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NEWSLETTER OF THE INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES

CONTENT OF PALYNOS VOL. 40 (2) 2017

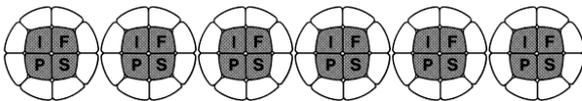
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revealed in according International scientific journals, which shows the more than 100-yr old field of palynology to be still highly innovative.

And looking forward, we plan to launch our new IFPS-Internet-Web-page in 2018, and are therefore still looking for a palynologist experienced with web-pages to take over as IFPS Web-Master officer. In case you are interested, please contact the IFPS president (email below).

We wish you happy reading, and we hope to meet you soon again at one of the upcoming palynological conferences or meetings, and the whole IFPS board hereby wishes you a palynologically successful year

2018 !

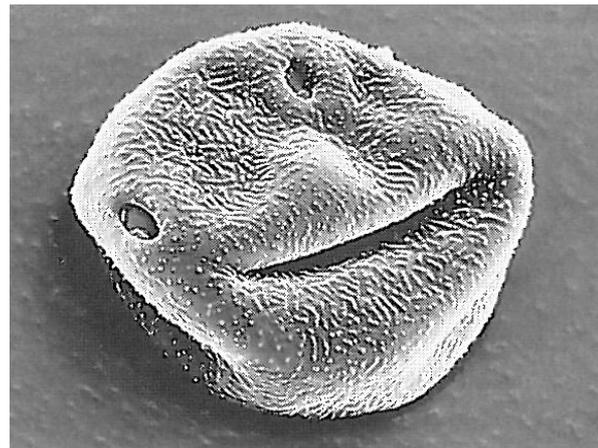


IFPS BUSINESS

IFPS BOARD MESSAGE

This current issue of PALYNOS contains a row of contributions from Europe, North America, Russia, and China, which all reveal our palynological field to be truly Intercontinental!

Looking backwards, this year 2017 – in-between the larger palynological conferences such as IPC and EPPC – has brought a wealth of smaller palynological conferences (see conference reports in this PALYNOS issue), and several palynological publications as



SEM-picture courtesy by J.N. Haas 1995

Jean Nicolas Haas, IFPS President (2016-2020)

Jean-Nicolas.Haas(at)uibk.ac.at

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IFPS STUDENT FUNDING FOR THE 10TH EUROPEAN PALAEOBOTANY AND PALYNOLOGY CONFE- RENCE (EPPC) IN DUBLIN, IRELAND, 12TH-17TH AUGUST 2018

The International Federation of Palynological Societies (IFPS) will support student participation at the upcoming **10th European Palaeobotany Palynology Conference (EPPC)** to be held in Dublin, Ireland 12th – 17th August 2018 (<http://eppc2018.ie>).

Funding will be awarded to Master and Ph.D. students presenting palynological results at the 10th EPPC (oral or poster) and which are members of one of the IFPS affiliated societies.



The IFPS board will review and evaluate all applications according to the quality of the submitted abstracts and the scientific merits of the candidates. Thus IFPS intends to sponsor up to 10 students with a 500 Euro contribution towards the cost of attending the conference.

Students wishing to apply should e-mail (preferably as a pdf):

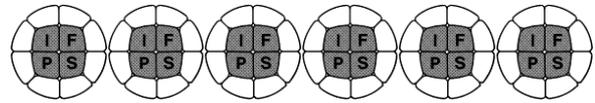
1) a covering letter (no more than one page, and explaining which IFPS affiliated organisation the student is a member of, and the nature of their palynological contribution to the meeting),

2) a short-CV (maximum one page)

3) their talk/poster abstract

Applications should be sent to IFPS Secretary-Treasurer James B. Riding ([jbri\(at\)bgs.ac.uk](mailto:jbri(at)bgs.ac.uk)).

Personal presence at the 10th EPPC is a prerequisite, as awards will be presented at the conference only. Applications should arrive before **March 1st, 2018**.



IFPS STUDENT FUNDING FOR THE 5TH INTERNATIONAL PALAEOONTOLOGICAL CONGRESS (IPC5) IN PARIS, FRANCE, JULY 9TH - 13TH, 2018

The International Federation of Palynological Societies (IFPS) has agreed to support student participation at the upcoming 5th IPC to be held in Paris, France, July 9th – 13th, 2018 (see <http://www.ipa-assoc.org/docs/First-Circular-of-IPC5.pdf>).



THE 5TH INTERNATIONAL
PALAEOONTOLOGICAL
CONGRESS

July 9th - 13th, 2018
FRANCE

Funding will be awarded to Master and Ph.D. students presenting palynological results at the 5th IPC (oral or poster) and which are members of one of the IFPS affiliated societies. The IFPS board will review and evaluate all applications according to the quality of the submitted abstracts and the scientific merits of the candidates. Thus, IFPS intends to sponsor up to three students with a 500 Euro contribution towards the cost of attending the conference.

Students wishing to apply should e-mail (preferably as a pdf)

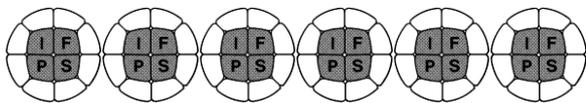
1) a covering letter (no more than one page, and explaining which IFPS affiliated organisation the student is a member of, and the nature of their palynological contribution to the meeting),

2) a short-CV (maximum one page) along with

3) their talk/poster abstract

to James B. Riding (IFPS Secretary-Treasurer: [jbri\(at\)bgs.ac.uk](mailto:jbri(at)bgs.ac.uk)).

Personal presence at the 5th IPC is a prerequisite, as awards will be presented at the conference only. Applications should arrive before **March 31st, 2018**.



PRESENTATION of NEW IFPS COUNCILLORS

PILAR S. TESTILLANO

Asociación de Palinólogos de Lengua Española, APLE

Pilar S. Testillano is Scientific Researcher of the Spanish National Research Council (CSIC) in the Biological Research Center (CIB) of Madrid (Spain), where she is the head of the Pollen Biotechnology of Crop Plants laboratory. In September 2017 she has been elected as new President of the Spanish Society of Palynology, the “Asociación de Palinólogos de Lengua Española” (APLE). From then, she is the new Councillor representing APLE in the IFPS.



She received the PhD in Biology from the Complutense University of Madrid, getting the Prize to the Best Doctorate Thesis. She performed stays in the CNRS (Villejuif, France) and the Cold Spring Harbor Laboratory (New York, USA). She has studied the physiology of microspore and pollen development in several horticultural and crop species, by using cell and molecular approaches. Her main research line is the analysis of the stress-induced microspore reprogramming and totipotency to embryogenesis, biotechnological in vitro process of high interest in plant breeding of agrofood and forestry species for production of doubled-haploid plants, investigating the key factors involved in this process, like autophagy, programmed cell death, epigenetic marks, phytohormones and cell wall, mainly by using techniques of in situ molecular identification, confocal and transmission electron microscopy, and modern bioimaging cell biology and molecular approaches. She has more than 100 publications in ISI peer-

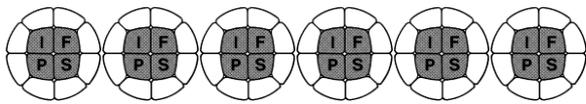
reviewed journals, and 50 book chapters. PI of various national and international projects, appointed to evaluation committees of Spanish, European and American grant agencies, and reviewer of numerous scientific journals of Plant Sciences. In 2013 she organized the 2nd International APLE-APLF congress on “Pollen Biotechnology, Diversity and Function in a Changing Environment” in Madrid.

