a/umich.edu/mpc2017/</u>.

Sunday's activities consisted of a field excursion to the Gerald Eddy Diversity center at the Waterloo Recreation Area and to Sharon Hollow to examine the magnificent spring flora of the Michigan eastern deciduous hardwood forests.



MPC 2017 group photo (by courtesy of G. Rothwell):

Back row: Selena Smith, AJ Harris, Camila Martine, Chris Dick, Patrick Fields, Peter Crane, Gar Rothwell

Back middle: Li Long, Brian Atkinson, Rebecca Koll, Yin-Long Qiu, Andrew Flynn, Mike Dunn, Regan Dunn, Allison Bronson, Fabiany Herrera

- *Front middle:* John Benedict, James Saulsbury, Charles Good, Liz Hermsen, Nathan Jud, Kelly Matsunaga, Molly Ng, Allison Buiser, Misti Corris, Peter Wilf, Mihai Tomescu, Ruth Stockey
- Front row: Robyn Burnham, Oscar Vargas, Han Meng, Xiao Tan, Katie Loughney, Steve Manchester, Stacy Welker, Tabitha Faber

Missing at time of photo: David Dilcher, Ashley Hamersma, Chris Poulsen, Katy Rico, Bekah Stein

Next spring we will be going back to Ohio University for MPC 35. Liz Hermsen will be organizing the conference with some help from Gar. Colloquium dates and conference details will be announced in a future IOP Newsletter. Fabiany Herrera will be taking over the MPC website and bringing it up to date, so we can look forward to a much improved presentation of and significantly easier access to our past and future activities. Please put the 2018 MPC into your plans for the spring of 2018, and join us in southeastern Ohio.

Gar Rothwell Ohio University, and Oregon State University

# Aglaophyton majus and all that: Report on "The Rhynie Chert; our earliest terrestrial ecosystem revisited".

#### Royal Society meeting, London (UK), 6-7 March 2017.

*"The Rhynie Chert is the most dramatic and important discovery of the century."* John Walton (1959).

Over 130 participants came to speak, present posters, listen and ask questions about the Rhynie Chert (RC; to include here the adjacent Windyfield Chert), Lower Devonian of Aberdeenshire, Scotland. Most at Carlton House Terrace were British, but Argentina, Belgium, China, France, Germany, Japan, Poland, Switzerland and the USA were also represented. Following the welcome and scene-setting by Dianne Edwards FRS (Cardiff,UK), both days were split into 8 sessions invited researchers gave 30 minute illustrated accounts of several aspects of the RC environment and its biota. These were followed by 15 mins for questions and discussion, with ample opportunity for further conversation in the refreshment intervals.

Alan Channing (Cardiff, UK) reconstructed the harsh environments often faced by RC organisms about 407 MYA (Emsian/Pragian Stage of the Lower Devonian). He drew comparisons with ways extant prokaryotes and eukaryotes survive in changing extremes of temperature, pH and toxic elements in Yellowstone Park, USA.

Charles Wellman (Sheffield,UK) and Dianne Edwards considered the status of RC plants, rejecting a supposed relictual nature for this flora. Comparing spores from RC sporangia with *sporae dispersae* from sediments adjacent to the RC and nearby Windyhill Chert, Wellman contrasted the 7 known sporophytes with the 31 dispersed taxa. He drew comparisons between RC conditions and those in which plants survive today around high pH, mineral-rich lakes at about 4km up in the Chilean Andes.

Carolin Haug (Munich, Germany) illustrated microscopic, aquatic RC invertebrates, *e.g.* crustacean *Lepidocaris rhyniensis*. She showed undescribed, sessile crustaceans and putative embryos or larvae, emphasizing the need for anatomical details over taxonomic or environmental interpretations.

Jason Dunlop (Berlin,Germany) listed 8 superlative age claims for certain RC invertebrate taxa or their organs: earliest nematode, springtails, mites, harvestman, true insects, book lungs, tracheae and female genitalia. Bolder claims for earliest herbivory (nematode eating RC plants) and male genitalia (*Colymbosathon ecplecticos* is Silurian) generated debate, as did the interpretation of RC coprolites containing numerous, apparently-undigested spores.

