ume would have been obtained, but it would not have been about Glaciated Coasts as such. The use of the term "paraglacial coasts" by Forbes and Taylor probably comes closer to approximating to the common theme of this volume than does the actual title. Not so much glaciated coasts, with the emphasis on glacial processes structuring coastal evolution, but rather the modification of an inheritance from past glacial processes on a coastline in existing non-glacial conditions. This proviso apart, the volume should be a welcome addition to most coastal geomorphology book shelves.

Julian Orford
Queen's University,
Belfast, Northern Ireland, UK

Annotated Bibliography of Italian Quaternary Shorelines (1970-1984), edited by F.P. Bonadonna, 1987. *Atti della Società Toscana de Scienze Naturali,* Pisa, mem. ser. A, suppl. v. 93 (1986), 458p.

An invaluable source of information about Quaternary shoreline morphology, stratigraphy, paleontology, neotectonics chronology, this volume is primarily oriented on Italy; but also treats with the Mediterranean as a whole. It is comprehensively indexed. References and citations (1724 in all) are complete and provided with 3-6 lines of annotations (in English). Original papers are mainly Italian, but also in German, French and English.

One looks in vain, alas, for any comprehensive review. The Mediterranean contains probably the world's most well-studied traces of shoreline formations covering the last two million years. In stratigraphy, these constitute "type sections," *e.g.,* Calabrian, Sicilian, Selinuntian, Emilian, Milazzian, Tyrrhenian, *etc.,* as well as some discussed terms such as Grimaldian, Monastirian and so on. Hey (1978) gives a valuable appraisal of the discarded theory of altimetric correlation. Miskovski (1970, a Paris doctoral dissertation) provides a comprehensive study of the cave-man stratigraphy and paleoclimatic relationships.

Rhodes W. Fairbridge
NASA-GISS
2800 Broadway
New York, New York 10025

Mathematical Modelling of Tides and Estuarine Circulation: The Coastal Seas of Southern British Columbia and Washington State, by P.B. Crean, T.S. Murty and J.A. Stronach, 1988. Springer-Verlag, Berlin. DM 88,00. 471p. ISBN 3-540-96897-0.

Subtitled "The Coastal Seas of Southern British Columbia and Washington State", this volume is dedicated to the memory of Norman Heaps, who was a significant figure in the development of computer modelling of the hydrodynamics of coastal seas. His influence was an important factor at the beginning of the project described in the book.

The book is a description of the development of computer models of the Straits of Georgia and Juan de Fuca in British Columbia. In a way it is also a history of development of models of coastal hydrodynamics. It is a retrospective view of work done since 1960 by Pat Crean and co-workers and is presented in historical sequence of increasing complexity. Consequently it can be appreciated at several levels. Since the basic equations, and their finite difference formulations are described, it will also be of use to those starting out in computer modelling, giving them background and perspective of problems. The book is well written and to my mind gives a unique view of the progressive succession and refinement of models. Many of the conclusions are in hindsight rather obvious, and are now part of the accepted framework of modelling, though they were fundamental at the time they were made. However, it is rather unusual to have in one volume the sequence of models, together with their strengths and weaknesses illustrated by intercomparison, and by comparison with field data.

The basic thesis is that it is possible to simulate the large scale motions without detailed treatment of the small scale semi-turbulent motions, the interaction between the two scales being approximated by the use of appropriate parameters. No mention is made of the higher order closure techniques that are becoming more popular these days.

The introduction describes the general oceanographic character of the area and the observations which provide a context for the modell-