PALYNOS

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NEWSLETTER OF THE INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES

CONTENT OF PALYNOS VOL. 41 (2)

IFPS BUSINESS

NEW IFPS WEBSITE

It took a while, but now we are pleased to announce the new website of IFPS:

- http://palyno-ifps.com/

The website is currently being uploaded with items of interest to the IFPS. However, a website makes only sense, if it is regularly updated, so please send us your items of palynological interest, and we will check them, possibly adapt them accordingly, and finally put them on the website thereafter.

As we are still looking for a webmaster to become member of the IFPS board of officers, this website is currently and provisionally maintained by the board of officers, who will for the moment decide on which items will be uploaded. Please send your information on society news, palynological events, opportunities, possibilities and locations to study palynology, etc. to:

Jean-Nicolas.Haas(at)uibk.ac.at
(the current president of IFPS).

And in case you might be interested to take over the job of a webmaster for IFPS, please send your written application to the same email address. We will evaluate possible candidates and the board of officers will decide on the future responsibility for the IFPS website thereafter. And most importantly: This new website is your (!) website, so please contribute to it, use it, and link it to your society webpage, so that we get a good visibility for our palynological field in the near future. Thanks and looking very much forward to get your feed-back!

Your IFPS board of officers: Jean Nicolas Haas, Charles Wellman, Jim B. Riding & Encarni Montoya.

PRESENTATION OF NEW IFPS COUNCILLORS

Tony Butcher

Commission Internationale de la Microflore du Paléozoique, CIMP

Tony graduated from the University of Portsmouth (UoP) with a BSc (Hons) Geology, and then undertook a part-time PhD project on chitinozoan biostratigraphy of early Silurian strata from North America and the Middle East (also at the UoP), supervised by Dr David Loydell (graptolite biostratigrapher). Following on from this, he undertook three years of postdoctoral research (also at the UoP, funded by ENI) focusing on chitinozoan biostratigraphy and acritarch morphological analyses from an exploration core in Libya, in order to both date and propose a depositional model for the 'hot' shale therein.

After the post-doc projects, in 2008, a position became available at the UoP as a lecturer/research fellow which Tony applied for and accepted - this has since evolved into his present role as the Course Leader/Senior Lecturer for the BSc (Hons) Palaeontology degree course that has been running at the UoP since 1996.

The administrative duties of running the course have slowed research activities somewhat, though he is still working actively on various chitinozoan biostratigraphy projects, undertaking industrial consultancy, and supervising undergraduate and postgraduate projects on palynology.

In addition to the new role as Director-at-Large for the Commission Internationale de la Microflore du Paléozoique (CIMP), Tony is also a member of council for The Palaeontographical Society.

The CIMP has undergone a change in membership of council, which can be found at the website (https://cimp.weebly.com/), and is looking to appoint a new students' representative on the council in order to make the society as relevant and accessible as possible to the new generation of Palaeozoic palynologists.

The CIMP sponsored a session titled 'Palaeozoic Palynology - Present and Future Research Directions' at the recent European Palaeobotany & Palynology Conference (details, and abstracts, at http://eppc2018.ie), and is planning to host a special session on Palaeozoic palynology at the AASP Annual Meeting in Ghent (1-3 July 2019).

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CONFERENCE REPORTS

10TH EUROPEAN PALAEOBOTANY & PALYNOLOGY CONFERENCE IN DUBLIN – IFPS FUNDED PHD STUDENTS REPORT

ALEXANDER ASKEW

The 2018 EPPC in Dublin marked my first time visiting Ireland, and the experience got off to an excellent start. After the icebreaker in the historic surroundings of Trinity College, Jennifer McElwain, chair of the organising committee, welcomed us to University College Dublin for the conference. “Us" included 401 delegates from around the world, an astonishing 110 of which were students like myself. The plenary and keynote speakers took us from Ireland to the frozen wastes of Antarctica, taking in such topics as amber and pollination along the way.

After seeing two days of talks on everything from Cambrian acritarchs to Burmese amber, there came the trip to the National Botanic Gardens at Glasnevin. There we saw their extensive plant collections and reconstructed Viking house, before the rain came down and we sheltered in their exhibition of Devonian fossils and palynology. The organisers declined to elaborate on whether it was there by design!

The following day saw more excellent talks before the gala dinner, held at the Guinness Storehouse. The historic venue only added to the quality of the meal, supplemented by judicious quantities of the local tipple!

The final day's talks and closing ceremony provided a fitting conclusion to what had been an exceptional conference. In the closing weeks of my PhD the EPPC certainly provided a fitting send off to my doctoral research. Hopefully the Swedish organisers can provide as good an experience in 2022.

Alexander Askew,
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CALIAN HAZELL

From the 12th to the 17th of August 2018 the peaceful Belfield Campus of the University College Dublin found itself descended upon by an international bonanza of a most unlikely kind- a diverse range of enthusiasts who all shared a unifying, to many on the outside inexplicable, fondness for palaeobotanical and palynological research. A whopping 401 delegates from 43 countries answered the call of 83 convenors by flocking to Ireland and the O’Brien Centre at the UCD in order to present 316 oral presentations and 156 posters across 35 special sessions. And I, on Sunday the 12th of August, arrived on campus one of 110 students attending this quadrennial event. It wasn’t however, in the grounds of the UCD that the initial jovialities took place, for that evening in the Dining Hall at Trinity College Dublin in the heart of Dublin’s city centre, the European Palaeobotany and Palynology Conference 2018 began!

Hello. I am Calian Hazell and I am getting ahead of myself so please allow me to back up a little. I am a third year PhD student at Northumbria University examining the potential relationship between palaeoclimate records and archaeological archives in the eastern Mediterranean, with specific focus on producing a palynological and diatom dataset from southern Cyprus. I was honoured enough to receive funding courtesy of The Micropalaeontological Society and the International Federation of Palynological Societies to attend and present my work at the EPPC 2018.

The EPPC 2018, taking place a short bus ride south from Dublin city centre, was, it is fair to say, a momentous affaire. It was the culmination of four years' work by the UCD, Trinity College Dublin, the Dublin Botanical Gardens, the National Museum and Key Note. And why? Well, as Professor Jenny McElwain (Trinity College Dublin) Chair of the Organization and Scientific Committee put it, the EPPC was to be "memorable, enjoyable, and scientifically fruitful", with the further aim of "meeting friends and exploring pubs". Throughout the course of the following ten days, seven field trips and a conference dinner at the Guinness Storehouse were provided for just those purposes. Field trips featured a Hop On / Hop Off Bus Tour of Dublin, a visit to the Dublin Botanical Gardens, the Historical Dublin Walking Tour, a trip examining the Glaciation and Palaeoecology of the Wicklow Mountains, and a post conference three-day excursion to Killarney (southwestern Ireland) to experience the Killarney Valley, the Ring of Kerry at Iveragh Peninsula, the world heritage site of Scelig Mhichíl, Valentia Island, and the Killarney National Park.

Returning to the Trinity College welcome reception, the waiters mingled amongst the guests introducing enough entrées to the delegates to comprise a three course dinner of lamb meatballs, mini quiches, chicken in a herby coating and sweet chilli sauce, and, best of all, these amazing little pastry bites with a strip of what may have been salmon on top. I am sure there were more food options, but there was also a great deal of wine available. When asked, Jenny McElwain expanded on her own personal goal for the conference, saying her "main aim is to break down the silos of research conferences and be multidisciplinary." At the time, I had no idea quite how multidisciplinary palaeobotany and palynology could be- safe to say I was in for quite the surprise. One conference attendee known only as "Steph" described the welcome reception as, "fantastic". I would wholeheartedly agree. That night some split off to find a spot of dinner (frequently featured on menus was Irish Guinness beef burger, Irish Guinness battered fish and chips and Irish beef and Guinness pie), while others split off to find a spot of drink. I was part of the latter group, and stuck to Guinness in its best and most liquid form.

