Shell size measurements of the planktonic foraminiferal species *Rotalipora cushmani* and *Whiteinella brittonensis* across the Oceanic Anoxic Event 2 (middle Cretaceous)

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Planktonic foraminiferal response to the latest Cenomanian–earliest Turonian Oceanic Anoxic Event (OAE) 2 has been estimated through quantitative analyses of assemblage composition in several sections all over the world. Despite the occurrence of anomalously dwarfed planktonic foraminiferal specimens is frequently signaled during the OAE 2 (e.g., KELLER et al., 2001; COCCIONI & LUCIANI, 2004; ELDERBAK et al., 2014), no studies include species-specific shell size measurements along a stratigraphically complete upper Cenomanian–lower Turonian record. Aim of this study is to test the relationship between selected biometric parameters of planktonic foraminiferal shells (number of chambers in the last whorl, height of the trochospire, maximum diameter) and present the first dataset of shell size variations of two planktonic foraminiferal species *Rotalipora cushmani* and *Whiteinella brittonensis* across the OAE 2 in three key-localities: 1) Eastbourne, Gun Gardens, UK (TSIKOS et al., 2004), 2) Clot Chevalier, SE France (FALZONI et al., 2016) and 3) Tarfaya, Core S57, Morocco (TSIKOS et al., 2004).

Results indicate that the maximum diameter crossing the proloculus is the most easily replicable methodology to estimate shell size variations of trochospiral planktonic foraminifera across key-stratigraphic intervals. Moreover, median values of the maximum diameter of the specimens measured fluctuate significantly from one sample to another, but general trends remain clear. Overall, our data do not support the occurrence of dwarfed specimens for the species analyzed; rather, we observe a general trend toward an increase in the shell size of *W. brittonensis* in all the sections studied. Interestingly, changes in the maximum diameter of *R. cushmani* at the onset of the OAE 2 follow reproducible patterns (an increase to the highest values followed by a sharp decrease) that appear synchronous at all localities, suggesting that common forces might have driven the shell size variations of this species slightly before its extinction.

COCCIONI, R., & LUCIANI, V., 2004. Journal of Foraminiferal Research, **34**/2, 109–129.
ELDERBAK, K. et al., 2014. dx.doi.org/10.1016/j.palaeo.2014.07.002
FALZONI, F. et al., 2016. Cretaceous Research, **59**, 69–97.
KELLER, G. et al., 2001. Cretaceous Research, **22**, 391–422.
TSIKOS, H. et al., 2004. Journal of the Geological Society, London, **161**, 711–719.