

Book Review Section

Compiled by John Jenkin*

Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860*. Cambridge: CUP, 1995. xiv + 540 pp., illus., \$125.00.

This book is the fourteenth volume of *Studies in Environment and History*, edited for Cambridge University Press by Alfred Crosby and Donald Worster. Grove has already established himself as an authority in this fast-breaking interdisciplinary field by (among other works) co-editing a history of conservation in Africa (Anderson and Grove (eds), *Conservation in Africa: People, Policies and Practices*, CUP, 1987) and publishing several articles on the origins of environmentalism; he has another collection of essays on India in press (Grove and Damodaran (eds), *Essays on the Environmental History of South and South-East Asia*, OUP). Grove currently holds a senior research fellowship at ANU and, as a fellow of Churchill College, Cambridge, co-ordinates the Global Environmental History Unit in the Department of History and Philosophy of Science there.

Green Imperialism paints a broad canvas, covering several widely separated oceanic islands, Cape Colony and India through 250 years of colonialism. This is a pioneering effort to document the early history of environmentalism, especially its colonial and global aspects. It highlights the influence of utopian, physiocratic and medical thought in the evolution of Western environmental ideas and explains how the development of a critique of the colonial impact on the environment depended on the emergence of a cadre of professional scientists in, successively, the Dutch, French and British empires. Grove emphasizes how remote, oceanic island 'Edens' were critical to new conceptions of nature, stimulating conserva-

tionist thinking by starkly revealing the limited nature of resources and man's vulnerability to environmental degradation.

At nearly 500 pages of text, the book is a demanding read; at A\$125, it is expensive enough to make most of us wait for the library copy or paperback edition. The scholarship, however, is meticulous, and as a study in the history of ideas, *Green Imperialism* is a tour de force, delving with sleuth-like indefatigability and unerring accuracy into the tangled, forgotten skein of international activity that created the modern sensibility towards nature. As Grove admits, the book chronicles his own 'intellectual journey into tropical environmental history, just as the narratives of explorers once charted Europe's collective voyage into the real tropics in search of wider perceptions'. In both cases, the voyagers were altered by their experiences; in both cases their readers come away enriched through vicarious exposure.

Building on the work of Keith Thomas, David Allen, Alfred Crosby and others, Grove demonstrates that the colonial experience was central to the development of Western environmental attitudes at two levels—first, in exposure to tropical island landscapes that, deforested and despoiled, acted as forcing houses for ecological disaster and a concomitant awareness of the dangers of unrestrained capitalist exploitation, and second, in incorporation of indigenous environmental philosophies and knowledge (especially Indian) into European thought. Grove overturns the assumption that European ideas and models were simply exported to tropical colonial environments as part of the process of imperial expansion, citing compelling case evidence to prove that European notions of nature were transformed by the flood of overseas information after the fifteenth century. Colonial scenes, especially those drawn from tropical islands, were increasingly used to locate symbolic, ideal landscapes and aspirations, which in turn influenced how new lands were conceptualized, organized and appropriated. Grove provides corrective counter-interpretations to the work of many historians, including Lynn White (Calvinism promoted sympathetic as well as destructive environmental attitudes), Lucile Brockway (colonial botanical gardens were, in fact, often at odds with the policies of their local governments), Roy MacLeod (indigenous knowledge was extremely important, not insignificant, in the development of science policy in nineteenth-century British India), and Carolyn Merchant (the mecha-

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nistic outlook of seventeenth-century science, rather than discouraging harmony between man and nature, enabled quantification of environmental change, encouraging an organized conservationist response).

Keying off Edward Said's work on the power of literary motifs in bolstering imperialism, Grove also discusses the 'historic collusion of the exploring and literary genres'. He shows that the imaginative hegemony implied by the new valuation of nature emerging from European encounters with the tropics had enormous implications for the environmental critique of colonialism developed by scientists in colonial service. His story really begins in the mid-seventeenth century, as the flowering of an Edenic island discourse coincided with the realisation that the economic demands of Dutch, French and English colonial capitalism threatened environmental degradation on St Helena and Mauritius. From this incipient awareness grew the first full knowledge of the limits of the earth's resources and a conservationist ideology based on close observation of environmental processes on tropical islands. After 1750, new climatic theories emphasizing desiccation resulting from deforestation contributed to this conservationism, often as part of a radical agenda of social reform originally promoted by the physiocrats of Enlightenment France.

The physiocratic conservationists had their first opportunity to put their theories into practice on Mauritius, where between 1768 and 1810 Pierre Poivre and others ran a long-term experiment in forest conservation, land use management, water pollution control and fisheries protection. The absolutist colonial state, preoccupied with economic and strategic objectives, proved peculiarly susceptible to scientific arguments regarding health threats in the tropics and, in turn, was able to pursue interventionist policies impossible to contemplate in Europe. The Mauritius experiment, itself elaborated from Dutch precedents at the Cape, proved an enduring model, fuelling similar policy experiments by the British in the Leeward Islands, St Helena and eventually India. Central to all these pioneering efforts in environmental stewardship were colonial botanical gardens, which served as models for perceiving and classifying the world, repositories of information and expertise, centres of calculation, links in imperial-wide information networks that diffused ideas as well as specimens, and metaphoric texts for efforts to recreate Eden in the setting of tropical colonies.

These roots of environmentalism were reinforced after 1820 by the holistic theories of Alexander von Humboldt, which subordinated man to other forces and, by providing tools such as isotherms to measure natural processes on a regional scale, enabled a scientifically reasoned interpretation of the ecological threat posed by unrestrained human activity. Humboldt's views were especially influential among Scottish surgeons employed by the British East India Company, who were trained in the French Enlightenment-derived curricula of Edinburgh, Glasgow and Aberdeen universities. Of interest in the Australasian context, Grove also dwells on the opportunities available in British colonies to central European scientists such as Paul Strzelecki and Ernst Dieffenbach. He stresses 'the predicament and philosophical identity of the colonial scientist', explaining how the schooling and marginality of these men made them peculiarly capable of absorbing indigenous systems of natural knowledge, drawing empathetic parallels between the colonial treatment of natives and nature, and developing a closely reasoned critique of laissez-faire colonial environmental policies based on overwhelming local evidence and an appeal to international scientific data. Grove draws a parallel between the Indian medical establishment's analysis of deforestation and climatic change as a rural public health issue, and the simultaneous drive for urban sanitation in Britain. In both cases, the advocated solution was state intervention for the common good in contravention of the interests of private capital: the British Association's 1852 report on Indian forest protection represented the colonial obverse of the Chadwick Report. Paradoxically, the very scientists who criticised the colonial state were the most forward in demanding extensions of its authority. The ultimate result of the sustained agitation of John Company's surgeon-botanists was the Indian forest conservation system, which became a model exported to British colonies in South-East Asia, Australasia, Africa and North America.

Grove's primary argument, therefore, is that colonial experience is central to the development of Europe's environmental consciousness. From Shakespeare to Banks to Darwin, the garden and the island were the key symbols used to organise perceptions of nature at the expanding colonial periphery and to provided global analogues. The need to conserve emerged first at the coal face of destruction, where fragile island ecosystems felt the full impact of capitalist exploitation,

including wasteful logging, deforestation for slave-grown plantation crops, soil erosion, stream pollution, extinctions and aridification. The speed of ecological change observed in these isolated settings by colonial scientists, most of whom held ardent or dissenting religious convictions, created a real crisis that mirrored their existential crisis regarding faith, biblical chronology and human control. Grove is at pains to point out that neither the history of science nor the history of imperialism has recognised the innovativeness of science at the colonial periphery nor its essential contribution to the modern European outlook. Science professionalized precociously in the colonies, France leading England by a substantial margin after surpassing pioneering Holland. It was at the frontier of discovery and exploitation, not in Europe, that the role of the professional naturalist was defined, beginning with the voyages of Cook and Bougainville, that included critiquing European environmental and sociological impacts. Colonial science exercised political leverage unknown in Europe, enjoying far greater opportunities to express and implement unconventional environmental views through the mechanism of threatening the colonial state with extinction as a result of its own shortsighted, profit-driven policies. In consequence, Grove calls for a general reassessment of 'simplistic assumptions' regarding the subordination of colonial science to capitalism and the state, as one aspect of his agenda for further fine-meshed research into the global origins of environmentalism 'as a direct response to the destructive social and ecological conditions of colonial rule'.

