

EPPC 2018 – Special Sessions

Title of Special Session (90 characters max incl. spaces):	(1) Advances and Applications of Paleozoic Palynology and Palynostratigraphy in the Arabian Plate and Adjoining regions Keywords: palynostratigraphic, kerogen classification and hydrocarbon exploration
Special Session Organizers (names and affiliations):	Marco Vecoli , Saudi Aramco Oil company Charles Wellman , University of Sheffield, UK (Saudi Aramco Sponsored)
Description of Special Session (250 words max.)	This special session invites contribution focused on Paleozoic Palynology of the Arabian Plate and adjoining regions of the northern Gondwana domain. All aspects of Paleozoic Palynology and their applications will be covered, such as: <ul style="list-style-type: none">- Taxonomy and systematics;- Palynostratigraphic applications;- Development of optical methods for kerogen classification and organic maturity assessment;- Applications to basin modelling;- Applications to conventional and unconventional hydrocarbon exploration

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(2) Palaeozoic Palynology – Present and Future Research Directions (CIMP Sponsored)</p> <p>Keywords: palaeozoic palynomorphs and integrative studies</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Reed Wicander, School of Earth and Environmental Science, The University of Queensland, Australia Hartmut Jäger, GeoResources Steinbeis Transfer-Centre, Germany</p>
<p>Description of Special Session (250 words max.)</p>	<p>This special session includes all groups of Palaeozoic palynomorphs – acritarchs, chitinozoans, cryptospores, miospores, pollen, scolecodonts, and small carbonaceous fossils, with a special focus on new and innovative studies currently being carried out in this field. These studies build on the traditional strengths and foundations of classical Palaeozoic palynology such as taxonomy, classification, palynostratigraphy, palaeogeography, and palaeoenvironmental analyses. The topics mentioned above are included in this session, but the emphasis is on the future directions of Palaeozoic palynology research. Such themes include, but are not limited to, integrative studies incorporating palynology with other fossil groups to provide a more comprehensive and detailed regional and global biostratigraphy; new and innovative statistical studies of Palaeozoic palynomorphs; the application of palynomorphs in palaeogeographic and palaeoenvironmental analysis; characterization of organic matter in relation to both mineral and petroleum exploration; anatomical, physiological, and geochemical studies, as they relate to the origin and biologic affinities of the aforementioned palynomorph groups. This special session will be inclusive in terms of both current and future research trends, as well as speculative presentations on the future of Palaeozoic palynology.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(3) Aspects of Upper Palaeozoic to Mesozoic palaeobotanical biostratigraphy</p> <p>Keywords: Age dating, palynological biostratigraphy and ‘multi-proxy’ approach</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Ellen Stolle, Beratender Geowissenschaftler BDG, Germany José Bienvenido Diez Ferrer, Departamento de Geociencias M. y O.T., University of Vigo, Spain</p>
<p>Description of Special Session (250 words max.)</p>	<p>Age dating is indispensable for the classification and verification of sedimentary rock bodies and models, and for reconstructions of palaeoenvironments. This session focuses on all aspects of Upper Palaeozoic and Mesozoic palaeobotanical biostratigraphy, including the use of palynology and macrofloras.</p> <p>In particular, it will focus on the use of special tools, applications, and common or individually customized methods to produce improved and conclusive stratigraphical results. Examples of the themes to be covered include:</p> <ul style="list-style-type: none"> - the application, validation, or development of palynological, macrofloral or other zones, or biozonal schemes - age determinations by biostratigraphical and stratigraphical correlation - age control on biostratigraphical results / ‘multi-proxy’ approach for stratigraphical dating - high-resolution biostratigraphical dating - identification of particular stratigraphical markers (key biostratigraphical taxa) - the revision of first or last appearance data of stratigraphical markers - recognition of environmental and depositional factors that can influence biostratigraphical results - use of archives and collections to revise stratigraphical results.

