

**Coral reef ecosystems**, by G.J. Bakus (Oxford & IBH Publ. Co., New Delhi), 1994, pp. 232, Hard cover, Rs 350.

[ISBN 81-204-0766-0]

Coral reefs constitute the most dominant marine benthic ecosystem of tropical seas. The complexity of the biotic and abiotic interactions, coupled with rich biodiversity of reef dwelling and reef building fauna and flora are comparable to those prevailing in tropical rain forests. Several important problems related to coral reefs all over the world, such as, biodiversity, biogeochemical cycles, nutrient flux, environmental degradation and ecological collapse, exploitation of reef resources—their conservation and management, have been addressed. These studies have resulted in the emergence of a broad spectrum of the present status of coral reefs both in Indo-Pacific and Atlantic realms, though, the interplay of ecological parameters that entangle the various reef environments is yet to be completely unfolded.

The coral reefs of India and adjacent islands are comparatively less studied, despite attempts by several Indian and foreign investigators, particularly in the last 25 years. According to a recent estimation by remote sensing (ISRO) the extent of reef flats of India is 1270 km<sup>2</sup>, composed of patch reefs, fringing reefs, barrier reef and atolls, spread over in, Gulf of Kutch, southwest coast of India, Andaman and Nicobar Islands and the Lakshadweep Islands. Recent studies on Indian reefs and adjacent islands mainly pertain to faunal and floral assemblage, natural and anthropogenic interference primary production and nutrient cycle. Most of these are from shallow reef habitats and there exists a wide gap in our knowledge of deep water reef environs. Professor G.J. Bakus and his co-authors have attempted a comprehensive review of the scientific results hitherto available in literature on the Indian reefs and adjacent islands including Sri Lanka and Maldives in the book under consideration “with a view to giving a stimulus to scientists to pursue field and chemical ecology of the Indian reefs”. On the face of it, the title, “Coral reef ecosystems” implies a general consideration of coral reefs in general though the contents confine only to a particular region.

A deviation from the normal format is that the various topics are not treated in separate chapters, but only under subheads and in this regard the entire book may be regarded as a review paper. Available

information on many aspects of reef studies, like, meteorology, oceanography, major and minor coral reef formations, their morphology, contiguous ecosystems such as mangroves and seagrass beds are briefly described. Out of the total 232 pages, the text covers only 56 pages, perhaps an indication of the paucity of scientific data available in literature for incorporation. The section on oceanography summarises data on hydrology, primary production, phyto- and zooplankton, detritus, particulate organic matter and bacteriology from the Laccadive and Andaman seas in a tabular form. The extent and morphology of the reefs are discussed under three subtitles. The minor coastal reefs are those of the Gulf of Kutch, central west coast of India and some patchy outcrops in Visakhapatnam in the east coast. No mention is made of a fairly significant growth of corals seen from Vizhinjam (Trivandrum) to Enayam (Kanyakumari District) along the southwest coast of India. This omission is justifiable, for the results of recent studies are yet to be made available to the scientific community. Under the major coastal reef, Gulf of Mannar and Palk Bay along the southeast coast and Sri Lanka are considered. The “Oceanic reefs” are those of Andaman and Nicobar Islands, Lakshadweep, and Maldives. The reefs of Andamans and Nicobar Islands merit separate consideration as continental island reefs rather than with oceanic reefs of Maldives and Lakshadweep, which are atolls. In the section on “coral reef preserves” the author has rightly stressed the need for establishing marine parks and coral preserves in Gulf of Mannar and Lakshadweep. However, it may be mentioned that a National Marine Park has been already established in Gulf of Mannar at least two years prior to the publication of this book and the Lakshadweep administration has imposed several conservation measures several years back. The World Directory of Coral Reefs (IUCN) provides sample information on the reefs of India. The last section of the book under review deals with “information gaps” on Indian reefs. A conspicuous omission may be a section on the value of coral reefs to India which might be of interest to both scientists and common man alike. Information on ecological and human interference on reefs and its deleterious consequences have not received full treatment in spite of fairly good data available in literature. Specific suggestions for reef management could have been made, for it is the need of the hour—policies and programmes adopted elsewhere

A set of good photographic illustration is *sine-qua-non* for a work on coral reef. This is however painfully absent and a few that are found are badly printed. Many "printers devil" have crept in the names of species and authors, both in the appendices and bibliography. Further, in the list of references the alphabetical order of citation is found more than once in disarray.

However, the book is warmly recommended to those who are interested in the biodiversity of marine fauna of the seas around India. The 22 appendices on

the major marine communities is probably the first attempt from this area to provide a comprehensive list. The references (1967) cited on the coral reefs and associated fauna and flora are more useful to students and researchers alike. The present contribution may not provide all the answers that the reader wants on the coral reef ecosystems of India but certainly is a pioneer attempt to provide a consolidated account of this major marine ecosystems. Professor Bakus deserves a word of thanks.

C.S. Gopinadha Pillai  
Central Marine Fisheries Research Institute  
Cochin 682 014, India