

## RADIOLARIAN STRATIGRAPHY OF THE HERMITAGE QUARRY TRINIDAD, WEST INDIES <sup>1</sup>

*F. Maurrasse*  
*Florida International University*  
*Tamiami Trail, Miami, Fl. 33199*

### ABSTRACT

Comparison of radiolarian assemblages from the Hermitage Quarry sequence in Southern Trinidad with similar taxa of the equatorial-tropical realms reveals that at least part of the sequence correlates with the upper part of the *Calocyclus costata* Zone. The upper part of this Zone can be identified by the presence of the nominate species, the concurrent range of *Cannartus mammiferus*, and more specifically by the absence of two distinctly short-lived species, namely *Brachiospyris alata* (ex *Dorcadospyrus alata*) the nominate species of the suprajacent zone, and *Dorcadospyrus dentata*. The latter taxon characterizes the lower part of the *C. costata* Zone.

As shown by the foraminiferal taxa correlative of the transitional period between the Burdigalian (Early Miocene) and the Langhian (Middle Miocene), the radiolarian assemblages include distinct short-lived taxa resulting from tectonic evolution. This is interpreted to be the results of adaptive divergence in response to environmental stresses related to climatically induced changes which occurred at that time.

It is further surmised that the significant increase in diatoms which characterizes the upper part of the sequence at the Hermitage Quarry represents also the effects of the climatic changes when decrease in global temperature gradients led to intensified low-latitude circulation. Local physiographic factors also appear to have played a key role to further intensify oceanic circulation in the area.

<sup>1</sup> Caribbean Geological Collection Contribution No 20.