

BOOK NOTICES

Baldisserotto, B., Mancera, J.M. and Kapoor, B.G. (eds). *Fish osmoregulation*. xii, 527 pp. Enfield, New Hampshire: Science Publishers, 2007. Price £71.70.

In this book several specialists have analysed and reviewed the new data on fish osmoregulation. The chapters present an integrative synthesis of the different aspects of osmoregulation in specific situations, function of osmoregulatory organs, general mechanisms and endocrine control. In addition, interactions of osmoregulatory mechanisms with the immune system, diet and metabolism are reviewed. New techniques to study osmoregulation have been analysed.

Bannister, J. *Great whales*. ix, 142 pp. Collingwood, Victoria: CSIRO Publishing, 2008. Price £25.36.

This book provides a detailed account of the seven 'great whales' found in the coastal waters surrounding Australia. It covers six of the largest baleen whales—blue whale, fin whale, humpback whale, sei whale, Bryde's whale and southern right whale—and the sperm whale, the largest toothed whale. It includes also the smaller minke whale because of its special interest to Australians. The book describes whales' highly specialized mammalian structure and biology, and the history of people's association with them, at first through legend and wonder, then whaling, and more recently whale watching. It also looks at their past and current status, and the conservation initiatives that are in place to protect them from existing or potential threats. It contains both historical and recent photographs, as well as an extensive glossary.

Camhi, M.D., Pikitch, E.K. and Babcock, E.A. (eds). *Sharks of the open ocean. Biology, fisheries and conservation*. xxxiv, 502 pp. Blackwell Publishing Ltd, 2008. Price £99.50.

The latest data and knowledge on pelagic shark biology, fisheries, management and conservation are presented. Coverage includes an introduction and overview of the book; life history and status of pelagic elasmobranchs; trends in catches and abundance; methods to improve understanding; conservation and management outlook.

Diogo, R. *The origin of higher clades: osteology, myology, phylogeny and evolution of bony fishes and the rise of tetrapods*. xviii, 367 pp. Enfield, New Hampshire: Science Publishers, 2007. Price £53.20.

This book provides a new insight on the osteology, myology, phylogeny and evolution of the Osteichthyes. Chapters 1 and 2 provide a short introduction to the main aims of the book and to the methodology and methods used. Chapter 3 deals with an extensive cladistic analysis of osteichthyan higher-level interrelationships based on a phylogenetic comparison of 356 characters in 80 extant and fossil terminal taxa representing all major groups of Osteichthyes. This cladistic analysis includes various terminal taxa and osteological characters, and principally a large number of myological characters not included in previous analyses. Chapter 4 provides a general discussion of issues such as the comparative anatomy, homologies and evolution of osteichthyan cranial and pectoral muscles, the development of zebrafish cephalic muscles and the implications for evolutionary developmental studies, the origin, homologies and evolution of the

Weberian apparatus, or the use of myological versus osteological characters in phylogenetic reconstructions.

Johnson, C.R. (ed.). *Seaweed invasions: a synthesis of ecological, economic and legal imperatives*. Berlin: Walter de Gruyter, 2007, 147 pp. (Reprinted from *Botanica Marina* 50(5/6), 2007.) Price €48.

In recognizing an urgent need to move beyond case studies and develop a conceptual synthesis, the scope of this volume is broad, covering the principal elements of both the invasion process and human responses to seaweed invasions. This includes addressing legal frameworks for regulatory control, practical means to track and respond to invasive seaweeds in the field, as well as the ecology of invasions. The result is both a multidisciplinary synthesis of work to date, and a pointer to future challenges and priorities.

Karanovic, T. *Marine interstitial Poecilostomatoida and Cyclopoida (Copepoda) of Australia*. vi, 331 pp. Leiden, The Netherlands: Brill, 2008. (*Crustaceana Monographs*, 9.) Price €119; US\$174.

The prime function of the interstitial system is the processing of organic material flushed into the sand. It functions as a carbon sink, which has significant implications in this age, in which we are trying to fight carbon levels in the atmosphere. Copepods are top predators here and, thus, crucially important. This book presents the first data about cyclopoid and poecilostomatoid copepods from the Australian marine interstitial. It includes one new cyclopoid family, the second record of the poecilostomatoid family Polyankyliidae, one new genus, and 21 new species. A zoogeographical analysis of the copepods recorded emphasizes the importance of looking at small-scale patterns when inferring Gondwanaland biogeography, and a number of distinct zoogeographical regions are now becoming apparent in Australia.

King, M.D., Parkinson, C.L., Partington, K.C. and Williams, R.G. (eds). *Our changing planet: the view from space*. xvii, 390 pp. Cambridge: Cambridge University Press, 2007. Price £25.

Satellites provide information on the many changes taking place, from movements in the land and volcanic eruptions, to human-caused changes such as the growth of cities, deforestation and the spread of pollutants in the atmosphere and oceans. Led by four editors with support from a production team at NASA Goddard Space Flight Center, many of the world's top remote sensing scientists showcase some spectacular and beautiful satellite imagery along with informed essays on the science behind these images and the implications of what is shown. This book will be of interest to students, teachers, environmentalists and the general public alike.

Kiorboe, T. *A mechanistic approach to plankton ecology*. 209 pp. Princeton, New Jersey: Princeton University Press, 2008. Price £23.95.

The life and interactions of plankton organisms are examined with the larger aim of understanding marine pelagic food webs. Plankton ecology and behaviour are looked at in the context of the organisms' immediate physical and chemical habitats. It is shown that the nutrient uptake, feeding rates, motility patterns, signal transmissions, and perception of plankton are

all constrained by non-intuitive interactions between organism biology and small-scale physical and chemical characteristics of the three-dimensional fluid environment.

