

On The Fringe of the Sea



One of Australia's most influential marine biologists has no formal degree, though she has facilitated many. Diana Giese has been looking at the papers and photographs of Isobel Bennett, known for her bestseller *The Great Barrier Reef* and, with her mentor Professor W.J. Dakin, the seminal *Australian Seashores*

'It is strange, Australians love the sea, but most of us are blind to what is in it. Just on the sea-fringes, where we walk or swim, there is a whole fascinating world of strange and beautiful animals, but somehow we don't see them.'

Isobel Bennett's remarkable work throughout her life has helped us see those creatures more clearly; to better understand their environment—and our own. If her brilliant career began 'by accident', there was nothing accidental about the way she invented herself as a scientist. She started out as secretary to Professor W.J. Dakin, head of the Zoology Department at the University of Sydney, whom she met on a cruise to Norfolk Island. With him as her mentor over 17 years, she rose to become a valued colleague and collaborator. Then she found more work of her own. Now 90, she is

recognised as one of Australia's leading marine biologists.

Her special areas of expertise became the intertidal zone, where the ocean meets the shore, coral reefs, and plankton—the floating microscopic animals and plants on which all life in the sea ultimately depends. Under Dakin's tutelage, she quickly learned techniques such as microscope sectioning, before becoming a demonstrator, collector, researcher and teacher. By 1948, she was recording and publishing detailed descriptions of the marine biota of the rocky shores of the south-eastern coast of Australia, using a scheme that continues to form the basis of shoreline description today. She was also involved in some of the earliest work on environmental science relating to seashores. She became the author of many bestselling books, starting with the seminal *Australian Seashores* which she co-authored with Dakin, and moving on to her most famous individual effort, *The Great Barrier Reef*, published in 1971.

Now Bennett's papers are available for use in the National Library. It's a rich archive: concise and lucid fieldnotes, manuscripts, updates and proofs of her books; correspondence with professional colleagues, friends, publishers and conservation organisations seeking her help; media cuttings; narratives of her voyages and, as part of the Pictorial Collection, a large number of the stunning photographs she has taken over her years of collecting.

The personality that emerges from the archive is formidable—knowledgeable, energetic, super-competent. Her voice is especially strong in the many letters. When asked about the 'equipment' of her

Illustrations for *Australian Seashores* (all photographs by Isobel Bennett). Left to right: *Botrylloides magnicoecum*; *Actinia tenebrosa*; Giant beachworm, *Australonereis ehlersi*

calling, she responds in characteristically forthright fashion. It consisted of 'billy cans, tossed out after rusting; then plastic jars and buckets and dishes which eventually went the same way, plus an oyster knife! Five cameras suffered watery graves—and I'm still using my Remington portable which I inherited in 1935 [then about 10 years old]. On this I've typed about every word I've ever written and very many that Professor Dakin wrote as well.'

That typewriter has provided much of the archive material, including work on *Australian Seashores*. The book's progress can be followed through the Library papers. In a letter of March 1949 to Colin Roderick at publishers Angus & Robertson, Dakin says that since he is ill, he is sending 'Miss I. Bennett, one of my collaborators in the book' with the manuscript and the plates. He then instructs the publishers about publication. Noting that the English books on the seashore sold by the company 'can be of little use to Australians', he defines his audience as naturalists and students, shore fishermen, surfers and holiday makers. He notes the pictures as a selling point, suggests a price, and recommends that the book should come out just before a big buying season, such as Christmas.

