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Paleocene-Eocene Brazilian sedimentary successions and their “flich-type” foraminiferal assemblages

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Abundant and highly diversified “flich-type” foraminiferal and palynological assemblages are recorded in the marine Paleocene-Eocene succession of four core sections drilled in the Sergipe and Campos basins, eastern Brazilian margin. Their occurrences are frequently associated with deep-water siliciclastic deposits.

The foraminiferal assemblages are documented, and a morphogroup analysis is carried out. Important markers of environmental changes include: variations in taxonomic composition and species diversity; the distribution pattern of the foraminiferal morphogroups and interpreted microhabitats, and associated feeding strategies. The characteristics of the foraminiferal and palynological assemblages and their relationships with turbidites are important in assessing the global impact of locally recorded paleoceanographic events as those related to the Paleocene-Eocene boundary.

Maximum species diversity among the agglutinated assemblages and a high number of suspension feeder morphogroups are recorded in uppermost Paleocene dark gray marlstones. These are locally associated with intervals of increased accumulation rates of coarse to fine-grained turbiditic sandstone bodies (thick turbidite sequences) in deep basinal settings (middle–lower bathyal environments). The taxonomic composition of the benthic foraminiferal assemblages indicates their cosmopolitan biogeographic distribution, showing close affinity with those of the Tethyan, Southern and Northern temperate realms. A large number of the recorded species have a common biogeographic distribution in slope and abyssal settings.