

2. DATA REPORT: EOCENE FORAMINIFERS, BIOSTRATIGRAPHY, AND PALEOBATHYMETRY, LEG 197 HOLE 1206A, NORTH CENTRAL PACIFIC OCEAN¹

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ABSTRACT

A sparse, predominantly benthic foraminiferal assemblage extracted from the lower volcanoclastic interval on the Koko Seamount, Leg 197 Hole 1206A, indicates an early to middle Eocene age and, in general, a middle to upper bathyal paleobathymetry (400–1000 m). The very rare occurrence of poorly preserved planktonic foraminifers tends to support this biostratigraphic interpretation, which is based primarily on benthic foraminifers.

INTRODUCTION

A total of 30 samples from a lower volcanoclastic sequence were selected for foraminiferal analysis. Twenty-one of the samples yielded a faunal assemblage that demonstrated low density and low diversity. The assemblage consisted of >90% calcareous benthic forms, a small number of planktonic forms, and an absence of agglutinated species. Representatives of four families dominated the assemblage: Miliolidae (*Quinqueloculina* sp.), Buliminidae (*Bulimina semicostata*), Cibicididae (*Cibicidoides* sp.), and Rotalidae (*Valvulineria* sp.).

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BIOSTRATIGRAPHIC ANALYSIS

The biostratigraphic zonation is based on benthic foraminifers that were correlated with the Paleogene Stages of California (Mallory, 1959) and the world-wide zonation (van Morkhoven et al., 1986). These zones were then correlated with the world-wide planktonic foraminifera zonation (P-zone system) (Blow, 1969). This zonation allowed the designation of the approximate age in millions of years before present (Ma), as used by Exxon Corporation and Phillips/Conoco Petroleum. This method is based on benthic foraminifers, which are often long ranging and time transgressive and thus contain an unknown margin of error. However, in the case of this investigation, the rare occurrence of planktonic foraminifers suggests a favorable correlation with the early and middle Eocene Stages of California and the world-wide zonation.

PALEOBATHYMETRIC ANALYSIS

The upper depth limits of benthic foraminifers are utilized in determining paleobathymetry. Recent studies have shown that most species have an upper depth limit that indicates their shallowest occurrence. The lower limit of their depth range is of little value because of the high potential for downslope transport.

The compilation of paleobathymetric data (van Morkhoven et al., 1986) included several species that were identified in this study. The presence of *Bulimina semicostata*, *Cibicidoides eocaenus*, and *Cibicidoides laurissae* suggests a bathyal (400–1000 m) depositional environment for this sequence.

The range chart in the “[Appendix](#),” p. 4, indicates the key species from each sample, their abundance, and their approximate ages.

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