

Book Review Section

Compiled by John Jenkin*

Tom Griffiths, *Hunters and Collectors: The Antiquarian Imagination in Australia*. Melbourne: CUP, 1996. xiv + 416pp., illus., \$34.95 pb. (This book has won at least four major book awards in 1996, including the Eureka Science Book Prize.)

This book is in three sections, with the titles *Collection*, *Possession* and *Preservation*, which all present aspects of 'the antiquarian imagination'; but underlying the detail there is another set of concerns, for the framework of the book is 'a history of History'. It is a reflection on the world of the historiographers, both professional and amateur. So the book charts the rise of so-called 'scientific history', with its reliance on the document because of the belief in the need for 'the repetitive scrutiny of evidence', and its co-existence with other modes of historiography, those of the antiquarians and of the naturalists. Then we follow the decline of history in the academies. Like David Lowenthal, Graeme Davison is fascinated by the paradox that, while history in schools and universities is in decline in the late twentieth century, 'it is blossoming in its popular forms'. These include the antiquarian and natural histories already discussed, with new interest in oral history, local history, histories of the built environment, heritage studies, Aboriginal histories, and what has come to be called 'public history'.

Griffiths summarises the challenge of public history:

It demands that historians recognise the power of memory and place. Oral history and local history, which study these phenomena, have been regarded with suspicion by the academy because they value experience as much as training, people as much as paper, and the parish as much as the nation. They challenge two of the founding orientations of 'scientific' history: national history and documentary science.

* Faculty of Humanities, La Trobe University, Bundoora, Victoria 3083.

But history writing has always been a branch of literature, and no-one but a group of professional academic historians has ever thought otherwise. Scientific history is a chimera that was with us for a hundred years, but the claims of national histories to be objective have always been highly suspect, and some recent comparative history makes this abundantly clear (a good recent example is Richard Bosworth's review of the way in which English, French, German, Italian and Japanese historians have interpreted the Second World War: Bosworth, 1993). It is also the case that many of the standard techniques of literary criticism—for example, analysis of the common metaphors and the implications of their use, of ironic structures, of narrative devices, the use of pronouns—can be as revealing when applied to the historians' words as to those of the poet or novelist.

So in looking for new roles for the practice of the professional historian's narrative skills, Griffiths greatly extends the range of admissible evidence (and thus is one with many of his colleagues). He is not tied to documents. The size of the trees in a eucalypt forest, axe marks, fire scars, logging trails, are all evidence for the reconstruction of past land use, which is a history of both land and people (Griffiths, 1992). So in oral history, artefacts, museum collections, all useful to those who know how to sift them well, to interweave, corroborate, link, tell a story. Griffiths has these skills, and others. His stories are laced with wit and the sharp insight that can come from forcing us to consider, in conjunction, two or more aspects of our world that we normally meet in disjunction.

Hunters and Collectors is a good title, an ironic introduction to the themes of the book. It refers not to the 'hunter-gatherer' society of the Aboriginal Australians, but to the hunting for cultural trophies of those who came to dispossess them. The subtitle, however, *The Antiquarian Imagination in Australia*, sells the book short, since it is much more than that. The subtitle is perhaps the only trace of the origins of the work, not so much as a doctoral thesis—would that a few more theses were so well written and so elegantly integrated, with

such a consummate interweaving of themes—but one undertaken during the tenure of a scholarship at the Museum of Victoria, the repository of the collecting mania of the last century. But the second half of the book ranges well beyond the reach of the antiquarian imagination, as in the concluding chapter, which explores the links between history and natural history. The book is also full of challenging speculation on the future roles of the historian in our society. Griffiths surely defines a role for himself, and this gives resonance to the book, generating waves that break well beyond the bounds of the antiquarian imagination.

The first section, *Collection*, inverts familiar categories. In Australia, the true hunters and gatherers of the last century and well into this were the European immigrants. 'Pastoralism is, after all, a kind of domesticated hunting. It is systematic predation, it supports a low number of people relative to the space it requires; it is nomadic within bounded territories, it grapples with a fringe environment that threatens to become desert, and it employs fire as a farming tool.' Hence the first chapter is called *Hunting Culture*; the collectors hunted the culture, or rather the tools, of the Aborigines, and the collectors were themselves a part of a hunting culture; in both cases, hunting with the hounds and collecting artefacts, the trophies were prizes of the hunt. Later in the same chapter 'the real nomads came from abroad, and brought their placeless, imperial history with them'. This is more than inversion. It is subversion, exploding the paradigms of the day to make its point, and it is representative of both the intent and the manner of the book: wit and irony employed in analysing the set of conceptions that drove the collecting and the dispossession of the makers of the collected artefacts: 'collecting is a crucial process of identity formation ... an exercise in how to make the world one's own'.

The second and third chapters are biographical sketches of major collectors, first of R.E. Johns, a public servant in central Victoria. The chapter begins with a story: in 1865, Johns finished his day in court, where he was clerk of petty sessions, and rode with two friends into the night for thirty miles to the fringe of the Wimmera, where they soon found 'the aboriginal graves we came to open'; 'the first we uncovered was "Barney", but he was not the one we sought. However, we took his skull, which was a good one, and then opened another grave, where we found

the skeleton we wanted—that of "Peeler", an ex-native policeman. We took his skull which was better than Barney's and closed both graves'. Johns took them home and worked on them 'until ... they looked quite clean and nice'. Johns was a decent, gentle, scholarly and retiring man, yet he went out after a known skull; he may well have learned of it while it was a living specimen. Griffiths traces the sources of the attitudes that made it possible for Johns to deny the humanity of Peeler in such an extraordinary way.

The third chapter, *The Stone Age*, looks at the Aborigines conceived as Stone Age Man, but also at the age in which stone implements were collected by the cartload. One of the collectors was A.H. Kenyon, who became keeper of Antiquities at the National Museum of Victoria. His historical vision was 'of a homogeneous Australian Aborigine, recently arrived, who had experienced no cultural change and whose material culture lacked invention. The stone circle was closed.'

But the stone circle was broken in the next chapter, *The Nuclear Family*, by a new generation of archaeologist-anthropologists, led by John Mulvaney, and by the use of radiocarbon dating. It began to emerge that Aboriginal occupation of Australia has a very long history, and that Aboriginal culture, or cultures, was diverse through both space and time, that it had a history of change, that it was innovative as well as ancient. It began to be recognised also that it is still here, that the long-predicted extinction had not taken place. 'Aborigines had been expected to make their appearance in museums as objects of display and research, and rarely as audience, owners or curators.' But by the mid-twentieth century, it was recognised with a shock that they were a part of the general public for whom the museums were intended, and this raised a new set of problems. In 1990, the Museum of Victoria returned its collection of human remains from Kow Swamp to the Echuca Aboriginal Co-operative, returning them to their places of burial, and this caused some outrage in the international scientific community and a 'genuine contest between ways of knowing, between forms of history-making'. 'What happens when "the sacred" is made into "heritage"?'

Historical research became profoundly revisionist in many ways, one of them in reviewing the role of the Native Police in the immediate post-contact years. Some of the Native Police moved easily across the two worlds they inhabited. Peeler, with whom an earlier chapter began, was likely to have

been one such. 'In death he was used to represent a relic race. But in life, he may have been testimony to a creative, adaptive and resilient culture.'

Section Two is called *Possession*. It moves from the collectors to the natural historians or popular naturalists, with a different and more nearly contemporary cast (Donald Macdonald, Charles Barrett, A.H. Chisholm, R.H. Croll; and Alfred Kenyon recurs). At first sight this is a new subject, but Griffiths interweaves his themes adroitly: 'The land itself could not be "collected", but it could be inscribed ritually and commemoratively.' 'When Europeans ventured into landscapes that were barren of recognisable history and culture, they often turned to the natural environment rather than the uncertain human past for temporal depth.' The idea behind the establishing of national monuments was to create a collection of places. 'The connoisseurship of things *in situ*.' Thus the second section of the book is linked with the first, but it is also a part of a developing set of themes. The recognition and protection of national monuments is a part of the conscious forging of national identity: Baldwin Spencer urged that 'Patriotism calls upon Australians to treat their heritage in land and fresh water fauna as a special and peculiarly Australian possession'. But Baldwin Spencer was also chairman of the Victorian War Memorials Committee, commemorating the Australian role in the First World War, and these war memorials are also eloquent in what they refuse to say, their silence about the other war, fought on Australian soil. One of the continuing structural ironies of this book is that possession implies dispossession. 'All over the continent', argues Henry Reynolds, 'Aborigines bled as profusely and died as bravely as white soldiers in Australia's twentieth-century wars—[but] do we make room for the Aboriginal dead on our memorials, cenotaphs, boards of honour and even in the pantheon of national heroes?'

This sustained irony is apparent in most of the chapter titles; the above is from Past Silences, and again in Chapter Seven, Land Rites, it is used to describe the European rituals of place, which aimed to secure the land emotionally and spiritually for the settler society during the 'very period in which the acknowledgment and illegitimacy of the European invasion of Australia was most strongly suppressed and denied, and the period when many Victorian Aboriginal reserves were revoked and Kooris were losing what few land *rights* they had'.

Referring later to the huge and largely neglected pile of stone artefacts warehoused in the Museum of Victoria, Griffiths uses the same ironic counterpoint in describing the memorials under construction all over Victoria marking the passage of the explorers: Hume and Hovell, Angus McMillan, Strzelecki, Major Mitchell, Charles Sturt. 'While one set of cairns was inventing places for the European imagination, the other cairn was leaching the landscape of Aboriginal meaning, disassembling place.'