ORCID ID: 0000-0003-4509-7646.

Website:

<http://www.cib.csic.es/research/environmental-biology/pollen-biotechnology-crop-plants>

E-mail: [testillano\(at\)cib.csic.es](mailto:testillano@cib.csic.es)



IFPS SOCIETIES’ REPORTS

Commission Internationale de Microflore du Paléozoïque (CIMP)

Dear colleagues,

We are pleased to briefly inform you about the commission’s past year ventures, and future meetings. In September 2017, we were part of the 50th Annual Anniversary Meeting of AASP – The Palynological Society, a joint meeting in which The Micropalaeontological Society (Palynology Group) was also involved. Five sessions were dedicated to Palaeozoic palynology, including a session supported by Saudi Aramco, and a special session dedicated to Gordon Wood’s

memory. In total, more than 30 members of the commission participated in this meeting, providing high quality and extremely interesting research on Paleozoic palynology. Seven student members were awarded travel grants to attend the meeting and all of them presented excellent oral and poster presentations.

Next year (2018), it will be an important year for the CIMP. Book the following date in your agendas - 12–17 August 2018 - which corresponds to the next EEPC Meeting in Dublin, Ireland. We will have several sessions dedicated to Paleozoic Palynology so, don’t forget to register. During this meeting we will also have to elect a new board for the next four years. The next newsletters to be published on the commission website

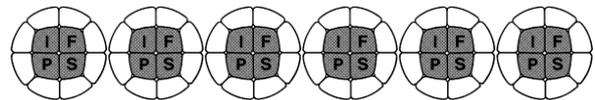
(<http://cimp.weebly.com/newsletters.html>)

and sent out to all members, will have more information on the election procedure, including the candidates, so pay attention to your e-mail boxes in the next months!

The CIMP is a group dedicated to Palaeozoic Palynology. Currently, more than 160 members are part of CIMP including graduate, postgraduate students, as well as active and retired professionals. If you are interested in knowing more about our group, and becoming a member of the CIMP, visit our website for more information (<http://cimp.weebly.com>).

Gilda Lopes (IFPS Councilor), Post-doctoral Fellow at the Department of Earth Science, University of Bergen, Norway.

[Gilda.Lopes\(at\)uib.no](mailto:Gilda.Lopes@uib.no)



CONFERENCE

REPORTS

International Palynological Conference “Actual problems of Palynology” in memory of V.P. Crichuk, June, 5-8, 2017, Moscow, Russia.

The International Palynological Conference “Actual problems of Palynology” dedicated to the 110th anniversary of the famous Russian palynologists Vladimir Crichuk was held in Lomonosov Moscow State University Faculty of Geography, June, 5-8, 2017. The Conference was organized by the Russian Palynological Commission (chair, Dr. N.S. Bolikhovskaya), the IGU Commission on Environment Evolution and Lomonosov Moscow State University. 125 participants including young scientists and PhD students from 8 countries (Russia, Germany, Ukraine, Belorussia, Slovakia, Azerbaijan, Kazakhstan and Abkhazia) took part in the conference. The programme included 77 oral and 31 poster presentations.



Figure 1. Emblem of the Russian Palynological Commission.

The main topics of the conference were follows:

- Cenozoic, Mezozoic, Palaeozoic and Pre-Cambrian: stratigraphy, palaeogeography, sedimentation, environment and climate evolution.
- Palynology as a tool for the broad-scale interregional correlation of marine and terrestrial sediments, use of pollen data in stratigraphical schemes.
- Methods of palaeoecology. New laboratory methods, innovation in sample preparations, new approaches in data analysis.
- Pollen biology, morphology and systematics. Palynology in phylogenetic research.
- Algal flora, Diatom analysis and other micro algae for palaeoecology and ecological indication.
- Applied palynology: pollen indicators for environment conditions, aeropalynology, melissopalynology, pollen data in archaeological researches, palynology in criminal investigations.



Figure 2. Poster session hold at the international conference.

Each topic included keynote plenary lectures by experts in the field of paleoecological research and palynology, short talk session and discussions on a range of relevant topics related to environment evolution, providing a

lively and comprehensive conference. The special attention in the conference was paid to explore the trajectory of climate change and human-environment interaction in the Holocene, and understand the pattern, mechanisms and evolution of man-environment relationships during this period. Oral and poster presentations were related to reconstructions of landscape dynamics and climate change in various regions in Russia, Belarus, Ukraine, China, Montenegro and Israel on the base of multi-proxy data; history of fossil flora of the different geological epochs. Unique pollen records obtained in the Arctic, Russian Far East and Siberia were presented in a number of researches. One of the most important sessions was aeropalynology and pollen indication of environment conditions in places of subsurface nuclear explosions.

The Proceedings of the Conference (in Russian) is available at:

<http://www.geogr.msu.ru/structure/labs/notl/nauchd/downloads/index.php>

*The chair of the Russian Palynological Commission Dr. Natalia Bolikhovskaya
Dr. Elena Novenko*

10th Palynological Society of China (PSC) Conference, Chifeng, Inner Mongolia, China, June 26-29th, 2017

PSC held its 10th National Conference in Chifeng, Inner Mongolia from June 26 to 29, 2017. It was followed by a post-conference excursion on "Vegetation and environment evolution in semiarid area of northern China" in Chifeng and its surrounding area from June 30 to July 2, 2017. The conference was organized by the PSC, and jointly hosted by the School of Urban and Environmental Sciences, Peking University, the Forestry College of Inner Mongolia Agricultural

University and the Chifeng Association for Science and Technology, Inner Mongolia.

More than 180 participants from research institutes, universities, oil and gas companies, etc. attended the meeting. All together 105 abstracts were received. Among them, 76 oral presentations and 14 posters were performed at the meeting for exchanges. The main scientific sessions included 1) Pollen analysis and observation technology, 2) Pollen and phytolith morphology and classification, 3) Modern process of spores and pollen, 4) Relationship between spores and pollen/phytoliths in surface soils and vegetations, 5) Palynostratigraphy, 6) Palaeovegetation and palaeoclimate, 7) Past global changes, 8) Environment archaeology, 9) Pollen database, 10) Palynofloras and palaeogeography, and 11) Acritarchs, covering almost all aspects of current palynological studies in China.

It is worth to note that the number of participants has increased year by year. In addition to a large number of Quaternary palynologists, there is a significant increase in the members for other geological periods including Paleozoic, Mesozoic and Tertiary. Many students also made oral presentations at the meeting, and 6 of them were selected as the best student papers. We also accepted 19 new members including 12 students. Finally the new PSC officers and councilors were elected. After many years' quick development, this meeting displays an ever increasing important role for palynologists in making contribution to the Chinese economic and social development.

After the congress, a post-conference fieldtrip was carried out in Chifeng and its surrounding areas, Inner Mongolia. Prof. Hongyan Liu from Beijing University guided the excursion. This was a most rewarding trip. The participants learned not only some important local plant types, but also vegetation history, climate condition, and local landscapes.



Photo 1. Participants of the 10th PSC Conference, Chifeng, Inner Mongolia, China, June 26-29, 2017.