Green Imperialism—essential reading for anyone in the field—suggests that such work will prove fruitful indeed. Those who would extend Grove's lead, however, are advised to summarize detail, avoid repetition, and shield their readers from the feeling of having performed the research while perusing its results. Still, Grove, like Said, has bravely gone where few have dared, highlighting the necessity of coming to terms with what Western intellectuals have been skirting since decolonization made the study of imperialism embarrassingly unfashionable—the undeniable truth that the experience of empire was essential to the development of the modern world view.

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Edward Duyker and Per Tingbrand (eds & transl.), *Daniel Solander: Collected Correspondence 1753–1782*. Melbourne: The Miegunyah Press, 1995. xviii + 466 pp., illus., \$69.95.

The majority of Australians have heard of Captain Cook, his circumnavigation of the globe and his discovery of the east coast of Australia. Fewer Australians will realise that he was accompanied by Joseph Banks, the botanising gentleman who has been called the father of Australian Botany. Banks was a paying guest, both for himself and for his entourage, on the ship *Endeavour* during the voyage. And fewer people still will be aware that Daniel Solander was a member of Banks' entourage—a Swede and a learned botanist, the first Swede to sail round the globe.

This most interesting and fascinating book contains the correspondence of Solander, some 180 letters between this eighteenth-century scientist and his contemporaries of importance and fame—Linnaeus, Banks, Ellis, Hunter and others. The letters throw light on their thinking, occupations and daily lives. Solander is the central figure, for he is the writer of the majority and the recipient of the correspondence from others.

Daniel Solander (1733–1782) was borne in the small northern Swedish town of Piteå, the son of a clergyman who was a friend of Carl Linnaeus, the great Swedish botanist. He had an uncle, also called Daniel Solander, who was a professor of law at the University of Uppsala. This made it possible for him to find lodgings and to study at the university. Soon his interests in natural history were apparent and, with his father's consent, he concentrated his studies under Linnaeus, who was then at the height of his fame and influence. Linnaeus trained many botanists and zoologists and sent them out into the world to collect and spread his binomial system of naming biological objects.

Speaking apparently for other London naturalists, John Ellis, a London merchant, approached Linnaeus to send one of his disciples to instruct them in the Linnean methods of classification. Indeed, Linnaeus had a practice of sending his students to foreign lands, and he expected them to return laden with their collections, to be subsequently incorporated into his programmes. Some perished on their mission, like Pehr Forsskål, who died of the plague in Yemen; others, like Daniel Solander, never returned because they took root in foreign lands. The book *Daniel Solander: Collected Correspondence*

dence gives, in the letters here reproduced, a gripping history of his life, from the time when he apparently finished his studies and was sent by his professor on the mission to England, until his death and some years beyond.

First delayed in Sweden by malaria, which was still epidemic in Europe at this time, he then travelled to London, where he was met by John Ellis and received with a flourish into the London intelligentsia. In the beginning, he dutifully reported all his doings and experiences to his professor back in Uppsala. So we learn about his life in London. Nothing later compares with the excitement that he conveys in his first letters to Linnaeus. He has dined with Mr Ellis, who has taken him in hand; he has met Philip Miller of Chelsea Gardens fame and the author of the *Gardener's Dictionary*, and he has been introduced to Peter Collinson, who vies with Webb and Miller as to who has the better garden. 'People will rather give a guinea more for a rare tree or shrub from Mr Gordon', who has a famous commercial nursery and whose plants are all well established. Later he tells of his joy at smelling for the first time *Calycanthus* or Allspice. He is ecstatic on seeing *Volvox* rolling under the microscope. He travels for the first time into the countryside of England in summer, when through his connection with Ellis he is invited to the country seat of Philip Carterer Webb of Busbridge. In a later letter he tells Linnaeus of all 'the different shrubs and trees which are now the glory of English gardens', introduced from the Americas and raised by seeds: *Andromedae*, *Hydrangea*, *Kalmiae*, *Magnolia* etc., etc. There is great excitement in wondering after whom to name a wonderfully perfumed plant, *Gardenia*.

After only a year away, there is the typical homesickness of the expatriate, when he delights in a snow cover in London. Solander also tells of a time when he has dined on delicious venison, and when he has sent cloudberry, half a buck deer and Dutch herrings to Sir Joseph Banks.

Sometimes he is witty in his observations, even in letters to Linnaeus: 'The English are generally polite to foreigners, if only you flatter them and tell them that everything you have seen in England is better than anything you have seen before; this they believe themselves and they wish all to concur. I hardly think there can be a more conceited Nation, this is really the strength of the country'. There is also a letter telling that they have many varieties of rhubarb and are competing with each other to collect more. Although English is not his native tongue,

Solander's style is warm and relaxed.

Through the influence of Linnaeus, Solander is offered the Chair of Botany at the Imperial Academy of Sciences in St Petersburg, at the time a greatly respected institution. He does not move, however, and by 1768 has opted to sail in the *Endeavour*. But by this time Solander is employed by the Trustees to make 'a Catalogue of the Natural Curiosities of the British Museum', so he has to obtain permission from the Archbishop of Canterbury, one of the Trustees, to sail to the South Seas.

Solander hasn't time to write many letters while sailing with the *Endeavour*, but it is revealing to read the interest and delight he displays when Cook's second and third voyages return home. The very warm friendship he developed with Banks is apparent here too, and the letters throw an interesting light on Banks as well as on Solander. This is particularly apparent in the moving letter from Banks to John Alströmer after Solander's death.

An added bonus of the book is the many letters of that most interesting but somewhat enigmatic figure, John Ellis. Ellis was one of the leaders of London's scientific society, and his bankruptcy did not tarnish his image. A member of all the clubs and the Royal Society, and a friend of the illustrious, he was described by Linnaeus as a 'bright star of natural history' and 'the main support of natural history in England'. His book *Essay towards a Natural History of Corallines* was translated into French, Dutch and German, and it contains beautiful plates of corallines, executed by the great illustrator of the century, the German, Georg Ehret. It is amusing to note how Ellis compares the insolent Ehret with the indolent and second-class engraver John Mynde. Incidentally, many of these illustrations were used again in the joint book by Ellis and Solander, *Zoophytes*, published posthumously by the daughter of Ellis, Martha, on the instigation of Sir Joseph Banks.

In all Ellis's books, he illustrates the special microscope that he used for all his researches, and he calls it 'Cuff's Aquatic Microscope'. He says, 'I have used a very commodious microscope of Mr Cuff's, the optician in Fleet Street, which I altered for this purpose'. The microscope shown on page 236 of the present book is a later and not an aquatic microscope.

I loved reading these marvellous letters; I couldn't put the book down. I have read every word of it. I am sure it will give pleasure not only to botanists but also to many

gardeners, horticulturists and historians of science. Who would not be interested to read about Lancelot Capability Brown laying out a garden, or how *Kalmia*, *Alstroemeria*, *Gardenia* and *Gordonia* were named?