The next day, after a complimentary breakfast for those staying at the UCD (it was supposed to be five items maximum, but I ended up with six due to some typically English confusion on my part- sorry Tomáisín, I know I said I wouldn't tell…), we all migrated to the O'Reilly Hall for the plenary speakers' "Fabulous Fossil Talks". First, Professor Pete Coxon (Trinity Collage Dublin) discussed the landscape evolution of Ireland over the last 65 ma. Following his review of the dramatic geological, tectonic and palynological history of Ireland I came to the realization that Dublin was once far more exotic than it is today, a fact making me wish the conference was held in the Mid-Pleistocene rather than 2018. The other plenary speakers were Professor Jane Stout (Trinity College Dublin) who discussed pollination from a biologists perspective, and Associate Professor Caroline Strömberg (University of Washington) who discussed the evolution of grasses. Caroline suggested that grasses may have diversified during the early Cretaceous, which is a personal victory for me as the drawing I made as a child of an *Archaeoceratops* creeping through tall grasses in the woods is finally scientifically plausible. Doctor Leyla Seyfullah (University of Göttingen) presented "A world full of amber", with the main takeaway message (other than many beautiful photos of fossils within amber) being that dinosaur DNA is absolutely not preserved in amber. I struggled to maintain concentration after such a crushing blow, however thankfully the presentations by Benjamin Bomfleur (University of Münster) and Claire Belcher (University of Exeter) brought me back around with their respective talks on Antarctic expeditions and fire-feedbacks in the Earth system.

After a short break, the main meat of the conference sandwich began- the special session presentations! With 35 special sessions running 316 presentations there were often five or six talks running at any given time, compounding the issue of having such a wide variety of options to start with. In the spirit of the conference, my goal for the talks was to see as many multidisciplinary lectures as possible. To give you a short idea of the sort of variation on offer, I will briefly go through the first four talks I went to. 1) Barry Lomax (University of Nottingham) discussed his experience using $\delta^{13}C$ as a proxy for palaeoatmospheric CO_2 levels, rather than as the more conventional precipitation proxy. 2) Alistair Seddon (University of Bergen) discussed UVB proxy development using *Pinus* pollen grains. 3) Christopher West (University of Saskatchewan) discussed the Arctic megaflora of the Eocene in Canada, and those who attended the conference will surely remember with a great fondness the most interesting layout to a lecture hall ever conceived, opting for the unconventional screens-at-either-end-and-circular-tables-dotted-in-between approach. 4) My last talk before refreshments was billed under Anthony Butcher (University of Portsmouth) an undergraduate lecturer of mine. Thankfully we had had the chance to catch up the night before, so I was not too surprised when instead of Anthony, an expert from the petroleum industry talked us through the biostratigraphy of Silurian chitinozoan assemblages in Saudi Arabia. This was an incredibly detailed treat for us oily folk who like their shales hot.

Over the course of the next five days I would attend roughly 60 presentations, and while this was only a fifth of the potential spread, I cannot do justice to each. On Monday and Tuesday a few stand out talks for me included Alessia Masi's (Sapienza University of Rome) talk examining Byzantine societal resilience as inferred by pollen and geochemical evidence in Greece, Claudia Moricca's (Sapienza University of Rome) "buckets-of-fun" talk taking us through the various remains discovered in a domestic rubbish pit from the 15^{th}-16^{th} centuries of Rome and Laura Russo's (Trinity College Dublin) talk on honey bee apple tree pollination in New York. For the remainder of Tuesday and Wednesday the special sessions on 'Quaternary vegetation, climate, fire, and plant resilience in Europe and the Near East', and 'A world full of amber' provided me with both some excellent academic insights and some more amazing photographs of amber. On Thursday morning I gave my first ever oral presentation at an international conference. Yikes! I was in the session titled, 'High temporal resolution palynology and palaeoecology – from centennial decadal vegetation change, to yearly flowering cycles and seasonal insights from stratified Quaternary deposits' chaired by the President of the International Federation of Palynological Societies, Professor Jean-Nicolas Haas (University of Innsbruck). After I presented, I had some insightful feedback and pragmatic suggestions in how to proceed from Professor Haas and Professor Thomas Litt (University of Bonn), for which I am very grateful. The rest of the day slipped past in something of a euphoric blur.

So, for those who could not attend the conference, I hope you now feel somewhat updated as to the academic events that took place. However, as previously mentioned, a key official goal of this conference was "meeting friends and exploring pubs". With this in mind (and as a thank you to the reader for staying with me this far) I will dedicate this short paragraph to the out-of-hours itinerary embarked upon by my cohort. On Monday night we ate at a gastro-pub on Parliament Street. As an English citizen (hostage?) I felt well at home in this gentrified pub. Thankfully, the constant assurances that each item on the menu was 100% Irish (and normally incorporated Guinness in some way) sought to remind me that I was, in fact, in an exotic locale. After this we went to a great little pub on Fishamble Street (yes, Fishamble Street, stop

sniggering at the back there), partly because it had a superb atmosphere and live music, and partly because it was right next door to my supervisor's hotel. A second night of jubilatory note was Thursday, when we ate Indonesian tapas in Temple Bar. Now this is where fine dining is at in Dublin. If you like Indonesian, or tapas, or food, I highly recommend you find this restaurant. We finished the evening at the famous Ha'penny Bridge Inn with a round of whiskeys to toast the future like the good tourists we were. The whiskey was very good, but I'd recommend applying for a separate grant in order to afford it.

And so, we come to the end of my EPPC 2018 story. It was an incredible event, filled with exciting and energising lectures, unforgettable meetings, excellent sight-seeing, delicious meals, and quite a lot of Guinness. Before I go, I would like to extend a massive thank you to both of my supervisors at Northumbria University, Doctor Matthew Pound and Doctor Emma Hocking, as well as TMS and the IFPS for funding my attendance to the EPPC 2018. And dear, dear reader, if you see me at the next conference, please don't be afraid to come and say hello. I will leave you with the words of a wiser man than I, "Is fearr Gaeilge briste, ná Béarla clíste", so, with that in mind, 'Slán'!

Calain Hazell
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EMMA REEVES

I was delighted to receive a travel grant to attend the tenth EPPC held in Dublin in August. I am a final year PhD student at the University of Southampton, UK, supervised by Professor John Marshall on the TW:eed project (Tetrapod World: early evolution and diversification).

My oral presentation enabled me to convey the extensive palynological data I have collated. Titled 'Post-extinction recovery of terrestrial vegetation following the End Devonian Mass Extinction: integrated palynological and palaeobotanical evidence from the Tournaisian (Early Carboniferous) of the UK', it was well received and sparked some debate. As the conference focused on palaeobotany as well as palynology, I reported our interpretation of the plant life and the development of the dominance of different plant groups throughout the Tournaisian stage and demonstrated how the vegetational changes may be linked to newly discovered climatic cycles.

Well organised (especially the food!), I found two of the Special sessions particularly valuable. The CIMP-sponsored 'Palaeozoic palynology' afforded me the opportunity to network with other Palaeozoic palynologists. Highly supportive, they gave me lots of encouragement and advice regarding net-working opportunities and directions my research could pursue.

'Celebrating the career of Bill Chaloner' was excellent. I first met Bill at a TMS Palyno-logy Group meeting at the University of Birmingham in June 2014. Most affable, I was surprised to find that he, just as myself, had been a mature student. We next conversed at the Linnean Society's Palaeo-botany Specialist Group meeting in London in November 2014 where I gave my first ever presentation: 'Megaspores of the West Mains Farm Borehole, Tournaisian, England'. Bill disagreed with one of the identifications I had made of a megaspore but soon set me on the right track. I fondly remember how helpful he was and interested in my research.

For me, the EPPC brought together a diverse mix of palaeontological and modern, botanical and palynological experts and proved an enjoyable and memorable addition to my future career.

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MELISSA SEHRT

Report on the Special Session 7: Melissopalynology, Pollen Morphology and Dispersal.

Convenors: Irina Delusina (University of California, USA), Cláudia Inês Silva (University of São Paulo, Brazil), Mackenzie L. Taylor (Creighton University, USA), Elena Severova (Moscow State University, Russia), Laura Russo (Trinity College Dublin, Ireland). Tuesday 14th August 2018.

Irina Delusina (University of California, USA) who made a general introduction to melissopalynology, and set the basics for this session, gave the first talk in this session. She described the new advantages of melissopalynology, also reflected in the following talks providing insights on various applications, like answering modern nature problems and using melissopalynology in studying climatic effects, reconstructing paleoclimates, and calculating environmental forecasts.

Cláudia Inês Silva (University of São Paulo, Brazil) introduced the online pollen catalogue network PCPol (rcpol.org.br) created in 2013. This platform enables researches not only to interact among each other and to upload and share their data like from pollen collections, herbaria and bee collections, but also provides keys for species identification.

