



BOOK REVIEWS

Internationaler Bibliographie zur Regionalen und Allgemeinen Küstenmorphologie (ab 1960)

D. Kelletat. Paderborn: Verlag Schöningh, Paderborn, West Germany, 1983, 218p. (DM 25.60)

This volume is going to be invaluable for coastal researchers concerned with geomorphology and general physical geography. It is bilingual, German and English, so a lack of German will not be a problem for English-speaking people except for the front matter. It consists of two parts: a Bibliography (numbered and alphabetic A to Z), of 6428 entries, containing full citations (pp. 41 to 218); and preceded by a numerical index arranged in two parts, geographical and general (process etc.).

The geographical index is particularly interesting because it carries a world map (Fig. 1) with 91 numbered subdivisions, which could be useful for anyone using a computer for studies of world shorelines. The general index includes: (1) textbooks, bibliographies, etc.; (2) methodology (selected); (3) coastal forms and processes; (4) ancient forms; (5) systematics.

Problems arise under the third heading, because not everyone is agreed as to classification. Kelletat uses "Ingressionsform" (translated as "Forms of Ingression: Primary Coasts"), which will surely puzzle the English-speaking audience. "Ingression", while long-established in central Europe, is simply never used in English. The AGI Glossary refers it to *Schief-erdecker*, the Dutch glossary. We would render it as "drowned coasts" or in a more general sense as "transgressive landforms". There is also a mistranslation over "complex"; this word is very popular with Russian authors, in the sense of "interdisciplinary" or "integrated", but in English "complex" means "complicated" or "confused". I am always amused to hear about

some massive eastern-bloc expedition that is nomenclatorially designated as "confused". Such are the perils of a polyglot world!

—Rhodes W. Fairbridge
Columbia University
New York

Creation and Restoration of Coastal Plant Communities

Lewis, R. R. (Ed.). CRC Press, Inc.: Boca Raton, Fla., 1982, 219p. (\$67.00)

This is a strange book. Basically it is a handbook for practical use, but its glossy format and high price suggest that it craves acceptance at a more academic level. It is comprised of nine chapters devoted to the creative management of coastal plant ecosystems. Ecosystems covered include sand dunes, marshes, mangroves and seagrasses. The layout of each chapter is broadly similar. A short introductory section describing the community structure, productivity and ecology, followed by a longer section detailing cultivation techniques for appropriate species, together with advice on planting (timing and spacing), fertilization and general aftercare. Each chapter is concluded with a summary of costs, research needs and references. One or two of the chapters (especially Chapter 4 (on the northeast Gulf of Mexico marshes) lean heavily on case studies, mostly without ever stating what it is that makes them distinctive enough to warrant inclusion in the volume.

Nature and range of advice varies. The first chapter on sand dunes (by Woodhouse) is reasonably well-balanced and covers most of the major American sand-binding plants—*Ammophila brevigulata*, *A. arenaria*, *Panicum amarum*, *Uniola paniculata* and *Elymus mollis*. There is little acknowledgment of non-

American experiences—I always thought the Danes 'wrote the book' on dune restoration, surely they deserve a mention. The references do cite Chris Phillip's (1975) unpublished review of sand stabilization techniques, but fail to note that it was published in far more accessible form in *Coastal Engineering* two years later.

Chapters 2 to 7 all deal with tidal marshes. Only chapter 6, which somewhat incongruously is about China, is not about the USA. Despite regional differences in marsh flora and ecosystem structure, there is inevitably a certain amount of duplication in these chapters, although, mercifully, little in the way of contradictory advice. In most cases it appears that the planting of various *Spartina* species is highly recommended. It is interesting to reflect that these very species are considered a nuisance in many parts of Europe, and are often eradicated by chemical spraying. This radical dichotomy in approach is not mentioned.

I found the final two chapters on mangroves and salt marshes the most interesting, partly because the topics are not normally covered in the literature, but partly because the chapters are well-written, informative (rather than bor-

ing) and have good reference lists. The chapter on seagrasses is the only one to attempt a global view.

