IOP NEWSLETTER 133

February 2024

CONTENTS

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

Letter from the president

Greetings Colleagues,

This newsletter is longer than usual as it contains many items relevant to recent and upcoming meetings, special announcements, and recognition of award winners.

We congratulate Else Marie Friis, who received the highest honour of the Palaeontological Association, and Yongdong Wang from NIGPAS (Nanjing) who received the Doctor Honoris Causa title from University of Bucharest in December 2023. A special symposium recognizing Sir Peter Crane will be held in conjunction with the US Mid-continent Colloquium at the Field Museum in Chicago in April 2024. More details for each of these honours follows in this newsletter.

Please note that deadline for early registration for the 20th International Botanical Congress (IBC) is nearly here (February 29, 2024). IBC will be held in Madrid, Spain, July 21st to 27th, 2024; deadline for early-bird registration: February 29, 2024; see: **https://ibcmadrid2024.com/index.php?seccion=registrationArea&subSeccion=registrationInfo** Our paleobotanical community has traditionally had strong representation at IBC; formation of our IOP society was initiated at the 8th IBC in Paris, France in 1954.

After a four-year delay due to the intervening pandemic, we are looking forward to the resumption of our quadrennial **International Organisation of Palaeobotany Conference (IOPC), to be held May 27 to 31, 2024 in Prague, Czech Republic**. It will be such a pleasure to meet old and new friends, in person, in this beautiful city where palaeobotanical endeavors date back to the early 19th century. We thank the local organizers who have prepared twice for this conference which was first intended to be held in 2020. Updated details of program, symposia and field trips: **https://prague2020.cz/** Please be aware that regular registration ends on February 29. For more information visit: **https://prague2020.cz/registration-guidelines/**

We invite members to participate in the IOP General Assembly 2024 in Prague (for preliminary agenda see below). At this meeting we will vote on the venue for IOPC 2028. Please find the proposal for Calgary, Alberta, Canada made by Christopher West from the Royal Tyrrell Museum of Palaeontology at Drumheller, Alberta and colleagues at the end of this newsletter.

Seventeen students have received IOP Graduate Student Travel Awards (8 from European institutions) to support their attendance in IOPC. Winners have received direct communi-cation already; they will be recognized during the general assembly meeting at IOPC.

Six persons have been nominated and confirmed by executive committee for honorary membership; these individuals will be celebrated during the gala dinner of IOPC at the National Museum in Prague.

The election and confirmation of new officers (president, vice presidents, secretary-treasurer, members at large) is to be carried out in conjunction with the IOPC. This newsletter includes a brief resume of each of the nominated individuals. The 2024 election will be conducted by email ballot in April with results announced at IOP. Those voting must be current members of the society. Election procedure will be explained separately soon in a circular.

In this newsletter we also remember fondly colleagues who recently died, including Rolf Gossmann and Wilfried Krutzsch (obituaries within). We welcome new members, including Maria Groumpou, Vaibhav Junghare, Akash Karande, Akash Kohapare, Sanchita Kumar, Surekha Nimgade, Artai Santo, Abhilash Sen, Neha Thakre, and Rahul Ukey.

It has been a pleasure serving IOP as president; I did not anticipate eight years, as our bylaws clearly indicate a 4-year term for the president, having been written without anticipation of Covid-19. Thank you for your patience with me. I promise a peaceful transition at our conference in Prague.

Sincerely,

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

News from our members

Lapworth Medal of the Palaeontological Assiciation awarded to Else Maria Friis

[Text from *Recordings and announcements from the Geological Society's General Annual Meeting, 2023*] The Lapworth Medal goes to Professor Else Maria Friis. Prof. Friis is one of the foremost palaeobotanists worldwide, and the undisputed leader in uncovering and developing the rich record of fossil angiosperm flowers from the Cretaceous. Her work on this material, and her continuing new discoveries, have yielded a level of detailed information on the structural and systematic diversity of early angiosperms during the crucial first 70 million years of their evolutionary diversification that was unimaginable before Prof. Friis began her work. Her key breakthrough was to recognize that numerous small fossil flowers, which are generally not visible to collectors in the field, are abundant, can be extracted from suitable Cretaceous sediments by bulk-sieving, and are often preserved in superb detail. Prof. Friis pioneered the careful study of these fossils in the 1980s, first with scanning electron microscopy, and then, three decades later, with some of the first applications of synchrotron X-ray microtomography to palaeobotanical material - which is now routine.

Because fossil flowers can be compared directly, and in detail, with comparable structures in living plants, the palaeobotanical data that they yield can be integrated with the other advances in angiosperm phylogenetics and comparative biology that have been made over the past 30 years. Prof. Friis' work has revitalized research on angiosperm fossils, and has greatly clarified many aspects of early angiosperm evolution. In addition to the discovery of exquisitely preserved ancient flowers - many preserved as charcoal from ancient forest fires, Prof. Friis has made key breakthroughs and contributions in elucidating the very early fossil record of angiosperms and in integrating the angiosperm fossil record with other fields. Prof. Friis' book "Early Flowers and Angiosperm Evolution" provides an integrated overview of data and ideas on the major patterns of angiosperm evolution, focusing especially on the early evolution of the group and its fossil record. The book illuminates how palaeobotanical results relate to recent insights into the phylogenetic systematics, structure, and biology of extant angiosperms.

In recognition of her research and outstanding service Prof. Friis received the Royal Order of the Polar Star, First Class, from the Government of Sweden, a highly prestigious, national, civilian honour. She is also a Foreign Member of the Royal Society (2020), a member of the Royal Danish Academy of Sciences and Letters (1990), the Royal Swedish Academy of Science (1996), the Norwegian Academy of Science and Letters (1998), the Chinese Academy of Sciences (2002) and the American Academy of Arts and Sciences (2017).

The Lapworth Medal is the most prestigious honour bestowed by the Association to a palaeontologist who has made a highly significant contribution to the science of palaeontology by means of a substantial body of research and service to the scientific community.

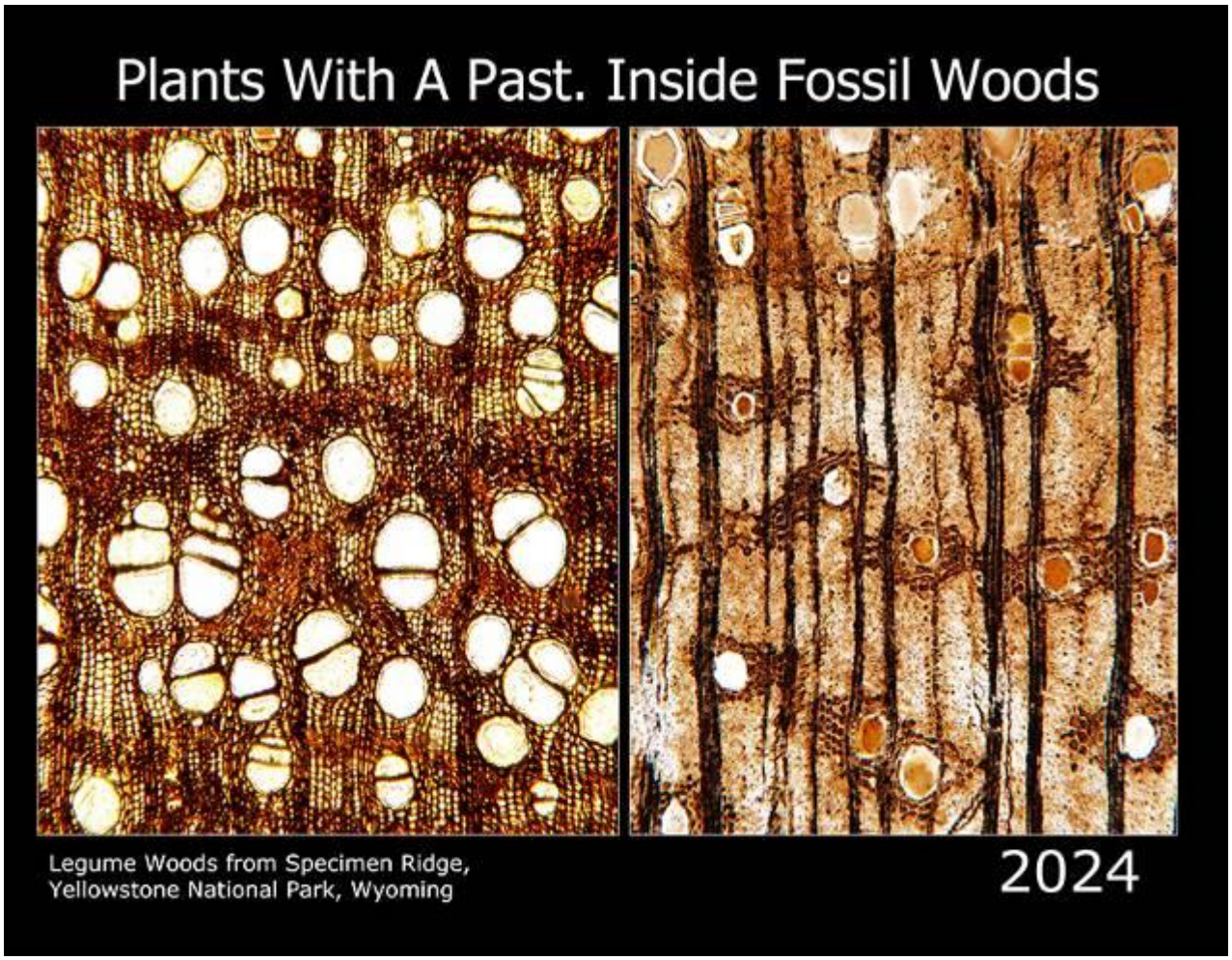
A 2024 Calendar for Wood Anatomists and Paleobotanists

Plants With A Past. Inside Fossil Woods. Each month features multiple colour photomicro-graphs of fossil and modern woods. The calendar gives the dates of Arbor Days worldwide, birth dates of I.W. Bailey and C.R. Metcalfe, wood anatomist specific days such as Ring-Porous Day and Vasicentric Parenchyma Day. You'll learn when Chocolate Cake Day, Wombat Day, Lost Sock Memorial Day, and Avoid Procrastination Day occur. Profits go towards supporting InsideWood curation and research on fossil woods.