With the next talk, *Mackenzie L. Taylor* (Creighton University, USA) took the audience back to the basics of understanding the traits of water-pollination while analysing the entire pollen lifecycle in *Ruppia maritima.*

Elena Severova (Moscow State University, Russia) showed the loss and re-gain of pollen apertures using the basal monocots of the order Alismatales as a model. Taxa of this group showed loss of apertures like in the family Scheuchzeriaceae, even if the genus *Althenia* on the other hand showed a de novo origin of the aperturate conditions.

Since the last two talks were mainly focusing on pollen morphology and pollen development, the final talk of the session by *Laura Russo* (Trinity College Dublin, Ireland) showed that melissopalynology is useful to detect target species when it comes to conservation management of bees by investigating the composition of collected pollen on pollinators in New York apple orchards, USA.

Overall, this session revealed the fascinating world of pollen morphology and scientific broadness of melissopalynology, which in the latter case is more than ever important in view of current and future research on climatic change, as well as on the impact of chemical agents and parasites on bee populations worldwide.

For me personally as a master student, this session triggered my interest in how co-evolution of plants and pollinators influenced pollen morphology traits, and motivated me with my future research to tackle the open questions of pollination mechanisms.

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IFPS SOCIETIES' REPORTS

Report on Linnean Society Palynology Specialist Group Meeting, London, 27 November 2018

Barry Lomax (Nottingham) convened and chaired this day of palynological talks at Burlington House, Piccadilly. It brought together about 30 workers in this field from across the UK, China, France, Germany and Norway.

Thomas Servais (Lille) spoke about Lower Palaeozoic acritarchs, trying to make sense of them in ecological, taxonomic and other biological contexts. He drew comparison with human morphotypes and the variabilities displayed by dinoflagellate cysts and Cannabis foliage. Richard Bateman reminded us of the disparity between morphotypes and DNA-based taxa amongst some extant orchids; caution is certainly advisable when interpreting acritarch biology.

Geoff' Warrington (Leicester) described both the human and palaeobotanical histories of the isospores produced by one of the few whole plants known from the Trias; viz. the small bryophyte *Naiadita*. In the centenary of the first female Fellows admitted to London's Linnean Society, it is apt that the first photographs of *N. lanceolata* isospores were published by one Miss IBJ Sollas in 1901. Linked with the dispersed spore *Porcellispora*, subsequent work has shewn this bryophyte was much more widespread in Rhaetian times than in the Bristol area alone. Palynology reveals its presence from Devon to Yorkshire in England, in N.Ireland, northern and central mainland Europe, N.Africa, the Middle East and N.America.

Matt' Kent (Nottingham) described the use of Fourier Transform Infrared Spectroscopy (FTIR) combined with the SporoSpec analytical programme to investigate the chemical structure of sporopollenin and cutin. This combination, allowing faster analysis of large numbers of sporomorphs, has been applied to grains from near the Permo-Triassic boundary; a time when ozone loss and higher UVB levels might have resulted in higher rates of mutation, eg malformation of tetrads. FTIR is also applied to palaeoaltimetry-eg to decide in which Cainozoic epoch/s the Tibetan plateau and Himalayas were elevated. The distinction between inherited mutations and temporary disruption of tetrad development was discussed.

Shu Wenchao (Wahan, China) compared the Late Permian megafossil plants and palynomorphs of northern China, land which lay between 30 and 40 degrees N on the eastern side of Pangaea at that time. Mudstones within redbeds yield voltzialean conifers, peltasperms and *Neocalamites*, preserved along with bisaccate pollen, *Cycadopites* and *Lundbladispora*. Many of these palynomorphs are dark-walled and some appear malformed; again this might be related to low ozone and high UVB levels. Barry Lomax expressed no concerns when it was queried whether high thermal maturity in these Chinese strata might influence application of FTIR to these grains.

Borja Cascales Minana (Lille) spoke about spore diversity in the Lower Devonian Posongchong Formation of SW China. Of the 32 species from 18 genera of sporae dispersae so far identified, *Aneurospora* and *Retusotriletes* are the most abundant, with *Emphanisporites* notably absent. Dianne Edwards remarked that very few mega fossil plant species are common to the early Devonian floras of southern China and Laurussia; the contemporaneous fish fauna of that part of China also displays marked endemism.

Emma Reeves (Southampton) built upon her 2017 presentation here with further details of the Tournaisian micro- and megafloras of the Anglo-Scottish border. Linking *Setosispora* with the small lycopsid *Oxroadia*, *Didymosporites* with the fern-like *Stauropteris*, plus the prepollens

Colatisporites decorus, *C. denticulatus* and *Prolycospora* with the ovules *Stamnostoma*, *Lyrasperma* and *Genomosperma* respectively, she reconstructed a highly dynamic environment; one in which terrestrial vegetation was recovering from the End Devonian Mass Extinction under a cyclical wet/dry climate.

Julia Gravendyck (Berlin & Oslo) described palynological events around the Triassic/ Jurassic (T/J) boundary using fossils from Bonenburg, near Mariental, Germany. Situated around 30 degrees N at that time, the well-preserved grains (Figure 1) from Upper Rhaetian beds became much darker near the T/J boundary, in the so-called Triletes Bed. Hirmerellacean conifer pollen (*Classopollis*) is found here often in abnormal tetrads and a fern-spike with abundant *Polypodiisporites* is also associated with the T/J boundary. As with the End Permian extinctions, discussion dealt with proposed high levels of UVB, heat stress and/or increased heavy metals concentrations as possible causes for these abnormal palynomorphs.

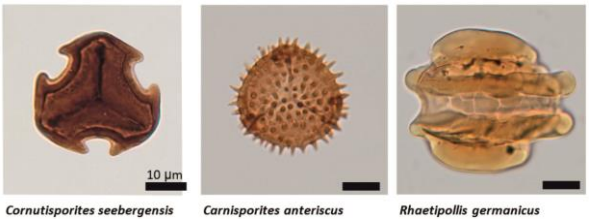

Figure 1: Photographs courtesy of and © of Julia Gravendyck (Freie Universität Berlin). Palynomorphs are from a new outcrop 'Bonenburg' in North Rhine-Westphalia (Germany) from the Exter Formation (Triassic) in the Germanic Basin.

Eva-Maria Sadowski (Goettingen) showed us remarkable pollen organs from Baltic amber of late Eocene age. Most of these have fagacean affinity and, following research since the nineteenth century, about 6 species of staminate inflorescences are now recognized in this Lagerstaette. The morphology of the anther apices, mode of filament fixation and in situ pollen provide critical taxonomic characters. Along with other angiosperms and conifers, these fagacean fossils help to reconstruct the Baltic amber environment; coastal swamps, a riparian floodplain and a combination of meadows/mixed woodlands free of flooding. An example of modern Fagaceae (*Quercus robur*) male inflorescences present by Eva-Maria is shown below (Figure 2).

Figure 2: Extant Fagaceae (*Quercus robur*) male inflorescences. Photographs courtesy of and © of Eva-Maria Sadowski.

Martha Gibson (Sheffield) has examined pollen and spores from the Zechstein forest of NE England, late Permian in age (Some of wonderful palynomorphs are shown in Figure 3). These come from conifers, pteridosperms and sphenopsids that lived around the repeatedly-transgress/regressive Zechstein Sea situated in the tropics of Pangaea. Alongside light microscopy, Martha made TEM sections of *Luekosisporites vikkiae* that had not been treated with Schultze's solution. These spores show variation in shape and size related to differing degrees of hydration; so-called harmomegarthy. Spore contents here have been interpreted as protoplasmic residues, fragments of micro gametophyte and/or perhaps a new record of Zechstein chytrid fungus.

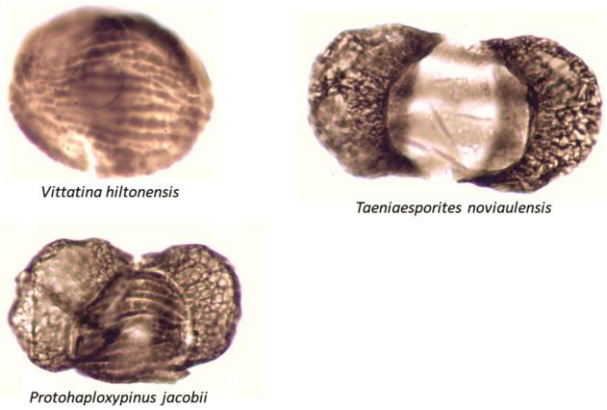

Figure 3: Photographs courtesy of and © of Martha Gibson (University of Sheffield). Palynomorphs are from the Cadeby Formation from a railway cutting in Kimberley, Nottinghamshire.