Paul Kenrick (London,UK) echoed Edwards in praising the century-old work of Kidston and Lang for their descriptions and reconstructions of 4 RC sporophytes. He reviewed advances made since 1980 linking 4 gametophytes with certain sporohytes in the RC; those for *Asteroxylon, Trichophorophyton* and *Ventarura* are undiscovered, unrecognized or unfossilized. Kenrick contrasted these RC plant life cycles with the less isomorphic alternation of generations seen in extant pteridophytes. Were these RC genera truly stem-group vascular plants or, as Wellman suggests, more advanced plants specially adapted to survive in an atypical ecosystem on hot-spring margins?



Presenters of the Royal Society Meeting on Rhynie Chert (by courtesy of H.L. Pearson)

Mitsuyasu Hasebe (Tokyo, Japan) drew attention to major genetic and developmental changes in extant land plants, *e.g. Physcomitrella*, which affect the growth of stems, leaves, conducting tissues, gametangia and sporangia. Increasing longevity of meristem cells might have permitted the trend towards sporophyte dominance in mid-Palaeozoic land plants.

Hans Kerp (Muenster, Germany) mentioned technical advances, *e.g.* ethanoate peel and ultra-thin sectioning that have allowed progress in our anatomical knowledge and reconstruction of RC plants. He commented that female prothalli of *Remyophyton* are larger than their female counterparts. In searching for the female gametophyte of *Nothia*, along with the other "missing" RC gametophytes, Kerp directed researchers to examine microbial mats in the RC, rather than the horizons where *Aglaophyton* axes abound.

Jill Harrison (Bristol,UK) chose branching in tracheophytes to account for much of their roughly 15:1 dominance over brypohytes in terms of numbers of their extant species. She described auxin transport in *Physcomitrella* gametophytes and *Selaginella* sporophytes, both genera with well-characterized molecular genetics. Apical dominance phenomena (investigated since Darwin's time) can be explained by falling auxin levels; auxin transport through plasmodesmata is controlled by callose that plugs those pores. Harrison's published synopsis refers to "the conquest of land by plants over 450 million years ago", but she made little reference to the RC.

Liam Dolan FRS (Oxford, UK) considered the evolution of rooting systems and illustrated the rhizoids of *Horneophyton, Rhynia* and *Nothia*; these rhizoids developed from epidermal cells following a change from radial to bilateral symmetry in these sporophyte axes. Sometimes rhizoids grew from asymmetric swellings on these plants. Dolan applied developmental genetics in extant plants to propose that class 1 RSL genes controlled rhizoid growth in RC plants. Little was said of rooting organs in *Asteroxylon*. Also, it would be helpful to know if RC gametophytes bore rhizoids.

John Raven FRS (Dundee,UK) used the excellent preservation of many RC plant tissues to present a quantitative, palaeophysiological view of the vascular systems. Today, about 1g of water is

lost for each 1g of dry matter produced by a typical land plant undergoing C3 photosynthesis. As the Devonian atmosphere had between 4 and 10 times the current level of CO2, the largely parenchymatous RC plants would have lost less water for the same gain in mass. Interestingly, RC plants lack an endodermis and there is scant evidence for their phloem. Discussion included a comment by Nicholas Rowe (Montpelier, France) that RC plants probably had short generation spans in order to cope with frequent changes in their environment by reproducing quickly.

Jeffrey Duckett (London, UK) extended the palaeophysiology with regard to RC stomata. He surveyed the range of stomata structures and their movements in extant bryophytes; he suggested their evolutionary origin might have been to dessicate the sporangium rather than to facilitate gas exchange for photosynthesis. Stomata in RC plants are often fossilized open. Was their apparent non- response by their guard cells to environmental stimuli (as in living hornworts and *Equisetum*) perhaps because they lacked the potassium pump mechanism found in most tracheophytes today? Dianne Edwards commented that she had seen many stomata fossilized open from RC and other Devonian localities; perhaps due to senescence, stress or damage just before they died.