There are no important theories running through the book. Neither Ellis nor Solander invented new concepts or machinery, but the correspondence of Solander and his correspondents gives penetrating insight into the deliberations on the amassing of biological data in this period. Many scientists of the nineteenth century, like Cuvier, Brown, Billiardière, Harvey, Lesueur and Mueller, continued to do just this. In the eighteenth and nineteenth centuries, the building blocks that served as the foundation for the theories erected by the great thinkers of later years were accumulated. Thus were created the fundamental notions of nineteenth-century biology and hence of evolution and biogeography.

The letters are of great importance, and I am glad that they have been published. They all appear in their original language (English, Swedish, Danish, Latin or German), and all are reproduced in English, many for the first time. But their presentation makes this a very irritating book to read, for little consideration appears to have been given to the diligent reader who wants to read substantial sections of the book. The major irritant is that the unannotated foreign text is placed between the annotated English text and the footnotes themselves. I have worn out the little red book mark provided in going backwards and forwards between the text and the annotations.

I wish the editors had given more consideration to providing good biographical notes at the end of the letters instead of reiterating the brief explanation as every name comes up. One third of the letters are by Ellis, and at least six times his life is briefly sketched in identical footnotes. Aiton is noted four times, Lee three times (and I didn't count from the very beginning). This is a terrible waste of space and energy. I am also unhappy that a botanist was not asked to check some of the names and explanations—then the eponymy *Solandra* (not *Solandria*) would have appeared and also been included in the botanical index. Incidentally, brown algae do not have any archegonia. The foregoing criticism is an indication that more thorough research at an early stage would have improved the presentation of the letters significantly.

Melbourne University Press is to be congratulated on the beauty of the book's pro-

duction. The printing, the illustrations and the lay-out—everything is exquisite, and the book is a pleasure to use. The dust jacket is stunning.

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Ann Moyal, *Portraits in Science*. National Library of Australia, 1994. 203 pp., illus., \$23.95.

And I guess, for me, it's always an awareness of looking at things that were before there was any human consciousness, that all these processes were going on, and you have access to them just at the end of your microscope virtually. It's a marvelous window into a time that had no human observers.

So commented Elizabeth Truswell to Ann Moyal while discussing the hundred-million-year palaeontological history of Australia's rainforests. This snippet is unlikely to be found in Truswell's academic publications, neither the idea nor the way it is expressed. I use Truswell's comment to illustrate two points: the importance of oral reminiscences as sources of ideas and information not necessarily available in the written record, and the difference between written and spoken text. The written text of a conversation may be very different from the text the speaker would create when conveying the same idea in writing. In reading the sentences that should be entering our ears, we are seeing a transmogrified voice.

Dr Elizabeth Truswell is a senior geologist and palynologist in the Australian Geological Survey Organisation and one of the few female fellows of the Australian Academy of Science. She is one of the Australian scientists whose voices have been added recently to the extensive permanent collection of recorded interviews in the Oral History Section of the National Library of Australia. As a Harold White Fellow of the National Library, Ann Moyal interviewed Elizabeth Truswell and a number of other scientists and science communicators, and edited the interviews into the chapters of *Portraits in Science*. This book is the third in the National Library's edited oral history series, that seeks to share the wealth of the Library's oral history collection with the wider community.

Ann Moyal selected her subjects, each with

a leading reputation in his or her field, so that together they would encompass 'key fields of Australia's basic research, the innovative application of scientific knowledge, the foundation and administration of [Australian] scientific institutions, policy making and national planning of science, top-level Australian representation in international science, and public communication and education in science'. She chose physicists Sir Mark Oliphant and Dr Paul Wild, medical researchers Sir Gustav Nossal and Professors Susan Serjeantson and Peter Bishop, animal geneticist Dr Helen Newton Turner, ecologist Professor Ralph Slatyer, geologists Dr Elizabeth Truswell and Professor Ted Ringwood, and science communicators Robyn Williams and Dr Michael Gore. Moyal's edited transcripts of these interviews and of Hazel de Berg's earlier interviews with Sir Mark Oliphant and Professor Harry Messel form the chapters of *Portraits in Science*.

The ages of those interviewed range from 47 to 91 years, and their careers range across the last six decades. Seven are Australian-born and three British-born, one is from Canada and another from Austria. Six are fellows of the Royal Society of London, eight are fellows of the Australian Academy of Science, and four are fellows of the Australian Academy of Technological and Engineering Sciences. They constitute a diverse and illustrious gallery.

Each chapter is essentially a word portrait. Although the colour is provided by the subject's own words, each picture is not simply a self-portrait. Moyal provided more than a text-free canvas for her subjects; she used partly structured interviews in which her interjected information and questions directed and sustained the conversations. Moyal's statement 'You've been a driving force behind the World Health Organization, and in the application of findings to developing countries' provided a springboard for Nossal's eloquent explanation of the involvement of the Walter and Eliza Hall Institute and other institutions in tropical disease research. Less predictably, her question 'And how many woman were there in the [US Deep Sea Drilling] team?' led Truswell to describe her contributions to dating the development of the Antarctic convergence, where cold Antarctic waters sink beneath warmer waters from the north:

In the geological record we could see the beginnings of that happening. And I can remember that quite vividly because I

had rough logs of the holes that we'd drilled [in the ocean floor] taped up around my cabin and I was colouring in the bits that were siliceous, silica-rich sediments, which marked the diatom-rich Antarctic waters as against the carbonate-rich waters from the north. And then all of a sudden I could see where these things were intersecting and at what points in time this was beginning, that these Antarctic waters were beginning to spread north.

By directing the conversations and by editing the transcripts of those conversations, Moyal has shaped her portraits.

Moyal maintains that women's narratives are different from men's: women see success in collaborative terms and emphasize team co-operation in their research. As Truswell explains:

I've tried, I think, to be as much of a synthesiser as I can. . . . So I've generated quite a lot of synthesis with a number of different people. I like working as a team member, I find that's very rewarding. Frustrating at times of course, but it is very rewarding.

Serving on many selection committees, Truswell has 'actually suggested that humility should be a selection criterion and this has been regarded with shock and horror by male members of the committee'.

So what does Moyal reveal in her portraits of Helen Newton Turner and Susan Serjeantson? Both are distinguished geneticists, but with very different careers. Helen Newton Turner had an unusual beginning to her scientific career. Clerical work followed her University of Sydney degree in architecture. However, her secretarial job during the 1930s was in CSIR's new McMaster Animal Health Laboratory, where the Officer-in-Charge was Ian Clunies Ross (later chairman of CSIRO). While typing papers for the Laboratory's statistician, Helen became interested in the new discipline of statistics applied to agricultural experiments. With Clunies Ross' help, statistical studies in Britain led to a long career in CSIR/CSIRO: from statistician in the 1940s to leader of the new Animal Breeding Section which was established in the mid-1950s to co-ordinate CSIRO's various breeding studies on the merino sheep. Newton Turner's injection of quantitative genetics into merino breeding contributed to the wealth of Australia's fine wool industry. In 1970, she was awarded a

Doctorate of Science on the basis of her collected publications on diverse aspects of sheep breeding. Dr Newton Turner has served on the United Nations' Food and Agriculture Organisation and the Australian International Development Assistance Bureau. She insists that she experienced no discrimination during her working life as a scientist:

I don't really feel I ever had a struggle. ... I just did what I wanted. I loved doing it. I loved being out in the field. I wouldn't ever ask anybody to do anything in the field that I hadn't already done or was prepared to do myself. I have never felt discriminated against in any way.

