Review: The World of Phycology
Reviewed Work(s): Seaweeds: Their Environment, Biogeography, and Ecophysiology by Klaus Luning, Charles Yarish and Hugh Kirkman
Review by: Larry B. Liddle
Source: *BioScience*, Vol. 41, No. 6 (Jun., 1991), pp. 427-428
Published by: Oxford University Press on behalf of the American Institute of Biological Sciences
Stable URL: https://www.jstor.org/stable/1311751
Accessed: 03-10-2021 09:27 UTC

outdated. On page 73 he states, "Man affected the evergreen moist forest very little. Locally, certain plant species may have been exterminated, other plant species might have been enriched, accidentally or purposely planted." Humans have purposely altered the rainforest; there is no "might have" involved. William Balée (1989) states that "at least" 11.8% of Brazilian Amazonian terra firme is of cultural origin.

Bruenig perpetuates another rainforest myth, that forest gardens require little maintenance or hard work and are run by women, while males are "roaming the landscape for food and adventure" (p. 73). Men generally clear the forest; women weed the fields. Either sex may plant. Perhaps clearing a rainforest or weeding a field by hand would abate Bruening's bucolic bosh.

In chapter 5, "Tropical Wildlife Resources," S. K. Eltringham discusses the economic importance of tourism and hunting. He notes that these alternative uses of wildlife are more profitable than meat production, particularly in East Africa. Land owners in Amazonian Ecuador are learning that ecotourism brings more dollars per hectare than does cattle ranching.

P. R. Burbridge discusses the evaluation of tidal wetland resources. Although pure conservationists frown on such activities, realistically economics and conservation are inseparable. Burbridge mentions the difficulty of evaluating wetland goods and services performed but not marketed and those realized away from wetlands. These same problems confront economic analysis of any ecosystem.

J. A. McNeely and J. R. MacKinnon provide a well-structured discussion of protected areas in the tropics. Their list of 12 conservation objectives leaves out ethnic preserves. They mention a "cultural heritage" category, but its scope is structures and sites. In a second list, they cite anthropological reserves. Preservation of extant cultures should be given more emphasis. If humans have been a vital part of the rainforest, can we preserve the forest without preserving indigenous cultures? For those of us concerned with these cultures, can we preserve tropical rainforest cultures without tropical rainforests?

McNeely and MacKinnon's general philosophy is one of integrated management. Like Burbridge, they mention the importance of economic evaluation, especially of the so-called "minor" products. Peters et al. (1989), in a study of a one-hectare site in Amazonian Peru, showed that the economic potential of these minor species is not so minor. McNeely and MacKinnon provide a rational approach to conservation of people, plants, and animals. They warn against the establishment of human zoos, which should be heeded by well-meaning foreigners trying to protect Ecuador's Waorani or Venezuela's Yanomamo.

P. K. R. Nair discusses agroforestry, a term not widely used until 1977 but a practice widely used by traditional societies. Agroforesty is the use of woody species with crops or animals. Nair cites examples of systems throughout the world and discusses the problem of technology transfer to people in the field.

In "Tropical Reservoir Fisheries," T. O. Petr and J. M. Kapetsky also mention the problems of transfer, this time transfer of knowledge. They discuss the widespread use of African tilapia in tropical fisheries, promoted by the Peace Corps and large development organizations in Latin America. In southern Florida, tilapia have established in freshwater lakes and rivers and in Everglades National Park, where they threaten local fisheries. The same could occur elsewhere. The Amazon has one of the world's largest number of freshwater fish species, which could be used in fishery projects. Use of native plants and animals should be a priority in any development program.

N. V. C. Polunin writes about regulated marine areas. His approach of classifying areas, identifying preservation objectives, then determining those objectives suitable for each area could also be useful for terrestrial systems. In chapter 2, R. Lal provides a good introduction to tropical soils. He discusses classification, soil biota, and management.

This book provides a wide assortment of tropical tidbits. Some chapters are very good, others are not worth reading. I am not sure what the editors did other than select the papers. An introduction would have been useful. Why were the papers selected? What ties them together? Who is the target audience? Considering these omissions and that these reports are already available, I wonder why Harwood published this book.

