



# 2<sup>nd</sup> Palaeontological **Virtual** Congress

May 1<sup>st</sup>–15<sup>th</sup>, 2020



## **Book of Abstracts**

**Palaeontology in the virtual era**

<http://palaeovc.uv.es/>

# A new way to make science

## **2<sup>nd</sup> Palaeontological Virtual Congress**

### **Book of Abstracts**

### **Palaeontology in the virtual era**

From an original idea of Vicente D. Crespo

**Published by** Evangelos Vlachos, Esther Manzanares, Vicente D. Crespo, Carlos Martínez-Pérez, Humberto G. Ferrón, José Luis Herráiz, Arturo Gamonal, Fernando Antonio M. Arnal, Francesc Gascó, and Paolo Citton

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# Presentation

After the great success of the 1<sup>st</sup> **Palaeontological Virtual Congress (PVC)** organised in December 2018, we are back with the 2<sup>nd</sup> edition of the first Palaeontological meeting completely developed in a virtual environment. The original idea of implementing this format in our discipline was the natural consequence of the emergence of new technologies, which allow the wider range of communication possibilities. The importance of this kind of initiatives, that allow communication among peers without being physically present, is even more evident with the dramatic changes and exceptional situation that our society has been experiencing in the last few months. Within this context, the origin of the PVC represented the first attempt in palaeontology to take advantage of these new possibilities, becoming nowadays the most important international palaeontological congress developed in the net. This online meeting offers an exclusively virtual-developed environment to researchers all around the globe. The novelty of this project is its simplicity, and one of our main goals is to give international projection to the palaeontological research carried out by groups with limited economic resources; allowing to save expensive registration fees, travel, accommodation and maintenance expenses.

The soul of our congress has not changed, and that is trying to combine the benefits of traditional meetings (i.e., providing a forum for discussion, including guest lectures, field trips or the production of an abstract book) with the advantages of online platforms. These allow reaching a high number of researchers along the world, promoting the participation of palaeontologists from developing countries and providing a comprehensive forum for the exchange of ideas and discussion with specialists in the target field. This abstract book is the best evidence of the success of the initiative, whose figures are increasing edition after edition.

At the moment of publishing this abstract book, more than **363** researchers on palaeontology from **44** different nationalities, and **six** continents (Europe, Africa, North and Central America, South America, Asia, and Oceania), have taken part in this initiative. It is important to highlight the numerous contributions from South America, Africa, Asia, Middle East and Eastern European Countries strengthening our main goal of a palaeontological congress without barriers.

The 2<sup>nd</sup> **PVC** is organised in four general theme sessions (**Palaeozoic, Mesozoic, Cenozoic and General Palaeontology**), trying to span the whole variety of potential contributions. However, taking advantage of the flexibility that virtual platforms offer, **five** specific thematic sessions, encompassing topics such as **evolution and palaeobiodiversity in islands, fossil insects, palynology, outreach** and an specific session for palaeontologists in their **early career Stage** to present their works in an completely friendly environment. In total, **161** contributions are compiled in this Abstract Book, including **four key-notes** presented by Dr. **Michael J. Benton** "*Identifying the drivers of macroevolution – methods and pitfalls*"; Dr. **Anne-Laure Decombeix** "*Reconstructing the biology of Palaeozoic trees*"; Dr. **James Kirkland** and Dr. **Don DeBlieux** "*Constraining the Jurassic – Cretaceous terrestrial biota: new data from Utah helps close the gap across the atlantic basin*" and Dr. **Jesús Lozano-Fernández** "*The conquest of land by arthropods*". All those contributions presented in this volume, somehow, summarize the good health and multidisciplinary nature of our science.

Finally, we would like to thank all our colleagues for organising and coordinating the different workshops. We also want to thank all the authors for submitting their contributions and the numerous reviewers that have made this volume and congress possible. We would also like to give special thanks to all Palaeontological and Geological Societies, Editorials, Museums, and Universities, that have supported this initiative.

Thank you all,

The logo for PalaeoVC is a stylized, handwritten-style signature in black ink. The letters 'P', 'a', 'l', 'a', 'e', 'o', 'V', and 'C' are interconnected and fluid. Behind the signature, there is a faint, circular graphic element that appears to be a globe or a similar abstract design in light blue and orange tones.

