

## *Australian seashores*

Anthony C. Gill and Kelsey McMorrow

Chau Chak Wing Museum, University Avenue, The University of Sydney, NSW 2006

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### Introduction

*Australian Seashores* is an historic photograph exhibition at the University of Sydney's Chau Chak Wing Museum (2022–2023). It celebrates the landmark text of the same name, which was first published in 1952 by Professor William J Dakin and Isobel Bennett of the University of Sydney, with Elizabeth Carrington Pope of the Australian Museum. The book was aimed at a broad audience, from general enthusiast to academics, and richly illustrated with original photographs. The exhibition uses the images to celebrate the writers, the book, and their impact on Australian marine science. It also considers potential new roles for the photographs, particularly in documenting environmental change over the past 70 years.

### *Australian Seashores: The book*

*Australian Seashores* is a classic textbook, reprinted and revised over a 35-year period from 1952 to 1987. Its concentration on Australian environments and organisms was a major departure from the essentially European and laboratory-based textbooks previously available to Australian students. Through *Australian Seashores*, Dakin, Bennett and Pope trained generations of marine scientists and educated the Australian public about local seashores. The subtitle “A guide for the beach-lover, the naturalist, the shore fisherman and the student”, reveals the broad audience they aimed to reach.



(Fig. 1 HP84.7.110.57) Isobel Bennett (right) and Elizabeth Pope examining a log covered in gooseneck barnacles, Gerroa, NSW. (See Plate 99)

Covering an array of topics (from how different coastlines are formed and change, to why the sea is a particular colour, to an outline for identifying the main plant and animal groups found on Australian seashores and their biology), the authors also laid the foundation for “citizen science” of our era. The book grew initially from scientific surveys of New South Wales intertidal ecosystems published in 1948 by Dakin, Bennett and Pope (Fig. 1). What resulted was not just a textbook for armchair reading, but an invitation for Australians to identify as coastal dwellers and turn their gaze from the interior of the country to the coast.

Despite its title, the geographic scope of *Australian Seashores* is restricted mostly to the New South Wales coastline. Organised into chapters of the main animal groups, the book is also restricted to the plants and animals that occupy the narrow part of the



(Fig. 2 HP84.7.16.5) The brown algae *Splachnidium rugosum* (Linn.) Greville, 1830. (See Plate 16)

shore that is covered and uncovered by the changing tides, the “intertidal zone.” This is an area of high biodiversity, but at the time of publication was poorly understood, even though it was easily accessible. Black and white photographs and illustrations were included to help the reader identify a variety of plant and animal species (Fig. 2, Fig. 3), which were organised into chapters of related species of commonly found groups. The coverage of common animals was so comprehensive that the book continues to serve as a useful identification guide today.

#### *Australian Seashores: The exhibition*

The Chau Chak Wing Museum at the University of Sydney incorporates the former Macleay Museum, Nicholson Museum and University Art Collection. The *Australian Seashores* exhibition opened in August 2022

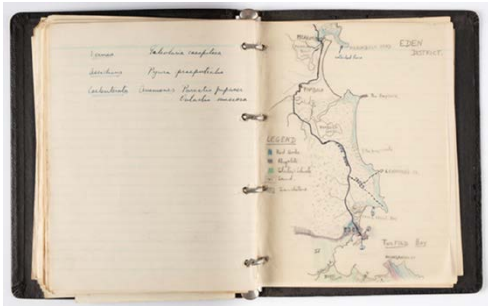


(Fig. 3, HP84.7.41.1) The horned ghost crab, *Ocypode ceratophthalma* (Pallas, 1772), photo by Gwen Burns. (See Plate 41)

and will run until the end of March 2023. It is the third exhibition within the dedicated historic photographic gallery of the Museum, which opened in November 2020. Curated by Anthony Gill with Kelsey McMorrow, it is the first to focus on a scientific subject area. The exhibition celebrates the book and its authors, and the role they played in influencing and inspiring Australian marine science.

The exhibition features enlarged and original photographs, field notes (Fig. 4) and ephemera, natural history specimens, Dakin’s Leitz microscope used by Isobel Bennett, and copies of the book. It is arranged in the following sections: the seashore, the authors and fieldwork, plants, animals, fisheries and plankton, and citizen science.

One species in particular, the snapping shrimp, *Alpheus strenuous* Dana, 1852, is focussed on to show the place of Dakin, Pope and Bennett’s research in our modern understanding of the species. At the time of the book’s publication, the question of how the shrimp made their snapping sound was a matter of debate. The authors put forward that the sound was produced by the small part of the claw clicking back into a socket



(Fig. 4, HP85.44.21) Field notebook belonging to Elizabeth Pope from a trip to Eden in 1946.

in the main part of the claw and creating a jet of water. While this is mostly correct, it has been recently discovered that the jet of water is so fast that it cavitates, forming a vapour bubble. The snapping sound, in fact, results from the bubble collapsing (Versluis et al. 2000).