Susan Serjeantson was a science student at the University of New South Wales in the 1960s. Her studies in genetics, which she saw as 'a beautiful enmeshing of biology and mathematics', included Newton Turner's papers. Preferring human to fruit fly genetics, Susan accepted a scholarship at the University of Hawaii, which allowed her to undertake fieldwork in Papua and New Guinea (PNG) to look at simple genetic markers including blood groups. She was interested in finding how genes flow between remote populations, which she hoped could provide an 'appropriate model for how men may have existed and interacted for most of our history'. After graduation and engagement to the local agricultural officer, she joined PNG's Institute of Medical Research and established a laboratory to study the genetics of tropical diseases. Returning to Australia in 1976, she joined the Human Genetics group in the John Curtin School of Medical Research at the Australian National University in Canberra to establish a laboratory to test for transplantation antigens, that were then being defined overseas. In 1988, she became head of the Human Genetics group. Professor Serjeantson's team has adapted and refined DNA techniques to replace older, less accurate serological methods. Now they can look right inside the cell at the genes that are responsible for encoding transplantation antigens. As well as aiding donor-recipient matching, their genetic work has also informed wider anthropological discussions. Their accumulated data for numerous antigen-encoding genes in Pacific people have contributed to discussions on the inter-relationships between Micronesians and Polynesians and their colonisation of the Pacific. Serjeantson explained that the citation for her 1992

National Clunies Ross Award for Science and Technology was 'for transferring science from the laboratory to a technological environment, and ... for our persistence in trying to improve the outcome of transplantation'. Of persistence she is proud: their research was 'a long history of slogging. ... I think I'm most proud of the long history, the track record ... and the persistence of pursuing this to the end, from the old crude serology days ... and following that through for more than fifteen years'.

Since Moyal's interviews concentrate on a favourite conversation topic of most scientists—their scientific work—it is not surprising that those conversations are both interesting and informative. Furthermore, for Nossal and Williams, whose voices are readily recognizable from radio programmes, their texts carry the rhythm of their spoken sentences. Moyal has provided engaging accounts of the working life of Australian scientists and science communicators. However, regrettably few insights into the place of that work in the context of the rest of their life are provided. Truswell and Serjeantson acknowledge their mothers' crucial help with child minding, and Serjeantson mentions the dilemma of motherhood.

Despite the change from spoken to written word, the text is reader-friendly. Conversion from one medium to another is difficult and the results can be disappointing; for example, the limp film of a gripping novel or the dull text of a spicy speech. As a lover of radio plays, who struggles to derive pleasure from reading them, I was apprehensive about reading a collection of interview transcripts. Stripped of vocal inflection and innuendo, how interesting and insightful could the silent text of an interview be? My copy of *Portraits in Science* is now annotated with the occasional unanswered question: when?, which? or who? In general, however, Moyal does provide sufficient information in her interview questions, interpolated information and occasional footnotes to complement that contained in her subject's answers. An abridged curriculum vitae or career timeline, listing significant dates, would enhance the clarity of each portrait and provide a check for errors in dates in the interviews. But more seriously, I am annoyed and amazed at the lack of index, and in a book published by a library! Without a retentive memory, I was unable to explore adequately institutional and intellectual links between Moyal's subjects; for example, links between the malarial work of Serjeantson and Nossal.

Moyal's edited interviews provide some

guidance to interview strategy, and they have sharpened my ideas about the role and presentation of verbal recollections of scientists.

Since the Second World War, Australian science has developed and diversified dramatically. And yet, as Moyal points out, surprisingly little is generally known of the lives of even key scientists and their contributions to science and society. There is certainly a need for historical investigation of the imperatives and influences of science in Australia during the last five decades. Since many of the post-war practitioners of science are alive and willing to discuss their work, oral history has an important role to play. Scientists' recollections can provide elusive and arcane information which is not commonly available in the extensive and detailed published and archival record of science, but which can contextualize and clarify information documented in the written record. Their recollections can reveal attitudes and aspirations which effectively but silently shaped their scientific careers. Moyal's portraits reveal formative influences, mentors and scientific networks. There is an urgent need to capture such recollections: since Moyal recorded her interviews, one of her subjects, Ted Ringwood, has died.

Portraits in Science provides substantial pictures of individual scientific careers, and includes scattered details of recent intellectual histories of several areas of research, including immunology, genetics and geology. In presenting her gallery of leading Australian scientists, Moyal succeeds in conveying a sense of the nature and variety of scientific activities and attitudes during the past half century, and clearly demonstrates the importance of oral history in the history of Australian science. With an index, *Portraits in Science* would be a useful resource for sociologists and historians of science and could provide the foundations for an interesting interactive programme to explore various sociological and historical aspects of recent Australian science.

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George Seddon, *Searching for the Snowy: An Environmental History*. Sydney: Allen & Unwin, 1994. xxxvi + 336 pp., illus., \$34.95.

In many ways, George Seddon's book *Searching for the Snowy* is an unusual but

interesting, historical mosaic. The author selects his data from a wide range of research material, including written documents, oral history, official records, scientific papers, periodical articles, newspaper reports, anecdotes, maps and photographs. In less able hands the result could have been an amorphous assemblage of disparate themes and approaches. Seddon, however, has achieved a creditable synthesis of the subject matter, his major focus being, as indicated in the subtitle, an environmental history of the Snowy River and its surrounds. Although he embarks on a variety of intellectual excursions throughout, he always returns to his central motif, environmental considerations, past and present.

The composite picture Seddon constructs leaves the reader with a sense of the unique beauty, grandeur, abundance, ruggedness, relative inaccessibility, special peculiarities, and to some extent the tragedy of the Snowy. Seddon illustrates not only the physical and geographical story of the river and its setting but the natural and human history as well. He especially emphasizes the 'reciprocal interaction' between people and the river—how humans have changed the river and its environment over time and how 'it has changed us'.

In the Introduction, Seddon shares with us his struggle to choose a central theme around which to present the fruits of his diverse research, and his difficulties in organizing the material and in deciding what to include and what to exclude. In the end he opts for a 'land-use' framework with an emphasis on human responses to the landscape, including his own. As Seddon points out, for Australians generally, the Snowy River has an ambiguous standing in the national psyche. Above all, it has a mythic status mainly due to a single poem by Banjo Paterson and the nationalistic rhetoric associated with the building of the Snowy Mountains Scheme. But for most Australians 'it has no historical, social or political reality'. Indeed, for many Australians it barely has any physical reality either. Although it is about 500 kilometres in length and stretches all the way from the slopes of Mr Kosciuszko to Bass Strait, and even though there are large population and industrial centres to the north and to the west, it is situated in a geographically inaccessible part of the continent, and few people ever see much of the river. It is a surprise to learn that there are only four road bridges across it, no railway bridges, and few good roads near it. For many people, their only glimpse of the Snowy is

when they drive over the bridge on the Princes Highway at Orbost.

Even though the river valley is not a single geological or biological unit it can at least be considered a continuous geographical entity. Consequently, it is from a geographical perspective that Seddon decides to present his narrative. In effect, Seddon takes us on a journey of discovery down the river, from the source to the mouth, frequently stopping along the way to explore and describe the river and its surroundings, often through the voices of the generations of humans who have explored, surveyed and exploited it. The book is logically divided into two parts: the first section on the High Country and the Monaro, the second dealing with the middle and lower reaches of the river.

