Calcareous microfossils and palaeoenvironmental changes across the Cretaceous–Paleogene (K–Pg) boundary in the Cerro Azul Section, Neuquén Basin, Argentina

Rodrigo M. Guerra

Unisinos University, itt Fossil (Technological Institute of Micropaleontology), São Leopoldo, RS 93020-190, Brazil; rmguerra@unisinos.br

Andrea Concheyro

University of Buenos Aires-CONICET-IAA, Buenos Aires, Argentina; andrea@gl.fcen.uba.ar

Karlos G. D. Kochhan, Marlone H. H. Bom, Daiane Ceolin

Unisinos University, as above; kkochhann@unisinos.br, marloneb@unisinos.br, daiaceolin@unisinos.br

Telma Musso

National University of Comahue, Buenos Aires, Argentina; telma.musso@fain.uncoma.edu.ar

Jairo F. Savian

Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil; jairo.savian@ufrgs.br

Gerson Fauth

Unisinos University, as above; gersonf@unisinos.br

We investigated changes in calcareous nannofossil and ostracod communities across the Cretaceous–Palaeogene (K–Pg) transition in the Cerro Azul Section, Jagüel Formation, Neuquén Basin, Argentina. Changes in the nannofossil assemblage compositions were compared with geochemical and magnetic property characterisations of the sediments in order to identify probable environmental drivers. The K–Pg transition in the Cerro Azul section is characterised by a change in calcareous nannofossil and ostracod compositions, in assemblages dominated by Cretaceous forms, to assemblages dominated by incoming Danian taxa, along with several survivor species. These changes in the assemblages are associated with a collapse in carbonate production at the K–Pg boundary, probably related to a drop in surface-water productivity, followed by a subsequent recovery in the Early Danian, as suggested by trends in the carbonate content and log(Ba/Fe) and log(Ba/Ti) ratios in the sediments. During the Late Maastrichtian, peaks in the relative abundances of *Eiffellithus* spp. just before the K–Pg transition were probably related to enhanced surface-water productivity. Stressed environmental conditions during the earliest Danian, probably related to decreased surface productivity, are evidenced by *Cervisiella operculata* blooms, coupled with increased abundances of the Cytheruridae and low abundances of members of the Trachyleberididae, both ostracod families. This interval is followed by increased relative abundances of *Braarudosphaera bigelowii* in the Danian, which probably can be correlated with intensified weathering conditions and, consequently, increased fresh-water input and/or continental runoff. This project was sponsored by IODP/CAPES grant 8888.091703/2014-01.