BOOK NOTICES

Adey, W.H. & Loveland, K. *Dynamic aquaria. Building living ecosystems.* 2nd edition. xx, 498p. San Diego: Academic Press, 1998. Price $49.95 (Paperback).

The book takes a unique approach by integrating ecology and aquarium science. The result is a better understanding of both ecological food webs and the limitations imposed on these webs by their compression into micro- and mesocosms. The reader is offered a complete view of the environment needed to sustain marine creatures in aquarium systems ranging in size from a few quarts to thousands of gallons emphasizing the most important functional aspects of living ecosystems.

Ansell, A.D., Gibson, R.N. & Barnes, M., editors. *Oceanography and marine biology. An annual review.* Volume 36. vii, 459p. London: UCL Press, 1998. Price £90.00.

This volume includes eight papers on the following topics: Ecology of the green macroalga *Codium fragile* (Suringar) Hariot 1889: invasive and non-invasive subspecies; coral/seaweed competition and the control of reef community structure within and between latitudes; ecological impact of green macroalgal blooms; impact of dredging works in coastal waters: a review of the sensitivity to disturbance and subsequent recovery of biological resources on the sea bed; *Obelia* (Cnidaria, Medusozoa, Hydrozoa): phenomenon, aspects of investigations, perspectives for utilization; symbiotic polychaetes: review of known species; cephalopod eggs and egg masses; ecological implications of small body size among coral-reef fishes.

De Silva, S.S., editor. *Tropical mariculture.* viii, 487p. San Diego: Academic Press, 1998. Price $99.00.

This book is the first to deal with mariculture in the tropics. It attempts to strike a balance between general issues and important technical considerations, including the culture of important individual species or species groups, encompassing the status of mariculture in the tropics. Land-based culture in saline waters is also covered.

Edwards, C., editor. *Environmental monitoring of bacteria.* x, 333p. Totowa, New Jersey: Humana Press, 1999. Price $89.50.

State of the art methods and techniques for the recovery of cells, for the analysis of whole cell and for the molecular study of target species and heterogeneous populations are brought together in this book. Many of the methods enable the monitoring of bacteria in their natural environments without culturing, and specifically address the difficult problem that only a small proportion of bacteria in any ecosystem can be cultured by traditional microbiological methods. The problems of monitoring bacteria in natural environments are reviewed and the principles by which the methods work are discussed. These reproducible methods enable the study of bacterial ecology as communities, single cells or at the molecular level.

Kingsford, M. & Battershill, C., editors. *Studying temperate marine environments. A handbook for ecologists.* 335p. Christchurch, New Zealand: Canterbury University Press, 1998. Price $49.95.

Procedures for designing descriptive and experimental studies on mobile and sessile organisms of soft and hard substrata in both intertidal and subtidal environments are described, together with methods for studying reef fish and planktonic assemblages. Data analysis and treatment of specimens are covered in detail, and a resource section provides a directory of expertise in relevant fields. Some emphasis is given to the study of impacts, marine protected areas and processes that influence marine organisms. The book includes case studies from both sides of the Tasman as well as the northern hemisphere, and will be useful in planning and executing studies of temperate marine habitats anywhere in the world.

Le Gal, Y. & Halvorson, H.O., editors. *New developments in marine biotechnology. Proceedings of the Fourth International Marine Biotechnology Conference, held September 22–29, 1997 in Sorrento, Paestum, Otranto, and Pugnochiuso, Italy.* xvi, 343p. New York: Plenum Press, 1998. Price $125.00.

The domains covered by marine biotechnologies range over various overlapping disciplines, from the molecular approaches of development biology and biodiversity to the chemistry of natural substances. New fields are rapidly evolving and are helping to successively emphasize specific areas of biological sciences. The format of the fourth edition of International Marine Biotechnology Conference (IMBC'97) was original and successful, as it enabled the presentation of straightforward reports and constructive discussions. With more than 60 selected papers organized in eight sections, this book covers the present state of the art in marine biotechnologies.

Meinhardt, H. *The algorithmic beauty of sea shells.* xi, 236p.+floppy disc. Springer, 1998. Price £34.00.

The dynamical processes that form decorative patterns on sea shells have been analysed and retraced in computer simulations. A diskette with the corresponding algorithms accompanies this book. The enlarged edition includes a new chapter showing that the models proposed for shell patterning can also account for other important processes in development such as the formation of organizing regions and embryonic axes and the initiation of leaves. Close parallels become apparent to processes like blood coagulation, chemotactic orientation of cells or the spread of neuronal excitation.

Ochi, M.K. *Ocean waves. The stochastic approach.* xii, 319p. Cambridge: Cambridge University Press, 1998. (Ocean Technology Series no. 6). Price £65.00.

Assuming a basic knowledge of probability theory, the book contains chapters describing the essential elements of wind-generated random seas; spectral analysis techniques; probabilistic predictions of wave amplitudes; wave height and periodicity; sea severity; extreme sea state; directional wave energy spreading in random seas and special wave events such as wave breaking and group phenomena. Finally the stochastic properties of non-Gaussian waves are presented. Useful appendices and an extensive reference list are included. Examples of practical applications of the theories presented can be found throughout the text.

Pörtner, H.O. & Playle, R.C., editors. *Cold ocean physiology.* xvii, 498p. Cambridge: Cambridge University Press, 1998. (Society for Experimental Biology Seminar Series no. 66). Price £80.00.

This book summarizes the most recent information on the adaptations exhibited by representatives of the main groups of polar animals, including marine invertebrates, fish, mammals and birds, at scales ranging from the whole organism through to the underlying molecular adaptational mechanisms. Unique in its breadth of coverage, this volume will provide an important resource for all those concerned specifically with how animals have adapted to life in extreme conditions, as well as being of general interest to all marine biologists.

Qasim, S.Z. *Glimpses of the Indian Ocean.* xvi, 206p. London: Sangam Books, 1998. Price £19.95 (Paperback).

Starting with the physiography of the Indian Ocean, the book discusses a wide variety of ocean subjects spread over 26 chapters. These include the Indian exclusive economic zone, progress of ocean sciences in India, food resources, fresh water supply, chemicals, bioactive substances, minerals, mangroves, coral reefs, etc. Other chapters deal with monsoons, cyclones, sources of pollution, satellite imagery, ocean-based industries, Indian expeditions to Antarctica and investment oportunities in the Indian Ocean in the twenty-first century.

United States. National Research Council. *Improving fish stock assessments.* x, 177p. Washington, DC: National Academy Press, 1998. Price £25.95 (Paperback).

This report which was requested by the National Marine Fisheries Service (NMFS) presents the results of a broad review of the methods used in the United States for stock assessment. The recommendations presented herein should also be useful to ongoing international activities related to fish stock assessments, such as those of the International Council for the Exploration of the Sea.