



# Programme and Abstracts

3<sup>RD</sup> INTERNATIONAL CONGRESS OF PALAEOENTOMOLOGY  
with  
2<sup>ND</sup> INTERNATIONAL MEETING ON PALAEOARTHROPODOLOGY  
and  
2<sup>ND</sup> WORLD CONGRESS ON AMBER AND ITS INCLUSIONS

7<sup>th</sup> to 11<sup>th</sup> February 2005

Pretoria  
SOUTH AFRICA

# **Fossils X 3**

## **Programme and Abstracts**

**3<sup>RD</sup> INTERNATIONAL CONGRESS OF PALAEOENTOMOLOGY**  
**with**  
**2<sup>ND</sup> INTERNATIONAL MEETING ON PALAEOARTHROPODOLOGY**  
**and**  
**2<sup>ND</sup> WORLD CONGRESS ON AMBER AND ITS INCLUSIONS**

7<sup>th</sup> to 11<sup>th</sup> February 2005

**Pretoria**  
**SOUTH AFRICA**

***Organising Committee:***

**Chairperson:** Denis Brothers (brothers@ukzn.ac.za)

**Venue and Accommodation:** John Anderson (anderson@nbi.ac.za)

**Programme and Abstracts:** Denis Brothers, Mike Mostovski (mmostovski@nmsa.org.za)

**Others:** Alex Rasnitsyn, Dany Azar, Conrad Labandeira, Julián Petrulevičius

***Sponsorships and other assistance:***

Grateful thanks are due to the following for financial and other assistance, without which this conference could not have happened.

UNIVERSITY OF KWAZULU-NATAL

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

PALAEO-ANTHROPOLOGY SCIENTIFIC TRUST

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

JUSTIN JAMES ADVERTISING

VACUTECH

TAU SAFARIS

**NOTE: This publication is not intended to form part of the permanent scientific record; it is therefore not a valid publication for the purposes of biological nomenclature.**



---

## Cladocerans (Branchiopoda: Anomopoda) from the Miocene Barstow Formation: Mojave Desert, California

V.L. Leggitt\*

Department of Earth and Biological Sciences, Loma Linda University, Loma Linda, CA, USA; lleggitt@sd.llu.edu

This is the first report of three-dimensional cladoceran fossils from the Miocene Barstow Formation. Exceptional SEM images of silica-preserved soft-tissue structure allows study of these fossils as if they were modern organisms (sub-micron detail). Both body fossils and ephippia occur in early diagenetic carbonate nodules associated with lacustrine sediments of the Middle Member of the Barstow Formation. The new fossils are found adjacent to the type section of the Barstow Formation, and are confidently correlated with known biostratigraphic and chronostratigraphic markers.

The cladocerans are 0.7 mm to 1.0 mm in length. The carapace covers the thorax, abdomen and thoracic legs. The carapace margin is curved ventrally. The carapace surface exhibits a fine reticulate pattern. The first antennae are five times longer than they are wide and are attached to the head away from the carapace margin. The second antennae are biramous. The dorsal branch contains four segments and four swimming setae. The ventral branch contains three segments and five swimming setae. There is a row of feathered lateral setae on the post-abdomen and a distal bident tooth near the base of the post-abdominal claw. The ephippia are 0.5 mm in length. Two embryos are evident. These characteristics are consistent with placement of this cladoceran in the family Moinidae.

The occurrence of cladoceran “resting eggs” may indicate changing palaeoenvironmental conditions such as temperature, pH, or even periodic lake desiccation. All specimens observed are fully articulated implying high sedimentation and/or high mineralization rates.

---

## New data on Fulgoromorpha (Hemiptera) from Lower Cretaceous Santana Formation, Brazil

Rafael Gioia Martins-Neto<sup>1\*</sup>, Jacek Szwed<sup>2\*</sup>

<sup>1</sup>Sociedade Brasileira De Paleontologia - SBPr: Rua Arnaldo Vitaliano, 150, Apto 81; 14091-220 – Ribeirão Preto – SP, Brasil; martinsneto@terra.com.br

<sup>2</sup>Museum and Institute of Zoology, Polish Academy of Sciences, Wilcza 64, PL 00-679 Warszawa, Poland; szwed@miiz.waw.pl

Fulgoromorpha (Hemiptera) recorded from the Lower Cretaceous, Upper Aptian, Santana Formation comprise representatives of Achilidae, Cixiidae and Lalacidae. There are some other families listed (Delphacidae, Ricaniidae and Flatidae) but no formal or closer description of representatives of these taxa is available. Lalacidae is represented by a number of highly differentiated taxa, but Achilidae and Cixiidae are scarce. In the newly collected material, representatives of Lalacidae also constitute the commonest group. Only a few of them are to be ascribed to previously known taxa. The others represent new genera and species. Among the specimens recorded, a representative of Fulgoridae was found, the oldest record of the family. This fossil bears some particular characters and needs further examination. Some other specimens are of particular interest – one of them could represent the oldest Derbidae, but with open clavus, which is regarded as an “achilid-like” feature (symplesiomorphy of these sister-groups?). Placement of the next specimen is still not clear; it also could be related to the earliest Derbidae. The position of another specimen remains unresolved; it bears some common characters with Lalacidae, but differs in venational details and head-capsule structures.

It seems that Fulgoromorpha from the Upper Aptian Santana Formation are highly diversified. Comparing them with other fossils of similar age, high specificity (e.g. number of highly diversified Lalacidae, presence of only a few other groups) is evident. It is clear that this locality presents data from the period of formation of more recent Fulgoromorpha faunas. The taxonomic diversity and morphological disparity of Fulgoromorpha from Santana call for further research.