What has become 'the bible of shore biologists' was not, however, to appear until 1952, two years after Dakin's death. With Elizabeth Pope

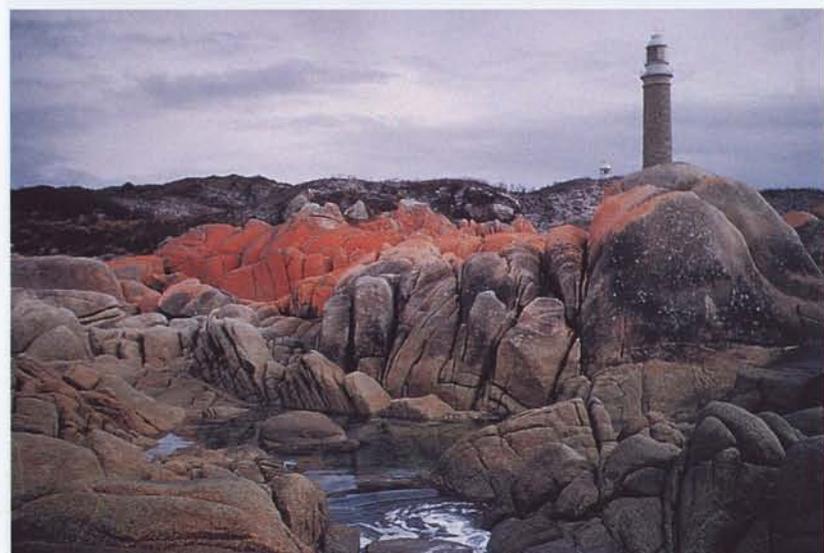
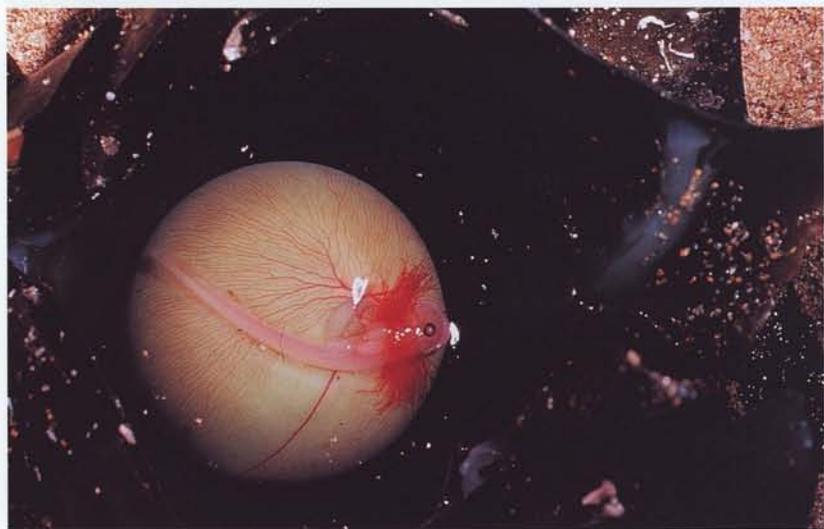
of the Australian Museum, the responsibility for the book became Bennett's 'as it has been ever since', over 12 editions. *Australian Seashores* was an immediate success, its first printing of 3500 selling out in a few weeks. It was reprinted four times through the 1960s, also in 1971, 1973 and 1976, and in 1980 'revised and metricated'. In 1968, editor Beatrice Davis, in asking for updated material, commented: 'What a pity the nomenclature changes so horribly in all natural history things!' as Bennett began the huge task of bringing scientific name changes into line with new taxonomic work. When approached in 1986 to produce a completely revised edition, expanding the text to cover every State, and replacing the black-and-white pictures of the original with colour, Bennett wrote to a colleague, 'I was so appalled at the enormity of the task, especially at my age (now 83), that I refused point blank'. With characteristic fortitude, however, she went on to take up the challenge. She observed how much the coastal environment had changed since the book first appeared: 'Often very great difficulty was experienced in even locating for photography the once very numerous animals of the seashore', a result of the growing environmental stresses placed on Australia's coastal rock platforms, bays and estuaries.