It is due to its unique climate, geological landforms and vegetation types, this region is considered as the best place to study climate, vegetation and human-land relationship in northern China. Geographically, it is located in the transitional zone between dry and wet for climate, and forest and grassland for vegetation. For a long time, these unique climatic, vegetation and geomorphologic features have attracted many palynologists to carry out their studies there, and the past

vegetation and climate evolution has been largely reconstructed.

Wei-Ming Wang

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Photo 2 . Post-conference fieldtrip on "Vegetation and environment evolution in semiarid area of northern China" in Chifeng and its surrounding areas, Inner Mongolia, June 30-July 2, 2017

Report of the 50th Annual Meeting of AASP – The Palynological Society, Nottingham 3–7 September 2017

This year, 2017, AASP – The Palynological Society celebrates the golden anniversary and I, as a recent member of this Society, had the honour to be part of it! The 50th Annual Meeting of AASP was led jointly with CIMP and The Micropalaeontological Society, Palynology Group, in the amazing campus of the British Geological Survey (BGS), in Keyworth, about 10 km from Nottingham, U.K. To celebrate these fifty years of promotion and commitment to palynology, the first session, on September 4th, was dedicated to the past, present and future of the AASP–The Palynological Society, an interesting reflection guided by Thomas Demchuck.

But, before telling you more about the scientific sessions, I should mention that the Pre-Meeting Field Trip on Sunday September 3rd, led by Dr. Duncan McLean and Dr. David Bodman, was a fantastic adventure (in wellington boots!) in the Peak District of Staffordshire to visit the Carboniferous Stage Stratotypes. In that evening, a welcome event was taken in the beautiful “Fat Cat Bar” in the centre of Nottingham, where the participants could meet with new and experienced colleagues. The scientific presentations were divided into 12 diverse and dynamic sessions through Palaeozoic to Quaternary palynology, in which two of these were dedicated to the superb work of Dave Batten and Gordon Wood. In my opinion, all presentations (oral and poster) revealed the high quality of work of the many teams spread all over the world and the multidisciplinary approach of palynology with other scientific subjects. These studies are a major contribution to the resolution of geological problems and to the prevention (or at least prediction) of future ones! Besides

that, many presentations were intellectually fascinating.

After the talks on the first day, the poster participants explained their work during the special poster session in the BGS exhibition area, together with very nice drinks provided by the local organization of the meeting. In that moment, with the presence of all participants and in a relaxed atmosphere, the exchange of scientific ideas and networking contacts were easily established! Actually, now that I am reviewing the Meeting, social activities happened all days! On the second day, the Conference Dinner took place in The Boundary Edge restaurant, in the Nottinghamshire County Cricket Club Ground, with a tourist tour included, at Trent Bridge, Nottingham. The meal and view were fantastic and we also had the privilege to hear old stories of the last 50 years by the charismatic and funny Barrie Dale. What an extraordinary speech! On the third day, the traditional AASP business lunch happened, not at lunch time but during a buffet dinner, in the Indian restaurant, “The Cumin”. Again, good food, enthusiastic speeches and time to say goodbye to some of us, until the next meeting.

On the last day, the participants could choose between a Field trip to Charnwood Forest (Bradgate Park) or one of two workshops: a) Strata Bugs workshop, led by Paul Britton and John Athersuch (StrataData Ltd.) or: b) Biostratigraphy: applications to the petroleum exploration and production, led by Iain Prince and Katrin Ruckwied (Shell). I opted for the field trip to Bradgate Park, located immediately north of Leicester, led by Jim Riding. It was a day full of remarkable Precambrian, Triassic and Quaternary geology, biodiversity and even British history! And it did not rain, so it was a perfect day in the field! We visited seven geological localities and I highlight the spectacular Sliding Stone, constituted by deformed volcanoclastic sediments, and the amazing and famous Memorial Crags, the outcrop of the discovery of Ediacarian fossils, as the beautiful *Charnia masoni*, in the late 1950's (Figure 1).



Figure 1. Ediacaran fossil at Memorial Grags.

I, as a young palynologist and first time in an AASP Meeting, couldn't be more grateful to the Organizing Committee, especially to the local organizers (BGS) Jim Riding, Jan Hennissen and Maria Wilson, for this memorable Meeting (Figure 2)!

*Vânia Fraguito Correia,
PhD student from Portugal - Algarve
University and Portuguese Geological Survey
(LNEG)*



Figure 2. 50th AASP meeting attendees with the organizer Jim Riding in the front.

Mediterranean Palynology: APLE-GPPSBI-APLF Symposium, Barcelona, 4-6 September 2017.

Once upon a day, in September 2015, in Rome, when finishing MedPalyno 2015, I was proposed to organize the next edition in Barcelona. I doubted for a while, but at the end I accepted. And now I am very grateful of having been trusted for that. It has been hard, but at the end a great experience. I am really thankful to all the colleagues helping in the organization and the development of the sessions and to all the participants for bringing and sharing their good science.

MedPalyno 2017

Barcelona has hosted, from 4th to 6th September 2017, the fourth edition of this series of joint symposiums of European palynological societies. In this case, and for the first time, the three associations APLE (Asociación de Palinólogos de lengua Española), L'APLF (Association des palynologues de Langue Française) and the GPPSBI (Gruppo di Palinologia e Paleobotanica de la Società Botanica Italiana onlus) co-organized the meeting (Fig. 1).



Figure 1. MedPalyno 2017 Opening session.

MedPalyno 2017 has gathered 117 experts on palynology, from 17 countries of 3 continents (Table 1). A total of 147 contributions have been presented, distributed around 4 main

subjects: Aerobiology; Melissopalynology; Paleopalynology; and Pollen morphology, biology and biochemistry (Table 2). If you are interested in the abstract book, please follow <http://lap.uab.cat/mp2017ebook>.

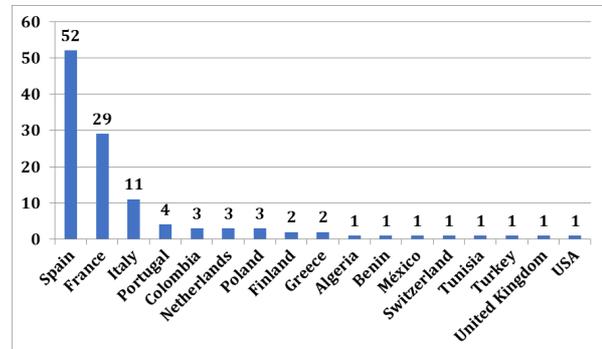


Table 1. Participants to MedPalyno 2017 and countries of origin.

Dr. Mikhail Sofiev was the invited speaker for the plenary lecture on Aerobiology; Dr. Ettore Paccini for the one on Pollen morphology, biology and biochemistry; and Dr. Joël Guiot was the speaker of the plenary lecture on Paleopalynology, that was devoted to make a warm (and funny) tribute to Prof. Jacques-Louis De Beaulieu and his very long and wise palynological scientific life (Fig. 2). Regarding Melissopalynology, Dr. Marie José Battesti gave an invited conference.

	Aerobiology	Melissopalynology	Paleopalynology	Pollen morphology, biology and biochemistry	Total
Plenary Lectures	1	-	1	1	3
Invited conference	-	1	-	-	1
Oral presentations	32	3	29	13	77
Poster	32	5	21	8	66
Total	65	9	51	22	147
Workshops	1				2
	-	1	-	-	

Table 2. Summary of the scientific contributions to MedPalyno 2017.