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(4) Cretaceous and Cainozoic palaeopalynology seen through the electron microscopy</p> <p>Keywords: electron microscopy (EM), pollen and botanical affiliation</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Friðgeir Grímsson, Christa-Charlotte Hofmann and Reinhard Zetter, University of Vienna, Department of Palaeontology, Austria</p>
<p>Description of Special Session (250 words max.)</p>	<p>This session is open for all contributions regarding palaeopalynology where single taxa or complete floras are studied using electron microscopy (EM). The morphological features of fossil pollen become much more detailed when studied using both LM and SEM (also TEM). This session is meant to highlight the importance of combining these approaches on the same fossil pollen grain for a more accurate botanical affiliation to pollen of extant plants. All contributions on taxonomy, palaeovegetation, palaeoenvironments and palaeophytogeography are welcomed.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(5) High temporal resolution palynology and palaeoecology – From centennial to decadal vegetation change, to yearly flowering cycles and seasonal insights from stratified Quaternary deposits</p> <p>Keywords: vegetation systems, chronological resolution and world-wide</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Jean Nicolas Haas, University of Innsbruck, Institute of Botany, Austria Benjamin Dietre, University of Bourgogne Franche-Comté, Laboratoire Chrono-environnement, France</p>
<p>Description of Special Session (250 words max.)</p>	<p>Reconstructing long-term changes in vegetation systems or biomes by palynological or palaeoecological means from all kinds of deposits world-wide has a more than 100 year long tradition. However, recently, new sampling strategies and methodological achievements were made to maximize and increase the chronological resolution in palynological/palaeoecological studies in order to gain detailed insights into short-term flora and vegetation processes. In this session we therefore welcome oral and poster contribution on any kinds of palynological/palaeoecological results from stratified, naturally or anthropologically accumulated deposits allowing insights into ecological changes of centennial or lower time resolution during the Quaternary.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(6) Quantitative pollen-based reconstructions of plant cover for environmental and archaeological research</p> <p>Keywords: vegetation-climate interactions, human vs. climate impacts and model approaches</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Marie-José Gaillard, Linnaeus University, Kalmar, Sweden Furong Li, Linnaeus University, Kalmar, Sweden Ralph Fyfe, Plymouth University, Plymouth, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>Models of the pollen-vegetation relationship and approaches/methods for reconstruction of past plant cover in quantitative terms have been developed, tested and applied over the last two decades. However, it is only in recent years that these models/methods and related software are made more flexible, efficient and widely accessible, and they are tested and used more broadly. Such reconstructions have already been shown to be useful in the study of scientific questions/hypotheses for which estimates of past plant cover in absolute values (in % cover of an area of known size or in m²/m²) at large or small spatial scales are required. Questions related to vegetation-climate interactions and human versus climate impacts on terrestrial vegetation and plant diversity (past, present and future) are especially in need of such information from the past. Given the increasing number of such studies, it would be most valuable to gather together scientists working with these model approaches and applying them to test specific research questions. Contributions from all parts of the world dealing with model/method development for pollen-based reconstructions of plant/vegetation cover and their application in Late Quaternary environmental research will be welcome. Hypothesis testing to understand processes involved in climate-vegetation-human interactions in the past and formulate lessons from the past for present and future environmental challenges will be of particular interest.</p>

Title of Special Session (90 characters max incl. spaces):	(7) New challenges of melissopalynology: environmental and methodological aspects keywords: honey, pollen tracking and climatic effects
Special Session Organizers (names and affiliations):	Irina Delusina , Dept. of Earth and Planetary Sciences and Honey and Pollenation Center, Univ. of California, Davis, USA Tiiu Koff , Institute of Ecology, Tallinn, Estonia
Description of Special Session (250 words max.)	Melissopalynology, in the modern scientific sense, is now able to provide a much broader range of information than simply documenting the pollen contained in a particular type of honey. This new capability has arisen as a response to new chemical, physical and statistical methods of data treatment and to a better understanding of the functioning of the global environmental system. The goal of this session is to survey the most advanced applications of melissopalynology to modern natural problems and its use in studying climatic effects, developing paleoclimate reconstructions and making environmental forecasts. We welcome contributions on <ul style="list-style-type: none"> - Geographical and botanical origins of honey, based on pollen analyses; - Methods of pollen tracking in the study of honey, including isotopes methods; - Reconstruction of the evolution/degradation of plant communities, based on the study of pollen from honey; - Climatic effects on pollen productivity and its relationship to honey quality; - Specification of bee-pollinated plants for specific geographical regions; - Morphology of honey pollen and pollen identification methods. - Documentation of agricultural land use changes based on pollen composition of honey.

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(8) Transformative Paleobotany: Commemorating the Life and Legacy of Thomas N. Taylor</p> <p>Keywords: paleobotanist, interdisciplinary research and Thomas.N. Taylor ‘s scholarship</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Michael Krings, Bayerische Staatssammlung für Paläontologie und Geologie, Germany Carla J. Harper, Universty of Kansas, USA Gar W. Rothwell, Oregon State University, USA</p>
<p>Description of Special Session (250 words max.)</p>	<p>Paleobotany today is interdisciplinary research. A paleobotanist fifty years ago needed geology and plant biology to study fossil plants. However, research areas such as geochemistry, molecular biology, microbiology, biomechanics, phylogeny etc. are transforming our approaches to, and perception of, the analysis of fossil plants and ecosystems, and some of these once so remote research areas are becoming increasingly important for, and integral parts of, paleobotanical research. Throughout his career, Thomas N. Taylor was a strong advocate for interconnecting and integrating research areas in order to push the discipline forward, and has done so continuously in his own work. This symposium will exemplify the potential of utilizing interdisciplinary research in paleobiological inquiry. We propose a wide-ranging coverage that includes the broadest possible spectrum of topics analyzing the structure, function, and evolution of fossil plants and microorganisms, as well as organismal interrelatedness in fossil ecosystems. For this, we will gather scientists who have made transformative contributions interfacing with T.N. Taylor ‘s scholarship, and request papers that characterize or summarize the most up to date understanding of an important field of study. In addition, the special volume “<i>Transformative paleobotany: Papers to commemorate the life and legacy of Thomas N. Taylor</i>” edited by Michael Krings, Carla J. Harper, Gar W. Rothwell & Rubén N. Cúneo (Academic Press, Elsevier Inc., 2018) will be introduced during this symposium.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(9) Experimental Paleobotany: Illuminating the Past Using Experiments and Modelling</p> <p>Keywords: plesiomorphic responses and deep-time paleobotany</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Cindy V. Looy, Department of Integrative Biology, Museum of Paleontology, UC and Jepson Herbaria, University of California Berkeley, USA</p> <p>Claire M. Belcher, wildFIRE Lab, College of Life and Environmental Sciences, University of Exeter, UK</p> <p>Jonathan P. Wilson, Departments of Biology and Environmental Studies, Haverford College, USA</p>
<p>Description of Special Session (250 words max.)</p>	<p>Paleobiology informs us about the state and fate of the biosphere of past worlds and its environment by studying fossils and information derived from fossils. However, the range of questions we can ask of the fossil record is limited by the amount of organisms that fossilize, are discovered, described and curated, and also by aspects of the dead organisms that actually preserved. Experimental studies can help to overcome some of these limitations. Experimental paleobiology allows us to infer aspects of the functioning of organisms and ecosystems in past worlds using methods that are informed by the anatomy, morphology, biogeography, and environmental context of plant fossils which may additionally be linked to numerical modelling approaches. Recent methodological advances have led research groups to employ experimental approaches to answer deep-time paleobotanical questions based on the uniformitarian notion of unaltered physical and chemical aspects of processes, including (but not limited to) those concerning plant physiology, chemistry, flammability and fire history, biomechanics and taphonomy. Experiments with extant plants can be used to explore ancestral, plesiomorphic responses to environmental change or stressors by comparing the experimental responses of distantly related extant crown groups informed by the fossil record. As such experimental paleobotany can illuminate the evolutionary history of land plants, the functioning of plants and their ecosystems and their Earth system feedbacks during times of non-analog climate and biomes.</p>