In Part I, Seddon begins with a sketch of the physical setting of the river, emphasizing its geographical, geological and biological diversity. He follows this with a critical discussion of the establishment of the Snowy Mountains Scheme and its economic and environmental consequences, and highlights the irony that the Scheme led to the area becoming zoned as Australia's first wilderness area. Then, in the next few chapters, he takes us on a tour down the upper section of the river and into the surrounding landscape. He introduces us to many of the local landmarks, various place names and a selection of established families in the area, many of whom are the dynastic descendants of the early settlers. Particularly original and absorbing is Seddon's own experience in the Snowy Country—driving, hiking, camping, canoeing and chatting to the locals. By these means he obtained first-hand knowledge about human interaction with the land.

He writes sympathetically and sensitively of the original Aboriginal inhabitants and of the generations of Europeans who displaced them. As a concerned environmentalist, he presents frankly the many transgressions of the early pastoralists but does not diminish their audacity, hardships and achievements. Particularly emphasized are the dramatic and wide-ranging changes visited upon the whole region by humans—both Aboriginal and European, the most important contemporary impacts being compaction of the soil by cattle, changes in vegetation due to clearing and the introduction of alien plants such as willows and blackberries, and the arrival of other exotic species such as rabbits, foxes, wild horses, cats and dogs. These changes have spawned many problems such as erosion, land degradation and excessive flooding.

Also in Part I, Seddon gives a detailed account of the geomorphology of the region, unravelling causes and characteristics of drainage patterns and river behaviour. This chapter is technically lucid, geology being one of Seddon's (many) specialities. In the final chapters in this section, the human story is addressed. Here he discusses the fragmentary archaeological and anthropological evidence of the Aboriginal inhabitants—the Ngarigo people of High Country and the Monaro Tableland, and the Krauatungalung people of the southern coastal regions. The Aborigines, although relatively few in number, had a significant impact on the Australian environment, mainly through the use of fire, causing major changes in habitat. In the Snowy region, they were 'active in assisting rapid physical and evolutionary change, here as elsewhere'.

The impressions of some of the first Europeans to make contact with the Aborigines are also examined in this section. The relatively disinterested remarks of Polish explorer Dr John Lhotsky are contrasted with the more earthy writings of ex-convict Joseph Lingard. According to Seddon, although Lhotsky's discussions of scientific matters are certainly of historical interest, his social comments on the early settlers, including the squatters and convicts, are even more so—they are 'invaluable'. Lhotsky was critical of authoritarian aspects of colonial society, particularly the poor treatment of the convicts.

The early European explorers and settlers of the middle and lower sections of the Snowy country are discussed at the beginning of Part II. In 1834, Scottish-born George McKillop, under the patronage of Captain William Hovell, set out from Sydney to explore the southern Snowy country. McKillop's favourable report, published in *The Edinburgh Journal of Agriculture* (1836), helped attract squatters and selectors into the Gippsland district. Much of this is now national park land. Over the years, as the cattle compacted the soil and ate out the best grass, a natural attrition of the cattle-men has taken place.

Miners followed in the wake of the explorers and pastoralists. Seddon details the scientific researches of the early geologists and mining specialists. The Reverend W.B. Clarke, in his *Researches into the Southern Goldfields of New South Wales* (1860), reported on large areas of the Snowy country. Subsequent nineteenth-century accounts were written by geologists and naturalists such as Taylor, Selwyn, Howitt,

Stirling and Ferguson. After gold was discovered in the Snowy country in 1861, a number of small goldfields were established. In addition, silver-lead has been mined around Buchan and some small copper mines have been worked. James Stirling was the most active mining geologist in the region during this period and was highly respected throughout East Gippsland. In the 1880s, he was stationed at Omeo and carried out surveying and geological research. A separate chapter is devoted to another notable naturalist of the era, A.W. Howitt, in which Howitt's adept interpretations of the Snowy River Volcanics are discussed. Howitt lived much of his professional life in Gippsland and contributed much 'in nurturing science and young scientists in Victoria'.

Another distinguished scientist 'writ large across the landscape' was the biologist and anthropologist Walter Baldwin Spencer. Seddon allots a chapter to Spencer's 1889 field trip into East Gippsland, in which he and his party made many scientific observations, including of the cabbage tree palm, Victoria's only native palm (noted earlier by Ferdinand von Mueller).

Seddon also writes of the process and problems of flooding along the Snowy River, made worse by the changes wrought by European settlement, such as accelerated run-off and increased erosion. The Snowy is famous for its flooding; in the past some of the floods have been awesome, destroying bridges and scouring the land. This leads to a discussion of the management practices and environmental consequences of settlement in the Orbost district in the penultimate chapter of the book. Quoting the words of Ferdinand Mueller, who visited the area in 1854 and again in 1855, and those of the naturalist Norman Wakefield, Seddon presents a vivid picture of the Orbost flats before the land was cleared: lush temperate 'jungle', lavish swampland and fertile soil. This was almost obliterated by clearing for grazing, cropping, dairying and other farming activities. Further inland, forestry has been, and remains, an important economic activity, and recently a controversial one.

The author reserves the final chapter for a moving discussion on the displacement, dispossession and genocide of the Aboriginal inhabitants of the Snowy district. No matter how much the issue is minimized or ignored, or what gloss is placed on the 'heroic' particulars of European settlement, the brutal treatment of the original custodians of the land is a sad and wretched episode in our history.

Searching for the Snowy is an informative, entertaining and challenging book. Seddon is at his best when dealing with the environmental consequences of human interaction with the physical and biological surroundings. For the historian of science, the main strengths of the book are in the areas of geology, geomorphology, geography and environmental science, and to a lesser extent anthropology and natural history. However, some of these areas, especially the latter ones, are only dealt with incidentally and sketchily rather than comprehensively. The book is more a personal Odyssey than a systematic historical treatise. The author is never strident or condescending but succinct, matter-of-fact, learned, emphatic and a good storyteller. His love for his chosen scholarly disciplines, the English language, the natural environment and the river itself are all manifest. This book is a significant distillation from a number of sources, well researched and written, and certainly worth reading.

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Andrew David, *The Voyage of HMS Herald to Australia and the South-west Pacific 1852-1861 under the Command of Captain Henry Mangles Denham*. Melbourne: The Miegunyah Press, 1995. xxviii + 521 pp., illus., \$69.95.

The voyage of the *Herald*, during the years 1852 to 1861 and under the command of Captain Henry Mangles Denham, was commissioned to fill a pressing need. Gold had been discovered both in North America and in Australia and commerce between Sydney and San Francisco was booming. But many of the floating human cargoes who saw the lights of Sydney dip below the horizon never saw the lights of San Francisco rise, for uncharted rocks, reefs, shoals and thundering surf buried their hopes in the Pacific Ocean. To chart such dangers in the south-west Pacific, and particularly among the Fiji Islands, the great hydrographer Sir Francis Beaufort selected Denham, and in choosing him Beaufort chose well. 'No man', he wrote of one of Denham's surveys, 'could have achieved that great work with more skill'; and of another, 'A more complete and masterly work has rarely been sent to the Hydrographic Office'.

In his meticulous research for this book,

fortune favoured Commander David, for at the time he was working at the Hydrographic Office at Taunton, where the archives hold much of Denham's original journal, all of his original surveys, and over one hundred and twenty coastal views executed by James Glen Wilson, the talented artist of the voyage. Wilson continued the tradition established by the artists who sailed with Cook, Flinders, Fitzroy and others, preserving for posterity superb eyewitness accounts of what they saw. Wilson was more than the elegant artist of the voyage, he was also its official photographer and the first to hold that position in the South Pacific. He used his camera to capture the likenesses of his associates and to record such historic moments as the resettlement on Norfolk Island of the descendants of the *Bounty* mutineers. The *Herald* and her consort, the paddle steamer *Torch* under Lieutenant William Chimmo, carried men well educated in various branches of science—John MacGillivray, the naturalist so devoted to ornithology, and William Milne, the botanical collector trained at Kew. The *Herald's* surgeon, Frederick Rayner, and the *Torch's* assistant surgeon, John Macdonald, had both been instructed in natural history by Sir John Richardson, renowned for his work as a naturalist in the Arctic.

