RADIOLARIAN BIOSTRATIGRAPHY OF THE NAVET FORMATION AT JACKSON HILL, SOUTHERN TRINIDAD, WEST INDIES

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ABSTRACT

Radiolarian assemblages occur intermittently in pelagic limestone, chalk and marl of the Navet Formation in southern Trinidad, and consist of up to 10 percent of the total coarse fraction greater than 38 micrometers. Radiolarians are well diversified and typical of the equatorial-tropical realm, although the assemblages are impoverished due to variable states of preservation of the tests that range from unaltered to partly dissolved, and calcitized. The presence of taxa such as Triacits tripyramis triangula, Thyrsocyrtis hirsuta hirsuta, Lamptonium fabaeforme fabaeforme, L. fabaeforme constrictum, Phormocyrtis striata striata, Eusyringium lagena, E. fistilugerum, Lithochytris vespertilio and early forms of Thyrsocyrtis triacantha, indicate a biochronostratigraphic position in the upper part of the Theocampe mongofieri Zone, or the lowest part of the Thyrsocyrtis tiacantha Zone, in the Middle Eocene.

Recurrent radiolarians in a predominantly pelagic carbonate facies is comparable to similar such patterns observed elsewhere in the Caribbean and interpreted as a record of climatic fluctuations in the middle Eocene. The sequence is also characterized by intermittent layers rich in benthic foraminifera, fine sand size glauconite, quartz and terrigenous constituents, mostly laminae less than a centimeter thick, with a maximum recorded thickness of beds up to 3 centimeters. They indicate that the site of deposition was affected by intermittent influxes of shallow water biogenic materials as turbidites.