

LATE CRETACEOUS FORAMINIFERAL
BIOFACIES OF THE NORTHEASTERN
INDIAN OCEAN REGION

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VOLUME TWO

Atlas of Late Cretaceous Foraminifera
from the Northeastern Indian Ocean.

The foraminiferal content of ten sections representing a time span of Late Campanian to latest Maastrichtian have been examined. Nine sections are from the Northeastern Indian Ocean region and represent facies from active margin, passive margin and oceanic settings. The final section, from the Ontong-Java plateau was used for comparative purposes only.

Using a simple counting technique, a "biofacies profile" was constructed for each section allowing a number of non-phyletic or biofacies events to be recognised. The biofacies events can be identified in several sections; therefore, once calibrated by conventional biostratigraphy, they become available as additional correlation tools. The biostratigraphic framework produced by combining the conventional biostratigraphic events with the biofacies events enables a more refined chronological correlation of the sections than has previously been possible. Such a framework is especially useful in those sections which suffer a dearth of biostratigraphically useful species.

Apart from the biostratigraphic significance of the various shifts in the biofacies profile, consideration of their causes is important. The major biofacies events are a series of five peaks in the number of agglutinated forms which appear to be due to shallowing. They are ocean-wide in their distribution; their number suggests eustatic oscillations at a higher frequency than the Transgression/Regression cycles documented by Kauffman, (1979b).

Superimposed on the agglutinated peaks from the mid-Maastrichtian onward, is a trend towards high praebuliminid numbers. This trend can be recognised in all sections of the appropriate age. Higher praebuliminid numbers are directly attributable to dysaerobic conditions.

The changes in foraminiferal assemblages recognised in the biofacies profiles can be viewed as secondary precursor events to the terminal Cretaceous event. The concept of a long build-up to the boundary is at odds with the now popular catastrophic models, however, the profiles offer some support to the ecological approach used by Kauffman, (1979a).

The situation at oceanic Site 217 on the Ninetyeast Ridge is unusual in two respects. Firstly in regard to biofacies events, Site 217 for much of the Maastrichtian acts in concert with the neritic sections of the Western Australian margin. This suggests that the site was not as deep as its mid-ocean position would indicate. Secondly the majority of globotruncanid species do not appear at Site 217 until after *Globotruncanella mayaroensis*; (McGowran, 1974, Pessagno and Michael, 1974); thus only the final Late Maastrichtian zone can be recognised. It is therefore suggested that the late development of keeled forms was due to the site moving from an extratropical to a tropical situation as it drifted northward with the Indian plate.