

Abstract Volume

INTEGRATED STRATIGRAPHY OF THE UPPERMOST HAUTERIVIAN-LOWER BARREMIAN PELAGIC SEQUENCE OF ARROYO GILICO (BETIC CORDILLERA, SE SPAIN)

Roque **AGUADO**, Miguel **COMPANY**, Luis **O'DOGHERTY**, Inmaculada **PALOMA**, José **SANDOVAL**, José M. **TAVERA**

An integrated stratigraphic study has been carried out on the Arroyo Gilico section, located in the pelagic domain (Subbetic Zone) of the Betic Cordillera. Stratigraphic distribution of ammonites, calcareous nannofossils and planktonic foraminifera, as well as the evolution of the $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ records and clay mineralogy, have been analysed and correlated for the interval spanning from the uppermost Hauterivian up to the lowermost Upper Barremian.

Ammonites are abundant and well preserved, which has enabled the precise identification of all the Mediterranean standard zones (Reboulet et al., 2006) included in this interval; i.e., from bottom to top, the *Crioceratites balearis*, *Pseudothurmannia ohmi*, *Taveraidiscus hugii*, *Kotetishvilia nicklesi*, *Nicklesia pulchella*, *Kotetishvilia compressissima*, *Coronites darsi*, and *Toxancyloceras vandenheckii* Zones.

Calcareous nannofossil assemblages are, in general, highly diverse. They have a strong Tethyan character, being largely dominated by the genera *Watznaueria*, *Nannoconus*, *Micrantholithus*, *Lithraphidites*, *Diazomatolithus*

and *Rhagodiscus*, although the genera *Biscutum*, *Zeugrhabdotus*, *Discorhabdus* and *Assipetra* are also common. The interval studied corresponds to the Subzones NC5B, NC5C and NC5D of Bralower et al. (1995). The boundary between the Subzones NC5B and NC5C, marked by the LO of *Lithraphidites bollii*, coincides with the boundary between the *P. ohmi* and *P. mortilleti* ammonite subzones and with the base of the Faraoni Level equivalent. Other significant events are the FO of *Nannoconus circularis*, recorded in the upper part of the *P. mortilleti* Subzone, and the LO of *Calcicalathina oblongata*, which marks the boundary between the Subzones NC5C and NC5D, within the *K. nicklesi* ammonite Zone.

Planktonic foraminifera are represented exclusively by praehedbergellids (mainly the genera *Praehedbergella* and *Gorbachikella*). Specimens with radially elongate chambers (belonging to the species *P. similis* and *P. eocretacea*) are especially abundant (up to 50% of the entire assemblage) between the upper part of the *K. compressissima* Zone and the lowermost part of the *T. vandenheckii* Zone. The FO of *Globigerinelloides blowi* has

been recorded in the lower part of the *T. vandenheckii* Zone.

The curve displays a gentle increase (from 1.1‰ to 1.6‰) throughout the uppermost Hauterivian, punctuated by a more accelerated shift corresponding to the Faraoni Level equivalent. The general trend becomes slightly

negative in the lowermost Barremian, until reaching a minimum (0.5‰) in the middle part of the *K. compressissima* Zone. From this point, mean values of $\delta^{13}\text{C}$ rapidly increase up to reach a maximum (1.9‰) in the *T. vandenheckii* Zone.

Roque AGUADO

Universidad de Jaén
Departamento de Geología
Escuela Universitaria Politécnica de Linares
Alfonso X El Sabio 28, 23071 Linares
Spain
e-mail: raguado@ujaen.es

Miguel COMPANY

Universidad de Granada,
Departamento de Estratigrafía y Paleontología,
Facultad de Ciencias,
Campus de Fuentenueva s/n, 18002 Granada
Spain
e-mail: mcompany@ugr.es

Luis O'DOGHERTY

Universidad de Cádiz,
Departamento de Ciencias de la Tierra,
Facultad de Ciencias del Mar y Ambientales
Campus del Río San Pedro, 11510 Puerto Real
Spain
e-mail: luis.odogherty@uca.es

Inmaculada PALOMA

Universidad de Granada,
Departamento de Mineralogía y Petrología,
Facultad de Ciencias
Campus de Fuentenueva s/n, 18002 Granada
Spain
e-mail: ipalomo@ugr.es

José SANDOVAL

Universidad de Granada
Departamento de Estratigrafía y Paleontología
Facultad de Ciencias
Campus de Fuentenueva s/n,
18002 Granada
Spain
e-mail: sandoval@ugr.es

José M. TAVERA

Universidad de Granada,
Departamento de Estratigrafía y Paleontología,
Facultad de Ciencias
Campus de Fuentenueva s/n, 18002 Granada
Spain
e-mail: jtavera@ugr.es

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Geologischen Bundesanstalt](#)

Jahr/Year: 2008

Band/Volume: [74](#)

Autor(en)/Author(s): Aguado Roque, Company Miguel, O'Dogherty L., Paloma Inmaculada, Sandoval Jose, Tavera Jose M.

Artikel/Article: [Integrated Stratigraphy of the Uppermost Hauterivian-Lower Barremian, Pelagic Sequence of Arroyo Gilico \(Betic Cordillera, SE Spain\) 36-37](#)