The symposium included also 2 workshops, one on New Palynological sampling and analyzing methods and one of the Spanish Melissopalynology group, and 3 meetings of

the societies APLE and APLF and the Asociación Española de Aerobiología, AEA.

Four young participants benefited from grants from APLE and other two from grants from L'APLF. Moreover, the three associations agreed to award eight participants for the quality of their contributions to MedPalyno 2017:

- S. Ghitarrini: best Aerobiology oral presentation
- A. Seijo Rodríguez: best Aerobiology poster
- D. Rodríguez de la Cruz: best Aerobiology poster
- P. Cardellach: best Melissopalynology presentation (poster)
- D. Oliveira: best Paleopalynology oral presentation
- C. Lambert: best Paleopalynology poster
- L. Sadori: best Paleopalynology poster
- M. Costa: best Pollen morphology, biology and biochemistry oral presentation
- A.R. Costa: best Pollen morphology, biology and biochemistry best poster.



Figure 2. Plenary Lecture of Prof. Joël Guiot, homage to Jacques-Louis De Beaulieu.

I want to thank my colleagues bearing the presidency of the associations at that time María del Mar Trigo (APLE), Anna Maria Mercuri (GPPSBI) and María Fernanda Sánchez-Goñi (L'APLF), for their full support and important contribution to the success of the meeting, as well as to all the colleagues kindly helping from the Organizing Committee and the Scientific

Committee and the colleagues who kindly accepted to act as members of the jury for the prizes. My special thanks also to my group, at the Laboratori d'Anàlisis Palinològiques of the Universitat Autònoma de Barcelona (LAP-UAB), for their continuous support, and especially to Concepción De Linares for taking care of the Secretary of the Symposium. I thank them all from my heart.

I am also very grateful to the sponsors (Unidad de Excelencia María de Maeztu MinECo, MDM2015-0552; and the companies Dronesphere, Lanzoni s.r.l. and La Imprenta Comunicación Gráfica, S.L.) and exhibitors (a.e.r.o.medi and Plair S.A.) for the economic support. I thank also the company helping with the organization of the symposium (Standing Tours S.A.) for the close and kind service provided in all moment.

Next MedPalyno appointment: Bordeaux 2019!!! Follow the news!!! My best wishes to the new organizers!

Jordina Belmonte
MedPalyno 2017 President
Laboratori d'Anàlisis Palinològiques, LAP-UAB, Institut de Ciència i Tecnologia Ambientals, ICTA-UAB
and
Departament de Biologia Animal, Biologia Vegetal i Ecologia Universitat Autònoma de Barcelona (UAB) – Spain
<http://lap.uab.cat/aerobiologia>

Report on Palynology Specialist Group Meeting, Linnean Society, London, 9th November 2017

Barry Lomax (Nottingham) organized and, with Charles Wellman (Sheffield) chaired this annual autumn meeting at Burlington House in Piccadilly, London. It attracted around thirty people. Twelve illustrated presentations were given by students and established researchers, plus a poster in the library on an

Eocene palynoflora from China. Topics ranged stratigraphically from aspects of Devonian spore studies to work on extant pollen. Lunch and mid-session breaks gave ample opportunities for ongoing discussions; the day concluded with a wine reception provided by the Linnean Society.

Charles Wellman spoke to present research by Martha Gibson (Sheffield) on palynomorphs and other plant fragments from the Upper Permian of NE England. Five evaporative cycles have been detected from the former Zechstein Sea that endured for about six million years. Quantitative analysis revealed mostly saccate pollen, with pieces of xylem and many cuticles. It seems this generally arid, equatorial zone was at times humid enough for conifer forest to grow along with rarer pteridophytes.

Stephen Stukins (Natural History Museum, London) reminded us of the great importance and value of the perhaps-underused palynological collections kept in the national collections at South Kensington. Article 42 of the ICN requires designated repositories for type material; Steve compared the type and figured collections at the NHM in London with those of the British Geological Survey, University of Sheffield and CENEX at Louisiana State University, USA. Dating back some forty years, the NHM houses palynomorphs, dinoflagellates, chitinozoa and acritarchs for much of the Phanerozoic Aeon. Moreover, the NHM Botany Dept. has over one hundred thousand slides of Recent pollen and spores. He praised the work of John Williams in drawing up a comprehensive "Index of Palaeopalynology" with its enormous potential to aid identification of *sporae dispersae* once digitized.

Hannah Banks (RBG, Kew) presented three aspects of pollen from living legumes (Fabaceae). Taxonomically, the sub-families Caesalpinioideae and Mimosoideae are very diverse in their pore and colpus arrangements, their exine ornament and the presence of pectinose Zwischenkoerper. Genera such as *Senegallia* and *Acacia* often bear pollen in multiple tetrads (polyads), with sometimes 64

grains remaining together, but never in the huge aggregations of orchid pollinia. Regarding adaptations and functionality, it appears larger numbers of apertures per grain allow faster germination, whilst grains remain viable for longer when they have fewer pores from which to lose water. Ecologically, many legumes have ant associations that risk repelling potential pollinators. At times of pollen release, these plants temporarily release chemicals to deter ants that generally reduce herbivory. The presence of a single legume megafossil, *Mimosites brownianus*, in the Eocene London Clay flora is supported by the discovery of polyads of Fabaceae pollen in that stratum.

Emma Reeves (Southampton) spoke about the Tetrapod World Early Evolution & Diversification project which has involved the sinking of boreholes and examination of outcrops near the Anglo/Scottish border to examine earliest Carboniferous (Tournaisian) strata to help close Romer's palaeontological gap. Emma has examined these sediments for miospores and megaspores to compare these TWEED taxa with the well-known sequences from Belgium and Eire. She found contrasting palynofloras with *Prolycospora* dominant at Norham, but mainly *Anaplanisporites* at Burnmouth. Quantitative sampling and principal components analysis of data point to sedimentary cycles that might reflect climatic fluctuations following the End Devonian Mass Extinction. Richard Bateman suggested Emma look also at the associated megafossil plants; e.g. *Oxroadia*, *Paralycopodites/Anabathra* ("*Lepidodendron calamopsoides*" auct.).

Adele Julier (Open University) described the dispersal of pollen from living vegetation from habitats around Lake Bosumtwi in Ghana to make comparisons with what is known of dispersal at temperate latitudes. Tropical diversity of taxa makes their identification a major challenge, but Adele reported that pollen traps sampled annually 2011-2014 showed the two most abundant genera in the wet evergreen plots are indeed major components of the pollen rain there. As with *Corylus* in temperate European peats, it

seems that pollen of Moraceae is disproportionately abundant in this tropical flora. Many of these Ghanaian plants are insect-pollinated; these show much greater variation between annual samples than do typically anemophilous families such as grasses.

After lunch, Barry Lomax (Nottingham) focused on the sporopollenin of palynomorph outer walls as a chemical treasure-trove awaiting plunder by the geochemist. In 1978 sporopollenin was called “the most resistant organic material from a living organism.” He illustrated the effects of nitric and acetolysis over 100C to 350C temperature ranges on the translucence of the exine of *Lycopodium* spores (Figure 1). The effects of ultraviolet-B solar radiation on stratospheric ozone are well documented, but UV-B has been found to cause variation in sporopollenin in grass pollen from near Lake Bosumtwi, Ghana with pollen chemistry tracking orbital changes in total solar irradiance over the last ~150 kyrs. These observations give greater potential to fossil palynomorphs in considering their value as indicators of ancient solar activity and changes in the climate of the Earth.