Geoffrey Abbott (Newcastle-upon-Tyne, UK) described advances made by applying highresolution, surface-analytical techniques to Devonian plants such as *Rhynia*. Notwithstanding loss of evidence due to silicification, a combination of X-ray photoelectron spectroscopy and time-of-flight mass spectroscopy was used across the radius of the Rhynia axis. This resulted in detailed mapping of aliphatic and aromatic hydrocarbon residues of lignin, plus the distribution of iron, oxygen, carbon and silicon more generally. Such techniques might yield further valuable data on cutin and/or suberin residues when applied to non-vascular Siluro-Devonian genera such as *Parka*, *Prototaxites* and *Pachytheca*.

Michael Krings (Munich, Germany) transferred our attention to RC fungi; they are almost ubiquitous in the matrix, litter layers and within RC plant tissues. High-resolution microscopy reveals many distinct taxa, although their separation from their original position of growth often leaves them as *incertae sedis* above the rank of genus. Minute chytrids are particularly abundant in RC, some finding their microhabitats upon the surface of other fungal spores. Brief reference was made to *Winfrenatia*; one might have wished to see more of this supposed RC lichen.

Silvia Pressel (London, UK) surveyed the evolution of plant/fungal interactions from the Ordovician onwards. She emphasized the need for well-defined fungus fossils to calibrate DNA-based molecular clocks in order to verify dates of origins and diversification of fungal clades. She confirmed the existence of mycorrhizal/embryophyte associations as Kidston and Lang had predicted for the RC almost a century ago for their "class" Psilophytales.

Christine Strullu-Derrien (London, UK) advocated the use of the term "paramycorrhiza" for such associations, as RC lacked true roots. An important aspect in assessing these RC associations is the distinction (where possible) of Mucormycotina from Glomeromycotina symbionts. Molecular clocks point to Basidiomycotina as contemporaneous with the EC; but had such fungi evolved their clamp connexions and/or basidia at that time?

Katie Field (Leeds, UK) described how symbiosis between extant liverworts and fungi results in carbon: phosphorus exchange. Her experiments varied the co2 levels available to these symbionts; this either promoted or delayed the evolution of oxygen depending on the fungal identity. Katie hypothesized that comparable enhancement of photosynthesis might have resulted in the drawdown of CO2 to glacial levels in the late Ordovician.

Dianne Edwards chaired the final panel discussion of invited questions. No meeting can be all-encompassing and Richard Bateman (Kew, UK) remarked on what was missing here; *viz* classical phylogeny. How do RC discoveries, such as the gametophytes and zosterophylls (*Trichopherpophyton* and *Ventarura*), help us select which of the dozen or so cladograms for embryophytes (as presented in Kenrick & Crane 1997) is best supported by new data? The discovery of Devonian fossils at Rhynie in the nineteenth century was not discussed (Pearson 2016). Peter Crane FRS (Yale, USA) commented on improved reconstructions of the RC plants. Paul Kenrick hypothesized on the potential value of per mineralized land plants some 50 to 70 million years older than the RC.

On the human level, two giants of palaeobotany who died in 2016 and who published on the RC were notable by their absence: *viz* Thomas Taylor (USA) and William Chaloner FRS (UK). Michael Krings dedicated his presentation on RC fungi to Tom and one of the 12 posters at this meeting included Tom amongst its authors. Bill surely would have made remarks on many points; *e.g.* amongst the reconstructed life cycles for certain RC plants, if *Lyonophyton rhyniense* Remy & Remy 1980 is the gametophyte of *Aglaophyton majus* (K&L 1917) DS Edwards 1986, which single binomial should be applied to this single organism (Chaloner 1986)? I cannot resist here complementing John Raven for his tribute to Caledonian culture by wearing a kilt to this meeting.

All present must thank Dianne Edwards, Liam Dolan and Paul Kenrick for initiating this meeting. Holly Pattenden and her team at the Royal Society are to be congratulated on a wellplanned event that allowed scientific interactions on many aspects of RC research; surely the essence of any such meeting. (I thank Holly for the photograph of the speakers reproduced here.) It is planned that a Royal Society publication on RC will follow this meeting. If I were to be critical, it was a pity that the 12 posters were set up so closely and only accessible for too brief a time for all present to read and discuss them.