The Organising Committee of the 2<sup>nd</sup> PVC

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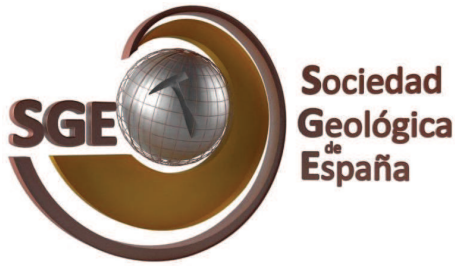
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## Thematic Session: Fossil insects, their record, ecology and evolution

Palaeoentomology started in the late 18th century, shortly after the 10th edition of Linnaeus' *Systema Naturae* (the foundation of modern taxonomy), when papers on the curiosities of insects entombed in fossil resins were published. Since its beginning, palaeoentomology covered not only descriptive aspects of terrestrial arthropods (including Insecta, Chelicerata and relatives) but also reconstructions of ancient environments, ecology, evolution and phylogenies.

Over half of all described species, at least one million species worldwide, are insects. This makes them one of the major ecological and evolutionary radiations on Earth. Insects evolved into a hyperdiverse lineage that currently occupies almost every ecological niche, thanks to great diversity of life forms and developmental strategies. Insects possess a surprisingly extensive fossil record, documented back more than ~410 million years ago. Nowadays, we know better their fossil record and phylogenetic relationships, our understanding of the reasons for this diversity is growing, but still is insufficient.

Despite retreat and impediment in taxonomic research, palaeoentomological papers are now flooding the journals, due to thousands of new fossils recorded in the mid-Cretaceous Burmese amber and in other fossil insects sites. However, more attention is nowadays, and should be given in future to present the fossils in wider context, with interpretation of their palaeoecological and evolutionary role and importance.

The main goal of this thematic session is to point out the needs in both descriptive (taxonomic) and interpretational (palaeoecological, evolutionary, etc.) aspects of palaeoentomological research. We wish to discuss these issues, search for the new ways of data accumulation and elaboration, finding the solutions for better understanding of ecological and (co)-evolutionary processes. We would like also discuss the ways to share and distribute the palaeoentomological data and information.

### Organiser

Dr. hab. Jacek Szwedo

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# Insight into the planthopper family Mimarachnidae (Hemiptera: Fulgoromorpha) from Burmese amber

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Mimarachnidae Shcherbakov, 2007 is one of the extinct families of planthoppers (Fulgoromorpha), which was originally characterized by its simplified venation, setigerous metatibial pecten, the spider-like dark silhouette, and black eyespots of its tegmina. Species of the family Mimarachnidae have been discovered dating as far back as the Early-to-mid Cretaceous, and are well known from the compressed fossils and fossilised impressions in sedimentary deposits of Buryatia (Russia), Japan and Spain. Some not formally described taxa come from Mongolia and, probably, from Brazil also. In addition, mimarachnids are known from inclusions in the mid-Cretaceous Burmese amber, spreading from the high latitude region to tropical palaeoequatorial region.

From Burmese amber, more than seven new species and five genera of the family Mimarachnidae have been erected by now. The taxonomic diversity and morphological disparity of these species exceed far beyond the known richness of Mimarachnidea or even Fulgoromorpha fossils already known. The recently described genera have already displayed great morphological disparity, with elongated heads like that of *Jaculistilus* sp. Zhang, Ren & Yao, 2018, giant in size like *Dachibangus* sp. Jiang, Szwedo & Wang, 2018, and rostrums reaching beyond the abdomen like in *Burmissus* sp. Shcherbakov, 2017. Furthermore, some species present morphological camouflage flatoidinisation, like *Mimaplax* sp. Jiang, Szwedo & Wang, 2019. These findings reshaped also the definition of the family.

The taxonomic diversity of these fossils allows us to erect a number of new taxa of specific, generic and even higher taxonomic levels and offers us an unprecedented opportunity to observe morphological adaptations for sophisticated camouflage, as well as several eco-morphological traits. Moreover, a set of new concomitant questions on the relationships of the Mimarachnidae within the Fulgoromorpha clade, with the potential to be addressed in future studies, arised from this study.



planthoppers  
Mimarachnidae  
Burmese amber  
morphological  
disparity



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