Available from Lulu Press –a print on-demand publisher. Check Lulu's home page to see if there is a sale. http://www.lulu.com/home

Direct link to a preview of the calendar and order form
https://www.lulu.com/shop/elisabeth-wheeler/2024-insidewood-plants-with-a-past/paperback/product-45vv9yw.html

Elisabeth Wheeler, N.C. State University, Raleigh, USA



Professor Yongdong Wang (NIGPAS): Doctor Honoris Causa of University of Bucharest

Professor Yongdong Wang (second person from the left in the photograph) from Nanjing Institute of Geology and Palaeontology (NIGPAS), China received the title Doctor Honoris Causa from University of Bucharest on 9 December 2023. During the ceremony, the significance of palaeobotany as a tool for understanding the geological past was emphasized. The contributions of Professor Wang in the fields of palaeobotany and palynology were acknowledged by the University of Bucharest, as well as the success of the scientific collaboration between both institutions.

Mihai E. Popa, University of Bucharest, Romania

News from Friends for Fossil Forests

In IOP Newsletter 131, we introduced **Friends of Fossil Forests** (FFF) and outlined our mission related to fossil wood. We are delighted to share that on November 30, 2023, Friends of Fossil Forests received official approval from the IRS as a 501(c)(3) nonprofit organization.

We invite you to explore the projects we have initiated in the United States and in Indonesia. Additionally, we are excited to announce our participation in the upco-ming XI International Palaeo-botany Conference (IOPC) in Prague. We look forward to the opportunity to connect with you at the event!

News from FFF members

We are excited to announce the commencement of Guatemala's inaugural paleo-botanical research collaboration project "Guatemala's First Petrified Forest: Dead Trees and the Stories They Tell." This project, supported by the National Geographic Society, is led by Dr. Markus Eberl, an archaeologist and Associate Professor from Vanderbilt University. Markus became interested in petrified wood when he discovered Ancient Mayan Artifacts crafted from petrified wood in the lowlands of northern Guatemala and wanted to learn where the wood came from. Learn more about his discovery of petrified wood artifacts in Guatemala and about the discovery of Guatemala's first petrifiedforest here! This endeavor is a collaborative effort among local Guatemalan educators, archaeologists and international scientists, including Dr. Gabby Salazar, a conservation photographer and an environmental social scientist, Ross Donihue, a cartographer and the Founder and Creative Director of Maps for Good, and two IOP members, Dr. Nareerat Boonchai and Osmín Jared Vásquez.

In 2023, our research team taught high school students in Guatemala about paleobotany and fossilized wood. Photo by Gabby Salazar. Left to right: Osmín, Aom, Markus, Omar (a Guatemalan archaeologist).

The primary goal of this project is to research the composition of the Neogene Flora of Guatemala and the paleoclimate of the El Salitre Petrified Forest near Agua Blanca, Jutiapa. We are also studying the relationships between humans, their natural resources, and the landscape through time. At the same time, we are conducting educational outreach activities to help local educators and students in the Agua Blanca region understand the value and importance of petrified tree trunks.

As part of this project, Osmín Jared Vásquez is studying the petrified forest for his doctoral dissertation. He is a new IOP member and will attend his first IOP conference in Prague. We're excited to welcome Osmín as Guatemala's first paleobotanist! Osmín is a geologist with a Master's degree in Environmental Design, Planning and Management. He is currently a doctoral student in Natural Sciences at San Carlos de Guatemala University. He is also a professor of Micropaleontology, Paleobotany and Geochemistry in the Geology program at the Northern University Center of the San Carlos de Guatemala University, in Cobán city, Guatemala. A dedicated educator, Osmín received the Academic Excellence Award for University Professor, awarded by the San Carlos de Guatemala University, in 2017.

Left: One of the petrified tree sites in El Salitre. Right: Osmín working on slides of fossil wood in the Florida Museum of Natural History. Photo credit: Gabby Salazar

Osmín's interest in Paleobotany arose due to his passion for life sciences and historical geology. Currently, he is part of a multidisciplinary team of scientists studying the first fossil forest in Guatemala. His doctoral thesis is being carried out as part of the paleobotanical research of this project (specifically on the petrified woods found at the site) under the advice

of Dr. Nareerat Boonchai (National Geographic Explorer; Friends of Fossil Forests, Corp; FLMNH, University of Florida).

In addition to all the paleoenvironmental, paleoclimatic and paleoecological applications that paleobotany implies, something additional that motivates Osmín to be a paleobotanist in a country like Guatemala is that the name "Guatemala" comes from the Nahuatl language which means "place of many trees." He is motivated to study Guatemala's current and ancient forests, to elucidate the history of these trees and contribute to the understanding of the evolutionary history of the forests of his country and of the Central American region.

Nareerat Boonchai, Friends of Fossil Forests

IOP elections 2024: nominations

Nominations in a nutshell:

For president: ***Harufumi Nishida*** (Chuo University, Japan)

For three vice presidents: ***Marion Bamford*** (University of Witwatersrand, South Africa)
Maria A. Gandolfo (Cornell University, Ithaca, USA)
Jun Wang (Nanjing Institute of Geology and Paleontology, China)

For secretary/treasurer: ***Lutz Kunzmann*** (Senckenberg Dresden, Germany)

For three members-at-large: **Nareerat (Aom) Boonchai** (Museum of Petrified Wood and Mineral Resources, Thailand & Friend of Fossil Forest, NGO)
Anne-Laure Decombeix (CNRS, Montpellier, France)
Evelyn Kustatscher (Museum of Nature South Tyrol, Bozen, Italy)
Mihai Popa (University of Bucharest, Romania)
Honghe Xu (Nanjing Institute of Geology and Paleontology, China)

[Please note that another officer of the IOP Executive Committee, the Conference Member, will be chosen by the new Executive Committee according to the IOP Statute: „The Conference Member shall be responsible for the co-ordinating with the appropriate authorities concerning the palaeobotanical program at the next IOP Conference or International Botanical Congress."]

Brief introduction of nominees:

In the following the candidates for the elections are introduced by short biographies provided by themselves. Each candidate has already confirmed her/his nomination for the respective position.

For president:

Harufumi Nishida (Chuo University, Japan)

Professor Harufumi Nishida is affiliated to Department of Biological Sciences, Chuo University, Tokyo, Japan where he is working as Professor for Plant Biology and Evolution. He also served as an Invited Professor at Graduate School of Faculty of Science, University of Tokyo. He has authored and co-authored more than 110 research publications and also working as a reviewer for reputed professional journals.

Harufumi Nishida is having an active association with different societies and academies around the world, e.g., he served for many years as IOP representative and national delegate of the Scientific Council of Japan to the International Union of Biological Sciences (IUBS) and held the 34th IUBS General Assembly at Tokyo in 2023. Harufumi Nishida made his mark in the scientific community with the contributions and widely recognition from honorable subject experts around the world. His collaborative field research expanded from, e.g., China, Russia and North America in the north to Gondwana-related area in the south, particularly in Patagonia and Antarctica. In the IOP business he organized the XIII IPC/IV IOPC Tokyo in 2012. Harufumi Nishida has received several awards for the contributions to palaeobotany and the scientific community. His major research interest involves systematics, palaeobiology, palaeobiogeography, and phylogeny of vascular plants, in particular the evolution of gymnosperms and angiosperms.

For three vice presidents:

Marion Bamford (University of Witwatersrand, Johannesburg, South Africa, China)

Prof Marion Bamford has been a member of the IOP since 1993. From 2002 she was the Regional Representative for African and the Arabian Peninsula from 2002 and a Committee Member at large from October 2016-2024. She is the Director of the Evolutionary Studies Institute (formerly the Bernard Price institute for Palaeontology) at the University of the Witwatersrand, Johannesburg.

Her research focuses on African floras ranging from the Devonian to the Holocene using fossil woods, charcoal and leaves. Her current projects are in the southern African Karoo deposits but she has collaborations with researchers in Brazil, Germany, France and the USA. Marion is keen to increase the membership from African countries as there are rich fossil deposits that would be of global interest.

Maria Alejandra Gandolfo (Cornell University, Ithaca, USA)

Maria Alejandra Gandolfo is a Full Professor and Curator of the Cornell University Plant Anatomy Collection at the L.H. Bailey Hortorium, Plant Biology Section, School of Integrative Plant Science at Cornell University, in Ithaca, United States. She received a B.Sc. in Biology and a Masters in Ecology and Systematics from Universidad CAECE and a Ph.D. in Biology with a concentration in Paleobotany from Universidad de Buenos Aires, Argentina.

After postdoctoral work at Cornell University, she became a Sr. Research Associate at the L.H. Bailey Hortorium, Cornell University. In 2023, she was promoted to Full Professor. Alejandra's research focuses on the evolution of Southern Hemisphere paleofloras. She is most interested in Cretaceous to Miocene Patagonian palaeofloras, their relationships with its extant flora, and the abiotic factors that affected their past and current distributions. Presently, Alejandra is working on (1) Maastrichtian-Danian floras of Patagonia, (2) two Tierra del Fuego Miocene floras (the southernmost worldwide), and (3) reconstructing the Argentinean Miocene using paleo-botanical data through latitudinal gradients and niche modeling, among other projects.