To sum up, given the British context of John Walton's remark (quoted above) that he made 41 years prematurely, I agree that the RC remains the most important discovery in twentiethcentury palaeobotany. Of course, I show UK bias; a Gondwanan worker might justifiably point to the per mineralized glossopteris pteridosperms reported since the 1970s as of equal importance in an austral context; a hunter of angiosperm ancestors might favour the remarkable flowers of early Cretaceous age found after 1959; a Precambrian prokaryote specialist could propose finds from the Proterozoic Aeon. Seldon & Nudds (2004) select the Emsian land biota of Alken-an-der-Mosel, Germany, plus the brackish-water, late Silurian fauna and flora of Ludford Lane, England to compare with the RC organisms. However, in neither case does the quality of cellular preservation match that often found in RC. Perhaps the Royal Society's claim that the RC is "our earliest terrestrial ecosystem.." is too bold for some, but such provocation will surely spur on further investigations into how life first moved onto the dry land.

#### References:

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Pearson, HL.2016.Who first discovered Devonian fossils at Rhynie? *The Linnean, London*, **32 (2):** 23-27.

Selden PA & Nudds JR. 2004. Evolution of Fossil Ecosystems. Manson. London. Walton, J. 1959. Palaeobotany in Great Britain. *Vistas in Botany*, **1**: 230-244.

HL Pearson, EDF (UK). (hugh.pearson@edf-energy.com)

## Upcoming meetings 2017-2018

(1) Climatic and Biotic Events of the Paleogene (CBEP 2017)



All information, registration, deadlines and bookings for the upcoming conference on **Climatic and Biotic Events of the Paleogene (CBEP 2017)** are available on: http://cbep2017.utah.edu/

(2) 26<sup>th</sup> International Workshop on Plant Taphonomy, at the University of Göttingen November 24<sup>th</sup>-26<sup>th</sup>, 2017, Göttingen (Germany)



This will be an open meeting with talks, posters and round table discussions on plant taphonomy, and the maintenance and availability of palaeobotanical collections and issues such as deterioration and preservation. Students are particularly welcome to join in and can attend for free.

## LOCATION:

The conference takes place at the Faculty of Geosciences and Geography (Geowissenschaftliches Zentrum der Universität Göttingen) at the northern campus of the University of Göttingen. We are based in the area of the building with the green star near the Geological Museum (Museum für Geologie).

Faculty of Geosciences and Geography Goldschmidtstraße 1-3 37077 Göttingen Germany

#### TRAVEL:

## International flights

You can fly to Frankfurt International Airport, located about 250 km southwest of Göttingen. Trains run twice every hour to and from Frankfurt International Airport. Transfer time is about 2 to 2:40 h from Frankfurt Airport.

Alternatively you can fly to Hannover International Airport, located 100 km north of Göttingen. This airport is connected by S-Bahn to Hannover central station (Hannover Hauptbahnhof), from where the fast trains take 0:35 h twice an hour, and regional trains take 1:15 h every hour to Göttingen.



## Public transport within Germany

There are both faster Inter City Express (ICE) and slower Inter Regio (IR) train connections to Göttingen, (for timetabling see DeutscheBahn: <u>www.bahn.de</u>). At the train station take either bus lines 21/22/23 from 'Bahnhof D' and get off at the stop 'Tammannstrasse' or take bus line 41 from or 41 from 'Bahnhof A' and get off at 'Goldschmidtstrasse'. There, follow the signs 'Uni-Nordbereich' and 'Fachbereich Geowissenschaften'.

To check times and other buses from the city centre see <u>www.goev.de</u> (in German)

## Travel by car

On the north-south bound motorway A7 take the exit 'Göttingen-Nord'. At the first traffic light on the feeder road go straight ahead on the B27 and turn right after approx. 500m ('Kliniken'). Follow the signs 'Uni-Nordbereich' and 'Fachbereich Geowissenschaften'.