Luoma, S.N. and Rainbow, P.S. *Metal contamination in aquatic environments: science and lateral management*. xiv, 573 pp. Cambridge: Cambridge University Press, 2008. Price £60.

Metal contamination is one of the most ubiquitous, persistent and complex environmental issues, encompassing legacies of the past (e.g. abandoned mines) as well as impending, but poorly studied, threats (e.g. metallo-nanomaterials). Written for students, risk assessors and environmental managers, this book explains why controversies exist in managing metal contamination and highlights opportunities for policy solutions stemming from the latest advances in the field. It illustrates how the 'lateral' approach offers opportunities in both science and management, making the case that the advanced state of the science now allows bridging of traditional boundaries in the field (e.g. between field observations and laboratory toxicology). The book has an international and interdisciplinary perspective, integrating geochemistry, biology, ecology and toxicology, as well as policy and science. It shows explicitly how science ties into today's regulatory structure, identifying opportunities for more effective risk management in the future.

McClanahan, T.R. and Branch, G.M. (eds). *Food webs and the dynamics of marine reefs*. 238 pp. Oxford: Oxford University Press, 2008. Price £47.

Nine shallow water marine ecosystems from selected areas throughout the world are covered: four coral-reef systems, three hard-bottom systems and two kelp systems. Each chapter focuses on the food webs of a respective ecosystem and the factors affecting these communities, from the direct pressure of human influence on fisheries to the multi-vector contributions to climate change. The book assists our understanding of the ecological management of food webs by summarizing their organization, analysing human influences on them, and noting recent developments in the study of these ecosystems.

Mente, E. (ed.). *Reproductive biology of crustaceans: case studies of decapod crustaceans*. xvi, 549 pp. Enfield, New Hampshire: Science Publishers, 2008. Price £70.

Crustaceans adapt to a wide variety of habitats and way of life. They have a complex physiological structure particularly with regard to the processes of growth (moulting), metabolic regulation, and reproduction. Crustaceans are model organisms for the study of endocrine disruption and stress physiology in aquatic invertebrates. This book is an overview of the extensive research that has taken place over the recent years on issues of crustacean reproduction.

Reynolds, C. *Ecology of phytoplankton*. xiii, 535 pp. Cambridge: Cambridge University Press, 2006. (Ecology, Biodiversity, and Conservation series.) Price £48.

The adaptations, physiology and population dynamics of the phytoplankton communities of lakes and rivers, of seas and the great oceans are dealt with in this book. It serves both as a text and a major work of reference, providing basic information on composition, morphology and physiology of the main phyletic groups represented in marine and freshwater systems. Recent

advances in community ecology are reviewed including assembly processes, coexistence and competition, disturbance and diversity.

Rocha, M.J., Arukwe, A. and Kapoor, B.G. (eds). *Fish reproduction*. xiii, 629 pp. Enfield, New Hampshire: Science Publishers, 2008. Price £71.70.

Reproduction is a continuous development process throughout ontogeny, requiring energetic, ecological, physiological, anatomical, biochemical, and endocrinological adaptations. The first chapters highlight important issues affecting fish reproductive development. Details focus on species living in opposite environments, such as tropical and polar fish, teleosts and cartilaginous fish, and finally, fish having different reproductive strategies. This book also describes factors and mechanisms that may well affect reproduction-related hormonal systems of fish living in polluted environments. Finally, the interplay of modern concepts of fish reproduction in aquaculture is reviewed.

Sebert, P., Onyango, D.W. and Kapoor, B.G. (eds). *Fish life in special environments*. x, 352 pp. Enfield, New Hampshire: Science Publishers, 2008. Price £54.90.

Due to the huge diversity of their habitats, fish make an excellent model to depict the interplay of morphological, physiological and biochemical aspects and are often used to study adaptation to new environments. Fish in diverse environmental conditions such as alkaline environments, caves, Antarctic, ice cold lakes, tropical coral reefs, and deep water are covered. The chapters also discuss mitochondrial functions in the cold, circadian rhythms, endocrinology of migratory fish life cycles and fish muscle function. The topics have been selected in order to present a window to an array of adaptations of aquatic inhabitants which enable them to subsist and survive in the uncommon, often hostile, external environment. This book serves as both a general and a specific source of information for fish biologists as well as ecophysiologicals, but also for students.

Weiher, E. and Keddy, P. (eds). *Ecological assembly rules. Perspectives, advances, retreats*. xii, 418 pp. Cambridge: Cambridge University Press, 1999. Price £38.

This volume brings together carefully selected contributions which examine the question of the existence and nature of assembly rules with some rigour and in some detail, using both theoretical and empirical approaches in a variety of systems. The result is a balanced treatment, which encompasses a wide range of topics within ecology, including competition and coexistence, conservation and biodiversity, niche theory, and biogeography.

Wolanski, E. (ed.). *The environment in Asia Pacific harbours*. xx, 497 pp. + CD-ROM. Dordrecht, The Netherlands: Springer, 2006. Price £57.50.

This book details how science can provide solutions so that economic and social developments can be ecologically sustainable. Twelve sites are discussed in detail, integrating physics and biology, and between science and engineering. In turn these are linked to economic and social issues. These sites are Tokyo Bay, the Pearl Estuary, Hong Kong, Shanghai and the Yangtze delta, Klang, Manila Bay, Jakarta Bay, Pearl Harbor, Ho Chi Minh City, Bangkok and the upper Gulf of Thailand, Singapore, and Darwin. Sixty prominent scientists and engineers in universities and research centres at all these sites contributed the chapters in this book.