Yet love of the land also led at times to a few steps towards a better understanding of the dispossessed: men were 'feeling their way towards a conviction that being an Australian would mean, in some senses, being Aboriginal'. 'It's curious how persistent is that love of one's native heath', confessed Bob Croll soon before his death, 'I am a very aboriginal in that regard.' These beginnings of understanding were nevertheless highly ambiguous, and this is illustrated especially well by attitude towards the interior, and above all to Ayers Rock (now Uluru). 'The outback' is an intrinsically colonial phrase, meaning distance from the coastal settlements, but it was also to become a place of pilgrimage where one could renew or strengthen one's national identity. When they get to Alice Springs and Uluru, many Australians now meet Aboriginal society, as distinct from individuals, for the first time; in fact they become one of the sights for the tourist, 'museum pieces in a heritage landscape', to be 'collected' in a new sense, brought home on film. Not, however, without qualms and the prickings of guilt, or as Griffiths puts it: 'On the giant canvas of the centre, the anxieties of urban southern Australians were writ large. There, confronted by an enduring Aboriginal presence, the impulses of collection and possession appeared problematic, and preservation became a matter of race.'

So we move to the last section, *Preservation*, which is our 'principal mode of appreciating the past', taxidermy on a massive scale; and so the past becomes a growth industry with the rise of the heritage movement and its new breed of self-appointed professionals. The historical societies began decades earlier, but like heritage began as popular, or at least non-academic, bodies; and as academic history has declined in the schools and universities, public history of many kinds has flourished; for example, black history, where Aboriginal traditions 'have been abandoned or lost, people of Aboriginal descent have had to reconstruct

them'. 'You *build* Aboriginality, boy, or you got nothing', says an Aboriginal elder to a younger man.

Although Griffiths shows sympathy and respect for the Aborigines' attachment to 'their country', he does not quite fall into the sentimentality of seeing them as innate conservationists. He quotes a report that cautions that Aboriginal culture in the Kimberley 'should not simply be *assumed* to be in a sustainable relationship with the environment'. Despite the caution, however, he does not consider the examples which can be seen as environmentally degrading; in fact, in one case he comes to a conclusion that is contrary to the reality: 'the soil was enriched by thousands of year of their fires'. Aboriginal burning kept the country open and parklike, trees with a grassy understorey, but every fire over thousands of years meant a loss of nutrients from the soil, and the extreme poverty of Australian soils is a part of our Aboriginal heritage.

The last chapter in the book looks at the complex relationships between history and natural history. Griffiths shows that the 'wilderness movement' of the 1980s is not just anthropocentric, it is eurocentric. What we call wilderness is a civilization other than our own, or as Sylvia Hallam puts it, the land 'was not as God made it. It was as the Aborigines made it'. In one of the ironic inversions that is a hallmark of this book, Daly Pulkara, an Aboriginal man, speaks of land that has been cared for by his own people as quiet, and land that has been degraded by pastoralism as 'wild' country. 'His wilderness is European made.'

If the wilderness movement was a denial of history, the ecologists have restored it, 'conducting a massive historical enquiry', the object of which is to chart the changes in the land through time. Work on plant succession in the High Country of eastern Victoria, with and without cattle grazing, is the example discussed, but there are many possible examples, especially if we add the archaeologists and anthropologists, who are beginning to chart the man-land relationship in Australia going back for millenia. Griffiths ranges across all these fields, not presumptuously but with a sharp eye, making light of others' sharp boundaries, doing, as he says, what historians do best. In doing so, he finds a role for the historian. 'Historians and ecologists would agree that conservation is concerned ultimately with intimate relationships, human and non-human. History—that stubbornly contextual and relativist craft—may be the tool that enables us to

grope for a conservation ethic that is social as well as ecological.'

References

- R.J.B. Bosworth, *Explaining Auschwitz and Hiroshima: History Writing and the Second World War 1945-1990* (London and New York, 1993).
Tom Griffiths, *Secrets of the Forest: Discovering History in Melbourne's Ash Range* (Sydney, 1992).

George Seddon
Centre for Studies in Australian Literature
University of Western Australia

Roy MacLeod & Richard Jarrell (eds), *Dominions Apart: Reflections on the Culture of Science and Technology in Canada and Australia, 1850-1945*. Ontario: Canadian Science & Technology Historical Association, being *Scientia Canadensis*, vol. 17, nos. 1 & 2, 1994. vi + 270 pp., no price given.

In 1990, a workshop was held to compare the experience of science, technology, and science-based industry in the former 'settler colonies' of Australia and Canada. The themes emerging from that workshop and addressed here are many. Several of them can be defined in terms of opposition: imperialism versus colonialism, federalism versus the autonomy of federated colonies, states and provinces; practical and applied science versus pure and fundamental research; and nationalism versus internationalism. Others are more intimately bound to disciplines, including physics, geology, geography, anthropology and chemistry. Yet others look at ideologies, econometrics and technology transfer. A theme that repeatedly asserts itself is the tension between the competing pulls of British and American science, models, authority and money.

The resulting volume has many good things in it, but it is closer to a set of conference proceedings than it might have been. It would have been useful if the editors had taken the opportunity to bring the themes together by offering a conclusion. Their introduction explains that the volume explores the comparative history of colonial science within a predominantly disciplinary framework, and traces the stages from scientific dependency to self-sufficiency.

Part I concerns 'The Culture of Science in the Settler Dominions'. Roy MacLeod argues for a coming-of-age of Australian science during the First World War and examines the transition in science from a federated to

a federal nation, with its interplay between progressivism, nationalism and imperialism, and portrays the role of the state in ensuring the efficient application of science to the purposes of progress and profit. He makes frequent comparisons between the Australian, British and American cases, with the American example—for Australia as for Canada—achieving greater significance as the imperial hold loosened.

Richard Jarrell, seeking ways to compare scientific activity in Canada and Australia, works with the notion of 'science-related expenditure', a notion resistant to nice definition but helpful in getting a relative measure of government support of science, especially applied science. He includes technical education but excludes science education. In spite of different administrative and political structures, late nineteenth-century and early twentieth-century expenditures have a broadly similar pattern of distribution in, for example, New South Wales and Ontario, British Columbia and South Australia. Unsurprisingly, in Jarrell's major categories of health, development (including mining and forestry), and institutions and control (e.g. statistics, patents), development was the largest sector in both countries prior to 1915, strikingly more so than in European industrial nations. That is to be expected in resource-based economies. It would be interesting to know what fraction of total government expenditures was science-related.

Rod Home offers an intriguing analysis of physics in Australia, arguing persuasively that circumstances of time and place may constrain the way in which a field or discipline is conceived locally. He contrasts the laboratory-based science that characterized physics in late nineteenth-century Britain or Germany with the broader face of physics in Australia in those years. (Home rightly supposes that a similar breadth characterized science in Canada.) That does not deny the importance of laboratory-based science, but does assert the importance of natural systems operating on a large scale: what has been called 'Humboldtian science'. Meteorology and geomagnetism were exemplars of such systems. In Toronto, the magnetic observatory, when the imperial government pulled out, was taken on by the colony. The Rossbank observatory in Hobart did not long survive the transfer of authority to the colony, but a new observatory was soon established in Melbourne under Georg Neumayer, a German geophysicist. (Neumayer's work makes one wonder about the local importance of foreign scientists who were

neither British nor American.) Surveying is important for settlement and development, and topographical surveys were linked with astronomical observatories. Surveyors developed practical expertise, important in geophysical work. In 1919, funds from the Carnegie Institution led to the establishment of a geomagnetic observatory at Watheroo, conceived of as American, and helped to develop links between the Australian and American physics communities. Geophysics remained an important part of Australian physics in the ensuing decades.

Part II of the volume, 'The Frontier and the Bush', considers geology and geography. Suzanne Zeller and David Branagan look at three geologists, William Logan, Alfred Selwyn and Henry Brown. They offer a gently revisionist account of Logan, pointing out that the Geological Survey of Canada derived largely from local economic interests rather than British geological pressure and patronage. The social community that sponsored Logan's survey 'accepted territorial expansion as a desirable solution to problems exposed by Logan's own investigations'. This, however, had an unintended consequence: when Logan left the GSC in 1869, two years after Canadian Confederation, he left a survey unable to live up to the expansionist expectations aroused.

Selwyn, meanwhile, went from Britain to Victoria, undertook surveying in the gold-fields region and, when the Geological Survey was formally established in 1855, rapidly established an international reputation by the quality of his work. He correctly predicted gold below the basalt in Ballarat but failed to make political capital out of economic success. He left Australia and succeeded Logan as director of the GSC, having laid foundations for the profession of geology in Australia.

Brown, born in Nova Scotia and educated in London, worked under Selwyn in Victoria and subsequently in New South Wales. From 1882 he was 'essentially the sole geologist of the South Australian Survey', covered a huge area, and helped to establish the School of Mines in Adelaide in 1889.

The three cases speak to the interplay of theoretical geology and mining, politics and economics, and nationalism and internationalism. They speak also to similarities and differences in the Canadian and Australian experience, and to the importance of individual contributions.

Nancy Christie similarly focuses on an individual, Griffith Taylor, who saw geography as the bridge between the natural and

social sciences, opening the way to 'technocratic predicability'. He stressed the causal role of the environment in human geography. Geography could thus help in determining what areas to settle, and how to do it. At the same time he included questions of race in his human geography, bringing in physical anthropology, considering Asians and Polynesians among others as belonging to the same family as Europeans, although there was little to be hoped for Negroes.