On this voyage Denham also took with him his thirteen-year-old youngest son, James, whom he was to bury on a remote island in the South Pacific. The ships left England on 10 June 1854 and reached Sydney eight months later, having directed their courses to examine reported dangers, to make soundings every two hours, to observe and record the changing magnetic variation, sea temperature and barometric pressure, and to conduct tests to determine the transparency of sea water. Since longitude can be expressed in time, the accuracy of the expedition's positions depended on the accuracy of its twelve chronometers, one of which Denham designated as his standard; the rates at which the others gained or lost against it had to be compared every day. The rate of the standard chronometer also had to be carefully determined by methods Commander David explains in an appendix, which must appeal to anyone with an interest in sextants, artificial horizons, altitudes of heavenly bodies, meridian distances and the relationship between time and longitude.

One of Denham's responsibilities was to pin-point positions, so that his charts could be related to accurate geographical references. At the end of the voyage, he had fixed

163 of them with great accuracy, and also completed work which led to the production of 129 charts, some of which are still in use today. The expedition kept a meteorological record of ten thousand observations and amassed over three and a half thousand items of natural history. The benefits that flowed to Australia from this productive voyage, however, did nothing to assist the country's ecology. Denham's action, and those of others before him, in releasing rabbits to be fruitful and multiply, led to millions of them desolating large areas of Australia's none-too-plentiful native pastures.

In these days of electronic satellite navigation, instant radio communication, air conditioning, helicopters, refrigeration and outboard motors, it is salutary to reflect on the harsh conditions and isolation endured by these naval surveyors in the Golden Age of British hydrography. Sounding for these men often meant days of back-breaking work with oar and lead line under a vertical sun. And in that searing heat, nothing they could eat or drink was likely to be below tepid room temperature. Their daily fare was far removed from the variety and crispness of the fresh foods carried in the freezers of ships at sea today.

The art of James Glen Wilson enriches this book. In one notable water colour, he illustrates a scientific method used by hydrographers in the nineteenth century to construct their charts. It shows the *Herald* drifting on a calm sea off Lord Howe Island, measuring a base line by sound ranging. This required a man on shore to observe the flash of a gun and note the time it took for the report to reach him; then, knowing the velocity of sound in air, he could determine the distance of the ship and establish a base line for triangulation. In 1857, Wilson painted another splendid marine study of the *Herald*. While examining the suitability of Shark Bay for a penal settlement, she ran aground in Freycinet Estuary at the top of high water and remained fast there for two days. This incident gave Glen Wilson the opportunity to portray his ship in distress.

Although Denham's service in Fiji coincided with an increase of Christianity there, his naturalists were still able to obtain many pre-Christian artefacts, observe pagan customs and gather much anthropological information. Fijian canoes particularly interested MacGillivray, who described two types in detail. *Ra Marama*, the largest double canoe ever built, measured 102 feet in length, only four feet less than Cook's *Endeavour* which circled the world. While in

Fiji, Denham heard a rumour that the flamboyant entrepreneur Ben Boyd, said to have been murdered by the natives of Guadalcanal, was still alive. He sailed to the Solomons and landed in Wanderer Bay, where Boyd had last been seen. After some inquiries convinced him that Boyd was dead, Denham tried to capture the chief responsible. In an ensuing fracas, the chief was shot and his village torched.

When Denham returned home after nine long years away, he recorded a poignant moment in which he failed to recognise one of his own sons:

... a ships boat with a Lieutenant ranged alongside from the *Trafalgar* whom I received at the top of our poop ladder with the formalities due to the officer of the Guard, struck, however, with his embarrassment I looked enquiringly in his face, when he seized my hand and, in suppressed tone, said 'Why father you don't know me'!—nor indeed could I, for now stood before me, a bigger man than myself, a Lieutenant of the *Trafalgar*, my son Annesley whom I had not seen since the day I placed him on board the *Southampton*—Admiral Reynold's Flag Ship as a Cadet in his 13th Year ...

This reunion, David suggests, must have begun to prepare Denham for the changes he would find in his wife, and perhaps the even greater changes she would find in him. Denham was deservedly knighted for his services in the *Herald*, in 1877 he became a full Admiral, and he died in 1887 at the age of eighty-six.

The *Voyage of HMS Herald* increases the significant contribution of Melbourne University Press to works relating to Australia's formerly much-neglected maritime history. For lifting the veil of obscurity which has surrounded Denham's work for 134 years, Commander David merits our salute.

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Richard Ferguson, *Antarctic Artefacts: A Selective Description and Annotated Catalogue of Artefacts in the Mawson Collection at the University of Adelaide*. Adelaide: University of Adelaide, 1995. xv + 267 pp., illus., \$25.00.

Antarctic Artefacts by Richard Ferguson is a welcome first step in making known the artefacts contained within the much wider

Mawson Collection at the University of Adelaide. This volume is Ferguson's third work to focus on Antarctica; his previous projects concentrated on Frank Hurley's photographs and his contribution to Antarctic discovery, and perhaps this earlier fascination with Hurley explains the use of his portrait of Mawson for the cover of this long-awaited volume.

I found *Antarctic Artefacts* most interesting. This catalogue of artefacts should finalize the documentation of the Mawson Collection but, while it fills an obvious gap in the intellectual access to Mawson's collection, I feel the title offers more than it delivers. *Antarctic Artefacts* would have benefited greatly from museological scholarship and collaboration, as the author's viewpoint is informed not by the world of material culture or science but by studies in the visual arts in Australia and by polar photography and Australian Antarctic history at Cambridge.

Ferguson's worthy aim, to provide a concise listing and means of accurate identification of artefacts, is diminished by his decision to exclude provenance, the factual tool for identifying objects and the evidence by which to distinguish significant objects from those that appear similar within the collection. If one means to tell the difference between the type and the number of artefacts, then Ferguson has succeeded, but is this a sufficient function for a publication of this nature?

The system of classification employed is adequate and, although it makes provision for description, this has unfortunately not been seriously taken up by the author. While being consistently neat and lavishly presented, this publication barely records the artefacts. The collection is presented as a value-free assemblage of things equally significant because they were once owned by a famous Australian scientist. Without provenance and information about the identity of an artefact, Ferguson's work looks antiquarian and borders on hagiography. I do not believe that *Antarctic Artefacts* can be successfully used as a catalogue—at best it will function as an accession list.

The technical issue of significance is problematic in this publication. First, there is a fundamental problem with the inclusion of replicas in a catalogue. Second, I was intrigued by Ferguson's treatment of Mawson as a great man of science and his collection, therefore, as one of scientific instruments. There exist today widely accepted models for analysing artefacts for meaning and significance, that apply similar

criteria and processes to that of heritage place assessments. The industry standard provides four main categories of value in which to locate significance: aesthetic, historic, scientific and social. Scientific values are embodied in unique physical and biological characteristics, while historic values articulate our regard for associational connections between places and people or events (see, for example, L. Young, 'Significance, Connoisseurship and Facilitation, New Techniques for Assessing Museum Acquisitions', *Museum Management and Curatorship*, 13 [1994], 191-9). It seems evident that it is the historic values of this collection that justify the expenditure of funds for its conservation, documentation and interpretation.