The collaborative leadership of women scientists involved in the research and writing of *Australian Seashores* is a strong theme of the exhibition. Another theme, taken from the book's encouragement of all Australians to understand and enjoy the science of the seashore is on citizen science. Many of the images taken during the making of the book show features of the coast that now have changed significantly. The exhibition included an area inviting today's citizen



(Fig. 5, HP84.7.7.1) Waves breaking in shallow water. Warriewood, Sydney. (Plate 7)

scientists to document the geology, flora and fauna of Australia's coasts and to post images of what they see from flourishing plastics to details of catch-sizes, frequency and counts of molluscs and the arrivals of exotic or seldom seen species brought to the coast with changing temperatures and salinity.



(Fig. 6, HP84.7.73.1) Oyster-spate collecting beds on the Hawkesbury River. (Plate 73)

For the final section of the exhibition, on citizen science, today's beachgoers are invited to continue to document and share their observations of our seashores. Comparisons between contemporary photographs and those taken for *Australian Seashores* can contribute to our understanding of how the environment has changed over the past 70 years and may also reveal new areas for scientific research. For instance, comparing Fig. 5 to the same landscape today, reveals vegetation of the sand dunes, as well as increased urban development. Fig. 6 reveals both continuity and change — although oyster spats are still found on the Hawkesbury River, steam trains have since been replaced.

### *Australian Seashores: The authors*

William John Dakin (1883–1950) was born in Liverpool, UK, and held academic positions in Europe and Western Australia before serving as Professor of Zoology at the University of Sydney from 1929 to 1947. His research interests were very broad, but his passion was for the sea and marine biology. He was also a dedicated public educator, a pioneering science communicator on ABC radio, and instrumental in revising the secondary school science curriculum. Dakin drew upon his knowledge of the natural world when he was seconded to the Department of Home Security to develop camouflage strategies during World War Two. Dakin's wife Gladys (née Lewis) was also a trained zoologist, and frequently served as his research and field assistant (Fig. 7).



(Fig. 7, HP84.7.120.07) The plankton net being deployed from the University research yacht *Thistle*. Isobel Bennett can be seen second on the left, and Gladys Dakin on the right.

When published shortly after his death, Dakin was listed as sole author of *Australian Seashores*, but the book was a collaboration with his research assistant Isobel Bennett and former student Elizabeth Pope. Together, Bennett and Pope also took on much of the fieldwork when Dakin's health

was in decline and saw through the book's publication after his death.



(Fig. 8, HP84.7.110.29) Isobel Bennett holding a shucking knife while inspecting barnacles on a rock platform at Freshwater, Sydney. (Plate 3)

Isobel Bennett (1909–2008) was a pioneer in Australian marine biology and remains an inspiration to generations of marine scientists (Fig. 8). She was initially hired to research historical records for Dakin's 1938 *Whalemen Adventurers*, but later assisted Dakin with his research (1933, 1940) on Australian plankton, intertidal organisms, and camouflage. Bennett took on the immense responsibility of revising and editing subsequent editions of *Australian Seashores*, updating information, species identifications and eventually replacing all of the original black and white photographs with colour ones. She also wrote eight other influential books. She received widespread recognition for her work, including the first Honorary Master of Science from the University of Sydney in 1962, a Mueller Medal from the Australasian Association for the Advancement of Science in 1982, and an Honorary Doctor of Science

from the University of New South Wales in 1995. She was made an Officer of the Order of Australia for her services to marine biology in 1984.

Elizabeth Pope (1912–1993) was a trailblazer and inspirational Australian marine biologist. Her University of Sydney master's thesis on the ecology of intertidal organisms at Long Reef, Sydney, was inspiration for the wider survey of New South Wales intertidal zones that led to *Australian Seashores*. Pope was initially employed as a scientific assistant at the Australian Museum in 1939, becoming inaugural curator of the Worms and Echinoderms Department in 1957, and Deputy Director of the museum in 1971. Her research focused on the taxonomy and ecology of marine invertebrates (Fig. 9). Among her contributions in science communication were regular appearances on ABC Radio's *The Argonauts* and her 1958 book with Patricia McDonald, *Exploring Between Tidemarks*.



(Fig. 9, HP84.7.26.1) A sea pen, *Cavernularia obesa* Valenciennes (Milne Edwards & Haime, 1851).