Taylor moved from Australia to the USA and thence to Canada, continuing to argue for the importance of environment over heredity. Hitler's racism, the plight of American blacks, the problem of Canada's native peoples—all were to be dealt with through an understanding of environment and race. Griffith also touted geography against the humanities; for him the important issue was the control of resources, not ethics.

Part III, "Transplanted Britons" and Native Peoples', also looks at anthropology. D. J. Mulvaney surveys Australian anthropology since Darwin. Aborigines were viewed as primitive and on the way to extinction. So, said anthropologists, study them fast, while they are still here. This approach ignored the individual and looked at race, so it fitted nicely into policies that used eugenics to speed the processes of assimilation and extinction, and also supported policies restricting immigration to whites. In 1912 Baldwin Spencer, Australia's leading academic anthropologist, was appointed to formulate policy towards the Aborigines, and although his approach combined 'bleak social evolutionary theory with firm paternalism', he also advocated 'ethnographic salvage'. An intriguing coda to Mulvaney's paper is the account of the dependence of Australian anthropological research on American foundations from the 1920s to the 1960s.

Gail Avrith-Wakeam looks at the clash in Canada between Darwinian anthropology, used normatively to urge the supremacy of northern races, and the work of Franz Boas, who emphasized the contingency of history and upbringing. She explores the interplay between Boas's work and that of George Dawson, arguing that Dawson's study of the North-West peoples was initially conceived in the twin contexts of the collection of evidence for the Darwinian debate and nationalism. His professional and institutional clashes with Boas were accordingly predictable. It would be intriguing to contrast Dawson's approach with that of the younger Diamond Jenness, who came from New Zealand to the Canadian Arctic and became

Canada's leading anthropologist, much more akin to Boas than to Dawson.

Part IV contains two papers, the first by James Hull, Ian Rae and Andrew Ross on the development of Australian and Canadian chemical industries from 1850 to 1950. They acknowledge the extent to which both countries imported technologies from Europe and the USA, but stress the creativity involved in applying these imports to local conditions, as well as later original contributions, notably Australia's to mining and Canada's to forestry. Equally, they identify as dominant Australia's awareness of strategic vulnerability and Canadian awareness of the threat of economic integration with the USA, the latter as keen now as it has ever been. They note government initiatives, although they don't indicate how effective these were. They review institutions, new industries and employment patterns. In 1916 most Canadian chemists were in industry, unlike the Australian and American situation. The authors note that Australian and Canadian chemical industries were comparably advanced, that in the 1920s Australian industries were slower to respond to change, but that by the Second World War Australia had developed an advanced indigenous industry that proved crucial for its war effort. And they suggest that Canada has seen industrial science as an alternative to protective tariffs.

The final paper, by David Zimmerman, picks up the theme of war and science and addresses the Royal Australian Navy's efficient adoption of microwave radar technology, contrasting it with the inefficient Canadian fiasco, which meant that the RCN could not detect surfaced U-boats at the height of the Battle of the Atlantic. Standards and specifications, American ownership of Canadian industry, consequent lack of research and development in a branch-plant economy, poor technical liaison with the British, and the relative resistance to criticism of Canada's National Research Council all contrast strikingly with Australian circumstances. Zimmerman's account is based on a careful reading of the Canadian documents, and on Australian official histories, notably by D. P. Mellor. He recognizes that this asymmetry provides a shaky foundation for historical argument and invites a more extensive study of the records of Australian naval science.

Trevor H. Levere
Institute for the History & Philosophy of
Science & Technology
University of Toronto, Canada

National Portrait Gallery, Old Parliament House, Canberra, *The Clever Country: Scientists in Australia*—an exhibition review.

What is the motivation for attending an exhibition of paintings, sculptures and photographs of Australian scientists? A love of art? A curiosity about the canon of those famous enough to be included? A fondness for seeing what people look like and how they are represented? All of these may be valid.

The exhibition of 72 items is presented in a series of rooms in Old Parliament House. The intimate scale and formal but unobtrusive architecture provide an admirable setting for this programme of the National Library of Australia.

Ann Moyal, author of *A Bright & Savage Land* and *Portraits in Science*, is the curator of the exhibition. She shows the benefit of her long experience in this field and has provided excellent short biographies of each of the scientists and an explanation of the importance of their work. It is also mercifully free of the heavy political gloss of some earlier exhibitions of the National Portrait Gallery.

What do the paintings and photographs tell us? My clear preference is for those which attempt to indicate by objects, symbols or setting what the scientist did. An early example is the mezzotint by William Dickinson, from a painting by Joshua Reynolds, of 'The Young Joseph Banks with a Globe', symbolizing his biogeographical collections and descriptions.

An interesting example of a painting where the scientist has been put in a characteristic setting is George Lambert's painting of Baldwin Spencer, biologist and anthropologist. Spencer, wearing an overcoat and scarf and carrying hat and gloves, appears to be sitting in a field extending to the horizon, while clouds race overhead.

Charles Todd, the planner and builder of the Overland Telegraph, was photographed in 1855 with his wife Alice, who seems to be fingering a length of wire which is draped over her shoulder and into her lap. Is this an obvious reference to the wonders of the telegraphic link, a technological marvel?

John Turner, botanist, plant physiologist and early conservationist, has been painted amidst a forest by Ian Armstrong. Veterinary scientist, John Francis, was painted on horseback by Gil Jamieson, probably with a central Australian mountain range encircling him but reminiscent of a bull ring.

Other portraits with an indication of their field of study include photographs of Ted Ringwood and Susan Serjeantson and an acrylic on linen of William Menzel holding a plastic pipe, the technology in which he made his mark.

Another group of considerable interest are those portraits which seem to reveal the character or personality of the scientist although their field is not indicated. A painting by Robert Hollingworth of botanist Sophie Ducker is a portrait of quiet warmth, almost photorealist in technique about the head but with a more subdued background of bookshelves, capturing a real person. Notable for its dignity is the portrait in oils of David Unaipon, the man on the \$50 note. A full-blood Aborigine from the Port McLeay mission in South Australia, he was a successful inventor of shearing tools. Perhaps he was painted in his role as an Aboriginal spokesman, wearing a suit with a badge in the lapel.

The informality of the seventies comes through in an oil of a laid-back Harry Messel (literally, half-reclining, with cigar) by Louis Kahan. The hard-edged acrylic on canvas of James Davenport, biochemist, also is refreshingly informal—painted by Alan Oldfield in 1977. A photograph of chemist Arthur Birch, taken by Graham Tidy of the *Canberra Times*, seems delightfully human and approachable. An older sepia print from a photograph shows the husband-and-wife team, Ian and Josephine Mackerras, specialists in the tropics, relaxing in the bush. A cartoon of Gus Nossal by John Spooner pictures him as friendly and open-handed, the friendliness appearing again in the bronze head of Nossal by Julie Edgar. A portrait of Adrienne Clarke by Rob Perkins is colourful and exuberant.

These are among the portraits that intrigued me and repaid some study and reflection; perhaps half of the exhibition had this appeal. Unfortunately, a fair number of the rest are of 'men in suits', or in several cases in academic robes, who appear to have been painted for the record rather than for accessibility or insight. While one can admire the quality of the painting by Judy Cassab of Ian Clunies Ross (1959) and of Philip Baxter (1963), they present a stiff and closed face to the viewer. Ivor Hele painted an inscrutable Douglas Mawson (1956). The quality of the painting of Stuart Butler is far exceeded by the reproductions of the cartoon series, *Frontiers of Science*.

The painting of Mark Oliphant, in brilliant scarlet robes, is given unusual prominence

as it can be seen several rooms away. As painted by Kerrie Elliott, one of the younger artists, Sir Mark looks both startled and uneasy, offering no key to his character. Helen Newton Turner, an animal geneticist, looks equally uncomfortable as she is portrayed by Alison Chrystal, with a mirror giving side and front views and no accessibility.

Selections are a matter of judgment. Does William McBride rate inclusion for his work on thalidomide, despite his later history? Does a portrait exist of Norman Gregg, who made important discoveries about rubella? In an exhibition where one room featured women exclusively and where women appeared in other areas as well, I missed Germaine Joplin, geologist, whose photo I had seen at a major geoscience convention in Canberra earlier this year. And what about Elizabeth Kenny, who developed new ways of dealing with polio? The inclusion of Susan Georgina Fereday, botanical illustrator, Lady Jane Franklin, Tasmanian Society of Natural Science patron, Elizabeth Gould, bird illustrator, and Louisa Anne Meredith, natural history illustrator and writer, are interesting examples of women who made contributions to science, some of whom were fortunate enough to be painted by friends.

Worth seeing? On its artistic quality alone, perhaps not. On the useful presentation and helpful notes by the curator, yes. On an informative and engaging tour through Australian science, yes again.

Joan Ophel
Canberra

Frank Horner, *Looking for La Pérouse: D'Entrecasteaux in Australia and the South Pacific, 1792-1793*. Melbourne: MUP at the Miegunyah Press, 1995. xiv + 318pp., illus., \$49.95.

To those familiar with his earlier book, *The French Reconnaissance*, it will come as no surprise that Frank Horner has again produced a fine work in his new book, *Looking for La Pérouse*. This is a detailed and meticulous study of one of the numerous scientific expeditions sent to this part of the world by the French in the later decades of the eighteenth century and the first few decades of the nineteenth. Yet, for all its scholarlyness, it is an absorbingly readable account of an eventful voyage that had its full share of triumph and tragedy.