Alejandra's previous executive experience includes more than 25 years combined as co-editor of *Cladistics*, *PlantSystematics.org*, *Ameghiniana*, Bibliography of the Paleobotanical Section (BSA), and the *Boletín de la Sociedad Geológica Mexicana*; currently, she is one of the Editors-in-Chief of the *Review of Palaeobotany and Palynology*. She is the Director of Undergraduate Students for Plant Biology and Biodiversity at Cornell and a member of the Academic Achievement and Petition Committee, CALS, Cornell University. More information can be found here: http://bhort.bh.cornell.edu/histology/labeng.html

Jun Wang (Nanjing Institute of Geology and Paleontology, China)

Professor and Deputy Director the Nanjing Institute of Geology and Paleontology (NIGP) Chinese Academy of Sciences (CAS); President of the Palaeobotany Branch of the Palaeontological Society of China (PSC).

Jun Wang got his PhD on Palaeobotany from Northwest University (Xi'an) in June 1997. Since then he did his research career at Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, and got a professor position there in 2001. His major research interests focus on the Chinese Carboniferous and Permian floras and their ecosystem. Current research projects include: 1) A systematic study on Noeggerathialeas—A group of Palaeozoic plants with uncertain affinity, most poorly known Palaeozoic plant group. 2) A restoration of an early Permian peat-forming vegetation preserved in ash-fall tuff in Inner Mongolia. The tuff flora is an exceptionally well-preserved window to the palaeo-ecosystem of so-called Cathaysian Realm. 3) The evolution of Carboniferous and Permian floras under the background of Icehouse and Greenhouse transition. Carboniferous and Permian may be the only geo-historical time when the earth had well-developped vegetation and went through Icehouse and Greenhouse climatic changes. The principle of vegetational reponse to Icehouse-Greenhouse transition during Palaeozoic could be meaningful for understanding the vegetational change in response to the present Icehouse-Greenhouse transition.

For secretary/treasurer:

Lutz Kunzmann (Senckenberg Natural History Collections Dresden, Germany)

Lutz Kunzmann is curator of palaeobotany at Senckenberg Natural History Collections Dresden, Germany, an institute of Senckenberg Society for Nature Reasearch Frankfurt (member of Leibniz Society); lecturer at Technical University Bergakademie Freiberg, Germany; one of the editors-in-chief of the journal *Palae-ontographica Abteilung B*. Serving as IOP Scretary/Treasurer since 2016.

Lutz Kunzmann is palaeobotanist with geological background mainly working in the Cenozoic and the Cretaceous. Focal research topics are currently: Paleogene/Neogene leaf floras – taxonomy, palaeoecology, palaeoclimate, and leaf trait analyses; the evolutionary history of European vegetation across the Eocene-Oligocene transition; fossil flora of the Early Cretaceous Crato Fossil Lagerstätte in NE Brazil. Overarching interest is the utilization of plant

fossils as palaeoenvironmental proxies for understanding deep-time ecosystems and climate. He has curational tasks in a large palaeobotanical collection with focus on ‚Tertiary' macrofloras from central Europe that has a long scientific tradition going back to the mid 19th century.

For three members-at-large:

Nareerat (Aom) Boonchai (Museum of Petrified Wood and Mineral Resources, Thailand & Friend of Fossil Forest, non-profit NGO)

Please follow this link: https://explorer-directory.nationalgeographic.org/nareerat-boonchai
Here you may find biographic information about her.

Anne-Laure Decombeix (CNRS, Montpellier, France)

Anne-Laure Decombeix is a Research Scientist at the Centre National de la Recherche Scientifique (CNRS) working in the department "Botany and Modeling of Plant Architecture", in Montpellier, France. She received a Bachelor degree in Organismal Biology from Université Toulouse 3, and a master and PhD in Paleontology, Paleobiology, and Phylogeny from Université de Montpellier. After postdoctoral work at the University of Kansas, she started her current position in 2011.

Anne-Laure's research focusses on Paleozoic and early Mesozoic plants. She is especially interested in anatomically preserved fossils and how their detailed study can give us insights into extinct plant biology. She is currently working on (1) Devonian-early Carboniferous floras from France, Australia, and Ireland, and (2) Permian and Triassic trees from Antarctica. Ongoing research also includes the development of new methods to image and analyze fossil plants. Anne-Laure's previous executive experience includes 7 years as secretary of the European association Agora Paleobotanica. She is currently a member of the editorial board of *Review of Palaeobotany and Palynology*, and an associate editor for *IAWA Journal* and *American Journal of Botany*. More information can be found here: https://annelauredecombeix.wordpress.com

Evelyn Kustatscher (Museum of Nature South Tyrol, Bozen, Italy)

I would like to present myself as a candidate for election as a Member-at-large of the IOP. My academic journey began with a PhD from the University of Parma, Italy, and continued with my habilitation at LMU Munich, Germany. My research primarily focuses on the integration of plant micro- and macrofossils from the Permian-Jurassic period. I advocate for the synergistic study of these two domains as it yields more robust biostratigraphical frameworks and enhances our understanding of past environmental and climatic conditions.

Since 2005, I have been the Curator for Palaeontology at the Museum of Nature South Tyrol in Bozen, Italy. In this role, I have spearheaded numerous research projects with a particular emphasis on reconstructing Permo-Triassic terrestrial ecosystems. A significant portion of my work also explores plant responses to major climate shifts and mass extinction events, areas critical to understanding both geological and contemporary environmental challenges. Although working in a museum, my commitment to academia is evidenced by my extensive teaching history, offering courses at both Bachelor's and Master's levels at LMU Munich, and guiding numerous students through their theses. Additionally, my involvement in organizing both national and international workshops and curating special exhibitions at the museum showcases my dedication to the dissemination of scientific knowledge. Given my comprehensive research background, educational contributions, and proactive involvement in the scientific community, I am confident in my ability to make meaningful contributions to the IOP. I am passionate about advancing our collective understanding of Earth's history and addressing the complex environmental challenges we face today.

Mihai Popa (University of Bucharest, Romania)

Mihai Emilian Popa was born and raised in Bucharest, Romania. He graduated Geology in 1994 at University of Bucharest, defended his Ph.D. thesis in 2000 on Early Jurassic plants of the South Carpathians, and his Habilitation thesis in 2015, on fossil plants and coals. He was a Fulbright Scholar at Florida Museum of Natural History, University of Florida, Gainesville, between 2001–2002.

Mihai is a Professor of Earth Sciences at University of Bucharest, Faculty of Geology and Geophysics, where he is teaching Palaeobotany since 1994, and chairing the Doctoral School of Geology since 2018. He focuses on Mesozoic, mainly Triassic and Jurassic plants from Europe, Asia and Greenland, also working on Carboniferous and Permian plants from Romania. Mihai served as IOP vice-president between 2010–2015, he was a visiting professor at Université Claude Bernard, Lyon, France, in 2002, and at Southwest Petroleum University, Chengdu, China, since 2019.

Honghe Xu (Nanjing Institute of Geology and Paleontology, China)

Professor of the Nanjing Institute of Geology and Paleontology (NIGP) Chinese Academy of Sciences (CAS); the Director of Big Data Center of the NIGP, CAS; Secretary General of the Palaeobotany Branch of the Palaeontological Society of China (PSC); Secretary General of the Paleontology Working Group of the Deep-time Digital Earth (DDE) program. Regional Representative of IOP (2018-2022).

Honghe Xu works on: 1) Biodiversity and evolution of early land plants and their palaeoenvironment background. The related study includes Devonian floras reconstruction and comparison based on plant fossil materials from Xinjiang China, South China, New York State (USA), Venezuela and Antarctica; fossil plant systematics, taxonomy, palaeophytogeography and evolutionary botany; and growth model of the earliest forest-forming plants; 2) Quantitative and systematical study and artificial intelligence of palaeontology and stratigraphy. The related study includes analyzing and mining big data of palaeontology and stratigraphy to discover potential knowledge; powering Geobiodiversity database, fossil images database and their websites (geobiodiversity.com and fossil-ontology.com); understanding the ontology of ancient organisms in the geological ages; 3) Science communications. Organic combination of scientific research and science communication work. Writing scientific books and articles and giving open talk to the public.

IOP General Assembly 2024: agenda announcement

The General Assembly of the International Organisation of Palaeobotany will take place during the IPC/IOPC 2024 in Prague on Thursday May 30, 18:00-19:30 (room to be announced in the conference program). Hereby, all IOP members are formally invited to participate. Following the IOP by-laws, the preliminary agenda for the meeting is announced here:

- report of the president
- report of the secretary/treasurer
- announcement of travel grant winners (handing over money)
- announcement of results of elections
- introduction of bid for next IOPC venue and voting
- miscellaneous

Obituary: Rolf Gossmann (1934–2023)

Rolf Gossmann excelled in bringing people together. Here, Rolf, in the center with the green shirt, discusses the formation of plant fossils and the importance of paleobotany with the general public. Photo: C. T. Gee

On October 19, 2023, we lost one of the most devoted and enthusiastic members of our paleobotanical community with the death of fossil plant collector and Devonian/Cenozoic specialist Rolf Gossmann. Rolf slipped away peacefully in his sleep at his home in Bonn, Germany, at the age of 89.

I first met Rolf some 40 years ago, in March 1986, on a field trip after the *Arbeitskreis für Paläobotanik und Palynologie* meeting in Münster. There was an unexpected cold snap, so it was freezing, and parts of the Devonian outcrop were covered in thick snow. However, despite the frosty weather and futile search for early land plants in heavy snowdrifts with a group of total strangers, I did not find myself the least bit uncomfortable, but instead exhilarated. I could not speak any German then, but Rolf in his open and kind way befriended me and made me feel warmly welcome to the paleobotanical community in Germany.

This was the magical personality of Rolf Gossmann. Charismatic, outgoing, and big-hearted, Rolf was a Renaissance man who had a wide range of interests, deep knowledge of global affairs, and an exuberant passion for people and nature. Luckily for us, he was also an avid collector of fossil plants. Rolf spent roughly 60 years collecting in the Devonian and Cenozoic of the Rhineland, published 34 scientific papers and popular articles, and gave countless talks at scientific conferences, in museums, on field trips, and in the field for the general public. He freely offered his knowledge to the scientific community and to non-scientists in the form of numerous museum exhibits on paleobotany. Rolf's scientific legacy lives on not only in his publications and dissemination of paleobotanical knowledge, but also in the donation of the valuable fossil plant collections that he and his wife Anne Gossmann made together over the course of their lifetimes to the Goldfuss Museum collections at the University of Bonn in Germany. These specimens are so exquisitely preserved that they can be used in lab to show students the central vascular strand, enations, microphylls, and the increasingly complex branching patterns of Devonian plants.