All in all the book is disappointing. In the preface Lewis says he was asked "to bring together all available information on the creation and restoration of coastal plant communities". This he has not done. The book remains a rather expensive, parochial view of coastal plant management. The price also mitigates against its usefulness as a field manual; the various *Coastal Engineering Research Center* publications and the excellent *Coastlands* manual from the British Conservation Volunteers are all better acquisitions. Should a revision ever be contemplated it would be nice to see the inclusion of more non-US material (some of which might allow new insights for US readers) and, a personal plea this one, a chapter on the restoration of gravel coastal ecosystems for those of us in the far north who don't have mangroves!

—Bill Carter
The New University of Ulster
Northern Ireland



BOOKS RECEIVED

Dawes, C. J. 1981. *Marine Botany*. New York: Wiley, 628p.

Dring, M. J. 1982. *The Biology of Marine Plants*. London: Arnold, 199p.

Gade, H. G.; Edwards, A.; and Svendsen, H., eds., 1983. *Coastal Oceanography*. New York: Plenum, 582p.

Humm, H. J. and Wicks, S. R. 1980. *Introduction and Guide to the Marine Bluegreen Algae*. New York: Wiley-Interscience, 194p.

Marsh, J. S. and Huff, D. 1983. *Underwater and Marine Parks: An Indexed Bibliography*. Monticello, Illinois: Vance Bibliographies. Public Administration Series: P-1322, 46p.

Sackett, R. 1983. *Edge of the Sea*. Chicago, Illinois: Time-Life Books, 176p.

Schwartz, M. L., ed., 1982. *The Encyclopedia of Beaches and Coastal Environments*. Stroudsburg, PA: Hutchinson Ross, 940p.





MEETING REPORTS

The I.G.U. Commission on the Coastal Environment: 1980-1984

During the 24th International Geographical Congress in Tokyo in September 1980, the General Assembly approved the continuation of the I.G.U. Commission on the Coastal Environment for a further four years, retaining Eric Bird (Australia) as chairman and H. Jesse Walker (USA) as vice-chairman. The other members were John Noorman (Sweden), Roland Paskoff (France), Kazuyuki Koike (Japan), and Vsevolod Zenkivich (USSR), and about 120 correspondents representing the coastal countries around the world.

The five projects carried out in the previous period, 1976 to 1980, were reported on in a volume, *Coastal Dynamics and Scientific Sites*, edited by E.C.F. Bird and K. Koike, and published by Komizawa University, Tokyo, in 1981. From 1980 to 1984 the Commission has organized four major projects:

Coastline Changes (convenor: E. C. F. Bird)

Impact of Man on Coastlines (convenor: H. J. Walker)

Man's Response to Coastal Changes (convenor: K. Ruddle)

Coastal Management (convenor: J. Norrman)

While much of the work has been conducted by mail, and co-ordinated through the Commission's Newsletters (Nos. 10 to 16), reviews have been carried out during meetings held in Venice, Italy (May 1982), Cabo Frio, Brazil (August 1982), and Aberdeen, Scotland (July 1983). Final reports will be presented to the concluding symposium on the Atlantic coast of France (September 1984).

Commission members have contributed to a major work, *The World's Coastline* (edited

by E. C. F. Bird and M. L. Schwartz) to be published by Van Nostrand Reinhold in 1984. 128 authors have produced the illustrated accounts of the world's coastline, divided into 139 sectors. Other co-operative ventures included an inventory of the world's major Coastal Lagoon Systems, compiled for the UNESCO Division of Marine Science, and a *Bibliography of Coastal Geomorphology (1979-82)*, edited by Roland Paskoff.

Much interest has been aroused by the Commission's work demonstrating the modern global prevalence of erosion on sandy coastlines, publicized in R. Paskoff's *L'erosion des cotes* (1981). On the world scale, attempts to counter this erosion, either by building protective structures, artificially restoring depleted beaches, or by re-locating coast roads and coastal developments, have been immensely expensive. The Commission has put forward a multicausal analysis of the beach erosion phenomena, and has worked on a number of selected sites to analyse the problem quantitatively. This work will be published later in 1984 and is expected to be of value to coastal engineers, whose operations do not permit as wide an approach to the analysis of erosion and deposition on coastlines as has been used by the I.G.U. Commission.