Title of Special Session (90 characters max incl. spaces):	(10) Fossil woods - New results and perspectives Keywords: wood anatomy, vascular cambium and lineages
Special Session Organizers (names and affiliations):	Anaïs Boura , Université Pierre et Marie Curie, Paris, France Anne-Laure Decombeix , CNRS-UMR AMAP, Montpellier, France (Convenors on behalf of IAWA)
Description of Special Session (250 words max.)	The advent of wood is a key event in plant evolution, and fossil evidence indicates that the production of this tissue by a vascular cambium evolved independently in several major lineages of vascular plants during the Paleozoic (i.e., lycopsids, sphenopsids, some ferns s.l., and the lignophytes). Today, the gymnosperms and angiosperms that dominate most extant ecosystems offer an insight into the complexity and diversity of wood anatomy and how it results from a combination of intrinsic and external factors. In the geological record, wood is one of the most common types of plant macrofossil. Its preservation at the cellular level allows for detailed anatomical studies and fossil wood can thus be used in a variety of approaches to reconstruct ancient plant life and environments. This IAWA sponsored general session will welcome all contributions linked to the study of fossil wood and bark anatomy, ranging from the description of new taxa to the use of wood to reconstruct the diversity, biology, and/or environment of fossil plants. We also invite contributions that aim to move forward the taxonomy of fossil woods, introduce new methods of analysis, or advance the conservation of fossil specimens and sites. Studies that focus more specifically on the timing and phylogeny of functional traits in wood can be submitted in our sister symposium on these topics.

Title of Special Session (90 characters max incl. spaces):	(11) A world full of amber Keywords: amber deposits and resinous ecosystems
Special Session Organizers (names and affiliations):	Leyla Seyfullah , University of Goettingen, Germany Jacopo Dal Corso , University of Padova, Italy Guido Roghi University of Padova, Italy
Description of Special Session (250 words max.)	<p>The recent discoveries of so many amber deposits across the world, and through earth history, means that we are now gaining insights into resinous ecosystems through time. The most notable deposits are from the Late Triassic, the Early and mid-Cretaceous, and the Eocene to Miocene, and these coincide with key times in plant evolution and/or palaeoclimatic events, providing us with increasing knowledge on ecosystems at these times. Amber is most famous for the often exquisitely preserved fossils entrapped within it, however, as it is an organic substance we also recognize that amber can contain information on its botanical source and potential ecological reasons for the original resinous outpouring.</p> <p>This session draws together diverse research areas linked by amber. Any talk on resin and amber chemistry, amber-preserved fossils and resin taphonomy is welcome, as is research on understanding the diverse ecosystems that have been responsible for amber bearing deposits, and exploring the evidence for both the amber producing plants themselves, and the other plants/organisms that made up these distinctive ecosystems. Linking these plant communities to their depositional/geological setting is also very welcome.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(12) Paleobotany and Palynology of the Deccan Intertrappean beds, late Cretaceous to Paleocene of Central India</p> <p>Keywords: Deccan Intertrappean beds, taxonomic affinities and biogeographic significance</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Steven Manchester, University of Florida, USA Bandana Samant, RTM Nagpur University, India Selena Smith, University of Michigan, USA</p>
<p>Description of Special Session (250 words max.)</p>	<p>We will examine recent advances in our understanding of the flora of the Deccan Intertrappean beds of central India. The stratigraphic distribution, taxonomic affinities and biogeographic significance of the flora will be considered. Well-preserved flowers and fruits, together with silicified woods and dispersed pollen, along with new analytical methods, provide an improved basis for understanding the flora of India at a time when the subcontinent was still isolated from other major land masses.</p> <p>Likely participants and topics include: Selena Smith (Review of the conifers of the Deccan Intetrappean Beds), Dashrath Kapgate (Review of angiosperm flowers and fruits from the classic Mohgaonkalan chert), Steven Manchester (Investigating fossil fruits and flowers of the Deccan Intertrappean beds and their geographic and stratigraphic distribution). Kelly Matsunaga* (Palms of the Deccan Intertrappean beds), Dhananjay Mohabey (stratigraphic distribution of main paleobotanical localities in relation to chronology from p-mag. and vertebrate fossils), Bandana Samant (Palynoflora and stratigraphy of the Deccan Intertrappean beds), Deepali Thakre* (Palynoflora of Chhindwara area), Elisabeth Wheeler, Rashmi Srivastava, Pieter Baas (Systematic affinities and climate implications of the Deccan Intertrappean petrified woods).</p> <p>*Graduate student researcher</p>

