plete or partial distribution maps of these phenomena can be found, although sometimes some maps are difficult to read (example: p. 72); the reader would have expected to see other maps in the other chapters. Other problems also leave the reader perplexed. In chapter 6, a case study in Spain is presented: is the example really representative of all the reference area? In chapter 9 concerning oceanography, wave monitoring using radar is referred to without providing any example related to the overall theme; the chapter becomes quite useless in this perspective.

Chapter 11 deals with the usefulness of integrating remote sensing data within a geographic information system (GIS) to insure better data integration with multisource data. This is quite pertinent specially at the end of such a publication; however, at least one application should have been presented showing its efficiency.

In conclusion, it is an interesting book although incomplete. The price is honest and it deserves to be purchased by libraries.

Dr. Jean-Marie M. Dubois
Département de Géographie et Télédétection
Université de Sherbrooke
Sherbrooke, Québec, Canada


This collective work was produced under the direction of two biologists of renown, A.C. Mathieson of the United States and P.H. Nienhuis of The Netherlands. The book is part of a collection devoted to world ecosystems directed by David W. Goodhall, a distinguished Australian biologist. The collection, begun in 1977, will contain at least 34 volumes at completion; so far, 28 volumes have been published. The ecosystems are divided into land ecosystems, natural and man-made, and aquatic ecosystems, marine, soft water and man-made. The present book quite obviously covers marine aquatic ecosystems.

Since this collective work does not fit the colloquium proceedings format, the subject matter would have been much more coherent if certain authors had not withdrawn from their assignments. Hence, most of the world coasts are not covered, such as those of Asia, the major part of Australia, the Mediterranean and Europe except for the Baltic, the Pacific coast of Central America, the Atlantic coast of South America and finally, those of the Arctic and the Antarctic. In spite of this drawback, the book generates overall interest, especially because of the presence of a few chapters presenting syntheses, and it will certainly be useful to its destined readers, i.e., graduate students, university teachers and scientists, as well as people involved in coastal planning or coastal protection policies.

Although it has a high price, the book is well edited and printed, with a solid hard cover. There are 37 authors and co-authors from 11 different countries, 18 from the United States, 4 from Australia, 3 from Germany, 3 from The Netherlands, 2 from South Africa, 2 from Great Britain and one from each of the following countries: Nigeria, Israel, Yugoslavia, Chile and Sweden. The general framework of the book begins with a preface which is more or less a list of acknowledgements and a list of authors and co-authors. At the end are found five very useful lists relating to biological types and species, cited authors, the place names mentioned and the subjects treated. The subject is divided into 18 chapters consisting of an introduction, four general interest chapters and 13 regional chapters. Unfortunately, there is no list of figures and tables.

Except for the introduction, the 17 chapters vary considerably in length, from 13 to 83 pages with an average of 27 pages. The number of figures and tables is also quite variable, from 0 to 17 with an average of 10 for some, and from 0 to 8 with an average of 2 for the others. At the end of each chapter can be found excellent references, which are really international in scope since, in addition to references in English, hundreds of references can be found in German, Spanish and French, and also a few in Italian and the Scandinavian languages.

The first three chapters cover generalities on the specific subject of the book, more specifically the intertidal zone or the tideless coastal zone up to a depth corresponding to less than 1% of natural light. These chapters present the physical and chemical characteristics of the area as well as the vertical zonation including the causes of zo-
nation. The synthesis, however, lacks references to the geomorphology and the different substrata.

The thirteen chapters that follow deal with specific regions and the editors deplore, in the introduction, the absence of very important portions of coastlines. Furthermore, in the areas covered, rocky coasts are mainly under consideration at the detriment of surficial deposit coasts. The two chapters presenting the Pacific and Atlantic coasts of Canada are written by eight co-authors, all Americans. Hence, it is not surprising that the Canadian portion is little developed, specially in the case of Quebec. Numerous recent contributions mostly from Quebec are not taken into consideration.

Finally, the last chapter deals with remote sensing of the benthic environment. This chapter is quite deceiving and with limited interest, most of the references restricted solely to American sources. No mention whatsoever is made of all the recent references in the field of macrophyte area identification and biomass estimation studies carried out in Canada, in Quebec and in France, as well as to the quite conclusive tests carried out with high resolution airborne sensors.

Dr. Jean-Marie M. Dubois
Département de Géographie et Télédétection
Université de Sherbrooke
Sherbrooke, Québec, Canada


This volume is a collection of sixteen of the author's published works, all in English, some translated for the first time from Chinese. In any case, the author's works are largely inaccessible at the present time, so publication of this book is very appropriate in view of the world interest in potential sea-level rise in the light of predicted global warming.

Professor Zhao is at the Institute of Geology, Academia Sinica in Beijing (P.O. Box 634, Beijing 100029), where, since 1974, he has concentrated his scientific energy on all sectors of the Chinese coastline, especially with the late Quaternary stratigraphy, 14C dating, sedimentology, geomorphology, and neotectonics.

The main thrust of this collection is (1) the geochronology and genesis of the cheniers or beach ridge strand plains, e.g., on Bohai Gulf; (2) the nature and age of beachrock, including the submerged beachrocks off Shantou City; (3) the Holocene coral reefs of Hainan Island; (4) the construction of a "standard" China sea-level eustatic curve for the last 20,000 years; (5) the mid-Holocene calcareous eolianites ("calcarenites" in the old terminology) of Putian (Fujian), and how they can be dated and shown to be distinct from beachrock; (6) the almost complete Holocene profile of Qingfeng (Jiangsu), which has been so thoroughly dated that it may well be offered as a world standard for Holocene sea-level chronology; (7) the building of a Holocene barrier-lagoon sequence with storm-surge deposits in the northern Jiangsu Plain. A more general article on the paleogeographic evolution of the Beijing Plain, more distantly related to sea level, is included. The collection is rounded out with a new overview of China's Holocene sea-level history which should be read by all coastal specialists.

Foreign specialists who have aided the author's endeavors are generously acknowledged, including N.A. Mörner, V. Goldsmith, N.P. Psuty, O. von de Plassche, P.G.F. Augustinus, and, not to forget the doyen of Chinese coastal experts, David K. Lin (Lin Guende), who in spite of some 20 years of incarceration and torture still survived to play an important role in China's coastal studies. Innumerable Chinese colleagues have also contributed to the work.

The present reviewer (R.W.F.) has been fortunate indeed to have been in touch with Professor Zhao over many years, and has often felt that this rich and varied coastline deserved more than scattered citations. Interspersed between localized areas of neotectonic activity, many extended sectors of China's coast are seen to be tectonically very stable, indeed a typical "Atlantic type" (passive) coast that is, oddly enough, facing the Pacific. These sectors provide ample justification for the author's plea that the richly studded record of 14C dates be accepted as a world standard. Admittedly, it would not be reasonable to imagine any "standard" as universally applicable. One thing that emerges from global studies over the last half century is that each region possesses certain unique features, so that rigid concepts of amplitude in rise and fall of sea level are to be re-