Cretaceous calcareous nannofossils from the São Paulo Plateau (DSDP Leg 39, Site 356): biostratigraphy and paleoecological implications

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Over the years, calcareous nannoplankton has proved itself to be an accurate instrument for biostratigraphy and paleoecology due to its cosmopolitan nature and response to environmental and climate changes. In Brazil, these organisms are heavily employed by the oil industry in the marginal and oceanic basins due to the ease and low cost of their preparation. DSDP (Leg 39 - Site 356) cores from the São Paulo Plateau (upper Albian to lower Danian pelagic and hemipelagic limestones) were sampled, and qualitative and quantitative analyses will be conducted in order to identify representative taxa, detect biozones, and infer paleoecological conditions. Cascade counting will be performed for each sample. To assist in the correlation of data and detection of global patterns, the biozonations of Sissingh (1977), Perch-Nielsen (1985), and Burnet (1998) will be utilized for biostratigraphic positioning and relative dating (Figure 1). Applied statistics, abundance rates, and diversity indexes will be compared to the lithostratigraphic, isotopic, and magnetostratigraphic studies in order to construct a database that can be used to locate temporal events and infer paleoenvironmental patterns, which in turn can detect influences of different water masses on the Cretaceous section at the São Paulo Plateau. Finally, it is hoped we will be able to obtain a better understanding of the opening of the South Atlantic Ocean and how elevations and plateaus in the Southwest Atlantic Ocean may have affected ocean circulation.

References

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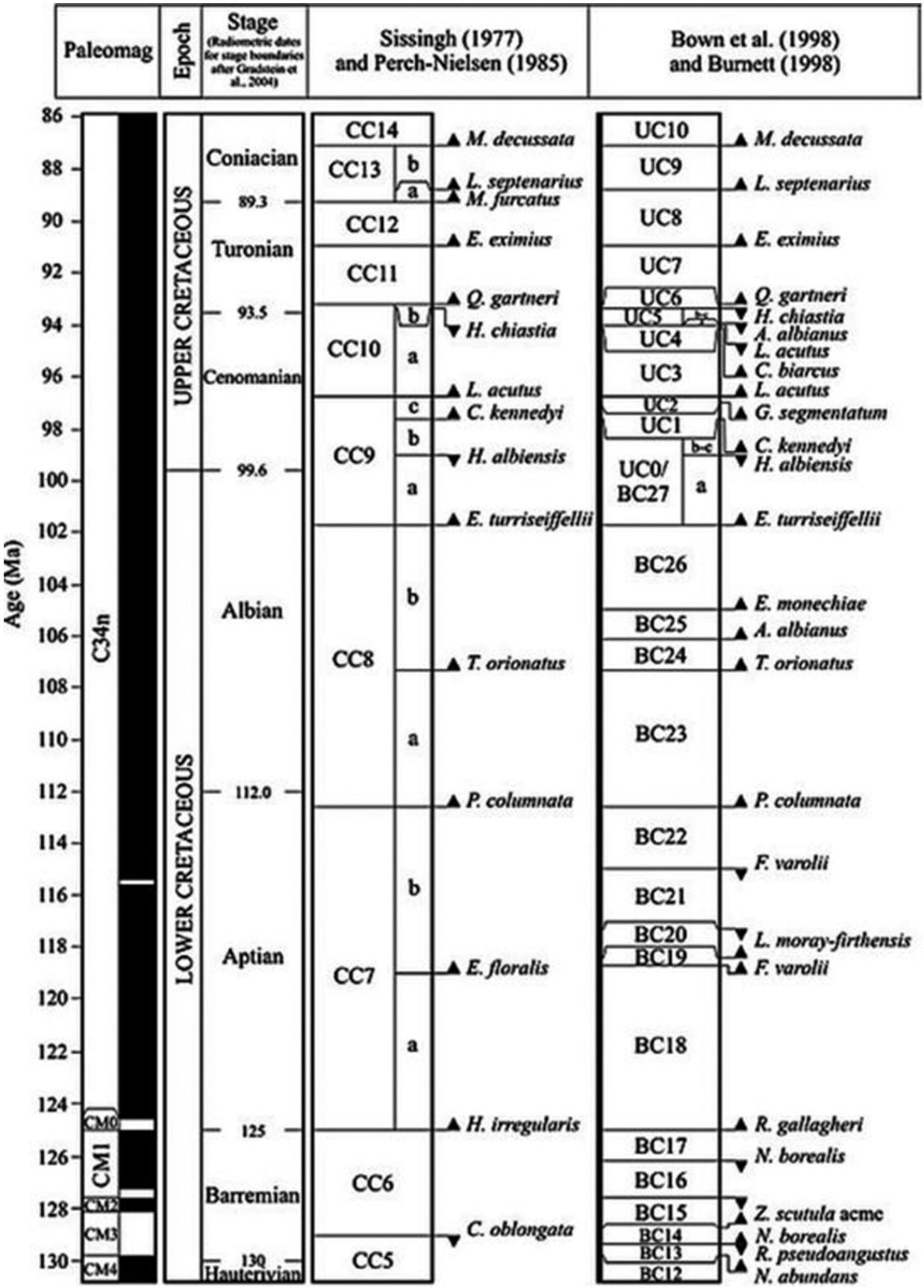

Figure 1: Correlated Biozonation from the Cretaceous, Sissingh (1977), Perch-Nielsen (1985), and Burnett (1998). (Modified from Fernando, A.G.S. *et al*., 2011)