Yet, Rolf did not earn his daily bread as a professional paleontologist, but collected fossil plants, did research, and wrote up his findings in his spare time. In real life, Rolf was a career journalist and diplomat who worked at the highest levels of international relations.

Rolf was born in the mid-sized city of Marburg located some 100 km north of Frankfurt, on October 12, 1934. His childhood and youth were spent in small town of Rosenthal in the Burgwald, about 18 km northeast of Marburg, where he had already begun to collect fossil plants. Despite his interest in paleontology, after high school, Rolf decided to go into journalism and politics. He studied law, modern history, and politics, first at the nearby University of Marburg, then in University of Würzburg where he earned his first degree in 1962. During his studies, he continued to build on his experience in journalism. Rolf was also very active in the Red Cross, and after finishing his studies, he spent several months abroad—in West and Central Africa, as well as in Geneva—on behalf of the Red Cross. One of the most exciting things to happen to Rolf while in Africa was a visit to the *Hôpital Albert Schweitzer* in the rainforest of Lambarene in Gabon, at the invitation of the great man himself, Albert Schweitzer, the multifaceted humanitarian who won the Novel Peace Prize in 1952.

Once back in Germany, Rolf married Annemarie ("Anne") Kiehne in 1963. Anne later worked as a microfossil preparator in Paleontology and curatorial assistant for the Goldfuss Museum at the University of Bonn for many years. Not only did Rolf and Anne share an interest in fossil organisms, I know from personal experience that they were also passionate about cooking, plants, gardening, and their family.

Rolf continued working in journalism as the international news editor of United Press International in Germany. In October 1966, he and Anne moved to Bonn, where Rolf began working for the German Federal Ministry, first as the head of the public relations office, then making his way upwards to the head of department of German-German relations. At that time, the world order was quite different: there were two Germanys—West Germany and East

Germany—with a deadly Berlin Wall and intense geopolitical tension between them. I imagine that Rolf was really the right person for this diplomatic mission, given his highly developed social and political intelligence, his skill with words, and his easy way with people.

Rolf was also active in foreign policy, accompanying the German Secretary of State to South Korea on three separate occasions. Back in Germany, during the discussions regarding reunification between the two Germanys, Rolf was instrumental in the high-level economic negotiations. For his service, after the reunification, Rolf was awarded the Order of Merit of the Federal Republic of Germany, a prestigious medal given for special achievements in political, economic, cultural, intellectual or honorary fields.

After the reunification of the two Germanys, Rolf continued to strive for international diplomacy and understanding in Germany and in Central Europe. Even after his official retirement from the Ministry in 1999, he still served as an Independent Expert Consultant as Chairperson of the Committee for the National Minorities of the Council of Europe.

It seems hard to reconcile these two sides of Rolf: the polished conciliator well-dressed in a suit and tie, selflessly serving in diplomatic service, and the field guy in rubber boots and a hard hat, toting a bucket of tools to the outcrop and lugging back scores of fossiliferous rocks after a long day. Nevertheless, this was indeed also the same generous man who shared with me the fresh rhubarb leaves that he grew himself in his garden or invited me over for a home-cooked meal of Korean bulgogi.

In the last 16 years of his life, Rolf's attention increasingly turned to the paleontological world, and he began to publish on his findings in the field. Many of his earlier, overview articles on popular science served to bridge the information gap between paleobotanists and people interested in the life of the past. In the last few years, though, while in his late 70's and 80's, Rolf began publishing more scholarly scientific papers, particularly on the Early Devonian plants of the Bonn area, but also on the species-diverse conifer floras of the Cenozoic. His achievements have been widely recognized. In 2007, Rolf was awarded the Zittel Medal from the *Paläontologische Gesellschaft*, which is presented to non-professionals working in paleontology who have made a significant contribution to the discipline. In 2015, Rolf received the distinguished Rheinlandtaler, a medallion honoring engagement and service to the Rhineland in regard to history, ethnology, the local language, linguistics, or the natural sciences.

At the time of his death, Rolf was working on more than a dozen manuscripts on Devonian and Cenozoic paleobotany in various stages of preparation. I am honored that the last paper that Rolf published, in 2022, was with doctoral student Mariah Howell and me, on a gentle bleaching technique that was tested on Miocene conifer cuticles that Rolf had collected. Working with Mariah on her first published paper, Rolf was just as friendly, open, patient, and kind to her, as he was with me that first time that we met on that snowy outcrop nearly four decades ago.

Rolf is survived by his wife Anne, his three children Katrin, Rolf, and Viola and their respective partners, ten grandchildren, and seven great-grandchildren. A great legacy for a great man.

Carole T. Gee, University of Bonn,
with contributions from Viola Hartmann

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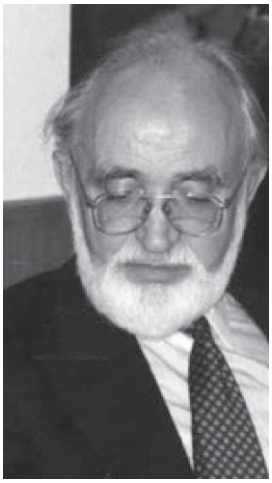
Obituary: Wilfried Krutzsch (1928–2022)



Wilfried Krutzsch, 1998
(photo: archive Harald Walter, Freiberg/Sa., Germany)

Almost unnoticed by the palaeontological community, the German palaeo-palynologist Wilfried Krutzsch passed away in Berlin on 17 April 2022 at the ripe old age of 94. With this short obituary, we would like to remember him especially from the perspective of scientists researching in Cenozoic units in central and eastern Germany.

Wilfried Krutzsch will be remembered by the professional community in palaeo-palynology as an excellent expert on the central and eastern German palynofloras from the mid-

Cretaceous to the Pliocene and as a leading author of Paleogene and Neogene palynomorph zonations for this region. He leaves behind an immense knowledge, documented in numerous publications, and an extensive collection of palynomorph slides, which were the basis of all knowledge and which, stored in the archives, can also be used for future investigations and revisions. As a former employee at the Central Geological Institute of the GDR in Berlin, he was bound to secrecy, especially with regard to all data relating to lignite deposits, which was - *de facto* - equivalent to a partial publication ban on his research results. Therefore, after the political change in East Germany in 1989, he endeavoured to publish his results and stratigraphic interpretations in monographs and overview papers. Tables with many columns and several pages testify to his endeavour to include all available geoscientific data in his considerations and concepts in a summarised form.

Wilfried Krutzsch was a scientist who sometimes found it difficult to acknowledge that the results of others also critically questioned his stratigraphic concepts in certain respects, especially when other opinions and interpretations came from results of new geological mapping and lithostratigraphic classifications. His sometimes dogmatic stance and polemical contributions in publications have unnecessarily polarised and unfortunately obscured his undisputed scientific expertise. For example, his biostratigraphic classification of the type section of the Niederschöna Formation in the Saxon Cretaceous Basin as upper lower Cenomanian, which dates back to the 1960s and has since been almost forgotten, was independently confirmed in 2023, ruling out the middle Cenomanian age that was believed to be certain.

In the last decade of his life, Wilfried Krutzsch endeavoured to secure his scientific legacy for the generations that followed him. Unfortunately, there is currently no other person with such comprehensive knowledge as him, who can help to professionally support the challenges we face in preparing for the future by providing reliable palynostratigraphic classifications of Cenozoic sediments in central and eastern Germany. Here, we are called upon to specifically train young scientists and thus utilise Krutzsch's scientific legacy in a productive way.

Detailed biographical data can be found in the commemorative publication issued by the Museum für Naturkunde Berlin in 1993 on the occasion of his 65th birthday.

Lutz Kunzmann - Dresden, Jochen Rascher - Dresden, Gerda Standke - Freiberg, Claudia Niemz - Lauta, Nora Pfeiffer – Lauta (all Germany)

Meeting reports

Palaeobotany Conference of the Palaeontological Society of China, Xi'an, Shaanxi Province

The Palaeobotany Conference of palaeobotany branch of the Palaeontological Society of China (PSC) was held in Xi'an, Shaanxi Province in 13-18 October, 2023. The conference was themed as "Palaeobotany in the Information Age" and undertaken by Chang'an University and Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (NIGP, CAS).

The academic conference included two-day's indoor reporting and two-day's post-meeting fieldwork in northern Shaanxi Province. There were 201 participants from over 40 units of universities, institutes, geology surveys, museums, and publishing houses. 121 academic abstracts were received and published in the abstract volume of the meeting. 76 oral and 17 poster presentations were reported and discussed during the conference. Excellent oral and poster presentations were selected and awarded to about 1/3 of participant graduates.

The palaeobotany branch of the PSC was founded in Xi'an in 1983 and holds academic meetings every two years. The Palaeobotany Conference 2023 just meets the 40's anniversary of the palaeonbotany branch. The next conference will be organized in Chengdu, Sichuan Province in 2025.

Group photo of participants of the academic conference 2023 of the palaeobotany branch of the Palaeontological Society of China (PSC).

Group photo from post-conference fieldwork in northern Shaanxi Province

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Palaeobotany Specialist Group of Linnean Society of London

Wednesday 22 November 2023, Burlington House, Piccadilly, London, W1, GB.

"Diolch yn fawr, Barry!"