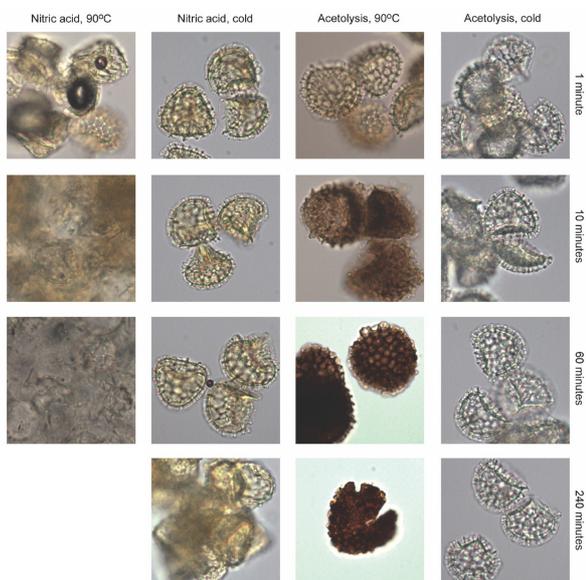


Figure 1. A selection of light microscope images of extant *Lycopodium* spores exposed to nitric or acetolysis over a range of temperatures and durations. Full details can be found in the open access publication of Jardine PE et al (2015) *Journal of Micropalaeontology*, 34, 139–149. (<https://doi.org/10.1144/jmpaleo2014-022>).

Alex Askew (Sheffield) focused our attention on the Middle Devonian of Spain. At that time, what is now the Iberian peninsula had separated from the Gondwanan super continent and appeared as islands in the Rheic Ocean. The monsoonal climate these islands experienced is reflected in their alternating beds of sandstones and limestones which yield rich Eifelian spore assemblages comparable to those from the Orcadian Basin in Scotland. Images of some of Alex’s palynomorphs can be seen in Figure 2.



Figure 2. A selection of fossil palynomorphs from the Middle Devonian strata of northern Spain. A; is the spore *Hymenozonotriletes argutus* and B is the acritarch *Polyedrixium pharaone*. Scale bar in both images is ten microns. Images courtesy of Alex Askew.

Annette Goetz (Portsmouth) spoke on the Permian stratigraphy of the Karoo basin in southern Africa. This was a time when the climate of Gondwana was changing steadily from the extreme Permo-Carboniferous “icehouse” phase to the opposite “hothouse” phase of Triassic times. Thus, for example, one finds a change from mostly monosaccates

(ferns?) to bisaccate grains (cycadophytes?) as the climate warmed up. The extraction of miospores from an almost continuous period of sedimentation in this basin from the Pennsylvanian to the Lower Jurassic allows not only a very widespread stratigraphic zonation but it also offers detailed climatic signatures for a large part of Gondwana where floral provincialism differs from Laurussia. Annette made a plea for radiometric data to allow more absolute dating of these strata.

Back in the present day, William Harvey (Oxford) introduced the Global Pollen Project as an online platform for viewing and analysing data from extant spores and pollen grains. Recording morphological and chemical data on palynomorphs, the GPP aims to be very selective in what data are recorded-*e.g.* it avoids unpublished “dark data” such as from unpublished theses. It tries to incorporate data from herbarium sheet specimens to link pollen and spores back to field data on their parent plants’ habitat, date of collection etc.

Christa Hofmann (Vienna) spoke about ericalean pollen from the Palaeogene of a number of European localities, including the Cobham Lignite of Kent, Brixton in London, Krappfeld near Klagenfurt in Austria, plus the Hainan Islands of China. She gave several fascinating SEM images of pollen (some of which are shown in Figure 3) of Ericaceae, Sapotaceae and Ebenaceae, comparing the fossil grains to those of their nearest living relatives.

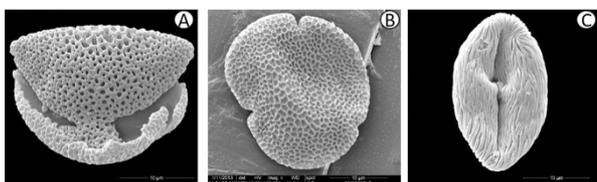


Figure 3. A selection of SEM images of fossil pollen grains from the Brixton PETM drill core. A; calamoid palm (today this is mostly found in SE Asia) B; is a tiloid Mortoniodendron (today found in Central America and northern South America), and C is Anacardium (PETM Brixton drill cores, today this plant has a neotropical distribution. Images courtesy of Christa Hofmann.

Christa considered where these pollen taxa had been found stratigraphically, *eg* in relation to the Palaeocene/Eocene Thermal Maximum event, plus in a phytogeographical context. It is interesting that she recognised some South American affinities for some of these pollen taxa where the living relatives are typically montane species.

Luke Maunder (Open University) spoke on the diversity of pollen from tropical forests where today the lowest annual temperature is never below 18C and the rainfall always more than 2 metres *per annum*. He described the paucity of megafossils from rainforests (*e.g.* late Palaeocene of Columbia), but the laryngological record is much better, especially for the Neogene of South America, Africa and Indonesia. He suggested that evidence for a radiation of the Malpighiales in the mid-Cretaceous points to an origin for our present day form of tropical rainforests about 100 million years ago. He agrees with Christa Hofmann that light microscopy of pollen should ideally be backed up with SEM for more secure identifications; in daily life, of course, time and money often dictate otherwise.

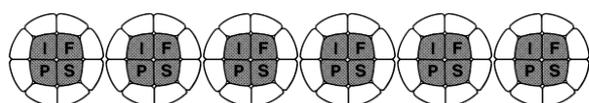
The final talk took us back down the column to the late Devonian. John Marshall (Southampton) described an early Frasnian locality of the progymnosperm tree *Archaeopteris* in Cottonwood Canyon, Wyoming, USA. The overwhelming predominance of *Geminospora* microspores and *Contagisporites* megaspores, along with the occurrence of *Callixylon* wood (including fusain), indicates a near monoculture in this primordial forest. John proposes this woodland grew near a stratified marginal lagoon with abundant microbial production. This locality at the NW corner of the American continent is important in mapping the distribution of the *Archaeopteris* plant whose deep roots played a major role in establishing the terrestrial carbon cycle.

Barry Lomax has organized a most interesting and productive meeting; all present will surely be looking forward already to next year’s reunion of the Palynology Specialist

Group at Burlington House which is planned to follow, as this year, a day after the Palaeobotany Specialist Group Meeting there. Our thanks go also to the staff and council of the Linnean Society of London for providing the premises, mid-session refreshments and concluding wine reception. Be sure to keep the right Thursday clear for the meeting in November 2018.

HL Pearson. EDF, UK.

