International Organisation of Palaeobotany

IOP NEWSLETTER 128

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

Letter from the president

Dear Colleagues,

Although concern about on-going variants of the Covid-19 virus pandemic continues, we can happily report that aspects of normalcy are returning and that recent in-person conferences have been successful. In this newsletter we present a summary of the recent Eurpean Paleobotanical and Palynological Conference (EPPC) in Stockholm. The success of this conference can encourage us about upcoming opportunities including our own IOPC, which after being postponed in 2020 is rescheduled for May, 2024. More detailed information will be provided in autumn. Possibilities for paleobotanical field work are improving again; of course, our research programs ultimately depend on recovery of new fossil specimens from the field. Despite increasing government restrictions, we should continue to encourage the amateur fossil collectors who are so helpful in alerting us to important fossil sites and new material.

This newsletter features an overview of the history, research and scope of paleobotanical collections at the Senckenberg Museum, Dresden facilities (Thank you Lutz!), continuing our series highlighting institutions with significant paleobotanical collections. Previous newsletters have featured the University of Kansas (Newsletter 118), the Field Museum in Chicago (Newsletter 119), the Cleveland Museum (Newsletter 120), the Queensland Museum (Newsletter 124), the Natural History Musuem in Stockholm (Newsletter 126). These prior issues can be found on our website at: https://palaeobotany.org/index.php/members-lounge/newsletter-archive. We invite you to consider preparing a similar overview for your own institution, which is a good way to introduce others to your facilities and open more possibilities for international collaboration.

Please join us in congratulating Margaret Collinson on her receipt of the Jongmans Medal presented at the recent EPPC, as summarized herein by Hans Kerp. Also, congratulations to Christopher West, who has been hired as the Curator of Paleobotany at the Royal Tyrrell Museum of Palaeontology in Alberta, Canada!

We welcome other news from members. Deadline for the next issue of our newsletter will be October 1st. Please send any contributions to Lutz.Kunzmann(at)senckenberg.de. Thank you very much in advance.

Sincerely,
Steve
Steven Manchester (Gainesville, FL, USA), IOP President

Conference report

231 registered participants from 33 countries on 6 continents, according to their stated home institution, and ca. 20 extra persons from the organizing institutions Natural History Museum Stockholm and Stockholm's University experienced an inspiring and well-organized international conference, which was the first bigger in-person meeting for most of us after the pandemic. During the three conference days 180 talks in three concurrent sessions and 66 posters were presented. 37 images of plants fossils were submitted to the fossil photo competition.

Two pre-conference workshops were conducted; 46 registered participants attended the Workshop on Fossil Nomenclature, and 24 registered participants attended the Workshop on European Training Network Grant Application PALEOPROXIES. The icebreaker party with BBQ buffet and life-performed music was held in the backyard of the Natural History Museum. At the beginning, Vivi Vejda and Steve McLoughlin welcomed all participants and appreciated the scientific lifes of Else Marie Friis (Stockholm and Aarhus) and Kay R. Pedersen (Aarhus) in occasion of her 70th and his 90th birthdays, respectively. On the first conference day, many participants attended the reception from the Major of the City of Stockholm with welcome talks, guided tour, light food and drinks at the City Hall (stadshuset).

Happily, four of the five offered field trips could be carried out: #1 (Birka) with 23 participants; #2 (Uppsala) with 9 participants; #4 (Skåne: Palaeozoic and Mesozoic) with 11 participants, and #5 (Ryggmossen ombrogenous mire) with 15 participants.

Finally, 160 people enjoyed a guided museum tour, typical Swedish food and music during the conference dinner in the Vasa Museum as the social highlight at the end of the conference. During the dinner, Margaret Collinson received the 2022 Jongmans Award (see article below).

The palaeobotanical and palaeo-palynological communities express their sincere thanks to all members of the organizing committee and to the commercial conference company for excellent preparation and operation of the meeting.