Title of Special Session (90 characters max incl. spaces):	(13) Biogeographic relationships of northern hemispheric Cenozoic floras Keywords: biogeographical patterns, abiotic and biotic factors
Special Session Organizers (names and affiliations):	Thomas Denk and Johannes Bouchal , Swedish Museum of Natural History, Department of Palaeobiology; University of Vienna, Department of Palaeontology
Description of Special Session (250 words max.)	<p>Biogeographic patterns are the result of abiotic and biotic factors and have markedly changed over time. With this symposium we want to provide a platform for palaeobotanists working on various aspects of biogeography.</p> <p>Research focussing on biogeographical patterns during particular time periods, investigating biogeographical affinities of local plant assemblages from low to high latitudes, tracing the biogeographic history of particular taxa and comparing it with modern distribution patterns, using phylogenetic frameworks or not, and utilizing different plant organs equally well fits within the symposium.</p>

Title of Special Session (90 characters max incl. spaces):	(14) Cenozoic Plant Diversity of Tibet, Himalayas and Hengduan mountains Keywords: topography, hotspots and palaeoclimate
Special Session Organizers (names and affiliations):	Zhe-kun Zhou and Tao Su , Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, China Lutz Kunzmann , Senckenberg Natural History Collections Dresden, Germany
Description of Special Session (250 words max.)	<p>It is one of main targets in the current world to understand how did palaeoenvironment changes shape biodiversity in geological past. For studying this topic, fossils from areas which have both complex environment conditions and high biodiversity play a crucial role. Tibet, Himalayas and Hengduan mountains experienced dramatic uplift and formed complex topography and varieties of climates; meanwhile, Himalayas and Hengduan mountains are hotspots of biodiversity in the world nowadays. Strongly affected by monsoons the time of onset of these specific climate regimes is still a matter of debate between geoscientists and molecular biologists. Many Cenozoic floras were found from Tibet, Himalayas and Hengduan mountains which potentially open windows to deep-time palaeoenvironments. All these facts make Tibet, Himalayas and Hengduan mountains predestinated as natural laboratories to test the influence and role of palaeoenvironment changes on the formation and development of biodiversity. During recent decades, fossils from those regions attracted a lot of attentions not only to palaeobotanists, but also to researchers from other disciplines, such as geologists, and ecologists. It is time to integrate evidence from plant fossils, palaeoclimate reconstructions, geological information, and molecular data to better understand the mechanisms of biodiversity in response to palaeoenvironmental changes. This symposium will provide a platform for those who are interested in the theme mentioned above. Meanwhile, it will have broad audience from palaeontology to modern biology, and we hope this symposium will stimulate further cooperation for researchers from different disciplines.</p>

Title of Special Session (90 characters max incl. spaces):	(15) The timing and phylogeny of functional traits in wood Keywords: secondary xylem and phylogenetic linages
Special Session Organizers (names and affiliations):	Lisa Boucher , University of Texas, USA Nathan Jud , Florida Museum of Natural History, USA (Convenors on behalf of IAWA)
Description of Special Session (250 words max.)	Secondary xylem has a long fossil record, and clearly has played an adaptive role in water transport and for mechanical support in plants. As a tissue it is composed of different types of cells with suites of characters that have varied through time both phylogenetically and with plant habit and habitat. This session will focus on aspects of the timing and phylogenetic placement of functional traits in the evolution of secondary xylem including, but not limited to: trends in the appearance of traits in the fossil record; combinations of characters in phylogenetic lineages; novel traits as adaptations to environmental or niche shifts; evolution of trait correlations; and phylogenetic constraints on wood evolution.