## **REGISTRATION AND ABSTRACT SUBMISSION:**

Registration is by email to Leyla Seyfullah, by **30 August 2017**: Email: <a href="https://www.usersettingen.de">lseyful@uni-goettingen.de</a>

Abstracts (500 words maximum) for posters (A0 portrait) and talks of 20 minutes are due by email to Leyla Seyfullah by **1 October 2017**: Email: <a href="https://www.userseyfullah.com">lseyful@uni-goettingen.de</a>

#### ATTENDANCE FEE:

10 € payable at the meeting. Students attend for free.

#### **CONFERENCE OUTLINE:**

Evening of Friday 24<sup>th</sup> November: Informal pre-meeting dinner at 19.00.

**Saturday 25<sup>th</sup> November:** Workshop with key note presentations; talks and poster sessions, roundtable discussions. Coffee and lunch will be provided. Conference dinner at 19.00, at your own expense.

**Sunday 26<sup>th</sup> November:** Collection visit, possibly further talks, and field trip to Willershausen Fossil Site (on demand).

#### ACCOMMODATION:

There are several options available. If you wish to stay near the venue, please reserve those options quickly as there is limited space available.

Following is a list of hotels and hostels in Göttingen, their respective distance to the conference venue and approximate price per night.

The hotel location information can be found from each hotel/hostel website below:

**Best Western, Hotel am Papenberg:** distance to venue ~700 m; 5 minute walk; room prices from 85 €; www.papenberg.bestwestern.de

Please note that we have 15 single rooms reserved at the Best Western, Hotel am Papenberg until August 31st, please refer to "Gruppe: Uni 23.11" when booking to get the rooms with discount (at 85 € per night)

**Youth Hostel Göttingen:** distance to venue 3.5 km; bed in shared room from 31 €, www.goettingen.jugendherberge.de/Portraet

*Hostel 37:* distance to venue ~6 km; bed in shared room from 28 €; <u>www.hostel37.de</u>

**B&B Hotel Göttingen-city:** distance to venue ~3.5 km; room price from 56 €, www.hotelbb.de/en/goettingen-city

*Weender Hof:* distance to venue ~2 km; room price 50 € to 80 €; www.weenderhof.de

*InterCity Hotel:* distance to venue ~4 km; room prices from 88 €; <u>www.intercityhotel.de</u>

*Hotel Eden:* distance to venue ~5 km; room prices from 79 € to 169 €; <u>www.eden-hotel.de</u>

*Leine-Hotel:* distance to venue ~5 km; room prices from 76 €; <u>www.leinehotel-goe.de</u>

**Parkhotel Ropeter (Best Western):** distance to venue ~6 km; room prices from 88 €; <u>http://www.bestwestern.de/hotels/Goettingen/best-western-Parkhotel-Ropeter</u>

*Novostar Hotel:* distance to venue ~6.5 km; room prices from 65 € <u>www.novostar.de</u>

*Hotel Stadt Hannover:* distance to venue ~3.5 km; room prices from 85 € www.hotelstadthannover.de

*Hotel Beckmann:* distance to venue ~4 km; room prices from 42 € <u>www.hotel-beckmann.de</u>

*Hotel Astoria:* distance to venue ~2 km; room prices from 66 € <u>www.astoria-goettingen.de</u>

*Hotel Garni Gräfin von Holtzendorff:* distance to venue ~5 km; room prices from 35 € to 45 €; www.graefinhotelgarni.de

*Hotel Rennschuh:* distance to venue ~7 km; room prices from 49 € <u>www.rennschuh.de</u>

*Hotel Schiffer:* distance to venue ~5 km; room prices from 68 € to 75 €; <u>www.schiffer-hotel.com</u>

**Romantik Hotel Gebhards:** distance to venue ~3.5 km; room prices from 104 €; www.gebhardshotel.de

*Hotel Central:* distance to venue ~4 km; room prices from 79 €, <u>www.hotel-central.com</u>