### *Australian Seashores: The collection*

Materials relating to the production of *Australian Seashores*, including photographs, typed drafts, research notes and specimens, are spread across several institutions. Isobel Bennett's notes and images are largely held

by the National Library of Australia and Elizabeth Pope's archive within the Australian Museum. Various family members also have memorabilia and materials relating to one of the authors. The University of Sydney Archives holds some papers relating to Dakin, while the Macleay Historic Photography collection at the Chau Chak Wing Museum holds two Dakin/book-related collections.

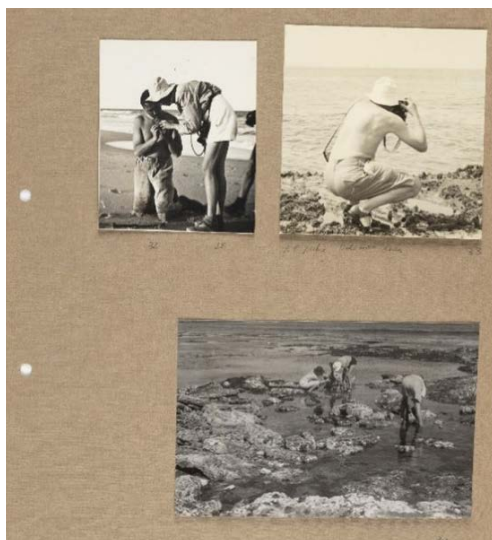


(Fig. 10, HP84.7.32.3) A southern feather duster worm, *Sabellastarte australiensis* (Haswell, 1884).

The first collection of these, donated by the Dakin family in the early 1980s, reflects Dakin's extensive research of marine biology, as well as his work in the University's Zoology Department. It comprises glass and film negatives, photographic prints, and some ephemera. Most of the collection relates to material used for the 99 plates and



(Fig. 11, HP84.7.37.5) The Greentail prawn, *Metapenaeus bennettiae* Racek & Dall, 1965. (See Plate 37)



(Fig. 12, HP84.7.110.32-34) A page from a ring binder. Top left inscribed 'TB', note Bennett's camera, top right inscribed 'EP pickie Dakin with Leica'.

figures in *Australian Seashores*. There are also photographic prints of marine invertebrates and seaweeds, and many views of NSW coastal landscapes. The second smaller collection consists of Pope's field and research notes, faunal lists, photographic prints and ephemera — including poems written by the researchers and their friends during their fieldwork expeditions for *Australian Seashores*. It is from these two collections that the *Australian Seashores* exhibition is drawn.

Although all three authors were involved in the publication's photography, individual images are not credited, save for those by the Zoological Department's photography assistant Gwen Burns, who took many of the microscopic and other laboratory-based images (Fig. 10). These images also reveal her photographic techniques and record details of shutter speeds and dates (Fig. 11). One invaluable group of photographic prints are those included in a ring-binder folder, with photographic prints mounted on card. In this group, notes on the subjects are occasionally included and the multiple photographers involved in the research are documented (Fig. 12).

The materials in the Dakin collection also give some insight into the production of the book: marginalia on glass negatives hint at the large number of photographs taken for each published photo (Fig. 13); uncropped images reveal staging associated with photographs (Fig. 14); field and research notes suggest at the immense amount of effort that went into gathering information and images; poetry written on fieldtrips offer insight into the comradery of the participants. These various kinds of images were included in the exhibition to give a sense of the social aspects of their careful and painstaking research and to show how their findings were used within the book itself (Fig. 15).



(Fig. 13, HP84.7.111.1) A 35-mm proof strip with William Dakin (or possibly his son William Peter Harvey) examining zonation pattern on a rocky shore. (See Plate 11)



(Fig. 14, HP84.7.9.3) Hand-coloured glass negative of *Phyllosoma* larva of a spiny lobster. (See Plate 9, a combined plate of images of planktonic animals)

### Conclusions

Preparation of exhibitions such as *Australian Seashores* provide opportunities for more general curation of the collections on which they are based. Moreover, audience feedback can provide novel information not otherwise available in museum records. Many responses to the exhibition have acknowledged how important the book was to individuals, and how it still occupies pride of place in private libraries. Other responders were former students who came under the influence of one or other of the authors, recalling how they were inspired or guided to eventual careers in science. Two particularly important responses were from family members of Bennett and Dakin who spent time in the exhibition not only recounting stories, but also helped identify people and places in depicted in the Dakin collection photographs. Responses such as these are critical for improving our understanding of collections and putting them into proper context.



(Fig. 15, HP84.7.99.2) Coaxing silver gulls (*Chroicocephalus novaehollandiae* (Stephens, 1826)) into position for a photograph at Long Reef, Sydney, NSW. (See Plate 99)

### Acknowledgments

Mostly taken between 1930–1948, all the photographs reproduced here from the Chau Chak Wing collection can be found on-line using the unique “HP” number in the caption. Plate numbers in the captions refer to the 1952 edition of *Australian Seashores*.

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