

The Great Barrier Reef

Isobel Bennett



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The Great Barrier Reef

The Great Barrier Reef, stretching 2,000 kilometres (1,200 miles) down the Queensland Coast, is the greatest natural wonder of the southern seas — a vast maze of islands, reefs and passages supporting a delicately balanced, complex and beautiful ecological system that equals any of the world's great regions of fauna.

Marine biologist Isobel Bennett's Great Barrier Reef is not the romantic, tourist brochure world of tropic nights, fairy lights, sunbathing and pleasure cruising.

It is a silent world of reality, teeming with a strange life of predator and victim, of tiny but sophisticated animal mechanisms, spectacular corals and reef shells, exotic tropical fish and multitudinous bird life.

In this first popular scientific book on the Great Barrier Reef Isobel Bennett's encompassing account of the extent, structure and ecology of the reef reveals a more enduring magic and beauty than that of the few inhabited reef islands. She explains, vividly and concisely, how the reefs were formed and how they live and grow. She describes the life mechanisms of the reef's invertebrate animals including sponges, worms, crabs, molluscs, sea stars and sea urchins; the rich vegetation and the fish and bird life of the reef zone; the extent and rare beauty of the thousands of islands, cays, sand spits, reefs and rocks that lie scattered, jewel like, in the warm, blue sea.

She outlines some of the scientific controversy that has raged over reef life and its origins, and some discoveries of the reef's secrets that have been made only recently. She discusses the reef's future — the destructive potential of the Crown of Thorns starfish, oil drilling and spillage, the dumping of silt into the clear, coastal waters, the growth of tourism and the small devastations left by single, thoughtless humans.

The author's colour photographs, maps and diagrams give lavish substance to the detailed description of the reef zone. Since all her photographs were taken without the aid of an underwater camera, it is obvious that visitors may, without the use of a snorkel or scuba gear, appreciate much of the beauty and diversity of animals and plants by merely wandering over the reefs at low tide.

Isobel Bennett writes: "All Australians should endeavour to understand one of their greatest natural assets — one of the world's truly magnificent reservoirs of tropical islands and coral reefs." This book makes that understanding possible and totally enjoyable.

Front cover: The holothurian, *pseudocolochirus axiologus* (Photograph: Reg Morrison)

Back cover: Ribbon Reefs (Nos. 2&3), Outer Barrier, N.E. of Cairns



The Great Barrier Reef

To

The Honourable Dato Seri Dr Mahathir
bin Mohamad, Prime Minister of Malaysia

and

Dato Sri Datin Paduka Dr Siti Nasmah

With Compliments

Graeme Kelleher

Chairman, Great Barrier Reef Marine Park Authority

The Great



Barrier Reef

Isobel Bennett

Photography by the Author



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DEDICATION

To the memory of Professor William John Dakin (Challis Professor of Zoology, University of Sydney, 1928-1948), who guided my first footsteps as a marine biologist, and introduced me to that fascinating realm of life 'Twixt Tide and Tide's Returning'.

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By the same author

Australian Seashores with W. J. Dakin and E. C. Pope
The Great Barrier Reef with W. J. Dakin
The Fringe of the Sea
On the Seashore
Shores of Macquarie Island
Discovering Lord Howe Island with Jean Edgecombe



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Sunday 12th August, 1770: "I immediately went upon the highest hill on the Island where to my mortification I discovered a Reef of Rocks laying about 2 or 3 Leagues with out the Island, extending in a line NW and SE farther than I could see on which the Sea broke very high."
(Voyage of the *Endeavour*. James Cook)

The ten years that have elapsed since this book was written have seen a considerable growth in interest in the Great Barrier Reef, with a far greater public awareness of its value as a National Heritage.

Numerous major scientific papers have been published, including a comprehensive monograph series on the reef-building corals of the Province. The hopes expressed on page 173 have been fulfilled, for on 20 June 1975, the Great Barrier Reef Marine Park Act became law, with Proclamation on 21 October 1979, of the Capricornia Section of the Marine Park.

Controversies such as the Crown-of-Thorns, mining and oil drilling, have been waged in the media, thus the whole region of the Great Barrier Reef has been brought to public notice as never before.

With the establishment of the Great Barrier Reef Marine Park Authority, there now exists a body responsible for the management of, and co-ordination of research within the Province. With the expertise available today, and given the chance to proceed with its plans, the Authority augers well for the future.

Preface

The Great Barrier Reef—for most Australians these words inspire wistful visions or vivid memories of sundrenched days on tropical islands, sparkling, blue-green seas lapping on coral sands; skin diving in a new and unreal world—an almost unbelievable realm of coral bastions, exquisite in design, colour and form, through which bizarre and highly coloured fish flash by in their myriad schools. Sunbaking, water skiing, fishing for hard fighting game fish or exotic reef species—this is the Great Barrier Reef holiday depicted, in glowing prose, but with a great deal of truth, by the tourist brochures.

But few know the fascinating reality of this tremendously complex maze of reefs and islands that lie scattered haphazardly along the continental shelf of Queensland's coastline. How much of the immensity and extent of this submarine mountain chain of limestone can be realised or appreciated during even a prolonged visit? Its extent can perhaps only be grasped by seeing it from the air. The airline pilots of the commercial jet routes along the coast see its ever changing forms and patterns at a sweep of a couple of hours—bluff, densely covered continental islands, flat coral cays seemingly afloat on the translucent water, tiny sandspits, ribbons of clear green running through the mottled dark blue water that is coloured by the reef it covers or surrounds.

The master mariners and the Torres Strait pilots have another picture as they guide the modern ships and giant tankers through the long stretch of water between Queensland's mainland and the outer reefs. The inner reefs remain a menace against which the seamen must be constantly on guard. They know that corals continue to grow, that ships are larger with deeper draught each year, and that deeper or uncharted outcrops of rock or coral will one day be at a level high enough to be dangerous.

The most modern aids to navigation are available to these seamen, but they also place great faith in the charted tracks they follow.

A long and fascinating story could be told of the making of the Australian and Admiralty Charts of today by the officers and men of H.M. Survey Ships of the last century, and their Australian counterparts of the twentieth. Over many long years these men sailed thousands of square miles painstakingly making sounding after sounding, gradually filling in the blanks of this vast Barrier Reef region.

Finally there are the few scientists scattered throughout the world, geologists, geographers and biologists, who have made it their special study—discovering the secrets of its formation and its hidden wealth, and of the intricately balanced, mutually sustaining life forms that make the reef one of the world's great faunal regions.

The traveller sailing through the Barrier Reef channel by ship, or visiting the island resorts, is as unaware of this enormous rampart of reefs as was Lieut. James Cook, R.N. two hundred years ago. Cook's magnificent achievements are apt to pale into insignificance in this modern age of astronauts, yet as the sole effort of one man and his crew in a small wooden ship, with only the crudest of navigational aids and no fore-knowledge of the vast oceans traversed, the *Endeavour's* voyage through these then unknown Barrier Reef waters must always remain one of man's most outstanding feats.

In Australia today, a great industrial expansion is taking place, matched by a growing population. In this era of new discoveries in oil and minerals, attention is being increasingly focussed on the coral reefs along her coasts, since the petroleum geologists are well aware of the link between oil reservoirs and fossil coral reefs. Applications for drilling, and mining rights for limestone and silica, have already