Steve' Stukins (London) carried out nanotomography on certain bisaccate pollen, particularly from extant Pinaceae and some Jurassic grains from the Isle of Eigg, Scotland. Surprisingly, this disclosed a foam-like interior for these exines. The function of this spongy, light and durable layer remains obscure; its permeability is unknown. X-ray fluorescence mapping shows some areas of calcium concentration in this foam-like material. Calcium is an inhibitor of pollen tube growth. Paula Rudall suggested a possible link with the change from proximal spore germination in pteridophytes to distal in spermatophytes.

Georgina Brennen (Bangor, N Wales) has investigated some allergenic properties of grass pollen. The abundance of such pollen in the northern hemisphere from May to September 2018 allowed target, high-throughput sequencing of Poaceae pollen from several localities across Great Britain. DNA metabarcoding shows that all British grass genera have discretely-timed and sequenced peaks of pollen incidence. Subsequent discussion included some surprise that plastid DNA has been detected in pollen from Poaceae, *Pinus* and *Urtica*.

Luke Mander (Milton Keynes) addressed the perennial issue of the latitudinal gradient in biodiversity. He reviewed many Holocene lake sediment logs from Greenland to Brazil in order to explain the evolution of plant morphology in a biogeographical context. Luke finds the peak diversity in angiosperm pollen forms at the highest latitudes; its minimum oddly occurs from 40 to 50 degrees N. Moreover, taxonomic diversity does not equate to morphological diversity in angiosperm pollen. Work by Chaloner, Crane et al. proposes that functionality has a greater influence than has phylogenetics in this question. John Marshall and others suggest that sedimentological considerations play a role here too, such as the proximity of beaches and/or slopes to the lakes where the pollen was fossilized.

This day of diverse and fascinating presentations concluded with a wine reception in the library of the Linnean Society. We thank the Society for its warm welcome. Barry Lomax is to be heartily congratulated for organizing such a successful and enjoyable event. Please note next year's Linn.Soc. Palynology Specialist Group meeting will take place at the same venue but at the earlier date of Thursday 24 October 2019; a Red-Letter Day to keep free in your agenda.

Report written by:
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Report on Miscellanea palaeontologica 2018, Liége, 10 October 2018

A joint meeting of the NFRS Working Group: Micropaléontologie végétale et Palynologie (MVP) and the Palynologists and Plant Micropalaeontologists of Belgium (PPMB) was carried out at the University of Liège last October. Program and abstracts have been edited by Philippe Steemans and Philippe Gerrienne, if you are interested in the abstracts book, please contact to Philippe Steemans (p.steemans(at)uliege.be).

FUTURE MEETINGS

2019

2019 1ST MEETING OF THE IBERIAN ECOLOGICAL SOCIETY (SIBECOL) & XIV AEET MEETING, BARCELONA, SPAIN, FEBRUARY 4-7, 2019

Coinciding with the commemoration of the centenary of the birth of Prof. Ramón Margalef, we are pleased to announce the 1st Iberian Ecological Society Meeting, concurring with the XIV Meeting of the Spanish Society of Terrestrial Ecology (AEET). The conference is aimed to be the kickoff of SIBECOL (Sociedad Ibérica de Ecología) a new scientific society, joining ecologists from Iberian countries, whatever the system or approach they work on. During the conference, several sessions will deal with ecological questions that require long-term datasets, and/or the use of palynology. Further details and sessions can be found at: http://congresosociedadibericaecologia2019.net

2019 PALYNOLOGICAL ASSOCIATION OF NIGERIA CONFERENCE ANNOUNCEMENT & CALL FOR PAPERS, ADEKUNLE AJASIN UNIVERSITY, AKUNGBA AKOKO, ONDO STATE, NIGERIA, MAY 5-9, 2019

The Palynological Association of Nigeria wishes to inform all that her biannual conference will hold at the Adekunle Ajasin University, Akungba Akoko, Ondo State, Nigeria between May 5 and 9, 2019.

The theme of the conference is *"Palynology: a veritable tool for achieving the millennium development goals"*.

The sub-themes are:

• Flood management and environmental restoration
• Human Ecology: Lessons from the past (Palaeoethnobotany)
• Honey and Pollen: Standardisation, health benefits and Economic Importance
• Aeropalynology and Public Health
• Palynomorphs in Pharmaceutics and human health promotion
• Current Challenges in mineral exploration: Palynomorphs to the rescue

Details available in the PAN Website: http://www.palynologica.com.ng/

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2019 10TH WORKSHOP OF THE NECLIME WORKING GROUP ON "TAXONOMY OF NEOGENE PALYNOMORPHS", WEIMAR, GERMANY, JUNE 17-20T, 2019

The NECLIME working group on "Taxonomy of Neogene Palynomorphs" is going to organize an annual workshop, which will take place in Weimar, Germany, from June 17th to 20th, 2019 at the Senckenberg Research station of Quaternary Palaeontology. The primary scientific focus will be on the vegetation evolution in Central and Eastern Europe and further include topics on:

• palaeo-ecological implications of Non-Pollen Palynomorphs (NPPs) and palynofacies
• conifer pollen in the Neogene record – taxonomic level of identification
• plant diversity patterns in pollen records – regional comparisons (China – Central Europe)
• Cenozoic palynomorph taxa with unclear taxonomy, botanical affinity, and climatic requirements
• new updates for the improvement of the NECLIME NLR database
• re-evalutation of Neogene palynomorph records using TLM/SEM in combination - activities and information on ongoing research
• relevant resources available to palynologists for botanical identification of palynomorphs

• high-resolution pollen analyses to study short-term climate and vegetation dynamics

Further time for a round table discussion and microscope work is scheduled. Additional suggestions are highly welcome and the focus on specific taxa can be considered if informed timely in advance. The 1st circular contains more details on the proposed topics, information in the preliminary schedule and information on the cultural history of Weimar, and it can be downloaded here.

For registration and further questions, please send an email to Martina Stebich before the **deadline of March, 31st, 2019**!

2019 52ND ANNUAL MEETING AASP-THE PALYNOLOGICAL SOCIETY, GHENT, BELGIUM, JULY 1-3, 2019

For details please consult:
https://palynology.org/aasp-2019-meeting/

2019 MEDPALYNO (APLF-APLE-GPPSBI) CONFERENCE, BORDEAUX, FRANCE, JULY 9-11, 2019

It is our great pleasure to announce that the Mediterranean Palynological Societies Symposium 2019 will be held in Bordeaux city center from July 9 to 11, 2019.

MedPalyno 2019 will be the next joint symposium of the Association des Palynologues de Langue Française (APLF), the Asociación de Palinólogos de Lengua Española (APLE) and the Gruppo di Palinologia e Paleobotanica della Società Botanica Italiana (GPPSBI). It aims at gathering all French-, Spanish- and Italian-speaking palynologists working on paleopalynology, aerobiology, melisso-palynology, pollen biology and pollen morphology.

We are pleased to announce that registration and abstract submission for the Mediterranean Palynological Societies Symposium 2019 (July 9-11, Bordeaux) are now open. The **deadline for abstract submission is February 15, 2019**.

All information and guidelines for abstract submission and registration are available on the conference website:
https://medpalyno2019.sciencesconf.org.

Note that abstracts can only be submitted via the online submission system available on the website. Abstract submission will only be effective once registration is completed.

Abstract can be submitted in one of the four proposed sessions:
• Session 1: Aeropalynology
• Session 2: Morphology-Biology-Biochemistry of pollen
• Session 3: Melissopalynology
• Session 4: Paleopalynology

A fieldtrip is planned on July, 11 (afternoon) on "Geology and Bordeaux wines: the example of the Margaux AOC". If you want to join, you need to apply while registering to the conference. Please do it quickly because there is room for only 40 people!

