

# Report

## XV INTERNATIONAL PALYNOLOGICAL CONGRESS & XI INTERNATIONAL ORGANISATION OF PALAEOBOTANY CONFERENCE

27<sup>th</sup>-31<sup>st</sup> May, 2024

THE 15<sup>th</sup> International Palynological Congress (IPC) and the 11<sup>th</sup> International Organisation of Palaeobotany Conference (IOPC), which is regarded as the “Olympics of Palaeobotany” were this time held in Prague, Czech Republic from 27<sup>th</sup> to 31<sup>st</sup> May 2024. This conference took place after an eight-year interval due to the worldwide pandemic. The conference was jointly organized by the International Federation of Palynological Societies (IFPS) and the International Organization of Palaeobotany (IOP). Other organizations and universities, including the Czech Academy of Sciences (Institute of Geology), National Museum Prague, Naturalium Universitatis Carolinae, Západočeské Muzeum v Plzni, and Ceska Geologicka Spolecnost, were also involved in organizing this event. The joint congress hosts the world community of palynologists and palaeobotanists meeting every four years to discuss and unravel the latest research in palynology and palaeobotany. The major insight of this huge gathering is to celebrate *200 years of palaeobotany* dedicated to the famous Czech palaeobotanist Caspar Maria von Sternberg, also known as the *Father of Palaeobotany*. The combined congress was attended by 520 participants from 51 countries, including stalwarts, early career researchers, and scientists/professors from palynology and palaeobotany

backgrounds. The conference schedule included 48 symposia, with 2 dedicated workshops and one colloquium covering all the diverse aspects and applications of palynology and palaeobotany. The total eight pre and post-field surveys covered the geological-rich localities of the Czech Republic. The conference started with a brainstorming workshop on 27<sup>th</sup> May, typically based on the ERV Model using ‘REVEALS’ to decipher the Modern vegetation and climate with the help of the natural forest cover of any particular region. On the second day, (28<sup>th</sup> May and onwards), the organizing team welcomed the participants from different continents and started the scientific programs, comprising oral and poster sessions, followed by an Icebreaker party in the evening at Clarion Congress Hotel, Prague.

The inaugural session of the Congress was presided over by the Chairperson of the organizing committee- Jiří Bek, with Vice-Chair Jiří Kvaček, General Secretary- Jana Votočková Frojdová, and Prof. Jacub Sakala. The congress had 4 plenary keynote sessions with distinguished talks by Carina Hoorn, Marion K Bamford, James B. Riding, and Jun Wang. Prof. Carina Hoorn from the University of Amsterdam, initiated the keynote session by reviewing the geo-climatic history of the Amazon by using palaeopathological records and time-calibrated phylogenies to evaluate the response of plants to environmental change. Prof. Bamford from the University of the Witwatersrand, elucidated the history of the southern African conifer flora by silicified woods retrieved from crater-filled sediments of the Late Cretaceous Salpeterkop volcano. He inferred that the wide and indistinct growth rings in the fossil wood support the warm and humid



palaeoclimatic conditions of the Late Cretaceous period in South Africa. James B. Riding from the British Geological Survey delivered an interesting talk on the fascinating development of palynological preparation techniques. He emphasized that there is no standard maceration technique for all samples because each sample is different and requires different chemical treatments. It is important to judiciously use chemicals during acid digestion to recover the desired palynomorphs. Additionally, he also recommended using non-acid preparation such as the use of sodium hexametaphosphate. Jun Wang, Director of the Nanjing Institute of Geology and Palaeontology presented a talk on the Permian plant Lagerstatte- Chinese Vegetational Pompeii, recovered from the volcanic ash bed in the Wuda Coalfield of Inner Mongolia. His extensive 10,000 sq km of fossil investigation in the past two decades has finally received the Geoheritage status by the IUGS.

After the plenary talks, parallel sessions were arranged in different halls based on the themes. Along with oral sessions, the poster presentations were also simultaneously presented by participants during the tea breaks. The oral presentations highlighted the multi-disciplinary and interdisciplinary aspects of palaeobotanical/palynological research and covered various topics including deep-time fossil records, their origins, and developmental biology; climate and vegetation patterns from the Palaeozoic to Cenozoic period; Permian plant succession and its relation to global climate; glacial and interglacial cycles; plant arthropods interaction; the use of molecular proxies in palaeoecology; applications of palynology in the modern era; melissopalynology; modern pollen studies and ecological concepts in the Quaternary period.

The Indian delegates from various universities and institutions enthusiastically participated and presented their research findings on this global platform. They also interacted with other eminent researchers around the world. The Indian scientific community included Prof. Suryendu Dutta (Institute of Technology Bombay), Prof. Yengkhom Raghmani Singh (Manipur University), Prof. Ashalata D’Rozario, Ms. Shreyasi Basak; Madhab Naskar (University of Calcutta), Ms. Sudha Gupta (University of Kalan), Dr. Oindrila Biswas (SRM University Sikkim), Dr. Salman Khan (Senckenberg Research Institute and Natural History Museum, Germany), Ms. Arya Pandey and Mr. Suraj Kumar Sahu (Birbal Sahni Institute of Palaeosciences, Lucknow). The Indian participants showcased their diverse research at the conference, including palynology in deep-time sediments, melissopalynology, palynology for reconstructing past vegetation and climate, multiproxy records, and the evolution of plant terpenoids, etc. They contributed and introduced new developments in the field of palynology and palaeobotany and discussed how

it can be standardized and integrated with other geochemical and geophysical proxies.

Ms. Arya Pandey presented her oral presentation on Late Holocene palaeoecological variations and depositional patterns in the upper Brahmaputra region of Assam, northeast India using biotic and abiotic proxies for assessment to decode the palaeovegetation and climatic condition concerning the palaeoflood episodes. Mr. Suraj Kumar Sahu highlighted the Palaeofloristic, palynofacies, and petrographic characteristics of the Ashoka coal-bearing succession of the North Karanpura Basin, in his oral talk to determine the palaeovegetation, palaeoecology, and depositional settings during the peat accumulation of Ashoka mire.

This conference offered scientists, especially young researchers, the chance to engage with a diverse group of palaeobotanists from around the world. The exchange of opinions, suggestions, and enthusiastic discussions helped participants gain a comprehensive understanding of recent developments in palaeobotany and related fields. The IPC/IOPC included the Art gallery and dedicated exhibition space for various industrialist and non-profit organizations such as Friends of Fossil Forest, Palynotech, Prague City Tourism, and Annals of Botany. They showcased their technology, new scientific equipment, day-to-day useful items, and fascinating science-based renewable tools and showpieces. During the conference, the procedures for the election of the new Council Members for the International Organization of Palaeobotany Congress and the International Palynological Congress were also processed and completed. The presidency for the International Organization of Palaeobotany Congress was given to Harufumi Nishida (Tokyo, Japan). Similarly, James B. Riding from the British Geological Survey was elected as the new president of the International Palynological Congress. The conference was adjourned by declaring the 16<sup>th</sup> International Congress of Palynology and the 12<sup>th</sup> International Congress of Palaeobotany will be jointly held in Calgary, Canada in 2028.

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