The conference Abstract, Program and Proceedings volume is available as a pdf from:

the conference webpage: https://jirango.com/cms/web/4b67cbd5?lang=eng
and from the ResearchGate page:
https://www.researchgate.net/publication/361761975_11th_European_Palaeobotany_and_Palynology_Conference_Abstracts_Program_and_Proceedings

Steve McLoughlin (Stockholm) and Lutz Kunzmann (Dresden)

Group photo of the EPPC-2022 participants in front of the main entrance of the Natural History Museum, Stockholm, Sweden on June 20, 2022 (photo provided by the organizing committee).

The Jongmans Medal 2022

An address presented at the 11th EPPC conference dinner Stockholm on 22 July 2022

The Jongmans Medal, an award for the life achievements of an outstanding palaeobotanist or palynologis,t was instituted in 1994 by a consortium of Dutch palaeobotanists and palynologists at the occasion of the 4th European Palaeobotany and Palynology Conference in Heerlen–Kerkrade. This award is named after the eminent Dutch palaeobotanist and stratigrapher

Willem Josephus Jongmans (1878–1957), who served many years as director of the Geological Bureau in Heerlen, a division of the Geological Survey of the Netherlands in the heart of the former Dutch mining district. Jongmans published a large number of papers and several monographs on Carboniferous palaeobotany and stratigraphy. He was the initiator and long-time editor of the *Fossilium Catalogus II – Plantae* and organized the first two conferences on Carboniferous stratigraphy, held in Heerlen in 1927 and 1935.

Ceremonial presentation of the award to Margaret Collinson by Hans Kerp during the EPPC conference dinner in the Vasa Museum, Stockholm on June 22, 2022 (photo by Cindy Looy).

Previous recipients of the Jongmans Medal are Winfried Remy (awarded in Heerlen, 1994), Maurice Streel (Kraków, 1998), Harald Walther (Athens, 2002), David Batten (Prague, 2006), Jean Galtier (Budapest, 2010), Bas van Geel (Padova, 2014) and Han van Konijnenburg-van Cittert (Dublin, 2018). In the EPPC session on emerging techniques, earlier today, this year's award winner summarized her career in a brilliant way – much better than I can – highlighting adopting and applying new techniques, many of these are now standard methods in palaeobotany and palynology such as SEM, TEM and µCT-scan. She stressed how much especially young scientists can profit from attending conferences like EPPC and IOPC. During these conferences she found inspiration and met future cooperation partners. Her research

interests are extremely broad and by implementing new techniques she bridged gaps between disciplines.

The Jongmans Medal winner started her career with William S. Lacey in Bangor, who advised her to go to London for a PhD under the supervision of William G. Chaloner. Her first publications with Chaloner, which both appeared in 1975, are an illustrated key to the commoner British Upper Carboniferous plant compression fossils and a paper on the application of SEM to a sigillarian impression fossil, but her PhD research was on Paleogene floras of England. Apart from well over 180 research papers and book chapters, she published a book on the fossil plants of the London Clay and co-authored a textbook on pollen analysis. Her work is novel and strongly interdisciplinary. Apart from palaeobotanical, palynological and palaeobiological studies, like her work on Paleogene fruits and seeds, palynology, megaspores and functional morphology, she published on biological self-assembly, plant taphonomy, plant-insect interactions, the evolution of the Paleogene and Neogene vegetation and terrestrial palaeoecosystems, palaeoclimate and global change across major boundaries. One of the plant groups that has her special attention are ferns, especially water ferns. In her talk earlier today, she confessed that *Azolla* is her favourite fossil plant. Her pioneering and innovative approach by combining palaeobotany with biomolecular palaeobotany, isotope geochemistry and organic geochemistry opened new directions within our discipline. She successfully cooperated with vertebrate palaeontologists, sedimentologists, coal scientists, archaeologists, isotope and organic geochemists, thus expanding our field. You name it, she did it. She is not only an innovative scientist but also a dedicated teacher. She supervised 10 MSc students, 19 PhD students an co-supervised 5 other PhD candidates and hosted three post-docs and one post-graduate researcher. She is a highly respected member of the palaeobotanical community who was and is active in several learned societies and editorial boards, and served as president of IOP. She attended all IOP Conferences, except for the last one in 2016 in Salvador (Brazil) when she was unable due to teaching obligations.