2019 VIII WORKSHOP ON NON-POLLEN PALYNOMORPHS, BARCELONA, SPAIN, JULY 15-19, 2019

The VIII Workshop on Non-Pollen Palynomorphs is foreseen to take place in Barcelona, Spain, organised by Dr. Encarni Montoya, Institute of Earth Science Jaume Almera (CSIC), Barcelona, Spain. We are glad to announce that for this occasion, we are planning a joint workshop of non-pollen palynomorphs and phytoliths, co-organised by Dr. Marco Madella, University Pompeu Fabra, Barcelona, Spain. **Deadline for early registration and abstracts submission: 31st March 2019. L**imited places! For detailed information and further updates:
www.phytolithsandnpp.org

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". See http://www.inqua2019.org

2019 International Mountain Conference (IMC2019), Innsbruck, Austria, September 8-12, 2019 – Specific Topic 1.4. Human Environmental and Social Interactions in Mountain Landscapes - the Paleo-Perspective

Coordinators: Gert Goldenberg (a), Michael Meyer (b), Klaus Oeggl (c), Peter Tropper (a)

Alpine environments are sensitive ecological systems that are prone to climatic and anthropogenic perturbation. While many research initiatives are investigating the impact of our industrial society on alpine landscapes and ecosystems or are looking for possible adaptation and mitigation strategies under warming climatic conditions, comparatively little research has been directed towards a systematic study of human-environmental interactions in alpine environments by pre-industrial societies or during pre-historic times. Such paleo-perspectives, however, provide a long baseline of past changes needed to understand the natural variability of alpine environments and its resilience over a variety of timescales. Paleo-perspectives and long-term timelines also provide a variety of links to scientific research results and datasets.

For the upcoming IMC2019 hosted by the University of Innsbruck, Austria, we are seeking contributions from researchers focusing on (geo)archaeological, palaeo-environmental, and palaeoclimatic research in Alpine environments. The goal is to create a platform for researchers interested in understanding the historic and long-term perspective of alpine climates and ecosystems and the changing role of humans using these environments. In order to improve our understanding of human-environmental interlinkages and to provide a foundation for interpreting their current status and future trends the European Alps might serve as a focus point, but contributions from other mountain ranges around the globe are particularly welcome as well.

Workshop a: Alpine mining – impact on environment and human societies

Workshop b: Alpine pathways, trade routes & migration

Workshop c: Subsistence strategies of alpine communities

The IMC2019 (www.imc2019.info) aims to encourage in-depth cross-disciplinary discussions towards a new understanding of mountain systems, their responses and resiliencies. It aims to build upon the three previous mountain conferences that took place in Perth, Scotland, continuing this special scientific conference series with a focus on mountain-specific topics. Hosted in the Alps, the IMC 2019 will provide an excellent opportunity for experts from different disciplines to come together and discuss mountain-related issues. The application phase is open until February 14, 2019, 17:00 UTC+1. (https://www.uibk.ac.at/congress/imc2019/program).

2019 Linnean Society Palynology Specialist Group Meeting, London, October 24, 2019

Palynology Specialist Group meeting will take place on Thursday 24 October 2019 in London, a Red-Letter Day to keep free in your agenda. Further details will be announced in due times.

2020

2020 15th International Palynological Congress (IPC) / IOPC XI Joint Meeting, Prague, Czech Republic, September 12–19, 2020

1820 – 2020: 200 YEARS OF MODERN PALAEOBOTANY

15TH INTERNATIONAL PALYNOLOGICAL CONGRESS (IPC) / XITH IOPC JOINT MEETING, PRAGUE, CZECH REPUBLIC, SEPTEMBER 12–19, 2020

We would like to invite you to the XVth International Palynological Congress and XIth International Organization of Palaeobotany Conference from September 12th to 19th 2020 in Prague, Czech Republic.

An international joint meeting of the whole community is dedicated to the 200th Anniversary of Modern Palaeobotany, as 1820 was the starting point of palaeobotanical nomenclature infered from the the first issue of "Flora der Vorwelt" the principal work of the Czech "Father of Palaeobotany" Kaspar Maria von Sternberg.

Palynology and Palaeobotany have a long tradition in the Czech and Slovak Republics with several famous pioneers including Kaspar Maria von Sternberg, Karl and Otakar Feistmantels, August Joseph Corda, Dionýz Štúr, Karel Bořivoj Presl, as well as world wide known Czech palynologists and palaeobotanists of the modern era e.g. Blanka Pacltová, Milada Vavrdová, Zlatko Kvaček, František Němejc, etc.

Scientific programme will cover, in oral and poster presentations, all aspects of palaeo-, actuopalynology and palaeobotany. During the field trips, organized across the time and space, participants will be allowed to see Lower Palaeozoic of the famous Barrandien area, to touch at the Pennsylvanian plants of Western Bohemia, to visit Tertiary and Quaternary sequences at the localities in North Bohemia and Southern Moravia, and last but not least, to know the cultural and natural specificities of the various parts of Bohemia and Moravia.

Preliminary programme, deadlines and related informations will be announced via:

www.prague2020.cz

as well as via:

https://www.facebook.com/ipciopc2020

by the beginning of 2019.

Congress Venue: Clarion Conference Hotel (www.clarioncongresshotelprague.com/en)

It will be our pleasure to welcome you all to Prague2020!

Organizing committee in cooperation with Conference Partners Prague Ltd.

PALYNOLOGICAL HOMMAGE

In memoriam Waldo Zagwijn (1928-2018): West European Neogene and Quaternary climate- and chronostratigraphy

At the age of 89 professor Waldo Heliodoor Zagwijn died after having dedicated his life to geology and palaeobotany. He developed the climate- and chronostratigraphical framework of Western Europe and he painted a 3-dimensional understanding of The Netherlands-below-the-surface.

Waldo Zagwijn (16 October 1928-26 June 2018) studied geology at the University of Leiden from 1947 to 1952. In 1954 he joined the Geological Survey of The Netherlands and he would spend his life at the Survey's Department of Paleobotany and Stratigraphy. In 1960 he obtained his PhD cum laude, supervised by prof. dr. I.M. van der Vlerk with his dissertation *'Aspects of the Pliocene and early Pleistocene vegetation of the Netherlands'*. He showed for the first time

that the Pleistocene included more than the four conventional ice ages known in the 1950s.

Waldo Zagwijn (1995) with a special journal issue on the occasion of his retirement; centrally: his secretary; right his colleague Jan de Jong.

He also documented important climate oscillations during the Pliocene evidencing that the Pleistocene series of ice ages had not a sudden start and that the concept of 'a first ice age' is misleading. Later he included the Miocene as well in his studies, and the more recent part of the Pleistocene as well as the Holocene. In 1949 Willard Frank Libby discovered the method of radiocarbon dating, and Waldo took this new challenging opportunity to improve his chronostratigraphy and he dated his newly described 'Amersfoort Interstadial' at around 75,000 years.

As an employee of the Netherlands Geological Survey Zagwijn was supported by technicians for the analyses of pollen, diatoms and sediments. His research focused on geological issues within The Netherlands and adjacent areas in Germany, Belgium and the North Sea basin. He also contributed with his knowledge to several review papers. The 1971 book chapter by Van der Hammen, Wijmstra and Zagwijn *'The floral record of the Late Cenozoic of Europe'* is still an unbeaten account which became a 'classical' paper (reprints and pdf available from the first author).

Integrating understanding of geology, palaeobotany, palaeoclimatology, palaeogeography and stratigraphy Zagwijn placed the 3-dimensional view on the complex stratigraphical structure of The Netherlands-below-its-surface along the time line and he developed a 4-dimensional understanding how The Netherlands came into existence. The suite of ice ages, of which two covered the northeastern part of The Netherlands with ice, and the frequently changing courses of the rivers Scheldt, Meuse and Rhine challenged his imagination. His series of palaeogeographical maps published in 1975 are examples of thorough data syntheses and show how The Netherlands developed from Upper Pliocene to Holocene times (Zagwijn, 1975). Ongoing research gradually improved Zagwijn's initial maps and Peter Vos' current map series shows in much detail how The Netherlands developed since 9000 BC (Vos et al., 2011); scientifically a master piece and educationally a document that will fascinate people from all ages.

The Italian-American geologist Cesare Emiliani discovered periodic variations in the ratio of $^{18}O/^{16}O$ and noticed the relation with glacial-interglacial cycles (Emiliani, 1955). Nick Shackleton (Cambridge, UK) further developed the marine $\partial^{18}O$ stratigraphy into a climate- and chronostratigraphical tool of global relevance (Shackleton, 1967). At the same time Waldo Zagwijn developed a terrestrial stratigraphy for Western Europe that can be considered an equivalent of the marine $\partial^{18}O$ stratigraphy. The extremely successful Ocean Drilling Program, and it successor the International Ocean Drilling Program, provided many long and continuous marine sediment cores. In contrast, sedimentary archives in northwestern Europe are fragmentary; the northernmost long and

continuous continental pollen record comes from Grande Pile in northern France (Woillard & Mook, 1982). Waldo had to deal with numerous relatively short pollen records and was confronted with a stratigraphical jigsaw puzzle that stretched into 4 dimensions. Waldo's encyclopedic knowledge of dozens of published West European pollen records gave him the right arguments for a composite Pleistocene climate-based chronostratigraphy which was remarkably well in agreement with the marine oxygen isotope stratigraphy.

