Planktonic foraminiferal biostratigraphy across the Coniacian-Santonian boundary interval in Tanzania and its reproducibility in coeval settings

***Petrizzo, M.R.*[1]**

1) Department of Earth Sciences, University of Milano, Milano, Italy, E-mail: mrose.petrizzo@unimi.it

This study is focused on the identification of the best sequence of planktonic foraminiferal bioevents that is reproducible across the Coniacian-Santonian boundary interval by comparing data from sections located in different paleogeographic area: core TDP 39 drilled in Tanzania (PETRIZZO et al., 2017), the Ten Mile Creek section in Texas (candidate GSSP stratotype section for the base of the Santonian; GALE et al., 2007) and the Cantera de Margas section at Olazagutia in northern Spain (GSSP stratotype section for the base of the Santonian; LAMOLDA et al., 2014). In the stratotype section the GSSP is marked by the lowest occurrence of the inoceramid *Cladoceramus undulatoplicatus* (= *Platyceramus undulatoplicatus*) comprised within the planktonic foraminifera *D. asymetrica* Zone and exhibits secondary microfossil events and a negative 0.3‰ excursion in $\delta^{13}C$. The same bio- and chemostratigraphic record have been identified in the Ten Mile Creek section. In Tanzania the GSSP secondary marker event *Globotruncana linneiana* has been used in the absence of *C. undulatoplicatus* and of correlative chemostratigraphic tie-points.

The composition of the planktonic foraminiferal assemblage in the three stratigraphic sections is similar although discrepancies are observed in the reproducibility of some bioevents. Similarities between sections include the same order of (1) appearances of the marker species *Sigalia carpatica*, *Costellagerina pilula* and *G. linneiana* at Olazagutia and TDP 39, (2) disappearances of *Marginotruncana schneegansi* and *Whiteinella* spp. at TDP 39 and Ten Mile Creek, and (3) appearance of *C. pilula* and absence of the single keeled globotruncanids (*G. stuartiformis*, *G. elevata*) at Ten Mile Creek and Olazagutia.

The comparison among the three sections reveals that discrepancies mostly pertain to particular ecological preferences of species that develop and diversify in specific paleoenvironmental conditions. Moreover, the apparent diachronism of some species is also due to species misidentifications and/or different species concepts that are thoroughly discussed. Results provide insights into the correct taxonomic identification and stratigraphic distribution of foraminiferal species and allow deriving a more accurate and reproducible sequence of bioevents across the Coniacian-Santonian boundary interval calibrated against other stratigraphic tools and applicable in different paleogeographic and depositional settings.

GALE, A.S. et al., 2007. Acta Geol. Pol., **57**, 113–160.
LAMOLDA, M.A. et al., 2014. Episodes, **37**, 1–13.
PETRIZZO, M.R. et al., 2017. dx.doi:10.1111/sed.12331