Over 50 researchers and other friends of fossil botany gathered to hear 19 speakers celebrate the long career of that doyen of British palaeobotany, Prof. Barry Archie Thomas. In addition to 11 speakers from Great Britain, it is a mark of the respect in which octagenarian Barry is held that a further 8 had crossed oceans and continents to speak here from France, Portugal, Czechia, Armenia, Japan and USA. Whilst Barry may have been the most senior attendee, it was cheering to see several people in their twenties embarking upon their palaeobotanical careers at the pre-doctoral level. A *frisson de nos jours* was present from the outset, with a declaration that an embargo be placed upon the sharing via social media of photographs taken from certain of these presentations of as yet unpublished ideas or information. (Please note that only the names of those speaking at the presentation are given, although in many instances they represent bigger teams, sometimes from more than one research centre.)

Christine Strullu-Derrien (Paris, France & London, GB) spoke on the earliest fungal plant pathogen found in the Lower Devonian (Emsian) Rhynie Chert of Scotland. Combining bright field microscopy and confocal laser scanning microscopy (CLSM), a newly-named fungus was shewn to form a stroma-like body in cortex of both aerial axes and enations of the lycopod *Asteroxylon*. The plant responded by forming dome-shaped projections from which tufts of fungal conidiophores erupted through the epidermis. This earliest known pathogenic fungus is clearly a new ascomycete; it might provide a minimum node age-calibration point for all Ascomycota and perhaps even for all the Dikarya crown group, sub-kingdom of fungi.

Eliott Capel (Lille, France) revised another Emsian flora from Matringhem, between Calais and Arras in northern France. Adpressions here include fertile *Psilophyton burnotense,* whereas the limonitic permineralizations are zosterophylls comparable to *Gosslingia* and *Trichopherophyton*. Both modes of preservation here are allochthonous material; the taxonomic differences may reflect differing ages within the Emsian and/or divergent taphonomies.

Laura Cooper (Edinburgh, GB) returned to the Rhynie Chert theme by describing what she calls phloem-like tissue in *Asteroxylon*. Traditional light microscopy alone is inadequate to resolve the presence of sieve pores in the leafy shoots of this lycopsid. By combining CLSM and scanning electron microscopy (SEM), she demonstrated sieve pores, some as small as 0.2 micrometres across, in the lateral walls of these phloem-like cells that had been exposed by HF etching of the chert. Laura drew comparisons with the sieve pores in certain extant species of *Selaginella* and *Lycopodium*.

Harufumi Nishida (Chuo, Japan) presented a stimulating collection of static and video images of plants from the Rhynie Chert as disclosed by the Hyper-resolution Multi-dimensional Petrographic Imaging System (MULPIS). Again an embargo was placed on the sharing of images from this talk and in subsequent questions there was limited disclosure of how the problem of glare in photographing wet surfaces is overcome. One block of the Chert was ground at intervals of 0.5 to 2.0 micrometres, digitally photographed with high resolution cameras and then an entire 3-D image was rendered using Amira and ImageJ technology. Over 160 plant and fungal fragments have been identified so far from this block; as with SEM, false colours are added to certain images to highlight particular tissues. MULPIS is now also applied to permineralized glossopterid ovules from Australia and Upper Cretaceous gymnosperms from Japan and Antarctica.

Peta Hayes (London, GB) and Christopher Cleal (Bristol, GB) gave a summary of the palaeobotanical career of Prof. Barry Thomas, including his studies at Sheffield, Reading and Newcastle, followed by teaching, research and administration at London, Cardiff, Aberystwyth and Lampeter. With nearly 30 books and almost 200 papers to his credit, Barry is one of Britain's most prolific palaeobotanists, widely referenced for his work not only on Carboniferous lycopods but also wider aspects of fossil plant taxonomy, on geoconservation and living pteridophytes. Barry was largely responsible for the international palaeobotanical meeting held at Goldsmiths' College, London, in 1985. Many palaeobotanists, including myself, are grateful to

Barry for his guidance, support and encouragement given to advance their careers over the last 50 years. Special congratulations were conveyed to him from Profs. Dianne Edwards, Robert Spicer and Joan Watson who sadly were unable to be present at this gathering.

Chris' Cleal continued asking "Where did Palaeozoic coal swamps come from?" Whilst coals are known since Devonian times, the greatest seams are Pennsylvanian (Upper Carboniferous) in age, having been formed from peats deposited beneath swampland forests that grew in lowland tropics of Pangaea. Chris' compared the older Visean/Namurian "proto-coal swamps" from Scotland, France and Silesia with the younger peak of coal swamp growth when in late Westphalan/Moscovian times about a million square km of coal was deposited to be found today from the Caucasus to the Appalachians. Whilst these older coals had formed largely from lycopods, sphenopsids and ferns, they lacked the cordaites and more diverse pteridosperms (e.g. medullosans) that also contributed to Pennsylvanian seams. He referred to the cyclothemic nature of Carboniferous coal seams linked to sea levels that fluctuated with Gondwanan glaciations, that waxing and waning much as in our Quaternary times.

Borja Cascales-Minana (Lille, France) described attempts to disentangle the phases of evolution of vegetation that are evidenced in the Nord Pas de Calais coalfield, near Douai in northern France. In an almost continuous series of Namurian to Westphalian deposits, he recognizes 6 phases of floristic development: ranging from initial invasion of peatlands in the Langsettian, through to typical Westphalian vegetation by the Bolsovian, to marked reduction in diversity in the Asturian. Borja related these changes to effects of the Variscan orogeny and coeval climate change linked to Gondwanan glaciation.

Sirush Khachaturian (Yerevan, Armenia & Lille, France) described diverse meagafossil- and palynofloras from the Ertych section of central Armenia. Whilst these fossils indicate a northern Gondwanan locality of Givetian age, the presence of *Kraeuselisporites ollii* shows also proximity of this flora to Baltica. Identification of associated megaspores remains to be done.

Andrew Scott (Egham, GB) proposed Carboniferous lycopod trees be considered keystone species in that their impact upon ecosystems of that age was large. From their limited presence in volcanogenic deposits and floodplains in the Mississippian to their dominance of tropical coal swamps in the Pennsylvanian, such trees caused major changes in the atmosphere globally; their increased photosynthesis raised the level of oxygen, whilst that of CO2 fell with the capture of much carbon in trees and then peats that became coals. Increased wildfire and temperature falls with resultant glaciation were consequential. Andrew drew attention to stigmarian axes allowing lycopods to form forests in wetlands; he even suggested a reconsideration of the nineteenth century idea that some coals formed from floating swampland forests.

Geoff' Warrington (Leicester, GB) provided palynological evidence for the age of the Exeter Group of sediments on the south coast of Devon, SW England. Miospores, including *Lueckisporites virkkii*, discovered there in the 1980s, point to the Permian. Now Ar:Ar isotopic work and magnetostratigraphy show the Exeter Group to be Mid-Permian (Roadian to early

Guadalupian). It appears an obelisk marking the western extremity of the Jurassic Coast is in fact Permo-Triassic!

Charles Wellman (Sheffield, GB) spoke about *sporae dispersae* of late Ordovician to basal Silurian age from the northernmost Cedarberg Formation of South Africa. His team have added to Gray's investigations of these near-shore, marine deposits that were laid down not far from the retreating Hirnantian ice-sheet. They were surprised to find abundant and dominant land-plant spores, with very few marine palynomorphs, perhaps indicating the proximity of the decaying glaciers. Compared to coeval, but more diverse palynofloras from similar latitudes in Gondwanan Arabia, these *sporae dispersae* are dominated by tetrads, with rare dyads and monads. Charles echoed Gray's view that these cryptospore-forming eophytes were indeed robust land plants.

Christopher Berry (Cardiff, GB) asked if there is evidence for the oldest known forests in Eifelian sediments in North Devon and West Somerset in SW England. He and collaborators from Cambridge, England, report from there branches and both fallen and *in situ* trunks of the pseudosporochnalean tree *Calamophyton*. Chris' compared these English finds with Frasnian lycopod forests from Svalbard, the Givetian trees of New York State, America, and Xinjiang, China. If their age and arborescence prove correctly interpreted, then this "tall tale" may indeed be one of the oldest known fossil forests.

H.L. Pearson (Sizewell, GB) gave the most abstract and probably the least scientific talk of this meeting by comparing reassembly of complete fossil plant bodies to solving jigsaw puzzles. He attempted to draw parallels with the six approaches proposed by Chaloner at the Goldsmiths' College conference that Barry Thomas convened in 1985. Instances of these approaches were supplemented with examples from partial reconstructions of plants of Devonian to Eocene age. Perhaps the 3D complexity of Rubic's cube serves better in this analogy than essentially 2D jigsaws. Sadly, our extant flora does not always give us such reliable guidance for reconstruction as do cover-pictures on jigsaw boxes; witness confusions over pteridosperms and bennettites.

Luke Mander (Milton Keynes, GB) provided an analysis of reticulate venation in fossil leaves, linking the occurrence of loops (anastomoses) in these foliar networks to reaction to herbivory. His modelling indicates branching venation optimizes transport through vascular tissues, whereas looping veins are more resistant to damage by animals and fungi. Luke showed detailed *camera lucida* drawings of veins in extant *Betula alba,* comparing its network to robust linkages in the Internet of computers. AC Scott commented that Carboniferous leaves show only marginal bites with scant evidence of foliovory when the plants were alive.

Alexander Hetherington (Edinburgh, GB) summarized the patterns in which leaves, enations, roots and reproductive organs are arranged around axes of vascular plants from the mid-Palaeozoic to today. Sandy provided evidence for contact parastichies in sporangia and enations of *Asteroxylon*, one of the most structurally complex plants from the Lower Devonian Rhynie Chert. He compared the 2D centric and 3D cylindrical approaches to describing

phyllotaxy, then described rhizotaxy in the helical stigmarian rootlets, whorled roots of calamites and regular lateral roots of extant *Cucurbita* and *Ceratopteris.* HL Pearson suggested Sandy compare the arrangement of rhizoids in *Aglaophyton majus* with their rhizotaxy in bryophytes.