In terms of collection content, scientific instruments comprise 17 percent of the Mawson Collection at the University of Adelaide, a figure that is consistent with the average of all other Mawson collections in Australia. At 20 percent, the polar and survival category has a higher numerical representation in this collection and, indeed, in all other Mawson collections in Australia (details are given in B. Wheeler, 'The Meanings of Sir Douglas Mawson's Antarctic Object Collections', University of Canberra Honours Thesis, 1993). To regard the Mawson Collection of artefacts as a scientific collection not only ignores the passage of time and the presence of souvenirs that authenticate and narrate Mawson's personal experiences, it also neglects the broader social-history perspective of the collection as it exists in the late twentieth century.

At times, monetary value and cultural significance have been confused. The meaning of references to high-value objects in the preface is clear. In the Introduction, however, 'valuable' and 'significant' have been used as interchangeable terms. Modern price conversions only confuse the issue further and seem to be somewhat misguided as an interpretation.

My primary difficulty with this volume is its inability to guide the reader, as if merely listing the contents of the collection is enough. Readers will need to bring to the exercise a detailed knowledge and understanding of Mawson and his experiences in order to make sense of the internal structures Ferguson has created. I refer to the author's practice of listing artefacts by function, separating those he deems to be 'Mawson Personal Items'. How are we to accurately identify artefacts unless we know the basis on which items have been selected? And why differentiate between similar arte-

facts without articulating the difference? The 'Sledge: Half: Modified by Mawson' on page 101 is very similar to the four others listed on page 100, but it is listed as a 'Mawson Personal Item'. Those who have read *Home of the Blizzard* will know intuitively that his sledge is listed as distinct from others to denote its special associations with the man and his lone struggle for survival in Antarctica in 1913. The task of identification and differentiation becomes more difficult, however, with artefacts of little renown, such as 'Personal Accessories: Mawson Personal Item: Briefcase, Leather' on page 119, and its counterpart 'Personal Gear: Mawson Personal Item: Briefcase, Green: Leather' on page 121. Why are these artefacts treated differently?

Ferguson's decimal numbering system also promises more than it delivers. I anticipated being able to see at a glance the groups of objects or relationships between component parts of objects, but the competing desire to prioritize the lists alphabetically renders the numerical listing more difficult to use than it need be. It is not until one turns to the section 'Numerical Listing by Accession Number' that the virtues of this type of accessioning become apparent, but the internal inconsistencies and unwieldy nature of this layout will make it difficult to use.

This review would not be complete without acknowledging Ferguson's insight into the construction and use of equipment and tools. I found the section 'Artefacts in Context' absorbing and enlightening. This is the kind of research that Australian audiences will immediately recognise as relevant, coherent and entertaining. Ferguson's choice of photographs is refreshing and lucid, and we are treated to some fine examples from the collection. On the other hand, the maps are not of the same visual quality, and I feel that modern versions of Mawson's originals would not have lost the desired impact.

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Ann Moyal, *Breakfast with Beaverbrook: Memoirs of an Independent Woman*. Sydney: Hale and Iremonger, 1995. 215 pp., illus., \$34.95.

To write with conviction, clarity and charm is the key to success as a public historian. During a varied career, Ann Moyal has used her entertaining pen to produce several works which marry readability with scholarship, and she has brought the same gift for

the telling story to her memoirs. Not quite an autobiography, this is history from the personal point of view. It has obvious resonance for this reviewer. Half a generation younger but with many of the same interests and experiences, it grips like the memory of what might have been. The slight shock of the different focus—her image of Sheila Lambert, Geoffrey Elton's wife, so different from mine—jogs one into reassessment.

Ann Moyal has been one of the most prominent women of her generation. Despite slights and setbacks, she always fell on her feet, obtaining interesting jobs which took her to many parts of the globe. Restlessness kept her moving from one job and one continent to another, shifting at least once a decade. After joining the Australian pilgrimage to Europe in 1949 with the assurance of a postgraduate scholarship to support her, she used her research assistant experience to work for Nicholas Mansergh, eventually deciding that publication, however vicarious, was more worthwhile than a research degree. Working for Beaverbrook from 1954 to 1957 gave her access to the world of power and influence and an introduction to many of the great and famous. This she enjoyed to the full, even if she did turn down a proposition from Joseph Kennedy.

Returning to Canberra in 1958, she participated in the early days of the *Australian Dictionary of Biography*, helped revise Earle Page's autobiography, and embarked on the work which was to fill the rest of her life—the history of science in Australia. All of these early years were punctuated by romances, broken engagements, failed marriages and resistance to the conventional pressures of a commitment to family and children. In 1965, she went with her third husband, Jo Moyal, to Chicago, and there, while preparing a biography of W.B. Clarke, she developed two important strands of her later work, oral history and a concern for science policy. Her editorial skills won her the position of science editor for the University of Chicago Press and a further experience of prejudice when she was suddenly sacked.

In 1971, she returned to Australia, to her first teaching position, at the Institute of Technology in Sydney, where she worked with engineering and science students. In 1977, she took up the Directorship of the Science Policy Research Centre at Griffith University, a decision which within two years led to a *cause célèbre* in which she was called before a university tribunal constituted with cavalier attention to the princi-

ples of natural justice, and resigned. Thereafter she has sought no long-term association with an academic institution, but with temporary grants and fellowships has engaged in the public history writing which she does best. To make the history of Telecom required reading was a remarkable achievement; to breathe life into the obscure and outdated work of nineteenth-century scientists equally impressive.

Ann Moyal is an enthusiast. Those to whom she has given her loyalty retain it. Heroes—for heroines, family and a few personal friends apart, are thin on the ground—do not have feet of clay. Beaverbrook, Churchill, Sir Keith Hancock, Manning Clark, must be defended against all criticism. She knew everybody, or so it seems, but only a few are worth protecting. She appears to have participated in the intellectual and cultural life of Australia with gusto. The memoirs concentrate more on the early years than the later, perhaps because they present fewer legal problems, perhaps because they can be viewed with less present emotion.

The story carries one with it on first reading. At a second or third reading, questions begin to arise. What makes a great, as opposed to an entertaining, autobiography? What level of critical reassessment of oneself is appropriate? Naïve recounting of triumphs and defeats can be revealing, but this is far from naïve. It is a work carefully shaped to present a particular *persona*: the clever, hard-working, independent woman, a feminine but not feminist battler for woman's equality. While the 'good ship Historical Enterprise' has carried her far, we get few reflections on history, most limited to brief, unsupported assertion. The claim that a historian's training 'equips her or him to approach any body of knowledge' is either jejune or dubious.

All her works promote the vision of Australian scientists as vigorous and innovative and contribute to the creation of a sense of national identity. She does not reflect on the assumptions which formed her judgement of science. Her study of the Australian Atomic Energy Commission was undoubtedly penetrating but, in hindsight, what was its role in a growing government disillusionment with the utility of science and a downgrading of the priority the government had given to research—the basis for the establishment of the ANU and the research funding of the State universities and CSIRO?

Closely examined, this is a remarkably reticent work that omits many incidents

which might cast light on her attitude to academic ethics and enterprise. As research assistant to Stephen Roberts and Gordon Greenwood, she must have been aware of the backstage dealing by which the very young and junior John Manning Ward was promoted over his two senior colleagues and which drove Greenwood to the University of Queensland.

Her account of the early difficulties of the *Australian Dictionary of Biography* seems perhaps unduly focused on Malcolm Ellis and problems at the centre, while the gossip in the corridors of at least one underfunded state university was concerned with time, the need for sound research, but above all with the grim battle between those disputing ownership of the field of Australian history, where prestige and reputation were the prizes for control of a work that would sit on library shelves throughout the world. She had left the venture before the crisis, for reasons she does not specify. Administration, with its inevitable compromises, may not have given her the sense of achievement provided by shaping prose. Conviviality and intellectual intercourse made her a sociable, networking person but not perhaps a team-worker or an arbitrator in internecine wars.