Antoine-Raymond-Joseph Bruny d'Entrecasteaux was already in his fifties and a

commodore, with a distinguished career behind him in the French navy and colonial administration, when, in 1790, he was chosen by the government to lead an expedition to the South Seas to pursue various scientific goals, but above all to try to discover the fate of the expedition led by the Comte de La Pérouse. This latter had set out in 1785 and was now feared lost. Despite the continuing turmoil in France after 1789, there was much public concern for La Pérouse. Louis XVI had played an active part in the writing of his instructions and even now, although in perilous circumstances himself, was keenly interested to learn what had happened to the expedition. It was, therefore, an undertaking of considerable emotional as well as scientific significance that was placed in D'Entrecasteaux's hands.

On 28 September 1791, the *Recherche*, commanded by D'Entrecasteaux, and the *Espérance*, commanded by Jean-Michel Huon de Kermadec, set sail from the Atlantic port of Brest. The ships each carried a large complement of officers, scientists and crew and were laden with equipment and supplies of all kinds, including livestock. Drawing for his information on the officers' and scientists' logs and journals, Horner provides a lively picture of conditions on board. As time went by, there were the usual difficulties with so many disparate personalities crowded together in such close confinement, the scientists often felt that the needs of their work were disregarded (a complaint common to such expeditions), everybody was unhappy with the quality of the food and drink, and discomfort, disease and death were ever-present. But in spite of everything, and due largely to D'Entrecasteaux's diplomatic skills, the work of the expedition was to proceed more smoothly than might have been expected.

Horner describes the ships' course via Tenerife, the Cape of Good Hope (where a few of the scientists left the expedition) and Isle de France (now Mauritius) to the south-east coast of Van Diemen's Land, where it arrived in April 1792. Here the intention was to anchor in Adventure Bay, but the ships found themselves by mistake in a large opening that turned out to be the entrance to the great channel that now bears D'Entrecasteaux's name. The discovery and exploration of the channel constitute one of the expedition's finest achievements. During the five-week stay in the area, the scientists were intensely active. The naturalists, Labillardière and Riche in particular, made large

and valuable collections of the flora and fauna, while Beautemps-Beaupré, the hydrographer, charted the channel with thoroughness and exactitude. Contact with the Aboriginal inhabitants on this first visit was disappointingly slight, although their camp-sites provided much fascinating information on their way of life.

Horner takes his readers along D'Entrecasteaux's subsequent course to the waters around New Caledonia, where the fruitless search for traces of La Pérouse's ships began in earnest. By September the expedition was refreshing in Amboina, preparatory to making for the south-west of New Holland to commence the coastal survey, as instructed. For several weeks in December 1792 and January 1793, it charted the southern coast of the continent, from Cape Leeuwin to a point that D'Entrecasteaux named Cape Adieu. Here lack of water aboard the *Espérance* and some much-needed repairs to her rudder forced the curtailment of the survey, and the ships headed once more to the south-east corner of Van Diemen's Land. It is from this second stay that the extraordinary descriptions of the inhabitants come. These are invaluable for their details of the Aborigines' physical appearance, their character, diet, implements and utensils, social structure and more.

From Van Diemen's Land, the expedition sailed in turn to New Zealand, Tongatapu in the Friendly Islands, Santa Cruz, the Solomons and New Guinea. Its experiences with the different island populations were very mixed, the diet and health of the ships' companies deteriorated daily, but the search for La Pérouse continued, as did the work of surveying and charting. After many exhausting months, D'Entrecasteaux was finally heading towards Java for rest and refreshment when, suffering from scurvy, he died of a perforated ulcer on 20 July, only weeks after the death of Kermadec at the beginning of May. The expedition reached Sourabaya on 23 October, and here it ended. Coming under Dutch control, the ships were ultimately sold and the members of the companies dispersed. Some died, others stayed to work in the East, but most gradually filtered back to France where, after many vicissitudes, the expedition's large botanical and zoological collections also finally came to rest.

Horner has related the complex story of this expedition with care and understanding. He has usefully placed it in its historical context and clearly demonstrated its failures and achievements. Most importantly, it

failed in its primary object: it did not solve the mystery of La Pérouse's disappearance, despite passing within sight of Vanikoro, where the wrecks of his ships lay among reefs. The expedition also failed to complete its survey of the southern coast of New Holland. Its achievements, however, were notable. Apart from significant scientific work (Labillardière produced the first published flora of the continent), they include the discovery of D'Entrecasteaux Channel and the Derwent River in Tasmania and Esperance Bay on the south coast of the mainland. And there was much valuable surveying done in the Solomons archipelago for the verification of existing charts.

Finally, this book is well-supplied with charts and illustrations and contains a comprehensive bibliography. *Looking for La Pérouse* is in every way a worthy addition to the growing body of literature on the impressive part that France played in the geographical and scientific exploration of the Australasian region.

Christine Cornell
Pymble, NSW

David Branagan (ed.), *Science in a Sea of Commerce: The Journal of a South Seas Trading Venture (1825-27) by Samuel Stutchbury*. Sydney: publ. privately, 1996. 246pp., illus., \$40 pb.

Our knowledge of scientific activities in the South Pacific in the early decades of the nineteenth century comes to us in the main from the journals and narratives of the seamen and savants on the major naval voyages of exploration and scientific discovery of France, Russia and England. There were few opportunities to undertake scientific observations in private voyages to the region. One notable exception is the subject of this book, the pearling voyage to the Tuamotu Archipelago by Samuel Stutchbury in the mid-1820s.

Stutchbury (1798-1859) would have preferred to have been the naturalist on Captain F.W. Beechey's contemporary expedition to the Pacific and Arctic in HMS *Blossom*, but his application was turned down in favour of George Tradescant Lay. This may have been a poor choice by the Admiralty, as Lay was unable to accompany the *Blossom* on its first season in the Beaufort Sea and later took only a minor role in writing up the natural history results, an activity which Stutchbury would have relished.

After some training in medicine and natural history, Stutchbury was appointed assistant curator at the Hunterian Museum, Royal College of Surgeons, in 1820. Stutchbury's application to join the Pacific Pearl Fisheries Company voyage to the Tuamotus was supported by Sir Everard Home, President of the Royal College of Surgeons and probably a financial backer of the venture. Home also presented Stutchbury with a list of instructions for his scientific activities and equipped the two vessels with the latest-model diving bell. In July 1825, Stutchbury was appointed zoologist and surgeon to the sloop *Sir George Osbourne*, under Captain Joseph Thompson. Although he lacked formal qualifications, his time at the College of Surgeons had given him a good practical background. The voyage was to provide the opportunity to develop his skills.

Stutchbury's journal is a contribution to our knowledge of nineteenth-century Pacific history, particularly with respect to its references to the then little known Tuamotu Archipelago, to the day-to-day activities of pearl diving, the use of early diving bells, and his scientific observations of fauna, flora and geology.

Some of the frustrating features of ship-board journals are the repetitious nature of many of the entries—often limited, day after day, to wind speeds and direction and other meteorological data—and the non-recording of other events and interactions that must have been experienced but were not considered worthy of note. For instance, one would like to know more about some of the diarist's fellow passengers, particularly Rev. William Williams, one of New Zealand's early and most successful missionaries, and Edward Riley, one of the pioneers of the Australian wool industry. Branagan uses both journals and family papers to fill in some of the gaps.

Shortly after passing the island of Madeira on the outward voyage, the 'North Atlantic Reading Society' was formed to help pass the time. Each of its seven members was required to read, in rotation, one hour per evening (except the Sabbath) from books of their choice. Stutchbury retained a listing of books belonging to each member. Religious (Williams) and scientific (Stutchbury) books predominate, but there are also many volumes on history, philosophy, poetry and the classics, providing a fascinating insight into what the educated classes of the 1820s were reading. Stutchbury's library of scientific and technical books tells us much about the broad range of interests of the man and, if funded by the company, shows more

understanding of the naturalist's responsibilities than shown to Tradescant Lay, whose application for the purchase of 21 books on natural history for the voyage on the *Blossom* was refused—only four were allowed. 'Sir Joseph Banks was of the opinion that books are not necessary during the voyage and only served to distract young naturalists when they should be collecting. This was also the opinion of Barrow ...'

While Stutchbury has little to say on his two-and-a-half months in Sydney, his comments on the events in the Bay of Islands, New Zealand are of interest to the historian. Here he met Rev. Henry Williams, William Williams' elder brother, who was establishing the foundations of a permanent Church Missionary Society presence, and Hongi Hika, the most successful Maori warrior chief of the time, then at the height of his power. En route to the Tuamotus, the two company vessels spent several weeks in the Society and Austral Island groups, trading, watering, provisioning, collecting wood and recruiting Polynesian divers. At Raiatea in the Society Islands, Stutchbury met Rev. John Williams, another prominent missionary with the London Missionary Society.

The Tuamotu Archipelago covers a wide area between latitudes 14° and 23°S and longitudes 135° and 149°W. The 76 islands of the group were discovered individually over a long period of time by the navigators of several nations, from the beginning of the seventeenth century to near the middle of the nineteenth century. The low elevation of the majority of its islands has long given the Tuamotus the reputation of a hazardous place to navigate and, even in the modern age of radar, inter-island copra schooners prefer to make their landfalls in daylight.

Hao, the atoll where the *Sir Everard Home* and the *Rollo* arrived in July 1826 for three months' pearl diving, was first 'discovered' by Quiros in 1606 and named San Pablo. Bougainville passed close by in 1768 and named it Isle de la Harpe. The following year James Cook decided the atoll's shape resembled a bow rather than a harp and named it accordingly. After the archipelago was annexed by France in 1880, the island reverted to its original indigenous name. Stutchbury's day-to-day account of the pearl diving activities at Hao makes interesting reading. The voyage appears to have been reasonably successful, with the *Rollo* obtaining 42 tons of pearl shell from which 2,544 gm of pearls were recovered.