Her archive includes a scrapbook of the glowing reviews the book at once attracted. The *Age* praised 'its entrancing descriptions of scenery and creatures, its simple language and profound knowledge'. A.N. Colefax's 1954 *Australian Journal of Science* review noted that it brings together 'an enormous body of information,

(top) Double Point Island, Queensland, looking north, 1997
Illustration for new edition of *Australian Seashores*
From the Pictorial Collection (Album 844A)

(centre) *Ecklonia radiata*, Port Jackson shark embryo
From the Pictorial Collection

(right) Rocks covered in red lichen near Eddystone Lighthouse, north-eastern Tasmania
From the Pictorial Collection (Album 844A)



previously widely dispersed'. He was also one of the first to praise Bennett's major contribution to what she is still modest enough to describe as 'W.J. Dakin's classic study'. He commented that it was 'hardly more than at the rough manuscript stage' when Dakin died. Bennett collected the specimens, supervised their photographs, wrote the captions, and arranged the index.

If she has made *Australian Seashores* her own, from the late 1960s she wrote 10 more books. Her fieldwork and teaching moved concurrently

Isobel Bennett taking her 'trick' at the wheel of *Te Vega* during the Stanford University 'graduate school at sea', September 1963

Isobel Bennett Papers (MS9348)
From the Manuscript Collection



from the eastern seashores to other areas. She first travelled to North Queensland in the mid-1940s. In 1954, she joined a survey of the Low Isles, north of Port Douglas, to study coral reefs. From 1958 to 1965, she took students on annual excursions to Heron Island Research Station. These experiences fed into her lyrical descriptions of the vast natural wonder that is the Great Barrier Reef. Her work was crucial in securing the Reef's World Heritage status in 1980.

In 1952, Bennett was the only woman to join the Danish deep-sea research vessel *Galathea* on its sojourn in Australian waters. In 1963, she lectured the 'graduate school at sea' on board Stanford University's *Te Vega*, increasing her knowledge of the

organisms of the open ocean as she crossed the Pacific.

She was one of the first group of (four) women scientists permitted to travel on the Australian National Antarctic Research Expedition (ANARE) vessel to Macquarie Island, in 1959. The women were, she writes, 'regarded with some suspicion. We had been warned that on our behaviour rested the future of our sex with regard to ANARE voyages.' This 'invasion' of a 'man's world' (*Woman's Day with Woman*, 1960) unleashed columns of patronising guff in the media. The *Age* headed its piece 'Women Got Sun Tanned in Antarctica' and speculated patronisingly that penguins in the island's huge rookery 'were not aloof from welcoming a friendly pat'.

In 1962, the University of Sydney awarded Bennett an honorary Master of Science degree, the first it had made. The popular press characterised her as a 'former office typist' with a 'sea hobby', and seemed struck by the fact that a Master's degree should be conferred on a woman. Ironically, because she did not earn a conventional degree (she received 98 per cent in the single exam she took), she was never employed as an academic and, despite her pioneering work and international reputation, retired with the status and pay of a professional officer. In 1982, she was awarded the Mueller Medal of the Australia and New Zealand Association for the Advancement of Science. A genus and five species of marine animals are named after her, and also a coral reef. In 1984 she was made an Officer of the Order of Australia and, in 1995, she was awarded an honorary Doctor of Science from the University of New South Wales.

It is now easy to forget that the study of seashores, oceans and reefs, their life and ecology, are relatively recent fields for research and popular concern. When *Australian Seashores* was being written, there were perhaps half a dozen marine biologists working in Australia, a marine nation where most people live near the coast. Now the CSIRO has marine laboratories in Tasmania, Queensland and Western Australia for

oceanography and fisheries research. The Australian Institute of Marine Science and the Great Barrier Reef Marine Park Authority are active in Townsville, the Victorian Institute of Marine Sciences is in Melbourne, and AIMS also works in Western Australia. Federal and State governments have fisheries departments. There are university departments of oceanography and marine science, and museums and marine research stations add their own contributions.

The work of Isobel Bennett has contributed mightily to our knowledge of our unique and beautiful coastline. But it demands committed successors. In 1987, she wrote: 'Not until more marine parks are established and people are made aware that our seashores and their inhabitants are irreplaceable treasures, will there be any future for them.'