So far, I did not mention the name of this year's Jongmans Medal winner, but I am sure that everyone will know who is meant. I am pleased to announce that the jury unanimously voted to present this year's medal to **Prof. Dr Margaret Collinson** from Royal Holloway University of London. Dear Margaret, I want to thank you in the name of us all for your tireless commitment to palaeobotany and palynology. Please give her a warm applause!

On behalf of the Jongmans Medal committee,
Hans Kerp (Münster)

Workshop report

The paleobotanical working group at the Senckenberg Natural History Collections Dresden (Germany) organized two consecutive international workshops in May 17 - 21, 2022. The workshops were funded by the Erika and Walter Datz Foundation Bad Homburg, Germany.

The symposium "*From functional traits to models - An interdisciplinary perspective on structure, functioning and evolution of ecosystems in deep-time*" was a networking initiative organized by early career scientists. Goal was to promote interdisciplinary exchange and networking between palaeobotanists, palaeoentomologists and modelers. The symposium was supported by keynote lectures given by Anita Roth-Nebelsick (Stuttgart, Germany), Conrad Labandeira (Washington D.C., USA), Philip Porada (Hamburg, Germany), Alexander Blanke (Bonn, Germany) and Torsten Wappler (Darmstadt, Germany) on functional leaf traits, plant-insect interaction, and vegetation modelling. A total of 30 participants from 7 countries agreed that the momentum of the initial workshop should result in a permanent informal working group and interdisciplinary projects.

The plant taphonomy community met for the "30th International Workshop on Plant Taphonomy". In her keynote, Eva-Maria Sadowski (Berlin, Germany) demonstrated the origin and material nature of plant inclusions in amber, and their palaeoecological significance on the reconstruction of "amber forests". After lectures and discussions, the participants visited the ‚Tertiary' forest in the Botanical Garden of the Technical University Dresden. During a one-day excursion to the Forest Botanical Garden of the Technical University Dresden in Tharandt they discussed characteristics of modern plant-insect interaction and leaf architecture.

Christian Müller (Dresden, Germany), Agathe Toumoulin (Brno, Czech Republic),
Dimitra Mantzouka (Athens, Greece) & Lutz Kunzmann (Dresden, Germany)

The participants of the two international workshops in front of the A. B. Meyer Building of the Senckenberg Natural History Collections in Dresden. (photo: D. Hennig, SNSD)

Collection spotlight: the palaeobotanical collection of the Senckenberg Natural History Collections Dresden, Germany

The palaeobotanical collection is part of the division Museum of Mineralogy and Geology that is among the oldest geoscientific collections in Germany and beyond. The year 1728 is considered as the date of foundation of natural history collections. At that time, several royal scientific collections were unified and established as public science museums in Dresden by an edict of the Saxon Elector Friedrich August I. However, mineralogical and geological collections emerged from the famous Art Chamber, which was founded in 1560 by Elector August. The oldest specimen of the museum is a piece of silver ore found in 1477 in the nearby Erzgebirge Mountains.

In 1857, the natural history collections were subdivided into two independent museums, the geoscientific museum called Museum of Mineralogy and Geology, and the Museum of Zoology. The palaeontologist Hanns Bruno Geinitz was the first director of the geoscientific museum and he established palaeobotanical and palaeozoological research in the institution.

Collections and exhibitions of the Museum of Mineralogy and Geology were accommodated in the historical castle-like Zwinger building in the city centre of Dresden from 1728 until 1945. In 1943 and 1944, during World War II, the geoscientific collections were packed and stored at several places in Dresden and surroundings assumed to be safe from destructions. However, a significant part of the objects got lost or were destroyed. After the war, the museum was moved from the destroyed Zwinger building to the former Saxon parliament building, and eventually in 1999 to a new institute building outside the city centre.

