

papers consider older formations, illustrating lithified analogs of the Quaternary deposits.

A very impressive review paper by John B. Anderson introduces the volume, providing much necessary general information for readers about the basis, history, and "state-of-the-art," and includes a wide reference list. This initial paper is especially good for students and scientists examining glacial marine sediments for the first time.

Following Anderson's paper are fourteen papers about Quaternary glacial marine environments and deposits. Areas described include Subarctic Alaska, Antarctica, Arctic Ocean, the Kane Basin, Baffin Island, the Puget-Fraser Lowland of Washington and British Columbia and the North Atlantic Ocean. The detailed lithofacies characteristics, sedimentary facies analysis, and models for the facies associations and environments are the subject of twelve of the papers presented by Bruce Molnia, Ross Powell, John Anderson, Robin Wright, David Clark, David Minicucci, Joseph Kravitz, L. Osterman, Eugene Domack, W. Moode, A. Nelson, and J. Brigham. Some geotechnical aspects of glacial marine processes and sediments are addressed by W.C. Schwab *et al.* Only one paper (by Maria Balazarini) deals with palaeoecological problems.

All of these papers are interesting, their greatest value is in the clear presentation of primary criteria for recognition of ancient glacial marine environments and in highlighting the differences existing within and between various glacial marine sedimentary facies and deposits. Many of the facts presented allow the possibility for comparative studies, engendering new questions about the existing interpretations, not only in the glacial marine environments, but in some glaciolacustrine ones too.

In the third and last part of the volume, three papers are presented about the Neogene Yakataga Formation in Southern Alaska (John Armencourt), about the Late-Palaeozoic Dwyka Formation of the Karoo Basin in South Africa (J. Visser) and about the Pre-Cambrian Mineral Fork Formation of Utah (Nicholas Christie-Blick). Each provides a good example of pure, rather than applied, sedimentology, results of which may be compared with observations from the Quaternary sequences.

The book is printed in the camera-ready form. Figures are clear and well prepared. The photos are of poor quality probably due to the nature of the paper. The text, figures, and photos comprise a thick, hard-bound volume, the price of which is not too high, relative to the scientific value, and the fact that the volume is the first about glacial marine

sedimentation. As such it fills one of the most gaping holes in the field of glacial sedimentology. The author, subject, and geographic indexes (63 pages) are of great potential value to readers. All this confirms the notion that the book is of real value for those who want to widen their glacial-sedimentological knowledge especially in an area they may not be familiar with. Specialists will find much useful information. The book is worth buying both for students and professionals.

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Islands, Capes and Sounds: the North Carolina Coast, by Thomas J. Schoenbaum, 1982, J.F. Blair, Winston-Salem, North Carolina, 332p. US\$ 22.50, ISBN 0-89597-021-5.

A historical/anecdotal account of the life and high times of coastal North Carolina would not normally provide essential reading for shoreline managers, but Dr. Schoenbaum has put together a fascinating book which deserves to be noticed.

This is a good example of a particular *genre* of coastal books, often written by enthusiastic amateurs and published by small, regional publishers. Michael Pollard's 1978 book on the North Sea surge of 1953 is another excellent example.

Dr. Schoenbaum obviously has a great love of the North Carolina coast, and he has compiled this account of its history, county by county, together with some more personal stories. What makes the latter so interesting and potentially useful is that they deal with his experiences as a lawyer working for environmental groups against barrier island developers. Anyone who believes in impartiality and justice may be somewhat disillusioned by his revelations about the political shenanigans.

The book has a strong personal bias, towards conservation and non-development, but put in the context of barrier island dynamics, this seems fair enough. It might have been interesting to include the developers' viewpoint, surely avarice is not their only motive. I enjoyed the tales about Blackbeard the Pirate and his associations with North Carolina. One is left with the distinct impression that his descendants manage the State's realty business.

The book is well-produced, although the photographs appear to have been added as an afterthought.

There are plenty of small-scale location maps, but some more detailed plans would have helped explanations of, for example, the problems at Oregon Inlet and Currituck.

Overall this is an informative, well-written book at a reasonable price.

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Design and Construction of Mounds for Breakwaters and Coastal Protection, edited by Per Bruun, 1985, Elsevier, Amsterdam, The Netherlands, 938p. US\$ 92.50, ISBN 0-444-42391-5. (Developments in Geotechnical Engineering, 37).

This volume, number thirty-seven in the Elsevier geotechnical engineering series, was produced under the general editorship of Per Bruun, assisted in design and construction by M. Losada (Spain), Sv. Kjølstrup (Norway), and J.H. van Oorshot (The Netherlands). The twenty-four contributors were from fourteen countries providing an international scope to this major reference volume. This book, a compilation and summary of development in recent years, provides a wealth of information relating to design parameters, construction, and maintenance of breakwaters.

Introductory material covers the history of breakwaters as well as their function, stability, and classification of damages by knockouts, liftouts, slides of armour, general breakdown and fatigue, undermining, overwash, lift-up and through-washes, toe erosion, failure of substrate, and so on. The second chapter deals with basic parameters for design, viz. hydrodynamics, waves versus structures analysis, structural unit stability, geotechnical aspects, placement of armour, and ice action against rock mound structure slopes. Design considerations in chapter three focus on practical aspects such as construction and design of breakwaters, including the choice of optimum design, risk analyses, and economic design. Chapter four deals with actual methods of construction for small, medium, and large mound breakwaters. This chapter is most informative as it attempts to explain the advantages and disadvantages of different kinds of construction, maintenance, and cost. In Chapter 5 various examples are given for mound breakwaters the world over. Graphic photographs highlight various types of breakwaters and suggest possible causes of failures and remedial action. Chapter seven considers the

types and functions of coastal protective mounds and revetments. Also included in this chapter are discussions of methods of beach and dune nourishment and maintenance of beach fills by barging, bypassing, and scraping. The concluding eight chapters deal with alternative designs of mounds, particularly the application of bituminous mixtures and structures. The latter methods show ingenuity and possibilities for a wider range of mound structures that are durable under difficult conditions.

The volume contains an adequate subject index but an author citation index would have been helpful. The general quality of line drawings and halftones is good (some are not so good) but it was disappointing to find that the pages were just glossy reproductions of typewritten manuscript. Another minor irritation centers about the fact that it is generally not possible to determine which contributor should be charged with the responsibility for specific sections (There are a few exceptions where authors are indicated). In a multi-authored work such as this, many readers will probably want to know who wrote what.

No publication is perfect and the imperfections indicated here are minor compared to the overall value of this major contribution to understanding of mound breakwaters. Coastal engineers, coastal zone managers, academics, and politicians will find this book essential reading. Although not written for the layman, others besides coastal engineers will find that parts of this compendium will answer important if not critical questions that are relevant to many issues bordering on the socio-economic fringe. Those who are interested in geotechnical engineering will find this book indispensable and a worth while investment. My advice is to buy it, read it, and practice what it preaches!

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Collins Guide to the Sea Fishes of New Zealand, by Tony Ayling and Geoffrey J. Cox, 1982, William Collins Publishers Ltd., P.O. Box 1, Auckland, New Zealand (available in the US from: ISBS, P.O. Box 1632, Beaverton, Oregon 97075), 343p. US\$ 19.95, ISBN 0-00-216987-8.

Books which provide identification keys for animals or plants of specific geographical areas are valuable and often difficult to find. Consequently, the handy and reasonably priced *Collins Guide to*