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(16) Originations, extinctions and species turnover in plant history</p> <p>Keywords: biostratigraphy, species turnover and species composition</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Evelyn Kustatscher, Museum of Nature South Tyrol, Italy Niall W. Paterson, Department of Earth Science, University of Bergen, Norway Benjamin Bomfleur, Institut für Geologie und Paläontologie, Westfälische Wilhelms-Universität Münster, Germany</p>
<p>Description of Special Session (250 words max.)</p>	<p>Seemingly sudden appearances and disappearances of taxa over geologic time form the foundations of biostratigraphy. Many system boundaries have been established based on dramatic changes in species composition in the fossil record. The patterns of diversification, extinction or species turnover in animal groups, however, are in many cases strikingly different from what we see in the plant-fossil record.</p> <p>We wish to bring together a diverse suite of oral and poster presentations that shed new light on the poorly understood patterns of rise and demise of plant groups. Contributors are welcome to present latest results on new fossil finds, novel techniques, or analytical tools that help us get a better understanding of how plants originated, diversified, or disappeared during critical times in Earth History. Topics may include micro- and macrofossils (or both) and range from earliest plant life to the rise of angiosperms.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(17) Boundaries, transitions and extreme environments of the Cenozoic</p> <p>Keywords: Cenozoic, climate transitions and future climate</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Matthew Pound; Northumbria University, UK Ulrich Salzmann; Northumbria University, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>The climate of the Cenozoic is presented as a predominant cooling trend towards the modern day. Within this cooling trend there are a myriad of climate transitions, boundaries and extreme environmental changes. How vegetation responds to these events is of great interest to understanding future climate. In this session we welcome submissions of Cenozoic palynological and palaeobotanical studies aimed at understanding and quantifying the transitions, boundaries and extreme environments of the Cenozoic. In particular we welcome high-resolution studies, multi-site studies or large scale synthesis work.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(18) Plant evolution; floral diversity and the response of plants to environmental stress from deep time</p> <p>Keywords: mass extinctions and plant diversity</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Wolfram M. Kürschner, Department of Geosciences, University of Oslo, Norway Heather Pardoe and Christopher Cleal, Department of Natural Sciences (Botany Section), National Museum Wales, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>Changing plant diversity has profoundly influenced the evolution of life on Earth, affecting animal life on land and in the seas, as well as impacting local and global (e.g. climatic) environments. Although some of these diversity changes were relatively slow, others were more abrupt. It has been assumed, for instance, that the five Phanerozoic mass extinctions that affected marine life can also be seen in plant evolution. However, the effect of these events on plants is more equivocal – as Alfred Traverse suggested 30 years ago, that it seems that “<i>Plant evolution dances to a different beat.</i>” This session will present new palynological and palaeobotanical evidence of vegetation dynamics through time, allowing comparison between different methodologies and approaches. Are the same methods suitable for data from both deep time and the relatively recent past, and for both gradual and more abrupt (mass extinction) changes? How do we account for inconsistencies in taxonomy and sampling in the fossil record? How can we relate the effects of mass extinctions, plant migrations and evolution, to the overall development of life on Earth?</p> <p>We hope to improve our understanding of the dynamics of past vegetational diversity through deep time to the present day, and its wider effect on life and habitats on Earth – to find new insights into common problems, irrespective of differences in timescale.</p>

Title of Special Session (90 characters max incl. spaces):	(19) Databases, online services and digital literature: response to challenges of palaeobotany in XXI century
Special Session Organizers (names and affiliations):	Alexander Doweld , National Institute of Carpology, Russia Jiří Kvaček , National Museum Prague, Czech Republic
Description of Special Session (250 words max.)	<p>In the new era based on electronic communication palaeobotany needs an online, open access, and community generated registry of fossil plant nomenclature as a service to the global scientific community. A dynamic data base should document all nomenclatural novelties (new scientific names of extinct plants) and associated data, including registry of the scientific publications (taxonomic literature) containing nomenclatural acts, and authors in palaeobotany and palaeontology in general. In contrast to open web projects with no editorial responsibility, the scientific databases should be governed by experts and editors, responsible for the scientific content and its conformity to modern rules of botanical nomenclature. Otherwise, these data bases are at risk of being transformed into subjective lists of names with no scientific merit. The importance of interlinks between professional data bases are emphasized to produce a qualified network of data linking the taxonomical literature (including digitized repositories), name indices and illustrations of fossils, suitable for global search engines. This general session will welcome all contributions linked to the production of open websites dedicated to electronic communication, databases, registration and compilation of fossil plant names, including spore/pollen taxa, wood and cuticular remains, and fossil algae, prokaryotes (formerly considered as algae) and fungi. Additional topics are: online services, digitization, digital literature etc.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(20) Plant evolution and geobiosphere interactions as a driver of Earth System</p> <p>Keywords: plant clades, evolutionary innovations and paleo-atmospheric composition</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Charilaos Yiotis, School of Biology and Environmental Science; Earth Institute, University College Dublin, Ireland Borja Cascales-Miñana, Evo-Eco-Paleo, UMR 8198, CNRS, University of Lille, France Joseph D. White, Department of Biology, Baylor University, USA José B. Diez, Departamento de Geociencias M. y O.T. Facultad de Ciencias del Mar. Universidad de Vigo, Spain Xin Wang, CAS Key Laboratory of Economic Stratigraphy and Palaeogeography, Nanjing Institute of Geology and Palaeontology, CAS, China Jennifer C. McElwain, Department of Botany, Trinity College Dublin, Ireland</p>
<p>Description of Special Session (250 words max.)</p>	<p>The fossil record provides key evidence for a comprehensive view of plant evolution and its interaction with the atmosphere and other environmental factors. However, our understanding of the mechanisms by which plant-atmosphere interactions can shape patterns in plant and geological evolution remains limited. Rapid changes in paleo-atmospheric composition have often been accompanied by the diversification of main plant clades and shifts in the ecological dominance between extant groups. A different aspect of this input-feedback relationship is that the early phase of the greening of the Earth's surface was driven by a series of key plant innovations including: occurrence of vasculature, secondary growth, and/or seed origin (among others). These morphological and anatomical innovations in plants are hinged with planetary biogeochemical cycles. In this context, the timing of key plant innovations have routinely been interpreted as indications of atmospheric change over time. This session will highlight the latest advances in the field of plant-atmosphere interactions and its relationship with the key steps of plant evolution. Interdisciplinary attempts in order to provide an integrative view about plant diversification and main changes of Earth's System through time are encouraged.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(21) Early evolution of soils and their biological components</p> <p>Keywords: soil ecosystems, organismal components and interactions</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Paul Kenrick and Christine Strullu-Derrien, Department of Earth Sciences, The Natural History Museum, UK</p> <p>Chris Berry, School of Earth and Ocean Science, Cardiff University, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>Our aim is to bring together scientists researching the early evolution of soil ecosystems (broadly defined) to discuss new approaches, techniques and results. This is a highly multidisciplinary area of broad general interest in the Earth Sciences. Our focus will be on the organismal component and the interactions with sediments and minerals. We are especially interested in the effects of weathering at the scale micrometres to centimetres which is particularly important but comparatively poorly understood. We will address the question: How did the evolution of plants, lichens, fungi and other microorganisms contributed to the establishment of soils in early terrestrial ecosystems and what were the broader consequences to key Earth Systems?</p> <p>We envisage a symposium with at least 6 speakers addressing three important times in the evolution of soils and associated organisms: 1. Proterozoic (before plants; microbial soils); 2. Early Devonian (before forests; cryptogamic ground covers); 3. Mid-Late Devonian (earliest forests ecosystems). We include two or three presentations focus key organism/soil interactions: e.g., 4. Fungi and other microbes, 5. Evolution of roots. Ideally, we will round off with a geochemical talk focussing on the carbon and/or oxygen cycles. We have identified ideal speakers and have commitments of half at this stage but are confident that we can deliver the other speakers.</p> <p>Attendees will get a state of the art overview of the early evolution of soils and associated organisms, the methods used to study them, and their broader global impact.</p> <p>We would welcome opening up the symposium to a couple of relevant contributed presentations and to associated posters.</p>

