Late Cretaceous (Coniacian–Maastrichtian) calcareous nannofossils and ostracods from the São Paulo Plateau (DSDP Site 356): Biostratigraphic implications

Mauro D. R. Bruno, Marcos Antonio Batista dos Santos-Filho, Gustavo Nunes Aumond, Rodrigo M. Guerra, Michele Goulart da Silva

Unisinos University, itt Fossil (Technological Institute of Micropaleontology), São Leopoldo, RS 93020-190, Brazil; dbruno@unisinos.br, marcos-absf@gmail.com, gaumond@unisinos.br, rmguerra@unisinos.br, migoulart@unisinos.br

Cristianini Trescastro Bergue

Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil; ctbergue@gmail.com

Gerson Fauth

Unisinos University, as above; gersonf@unisinos.br

Micropalaeontological studies conducted on DSDP drill cores in the 1970s and 1980s in the South Atlantic are considered to be important references, especially sites such as those from the São Paulo Plateau. Carminatti et al. (2008) predicted that petroliferous activity in Brazil would be focused on deep-water Cretaceous deposits, making it necessary to reinterpret previously-established biostratigraphic zonations for these areas. This work presents a biostratigraphic study of calcareous nannofossils that were identified from 66 smear-slides of sediments found in the basal section of the core drilled in the offshore Site 356, DSDP Leg 39, in the southeastern portion of the São Paulo Plateau. These samples were also prepared for ostracods, with the objective of calibrating ostracod ages with calcareous nannofossil ages. A total of 140 nannofossil taxa and 34 ostracod species were identified. The nannofossil assemblages were diverse and abundant, with preservation varying from moderate to good, and were dominated by *Watznaueria barnesiae*, *Micula staurophora*, *Prediscosphaera cretacea* and *Cribrosphaerella ehrenbergii*. In contrast, ostracods were rare and poorly preserved, frequently fragmented and weathered, and the most diverse genera were *Cytherella*, *Krithe* and *Bythocypris*. Following the zonation proposed by Burnett et al. (1998), five calcareous nannofossil biozones were identified from the Late Turonian to the Late Maastrichtian, and the top of the section was Danian in age – Zones UC10, UC11, UC15c, d, e), UC19 and UC20a, b, c, d. Two of the identified ostracod species have biostratigraphic value (*Dutoitella mimica* and *Phacorhabdotus subtridentus*), which reinforced the nannofossil ages. The project was sponsored by the IODP/CAPES grant 8888.091703/2014-01.

References

Burnett, J.A., Gallagher, L.T. & Hampton, M.J. 1998. Upper Cretaceous. *In*: P.R. Bown (Ed.). *Calcareous Nannofossil Biostratigraphy*. Kluwer Academic Publishers, Dordrecht: 132–199.

Carminatti, M., Wolff, B. & Gamboa, L.A.P. 2008. New exploratory frontiers in Brazil. *WPC Proceedings, 19th World Petroleum Congress, Madrid, Spain*.