

## **The record of the Valanginian Weissert episode of environmental change from the Prebetic (Spain): C-isotope stratigraphy and biomarkers**

M. L. QUIJANO<sup>1\*</sup>, G. A. DE GEA<sup>2</sup>, J. M. CASTRO<sup>2</sup>,  
S. GARCIA-ZAFRA<sup>2</sup>, C. ARIAS<sup>3</sup>, L. VILAS<sup>3</sup> AND  
M. COMPANY<sup>4</sup>

<sup>1</sup>Depto. Química Inorgánica y Orgánica – CEACTierra, Universidad de Jaén, E23071-Jaen, Spain (\*Corr. author: lquijano@ujaen.es).

<sup>2</sup>Depto. Geología – CEACTierra, Universidad de Jaén, E23071-Jaen, Spain.

<sup>3</sup>Depto. Estratigrafía - Universidad Complutense, E-28040, Madrid, Spain.

<sup>4</sup>Dpto. Estratigrafía y Paleontología, Universidad de Granada, E18071-Granada, Spain.

The Upper Valanginian stratigraphic section of the sierra de la Oliva (Prebetic, Valencia province, Spain) records a significant sedimentary episode which has been named as "Weissert Episode of Environmental Change" [1]. This episode is characterized by a positive excursion in the  $\delta^{13}\text{C}$  profile, which have been considered to be linked to a global perturbation in the carbon cycle, with environmental consequences that have been the object of debate, especially the degree of oxygenation of the sea bottom waters.

We studied the sedimentary evolution during the late Valanginian in a shallow platform setting, beginning with the drowning of the early Valanginian carbonate platform, followed by a succession of shallowing-upwards sequences, which define a general deepening-upward evolution. The  $\delta^{13}\text{C}$  profile records a positive excursion during the late Valanginian, and the biomarker study has revealed the episodic development of anoxia, coeval to the deposition of organic rich facies, occurred during the episode of maximum deepening of the platform. Stratigraphic correlation point to a diachrony in the record of the positive C-isotope excursion, which has been interpreted as related to local factors. This study has demonstrated that the "Weissert Episode" has been recorded in the Prebetic platform, and that the environmental perturbations gave place to the occasional development of anoxia in a context of high organic productivity.

[1] Föllmi (2012) *Cretaceous Research* **35**, 230-257.