The two diving bells were not a success. Designed and built by an English engineer,

James Rennie, the cast iron chamber with its bottom open to the sea had been used effectively in the quiet waters of Ramsgate Harbour. The original plan was to have used non-native divers, lower the bell down to 40 to 50 feet and allow the divers to descend to 70 to 80 feet to recover shells and return to the bell, which would also serve as a safe haven if the diver was threatened by sharks or other large fish. Unfortunately, the leather air hoses could not withstand the air pressures required and leaked badly, with the result that the air space in the bell could not be maintained. The native divers from Huahine and Raivavae, used to free diving, complained about the pressure on their ears within the bell at 30 ft depth (where the surface atmospheric pressure is doubled). As a result, the bells could not be used below 24 ft, a depth where surface divers were just as effective. This was probably a blessing in disguise. If local divers had had to abandon the bell at 50 ft and ascend freely with a lung full of compressed air, embolisms would have been the inevitable result.

The literature on the Tuamotus in general and pearl diving in particular is limited. Charles Nordhoff (of mutiny on the *Bounty* fame) described the activities of an American pearl diving adventure in his novel *The Pearl Lagoon* (1924), while Frederick O'Brien described the pearling industry as seen by Polynesian participants in his *Atolls of the Sun* (1922). Both authors knew the archipelago from first-hand experience.

Throughout his several months in Polynesia, Stutchbury recorded all aspects of the flora, fauna and geology he saw. This included a traverse across the mountains at Tahiti. These observations were the basis of several papers published on his return to England, including one 'on the formation and growth of coral reefs and islands' in the *West of England Journal of Science and Literature* in 1835. This paper records the presence of elevated reefs of 'strata of semi-fossil coral' at 7,000 ft elevation in Tahiti. This observation is referred to by the main theorists of the origins of coral reefs, Charles Lyell, Charles Darwin and James Dwight Dana. Branagan discussed Stutchbury's influence on Lyell in an earlier paper in *Records of the Australian Academy of Science* (1977). It would be interesting to see this theme developed further if any additional evidence is available.

On his return to England, Stutchbury eventually became Curator of the Bristol Institution, a position he held for nineteen years. During this time he published many

scientific papers on a wide range of subjects. He also drew up a set of instructions for ships' captains, entitled 'Brief directions for preserving and bringing home objects of natural history', based on his Pacific experiences.

In 1850, Stutchbury accepted a position of government mineral surveyor in Australia. This was probably a mistake, as he was not the mineral prospector that the times and place required. Geoffrey Blainey has said that 'the arrival of that fussy, elegant, impractical geologist from England could have been a decisive event, but was not'. After five years in Australia, Stutchbury returned again to England, where he died in 1859.

This is a book that needs to be read with careful attention to the footnotes and endnotes. There are many events that either Stutchbury did not consider worth recording or were not apparent at the time that fuel the reader's appetite for more information. Here the editor has done an excellent job in providing much of what the serious reader seeks in the form of 878 endnotes. The combination of Samuel Stutchbury's *Journal* and David Branagan's research provides us with a valuable addition to the limited literature on the Tuamotu Archipelago, pearl shell fishing, diving techniques, and scientific observations in the South Pacific in the early nineteenth century.

Many of the illustrations, particularly the hand-drawn ones, have not been reproduced clearly and are hard to read, but in general they complement the text. It is perhaps unfortunate that this work could not have been published by one of the university presses, as it is an important contribution to our understanding of the scientific and economic history of the period as well as a fascinating insight into the lives of those involved.

Howard Hume
School of History
La Trobe University

Ralph Neale (ed.), *The Unillustrated Papers of the Landscape Australia 1994 Garden Design Conference, 'Gardens for Tomorrow'*. Melbourne: Landscape Publications, 1994. 120 pp., \$20 pb.

Don Garden (ed.), *Created Landscapes: Historians and the Environment*. Melbourne: History Institute Victoria, 1993. iv + 100 pp., illus., \$8.95 pb.

These two books offer two different and equally fascinating approaches to a common topic, that of designed landscapes.

The reason for the slightly unusual title of the first volume, *The Unillustrated Papers of the Landscape Australia 1994 Garden Design Conference, 'Gardens for Tomorrow'*, is that Ralph Neale considered publishing an illustrated volume of the papers. However, to assist the landscape debate by circulating the material promptly, he has given us the unillustrated version, which I shall subsequently refer to simply as *Gardens for Tomorrow*.

Ralph Neale is a most inspired and diligent promoter of high-quality landscape design. He is both editor and publisher of this book, through his firm Landscape Publications, which also publishes the journal *Landscape Australia*. The conference from which the papers are taken is one of many of Ralph Neale's great contributions to the area of landscape architecture and garden design. The President of the Australian Institute of Landscape Architects noted that Ralph Neale has been justly recognised for his contribution to landscape architecture with the Order of Australia Medal.

The conference was chaired by Professor George Seddon, who has a remarkable capacity to extract the essence from contributions and draw threads together into a rich fabric of ideas. Fortunately, we have been given Professor Seddon's introductory and concluding comments for each presentation, as these are often as important and entertaining as the papers themselves.

Gardens for Tomorrow offers views on garden design by a range of highly respected garden and landscape authors, both local and international. It is predominantly about gardens, but it addresses these in the broadest sense. Several authors extend the topics further into wider landscape issues.

David Yencken's paper on 'Changing Perceptions of the Australian Garden' provides a fine introduction to the volume. It explores images of the Australian garden from settlement to the present, using literature, art and commentary of the day. In this it comments on a fascinating aspect of our cultural history.

There is a cluster of articles dealing with garden style. Helen Armstrong reviews garden styles in Australia. She draws out the issue of whether there is an 'Australian Style' or a series of Australian styles, which, as Professor Seddon says, 'most people have not taken the trouble to notice'. Marc Treib discusses regionalism in garden design and

asks 'Can gardens ever escape regional traits, given their dependence upon and response to their immediate physical situation?' One might also ask 'should gardens escape their regional traits?' This contrasts with the article on 'The International Garden Style' and its influence on gardens in Australia. Here Peter Valder comments on the transfer of ideas and plants from overseas and the role of the international garden tour as a source of ideas for Australian gardens. John Brookes and James Hitchmough look from the present to the future and offer some ideas on what will shape garden design in the 21st century. Topher Delaney takes the matter of design from analysis to synthesis and describes the outcomes of her design philosophies in gardens she has constructed.

The second cluster of papers centres around designing for dry landscapes. In this, the reality of gardening and landscape management in Australia and in other arid climates is recognised. Water is not always readily available, and if it is, the highest priority may not be the garden. This cluster includes 'Arid Landscapes—Alternative Approaches' by Stephen Forbes, which gives us an idea of the diversity of the plant palette available; 'Garden design for water conservation' by Robert Perry, which offers a very useful comparison with Los Angeles and offers both cautionary tales and sensible solutions; and 'Xeriscape Gardens in Australia', in which Andrew Straker discusses how principles of water conservation can be applied in practice.

The third cluster of papers deals with different elements in landscape design. 'Environmental Weeds' by Judith Rawling describes the garden plants that got away and subsequently caused havoc in our bushland. Nature in our gardens and the delight that can bring is described by Graham Pizzey. The role of scent in the garden and, more generally, sensual aspects of garden design is discussed by Geoff Sanderson. The use of sculpture, water and paving in garden design is explored by Simon Klose, Dirk Slotboom and Giovanni Abrami respectively. Australian native plants and their use in garden design are admirably addressed by Rodger Elliot, who is an authority on Australian plants and the co-author of the *Encyclopaedia of Australian Plants*, and by John Patrick who focuses on aspects of native plants and design. Pamela Burton describes the influence of firestorms on the landscapes of California and draws parallels for Australia.

I have separated out George Seddon's paper 'The Garden as a Statement', as it offers an important new slant on the concept of the garden in Australia. Professor Seddon discusses the concept of garden as oasis, as clearing in a forest, as house in the trees, as walled garden (with an important discussion on boundaries and degrees of permeability), as well as more formal and conventional garden styles. He also describes meadow gardens and gardens in the style of pastoral landscapes. In this he points to the interface between garden and landscape and approaches some of the ideas set out in the second book. This paper is a gem. The ideas are insightful and the lateral links to broader landscape issues are characteristically Seddonian.

Professor Seddon's paper intersects with the second book, *Created Landscapes: Historians and the Environment*, in viewing the garden as an integral part of the overall landscape. *Created Landscapes* also deals with landscapes that have been shaped by people, either as designed landscapes or in a less conscious way.

This book is also the product of a conference, 'Historians and the Environment', held in 1992. It is a smaller and more focused publication, edited and introduced by Don Garden. It offers a number of different perspectives on the environment from a solid historical base.

Recently, we have seen historians moving further into the field of landscape and environmental history, an area previously the province of geographers, landscape historians trained through landscape architecture, and other related disciplines. This is a welcome shift, as the careful study of the evolution of our landscapes is essential for future planning and management and adds another important layer to our understanding of the culture of place. Eric Rolls, in the foreword to *Created Landscapes*, reminds us in his refreshingly forthright fashion that 'Some fervent environmentalists are a danger to the environment'. How right he is!

Created Landscapes also explores three main themes. First, Joe Powell provides a context for the papers that follow with a discussion of the genesis and development of environmentalism in Australia. He describes his paper as a 'mildly speculative historical sketch', and then proceeds with a masterful exposition of environmentalism in Australia. He catches the difficulties of this task in describing 'environmentalism' as 'a cantankerous, bamboozling term'. He identifies what he terms 'White Fella Songlines', and

suggests that historical geography can supply the stories and the singers.