Title of Special Session (90 characters max incl. spaces):	<p>(22) Celebrating the career of Bill Chaloner - from palaeoproxies to nomenclatural issues</p> <p>Keywords: Bill Chaloner, palaeoproxies, Paleozoic plants</p>
Special Session Organizers (names and affiliations):	<p>Margaret E. Collinson and Andrew C. Scott, Earth Sciences Department, Royal Holloway University of London, UK</p>
Description of Special Session (250 words max.)	<p>We are interested in having a very wide ranging symposium to celebrate the scientific contributions of Bill Chaloner. Bills research publishing career spanned 1951-2017 and he taught Botany, Palaeobotany and Palynology in London University between 1956 and 2015.</p> <p>We envisage short presentations (15mins + 5 discussion) where speakers focus on their own specialist topic and, while doing so, reflect briefly on the past 70 years for that subject and look forward to the future.</p> <p>Listed below are themes that we feel capture some of Bills many and varied interests. Some examples of his work are given in brackets. We suggest that potential participants consider these themes (but need not be limited by them).</p> <ul style="list-style-type: none"> (i) Plants as palaeoproxies (e.g. CO₂, climate, vegetation, global change, fire); (ii) Experimental approaches (e.g. mimicking effects of compression; feeding spores to locusts); (iii) New methods of study and imaging (e.g. latex replicas, early use of SEM for plant fossils; organic geochemistry); (iv) Paleozoic plants (everything from spores to whole plants) (v) Nomenclatural issues (Between 1969 and 2011 Bill served on various committees and as an editor of codes for IBC). (vi) Simple, memorable, innovative teaching (e.g. using morphological variation in Recent <i>Ginkgo</i> leaves to discuss implications for species concepts in fossils; demonstrating the difference between SD and SI by moving an image on an overhead projector further away from the screen; never forgetting the importance of field work from modern mires to coal mine tip heaps)