Mapping and documenting the various responses to this prevalence of coastal erosion in recent decades has been carried out with particular reference to Japan, Australia, South Africa, and the United States. As well as demonstrating the extent and rapidity of artificialization of coastlines, this work has proved useful to coastal planners and developers anxious to avoid the high costs of protecting structures built too close to eroding coastlines.

In seaside resort areas, artificial beach restoration is now widely used to maintain recreational areas, but as such beaches are usually depleted by further erosion this is likely to become a recurrent expense. Reports on man's impact on the world's coastline and the response of coastal societies to changes that have taken place on the coast are being prepared for presentation at the concluding symposium in September.

In face of continuing development and growth of ports, industrial centers, urban areas, seaside resorts, and recreational facilities along coastlines, many countries have made efforts to identify and safeguard sectors of their coastline that are of outstanding scenic, scientific, or cultural significance, by declaring various kinds of coastal reserves, including national parks and nature reserves. In consultation with other international agencies, the commission has been developing methods of inventorying

coastal resources as a basis for the zonation that is required for coastal management.

In the past four years, the I.G.U. Commission on the Coastal Environment has sought to foster coastal research and its applications to coastal management, and has shaped a substantial contribution from geographers (mainly physical geographers) in this field, as well as cooperation with geologists, ecologists, marine scientists, engineers, and planners. In building up an international team of physical geographers, geomorphologists, and geologists we have become aware of the many coastal problems that require an interdisciplinary approach. If it is able to continue after 1984, this Commission will form a focus for the evolution of a new multidisciplinary organization to foster international coastal research.

—Eric C.F. Bird
Melbourne, Australia

The Gulf and Caribbean Fisheries Institute Annual Conference

The 36th Annual Meeting of the GCFI was held in Port of Spain, Trinidad, November 13-18, 1983. As in the recent past, this year's conference was centered on a particular theme, although presentations were made on other topics. The 1983 conference dealt with artesian fisheries and related matters. The format followed previous meetings where the first two days were devoted primarily to plenary sessions, including status reports from many of the Caribbean nations. These sessions discussed the overall problems confronting fisheries' managers and scientists, as well as exploring ways in which improvements could be accomplished both regionally and on a nation by nation basis. The conferees were in general agreement that while much of the inshore fisheries appear to be harvested at near capacity and may even be over fished in some areas, a potential does exist for increasing the pelagic fisheries which for many Caribbean nations include waters far larger than the island nation itself.

The second part of the conference consisted of technical and scientific papers and spanned a wide range of topics varying from sail-assisted fishing crafts to the role of remote sensing in identifying potential inshore and offshore fish habitats. Participants in these sessions included resident experts, representatives from the private sector, and a sprinkling of resources scientists from Caribbean, Latin and North American academic institutions.

Approximately 150 delegates participated in the conference, proceedings of which can be obtained from Mr. James Higman, Executive Director, Gulf and Caribbean Fisheries Institute, University of Miami, Miami, Fl. 33149, Tel. 305/361-1098.

Next year's meeting, which will emphasize sports fishery, is scheduled to be held in Cancun, Mexico during the month of November.

—Niels West
Kingston
Rhode Island, USA

Symposium on Beach Rock

A meeting on beach-rock has been held on 28 and 29 November, 1983, at Lyons, France, under the sponsorship of Drs. Rémi Dalongeville and Paul Sanlaville. It was attended by 28 participants from Belgium, France, Italy, Switzerland, and Tunisia. 15 papers were read and discussed, bearing on various aspects of beach-rock and its formation in the Mediterranean, the Red Sea, the Arabo-Persian Gulf, and the three Oceans. Particular attention was paid to the relations of beach-rock with old Holocene beaches, the paleogeographic and neotectonic significance of beach-rock (especially when now emerged or submerged), the genetic processes, and the data provided by beach-rock on recent changes in tropical sand cays.