DIANA GIESE is interviewing Isobel Bennett for the Library's Oral History Collection. All photographs in this article are by Isobel Bennett unless otherwise attributed

Disembarking from *Magga Dan*,
December 1960, en route
to Macquarie Island
Isobel Bennett Papers
(MS9348; box 10)
From the Manuscript Collection



'The name Great Barrier Reef has now been used for nearly 200 years, and appears as such on all world maps and charts. The term "barrier" was first used by Captain Matthew Flinders for the great series of linear reefs along the far north-eastern Australian coast. However, since it is neither a single reef, nor even a series of reefs, and not a "barrier reef" within the meaning of the term as it was first defined and used by Charles Darwin, geologists have suggested the use of the term "Great Barrier Reef Province" fitting it thereby into the overall picture of the various geographical and geological regions of the south-west Pacific Ocean.

There is tremendous diversity in the age, shape, size and overall pattern of the countless reefs within the province, all of which were originally determined by the place of settlement of the first coral polyps, and then fashioned by the hydrological conditions in the surrounding sea water. Superimposed on this has been the gradual development of the reefs themselves, which in turn has modified the environment, altered current directions and led to further changes in shape and structure within this enormous and complicated mass of reefs and coral islands. In order to appreciate the complexity and immense variety of these reefs, it is perhaps easiest to describe some of the more important features which characterise them. A glance at the map will show that from about the latitude of Cairns, there is a long series of reefs, stretching in a north-westerly direction to Lat. 12° S and then veering slightly east of north, till they reach the northern-most outliers and the Great North-East Channel. This formidable chain of reefs along the edge of the Continental Shelf, fronting the deep blue waters of the Queensland Trench, is usually referred to as the "Reefs of the Outer Barrier". They are separated from one another by narrow channels, very conspicuous from the air because of the dark blue of their deeper waters compared to the colour of the water overlying the reefs. Ranging in size from small patches to long, narrow "ribbon" reefs, several kilometres in length, these linear reefs present a vast wall-like structure which takes the full force of the great rollers of the Pacific Ocean.'

Isobel Bennett, from an unpublished article, 1981

Interviews with scientists
by Diana Giese
National Library of Australia

Valerie Attenbrow, archaeologist, Australian Museum, specialising in the Aboriginal history of the Sydney metropolitan area (TRC 4651)

Isobel Bennett, pioneer marine biologist and co-author of the seminal *Australian Seashores* (TRC 3910)

Graeme Clark, inventor of the bionic ear, Director of the Bionic Ear Institute and Laureate Professor of Otolaryngology, University of Melbourne (TRC 4897)

Ian Kiernan, Founder of Clean Up Australia and Australian of the Year (TRC 3854)

Chan Liu Lee, marine biologist specialising in aquaculture work with indigenous and south-east Asian colleagues (TRC 3664)

Helene Marsh, dugong specialist, Professor of Environmental Science, James Cook University (TRC 3634)

David Penington, biomedical researcher, former Vice-Chancellor, Melbourne University (TRC 4582)

David Pollard, specialist in threatened species and conservation ecology, former Principal Research Scientist, NSW Fisheries (TRC 4886)

Russell Reichelt, marine biologist, former Director, Australian Institute of Marine Science (TRC 3919)

Jim Specht, Pacific archaeologist, former Chief Scientist and head of Division of Anthropology, Australian Museum (TRC 4992)

Ronald Strahan, zoologist, specialising in primitive fishes, and former Director of Taronga Park Zoo (TRC 4980)

John Stocker, biomedical specialist, former Chief Scientist, Australia, and Australian of the Year (TRC 4585)

Frank Talbot, marine scientist and former Director of the Australian Museum (TRC 4650)

John Yu, paediatrician and former Chief Executive Director of the New Children's Hospital, Westmead (TRC 3613)

Links

National Library of Australia <http://nla.gov.au/>

Encyclopedia of Australian Science <http://www.eoas.info/>