The second theme deals with development of the landscape of the suburbs, and in particular with the uniformity of housing and subdivision design. He traces the post-war history of the suburban dream of a detached house in its own garden and measures it against the realities.

Contrasting with this theme, and comprising the bulk of the book, are papers dealing with the landscape history of the 'bush'—forests, countryside and the 'High Country'. Jane Lennon discusses the management of various types of rural heritage such as historic townships, rural properties, industrial sites such as mills, and forests. She sees people and relics of settlements among what may pass as 'pristine bush'.

Tom Griffiths examines the 'secrets of the forest', the close links between human history and the natural history of the Mountain Ash forests of south-eastern Australia. He also deals with the more general question of writing an environmental history that intertwines these two strands. He writes evocatively of the role of fire in the forest ecosystem and its effects on the people who live and work in the forest.

Meredith Fletcher expands this theme in a detailed study of the Heyfield district, while Anita Brady deals with the old growth forests of East Gippsland. Brady describes a history of disturbance and clear-fell logging, and outlines the way in which history can be used as a tool for environmental surveys. Peter Gell discusses forest ecology and the ecologists who study it.

Sue Hodges (who also compiled the volume) deals with the issue of environmental action and the disputes over East Gippsland and the High Country. She describes different ways of understanding sense of place and the values attached to a landscape, and illustrates that these may not be the same for different groups of people.

I found myself wondering why I felt the first publication was better described as clusters of papers and the second as a set of themes. Perhaps it is because the second volume is more focused. Recent experience at the 'Ecology and Empire' conference, organized and hosted by the Sir Robert Menzies Centre for Australian Studies in London (September 1996), demonstrated that there is a great deal to be gained by being focused. Indeed, it in no way limits the lateral thinking or diminishes intellectual richness, and in fact provides a conceptual framework within which they can flourish. The

temptation for conference organizers is to be very broad and to offer a wide range of topics to please a diverse interest group. On the whole I think this temptation should be resisted, and that books derived from focused conferences are more thematic, more coherent and more satisfying in the long run.

Janet Schapper
School of Environmental Planning
University of Melbourne

Melbourne's Pride and Glory: 150 Years at the Royal Botanic Gardens. Melbourne: Royal Historical Society of Victoria, being a special issue of the *Victorian Historical Journal*, vol. 67, no. 1, 1996. 176 pp., illus., \$15 pb.

In 1996, the Royal Botanic Gardens, Melbourne, marks two important events: the 150th anniversary of the foundation of the gardens and the 100th anniversary of the death of Australia's great nineteenth-century immigrant scientist, Baron Ferdinand von Mueller. Mueller was Victoria's first Government Botanist and first Director of the Botanic Gardens. To celebrate these events, the *Victorian Historical Journal* has dedicated a special issue to them, calling it *Melbourne's Pride and Glory*. The issue contains nine essays by diverse writers, as well as a useful select annotated bibliography.

'Perceptions of Melbourne's "Pride and Glory"' by Weston Bate is wonderfully presented, most readable, gives a history of the gardens to some degree, and puts the gardens in the context of the times. I liked it. One of the most interesting paragraphs analyses the use of the gardens by different people, according to suburb, age group, education and ethnic background. In the 1850s the gardens were a middle class preserve, while a survey in 1980 'revealed that visitors came from central and south eastern Melbourne. Fewer than ten per cent were from the north and west. Most common were professional people over thirty years of age and those with incomes above \$20,000.' And Bate finds it interesting that 'nostalgia for the old world, as among nineteenth-century migrants, seems to have resulted in a relatively high proportion of overseas born'. Overall Bate writes about the gardens generally rather than specific episodes; and it is one of the few articles in the issue that celebrates the beauty of the gardens.

'In Pursuit of Useful Knowledge: The Nineteenth-Century Concept of the Botanic Garden' by Therese Wyborn contains some

interesting ideas; for example, 'The ability to learn from nature while simultaneously subduing it was thought to symbolize an enlightened age, a self improving age. Such sentiments had their impact upon the nineteenth-century idea of the botanic garden.' The formation of botanic gardens on the Continent and in England was designed to a large extent to show to the public plants gathered from all over the world, collected in the century of exploration, and most of all the riches of medicinal and other useful plants. Gardens that Mueller had known before he arrived from northern Germany were not beautifully landscaped gardens but were very much tinted with the practical and scientific approach.

Of all the articles in the issue, 'A Garden of Views: Photographic Records of the Botanic Gardens, 1860 to 1910' by Eve Almond is the one that gave me the greatest pleasure and from which I learned a great deal about the different approaches to the gardens employed by Mueller and Guilfoyle. I was so pleased to have the working methods of Guilfoyle explained and to have them so beautifully illustrated by photographs. It is a great pity, however, that there is not a drawing or plan to show how Guilfoyle perceived and planned his alterations to the existing (Mueller) gardens. I would love to have seen an instruction sheet from the Director to the Foreman of the gardens. No wonder that Mueller, after his dismissal and hearing about all the alterations, never put a foot into the gardens again.

The versatility expected of Mueller in the early years of the gardens is very forcibly conveyed in the essay 'Under Pressure: The Evolution of the Water Supply System of the Royal Botanic Gardens', by Rohan Lamb. Mueller had to turn his hand to so many facets and necessities of the gardens. He dealt with the difficult water supply, he had to arrange for the uncertain arrivals and housing of a most diverse range of animals, he had to move and erect fences, and most of all he had to struggle with the authorities. Guilfoyle's task, by his time, was somewhat easier; but as Rohan Lamb says in his most illuminating article, 'For much of its existence the Botanic Gardens has not been able to take its water supply for granted. The first administrators had to cart water manually from the Yarra River. Mueller enjoyed access to Yan Yean water briefly but mainly relied on a steam engine [it was his idea, and he had to beg for one disused in the printing office!] to pump water from the Yarra. Under

Guilfoyle large sums were invested in a reservoir and machinery but with disappointing results. It was not until the construction of the Dight's Falls Scheme that the Gardens had a reasonably reliable and sufficient water source. The importance of water to a garden in a dry country like Australia cannot be overestimated. Mueller and Guilfoyle in particular ... were constantly "under pressure" to put their case to authorities against competing interests to ensure sufficient water and the survival of the Gardens.'

Linden Gillbank writes of 'A Tale of Two Animals—Camel and Alpaca: Zoological Shaping of Mueller's Botanic Gardens'. I wonder how many readers will be amazed, as I was, to read that the camels used by the Burke and Wills Expedition were really imported and paid for from Mueller's Zoological Gardens allocation and used for the enterprise of the Royal Society of Victoria? I found all this very interesting and well presented.

I also found 'Relief from Duties of Minor Importance—The Removal of Baron von Mueller from the Directorship of the Melbourne Botanic Gardens', by Helen Cohn and Sara Maroske, an interesting topic. One learns that Mueller just had to be removed; it was inevitable. The long-time-brewing animosity towards him came from different quarters and for different reasons. There were so many different sources of objection, and any one of them would have been good enough. There was the strong lobby of nurserymen, who feared for their trade, there was the obvious racism, there was the personal animosity of the public servants, and there was the envy of less educated men. And all of this was not helped by J.D. Hooker sitting on the fence, when he should have supported Mueller. The authors compare the circumstances and personalities of the time, here and overseas. And it is very true that 'Mueller's fame did not ultimately rest on his occupancy of the position of Director. After 30 June 1873 he continued as Government Botanist and managed to make his crowded botanical museum, and makeshift offices in his private residence, into an institution of vastly more significance than size and staff alone would suggest. It is Mueller's taxonomic publications, his library and herbarium that are his chief legacy, although his successor at the Garden, William Guilfoyle, found an impressively diverse plant collection from which to create a new landscape design.'

On reading 'William Guilfoyle and Staff Discipline in the Botanic Gardens' by Darren Watson, one can only wonder how much the creative spirit of Guilfoyle was frustrated by his difficulty with the staff of the gardens. It is interesting to muse on these reports in comparison with our present-day industrial laws. Here again, I would have loved to have read something about the working methods of Guilfoyle himself and how he transmitted his plans to the gardens' staff.

'The Provincial Gardens in Victoria and their Relationship with the Royal Botanic Gardens, Melbourne' by Francine Gilfedder is a most useful study, and it has used the extensive records, at last documented, on the provincial gardens of Victoria. It will dispel many myths about the designers of some of these gardens.

Although I personally remember many of the developments of the Maud Gibson Trust, it was nice to have the story put here in 'The Cranbourne Botanic Garden and the Maud Gibson Gardens Trust' by Peter Howson. I went out with both Professors Wadham and Turner to the Cranbourne and Langwarrin sites, and I had botany students in the area while all this was being discussed. I am pleased to see the records of these periods being written up, for it is so necessary for these things to be handed down to future generations. For them, following the invention of the telephone and electronic mail, historians will not find as many written records of late twentieth-century developments in the archives.

The writers of these articles are steeped in the history of the life of Ferdinand von Mueller and in the history of Melbourne's Royal Botanic Gardens, but the majority of readers of the *Victorian Historical Journal* will not be. So it would have been helpful if a page of relevant dates could have been given for both Mueller's life and those of the gardens. This would have made it unnecessary for the individual writers to give so much background to their separate themes and would have been invaluable for the evaluation of the specific episodes mentioned.

What a wealth of archival material has been unlocked by these studies! Painstaking work in public records and libraries was the key to the success. Most of the articles, however, deal with the nineteenth century; essentially only one third of the life of the gardens is considered. One wonders about all the changes in the gardens brought about by the hazards of this century, to mention only the population explosion, flying foxes, pollution and money scarcity? The gardens

have survived all this, and somewhere there should be a celebration of the achievements originated by Mueller and Guilfoyle but maintained over this long century, to uphold to the present day the pride and glory of Melbourne's Royal Botanic Gardens.