Peter Crane (Virginia, USA) presented an update of new discoveries and revised observations from older collections of megafossils and mesofossils from around the globe that shed new light on the diversity and evolution of Gnetales (chlamydosperms). Pollen resembling the striate grains of extant *Ephedra* and *Welwitschia* are known from the Permian onwards, but the last 40 years have seen many advances in recognition of greater diversity and abundance of Gnetales, particularly in Upper Jurassic to mid-Cretaceous strata. Peter drew attention to *Ephedra* -like whorls of inner fleshy and outer harder bracts in some fossils; others show micropyles with radiating cells that bear comparison with ovules of the bennettite *Cycadeoidea*. Like *Ginkgo*, Gnetales declined in diversity from the mid-Cretaceous, although DNA hints at diversification of *Ephedra* and *Gnetum* in the Cainozoic.This evidence all adds considerably to data to refine our understanding of how Gnetales fit best into the various cladograms of seed plant phylogeny.

Carlos Gois-Marques summarized the history of palaeobotanical discoveries from the Azores, Canaries, Madeira and Cabo Verde islands that constitute the Macaronesian archipelagos. A diverse range of documentation and museum specimens, dating back to the sixteenth century, is being supplemented by current collecting of mega-, meso-, micro- and ichnofossils, ranging in age from Miocene to Holocene. These fossils are autochthonous or allochthonous, but are generally preserved in connexion with explosive volcanism. Carlos explained how these floras provide evidence for the evolution of insular syndromes and demonstrate anthropic impact on insular vegetation.

Jiri Kvacek (Prague, Czechia) drew our attention to the 15th International Palynological and 11th International Palaeobotanical Conferences which will take place 27-31 May 2024 at Prague. He generously distributed hard copies of *Fossil Imprint,* the Palaeontological journal of the Narodni Museum, Prague, in which papers for the CH Shute *Festschrift* are due to be published in July 2024.

As in many earlier years, Dr Peta Hayes is to be warmly thanked for the smooth and efficient running of the gathering, as are the Linnean Society of London for making their rooms available for these Specialist Group meetings, including the provision of refreshments in their historical Council Room. As usual, there was ample time for more informal interactions throughout the day; such events are higly valuable to all those who attend, given the celebratory, innovative and dynamic nature of fossil botany today.

Hugh L. Pearson (Sizewell, GB).
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Meeting report: Palynology Specialist Group of Linnean Society of London

This meeting was convened at Burlington House, London, GB on Thursday 23 November 2023 by Dr Barry Lomax (Nottingham, GB) and attracted about thirty participants, including speakers from Germany, Great Britain and the USA. For brevity, only the speakers' names are given and their geographical locations rather than their complete teams and titles of their research institutions.

Paul Strother (Boston, USA) considered fossil spores before sporophytes at the algal/plant transition. He described assemblages of cryptospores and terrestrially-derived spores that indicate changes in meiotic developmental processes rather than the direct phylogeny of an embryophytic land flora. Across the Lower Palaeozoic, Paul pointed to cryptospores comparable to extant charophytes and hepatics, naming *Tetrahedraletes* from the Middle Ordovician as a likely precursor of the trilete spore.

Phil Jardine (Muenster, Germany) asked if palynological data can be used to archive the phylogenetic diversity of vegetation. Examining angiosperm pollen from the Americas between 20°S and 80°N, he chose to omit conifer pollen, fearing it may skew his analysis. His findings suggest such pollen analysis does not give as reliable indication of phylogenetic diversity as does DNA data from late Quaternary material.

Hendrik Nowak (Nottingham, GB) has been examining morphological variability and chemotaxonomy of *in situ* Triassic spores and pollen. Omitting bryophytes, he described fern spores and conifer pollen where sometimes over 50 % of the undispersed grains observed by visible light might be considered malformed. Does this indicate hybridization or perhaps ecological factors at work? Using also Fourier transform infra-red spectroscopy, Hendrik concluded it best to use multiple samples to define species boundaries where maturation, teratology and taphonomy all play their parts.

Wilson Taylor (Eau Claire, USA) updated us on his research into encysted and vegetative euglenids. He has used TEM to investigate the ultrastucture of their laminated cyst walls in material from across the world that ranges from Devonian to Quaternary in age. Some of hese palynomorphs have been mistaken for prasinophytes or soil fungi. They may be useful indicators of terrestrial/freshwater deposits.

Faidra Natal (Nottingham, GB) uses chemotaxonomy as a tool in resolving the classification of sub-fossil grass (Poaceae) pollen. She has been sampling Holocene sedimentary laminae from a lake in central Turkia, plus grains from many extant domesticated cereals and wild grasses. Using FTIR scanning of acetolysed grains, she concludes that there have been certain misclassifications (eg between some wild grasses and *Triticum*), with identification below genus rank being difficult.

Gilda Lopes (Sheffield, GB) addressed the Lower/Middle Devonian transition in northern Spain, particularly in relation to extinctions around the Chotec Event. He pointed out the problem of distinguishing between extinctions and changes in environment. Strata near the

Picos de Europa, dated by conodonts as early Eifelian, include palynomorphs of Gondwanan affinity. Gilda finds no evidence here of a worldwide anoxic event, but he suggests the Rheic Ocean was somewhat narrower than previously proposed at that time.

Higor Antonio-Dominguez (Kew, GB) spoke about pollen of the extant asteracean tribe Veroniae from Madagascar, Africa and Asia. He has used light microscopy, SEM and TEM to examine acetolysed grains and applied principle components analysis to his observations. On Madagascar, he used differences in apertures to recognoze 89 species belonging to 13 genera, including the endemic *Centauropsis*. He plans now to focus on pollen from this tribe from South Africa.

All talks were followed by questions and there was ample opportunity for ongoing discussions and networking during refreshment breaks in the historic Council Room of the Linnean Society. Barry Lomax and the Society are to be congratulated in organizing and supporting this successful event. If you were not able to attend this event, make a note in your diary to go to the Palynology Specialist Group Meeting at Burlington House in November 2024.

Hugh L. Pearson (Sizewell, GB)
e-mail: hugh.pearson@edf-energy.co.uk

Upcoming meetings

41st Mid-Continent Paleobotanical Colloquium (MPC) 2024, Field Museum, Chicago, USA

Dear Colleagues and Friends,

The 41st Mid-Continent Paleobotanical Colloquium (MPC) 2024 and a very special symposium to celebrate Sir Peter Crane's 70th Birthday will take place at the Field Museum in Chicago, April 12-14, 2024. We invite a diverse set of students, faculty, amateur paleontologists, and others interested in fossil plants to attend this meeting.

Please visit the MPC 2024 website for details regarding registration, field trip, tentative program, student travel grants, lodging and transportation, and other relevant information: https://www.herrerapaleolab.org/mpc-2024.

Important Deadlines:

Registration: February 28th, 2024, 11:59 PST (USA).

Abstract Submission: March 30th, 2024, 11:59 PST (USA).

Student Travel Grant application: February 28th, 2024, 11:59 PST (USA).

We look forward to hosting you in Chicago in 2024, back where it all began!

Organizing committee:

Fabiany Herrera (Field Museum)

Patrick Herendeen (Chicago Botanic Garden)

Michael Donovan (Field Museum)

XV International Palynological Congress / XI International Organization of Palaeobotany Conference May 25–31, 2024, Prague, Czech Republic

For more information please visit: https://www.prague2020.cz/news.php

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XX International Botanical Congress July 21–27, 2024 Madrid, Spain

For more information please visit: https://ibcmadrid2024.com/

12th European Palaeobotany and Palynology Conference, 2026, Münster, Germany

For more information please read announcement on p. 3 of IOP Newsletter 132.

32nd International Workshop on Plant Taphonomy, November 8–10, 2024, Berlin, Germany

Save-the-Date!

Dear Colleagues,

we are announcing the 32nd International Workshop on Plant Taphonomy, to be held from November 8–10, 2024, and hosted at the Museum für Naturkunde Berlin. This year, we are organising a joint event together with an APP meeting (Arbeitskreis für Paläobotanik und Palynologie).

We appreciate oral or poster contributions from the fields of palaeobotany, palynology, plant evolution, or related geoscientific disciplines. Especially, we want to encourage young scientists (students, PhD candidates) to share their scientific results in a familiar environment of our community but also of citizen scientists who like to share their results. Conference languages will be English and German. The First Circular will be spreaded by the end of February. In case of interest or questions, please contact: ludwig.luthardt(at)mfn.berlin.

Ludwig Luthardt (Museum of Natural History Berlin)
Berlin, 19/02/2024

Following page:
Proposal for hosting IPC/IOPC 2028: Calgary, Canada

The **International Organisation of Palaeobotany Conference and** International Palynological Congress (**IOPC XII/**IPC XVI) 2028

Calgary Land Acknowledgment

Tourism Calgary would like to take this opportunity to acknowledge the Calgary **area where the Bow and Elbow rivers meet is a place of confluence where** the sharing of ideas and opportunities naturally come together. Indigenous peoples have their own names for this area that have been in use long before Scottish settlers named this place Calgary. The Métis call the Calgary area Otos-kwunee. In the Blackfoot language, they call this place, Moh-kins-tsis. The Stoney Nakoda Nation refer to the Calgary area as Wichispa Oyade and the people of the Tsuut'ina nation call this area Guts-ists-i. We would like to acknowledge that we are located on the traditional territories of the people of the Treaty 7 Region in Southern Alberta. This includes: the Siksika, Piikani, and Kainai collectively known as the Blackfoot Confederacy; the Îethka Nakoda Wicastabi First Nations, comprised of the Chiniki, Bearspaw, and Wesley First Nations; and the Tsuut'ina First Nation. The City of Calgary is also homeland to the historic Northwest Métis and to Métis Nation of Alberta, Region 3. We acknowledge all Indigenous urban Calgarians, First Nations, Inuit, and Métis, who have made Calgary their home.

tourism calgary

Overview from the Organizing Committee

IOPC XII / IPC XVI

Alberta, Canada proudly hosted the 2nd International Organisation of Palaeobotany Conference in Edmonton and the 6th International Palynological Congress in Calgary in 1984. We are excited about the prospect of hosting IOPC XII/IPC XVI in 2028, inviting delegates to return to Calgary, Alberta, more than four decades later.