For an historian committed to context and milieu, the background for her account is oddly muted. She does not reflect on the possible disadvantages of a single national university alone adequately funded for postgraduate study in a continent the size of Australia. The 'international oasis' she perceived at ANU seems at odds with a focus on Australian history, with its long state-based traditions. She appears to accept without question the lavishing of funds on a privileged élite, with the assumption that the state universities would be undergraduate colleges feeding the cream to the centre.

What is left in the shadows flattens a picture that adds little flesh to the bones of our pre-existing knowledge. Moyal's account of the Griffith affair disappointingly adds little to the story in *Intellectual Suppression*, no impassioned defence, no analysis of the structural discrimination, no examination of conscience.

The sense of systematic depression of women's intellectual ambitions can now be discussed openly, so it is disappointing that Ann Moyal restricts her comments on how cultural expectations moulded her life to a few throw-away comments. She felt, as a university woman, that she lacked role models, yet she was studying in a department that had one of the rare women lectur-

ers and one who was to become a professor. Was it not the apparent celibacy of the women academics that made the model unattractive to the young sexually-maturing girl, rather than the absence of models?

She comments on the willingness of bright young women to attach themselves to male stars—which was and is a less abrasive and faster way to the top than the drudgery of scholarship—but she does not reflect on the possibility that it was her youth, good looks, wit, good manners and charm as much as her undoubted research skills that earned her the position with Beaverbrook. Apart from the banality that it is all a 'learning experience', what did she gain from this exciting interlude? An honest if painful self-analysis of the way in which social assumptions, mediated through male behaviour, moulded her career would be such a valuable contribution to our understanding on so many levels that its absence is disappointing. These are entertaining memoirs, not an account of an academic life.

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Gwynedd Hunter-Payne, *Proper Care: Heidelberg Repatriation Hospital 1940s–1990s*. Sydney: Allen & Unwin, 1994. xiii + 313 pp., illus., \$34.95.

In the bicentennial year of 1988, there were multiple commemorations of our national identity. Hardly noticed was the fiftieth anniversary of Munich, with Neville Chamberlain's exultant declaration, 'Peace with honour: I believe it is peace for our time!' But the next year brought reminders of the outbreak of the Second World War of 1939–45. Since then we have been assaulted by successive anniversaries of the events in that conflict. They have ranged from great set-piece national occasions like the Return of the Unknown Warrior to small gatherings to remember the aircrew of a particular bomber that flew off and did not return. Prime Ministers and others have produced readings of history to suit their own purposes as much as (or even more than) to convey what happened at the time.

Included within this process have been historical projects covering the half-century milestone of the second generation of Repatriation General Hospitals. This book is an account of one of them, which has served Victoria since its hand-over from the Army on

19 May 1947. There is no description of what happened between the wars.

A modern generation, with roots wider than the British Australians who went to war in 1914, may seek background on how the Repatriation (and subsequent Veterans) system developed after the introduction into the Commonwealth Parliament of the Australian Soldiers' Repatriation Bill on 18 July 1917. They will find an outline in this book that should suffice for the purpose. One matter, however, is quite misleading. From 1917 to 1976, the somewhat oddly named Repatriation Commission and its bureaucracy was widely known throughout the country as 'The Repat'. Dr Hunter-Payne, with a provincialism of outlook that I feel detracts from her history, has misleadingly appropriated this name to a single hospital, namely that serving Victoria.

In the same way, only readers familiar with Melbourne and the hospital will find their way about. There is no map to show relationships with central Melbourne or with other key institutions, such as the Caulfield, Austin, Macleod or Preston and Northcote Community Hospitals. Streets are named but, not knowing Melbourne, I have no picture of where they may be and whether they are major thoroughfares or suburban byways. It is also difficult to find locations within the hospital itself, of which there is only a fuzzy sketch dating from the war years and which is hard to decipher, even under magnification. The Glass House is mentioned frequently; from the context this seems to be a multi-storey building, but the number of floors is not given, nor when it was built or how it relates to other named structures, both old and new. Neither is there a coherent account of what functions it may have served over the years and how these have varied. There are many references to the duckboard wards, but no statement as to how many there were. To be fair, this volume, although the first to appear, is to be the second devoted to the institution (best known as 115 Australian General Hospital) built on the Heidelberg site during the Second World War. An impending publication, *Duckboard Hospital*, will tell that story. It would have been helpful to have included more background material from that time in order to make this book easier to follow.

For those who know the Heidelberg hospital well, and also for those like me who don't, Dr Hunter-Payne devotes her longest chapter, entitled Medical Mastery, to an interesting overview of some of the special-

ized medical developments during the last half-century. Based on the significance of tuberculosis in both world wars, respiratory medicine at Heidelberg under Dr A.H. Campbell was at the forefront of clinical research in this field from the 'fifties. This enthusiasm has been maintained by his successors. In the same way, the significance of cancer in the population of veterans led to advances in what came to be called Medical Oncology. This, in turn, created a fine service in palliative care, including an innovative programme of teaching medical and other students. Surgical and radiation treatments of malignant diseases progressed in tandem.

An advantage enjoyed by the Repatriation (Veterans) Department was access to more generous funds than State hospitals. This factor, combined with the nature of the clientele, enlightened administration and the enthusiasm of clinical staff, resulted in Heidelberg leading the way in a number of other fields. Dr Hunter-Payne illustrates these issues in her discussion of vascular surgery, nuclear medicine and aged care. In these and in other departments, the influence of the hospital was widely spread through undergraduate and postgraduate teaching, publications and the later careers of doctors, nurses and other staff who had worked in these specialist services.

Although Dr Hunter-Payne was formerly a speech pathologist, there is little information on the allied health professions: how they arose, when the newer ones were introduced, and how they may have been involved with teaching; and there are no index entries under physiotherapy, occupational therapy, social work or speech pathology. Nursing, the largest profession in any hospital, does better. The names of the Matrons and Directors of Nursing are recorded, but it is disappointing not to have records (usually placed in an appendix) of the names of other key senior staff, with their dates of appointment. Medical Superintendents are mentioned from time to time, but there is no index entry leading to them. A reader who doesn't know their names has difficulty tracing who succeeded whom and when.

There are a few errors of important detail: New Zealanders are always justifiably angry to read of the Royal Australian College of Surgeons, and the Australian College of Rehabilitation Medicine does not have a Royal charter. A more significant deficiency is the sadly inadequate index. The word processor has coped with the names of people, but not of many important topics or even

buildings like the Flanders Wing and the Tobruk Centre. It is necessary to search the text to find them.

Perhaps the oddest feature of the book is the repeated denigration of its subject. It opens with a bald statement, 'The Repat has a dubious reputation', and this is emphasized again and again. It may be true for Heidelberg, but it is most emphatically not so of other Repatriation General Hospitals, nor of the Department bearing that name.

As the story unfolds, it becomes clear that there are many aspects of the Heidelberg hospital that deserve to be widely known, and that enhance its status for the classical triad of patient care, teaching and research. At the time of publication, its prospects were uncertain after the withdrawal of control by

the Commonwealth Government. Like any institution, it will stand upon the shoulders of those who were committed to it in the past. Those who come to it in future will find in *Proper Care* the story of how their hospital reached its present state, including the long-standing and sometimes uneasy relationships to universities. Unfortunately, this publication will have less appeal to those from further afield, but it does provide a good account of changing Australian hospital practices and attitudes over the last fifty years.

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