**Onkel Tom's Hütte:** distance to venue ~7 km; room prices 55 €, <u>www.restaurant-onkel-toms-huette.de/hotel</u>

*Hotel zum Stresemann:* distance to venue ~5 km; room prices from 60 €; <u>www.hotel-stresemann.de</u>

Hotel Freizeit Inn: distance to venue ~9.5 km; room prices from 106 € www.freizeit-in.de

Adesso Hotel Schweizer Hof: distance to venue ~7 km; room prices from 96 €, www.adessohotel.de

## DEADLINES & IMPORTANT DATES: Abstract submission: October 1<sup>st</sup>, 2017 Registration deadline: August 30<sup>th</sup>, 2017

#### CONTACT INFORMATION:

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Eva-Maria Sadowski, Leyla Seyfullah & Alexander Schmidt (Göttingen)

## (3) EPPC Dublin in 2018

On behalf of the organization committee we would like to extend a warm welcome and invite you to Dublin in August 2018 to attend the 10th European Palaeobotany and Palynology Conference. The disciplines of palaeobotany and palynology are integrative and multidisciplinary by nature. As a community we are constantly seeking new tools and techniques to answer both long-standing and new questions. Palaeobotanists and palynologists demonstrate a strong history of partnership with disciplines that are outside our core biological and geological fields of research such as with chemistry, physics, maths and computer science. Our community have been early adopters of stateof-the- art technology in visualization, experimentation and chemical analyses to name but a few.

The theme for EPPC 2018 'A Multidisciplinary Science' seeks to highlight multi- and interdiciplinarity in palaeobotanical and palynological research, past, present and future. We aim to showcase disciplinary diversity in palynological and palaeobotanical research through themed and open sessions, via demonstrations of new technology platforms in a dedicated exhibition space and during post-conference field excursions.

We have planned exciting cultural activities and field trips for you to explore the great botanical, archaeological and geological richness that the island of Ireland has to offer. These include the famous karst landscapes and flora of the Burren in County Clare and two world heritage sites of immense geological and archaeological interest; The Giants Causeway in Northern Ireland and Skellig Michael, islands within the Atlantic Ocean off the west coast of County Kerry. Mid-conference day trips will showcase the Viking history and building stones of Dublin city and natural heritage of surrounding counties including blanket bogs and oak forests.

Céad Míle Fáilte! We look forward to welcoming you to EPPC Dublin in 2018.

Yours sincerely,

Jennifer C. McElwain Chair, Organization Committee

All information, registration, deadlines and bookings for the EPPC are available on: <a href="http://eppc2018.ie/">http://eppc2018.ie/</a>.



## (4) 5<sup>th</sup> International Palaeontological Congress, Paris, 2018

On behalf of the Organising Committee, we are particularly pleased to invite you to France for the fifth edition of the International Palaeontological Congress, the IPC5. Under the auspices of the International Palaeontological Association (IPA) and with the participation of the whole French Palaeontological community, "the Fossil week" will be organized in 2018 in Paris, July 9th-13th. This event is a unique opportunity for our community to present its new results and discuss all aspects of our discipline.



THE 5TH INTERNATIONAL PALAEONTOLOGICAL CONGRESS July 9th - 13th, 2018 FRANCE

"The FOSSIL WEEK"

We propose here some possible symposia and sessions. Of course, the list is provisional and it is still completely open. We are waiting for your proposals.

Fieldtrips are planned before and after the congress throughout France, Belgium and Italy. They will give you the opportunity to discover our palaeontological, geological and gastronomic heritages. We hope to welcome many of you in France in 2018.

Contact details:

1<sup>st</sup> Circular available: www.palaeontology.geo.uu.se/ISCS/IPC5\_1stCircular.pdf

<u>Disclaimer:</u>

Newsletter edited by Lutz Kunzmann & Steven Manchester.

The views expressed in the newsletter are those of its correspondents, and do not necessarily reflect the policy of IOP.

Please send us your contributions for the next edition of our newsletter (113) until end of May 2017. Contributions should be sent to Lutz.Kunzmann(at)senckenberg.de.

IOP Logo: The evolution of plant architecture (© by A. R. Hemsley)