Institute building of Senckenberg natural History Collections Dresden (photo Christian Müller, SNSD).

In 2000, the museums of Mineralogy and Geology and Zoology were merged again to the State Natural History Collections Dresden keeping about 6.5 Mio. nature objects and series. Since 2009, the Natural History Collections became part of the Senckenberg Society for Nature Research based in Frankfurt on the Main.

The oldest objects in the palaeobotanical collection are petrified woods from several Central European sites such as the bennetittalean trunk *Cycadeoidea* ("*Raumeria*") *reichenbachiana* found near Wieliczka in Poland in 1751 and donated to the museum in Dresden in 1753. The first separate stock catalogue of palaeobotanical objects in the natural history museum was compiled by Christian Eilenburg in 1757.

Historical objects in the palaeobotanical collection: petrified Cretaceous bennettitelean stem *Cycadeoidea* ("*Raumeria*") *reichenbachiana* (Göppert) Wieland, Wieliczka, Poland, receipt 1753 (left); Permian seed fern foliage *Neurocallipteris neuropteroides* (Göppert) Cleal, Shute & Zodrow, Zwickau, Germany, receipt ca. 1750 (right) (photos: F. Höhler/M. Fischer, SNSD).

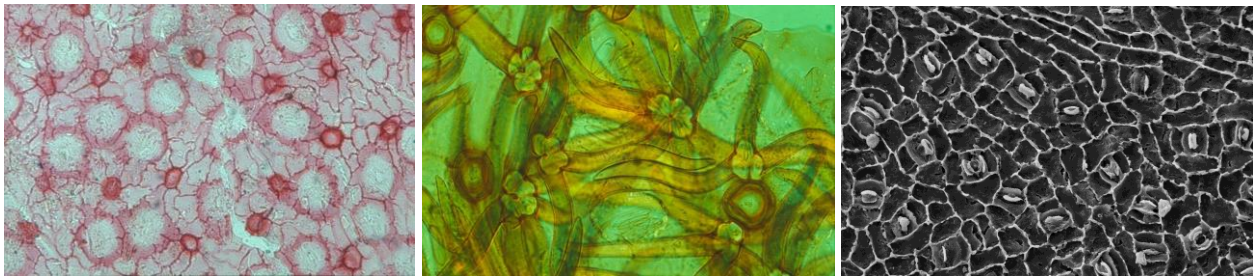
In the 19th century the history of the palaeobotanical collection and palaeobotanical research was dominated by Hanns Bruno Geinitz, one of the last "universal" palaeontologists studying both plant and animal fossils from Paleozoic, Mesozoic and Cenozoic strata. Unfortunately, main parts of the palaeontological collections were destroyed in 1849 when the Zwinger was damaged during civil war fights. However, due to Geinitz' work as director of the museum in the second half of the 19th century the collections could increase again by donations, by exchange, by own collecting and by the purchase of complete private collections such as the Gutbier collection (Carboniferous of Saxony).

Stimulated by Geinitz, two private palaeobotanists from Dresden carried out research on Cenzoic plants: the teacher Hermann Engelhardt (1839-1918) and the medical doctor Paul Menzel (1864-1927) who were in close contact to the museum. The Engelhardt collection – Cenozoic plants from Germany and northern Czech Republic – have been donated to the museum at the end of the 19th century and parts of the Menzel collection – ca. 12.000 specimens from Saxony and Northern Bohemia – have been bought by the museum in 1927.

Research on 'Tertiary' plants was intensively continued by Hellmut Jähnichen (1919–2011) from 1954–1956, by Harald Walther (1929–2013) from 1962–1994, and since 1994 by myself.

