

INTRODUCTION

The diversity and longevity of the radiolarian fauna is recognized as a useful stratigraphic tool for both marine sections and land-based sequences. Over the past 40 years, research into the stratigraphic and geographic distribution, the morphology, and the phylogenetic relationships of Radiolaria has allowed the establishment of a refined and workable sequence of events and a zonation scheme which, at least in low latitudes, places radiolarians among the important microfossil groups for dating marine sediments.

This volume has been designed to accompany a set of 60 radiolarian zonal reference slides on board the *JOIDES Resolution*. Depending on the length of the zone, there are one, two, or three strewn slides for each of the 32 low-latitude and 11 middle-latitude zones. The reference slides, used in conjunction with this volume, provide standardized species and zonal concepts and thus facilitate consistent stratigraphic interpretation. We have presented a compendium of 150 stratigraphically useful species descriptions, containing a brief synonymy, morphologic description, dimensions, distinguishing characters, variability, geographic and stratigraphic ranges, phylogeny, and an illustration. In addition, we have presented definitions of each of the commonly used Cenozoic radiolarian zones from both low and middle latitudes, a summary of the radiolarian events that occur within each zone, and a summary range chart.