In the marine record the Pleistocene started for a long time at the Olduvai magnetic reversal at 1.77 Ma, a boundary position that could be practically identified on a global scale. However, considering the terrestrial sequence of glaciations the 1.77 Ma boundary as the start of the Pleistocene was without logics. In several papers Zagwijn discussed the start of the Pleistocene, nailed down at the first occurrence of 'significant glacial' climatic conditions: the Pre-Tiglian (Zagwijn, 1963, 1974, 1975, 1985, 1992). Moreover, the Pre-Tiglian was the start of a long period in which the European flora lost its warm floral elements due to the suite of ice ages that would follow (Van der Hammen, Wijmstra and Zagwijn, 1971). As temperature oscillations were also found during the Pliocene, at present-day so well documented in the global oxygen isotope stack record of Lisiecky and Raymo (2004), a 'first ice-age' is a difficult concept. Zagwijn was pleased to see 'his' Pliocene-Pleitocene boundary was finally accepted (Gibbard et al., 2009). Zagwijn's composite Quaternary stratigraphy became the standard in Europe and he developed into an internationally respected authority.

Zagwijn's merits were rewarded in 1972 with the *Albrecht Penck Medal* of the German Quaternary Association (DEUQUA). In 1974 he received the *Van Waterschoot van der Gracht Medal* issued by the Royal Netherlands Geological and Mining Society, the highest distinction in Dutch earth sciences. He was appointed by the Queen *Officier in de Orde van Oranje Nassau*. In 1980 he was elected a member of the Royal Netherlands Academy of Sciences (KNAW) and he used this new connection to make liaisons between the industrial and academic communities of earth-sciences.

Zagwijn served in the Committee for Vegetation Science of the Royal Dutch Botanical Society, he was chairman of INQUA Netherlands, a member of the IUGS Sub-commission for Stratigraphical Nomenclature, secretary of the INQUA Sub-commission for European Quaternary Stratigraphy, and a member of the editorial board of the Review of Palaeobotany and Palynology.

Waldo was a sympathetic and sharp debater; in discussions his encyclopedic knowledge of the literature allowed him to use loads of arguments. In 1989 he was appointed professor in Quaternary Palynology at the Vrije Universiteit in Amsterdam; Limited by time Wim Hoek was his only PhD student who published his PhD thesis on *Palaeogeography of Lateglacial vegetations* in 1997.

During his appointment in Amsterdam in the early 1990s, Waldo was working on Eemian and Holocene climate reconstructions based on carefully selected pollen diagrams from the literature. He was inspired by Iversen and Grychuk, using well-known climate indicators *Hedera, Ilex* and *Viscum* as well as other thermofilous tree taxa (Zagwijn 1994, 1996), and produced two well cited papers on the climate of Holocene and Eemian in Western and Central Europe (Zagwijn, 1994; 1996). Waldo's retirement in 1993 was marked by a large symposium held at the Royal Academy in Amsterdam. The proceedings were published in a 510 pages volume *'Neogene and Quaternary geology of north-west Europe; Contribution on the occasion of Waldo H. Zagwijn's retirement'* (Herngreen et al., 1995) to which 67 authors contributed. This volume also provides a list of Zagwijn's one hundred publications (De Jong, 1995).

We remember Waldo Zagwijn as a sympathic and eminent scientist who developed an

understanding how the kilometers of sediments below The Netherlands' surface had developed, and he was the architect of the frame of continental chronology and climate stratigraphy showing the dynamic history of Western and Mediterranean Europe during the last five million years.

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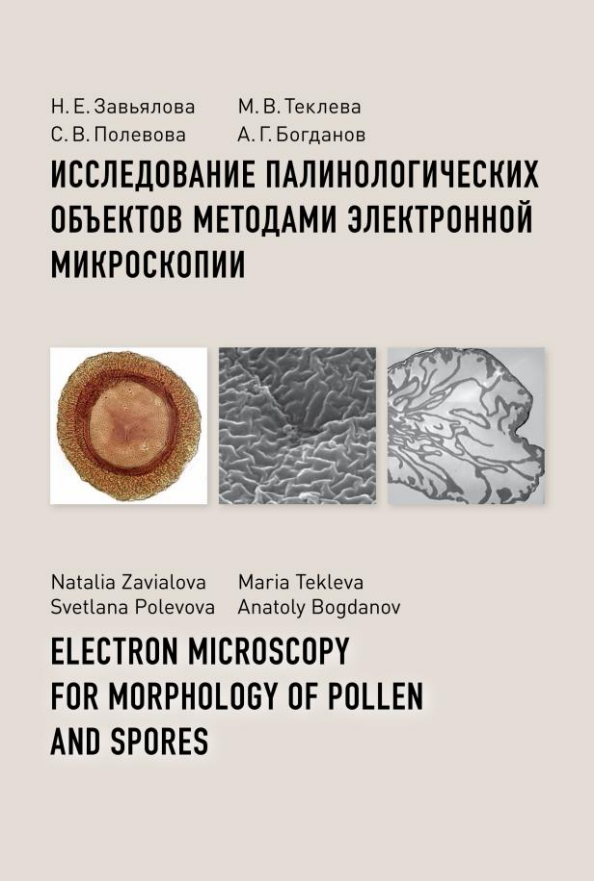
ANNOUNCEMENTS

New Book: Electron Microscopy for morphology of pollen and spores

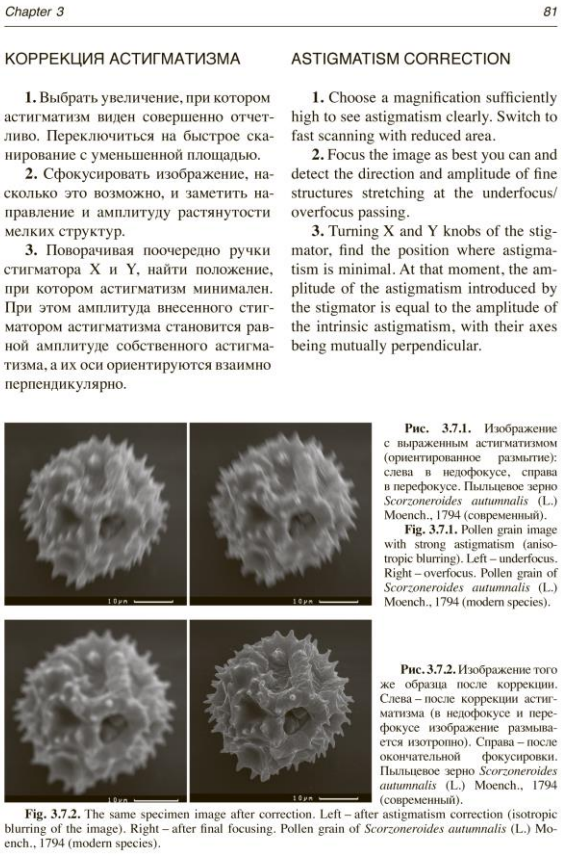


The book addresses the morphology and ultrastructure of pollen and spores of fossil and modern higher plants. Steps of preparation and observation of palynological objects in light microscope (LM) and scanning (SEM) and transmission electron (TEM) microscopes are described and illustrated. Much attention is given to TEM stages of the work; in particular, ultramicrosectioning is described and illustrated, as well as preparation of coated grids and glass knifes, grid staining, etc.

A consecutive study of an individual pollen grain or spore in LM, SEM, and TEM is described. Interpretation of raw data on the sporoderm ultrastructure is discussed. Important points are highlighted for sporoderm ultrastructure of particular groups

of the higher plants. Modern methods of visualization of microscopical objects are reviewed in light of their applicability for studies of the morphology and ultrastructure of pollen and spores. Special chapters deal with tuning of electron microscopes for biological objects and the proper way of working with electron microscopes. The book is intended for palynologists, botanists, and paleontologists, but can be also helpful for other scientists who operate ultramicrotomes and electron microscopes in the fields of biological and medical micromorphology.