Palaeobotany in Canada has a rich history, with a legacy stretching back before Canada became a nation. **The discipline was shaped by the scientific endeavors** of pioneering scientists such as J.W. Dawson, G.M. Dawson, and D.P. Penhallow. The fossil record of plants in Canada, spanning the Phanerozoic, is rich and extensive, with discoveries made all across the country. Alberta is no exception to this rich and extensive fossil record. Although famous for its dinosaur fossils, the province also boasts an abundance of well-preserved **fossil floras and palynofloras from the Late Devonian, Early Cretaceous, Late Cretaceous, the K-Pg boundary,** and Paleocene.

The Appeal of Calgary

Calgary offers captivating scenery, vibrant culture, and fascinating fossils and geology. The rolling hills and **river valleys, dotted by conspicuous boulders, reflect a** glacial past. Below that are Paleocene strata that preserve plant fossils in abundance. Exposures of these fossiliferous rocks are observable along the banks of the Bow and Elbow Rivers that meander their way through the city.

Sitting where the mountains meet the prairies, Calgary **is a gateway to many of Alberta's most significant sites** and landmarks. Calgary is within a two-and-a-half-hour drive of the Royal Tyrrell Museum of Palaeontology, Dinosaur Provincial Park (UNESCO World Heritage **Site), Banff National Park (UNESCO World Heritage Site), many Late Cretaceous and Paleocene fossil plant** sites, and rocks that record the K-Pg extinction event. This makes Calgary an ideal spot from which to launch **exciting conference field trips.**

Organizing Committee Members

Christopher West, PhD
Committee Chair
Royal Tyrrell Museum of Palaeontology

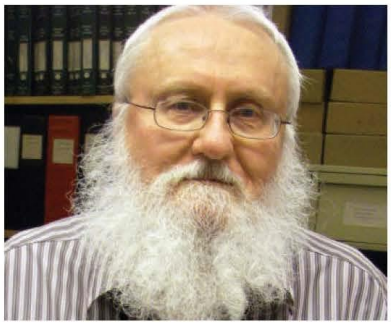
Jennifer Galloway, PhD
Geological Survey of Canada

Jim Basinger, PhD
University of Saskatchewan

Az Klymiuk, PhD
University of Manitoba

Thomas Demchuk, PhD
PetroStrat Inc.

Kimberley Bell, PhD
PetroStrat Canada Ltd.



Dennis Braman, PhD
Royal Tyrrell Museum of Palaeontology

Selena Smith, PhD
University of Michigan

Executive Summary & Proposed Schedule

Calgary, Alberta is a dynamic city. With both picturesque prairie landscapes and a vibrant urban Centre, Calgary's **energy is a reflection of its entrepreneurial history, cowboy spirit, and cosmopolitan attitude.**

On the edge of the majestic Rocky Mountains and the vast expanse of the Canadian prairies, Calgary's energy exhilarates, invigorates, and motivates. With a population of almost 1.5 million, Calgary is a place of big ideas, big skies, and welcoming, friendly people. There is always something to do whether trying a new restaurant or attending one of the many festivals or attractions. Calgary is gaining global recognition for its architecture, young and energized population, and celebrated arts and culinary scenes.

Named the most livable city in North America by The Economist for two years in a row, Calgary has the highest **concentration of corporate head offices per capita in Canada.** The city's growing tech sector speaks to the innovative spirit that has made Calgary one of North America's most exciting and progressive cities.

Attendees will enjoy everything they would expect from Canada's third largest city: a diverse culinary scene, incredible theatre, world-class attractions, and great shopping. They will also enjoy a few things they might not expect such as a great **food scene**, plenty of **cultural attractions**, and more days of sunshine to spend in more green spaces than any other Canadian city.

Proposed Schedule

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
8:30 - 10:30	Pre-Conference Field Trip	Oral Presentation	Oral Presentation	Field Trips	Oral Presentation	Oral Presentation	Oral Presentation	Post-Conference Field Trips
10:30 - 11:30		Coffee Break	Coffee Break		Coffee Break	Coffee Break	Coffee Break	
11:00 - 13:00		Oral Presentation	Oral Presentation		Oral Presentation	Oral Presentation	Oral Presentation	
13:00 - 14:30	Registration 10:00 - 18:00	Lunch	Lunch		Lunch	Lunch	Lunch	
14:30 - 16:30		Oral Presentation	Oral Presentation		Oral Presentation	Oral Presentation	Oral Presentation	
16:30 - 17:00	Ice Breaker Social Evenet 18:00 - 24:00	Coffee Break	Coffee Break		Coffee Break	Coffee Break	Coffee Break	
17:00 - 19:00		Oral and Poster Presentation	Oral and Poster Presentation		Oral and Poster Presentation	Oral and Poster Presentation	Oral and Poster Presentation	

Please Note: there will be a congress banquet planned for one evening mid-week, from 19:00 to 24:00. This event will have limited ticket availability.

Potential Field Trips

Royal Tyrrell Museum of Palaeontology and Dinosaur Provincial Park, Alberta

The field trip will feature a visit to the Royal Tyrrell Museum of Palaeontology and fossil sites from the surrounding area in the Late Cretaceous Horseshoe Canyon Formation, as well as a tour of the town of Drumheller. Following a night spent in Drumheller, the trip will continue to the UNESCO World Heritage Site, Dinosaur Provincial Park, to explore both classic and recent fossil localities known for plants, pollen, and vertebrate animals from the Dinosaur Park Formation. Potential duration: two- to four-day field trip. Potential to include a one-day visit to the Royal Tyrrell Museum as a mid-conference trip.

Approximate Distance: 142 km/ 88.3 mi

K-Pg Boundary Visit & Dry Island Buffalo Jump Provincial Park, Alberta

The field trip will feature a visit to the K-Pg boundary near the town of Trochu, Alberta, and to sections in Dry Island Buffalo Jump Provincial Park, where participants can learn about the stratigraphy, palynoflora, and the iridium layer preserved in the Ardley Coal Zone of the Scollard Formation. Additionally, the trip will include opportunities to stop at other classic fossil localities, including plant and vertebrate sites near Tolman, Alberta. Potential duration: One- to two-day field trip.

Approximate Distance: 177 km/ 109 mi

Potential Field Trips- Continued

Paleocene Fossil Plant Localities Red Deer, Alberta

The field trip will focus on visiting Paleocene plant localities from the Paskapoo Formation known in the Red Deer area. Dependent upon access, potential site visits may include Joffre Bridge, Blindman River, Blackfalds, and Munce's Hill. The trip may include visits to classic Paleocene sites west of Edmonton, such as Genesee. Potential duration: One- to two-day field trip.

Approximate Distance: 149 km/ 92.5 mi

Late Cretaceous Fossil Sites of Southwest Alberta

The field trip will visit fossil localities from the Late Cretaceous St. Mary River Formation near Cardston, Alberta. There is also the opportunity to visit classic vertebrate fossil localities, or for tours of ammonite mines near Lethbridge, Alberta, and explore the deposits of the Bearpaw Formation from the Western Interior Seaway. Potential duration: Two- to three-day field trip.

Approximate Distance: 235 km/146 mi

Early Cretaceous Plants and Dinosaur Trackway, Grand Cache, Alberta

The field trip will feature a visit to fossil plant localities from the Early Cretaceous Gates Formation near Grande Cache, Alberta. Additionally, the trip may include a tour of the coal mining operations in the area, as well as a visit to the nearby Grande Cache Dinosaur Tracksite, the only large-scale dinosaur trackway known in Canada. Potential duration: Two- to three-day field trip.

Approximate Distance: 6.5 hour drive

Additional Field Trip Opportunities:

Trips may be arranged that focus on visits to other important palaeontological, historical, or cultural sites in Alberta, and may include visits to the following destinations:

- Writing-on-Stone Provincial Park
- Banff National Park, Lake Louise, and Victoria Glacier
- Jasper National Park
- Burgess Shale & Field, British Columbia

About Calgary

Calgary was ranked amongst the top 10 most livable city in North America by The Economist in 2023.

Calgary has the highest concentration of corporate head **offices per capita in the country.** The city has historically been home to major oil and gas producers but the list of companies headquartered here extends well beyond energy.

The Volunteer Capital of Canada

Largely born out of the 1988 Winter Olympics and perpetuated with the annual Calgary Stampede, from World Cups to Golf Championships, volunteer wait-lists are not uncommon in Calgary.

Young & Affluent

Calgary has the youngest population among Canada's major cities, third highest level of educational attainment, and the highest median household income.

Calgary is home to 240 **different ethnic origins,** ranking **third in Canada in the proportion of visible minorities.**

Calgary is good for your bottom line. Alberta is the only province in Canada without a provincial sales tax (PST).

Calgary is easily accessible worldwide, just one stop away from most major global cities.

Climate

Summer

Calgary is a mountain city with a dry climate directly related to our northern latitude. It also means Calgary summer days are longer. Temperatures are mild – the highest on average in July is at around 23.2°C (73.8°F).

Winter

During the winter, the mountains to the west of Calgary receive abundant snowfall (perfect for skiing). The city itself usually has moderate snowfall. Winter often brings warm, westerly winds called Chinooks that can raise the temperature by as much as 15°C. The average daily temperature in the winter is -7.5°C (18.5°F).

Sunshine per year: 2,400 hours
The sunniest major city in Canada!

Rainfall per year: 326 mm (12 inches)

Snowfall per year: 128 cm (50 inches)

Calgary Venues

BMO Centre at Stampede Park

The BMO Centre at Stampede Park is located on the South East corner of downtown in the heart of Calgary's emerging cultural and entertainment district. The BMO Centre is a part of the Calgary Stampede, a **not-for-profit community organization that preserves** and celebrates our western heritage, cultures and community spirit. Each year for more than a century, Stampede Park hosts the Calgary Stampede, the Greatest Outdoor Show on Earth, welcoming over four millions guests and hosting over 1,200 events.