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(23) Geochemical and molecular proxies from fossil plants and palynomorphs: new techniques, new challenges</p> <p>Keywords: biogeochemical signals, carbon isotopes and plant fossils</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Barry Lomax, University of Nottingham, UK* Daniela Festi, Free University of Bolzano, Italy* Keith Bennett, University of St Andrews, UK William Fletcher, University of Manchester, UK Phillip Jardine, University of Münster, Germany Wesley Fraser, Oxford Brookes University, UK Alistair Seddon, University of Bergen, Norway</p>
<p>Description of Special Session (250 words max.)</p>	<p>Geochemical and molecular proxies preserved within fossil/ sub-fossilised plant organs may provide a wealth of information that can be used to deliver new understanding of old problems in paleobotanical and palaeoecological research. Approaches vary from the use of carbon isotopes to deliver insights into changes in the global carbon cycle, and to infer changes in plant ecophysiology such as water use efficiency. Pollen-chemistry methods are being used to perform reconstructions of past UV-B fluxes and to gain information about taxonomy. New ancient- and environmental- DNA techniques are enabling sub-species level population diversity to be reconstructed from sediments.</p> <p>However, the development of new proxies results in a number of challenges requiring modern-day calibration studies and an understanding of taphonomic and diagenetic processes. This is crucial if the information from these new approaches are to be interpreted robustly.</p> <p>This session aims to bring together workers using novel geochemical and molecular techniques to explore how plant fossils may be used in a dynamic/ mechanistic manner to address a variety of questions that cut across temporal and spatial scales. In line with the conference ethos we welcome submissions from any time period and on any plant organ/tissue. Submissions that focus on modern- and/or palaeo-archives are encouraged, with a specific focus on those that use these data to address new questions, or that attempt to unravel key processes related to reducing any uncertainties in interpretation of these records.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(24) Can the past unlock the future? Using palaeobotany & palaeoecology to predict future ecological trends</p> <p>Keywords: predictions and modern plants</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Karen Bacon, School of Geography, University of Leeds, UK Claire Belcher, Department of Geography, University of Exeter, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>Palaeobiological studies often cite the utility of their results to interpreting near-future trends or changes in ecology but seldom develop these ideas beyond a cursory comment or two. More often, we look at modern plants and ecosystems as a means to interpret change observed through examination of the fossil record; however, if we can use modern plants to interpret the past then perhaps we should also be considering the utility of using palaeobotanical approaches to inform our predictions of the future. This session aims to investigate the range of possibilities and challenges for palaeobotanical/palaeoecological studies to contribute to and inform modern ecology and help to predict and understand how our modern ecosystems may alter due to near-future climate change.</p> <p>Topics on proxy development, extinction risk, ecology–climate interactions, modelling, all welcome.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(25) Cenozoic plant diversity gradients in time and space and their impact on early humans (ROCEEH/NECLIME)</p> <p>Keywords: phytocoenoses and climate conditions and Cenozoic</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Angela A. Bruch, ROCEEH Research Centre, Senckenberg Research Institute, Germany Alexandra-Jane Henrot and Louis François, Unité de Modélisation du Climat et des Cycles Biogéochimiques, UR-SPHERES, University of Liège, Belgium Natalia Rudaya, Centre of Cenozoic Geochronology, Institute of Archaeology & Ethnography, Russian Academy of Sciences, Russia Torsten Utescher, Senckenberg Research Institute, Frankfurt am Main; Steinmann Institute, University of Bonn, Germany</p>
<p>Description of Special Session (250 words max.)</p>	<p>The worldwide cooling throughout the Cenozoic and decline of atmospheric carbon dioxide had a significant impact on the evolution of biodiversity. The diversity evolution of various plant groups and functional types mirrors the differentiation of phytocoenoses existing under equable climate conditions in the earlier Palaeogene into communities thriving under steeper latitudinal temperature gradients and the development of seasonal drought in the continental interiors. Moreover, the Cenozoic era is characterized by significant uplift and hence increase in geodiversity in many regions of the globe thus producing also altitudinal diversity gradients. These changes in the structure and functions of vegetation and ecosystems also impacted the evolution of Cenozoic fauna, as well as the displacement and life habits of early humans and pre-humans communities, which make use of vegetation directly, as in the case of food and firewood, and indirectly, for example as a habitat for animal life.</p> <p>Quantitative reconstructions of palaeovegetation from data and models are thus crucial to understand the interactions between Cenozoic climate and vegetation changes, as well as their impact on early humans, their migration routes and behavioral or cultural changes since the Early Pleistocene.</p> <p>In this session, we welcome contributions on quantitative reconstructions of vegetation from proxy data and/or models at various spatiotemporal scales of the Cenozoic era, and particularly at archaeological/palaeoantropological sites relevant for the Palaeolithic expansion. This open session is organised in the framework of NECLIME (Neogene Climate Evolution in Eurasia, www.neclimate.de) and ROCEEH (The Role of Culture in Early Expansions of Humans, www.roceeh.net).</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(26) Quaternary vegetation, climate, fire, and plant resilience in Europe and the Near East</p> <p>Keywords: Quaternary environments and multi-proxy-studies</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Angelica Feurdean Senckenberg Biodiveristy and Climate Research Centre, Germany Walter Finsinger, Palaeoecology (UMR 5554 CNRS), Montpellier, France Andrea Miebach, University of Bonn, Germany Nadine Pickarski, University of Bonn, Germany Graciela Gil Romera Department of Geography and Earth Sciences of the Aberystwyth University, Wales, UK Laura Sadori, Universita degli Studi di Roma La Sapienza, Italy Lyudmila Shumilovskikh, University of Göttingen, Germany</p>
<p>Description of Special Session (250 words max.)</p>	<p>Terrestrial and marine sedimentary archives provide valuable insights into both long-term and short-term ecosystem dynamics, thereby improving knowledge of the connections between climate, vegetation, disturbances (e.g. fire), and land-use changes. Such records allow fire-vegetation feedbacks to be examined and thus learn more about the impact of fire-regime changes (frequency, severity, and spatial extent) on vegetation composition, species coexistence, and adaptive strategies of plants to fire.</p> <p>In this multidisciplinary session, we invite contributions investigating Quaternary environments from Europe to the Near East including the Mediterranean Sea and the Black Sea that may refine the understanding of environmental interactions and thus help to assess the impact of recent and future climate changes in a longer-term context. We welcome multi-proxy studies spanning any time frame within the past 500,000 years that make use of high-resolution analysis of palaeoecological indicators to describe, reconstruct, and model paleoenvironments and fire-vegetation feedbacks.</p> <p>The session aims to:</p> <ul style="list-style-type: none"> • Examine long-term and short-term paleoecological processes driven by climate oscillations and disturbance factors • Provide a comprehensive view of fire dynamics in different vegetation types focusing on climate or vegetation-driven fires • Assess shifts in plant diversity to climate change and fire • Understand the role of plant traits for the resilience to changing climate and fire regimes

