



# 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 features the text 'PalaeoVC' in a large, elegant, cursive script. Behind the text is a circular graphic containing a stylized globe and a hand holding a magnifying glass, symbolizing research and discovery.

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

# MAIN MENU



Clicking on the logo anywhere will return you to this Main Menu

**PRESENTATION**

3

**SUPPORT**

5

**ORGANIZING  
COMMITTEE**

6

**SCIENTIFIC  
COMMITTEE**

7

**KEYNOTE  
PRESENTATIONS**

12

**THEMATIC SESSION**

**Evolution and  
Palaeobiodiversity  
in Neogene and  
Quaternary  
Islands**

20

**THEMATIC SESSION**

**Fossil insects,  
their record,  
ecology and  
evolution**

29

**THEMATIC SESSION**

**Palynology  
as a tool in  
stratigraphic and  
paleoenvironmental  
research**

41

**THEMATIC SESSION**

**PalaeoVC  
Early  
career  
session**

48

**THEMATIC SESSION**

**Paleontology  
in Education  
and Society**

66

**GENERAL SESSION**

**GENERAL  
PALAEOONTOLOGY**

92

**GENERAL SESSION**

**PALAEOZOIC**

103

**GENERAL SESSION**

**MESOZOIC**

113

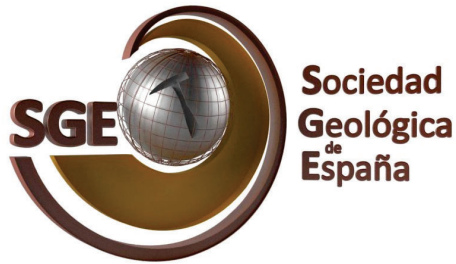
**GENERAL SESSION**

**CENOZOIC**

144

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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

University of Gdańsk Professor Laboratory of Evolutionary Entomology and Museum of Amber Inclusions

## Table of Contents

- 31** NEW PSOCODEA FROM THE ALBIAN SPANISH AMBER AND A REVIEW OF THE PSOCIDS IN CRETACEOUS AMBERS  
*by S. Álvarez-Parra, E. Peñalver, and X. Delclòs*
- 32** TAPHONOMY OF BALTIC AMBER INCLUSIONS  
*by B. Bojarski and K. Cierocka*
- 33** TARDIGRADES AND THE EVOLUTIONS OF TERRESTRIALISATION: EXPLORING ANCIENT QUESTIONS WITH A POOR FOSSIL RECORD  
*by J. Fleming, K. Arakawa, and D. Pisani*
- 34** THE OLDEST REPRESENTATIVE OF THE ROVE BEETLE TRIBE PINOPHILINI (COLEOPTERA: STAPHYLINIDAE) FROM UPPER CRETACEOUS BURMESE AMBER  
*by J. Jenkins Shaw, B. Wang, M. Bai, and D. Żyła*
- 35** INSIGHT INTO THE PLANTHOPPER FAMILY MIMARACHNIDAE (HEMIPTERA: FULGOMORPHA) FROM BURMESE AMBER  
*by T. Jiang, J. Szwedo, and Bo Wang*
- 36** FOSSIL *EPHEDRUS* SPECIES (HYMENOPTERA, BRACONIDAE, APHIDIINAE): FROM SAKHALINIAN AMBER  
*by M.O. Kaliuzhna, E.M. Davidian, and E.E. Perkovsky*
- 37** INSECT POLLINATOR DIVERSIFICATION DURING THE CRETACEOUS  
*by D. Peris, C. C. Labandeira, E. Peñalver, X. Delclòs, E. Barrón, J. Rust, and R. Pérez-de la Fuente*
- 38** SCIENTIFIC POTENTIAL OF THE COLLECTION AT THE MUSEUM OF AMBER INCLUSIONS, UNIVERSITY OF GDAŃSK  
*by E. Sontag, B. Bojarski, D. Żyła, and J. Szwedo*
- 39** NEW SPECIMENS OF †HEXAGENITIDAE (EPHEMEROPTERA) FROM THE CRATO FORMATION (APTIAN, LOWER CRETACEOUS), BRAZIL  
*by A.P. Storari, F.F. Salles, A.A.F. Saraiva, and T. Rodrigues*
- 40** THE OLDEST REPRESENTATIVE OF PAEDERINI (COLEOPTERA, STAPHYLINIDAE) FROM LATE CRETACEOUS BURMESE AMBER AND ITS SYSTEMATIC POSITION  
*by D. Żyła, S. Yamamoto, and J. Szwedo*