BRADLEY C. BENNETT
*Institute of Economic Botany*
*New York Botanical Garden*
*Bronx, New York 10458-5126*

### References cited

Balée, W. 1989. The culture of Amazonian forests. *Adv. Econ. Bot.* 7: 1–21.

Peters, C. M., A. H. Gentry, and R. O. Mendelsohn. 1979. Valuation of an Amazonian rainforest. *Nature* 339: 655–656.

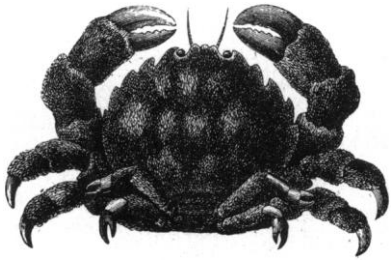
## THE WORLD OF PHYCOLOGY

**Seaweeds: Their Environment, Biogeography, and Ecophysiology.** Klaus Luning. Charles Yarish, and Hugh Kirkman, English language edition eds. John Wiley & Sons, New York, 1990. 527 pp., illus. $89.95 (ISBN 0-47-62434-9 cloth).

*Seaweeds* is an impressively comprehensive and well-organized compilation of information about the ecology of macroalgae and seagrasses. This one-author treatise is a re-edited English-language edition of *Meeresbotanik* (Luning 1985). It has been updated in all areas and expanded to include more paleoecology. A great deal is accomplished in the 370 pages of text, which has been well translated. The book is cleverly organized, so that it may be read from cover to cover with little repetition or it can be used as a reference. The subjects are covered from the general to the specific, according to a biogeographical outline, and the book ends with a 100-page discussion of the experimental data that help explain the mechanisms of adaptation that seaweeds employ.

The single index combines taxa, geographical names, and subjects and seems to be detailed and convenient. The extensive single bibliography avoids the repetition that would ensue if each chapter had its own list of references. A taxonomic overview of genera efficiently defines the scope of the book.

The illustrations are irregular in



artistic quality, which is, in general, low. Some seem to be photocopies, several generations removed from the original sources, rendered into overly high-contrast images. Others are amateurish, detailed sketches with outsized labels. The photographs of single organisms are mostly clear and useful to the professional phycologist, but some of the field photos are too dark or otherwise too obscure to allow the viewer to appreciate what is being illustrated. However, many of the photos are rare and valuable documentations of seaweeds and seaweed-related activities in far-off places where only the most intrepid, adventurous phycologists would work. Much of that work has been done by scuba diving. I was especially impressed by the photo of the hole for divers through the ice at a continuous light measuring station near Igloolik, Northwest Territories, Canada (p. 170).

The graphs and tables are not in standardized format, but, at worse they are utilitarian and, at best, creative and clear. Of great interest to me are the maps of the distribution of approximately 40 common seaweeds in the North Atlantic and of seagrasses around the world. It would be enlightening to have similar maps for less-well-known species from the tropics and the Southern Hemisphere.

Klaus Luning has been effective in what was clearly a major effort to write, and then translate, a book that is useful for many purposes. It could be used as a textbook for an advanced course in phycology, and it is a useful reference for marine and terrestrial ecologists. The book illustrates the youthfulness of some fields in phycology, especially experimental ecophysiology, in which Luning has been a leader. The editors, Charles Yarish and Hugh Kirkman, are to be commended for helping to get this book to the English-language audience.

LARRY B. LIDDLE
*Division of Natural Sciences*
*Southampton Campus*
*Long Island University*
*Southampton, NY 11968*

### Reference cited

Luning, K. 1985. *Meeresbotanik*. Georg Thieme Verlag, Stuttgart, Germany.

## CAPTIVE COAST

**Enclosed Experimental Marine Ecosystems: A Review and Recommendations.** Coastal and Estuarine Studies 37. C. M. Lalli, ed. Springer-Verlag, New York, 1990. 218 pp., illus. $49.00 (ISBN 0-387-97341-9 cloth).

Marine ecology has a long history of being a descriptive science. Even the