Zitteliana 91

An International Journal of Palaeontology and Geobiology

15th Annual Meeting of the European Association of Vertebrate Palaeontologists
Munich, Germany

1st to 3rd August 2017

Information and Abstracts

Munich 2017

profusely dispersed before or during debris-flow transport. The predominance of weathering stages 0 and 1 indicates that most of the bones were exposed a maximum of 3 years before burial. Based on the taphonomic evidence, we suggest that Somosaguas-North assemblage was formed by successive debris-flow transport and burial of different pre-existing thanatocoenoses, with varying taphonomic characteristics depending on their exposure time.

ID 189

Alberto **Martín-Serra**[1], Borja Figueirido[2*], Alejandro Pérez-Ramos[2], Francisco Pastor[3]

[1]University of Oxford, UK
[2]University of Málaga, Spain
[3]University of Valladolid, Spain
Borja.figueirido@uma.es

Intraspecific Allometric Changes in the Skull of the Cave Bear (*Ursus spelaeus*)

Poster Presentation
Symposium: Recent Advances on the Palaeoecology, Evolution and Extinction of the Cave Bear

With an extensive fossil record, the cave bear (*Ursus spelaeus*) is one of the most well-known Pleistocene mammals. Despite this, it remains unexplored whether the cave bear follows the same allometric pattern than its living relative, the brown bear (*Ursus arctos*). Here, we investigate patterns of static allometry (among adult individuals) of the skull in the cave bear complex and the brown bear. To do this, we collected a large sample of skulls of *U. arctos*, *U. spelaeus* (including *U. s. spelaeus*, *U.s. ladinicus*, *U. s. eremus*) and *U. ingressus*. We located 3D landmarks on them and applied geometric morphometric methods. To study the correlation between skull shape and size, we performed a multivariate regression between Procrustes coordinates (shape) and log-transformed centroid size (size). The results obtained show that size increase is associated with a longer muzzle, anteriorly narrower zygomatic arches, a narrower occipital crest, and a shallower rostrum. These shape changes are very similar for both species. However, the cave bear complex is shifted positively in comparison with brown bears. This change indicates that for similar-sized skulls, the allometric features described above are more developed in the cave bear than in the brown bear. Moreover, the different species and subspecies included within the cave bear complex follow the same trend than the whole group. Our results indicate that the cave bear complex follow the same allometric pattern, and this is different from the one followed by brown bears.

ID 193

Marco **Marzola**[1,2], Octávio Mateus[1,3], Jesper Milàn[4,5], Lars B. Clemmensen[2]

[1]GeoBioTec, Departamento de Ciências da Terra, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal
[2]IGN, Department of Geosciences and Natural Resource Management, Copenhagen, Denmark
[3]Museu da Lourinhã, Portugal
[4]Geomuseum Faxe, Denmark
[5]Natural History Museum of Denmark, Copenhagen, Denmark
m.marzola@campus.fct.unl.pt

European Affinities of the Late Triassic Biota from Greenland are Related to Paleolatitude

Oral Presentation

The discovery of *Cyclotosaurus naraserluki*, a new temnospondyl capitosaur from the late Norian-?early Rhaetian of the Fleming Fjord Formation, has raised paleobiogeographic questions on the affinities of the Late Triassic Greenland biota. This is because Greenland is part of the North American continent but all *Cyclotosaurus* species are restricted to Europe. Of the 21 taxa known from the Late Triassic of Greenland 9 are plants and 12 are vertebrates. Curiously, we failed to find evidence of Late Triassic invertebrates in literature from Greenland, though bivalves from the Fleming Fjord Formation were collected.

The closest relatives of each taxon show the following distribution: 10 from Europe (48%), 1 from Asia (5%), 1 from North America (5% - *Paratypothorax andressorum*), 8 cosmopolitan (38%, mainly plants), and 1 unclear (5% - *Mitredon cromptoni*). These figures provide an indication of the possible paleogeographic origin of the Late Triassic taxa and the most influential provinces. Despite the geographic position of Greenland as part of the North American plate, its Late Triassic fauna and flora show strong European affinities.

North American findings are from the Southern USA, at a tropical paleolatitude of 5–10ºN, while most European findings are from a temperate paleolatitude of 34–44ºN. The Jameson Land Basin lay at about 44ºN during the Late Triassic, within the range of the northernmost European findings. The arid band controlled by the Hadley cell lay between the North American and European fossil sites. The dispersal of Triassic life was therefore strongly influenced by paleolatitudinal climate belts.