

the development of an idea, follow its experimental development and revel in its conclusion, appreciating what it meant then and what it continues to mean now set amidst the framework of contemporary marine science. How much worse off would we have been had not such a study been made?

The general topics included are "Stratification in the deep ocean," "Horizontal patchiness and variability," "Variability in sea level," "Variability near the sea bed," "Equatorial undercurrents," "Electrical and magnetic effects," and "The Antarctic." Within each topic a series of papers, up to 10 in the case of "The Antarctic," are reproduced, prefaced by Editor's comments on each. It makes easy reading but there is a challenge to the reader in seeing, particularly for a topic with which he is not specially familiar, whether he agrees with the editorial assessment of its significance and whether it seems to earn its place in the annals of oceanography.

Taking the Antarctic section as an example, the papers range in vintage from 1911 (Brennecke on the oceanographic work of the German Antarctic Expedition) to 1976 (Foster and Carmack on frontal zone mixing and Antarctic bottom water formation). Would biologists agree with the inclusion of Mackintosh's 1946 paper on the natural history of whalebone whales or, especially, of the 1935 study of the phytoplankton of the Bay of Fundy and the Gulf of Maine by Gran and Braarud? Their demonstration that in turbulent waters the phytoplankton is more or less evenly distributed from the surface down and spends part of its time below the optimum light intensity so that photosynthesis and propagation are reduced is highly relevant in explaining, to a large degree, the lack of limitation of phytoplankton growth in the rich waters of the Antarctic Ocean. The transfer of oceanographic principles from one such study far removed in time and space to another illustrates another important aspect of the reappearance of such "benchmark" papers. Today's student may suddenly relate his work to something found long ago. I believe this will be so especially in future work on the krill resources of the Southern Ocean. Hence the inclusion of Mackintosh's review of the natural history and geography of the Antarctic krill, outstanding in its day and apparently untarnished by time, is thoroughly imaginative.

One concludes that each of these papers included in the Deacons's anthology represents, in the words of Rhodes W. Fairbridge, the Series Editor, "the bricks of our scientific edifice" but I commend them, not merely as he has said from a historical viewpoint, but as a stimulus, each one, to the steady pro-

gress of that fascinating multidisciplinary science known as oceanography.

The book deserves to be read widely and will serve for a long time as a memorial to the late Sir George Deacon, truly a Father of Modern Oceanography, and as a tribute to the skill and diligence of his daughter in documenting the advance of her father's beloved science.

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Florida's Sandy Beaches: An Access Guide, by David W. Fischer, 1985, University Presses of Florida, Pensacola, Florida, 218p. ISBN 0-8130-0820-4.

Florida is noted for its sandy beaches and, indeed, the state derives much of its income from tourism. This tourism depends heavily on an understanding of and access to state beaches. Some beaches are easily accessible and well used by the public whereas others, especially in heavily urbanized corridors, are almost inaccessible to the public. This guide admirably fulfills its stated goals of attempting to show where the beaches are, how to get there, and what to expect on arrival. To this end, the author and supporting staff have compiled a useful book that divides the coast into three major geographic areas: east coast, southwest coast, and northwest coast (Florida Panhandle). Each geographic area is subdivided by counties. The coastal counties are highlighted by selected historical anecdotes and other interesting local features.

The oversize format of the book is conveniently suited to portray long narrow coastal stretches. Three maps are used for each county showing planimetric details for orientation, district maps for general routing, and inset maps for urban areas. Accompanying the maps are charts that outline a variety of facilities and environmental conditions that would be of interest to beach users. This supplemental information is perhaps the most useful part of the book as it is certainly an essential consideration for those not familiar with a particular coastal segment that they intend to visit, or not, as the case may be after perusing the maps and charts.

Photographs and illustrations supplement the maps and charts to advantage. Articles of general interest are also provided for the interested reader. Sports fishermen will find tables listing the locations of saltwater fishing piers and other pertinent

information such as service facilities for day and night fishing, parking, and immediate evacuation in the event of inclement weather. Coastal researchers will also find information of interest in this guide. As useful as the book is, one would hope that it will become widely available to beachgoers and others with related interests.

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The Urban Edge, edited by Joseph E. Petrillo and Peter Grenell, The California Coastal Conservancy and William Kaufmann, Inc., Los Altos, California, 1985, 108p. \$14.95, ISBN 0-86576-078-0.

Where the land meets the sea remains an area of special fascination to humans. In endless variety, statisticians cite the number of people within a certain distance of the ocean's edge. That interest translates into conflicting desires to protect and to develop the coastal boundary. It also translates into books on this theme.

The Urban Edge is another in this group. Yet, it takes a unique tack, focussing on the role design plays in balancing protection and development. The intent is to describe for a lay audience the State of California's programs in this area. Included are a description of the California Coastal Plan and in particular the role of the book's sponsor, the Coastal Conservancy (an agency of the State of California); a history of the California coast from the architectural perspective; advice on negotiating development projects through involvement of the local citizenry; information on financing large-scale projects that design an area rather than just develop it; and most interesting of all, many photographs interspersing views of developed and pristine coastline in California.

This book, through its photographs, demonstrates the way humans add another layer to the physical and biological diversity of the coast — a useful perspective to those who concentrate on its physical and biological properties alone. Human development here is not a monomorphic extension of urban sprawl. Simple wooden structures vie with giant concrete monoliths against the waves. We also want structures where we can parade before the tides in our finest plumage. But we then seek solitude in the coastal fringe. Protection, development, and access all shape California's coastline and they are balanced through perhaps the world's most

comprehensive coastal program.

It is at this point that *The Urban Edge* begins to disappoint. Surely, the editors intended a larger audience than that of California's coastal community. Discussion of the California coastal program, however, seems directed at those already knowledgeable about it. The Coastal Conservancy's charge under the state's coastal legislation is "protecting, preserving, and restoring coastal resources through programs of land acquisition, waterfront restoration, wetland enhancement, public access, agricultural preservation, open space protection, and aid to local land trusts." It is a unique institution in state government, and several chapters discuss persuasively its useful role in resolving controversy over development projects. These discussions could have been enhanced with photographs related to the discussion. One of the book's shortcomings is that photographs, despite their intrinsic interest, often do not correlate with the text and in some cases are unlabelled.

The Urban Edge then tantalizes. For example, it argues that California's early European settlers sought to insulate themselves from the sea. Each new wave brought its style and translated it to the California coast. But the nature of today's development, the vision of the second generation Californian perhaps looks different, but the driving forces behind that change are not considered.

In summary, this book seems confused about its objectives. Is it a manual of coastal protection and development? An analysis of the coast's architectural history? A promotional for the Coastal Conservancy? Each could be useful; all three wrapped together informative to a broad audience. but as it stands, the bits and pieces of *The Urban Edge* are less than satisfying.

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The Ecology of Rocky Coasts, edited by P.G. Moore and R. Seed, Hodder and Stoughton, London, 1985, 467p. £40.00, ISBN 0-340-37011-4.

This book has the subtitle "Essays presented to J.R. Lewis, D.Sc." and should therefore be viewed as a collection of essays rather than as a text book or an attempt at an encyclopedic coverage of rocky shore ecology. The foreword, preface and first chapter explain the impact of Jack Lewis, well-known author of the *Ecology of Rocky Shores*,