The participants came to an agreement on

the following definition of beach-rock, translated here from French into English: Sedimentary formation appearing generally as a series of slabs sloping to the sea, indurated under the effect of a calcareous cementation (aragonite or magnesian calcite, initially) at the mediolittoral level. There are fossil beach-rocks located at levels higher or lower than the formation level.

The proceedings will be published by Maison de l'Orient Méditerranéen, 1 rue Raulin, F 69007, Lyon. Besides the papers, they will include a list of some hundreds of references dealing with beach-rock, compiled by Rémi Dalongeville, Christine Gaulin and André Guilcher.

—A. Guilcher
Brest, France

International Symposium on Coastal Evolution in the Holocene, August 29 thru September 3, 1983, Tokyo, Japan

Three main topics were discussed in this meeting: (1) methods for investigation of sea level changes, (2) causes and variations of sea level through time and space, and (3) processes of coastal environments deduced from nature and human actions.

Thirty-nine papers were read and half of them were contributed by the Japanese participants in this meeting. Eighty-nine scientists, including twenty-five from sixteen other countries, attended the sessions.

The meeting was most successful, mainly due to the efforts and contributions of participants from Southeast Asia and the Indian Ocean region. Reports from those areas provided interesting and useful information for little known coastal segments, including the Chinese mainland and surrounding areas.

The proceedings, to be published in *Coastal Oceanography Around the Japanese Islands*, is edited by the Oceanographical Society of Japan. The volume includes topics that focus on (1) geology and topography, (2) physics, meteorology, and ocean conditions, (3) chemistry, pollution, and environments, and (4) the biology and fisheries of twenty-three littoral areas around the Japanese Islands.

The contents of this book are directed to coastal specialists, but are also of general interest to field workers and technologists. It is anticipated this book will be useful for basic scientific research and socio-economic studies as well.

—Shoji Fujii
Toyama, Japan

INQUA Commission on Quaternary Shorelines Annual Report for 1983

The commission is generally concerned with the study of paleoshorelevels, the ultimate goal being to trace the relative movement of global sea level up to the present day. The purpose is mainly to interpret the local and regional sea-level responses in terms of crustal movements and climatic change, and thus to understand the main factors in Late Cenozoic geological evolution. Our approach is primarily stratigraphic and based on field studies. Recently however, a growing number of mathematical modellers are using the field data as a basis for computer simulations to interpolate the unknown areas and to project future trends. Our work is carried on by individuals, by ad hoc working groups, and by five regional subcommissions divided along natural geographic lines: Africa, the Americas, the Mediterranean and Black seas, Northwestern Europe, and the Pacific and Indian oceans. Each currently manages broad thematic projects, while the commission as a whole is united behind IGCP Project 200 (Sea Level: Correlations and Applications).

PROGRAM

There are two main ongoing projects of a publication nature within the commission as a whole. The most basic involves preparation of supplements to the *Annotated Bibliography of Quaternary Shorelines*. Compiled by Horace G. Richards partly from members' submissions, these comprehensive source books are an invaluable record of progress in the science and a vital starting point of any study. As such they have a high practical value as a ready source of data on virtually every part of the world's coastline.

Similarly, the *World Shorelines Map*, compiled and published privately by past president Donald J. Colquhoun, and based largely on information supplied by subcommissions, presently covers the world's coast, except for the Americas. Each compendium in the series

includes a list of reference sources, a list of data locations and a map which seeks to reduce complex Quaternary sea-level variation to three essential parameters—the elevation of the last interglacial high stand, that of the 'mid-Flandrian' c. 3500BP, and the present rate of Mean Sea-Level movement. The purpose is to express crustal and eustatic changes on various time scales in order to reveal tectonic and climatic factors. At a glance practitioners can see on the maps, areas and rates of present day emergence and submergence, and thus appreciate the tendency of shoreline migration. Plans are being formulated to release the information as maps of coastal evolution so that modern processes can be read directly.