[Hugh.pearson\(at\)edf-energy.com](mailto:Hugh.pearson(at)edf-energy.com)



FUTURE MEETINGS

2018

2018 5TH INTERNATIONAL PALAEO-TOLOGICAL CONGRESS (IPC 2018), PARIS, FRANCE, JULY 9 – 13, 2018

The 5th International Palaeontological Congress (IPC 2018) will take place in Paris, France, from July 9-13, 2018. Further information available at <http://www.ipa-assoc.org/docs/First-Circular-of-IPC5.pdf>

2018 XVII ARGENTINE SYMPOSIUM OF PALEOBOTANY AND PALYNOLOGY (SAPP): TOWARDS NEW CHALLENGES, PARANÁ-ENTRE RÍOS, ARGENTINA, 30TH JULY – 5TH AUGUST, 2018

The 17th SAPP symposium will be held for the first time in Paraná, in the Entre Ríos province of Argentina, between 30th July and 5th August, 2018. Deadline for abstracts' submission and early registration fee is next **30th January 2018**. For further information please visit the symposium webpage: <http://fcyt.uader.edu.ar/web/sapp2018>, or contact the local organiser Mercedes di Pasquo ([sapp2018\(at\)palino.cm.ar](mailto:sapp2018(at)palino.cm.ar)).

2018 10TH EUROPEAN PALAEO-BOTANY PALYNOLOGY CONFERENCE (EPPC), DUBLIN, IRELAND, AUGUST 12–19, 2018

The 10th EPPC will take place in Dublin, Ireland, from August 12-18, 2018. For further information, please visit the conference webpage: <http://eppc2018.ie>

2018 11TH INTERNATIONAL CONGRESS ON AEROBIOLOGY (ICA), PARMA, ITALY, SEPTEMBER 3–7, 2018

The 11th International Congress on Aerobiology (ICA): *Advances in aerobiology for the preservation of human and environmental health: a multidisciplinary approach* will take place in Parma, Italy, from September 3–7, 2018. For more information please visit the webpage: <http://www.ica2018.eu/>

2019

2019 XX INQUA CONGRESS 2019, DUBLIN, IRELAND, JULY 25 – 31, 2019

The XX INQUA Congress will take place in Dublin, Ireland from July 25-31, 2019. The congress theme will be "Life on the Edge", with additional sub-themes of "Dynamic Ice Sheets on a Global Scale", "Extinction", and "Adaptation to Environmental Change". Further Information available at http://iqua.ie/INQUA_2019.html

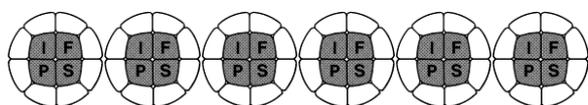
2019 VIII WORKSHOP ON NON-POLLEN PALYNOFORMS, BARCELONA, SPAIN, 2019

The VIII. Workshop on Non-Pollen Palynomorphs is foreseen to take place in Barcelona, Spain, in 2019 organised by Dr. Encarni Montoya, Institute of Earth Science Jaume Almera (CSIC), Barcelona, Spain. Further Information will be available in due times.

2020

2020 15TH INTERNATIONAL PALYNOLOGICAL CONGRESS (IPC) / IOPC XI JOINT MEETING, PRAGUE, CZECH REPUBLIC, 2020

The 15th International Palynological Congress (IPC) / 11th International Organisation of Palaeobotany Conference (IOPC) will take place in Prague, Czech Republic, in 2020. Further Information will be available in due times.



PALYNOLOGICAL HOMMAGE

A pioneer in Quaternary archaeobotany and palynology of the Middle East: in memoriam

Willem van Zeist (1924-2016)

On 7 October 2016 Willem (Wim) van Zeist, Professor Emeritus at the University of Groningen, passed away at the age of 92. He studied biology from 1945 to 1951 at Utrecht University and prepared his PhD (1951-1955) under the supervision of the archaeologist Professor Albert E. van Griffen (1884-1973). His thesis ‘Pollen analytical investigations in the northern Netherlands, with special reference to archaeology’ focussed on palaeobotanical and palynological research in the northern Netherlands and he attempted to make new, unexplored links between

archaeology and palaeoecology. Wim became an assistant at the Biological Archaeological Institute (BAI) at Groningen and was appointed researcher in 1957. Wim started analysing pollen and macrofossils from mounds, settlements, burial hills, peatlands, and pingos, and then began exploring areas in western Brittany and in the Paris basin.



Willem van Zeist, Photograph courtesy of Aukje Mennens-van Zeist.

In 1960/61 Wim van Zeist spent twelve months with Herb Wright at the University of Minnesota as a ‘visiting researcher’, leaving his wife and five children aged 2–10 behind. Wim analysed sediment cores from Lake Zeribar, western Iran, leading to a 17,000 yr long reconstruction published in 1963 in Science entitled ‘Preliminary pollen studies at Lake Zeribar, Zagros Mountains, south-western Iran’. Wright and Van Zeist showed that glacial conditions in this Middle East region were cool and dry. This work led to new hypotheses of environmental determinism in the origins of agriculture. Wim’s collaboration with Herb Wright led to three joint publications and he further developed research themes in the Middle East from his Groningen laboratory. He published about many countries; successively Iran (1963), Syria and Jordan (1966), Turkey (1968),

Greece (1971), Tunisia and Iraq, including Mesopotamia (1979), Cyprus (1981), Sudan (1983), Egypt (1987), and Israel (2009). In 1967 Wim was appointed Lector in 'Quaternary Palaeobotany' at the University of Groningen. His 1968 publication Prehistoric and early historic food plants in the Netherlands was an important milestone in research about the diversity of consumable food plants. In 1973, Wim was appointed Professor at the University of Groningen.

Sytze Bottema's thesis (1974) 'Late Quaternary vegetation history of northwestern Greece' provided strong support for the 1963 concept developed by Van Zeist & Wright of how a glacial-interglacial cycle developed in the Mediterranean area. Greek vegetation was dominated by cool and dry steppe vegetation during glacial times and oak-dominated Mediterranean forest during interglacial times. Together with Sytze Bottema, Wim van Zeist left an impressive body of research on the Middle East. The 1977 publication "*Palynological investigations in Western Iran*" is a classic and contributes to the basis of our current understanding of the early development of agriculture and vegetational and climatic change in the Middle East. He placed archaeological artefacts and local reconstructions of sites mentioned in the Bible in a regional context of changing climate and vegetation. He contributed very much to our understanding of early agricultural development in an environmentally changing world. Wim's research on prehistoric crop plants could easily be popularised for a wide audience and the interested layman could be absorbed by his fascinating stories. But in all his popular texts Wim always retained his scientific objectivity. However, when meeting him during a coffee break, it might happen that he would lift a small part of the veil on his fascinating and exciting adventures and memories. In 1983 he was elected a member of the Royal Netherlands Academy of Science. Wim van Zeist was co-editor of a number of books, including *Plants and Ancient Man* (Van Zeist and Casparie, 1984), *Man's Role in the Shaping of the Eastern*

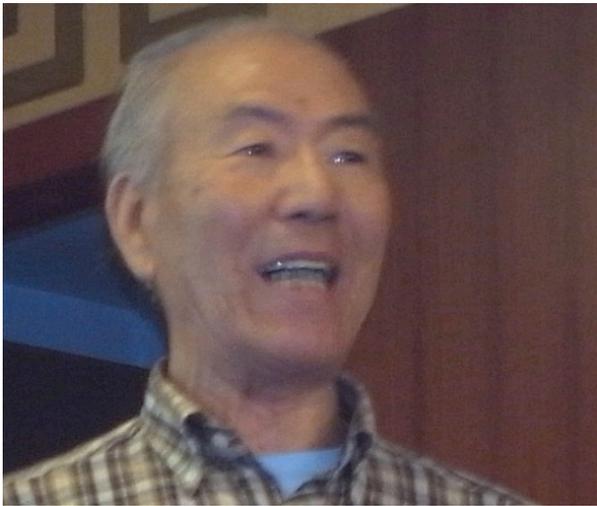
Mediterranean Landscape (Bottema et al., 1990), and *Progress in Old World Palaeoethnobotany* (Van Zeist, Wasylkova and Behre, 1991). In 1991, two years after Wim's retirement he completed with Sytze Bottema the now classic synthesis paper *Late Quaternary vegetation of the Near East*. Wim van Zeist published 204 publications, 85 about The Netherlands, 15 about Ireland, France, Switzerland and Yugoslavia, 1 about the USA, 4 about south-east Asia, and 99 with a focus on countries in the Middle East and North Africa. Wim supervised five PhD students: Willem Casparie (1972), Sytze Bottema (1974), Wim Gremmen (1982), Guus Lange (1988) and Ingelise Stuijts (1993).

