

neglected intervals (e.g., Upper Jurassic to Lower Cretaceous, and Carboniferous through Triassic).

- Detailed integrated stratigraphy for Upper Paleozoic through Lower Mesozoic.

The geochronological science community and ICS are focusing on these issues. A modified version of the time scale to accompany the standardization (boundary definitions and stratotypes) of all stages is planned for 2008, with a totally revised version of GTS available in 2012.

**THE REPORT OF THEIR PROVINCIALISM IS GREATLY EXAGGERATED - ATLAS AND INTERACTIVE DICTIONARY OF COSMOPOLITAN DEEP-WATER AGGLUTINATED FORAMINIFERA (PALEOGENE).**

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As a step towards documentation of the global deep water agglutinated foraminifers faunas through geologic time, we have prepared an Atlas of Paleocene taxa. These faunas started to flourish in deeper water basins as early as Middle Jurassic, with major phases of evolutionary expansion in the Aptian-Turonian, Campanian, late Paleocene, Early Eocene and Middle Miocene. The Atlas, which we started in 1979 at the Bedford Institute of Oceanography in Dartmouth, N.S., is intended to serve as a guide for micropaleontologists dealing with agglutinated benthic foraminifers in deep marine, siliciclastic strata of Paleogene age around the world. A small proportion of the taxa are stratigraphically long ranging, while others either appeared in Late Cretaceous-time, or extend into Neogene. Taxa are grouped in Linnean taxonomic units using fossil shell morphology. There is concise text for each of the 134 taxa that represent the majority of species to be expected. For each of these valid species we provide type illustrations, and one or more plates with SEM and optical photographs or hand drawings, with characteristic views of the tests in samples from several different sedimentary basins. This Atlas starts with an introduction outlining the history of investigation, and important collections. The second chapter summarizes the biostratigraphical record of DWAF, in offshore eastern Canada, in the North Sea, Offshore Norway, Norwegian

Sea, Barents Sea, Carpathian Trough, southern European Tethyan basins, West Africa, and Trinidad/Venezuela. Each main area of investigation has a stratigraphic range chart for key taxa. Chapter three deals with Paleocology and its spin-off Paleobathymetry, in demand for study of deep water basins. The following section contains the main course of this Atlas: Systematic Taxonomy. The genus index, the species index, and the subject index, and the master reference listing follow this. An interactive, digital version is available also.

## PARTITIONING DIVERSITY

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Diversity has been heavily relied on as a descriptor of ecosystems; its relationships with stability, with latitude, with climate, and with evolutionary strategy have been investigated in great detail. Since diversity remains a simple scalar quantity, however, its explanatory power (in the statistical sense) is limited by equifinality: that is, even if diversity can be shown in univariate comparisons to be correlated with stability and with tropical climate, such a univariate measure can provide no information about which of its known covariates are important in a given case. This limitation can be addressed by supplementing diversity with morphological variables or proportional representation in morphological bins, which provide multiple responses. In an example from the leaf fossil record at the Cretaceous-Tertiary boundary, it can be shown that there is an evident difference between change in diversity and change in disparity, leading us to question whether evolutionary dynamics are better examined by partitioning diversity into proportional ecomorphic measures that automatically normalize for taxonomic and taphonomic bias.

**USE OF MULTIVARIATE MORPHOMETRICS TO EVALUATE MODE OF EVOLUTION IN BUCHIA BIVALVES FROM THE UPPER JURASSIC TO LOWER CRETACEOUS OF GRASSY ISLAND, BRITISH COLUMBIA**