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Oligocene planktonic foraminifera: an overview of the new atlas

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We, the Paleogene Planktonic Foraminifera Working Group, have recently completed a revision of the taxonomy, paleoecology, evolutionary relationships and stratigraphic distribution of planktonic foraminifera from the Oligocene Epoch for the forthcoming Atlas on Oligocene Planktonic Foramnifera. This will follow our two previous contributions that focused on Paleocene and Eocene planktonic foraminifera. As was the case in the previous two Atlases, we adopt a type-based taxonomy, focusing our investigations on scanning electron micrographs of the type specimens, where possible, and accompanied by extensive illustration of material from around the world. The resulting photographic plates demonstrate the range in morphological variability permitted to our refined taxa concepts throughout their geographic range and in material with differing preservation styles.
The Atlas of Oligocene Planktonic Foraminifera is composed of 21 chapters in which all the species spanning the Oligocene and Early Miocene are documented. A total of 127 species, of which 15 are new, 26 genera, of which 3 are new, are described. Analysis of wall structures forms the basis of our higher classification, dividing the group into microperforate, spinose and nonspinose groups. A revised biostratigraphic zonation of the “O” zones has been developed in parallel with this work.
Novel aspects of the taxonomy include for example: 1) Pore density and pore diameter have been used for the taxonomic identification of some genera, to distinguish among the several globular r-strategist taxa occurring in the Oligocene 2) Two new macroperforate and three microperforate wall texture types have been identified and described. 3) The phylogeny for the Late Oligocene to Early Miocene Globigerinoides is proposed, and 14 species have been identified 3 of which are new. 4) Globorotaloides suteri is revised and reintroduced as a valid species. The origin of the extant taxon Globorotalides hexagonus is traced to the Globorotaloides variabilis group in the Late Oligocene and a new species Globorotaloides is described as a transitional form that links Globorotaloides to the near-planispiral globorotaloidid genus Protentelloides. 5) Most species previously attributed to Protentella are included in the genus Globigerinella, leaving Protentella as a monospecific genus with P. prolixa as type species. 6) The digitate form of Globigerinella are revise and documented. 7) A new classification of microperforate wall textures is presented and used as the basis for the higher taxonomy of microperforate forms.