Wim van Zeist provided many archaeological sites and antique cities with a palaeoecological context in which archaeologists could place their finds and narratives. Many of these sites are now sadly suffering from the effects of wars in the Middle East. The Quaternary botanical community will remember Wim as a prominent archaeobotanist, palaeobotanist, and palynologist who gave the Middle East an environmental and agricultural past.

Note: More information on Wim van Zeist can be found in Cappers & Kooi (2015/2016) *In memoriam Wim van Zeist*. *Palaeohistoria* 57-58, pp. 1-4; Cappers et al. (2015/2016), *Bibliography of Wim van Zeist*. *Palaeohistoria* 57-58, pp. 4-10; Hooghiemstra & Birks (2017), *Obituary Willem van Zeist: 12 March 1924-7 October 2016*. *Review of Palaeobotany and Palynology*. in press.

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[H.Hooghiemstra\(at\)uva.nl](mailto:H.Hooghiemstra@uva.nl)

Obituary for Song Zhichen (1929-2017)



Zhichen Song, one of the pioneering palynologists in China, passed away in Nanjing on August 28, 2017. Zhichen Song was born in Gangu county, Gansu Province in January 1929. He graduated from the Department of Biology, Fudan University in Shanghai in August 1952, and then was assigned to the Department of Palynology, Nanjing Institute of Geology and palaeontology, Chinese Academy of Sciences (NIGPAS) as a intern researcher in September 1952. From April 1954 to 1958, he successively seconded to work in the Palynological Laboratory of Geology and Mineral Resources Bureau, and Institute of Geological Sciences, Ministry of Geology and Mineral Resources in Beijing. He returned to NIGPAS in 1959, and promoted as assistant research professor, associate research professor, and research professor in succession. He was once the director of the Palynological Society of China (1988-2000), PSC councillor for IFPS (1988-1996), and the president of the Tenth International Palynological Conference (Nanjing, 2000). He was retired in June, 1996, and kept part-time working till at the age of 80.

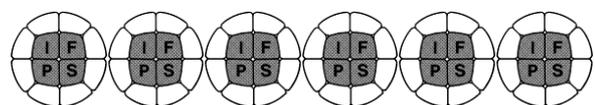
Zhichen Song had long been engaged in the study of palynology and related biostratigraphy. He was one of the major pioneers and academic leaders on the stratigraphic palynology in China, making

outstanding contribution especially to the late Cretaceous-Cenozoic palynology and stratigraphy. He had strong research ability and rich practical experience. His studies covered different regions all over China, such as Gansu, Qinghai, Shanxi, Jiangnan, Liaoning, Shandong, Jiangsu, Guangdong, Yunnan, Tibet, the coastal region of Bohai, East China Sea, etc., and Antarctica as well. Most of the local palynological assemblages established by him had become the standard sequences in stratigraphic correlation for oil and gas explorations, and were also frequently applied in national geological surveys. He was a prolific scientist with lots of publications. Some of them had become major reference books, and won various awards of national, provincial and ministerial levels. The books "Fossil Spores and Pollen of China (Vol. 1 and 2)" published in 1999 and 2000 respectively, became the century summary of stratigraphic palynological study in China.

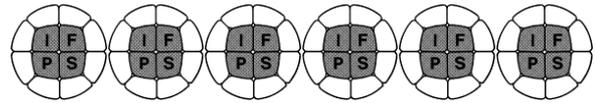
For decades, his footprints had spread throughout the provinces and regions in China, especially in some major oil fields. He had summarized and studied the relevant palynological data, and made great contribution in the national oil and gas exploration. At the same time, he had trained a large number of palynologists for some major oil companies in China. Since 1978, he also trained a number of high-quality master and doctoral candidates, and was an excellent tutor for graduate students. In the career of more than 40 years, Zhichen Song was devoted his life to science. He was always very kind, helpful, and got universal praise from colleagues.

We deeply cherish the memory of the late Prof. Zhichen Song.

Wei-Ming Wang (Department of Palaeobotany and Palynology, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences,
[wmwang\(at\)nigpas.ac.cn](mailto:wmwang@nigpas.ac.cn)



ANNOUNCEMENTS



NEW JOURNAL



quaternary

Dear colleagues,

I am pleased to announce the launching of a new open-access journal called “Quaternary” covering all aspects of Quaternary science (<http://www.mdpi.com/journal/quaternary>).

“Quaternary” aims to be a high-quality, multidisciplinary and influential journal in the field, for which we have assembled a high-quality Editorial Board covering the wide range of Quaternary disciplines (<http://www.mdpi.com/journal/quaternary/editors>).

Manuscript submission is already open (<https://susy.mdpi.com>). We accept papers of different types including palynology with no limits on space, figures and color (<http://www.mdpi.com/journal/quaternary/instructions>). Publication charges are waived for the first three years in order to stimulate potential authors to contribute. More details are available in the “Quaternary” website, where the inaugural editorial can be read and downloaded (<http://www.mdpi.com/2571-550X/1/1/1>).

I would like to encourage you to send manuscripts and share this invitation with your colleagues, and I remain open to any comments and questions you may have. Look forward to seeing your work published in “Quaternary”.

Thank you very much and best wishes,

Valenti Rull, Editor-in-Chief

[vrull\(at\)mdpi.com](mailto:vrull@mdpi.com)

PALYNOLOGY- RELATED COURSES

FIRST ANNOUNCEMENT ADVANCED COURSE in Jurassic - Cretaceous - Cenozoic ORGANIC-WALLED DINOFLAGELLATE CYSTS

Morphology - Stratigraphy - Palaeoecology

When: July 1st to July 6th, 2018

Where: Nottingham, United Kingdom

Costs: Academic €400; Consultant €800;
Industry €1200

Registration includes a license to the
new PALSYS.org dinocyst taxonomic
and stratigraphic database

Pre-registration: email your name and
affiliation to info@lpp-foundation.nl



The course takes place at the British
Geological Survey at Keyworth: very
close to the city of Nottingham,
and close to Birmingham Airport.

There will be a midweek field excursion
to sites of geological interest in the
nearby Peak District National Park.

Proposals for adjacent workshops will be
considered.

