



DISCUSSION OF BOOK REVIEWS

Coral Reef Geomorphology, André Guilcher, 1988. Wiley, Chichester, 228p., £32.95, ISBN 0-471-91755-9. [JCR, vol. 5, no. 4 (89), 872-873].

About Coral Reef Geomorphology

I would like to make some comments about the review of my recent text *Coral Reef Geomorphology* by David Hopley in the *Journal of Coastal Research*, Vol. 5, n° 4, Fall 1989, pp. 872-873, in which David is rather critical in several respects.

Beside many details which would be much too long to discuss here, the clue of the controversy is probably that David Hopley in his own excellent work on coral reefs concentrates with his colleagues on processes in reefs of the Great Barrier of Queensland (*e.g.* the good paper by Parnell in *Progress in Physical Geography*, Vol. 12, 1988, pp. 209-236), but is not very interested in the wide variety of forms existing in Kenya, Brazil, Indonesia, Madagascar, Zululand, Sri Lanka, the Solomon Islands, the Seychelles, the Red Sea, *etc.*, which he considers, according in his own words, to be a "descriptive

catalogue." I personally think (and I am not the only one) that such descriptions are quite indispensable to give a correct idea of the real variety of forms of the reefs around the world. We must remind ourselves that geomorphology is the study of landforms, and that recommendations for coral reef management must not be general but take account of the nature of the reef system involved.

David writes in his second paragraph that recent work on reefs is based on research stations located in reefal areas, and on biological understanding of reef structures. Well, this has been done outside the Great Barrier Reef in stations such as Tulear in Madagascar, Moorea in Polynesia, Saint Croix and Barbados in the Caribbean, *etc.*, and results of such work have been summarized in my book, even though he says that the book does not "reflect these recent trends."

I cannot accept his statement that my book is archaic, based on Charles Darwin, W. M. Davis (written Davies two times in the review) and other old moons, and ignoring recent research. I keep the ancestors' ideas where they have

been checked by recent work (as in the case of Darwin by the Mururoa drillings), and I follow the new trends when they are valuable. It is not only a "passing mention" which has been made to Purdy's recent work on karstification of reefs, since his "karstic saucer theory" (an expression coined by myself) is discussed over six pages (75–80) and has been accepted as a possible explanation of reef morphology at least in a number of places. Similarly, the excellent work conducted by Americans in the Caribbean area, especially by Macintyre, Aday, Gladfelter, Milliman, Roberts, *etc.*, has been carefully mentioned *e.g.* pp. 16, 37, 63–65, 139, 182, *etc.* The Caribbean area is quoted 32 times in the index. I have tried to keep pace with recent contributions as well as recognize earlier discoveries and ideas that are still valid.

The Great Barrier Reef of Australia has not been neglected by me. That area, described with much care by David Hopley in his handsome *Geomorphology of the Great Barrier Reef* (Hopley, 1982), holds the place it deserves and is quoted 21 times in the index. It is important, however, to give more room to other reefs in the world, since, although the Great Barrier Reef is presently the largest reefal structure, it is a rather recent one as I have said p. 66 from Orme, Davies and other recent Australian authors, who are thus not "ignored" (Hopley, last paragraph) at all by me. During the "International Coral Reef Symposium" held in Townsville, Queensland, in 1988, Symonds, Davies, Feary and Pigram have shown that Tertiary reef growth has been restricted to Northeast Australia, and extended southwards (*i.e.* in the main areas of the Barrier) only during the

Pleistocene, because the south area was not climatically suitable earlier owing to the location of the Australian plate in the Tertiary. So that the life of the Great Barrier Reef as a whole has been comparatively short, hence it is justified to give more details on Pacific reefs of Hawaii, the Marshalls, Carolines, Societies, Tuamotus, Kiribati, *etc.*, in which many structures have had a longer history.

I accept David's criticism when he notes that I have written, p. 41, that Northwest Australia is exempt from hurricanes. This is a mistake indeed. The readers may decide if it is a very large one.

I hope that I have given in this book, which is a short one, a reasonable account of the present knowledge on coral reef geomorphology gathered in the world by British, Americans, Germans (West and East), French, Australians, Russians, Dutch, Japanese, *etc.*, including carefully the old results when they are still valid, but summarizing the immense research that has been carried out recently in the three oceans and their seas, as in Brazil and the Red Sea which are too often ignored by authors. Three hundred and three of my references concern papers published after 1970, against one hundred and fifty nine published at that date and before; and, if by chance there is a second edition, I will continue in the same direction, with, however, some more consideration of the diagenesis and particularly dolomitization in thick reef structures, and of present-time processes and quantification.

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