The highlights of Commission activity have been circulated through a periodic newsletter, *Litoralia*. Through an arrangement with the Van Nostrand Reinhold Company (New York), this has now become the name of a new quarterly periodical on coastal science which will carry abbreviated Commission news on a regular basis. The Commission newsletter, prepared by the president, will continue under a new name in order to inform all members, at no cost, of all matters bearing on our activities, and to recast information contained in subcommission bulletins. Henceforth all IGCP-200 news will be circulated in this way. It thus remains the prime means by which each of the over 600 shorelevel workers throughout the world is linked to all others. Any one may submit material for printing, providing it is received in camera-ready form (12-cm column width, single-spaced, in IBM Letter Gothic typeface). The newsletter is free on demand and is being sent to all individuals and agencies throughout the world who are considered to have an interest in our work. It represents the first contact the Commission can make in the developing countries, and thus opens the way for full collaboration on an individual and group basis.

In sum, the bibliographies, maps, and bulletins are at present our chief means of informing

industry and influencing policy planning. However, a more focused effort is needed, through a special working group, to ensure that our knowledge is translated into action quickly and effectively.

During 1983 the Commission was involved directly and indirectly in various meetings, conferences, and excursions:

1. The NATO conference on *The Last Deglaciation*, May, Virginia, USA (planning GSA Centennial Book on 'Ice and Sea-Level in North America')
2. Geological Association of Canada, Symposium on *Quaternary Sea Levels and Crustal Geodynamics*, May, Victoria, Canada.
3. Second Nordic Symposium on *Climatic Changes and Related Problems*, May, Stockholm, Sweden.
4. York Symposium on *Correlation of Quaternary Chronologies*, May, Toronto, Canada.
5. 18 IUGG Congress, Symposium on *Desert Encroachment, Tropical Erosion, Coastal Subsidence and Submergence*, August, Hamburg, Germany (co-sponsor).
6. *International Symposium on Coastal Evolution in the Holocene*, September, Tokyo, Japan (co-sponsor with IGCP-61).

RESEARCH RESULTS

The scientific output of the Commission, as expressed by the work of individual members and by the planned efforts of subcommissions, can best be summarized in terms of its practical value to all countries regardless of economic status, and to the furtherance of geological practice throughout the world. Shorelevel studies are the basis for interpreting the prospects for economic mineral placers, particularly on the west African shelf. Delevelling of dated paleoshores is the prime measure of crustal instability, particularly for assessing seismic periodicity (notably in Japan, the Mediter-

anean, and western North America). Sea-level change is the prime determinant of shoreline migration particularly on shallow coasts, and is a useful tool for predicting economic impact on heavily populated segments of southeast Asia, North Sea, eastern North America. The European group is presently defining Late Holocene local sea-level histories for their paleoclimatic value and as a basis for predicting future impact on this most sensitive coast. The Americas group is focusing on broad-scale plate warping and collision, and on tidal change. The Mediterranean group's inter-congress theme is the Tyrrhenian stratigraphy of the last interglacial littoral formation, mainly as a manifestation of climatic optima, and secondarily as a datum for crustal delevelling.

The Pacific group continues to elucidate relationships between shoreline delevelling and differential tectonics/seismicity. The program for Africa includes study of submerged shores for their mineral potential.

Further the Commission has been consulted on sea-level and crustal movement topics for the large-scale AGID workshop and training course program. Though the Commission has made its presence felt in many quarters, we have a long way to go before we achieve a close working relationship with *all* of those on both the academic and the practical sides of shore-level studies.

PUBLICATIONS

Each subcommission and the Commission Secretariat issued at least one *newsletter* in 1983—to the limit of financial resources. In addition external funding made it possible for the Pacific and Indian Oceans Subcommission to produce the *Abstracts Volume*, on behalf of IGCP-61, of the International Symposium on Coastal Evolution in the Holocene, and for the Mediterranean and Black Seas Subcommission to publish *Les Côtes de la Tunisie*—a comprehensive stratigraphic monograph on the Tyrrhenian formations.

—Douglas R. Grant
Ottawa, Ontario,
Canada