Objects in the palaeobotanical collection Dresden (from left to right): *Fagus saxonica* (late Oligocene, Bockwitz, Germany); *Mastixia lusatica* (early Miocene, Wiesa, Germany); *Sphenophyllum thoni* (earliest Permian, Freital, Germany); mummified Lauraceae leaves (latest Oligocene, Witznitz, Germany).

Currently, the palaeobotanical collection encompasses approximately 82.000 catalogue numbers with ~350.000 fossils plant remains, ~16.500 preparation objects, which are slides of fossil cuticles, slides of cleared and mummified leaves, thin sections and SEM stubs, and about 4.600 herbarium specimens. The collection contains approximately 150 nomenclatural types of fossil-taxa and more than 10.000 figured specimens ("originals"). While in the 19th century the palaeobotanical research was mainly conducted on Carboniferous, Permian and Cretaceous fossils, in the 20th and 21st centuries Cenozoic fossils became the focal working point being now the main and most important part of the scientific collections. Paleogene and Neogene plant fossils comprise about 45.000 numbered objects and series.



Leaf cuticle preparation slide collection Dresden (from left to right): *Trigonobalanopsis rhamnoides* (early Miocene, Wiesa, Germany; LM); *Castanea* sp. (extant; LM); *Laurophyllum pseudoprinceps* (early Miocene, Wiesa, Germany; SEM).

For additional information please visit
https://www.senckenberg.de/en/institutes/senckenberg-naturhistorische-sammlung-dresden/museum-of-mineralogy-and-geology/dd-palaeobotany/

Lutz Kunzmann (Dresden)

Obituary: Haomin LI (1934–2022)

Professor Haomin Li, provided by Gongle Shi

Professor Haomin LI passed away peacefully surrounded by her family in Nanjing on February 20, 2022, at the age of 88. Haomin was well known for her contributions to the Cenozoic floras from China and Antarctica. China sadly lost one of its prominent paleobotanists, and we lost a beloved mentor and colleague.

Haomin was born on December 31, 1934 in Beijing, China. She graduated from Lomonosov Moscow State University in the former Soviet Union in 1960, and spent her entire academic career at the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (NIGPAS). She was one of a few pioneer women paleobotanists in China. In her career spanning five decades at NIGPAS, along with her colleagues, Haomin had played a crucial role in building the Cenozoic Paleobotany research in China. She was one of the key contributors to the well-known monograph “Cenozoic Plants from China”. The monograph published in 1978 is among the most cited and remains the best source regarding the taxonomy and stratigraphic occurrences of Cenozoic plant megafossils across China. She led the early research of many newly discovered Cenozoic floras in China, such as the middle Miocene Namling flora from the southern Tibetan Plateau, the late Miocene Ninghai flora from Zhejiang, eastern China, the Oligocene Ningming flora from Guangxi, southern China, and the middle Miocene Zhangpu flora from Fujian, southeastern China. Haomin introduced leaf architectural analysis to her Chinese

colleagues in both botanical and paleobotanical communities after her return from the late Professor Leo Hickey's lab at Yale University. She was also among the early paleobotanists in China working on *in situ* pollen grains and leaf cuticles from the Cenozoic plant fossils.

Haomin was also known for her research on plant fossils from the Eocene Fossil Hill Formation at King George Island, Antarctica. She joined China's 9th Antarctic scientific expedition team in 1992 at the age of 58, when most people in China's academic community start to plan their retirement. As the most senior team member, she spent three months on King George Island, collecting fossils at the Fossil Hill and other localities. She was the first Chinese female paleontologist to visit the polar regions. Reflecting her lifetime trip experience to Antarctica, Haomin's anthology of travelogues entitled *A Paleobotanist's Voyage to Antarctica*, in which she gave a vivid account of her five-month trip as a geologist explorer under severe climate conditions in Antarctica, was published in 2011. The book is top-rated and arouses high interest in young readerships.

