tors, e.g., Atlantic city, New Jersey, where the MSL rise is 4.1 mm/yr, or 28.7 cm in 70 years. One may question the high value of real estate there.

Rhodes W. Fairbridge
New York, New York USA


There is already an abundance of literature available on foraminiferal distribution, but much of this can be considered no more than extended systematic monographs concentrating on taxonomic description. This book endeavours to identify the benthonic foraminiferal provinces of the Gulf of Mexico using the Generic Predominance Facies model. This is an ambitious undertaking and it is to the author’s credit that he succeeds in conveying to the reader both an understanding of foraminiferal distribution in the Gulf and of the concept of Generic Predominance Facies. The latter is particularly useful in increasingly older rocks, as species assemblages tend to diverge markedly from their modern analogues whereas resemblance is often maintained at the genus level.

The work falls neatly into two parts. Environmental and distributional data is crammed into the 31 page long Part 1. Here the author reviews the general environmental characteristics and benthonic foraminiferal distribution of the Gulf and examines their relationships. There then follows a short discussion of the Generic Predominance Facies model as it applies to the Gulf area and some examples of its use in palaeoenvironmental analysis. The author reverts to a slightly more traditional approach in Part 2. Here he highlights the major morphological characteristics of 138 diagnostic and/or common species. Each species is illustrated from three different angles on 64 scanning electron photomicrograph plates. The descriptions, which take the form of figure captions, are arranged alphabetically, whilst the plates are grouped according to facies. Data on species distribution in relation to facies is included.

This book is to be recommended as a primary text for students commencing work on Gulf Foraminifera, but should also be of use to micropalaeontologists in all walks of life. The Gulf of Mexico is presented here as a working example of how the Generic Predominance Facies approach can be applied in both environmental analysis and palaeoenvironmental reconstruction. This is the major theme throughout, owing perhaps to the author’s own experiences in industry and government institutions. Part 1 is extremely condensed, but a lucid, if decidedly American style is maintained and little is lost by way of important information. A little more attention might however, have been placed on describing the facies of the shelf down to the abyssal deep using published examples, as was done for the inshore facies.

The illustrations are of an excellent standard and will go a long way to promoting identification. Taxonomic problems are inherent in all foraminiferal studies, but Poag has endeavoured to avoid getting trapped in taxonomic complexities. This may be the reason why he left 8 species in open nomenclature. In addition, some workers might dispute the usage of certain generic and specific names. But these are details which can be overlooked in the early stages of identification. The work is not intended to be a monograph in any case.

The author has included some new data from the Mexican side of the Gulf, thus establishing a more comprehensive sampling framework from which to identify facies distribution. Despite this complexity of facies in the north as opposed to their simplicity in the south may be biased by an uneven data spread. Hopefully this book will encourage further research to fill in these gaps.

David N. Penny
Aarhus, Denmark


Salt may be bad for the health but it appears good for career enhancement! This bibliography contains approximately 3500 references on the geological aspects of salt, covering sedimentology, tectonics, structures, chemistry and mining. The references stretch back to the early 1900s and are arranged in alphabetical order. (The most recent references are from the early 1980s). There are also subject and geographic indexes, although as the former only covers five topics it may not prove as useful as it might have done. The geographic index is more helpful, down to US county level (always assuming you know which county you are in), although

outside the US it is not so comprehensive, for example Germany could have been usefully sub-divided.

The most helpful aspect is the annotation, usually a sentence or two saying what aspect of salt geology is discussed in the publication. It is surprising how many titles of papers give nothing away about their contents. It is for searching out many of these that the compilers should be congratulated. One major area of omission would appear to be salt weathering, very few papers on this subject are included.

Of use to libraries. The price is offputting. I have a sneaking suspicion that this will be a much xeroxed, little purchased volume. A computer-based version allowing continual updates would be welcome.

R.W.G. Carter
Ulster, Northern Ireland


This volume contains 45 out of the 58 presentations made at the International Symposium on North Sea Dynamics, Hamburg, 1981. The aim of the volume is to deliver a representative survey of research on currents and water balance, waves and storm surges, transport of momentum, energy and matter and ecosystem dynamics within the North Sea basin. The book is targetted at researchers in oceanography and marine biology although it may also be of some limited interest to coastal researchers. In spite of the inevitable overlaps in content, the book is well-ordered into the four sections mentioned above.

The book opens with a historical review of international North Sea Research thus providing a general backdrop to the more detailed presentations which follow. It would be counter-productive to detail all the papers in the book but, by way of a sample, the following papers caught this reviewer’s attention. A good introduction to North Sea currents and water balance is provided by L. Otto who usefully balances observation with modeling. Taken in conjunction with the modeling paper by A.M. Davies, it is clear that even at the large scale, difficulties in quantifying the mean circulation of the North Sea have not been fully resolved. At a much smaller scale, S. Tryggestad et al. show that some tidal currents are subject to substantial wave-forcing with velocities up to 90 cm s⁻¹ being measured during a storm off Teesside in 1978. Bottom currents of this magnitude have clear implications for the erosion and transport of fine grained sediments. A useful paper by A.H. Taylor et al. serves as a reminder that variability in oceanographic conditions in a partly enclosed basin owes much to the seasonality of fluvial runoff!

The continuing concern with the prediction of storm surges is reflected in the balance of the section on waves and surges with J.T. Duun-Christensen demonstrating the limitations of traditional surge forecasting models. He considers that the inclusion of the latest tide gauge data will allow more accurate forecasting, a view also held by R.A. Flather and R. Proctor. Their paper also shows how double generation of wind-fields can be partly avoided by the use of input data based on up-dated meteorological analyses.

G. Kullenberg gives a balanced review of the mixing processes of the North Sea and of the modeling problems encountered. Surprisingly, given the volume of research, only three papers address sediment transport problems in the North Sea. J.F. Venn and B. D’Olier suggest that trapped waves are responsible for the stability of linear sand ridges and suggest the possibility of coupling between sand ridges and surface waves. On a similar topic of surface waves creating linear phenomena, P.P.G. Dyke and S.F. Barstow’s discussion of Langmuir circulation and its relationship to pollution and marine biology is both stimulating and, for those who doubt its validity in marine situations, speculative.

The section on North Sea ecosystems has much less of a modeling flavor, being mainly concerned with papers reporting the results of the Flanden Ground Experiment (FLEX ‘76). As such, the section sits somewhat uneasily amidst a sea of modelers, the most graphic example being C. Joiris’s paper on seabird distributions which seems to have been added almost as an afterthought.

Conference proceedings are generally a mixed bag, and this one is no exception. With so much of North Sea research being concentrated on modeling it is inevitable that the volume is mathematical in bias yet several of the authors could have profitably spent more space in explaining the implications of their models. This reviewer’s main criticism, however, lies in the lack of perspective offered by the editors. There was a great need in this volume for editorial comment aimed at helping the reader navigate his way through each section. The volume is also slightly unbalanced with major areas of research such as remote sensing and offshore sediment dynamics left relatively untouched although, in fairness, this is a reflection of the symposium.