Sophie C. Ducker
School of Botany
University of Melbourne

John Wisdom, *A History of Defence Science in Australia*. Melbourne: Defence Science and Technology Organisation, 1995. 267 pp., illus., not for sale—available through libraries.

This book indicates the importance of Australian defence scientific research to the industrial and technological development of Australia. Beginning early in the twentieth century, Australian defence science was never narrowly focused on defence problems, but always contributed significantly to the much larger task of national development. The missionaries of defence science sought to assist particularly the development of manufacturing industry and the organization and promotion of science as a new force in Australia's political agenda. To some extent, that mission remains today, although Defence Science is no longer the dominant force it was fifty years ago. There are many other organizations now, such as the universities, major corporations, CSIRO, state government laboratories, and more. Despite this, Wisdom had been able to show that Defence Science remains a creative force that extends its technical influence beyond mere support of the Armed Services.

The first quarter of the book shows the growth of Defence Science until the end of the Second World War in 1945, and the rest gives the most detailed account yet published of the developments in the period 1945 to about 1990. The main difficulty lies with the pre-1945 history.

Wisdom has chosen to discuss the period in some detail rather than give it a brief summary, but there is a strange lack of awareness of the existence of a considerable historical literature which covers this period. For example, Roy MacLeod has published many articles on Australian defence science in the First World War, and Rod Home has published quite extensively on science and defence science in the inter-war period. My own PhD thesis is also directly relevant to much of Wisdom's pre-1945 history (*The Arming of Australia* ..., UNSW, 1986).

Another example is the journal *Man and Aerial Machines*, which has been publishing Australian aeronautical history for some years.

This literature outlines a more complex world than is acknowledged by Wisdom. For example, Australian industry was not 'in a fairly rudimentary form' in 1939. It was, in fact, quite advanced, well balanced and largely self-contained. This had been achieved by deliberate Australian government policies from 1915. The fact that Australian industry and science proceeded, during the Second World War, to make the most advanced weapons, munitions, radar and aircraft was an indication of such development. Similarly, it is misleading to say that Australia had an 'almost total dependence on United Kingdom technology in the munitions field'. Australia chose to use British technology in munitions, but was more than capable of modifying it to suit different materials and industrial processes, and different operational requirements. As Wisdom himself partly chronicles, Australia demonstrated all these technical strengths during the Second World War.

Other areas, it seems to me, are treated too simply; for example, the Beaufort project and the Boomerang fighter. The Beaufort bomber was foisted on Australia in a successful attempt by the British government to re-insert British aero-technology into Australia. It led to the almost total disorganization of the aircraft industry because of infighting between the Commonwealth Aircraft Corporation and what became the Government Aircraft Factory. This rivalry carried on into the post-war period. Similarly, the Boomerang did not suddenly appear after only six months in 1942; the design was begun in 1939 and progressively refined.

All of this may appear serious criticism, but it does not refer to the central part of the book, which is of a much higher standard. Furthermore, Wisdom is not entirely to blame for the weakness. I saw a draft of his book in 1984, while working for the Defence Science and Technology Organisation (DSTO). As far as I can tell, there is virtually no difference between what I saw then and what has been published in 1995. In 1984 there was no alternative literature, except that of the official historian D.P. Mellor, whom Wisdom cites frequently. The alternative literature largely appeared after 1986 and would have cited Wisdom if he had been published in 1984, as he should have been. He was caught in a time warp for eleven

years by DSTO, and during this time his intellectual capital steadily eroded.

Fortunately this has not happened to the main part of the book, that regarding the post-1945 era. Here Wisdom shows a broad technical knowledge which allows him to explain simply the many different Defence Science projects carried out in the last fifty years. The big picture is described along with much intriguing detail although, in regard to the Joint Project with Britain and the atomic bomb tests, he duplicates detail produced in earlier books such as Peter Morton's *Fire Across the Desert* (AGPS, Canberra 1989). I believe that this is explained as before; DSTO has held the text, Wisdom has had little to do with it, and Morton's and other books have been published in the intervening years.

Because he covers the big picture, Wisdom is able to put the Joint Project into much better perspective than anyone else, including Morton. It was the most expensive project carried out by Defence Science by a wide margin, and according to Wisdom, it bore little direct relevance to any of Australia's eventual defence needs. But it introduced Defence Science to mathematical modelling of weapons systems, which became a vital tool for evaluating defence equipment such as the FA-18 and F-16 as replacement fighter aircraft for the Mirage. It led to the development of stringent trials and exercise evaluation. The Joint Project introduced many advanced technologies, which led to most of the big equipment developments carried out by DSTO, including Malkara, Ikara, Jindalee, and the Barra Sonobuoy. Defence Science also became a leader in digital data transmission and pioneered the manufacture of micro electronic silicon chips in Australia. The Joint Project was the stimulus for all these and many other activities. It gave Defence Science long-term, large-scale government financial support, which might not have occurred without the Joint Project. It was a window of opportunity that was fully exploited by the scientists and engineers of Defence Science.

Wisdom also covers many other areas of Defence Science that are usually ignored in favour of the big projects. These include aeronautical research, acoustic modelling, laser applications, materials research and chemistry, radar investigations, artillery systems, communications, mapping, navigation, and relations with the Armed Services, industry, CSIRO and the universities. The majority of this information will be new to

the general public and non-defence scientists. Given the heritage of secrecy in the Defence Department, it is refreshing to see the detail which the author has been allowed to present.

Wisdom's book is the only comprehensive work ever written on Australian Defence Science and it is going to be a long time before it is surpassed. He has shown the importance of defence research to Australia, not only in defence but also to national development. When DSTO is subjected to yet another review, as is now the habit of all governments in regard to their instrumentalities, the first thing to throw on the table will be Wisdom's history. It answers the question of whether there should be a DSTO.

A History of Defence Science in Australia is definitely recommended for scholars and students, although they would be wise to read it in conjunction with the other literature mentioned in this review. Scattered throughout the text are some errors of historical fact, but they have no influence on the main impact of the text.

A.T. Ross
Grafton, NSW

Bernard O'Neil, *Above & Below: The South Australian Department of Mines and Energy, 1944 to 1994*. Adelaide: South Australian Department of Mines & Energy, being Special Publication No. 10, 1995. xvi + 655 pp., illus., \$39.95.

This is a solid and heavy volume, printed on glossy government paper (not an obvious bed-time read), the title *Above & Below* is in an unappealing type face, and the brightly-coloured picture providing the rather garish cover turns out to be a modern aeromagnetic image. However, despite the off-putting appearance and what might be expected to be the trivial if not boring details of a government department's activities, this is a human story, as a result of the generous quotes from oral history interviews and the numerous photographs of people and places. It covers a period when South Australia was undergoing major changes in which geology was to play a significant part.

Bernard O'Neil is an active historian whose University of Adelaide MA thesis led to his first book *In Search of Mineral Wealth* (1982), which covered the period from the beginnings of the Geological Survey of South Australia in 1882 up to 1944. His research output also includes a biography of Johannes

Menge, *The Father of South Australian Mineralogy*.

The theme is the Geological Survey of South Australia (or strictly the Department of Mines), in clear chronological order and under each director's name, from the Dickinson years of 1944-1956 to the Fardon years of 1992-1994. But don't turn to this book for biographies of Survey staff; even many of the major participants in the Survey's activities are only mentioned in passing, although their names can be found in the large index.

Many black and white photographs are provided, mostly in the third of the page left as an otherwise generous blank margin. These have excellent and informative, even entertaining, captions! At the rear of the book it takes five and a half closely-printed pages to list the illustrations with their captions and sources. The reader will want to consult maps, but few are given. By contrast, the recent history of the national survey, *Rocks to Riches* (by Rick Wilkinson, Allen & Unwin, 1996), has a useful appendix with numerous maps.

Who are the likely readers? Certainly past members and associates of the Survey, and students of the broad sweep of history at state government level. In all, not that many, I should think. However, South Australia in the post-war years, under the premiership of Playford until 1965, was a growing economy. Problems and opportunities were associated with geological exploration and mining development. The list includes Radium Hill uranium and Leigh Creek coal, iron ore, opal, underground water, oil and gas in the Cooper Basin. Aboriginal land rights and land access problems arose, followed by developing interest in the environment; most recently South Australia has been the leader in mining heritage and geological conservation work. The South Australian Exploration Initiative of 1992 and the new techniques of remote sensing and airborne geophysical imaging, supported by data manipulation using computers, has now led to major growth in Survey activity, with an obvious sense of being at the growing point of a major applied science.

How does the book impress the reader overall? Quotes from the interviews are substantial portions of the book and encourage browsing. Aerial views of mines and photographs of field work, drilling rigs, odd and unusual field vehicles, mine site visits by politicians and laboratory work and geological displays, are contrasted with excellent photographs of individuals, staff cricket teams and football matches.

O'Neil points out that he has placed special emphasis on the people who have worked in, or were associated with, the Department, and 'his focus on people from the bottom to the top of the Department is reflected in the title' of the book. The title, *Above and Below*, also 'relates to the gradual assertion of official control over all minerals below the surface of the earth', and as he points out, can also be linked to the extensive airborne magnetic and radiometric surveys now being carried out in South Australia. This brings us back to the source of the image on the cover of the book. As O'Neil reminds us, 'Interpretive eyes from above will enable explorers to "see" more of what lies below the surface'.