Currently, the BMO Centre offers 250,000 square feet (sq. ft.) of exhibit space and 20,000 sq. ft. of meeting space. However, an expansion is currently underway and will be opening in 2024. Once completed, the BMO Centre at Stampede Park will be Western Canada's **largest Convention Centre, offering Calgary's largest** ballroom at 50,000 sq. ft. and 80,000 sq. ft. of meeting space - including a 20,000 sq. ft. junior ballroom, and 350,000 sq. ft. of contiguous exhibit space.

On-site Hotel Development (Opening TBC)

20 km | 12.4 mi | 22 min.

Current: 270,000 sq. ft.
Floor Plans and Capacity Charts
360 Virtual Tour

Effective June 2024: 500,000 sq. ft.
Click here to learn more

Calgary TELUS Convention Centre

The Calgary TELUS Convention Centre (CTCC) is much more than just a venue. It is a space of community and inspiration, where ideas are shared, and meaningful connections are made. They have over 122,000 sq. **ft. of flexible space, 47,000 sq. ft. of exhibit space, five pre-function areas and 36 meeting rooms.** They bring people together locally and from around the world for a variety of events, meetings, special occasions, and conferences, always with the safety and wellbeing of their clients and guests as a top priority.

Located on the iconic Stephen Avenue at the centre of Downtown Calgary, the CTCC is connected to the Calgary Marriott Downtown Hotel, Fairmont Palliser and Hyatt Regency. The convention neighbourhood has a diverse collection of restaurants, retail shops, live theaters, concert halls, convention facilities, museums, art galleries, and Calgary's business towers.

3 connected hotels (Calgary Marriott Downtown Hotel, Hyatt Regency Calgary, Fairmont Palliser)

19 km | 11.8 mi | 20 min.

122,000 sq. ft.
Floor Plans and Capacity Charts
360 Virtual Tour

Calgary Cuisine

Calgary is world-renowned for innovative, creative and unique cuisine. With a variety of internationally acclaimed local chefs, the food scene here is vibrant and constantly growing - in the downtown core alone there **are over 200 restaurants. From exquisite fine dining to** casual cowboy fare, Calgary's cuisine is sure to tantalize every palate.

Wilder Institute/Calgary Zoo

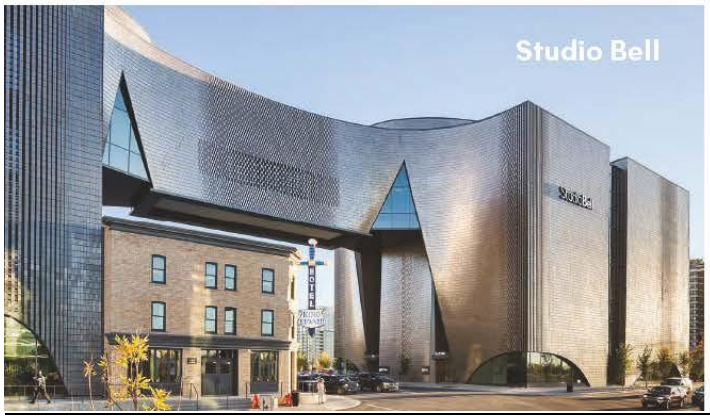
A central fixture in the city, the Wilder Institute/Calgary Zoo is located downtown, occupying St. Georges Island **on the Bow River. The Zoo offers captivating animal** experiences and exhibits, including the new polar bears experience! The Zoo is also one of Canada's leaders in **conservation efforts.**

Heritage Park Historical Village

See and feel the past as it comes to life in front of your eyes. This unique Park's attractions and exhibits span Western Canadian history from the 1860s to 1950s. With over 180 exhibits on 127 acres of land, Heritage Park is Canada's largest living history museum.

Studio Bell

Studio Bell, home of the National Music Centre, is a world-renowned architectural wonder and an international hub of music and technology. The National Music Centre features a 2,000+ piece collection of artifacts, instruments and music technology, 22,000 sq. ft. of exhibitions, a 300-seat performance space, and recording studios, including the Rolling Stones Mobile Recording Studio.



Pre & Post Event Getaways

Calgary's location makes it the perfect basecamp for adventure. In fact, the province of Alberta is home to six UNESCO World Heritage Sites, four of them within a 3 hour drive from Calgary.

Drumheller & The Badlands

East of Calgary, the endless golden prairies suddenly drop away into a strange moonscape of striped hills and otherworldly rock formations – The Badlands. Hike through the impressive Horseshoe Canyon, explore the hoodoos, or visit Drumheller, the Dinosaur Capital of the World, and the Royal Tyrrell Museum of Paleontology. Approximate Distance: 138 km/85.6 mi

Head-Smashed-In Buffalo Jump

Head-Smashed-In Buffalo Jump, south of Calgary, is where Blackfoot hunted buffalo for 6,000 years. Experience diverse programming, and vast landscapes to learn about the region and its **cultural significance. Approximate Distance: 184** km/ 114 mi

Waterton Lakes National Park

Take a drive south of Calgary and watch the rugged, windswept mountains rise abruptly out of gentle prairie grassland in spectacular **Waterton Lakes National Park. Here, several different ecological regions meet and interact in a landscape shaped by wind, fire, flooding,** and abundant plants and wildlife. Approximate Distance: 271 km/166 mi

The Rockies: Banff & Lake Louise

Just west of the city are the majestic Canadian **Rocky Mountains. Stunningly beautiful, Banff and Lake Louise offer adventure and first-class** amenities - from unparalleled skiing and hiking opportunities to delectable dining and Nordic spas. Distance: 127 km/79.2 mi

Airlift, Transportation & Hotels

Calgary's International Airport

The Calgary International Airport (YYC) is Canada's fourth busiest airport and is consistently ranked as one of the best airports in North America for overall passenger convenience. In 2019, YYC boasted more than 1,400 weekly departures and operates 24 hours a day, seven days a week, serving over 18 million passengers a year.

More than 200 daily non-stop flights connect Calgary to the world through this modern, easy to navigate airport and Calgary is no more than one stop away from any major city in the world. YYC is just 20 minutes from downtown Calgary and is easily accessible from anywhere in the city. For further information, including airline details, visit yyc.com.

Taxis & Ride Sharing

Ride sharing is a convenient mode of transportation **with Uber offering the service in Calgary. Taxis charge** a base rate of $3.80 and an additional surcharge at the airport. Most services have online and mobile booking apps. Stands are located at YYC and at most downtown hotels.

Explore Calgary on Foot, by Bike or Scooter

Calgary has the most extensive urban pathway and cycle network in North America, with approximately 850 km of regional pathways and 95 km of trails. The popular e-bike and e-scooter sharing programs, Bird and Neuron, are also available. Calgary also has the world's largest elevated, climate-controlled pedestrian pathway - the +15 Skywalk System.

Public Transit

The backbone of Calgary's transit system is the C-Train, a light-rail train system that runs NW to SE and SW to NE. The downtown core is a Free Fare Zone, allowing passengers to travel between hotels, restaurants and events free of charge. Calgary also boasts an extensive busing system. Bus and C-Train tickets are purchased at YYC or paid by cash on the bus or at the station.

Hotels

Discover the perfect accommodation for your conference in vibrant Calgary! Immerse yourself in a diverse selection of hotels, from luxurious four-star properties to budget-friendly options tailored to student rates. With over 4,730 guestrooms nestled in the heart of our downtown core, you're spoiled for choices.

Airline Offers for Group Travel

AIR CANADA

Air Canada's Meetings and Events Program is available for 10 or more people travelling from multiple points of origin to the same destination. They simplify the booking process for you and your clients and you can take advantage of their reduced rates and other valuable benefits when planning trips within their extensive North American and international network.

WESTJET

WestJet's Groups and Conventions Program would be able to support your event by providing discounts for your attendees through their ever-expanding global network. For conventions with 25 or more delegates **travelling from different locations to one destination, discounts would be available off their published fares,** guaranteeing the lowest fare, as well as other great benefits.

Visiting Canada

Entering Canada

Visitors to Canada must have valid travel documentation, such as a passport. In certain cases, a visa or Electronic Travel Authorization (eTA) may also be required. Visitors must present this documentation upon arrival at a port of entry. For more information on visas, eTAs, visiting Canada for business, and travelling with minors, please visit the Government of Canada website.

Like most countries, Canada has restrictions on certain goods you can bring into the country, this includes **items such as firearms, animals and plants. You must declare all goods when you first arrive at your port of** entry. For more information, visit the Canada Border Services Agency.

Currency

The monetary system in Canada is comprised of Canadian dollars and cents. Although many businesses accept American currency, visitors are advised to exchange their traveller's cheques or homeland currency for Canadian currency. The best exchange rates can be found at chartered banks, credit unions, caisse populaires, and airport and border crossing **exchange booths. Each financial institution sets its own** exchange rate. Please note, some banks may charge a fee to cash travellers cheques.

Tourism Levy & Fees

Alberta has a four per cent (4%) levy and a three per cent (3%) Destination Marketing Fee on hotel rooms.

Goods and Services Tax

The five per cent (5%) federal goods and services tax (GST) is a value-added tax that applies to most goods and services. Similar systems of taxation are used in at least 48 other countries.

GST Rebate for Foreign Conventions

The Canada Revenue Agency may be able to support your convention with a rebate of the GST paid on a convention facility and a related convention supply. To learn more about GST rebates and eligibility, visit the Canada Revenue Agency.

Key Information

HOST CITY	**CALGARY, ALBERTA, CANADA**
PROPOSED VENUE	**BMO CENTRE AT STAMPEDE PARK OR CALGARY TELUS CONVENTION CENTRE**
PROPOSED DATE	**LATE JUNE or LATE AUGUST 2028**

CONTACT DETAILS

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CONFIDENTIALITY CLAUSE

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 (133) until end of June 2024.
Contributions should be sent to Lutz.Kunzmann(at)senckenberg.de.

Homepage: *www.palaeobotany.org*

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