A complete bibliography of Professor Haomin LI has been published in *Palaeoworld* and is accessible freely at https://www.sciencedirect.com/science/article/pii/S1871174X22000178 in 2022. She will be remembered as a kind mentor, a loyal friend, and a great paleobotanist with remarkable contributions to understanding Cenozoic plant fossils in East Asia and Antarctica.

Gongle Shi, Yusheng (Chris) Liu & Zhe-kun Zhou

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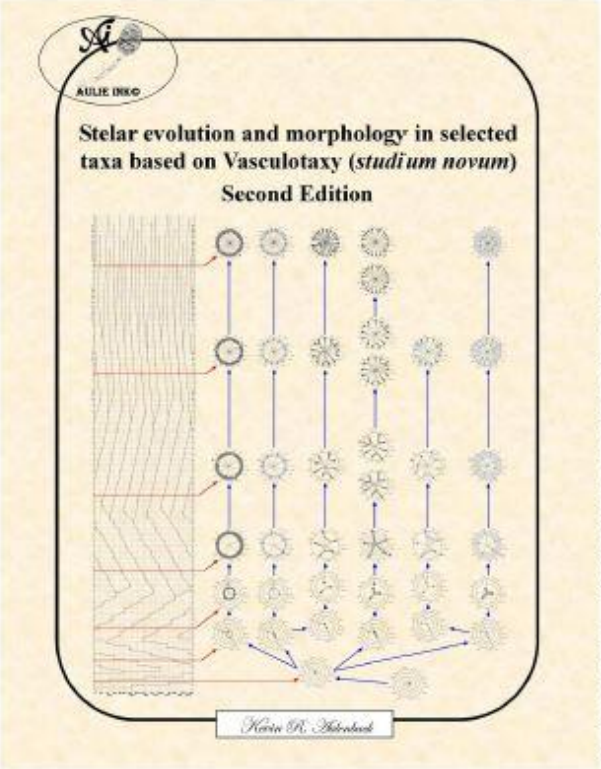
News from our members

Christopher West informed us that he has been hired as the new Curator of Paleobotany at the Tyrrell Museum in Drumheller. A nice museum in the heart of dinosaur country with excellent paleobotanical collections. Congratulations, Chris!

Book advertisement



Stelar evolution and morphology in selected taxa based on Vasculotaxy (*studium novum*) Second Edition.

Author; K. R. Aulenback. 265 pp., 258 images. ISBN 978-0-9812186-5-6. $149.95 + 7.50 GST + shipping. Canadian or US funds only. Please enquire as to payment methods and shipping charges at: kbotany@telus.net.

First published in 2015 the original book was questioned due to the limited taxa investigated. This new edition contains both original taxa and many more new taxa as well as suggested inclusions.

Phyllotaxy has long been used to interpret organ placement in fossil and extant plants. Many plants unfortunately do not follow the basic phyllotactic laws which have been developed in the past century. This has resulted in a plethora of books and papers both mathematical and biological to interpret a vast array of individual systems. Although a single plant can contain a variety of these systems there has been no cohesive explanation offered by the study of phyllotaxy. To this end is offered a new scientific study to answer many of the problems observed or produced by the study of phyllotaxy.

Vasculotaxy *studium novum* is presented and followed from the earliest plants to modern monocots. Vasculotaxy offers many answers to stelar formation and evolution within many plant taxa. Vasculotaxy also allows for the interpretation of accessory organ development and placement such as formation of megaphylls, microphylls and reproductive organs.

Many models are developed based on vasculotaxy and used to interpret stelar form in the Polypodiidae, Lepidodendrales, Lycopodiales/Selaginellales, Equisetales, Medullosan and gymnosperm/angiosperm lines. Special reference is given to the evolution of the gymnosperms and angiosperms using specific taxa culminating in floral evolution. These investigations illustrate the adaptability of the study of Vasculotaxy to answer many, if not all, of the growth forms seen in ancient and extant plants.

Original first edition review; "The author has provided his readers with a panorama of the evolution of the vascular network in all of its detail and phylogenetic grandeur. Not since the time of Esau and Fahn has stelar anatomy and morphology been so richly displayed and analyzed", Karl Niklas, Phd.