[Click on the title to go the Abstract](#)

[In the Abstract, click on the title to return to the Table of Contents](#)





# Taphonomy of Baltic amber inclusions

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Taphonomical studies are the background stories of fossils either in rocks or those sunk in resin ages ago. When most of the research is focused on regular fossils, taphonomical studies of ichnofossils (trace fossils), cover not only the place or cause of death, but also the history of fossils themselves, up to the day they were dug out. This information, gathered in substrate covering the specimen, can answer those questions, which are puzzling when research is focused only on the fossilised organism itself. This presentation aims to shed light on the backstory of Baltic amber, Eocene, ca. 37–48 m.y.o. from Central Europe.

In this study, quaternary deposits of Baltic amber were used, comprised of three samples of raw material, collected in the city of Gdańsk or near-Gdańsk area. Each amber piece was examined to see if there is occurrence of the ichnofossils at its surface before grinding. The next steps were grinding, cutting and polishing selected material with inclusions spotted before.

Both, ichnofossils and ichnoinclusions in the amber were studied. Faecal pellets, spider webs, silk-web nests and larval cases, with no particular ichnotaxonomical designation belong to the ichnoinclusions group. In case of the ichnofossils, three different ichnotaxa were recognized: *Teredolites*, *Gastrochaenolites* and *Petroxestes*.

Paleontological, taphonomical and palaeoecological researches can benefit from the awareness of the occurrence of ichnofossils in fossil resins. This knowledge leads to a better understanding of the past biocoenosis, preserved in those yellow-green gems.

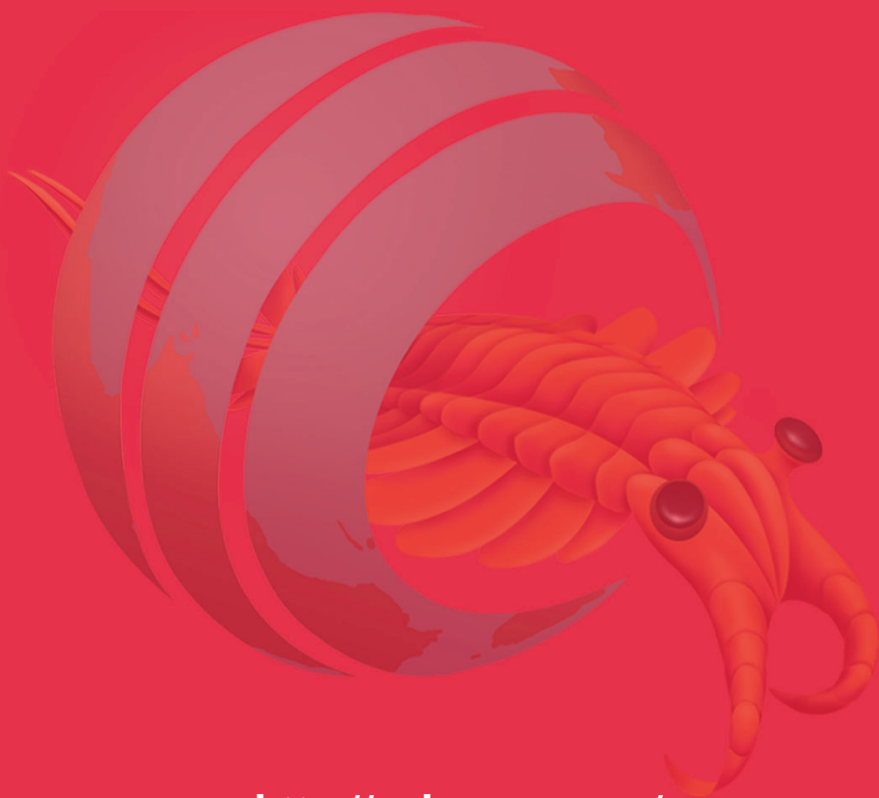


Baltic amber  
Ichnofossils  
*Teredolites*  
*Gastrochaenolites*  
*Petroxestes*



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