The book is written in Russian and English in parallel. It is freely available as a pdf from the authors (via e-mails zavialovane@gmail.com, tekleva@mail.ru, svetlanapolevova@mail.ru, and angeor@list.ru or researchgate-pages) and also can be downloaded from paleobotany.ru.



Chapter 3 81

КОРРЕКЦИЯ АСТИГМАТИЗМА

1. Выбрать увеличение, при котором астигматизм виден совершенно отчетливо. Переключиться на быстрое сканирование с уменьшенной площадью.

2. Сфокусировать изображение, насколько это возможно, и заметить направление и амплитуду растянутости мелких структур.

3. Поворачивая поочередно ручки стигматора X и Y, найти положение, при котором астигматизм минимален. При этом амплитуда внесенного стигматором астигматизма становится равной амплитуде собственного астигматизма, а их оси ориентируются взаимно перпендикулярно.

ASTIGMATISM CORRECTION

1. Choose a magnification sufficiently high to see astigmatism clearly. Switch to fast scanning with reduced area.

2. Focus the image as best you can and detect the direction and amplitude of fine structures stretching at the underfocus/overfocus passing.

3. Turning X and Y knobs of the stigmator, find the position where astigmatism is minimal. At that moment, the amplitude of the astigmatism introduced by the stigmator is equal to the amplitude of the intrinsic astigmatism, with their axes being mutually perpendicular.

Рис. 3.7.1. Изображение с выраженным астигматизмом (ориентированное размытие): слева в недофокусе, справа в перефокусе. Пыльцевое зерно *Scorzoneroides autumnalis* (L.) Moench., 1794 (современный).

Fig. 3.7.1. Pollen grain image with strong astigmatism (anisotropic blurring). Left – underfocus. Right – overfocus. Pollen grain of *Scorzoneroides autumnalis* (L.) Moench., 1794 (modern species).

Рис. 3.7.2. Изображение того же образца после коррекции. Слева – после коррекции астигматизма (в недофокусе и перефокусе изображение размывается изотропно). Справа – после окончательной фокусировки. Пыльцевое зерно *Scorzoneroides autumnalis* (L.) Moench., 1794 (современный).

Fig. 3.7.2. The same specimen image after correction. Left – after astigmatism correction (isotropic blurring of the image). Right – after final focusing. Pollen grain of *Scorzoneroides autumnalis* (L.) Moench., 1794 (modern species).

Book reference:
Zavialova N.E., Tekleva M.V., Polevova S.V., Bogdanov A.G. Electron microscopy for morphology of pollen and spores. Moscow: RIPOL Classic Press, 2018. 334 p.

Award: Jongmans Medal

The "Jongmanspenning" first awarded in 1994 at the EPPC in Heerlen, The Netherlands is named after the eminent Dutch palaeobotanist Prof. Willem J. Jongmans (1878-1957). This medal is intended as a lifetime achievement award for a European palaeobotanist and/or palynologist. The medal is awarded every four years at the EPPC, alternating between a paleobotanist and palynologist. A special committee, installed by the Dutch Palynological Society, reviews nominees and selects a medalist. This year we award the Jongmanspenning **to**

Prof. Dr. J.H.A. van Konijnenburg – van Cittert.

This year's Jongmans Medal winner is Prof. Johanna Hermine Aleida van Konijnenburg-van Cittert, better known as Han. She was born on April 4th 1943 in Utrecht. Her parents were both well-known physicists and science historians. Han grew up in Utrecht where she went to school and started studying biology in 1961. In 1967 she graduated with palaeobotany as one of her two main research subjects. She worked on the Jurassic flora of Yorkshire and made several fieldtrips with the late Prof. Tom M. Harris. On January 1st, 1968 she started her PhD research on In situ gymnosperm pollen from the Middle Jurassic of Yorkshire under the supervision of Prof. Frits P. Jonker.

With her thesis, which she successfully defended on December 2nd 1970, she bridged the gap between palaeobotany and palynology. In 1968 she married Dr. Jan van Konijnenburg. After her PhD she initially worked as schoolteacher, took care for her family and raised two children. However, she never gave up palaeobotany and palynology. For more than 30 years she remained very active without having a position. She mainly worked at home but at least once a week she travelled, initially from Tiel and later from Castricum, to Utrecht.

The Netherlands are a small country but nonetheless it is always at least a one-hour

drive. In Utrecht she did macerations that required the use of HF, something she could not do in her kitchen at home, she consulted the library, made photographs and discussed with colleagues. She is honorary research fellow at the Laboratory of Palaeobotany and Palynology in Utrecht, where she is still teaches today.

In 1988 the Jongmans collection, one of the World's largest collections of Carboniferous plant fossils, was moved from the former Geological Bureau in Heerlen to the Naturalis Biodiversity Centre in Leiden. Han then started working in Leiden too, also without having a position, spending one day per week in Utrecht and one in Leiden. Fifteen years later in 2003 she was finally appointed as extraordinary professor for Prequaternary Palaeobotany at the University of Leiden.

Hans Kerp hands over the Jongmans Medal to Johanna "Han" van Konijnenburg – van Cittert during the EPPC Social Dinner in the Guinness Brewery (photo by Alexander Schmidt, Göttingen, Germany).

In her dissertation on in situ pollen of Jurassic gymnosperms from Yorkshire Han included a statement that says "sterke specialisatie leidt tot ondergang" which freely translates as strong specialisation leads to downfall. Obviously keeping this in mind, she soon expanded her research activities, stratigraphically, taxonomically as well as geographically.

Meanwhile, the Permian and Triassic have become time intervals that also have her special interest. She published papers on floras from the Upper Carboniferous to the Paleogene, on a wide variety of taxa such as lycopsids, sphenophytes, ferns, pteridosperms, cycads, bennettitales, ginkgophytes and conifers, and addressing topics from spore wall ultrastructure to fossil plant community structure.

She collaborated with colleagues from all over the world. Especially her co-operations with colleagues from Eastern European countries like Hungary, Poland, Rumania and Russia should be mentioned, because these were already firmly established years before the political situation changed in the late 1980s and early 1990s when communication and traveling became much easier. She served on PhD committees in the Netherlands and abroad and she supervised several foreign and Dutch PhD students.

Apart from more than 150 papers, many of which are now standard references, she published a guidebook on the Jurassic Flora of Yorkshire with Helen Morgans in 1999. Several of her papers were published together with "amateur" palaeontologists. Every year she visits her friends and fossil collectors in Germany and Italy. Han serves on several editorial boards. As a former editor I contacted her regularly, maybe more often than I should have done. She was always busy, even after she retired from Leiden in 2013. She continued doing research and still teaches in Utrecht. Nevertheless, she was always willing to review a manuscript and her reviews were insightful, critical but always very constructive and fair.

I have known Han since the late 1970s when I started as an undergraduate in palaeobotany. For a while we even shared an office in

Utrecht. I really learnt a lot from her. We have been in regular contact ever since I left Utrecht in early 1989. When my wife and I moved to the US and transatlantic communication was still restricted to what is now called snail mail, she was one of the few who wrote very regularly. Han is not only a passionate palaeobotanist and palynologist but she also loves gardening and many foreign colleagues and friends enjoyed the warm hospitality in her home in Castricum. She is also very active in other fields, e.g., in her church and in her choir. For her great scientific achievements and her extraordinary societal engagement Han was decorated by Royal decree as Officer in the Order of Orange-Nassau on April 25th 2014.

Being very active at a continuously high level during 50 years of which more than 30 years without holding a formal position is very impressive and Han is without any doubt one of the best ambassadors for our discipline. In recognition of her achievements the committee unanimously decided to award her the Jongmanspenning 2018 to join the ranks of the previous awards winners: Winfried Remy (1994), Maurice Streel (1998), Harald Walther (2002), David Batten (2006), Jean Galtier (2010) and Bas van Geel (2014).