About the Author

Kevin was born in Rivers, Manitoba although he spent most of his younger formative years in Edmonton. Kevin has always had an interest in science from an early age by raising reptiles to preparing skeletons on his mother's kitchen table.

Kevin worked at the Royal Tyrrell Museum from 1981 until 2005 when, as head technician, he left. During those years he had prospected for, collected, prepared, molded, cast and mounted a vast array of fossil vertebrate, invertebrate and plant material. He has worked on everything from *T. rex* to palynomorphs.

Kevin has also worked in a variety of locales such as the Gobi Desert in Inner Mongolia; Dinosaur Cove, Australia; Top of the World Provincial Park in British Columbia, and all over Alberta.

In 2009 Kevin produced the "*Identification guide to the fossil plants of the Horseshoe Canyon Formation of Drumheller, Alberta*", with the University of Calgary Press. This was followed by two shorter works entitled "*New fossil plant finds from the Horseshoe Canyon Formation, summer 2008*" and "*New fossil plant finds from the Horseshoe Canyon Formation, summer 2009*" as well as the paper "*The cupulate cone Bethella lowenii, gen. et sp. nov., (Bennettitales) from the Horseshoe Canyon Formation (Upper Cretaceous) of Alberta, Canada; a dissenting Interpretation.*" and the book "*Heterosporous ferns of the Horseshoe Canyon Formation (Cretaceous, Campanian), Alberta, Canada and their relationships to extant and extinct taxa.*". All these titles were published privately.

Kevin presently works as a general horticultural laborer and resides in Drumheller with his loving wife, Julie and three children Brandy, Spencer and Lucas. Kevin is also an avid photographer and artist/illustrator.

AULIE INK©
Fascination wells from the never ending stream of discovery.

Upcoming meetings

The Palaeontological Association's Annual Meeting: Cork, Ireland (July 18-24, 2022)

Summary: The Annual Meeting of the Palaeontological Association will be held at University College Cork (UCC). The meeting will consist of various events targeted at the general public on Monday 18th July and an early career researcher event on Tuesday 19th July. Workshops, laboratory tours and the symposium will take place on Wednesday the 20th of July, followed by the core scientific sessions (July 21 & 22). There will be a two-day post-conference fieldtrip on (July 23 & 24).

The organizing committee is chaired by Prof. Maria McNamara, with help from Dr Chris Mays and other members of the School of Biological, Earth and Environmental Sciences at UCC. Please see our schedule for a full program of the conference.

General contact email: annualmeeting2022@palass.org

Website: https://www.palass.org/meetings-events/annual-meeting/2022/annual-meeting-2022-cork-ireland-overview

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2022 Annual NECLIME Conference

With great regret, we had to cancel the NECLIME annual meeting in Tbilisi (Georgia) due to unforeseen complications. NECLIME wants to apologize to all participants and thank all the organizers for their work so far. We are deeply sorry we cannot meet in person this year.

To continue our scientific exchange, we are going to organize another online conference with a preliminary date set to late November, 2022. A first circular will be distributed soon.

Contact: Angela Bruch (angela.bruch@senckenberg.de).

For further information please visit: https://ipc6.msu.ac.th/

2nd Asian Palaeontological Congress August 3-7, 2023, Tokyo, JAPAN

https://www.apc2.org/?fbclid=IwAR1lDYRXDJj751dQ8pkmULhOBrBX8WG433MVHtQurTBewn5RS9WlU7y1ZMY

Here is the link to 1st circular
https://www.apc2.org/pdfs/APC2_1st_circular.pdf

Disclaimer:

Newsletter edited by Lutz Kunzmann & Steven Manchester.

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

Newsletters are regularly issued in February, June and October every year.

Please send us your contributions for the next edition of our newsletter (129) until end of September 2022. Contributions should be sent to Lutz.Kunzmann(at)senckenberg.de.

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