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(27) Work vertically, think 3-dimensionally: palaeocology in topographically complex mountain settings</p> <p>Keywords: pre-Quaternary and vegetation dynamics</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Walter Finsinger, CNRS, Montpellier, France Eniko Magyari, ELTE, Budapest, Hungary Konstantinos Panagiotopoulos, University of Cologne, Germany</p>
<p>Description of Special Session (250 words max.)</p>	<p><i>Mountains</i> are among the most sensitive <i>ecosystems</i> to environmental <i>change</i> and are being affected at a faster rate than other terrestrial habitats. The history of the late Quaternary unfolds unique records of past environmental change and vegetation dynamics and thereby represents a critical intersection between ecology, pre-Quaternary palaeobiology, and global climate-change studies. Long-term records can show, for instance, past land-cover changes and vegetation dynamics. Thus, these archives allow determining the legacy of past climatic and land-use changes as well as disturbance regimes that shaped modern ecosystems.</p> <p>The interpretation of long-term palaeoecological records in mountain regions needs to integrate over different spatial scales (elevation and horizontal space) to take into account the complex topography. Hence, the motto coined a century ago by Lennart von Post “<i>Work vertically, think horizontally</i>” needs to be extended to take into consideration altitudinal vegetation shifts.</p> <p>We seek contributions showing the variety of late-Quaternary ecosystem responses in mountain regions: from tolerance <i>in situ</i>, to moderate shifts in habitat (treeline and timberline shifts), to migration and/or extinction, depending on magnitudes and rates of environmental change and changing disturbance regimes.</p>

<p>Title of Special Session (90 characters max incl. spaces):</p>	<p>(28) Filling the gaps about Non-Pollen Palynomorph ecological significance</p> <p>Keywords: terrestrial, microfossils, and Quaternary</p>
<p>Special Session Organizers (names and affiliations):</p>	<p>Benjamin Dietre, Laboratoire Chrono-environnement, University Bourgogne Franche-Comté, France</p> <p>Fabienne Marret-Davies, Department of Geography and Planning, School of Environmental Sciences, University of Liverpool, UK</p> <p>Havandanda Ombashi, School of Geography, Earth and Environmental science, University of Plymouth, UK</p>
<p>Description of Special Session (250 words max.)</p>	<p>Since first introduced 40 years ago, the description and analysis of terrestrial organic-walled microfossils other than pollen, moss and fern spores from pollen slides have enabled to further explore past environmental conditions, such as relating human activities and landscape. Many of the so called <i>non-pollen palynomorphs</i> have been identified and their ecological significance specified, thus providing valuable additional information to classical palaeo-ecological studies. However, the ecology of many described types is still unknown. The very nature of NPPs is multi-disciplinary. More than ever is it necessary to combine efforts of experts from a broad scale of domains to develop the NPPs' vast potential.</p> <p>The objective of this session is to make a leap forward regarding our understanding of the significance of current or new palynomorphs. By comparing the occurrence of new or poorly known NPP taxa with the ecological conditions reconstructed from other proxies, multi-disciplinary studies are likely to reveal the ecological requirements of these types. During this anniversary session, we would like to emphasise such studies in order to shed new light about the ecological value of NPPs. We believe this will serve and extend the interpretation of future studies. To this aim, we welcome proposals that unveil so far unsuspected value to new or known NPPs from any taxonomical group. We encourage proposals covering large time scales within the Quaternary period, but also studies on modern assemblages.</p>

Title of Special Session (90 characters max incl. spaces):	(29) Palaeoecology through the lens of Art and Science Keywords: arts, inter-disciplinary and palaeoecological
Special Session Organizers (names and affiliations):	Benjamin Gearey , Department of Archaeology, University College Cork, Ireland Suzi Richer , Archaeology and Environment, University of York, UK Jo Dacombe , Artist/Honorary Fellow University of Leicester, UK
Description of Special Session (250 words max.)	<p>Palaeoecology has a long established tradition of cross- and inter-disciplinary working with particular connections to archaeology, physical geography, earth science, botany, ecology and conservation. In recent years there has been increased reflection on the connections between the visual and creative arts and the pure and applied sciences, marking a distinct attempt to consider what these often separate disciplines and practices might learn from each other (e.g. Root Bernstein et al., 2008; Wilson 2001). Such inter- and intra-disciplinarity is emerging as a major and highly productive force in contemporary research paradigms (e.g. Frodeman et al. 2010; Scheffer et al. 2015).</p> <p>This session thus aims to venture into the seldom traversed terrain between the scientific practice of palaeoecology and that of the visual and other creative arts. Can we usefully begin to think about consilience between palaeoecology and these ‘non-traditional’ creative disciplines? How may such projects be conceived and put into practice? What are the problems, as well as the potentials, of such closer explicit connections? Themes might include (but are not limited to):</p> <ul style="list-style-type: none"> • What form of productive interfaces can be identified between palaeoecology and the arts? • In what ways might palaeoecology itself be regarded as a creative practice? • What is the role of the imagination in palaeoecological interpretation? How is this shaped in turn by artistic representations and processes? • How can the visual arts and palaeoecological study be usefully or productively drawn into dialogue? • How do artists draw inspiration from palaeoecological practices and data? • How do artists present, imagine or interrogate ideas of past landscapes and environments interpreted from palaeoecological data through creative practice?

	<p>References</p> <p>Frodeman, R., Klein, J.T., Mitcham, C. 2010. <i>The Oxford Handbook of Interdisciplinarity</i>. Oxford University Press, Oxford.</p> <p>Root-Bernstein, R., Allen, L., Beach, L., Bhadula, R., Fast, J., Hosey, C., Kremkow, B., Lapp, J., Lonc, K., Pawelec, K., Podufaly, A., Russ, C., Tennant, L., Vrtis, E., Weinlander, S. <i>Journal of Psychology and Technology</i> 1, 2, 51-63.</p> <p>Scheffer, M. et al. 2015. Dual Thinking for Scientists. <i>Ecology and Society</i> 3, 2.</p> <p>Wilson, E.O. 2001. How to Unify Knowledge. <i>Annals of the New York Academy of Sciences</i> 935, 12-17.</p>
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