Report written by:
Hans Kerp, Münster, August 2018

Award:
Florschütz Award 2018

The Dutch Palynological Society 'Palynologische Kring' has installed an annual Florschütz Award for the best master thesis written at a Dutch university in the field of paleobotany and palynology in its broadest sense. The award has been named after the eminent Dutch professor *F. (Frans) Florschütz* (Hasselt 1887- Rheden 1965) who may be considered the founding father of paleobotany and palynology in The Netherlands (Figure 1). Florschütz was a professional jurist, who had a keen interest in both botany and geology. He became particularly fascinated by pollen analysis. In the late 1920s he built his private palynological research laboratory at his home in the village of Velp near Arnhem. Once a week he came to the Botanical Museum of Utrecht University, where he generated enthusiasm for the young science among staff and students. In 1947 he was awarded an honorary doctor's degree for his pioneering research achievements. Meanwhile he had transferred his activities from Utrecht to the Geological Institute of Leiden University, where he was appointed professor of 'Paleophytology of the Cainozoicum and Palynology' in 1948. In his inaugural lecture on 28 January 1949 *'In het grensgebied van twee wetenschappen'* ('On the boundary of two disciplines') he hinted already to the novel interdisciplinary approach in palynological research.

Figure 1. F. Florschütz in the field examining a profile.

Florschütz's students classified him as a very inspiring teacher, promoting research with focus on geology, vegetation science and climates of the past. He used paleobotanical fossils as information to reconstruct changing Pleistocene environments along the geological time scale. Among his collaborators and students were *F.P. (Frits) Jonker* (1912-1995) and *T. (Thomas) van der Hammen* (1924-2010); both became the next-generation Dutch professors of paleobotany and palynology at the universities of Utrecht and Amsterdam, respectively. Almost forgotten is the iconic book *'Nederland in het ijstijdvak'* ('The Netherlands during the ice age'), a beautifully written and illustrated book by Van der Vlerk & Florschütz (1950), now a 'dated' master piece in scientific outreach. But also *W. H. (Waldo) Zagwijn* (1926-2018), who spent his life at the Dutch Geological Survey and who was appointed at the end of his career professor at the Free University Amsterdam, was educated by Van der Vlerk and Florschütz. So, there is every reason to install a 'Florschütz Award' for the best Dutch master thesis in the broad field of palaeobotany and palynology.

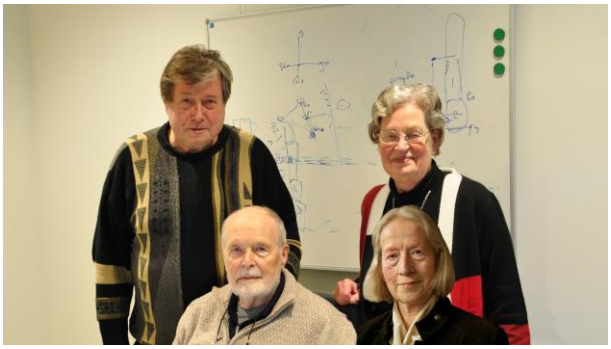


Figure 2. Photograph of the jury of the Frans Florschütz Award consisting of four Dutch emeritus professors: Henry Hooghiemstra (top left), J.H.A. (Han) van Konijnenburg-van Cittert (top right), Henk Visscher (bottom left), and Corrie C. Bakels (bottom right).

A dedicated jury of four Dutch emeritus professors was installed by the Dutch Palynological Society: Corrie C. Bakels (1942) from Leiden, J.H.A. (Han) van Konijnenburg-van Cittert (1943) from Leiden, Henk Visscher (1937) from Utrecht, and Henry Hooghiemstra (1948) from Amsterdam (Figure 2). Four master theses were submitted. The jury was pleased by the high quality of the master theses and selecting a winner was an enjoyable task.

The 2018 Florschütz Award winner - The jury unanimously identified the master thesis of Amber Woutersen, entitled *'The Origin and evolution of the Nitrariaceae; An integrative study to the steppe-desert taxon Nitraria and its development at the Tibetan Plateau'* as the winner (Figure 3). Carina Hoorn was the source of inspiration and she guided Amber through the research project.

Figure 3. The recipient of the Florschütz Award 2018, Amber Woutersen.

Nitraria is a halophytic taxon that belongs to the plant family Nitrariaceae and commonly occurs in coastal regions from the Mediterranean, across Asia into the south-eastern tip of Australia but also in the Tibetan Highlands, presently far removed from the sea. The taxon is thought to have originated in Asia during the Paleogene (66-23 Ma), alongside the former proto-Paratethys epicontinental sea. Although *Nitraria* may provide important clues on the links between

climatic and biotic evolution in the Paleogene Tibetan steppe, such investigation has been hindered by the challenges of taxonomic identification. The evolution of *Nitraria* was studied through time, by investigating if the morphology and chemical composition of the wall of the pollen grain between species are distinct and informative of evolutionary history of *Nitraria*. Furthermore, Amber investigated if pollen morphological and chemical traits differentiate between extant taxa from coastal and highland environments. To answer these questions, a novel approach consisting of a combination of Fourier Transform Infrared spectroscopy (FTIR) was used to determine the chemical composition of the wall of the pollen grain, in combination with pollen morphological analyses using light microscopy (LM) and scanning electron microscopy (SEM). Data were analysed using ordinations (principal components analysis and non-metric multidimensional scaling), and directly mapped on the Nitrariaceae phylogeny to produce a ‘’phylomorphospace’ and a ‘phylochemospace‘. LM, SEM and FTIR analyses show clear morphological and chemical differences between extant *Nitraria* species. Moreover, morphology of fossil pollen grains shows a larger variety but also considerable overlap with extant pollen morphology, with *N. sphaerocarpa* and *N. retusa* as modern analogues. Differences in the morphological and chemical characteristics of highland species (*Nitraria schoberi, N. sphaerocarpa, N. sibirica* and *N. tangutorum*) and lowland species (*Nitraria billardierei* and *N. retusa*) are subtle yet suggest an early separation between the coastal and highland taxa. Phylogenetic history appeared to be a more important control on *Nitraria* pollen grains than local environmental conditions. This approach shows that pollen morphology and phylogeny provide the best key to explore the early Paleogene history of *Nitraria.* Taken together this study demonstrates how novel methods for studying fossil pollen grains can facilitate the evolutionary investigation of living and extinct taxa, and the environments they represent. Congratulations to Amber Woutersen, who received the award while travelling in Patagonia. She published already a part of this study in PeerJ (2018) doi: 10.7717/peerj.5055.

Report written by:
Henry Hooghiemstra & Henk Visscher.

Updated webpages of IFPS societies

We have several updates in the current IFPS affiliated societies, including:

- Canadian Association of Palynologists (CAP): https://capacp.wordpress.com
- Gruppo di Palinologia della Società Botanica Italiana (GPSBI): http://www.societabotanicaitaliana.it/gruppi/gruppo-palinologia-e-paleobotanica-gpp-sbi/21
-
- Palynological Association of Nigeria (PAN): https://www.facebook.com/Palynological-Association-of-Nigeria-168093586579093

Please remember that you can check all the societies affiliated to IFPS, and their webpages and current contacts at the end of this newsletter.

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 (vacant) should be informed of any errors or necessary changes (email addresses below)
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(at)uibk.ac.at
IFPS Past President	**Charles Wellman**	University of Sheffield, England	C.Wellman(at)sheffield.ac.uk
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IFPS Editor of PALYNOS	**Encarni Montoya**	Institute of Earth Sciences "Jaume Almera" (CSIC), Spain	encarnacionmontoya(at)gmail.com
IFPS Web-Master	**Vacant / IFPS board of officers**		
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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://aple.usal.es	Pilar S. Testillano
Association des Palynologues de Langue Française		APLF http://laplf.org/	Marie-Pierre Ledru
Canadian Association of Palynologists		CAP https://capacp.wordpress.com/	Simon Goring
Collegium Palynologicum Scandinavicum		CPS www.palynology.info	Heikki Seppä
Commission Internationale de Microflore du Paléozoique		CIMP http://cimp.weebly.com/	Anthony Butcher
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 https://www.facebook.com/Palynological-Association-of-Nigeria-168093586579093/	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/	Reiko Kishikawa
Palynological Society of Poland		PSP	Milena Obremska
Palynologische Kring (The Netherlands)		PK http://www.palynologischekring.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 http://palaeobotanicalsociety.org	Rama S. Singh
Turkish Committee for Palynology		TCP	Zühtü Bati
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International Union of Geological Societies		*IUGS*	*Lucy Edwards*
International Union of Biological Societies		*IUBS*	*Jacques-Louis de Beaulieu*
Societies on hold/Former Societies of the IFPS:			
International Association for African Palynology		AIPA/IAAP	
Palynological and Palaeobotanical Association of Australia		PPAA	
Philippine Palynological Society		PPS	

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

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