

graphs too small. These are minor points for what is a useful book.

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Fish Farming Handbook: Food, Bait, Tropical and Goldfish, edited by E.E. Bron and J.B. Gratzek, 1980, AVI Publishing Company, Inc., 391p. US\$ 39.50, ISBN 0-87055-341-0.

Aquaculture topics have now become a significant proportion of the current world's fisheries literature. To write a comprehensive and up-to-date book on such an important subject to the growing body of aquaculturist is a daunting task. The emphasis given to US aquaculture activity in the present book is a practical one, yet even in the short time since publication, new species have become of interest in the USA, for example, the white sturgeon, *Acipenser transmontanus*. Surprisingly some fish are not given attention, like *Gambusia affinis*, a small viviparous top minnow (used for mosquito control) which suffers from lack of an efficient mass-rearing method, and coolwater fish, like *Muscellunge*, the northern pike and many others.

This book is aimed at . . . 'private and public aquaculturists, and to those interested in fish culture as a hobby or as a large scale operation' . . . to quote from the cover, . . . but only within the limit of the species covered. So assure yourself in advance if the fish you are interested in is described by the authors under the categories: food, bait, tropical or goldfish or is among the 'others' not mentioned.

An opening chapter on Environmental Factors (by R. Reinert) includes diffuse information; a one-page table could be more instructive than this mixture of fish physiology and environmental effects, not many corresponding to readers requirements. A chapter on types of culture methods describes ponds and raceways, mentions cages, but gives no information on aquaria, tanks, and recirculated systems, often an essential part of commercial aquaculture enterprises. When reading about the control of fish populations and vegetation, a novice may be convinced that using chemical methods (11 pages) instead of biological ($\frac{1}{2}$ page) or mechanical methods ($\frac{1}{2}$ page) is best. Such preference is neither justified by its selectivity nor by the economics.

In the methods section, culture techniques for catfish (20 pages), trout and salmon (30 pages), American eel (4 pages), bait (minnows and suckers)

and goldfish (38 pages), and tropical fish (40 pages) are reviewed. This is an essential part of the book, but should serve only as preliminary information for most species.

Nutrition and feeding by R.T. Lovell covers largely the nutrient requirements for catfish, but adds two diet formulations for golden shiner and angle fish, and finishes with a feeding schedule for channel catfish and rainbow trout. Thus the chapter has little correspondence to the important fish species mentioned elsewhere in the book. Most significantly the book neglects entirely live food culture, growing facilities, and methods. In the second, and most extensive part, common fish diseases and their control receive unequal treatment. The range of coverage is enormous and superficial. The reader is expected to learn about a monocular microscope and 50 pages later about the isolation of gram negative bacteria and virus diagnostic procedures on cell culture. Authors very 'generously' supply 4 scanning electron micrographs of the protozoan *Ichthyophthiris multifillis* (2 pages) and 4 SEM (3 pages) of *Costia* and *Chilodonella*, etc., when simple drawings would have done. The part covering prevention and treatment is useful but too short.

The last chapter, Processing and Marketing by E.W. McCoy and M.L. Hopkins is notable for the fact that it neglects to mention at what condition fish should be kept and marketed. Literature is cited after every chapter, so Leitritz and Levis' book is quoted 3 times (page 39, 69, and 209). This seems excessive. As authors state (page 71) . . . 'no one book or any number of books are a substitute for practical knowledge.' On the evidence here, I agree with them.

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Glacial Marine Sedimentation, edited by Bruce F. Molnia, 1983, Plenum Press, New York, 844p. US\$ 67.00, ISBN 0-306-41497-X.

1983 was especially rich in glacial geology books. However this volume is the first one on glacial marine sedimentology. The editor has compiled eighteen papers describing a variety of temporal and spatial settings for glacial marine sedimentation. Many characteristics of Quaternary sediments have been studied allowing regional differentiation between glacial marine environments and their resulting deposits and facies. Some

papers consider older formations, illustrating lithified analogs of the Quaternary deposits.