More info: info@lpp-foundation.nl;
www.lpp-foundation.nl



Presented by

**Peter Bijl, Appy Sluijs (Utrecht University, NL); Martin J. Head (Brock University, Canada);
Jörg Pross (Heidelberg University, Germany); James Riding (BGS, UK);
Poul Schiøler (Goodall Palaeo PTY LTD, Aus)**

With contributions from:

**Rob Fensome, Graham Williams (GSC Atlantic, Canada); Martin Pearce (Evolution Applied, UK); Roel Verreussel,
Dirk Munsterman, Alexander Houben (TNO, NL); Henk Brinkhuis, Francesca Sangiorgi (Utrecht University, NL)**

Local coordinator: J.B. Riding (Nottingham, UK)



MORGAN GOODALL PALAEO PTY LTD



Universiteit Utrecht





TNO



MASTER CLASS

**“Terrestrially-Derived Fossil Palynoflora:
Subsurface Application to Petroleum Geology”
July 16-20, 2018 Florence, Italy**

Course Instructors:

**Adele Bertini, Timme Donders, Guy Harrington,
Carlos Jaramillo, Gunn Mangerud, Robert Morley,
David Pocknall, Mercedes Pramparo, Mike Stephenson,
Jim Riding, Paul Strother, Roel Verreusel**

Course Organizers:

Adele Bertini, Peter Bijl, Thomas Demchuk, Timme Donders

Course Outline:

- General Pollen/Spore Morphology and Taxonomy, Concepts and Applications
- Paleozoic-Mesozoic-Cenozoic Spore Chronostratigraphy and Paleoecology
Special focus on Middle East, Southern Hemisphere, N.W. Europe, West Africa, Southeast Asia, North and South America
- Quaternary and Holocene Palynostratigraphy and Paleoecology

The Aims and Deliverables of the Class will be:

- To provide instruction on basic pollen/spore/algal taxonomy as an aid in identifying and classifying varied terrestrially-derived palynoflora
- To provide a general background into terrestrial palynomorph morphology, taxonomy, chronostratigraphy, paleoecology and paleoclimate through the Phanerozoic
- To provide case studies of standard and innovative industrial applications of terrestrially-derived pollen/spore/algae to subsurface problem solving, including calibration to sequence stratigraphic modeling
Middle East-Paleozoic: Southeast Asia-Cenozoic: West Africa-Neogene
- Each topic and lectures will be accompanied by microscope workshops
- A fieldtrip is being planned but is not yet finalized
- Anticipated Course Fees: Students €350, Academic/Consultant €650, Industry €1000

For additional information and interest in attending this Class please contact:
Thomas Demchuk at t-demchuk@swbell.net

CURRENT IFPS AFFILIATED SOCIETIES AND COUNCILLORS

The current list of the IFPS officers and IFPS councillors is provided below. The IFPS president (Jean Nicloas Haas), IFPS secretary-treasurer (James B. Riding), IFPS editor of *PALYNOS* (Encarni Montoya), and the IFPS Web-Master (Owen Davis) should be informed of any errors or necessary changes (email addresses below; postal addresses of all officers & councillors: <http://www.geo.arizona.edu/palynology/ifpscnc.html>). The list of current IFPS councillors also includes information on website addresses for the various societies. Please inform the IFPS Officers of possible website changes.

IFPS Officers	Affiliation	Email
IFPS President Jean Nicolas Haas	University of Innsbruck, Austria	Jean-Nicolas.Haas@uibk.ac.at
IFPS Past President Charles Wellman	University of Sheffield, England	C.Wellman@sheffield.ac.uk
IFPS Secretary-Treasurer James B. Riding	British Geological Survey, UK	jbri@bgs.ac.uk
IFPS Editor of <i>PALYNOS</i> Encarni Montoya	Institute of Earth Sciences "Jaume Almera" (CSIC), Spain	encarnacionmontoya@gmail.com
IFPS Web-Master <i>Vacant</i>		
IFPS affiliated Societies	Website	Councillors
American Association of Stratigraphic Palynologists – The Palynological Society (AASP – TPS)	http://www.palynology.org	Fabienne Marrret-Davies
Arbeitskreis für Paläobotanik und Palynologie (APP)	http://www.palges.de/arbeitskreise/ak-palaeobotanik-palynologie.html	Martina Stebich
Arbeitskreis für Vegetationsgeschichte der Reinhold-Tüxen-Gesellschaft (AVRTG)	http://www.reinhold-tuexen-gesellschaft.de/	Hermann Behling
Asociación Latinoamericana de Paleobotánica y Palinología (ALPP)	http://www.ufrgs.br/alpp	Mercedes di Pasquo
Asociación de Palinólogos de Lengua Española (APLE)	http://apple.usal.es	Pilar S. Testillano
Association des Palynologues de Langue Française (APLF)	http://laplf.org/	Marie-Pierre Ledru
Canadian Association of Palynologists (CAP)	http://www.scirpus.ca/cap/cap.shtml	Simon Goring
Collegium Palynologicum Scandinavicum (CPS)	www.palynology.info	Heikki Seppä
Commission Internationale de Microflore du Paléozoïque (CIMP)	http://cimp.weebly.com/	Gilda Lopes
Gruppo di Palinologia della Società Botanica Italiana (GPSBI)	http://www.societabotanicaitaliana.it/laygruppo.asp?IDSezione=22	Laura Sadori
International Association for Aerobiology (IAA)	https://sites.google.com/site/aerobiologyinternational/	Dorota Myszkowska
Linnean Society Palynology Specialist Group (LSPSG)	http://www.linnean.org/	Barry Lomax
Organisation of Czech and Slovak Palynologists (OCSP)	http://www.ocsp.eu/	Marianna Kováčová
Palynological Association of Nigeria (PAN)		Emuobosa Orijemie
Palynological Society of China (PSC)	http://www.chinapsc.cn/palynology/en/index.asp	Wei-Ming Wang
Palynological Society of Japan (PSJ)	http://www.psj3.org/	Hikaru Takahara
Palynological Society of Poland (PSP)		Milena Obremaska
Palynologische Kring (The Netherlands) (PK)	http://www.palynologischeskring.nl	Timme Donders
Palynologists and Plant Micropalaeontologists of Belgium (PPMB)		Philippe Steemans
Russian Palynological Commission (RPC)		Elena Novenko
Society for the Promotion of Palynological Research in Austria (AUTPAL)	http://www.autpal.at	Michael Hesse
The Micropalaeontological Society Palynology Group (TMS)	http://www.tmsoc.org/paly.htm	Manuel Vieira
The Palaeobotanical Society India (PBS) (Formerly called The Palaeobotanical Society of Lucknow, PSL)	http://palaeobotanicalsociety.org	Rama S. Singh
Turkish Committee for Palynology (TCP)		Zühtü Bati
Affiliation/Membership of the IFPS at:		
<i>International Union of Geological Societies (IUGS)</i>		<i>Lucy Edwards</i>
<i>International Union of Biological Societies (IUBS)</i>		<i>Jacques-Louis de Beaulieu</i>
Societies on hold/Former Societies of the IFPS:		
International Association for African Palynology		
Palynological and Palaeobotanical Association of Australia		
Philippine Palynological Society		

PALYNOS (ISSN 0256-1670) is published bi-annually (in summer and winter) and is distributed electronically to all IFPS Councillors for local distribution to individual members of their **International Federation of Palynological Societies (IFPS)** affiliate society. The newsletter is also posted on the IFPS website (see below).

We welcome news items, reports on society activities, reviews etc. and members should forward these to the editor:

Encarni Montoya

Encarnacionmontoya(at)gmail.com

Current IFPS web site at:

<http://geo.arizona.edu/palynology/ifps.html>

New IFPS website relaunch planned for 2018.