A very impressive review paper by John B. Anderson introduces the volume, providing much necessary general information for readers about the basis, history, and "state-of-the-art," and includes a wide reference list. This initial paper is especially good for students and scientists examining glacial marine sediments for the first time.

Following Anderson's paper are fourteen papers about Quaternary glacial marine environments and deposits. Areas described include Subarctic Alaska, Antarctica, Arctic Ocean, the Kane Basin, Baffin Island, the Puget-Fraser Lowland of Washington and British Columbia and the North Atlantic Ocean. The detailed lithofacies characteristics, sedimentary facies analysis, and models for the facies associations and environments are the subject of twelve of the papers presented by Bruce Molnia, Ross Powell, John Anderson, Robin Wright, David Clark, David Minicucci, Joseph Kravitz, L. Osterman, Eugene Domack, W. Moode, A. Nelson, and J. Brigham. Some geotechnical aspects of glacial marine processes and sediments are addressed by W.C. Schwab *et al.* Only one paper (by Maria Balazarini) deals with palaeoecological problems.

All of these papers are interesting, their greatest value is in the clear presentation of primary criteria for recognition of ancient glacial marine environments and in highlighting the differences existing within and between various glacial marine sedimentary facies and deposits. Many of the facts presented allow the possibility for comparative studies, engendering new questions about the existing interpretations, not only in the glacial marine environments, but in some glaciolacustrine ones too.

In the third and last part of the volume, three papers are presented about the Neogene Yakataga Formation in Southern Alaska (John Armencourt), about the Late-Palaeozoic Dwyka Formation of the Karoo Basin in South Africa (J. Visser) and about the Pre-Cambrian Mineral Fork Formation of Utah (Nicholas Christie-Blick). Each provides a good example of pure, rather than applied, sedimentology, results of which may be compared with observations from the Quaternary sequences.

The book is printed in the camera-ready form. Figures are clear and well prepared. The photos are of poor quality probably due to the nature of the paper. The text, figures, and photos comprise a thick, hard-bound volume, the price of which is not too high, relative to the scientific value, and the fact that the volume is the first about glacial marine

sedimentation. As such it fills one of the most gaping holes in the field of glacial sedimentology. The author, subject, and geographic indexes (63 pages) are of great potential value to readers. All this confirms the notion that the book is of real value for those who want to widen their glacial-sedimentological knowledge especially in an area they may not be familiar with. Specialists will find much useful information. The book is worth buying both for students and professionals.

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Islands, Capes and Sounds: the North Carolina Coast, by Thomas J. Schoenbaum, 1982, J.F. Blair, Winston-Salem, North Carolina, 332p. US\$ 22.50, ISBN 0-89597-021-5.

A historical/anecdotal account of the life and high times of coastal North Carolina would not normally provide essential reading for shoreline managers, but Dr. Schoenbaum has put together a fascinating book which deserves to be noticed.

This is a good example of a particular *genre* of coastal books, often written by enthusiastic amateurs and published by small, regional publishers. Michael Pollard's 1978 book on the North Sea surge of 1953 is another excellent example.

Dr. Schoenbaum obviously has a great love of the North Carolina coast, and he has compiled this account of its history, county by county, together with some more personal stories. What makes the latter so interesting and potentially useful is that they deal with his experiences as a lawyer working for environmental groups against barrier island developers. Anyone who believes in impartiality and justice may be somewhat disillusioned by his revelations about the political shenanigans.

The book has a strong personal bias, towards conservation and non-development, but put in the context of barrier island dynamics, this seems fair enough. It might have been interesting to include the developers' viewpoint, surely avarice is not their only motive. I enjoyed the tales about Blackbeard the Pirate and his associations with North Carolina. One is left with the distinct impression that his descendants manage the State's realty business.

The book is well-produced, although the photographs appear to have been added as an afterthought.