The book contains an appropriate bibliography of over ten pages, listing not only unpublished theses, state records, pamphlets and non-print sources, but also a carefully noted list of interviews, many by the energetic South Australian geologist Barry Cooper. Unfortunately, a useful list of people with the dates of their association with the Department found in this section is not mentioned in the index.

Histories of most state geological surveys have been published, and there is a new history of AGSO this year. There have been histories of other related organisations such as universities, royal societies, ANZAAS, and the recent history of the Geological Society of Australia (by Cooper & Branagan, *Rock Me Hard ... Rock Me Soft ...*, Geol. Soc. Aust., 1994). But there is also a need for integrated histories of geology, state by state, since the states have traditionally worked more or less separately in their geological mapping and research, and continue to do so today. Such ideal state geological histories would combine university, government survey and museum activities, and include others aspects such as the work of school teachers (an important group in the early years of Australian geology). The part played by societies such as the Royal Societies, ANZAAS, geographical societies and field naturalist groups should also be considered.

To give examples from Victoria, in the second half of the nineteenth century Frederick McCoy was both a foundation professor of the new University of Melbourne and Director of the Museum of Victoria; later, at the turn of the century, his successor J.W. Gregory was Professor of Geology and also Director of the Geological Survey. In the 1950s, the geologists of the Survey and the

University together helped start the Geological Society of Australia. As a member of that university, which has as long a history of geological research and teaching as any in Australia, I note that there is no published history of its Department of Geology. In the last few years, many of the senior teaching staff have retired. The same loss of long-term employees has taken place at the Geological Survey. While some short histories exist for the Geological Survey of Victoria, the Museum of Victoria, and the Royal Society of Victoria, there is an obvious place for an integrated account of the one-and-a-half centuries of geological discovery in Victoria that began with the explosion of work following the gold discoveries of the 1850s.

As O'Neil points out, it is now too late to go back to the earliest periods for oral recollections, but 'there is the practical necessity to record oral history sooner rather than later, as the dead certainly do not tell tales!'

Bernie Joyce
School of Earth Sciences
University of Melbourne

Tim Sherratt, Lisa Jooste and Rosanne Clayton (eds), *Recovering Science—Strategies and Models for the Past, Present and Future: Proceedings of a Conference held at the University of Melbourne, October 1992*. Canberra: Australian Science Archives Project, 1995. 124 pp., \$10 pb.

What sort of conference attracts the following range of speakers: a lecturer in landscape architecture, two government archivists, a collecting archivist, a manuscript librarian, two science archivists, an archivist and records manager from a museum, an archivist turned museum curator, another museum curator, an archivist turned public historian, two other public historians, a medical research administrator, a science librarian, a curator of scientific instruments, a scientific illustrator turned science biographer, two other science biographers, and a lecturer in English? Well, it obviously has something to do with archives, museums and the history of science. It might have been this conference, organized in 1992 by the Australian Science Archives Project (ASAP); or it could have been one of the conferences organized on the same theme in 1981 and 1985—except that those attracted mainly archivists, 24 of them in 1981 and 54 in 1985, while the 1992 event had 119 attendees drawn from a wide field, including some eminent scientists.

The modest professional province of archivy has common borders with some twenty other professional fields, and with every other profession and trade through its dealings with their documentary leavings. But it took ASAP—established in 1985 and perhaps the most imaginative, enterprising, courageous and successful archival initiative this country has ever seen (certainly the only one that scores highly on all those criteria)—to actually bring such a variety of the neighbours together to talk with archivists about archives. One is thus wryly amused by the complaint of one of the editors, in the introduction to this book, that 'the boundaries between science, history and archives remain disturbingly inviolable'.

Had he been around archivy as long as I have, he would be more grateful for small mercies! From a situation in 1985 when Australian science archives were the flea on the tail of the dog that chewed Cinderella's slipper, they have now advanced—thanks mainly to ASAP—to full Cinderella status. This sector is now a leader in Australia's modest archival endeavour. There is probably no other country in the world that is tackling science archiving with such flair.

The variety of the matters addressed at the conference was as remarkable as the variety of speakers. One can read in these pages about the motives, joys and problems of biographers of scientists; about the obstacles to research in the massive archives of Australian defence science; about the culture of research institutions as it affects the keeping and use of their archives; about the policies of the Australian Archives; about using CSIR/O archives to reveal invisible women; about the role and records of amateur scientists; about using scientific instruments, and records of them, to understand nineteenth-century science; about documenting artefacts of science and technology; about the records of 100 years of R&D in a major Australian industrial enterprise, CSR; and about the trials of the historian searching for records in a private enterprise wilderness where no archivist has made a map, let alone built a search room.

A flaw in the book is its lack of a proper introduction of the keynote speaker, Joan Warnow Blewett. She is the Associate Director of the Center for History of Physics of the American Institute of Physics, where her achievements provided one of the models followed by Gavan McCarthy in developing ASAP. She talked on this occasion about her investigations of the state of science archives in the United States, listing the elements of

the problem in American laboratories, namely: no in-house archivists or historians, but rather lots of current records managers and disposal schedules; mountains of extant records and vanished mountains of destroyed records to which the said schedules had not been applied; a National Archives service that failed to understand that laboratories work bottom-up as well as top-down, and therefore failed to grapple with the making and keeping of records at the actual bench; and a precocious development of electronic record-keeping that left archivists floundering. It all sounded familiar to this former CSIRO Archivist.

Blewett's is but one of ten references throughout the book to cases of large-scale indiscriminate destruction of records of science and technology. There should be less of it now, thanks to ASAP and conferences such as this, but one wonders.

ASAP would not exist but for the readiness of historians of Australian science—most notably Professor Rod Home—to sponsor it. One hopes this little book, which provides so much evidence of ASAP's achievements and an education in the nature of the problems, will inspire and assist more historians to be active and effective on behalf of preserving the irreplaceable raw material of their work.

Colin Smith
Archivist, Royal Australasian College
of Surgeons
Melbourne

Peter McPhee, *The Politics of Knowledge: Towards a Biography of R.D. ('Pansy') Wright*. Melbourne: The History of the University of Melbourne Project, 1995. ii + 22 pp., illus., free (\$2.00 p & p).

Universities are complex organizations; they have existed for nearly 150 years in Australia and they have been changing very rapidly in recent times. What have they made of their history, what steps have they taken to preserve it, and are they using it to assist in their present dilemmas?

Regrettably, despite their commitment to history as a discipline, it seems our universities generally have a rather sad record in regard to their own histories. I can only consider a few here, so let me take the older ones as an example.

Sydney has excellent archives, but its recent massive history in two volumes (*Australia's First*) troubles me. At 1,160 pages it is hardly digestible, yet the traumatic but

important saga of the Cancer Research Committee (ca 1922-1938), for example, has been essentially expunged. Are university histories being sanitized for reasons of public relations?

Adelaide has a wonderful set of records—almost every document associated with its central administration has been preserved from the time of the university's foundation—but its official history (*The University of Adelaide 1874-1974*) is a very limited work.

For the Universities of Tasmania and Western Australia we have, respectively, the recent and useful *Open to Talent* by historian Richard Davis and the much older, detailed study *Campus at Crawley* by Fred Alexander.

Of the newer universities, the ANU has had a special role, and yet it has never appointed an archivist or established an archives, and has excused itself on the dubious grounds that the Australian Archives are nearby and nominally responsible. The ANU has recently published a very well received fiftieth anniversary history (*The Making of the Australian National University, 1946-1996*), but it is surely regrettable that an institution founded and supported especially to promote higher Australian scholarship and research should have come to its fiftieth birthday without a properly staffed archives.

The University of Melbourne has my favourite history (*A Centenary History of the University of Melbourne*) by Geoffrey Blainey, modest in length, eminently readable, accessible and happily honest. But this work is now forty years old, and Melbourne has therefore established a 'History of the University Project' in its History Department, 'to encourage the preparation and publication of work on or related to the history of the University of Melbourne'. It sponsors a series of activities in support of its aims and has no doubt had an interest in the very-recently published *A Place Apart: The University of Melbourne—Decades of Challenge*. On the other hand, the Project's first Working Paper, which is the subject of the present review, is only 22 pages in length, but the text is nevertheless suggestive of a promising full biography to come.

'Pansy' Wright was born in 1907, the ninth of ten children in a northern Tasmanian farming family, in a world of hard physical work and, one suspects, psychological tension. After a brilliant Melbourne medical degree, he worked with Florey in Oxford and

in 1939 was appointed Professor of Physiology at Melbourne, a position he held until his retirement in 1971.

McPhee foreshadows four major dimensions to Wright's life and work. First, he had particular success in establishing and developing institutions (or in assisting to do so); for example, the ANU, of whose Council he was a member for 30 years, and the Cancer Institute, the Peter MacCallum Cancer Clinic and the Howard Florey Institute, all in Melbourne.

Second, he made important and influential contributions to debates about the desirable features of universities. Near the end of his life he characteristically expressed his opposition to the decline in collegiality and autonomy in his own university. He would be a great asset now!

Third, his scientific output was considerable and important despite his administrative load: almost 200 papers on steroid hormone extraction, secretory processes, the evolution of the nervous system, and the blood supply of tumours.

Fourth, Wright's life illuminates the contribution of intellectuals to Australian liberalism and our public culture: he was a 'stirrer and shaker ... a boat-rocker and a confounded nuisance' (Geoffrey Serle), 'a

champion of freedom and human rights ... unsurpassed' (Ninian Stephen), and 'Sydney Sparks Orr's ... academic best friend'.

But Wright was also 'a man of excess: excessively clever and energetic ... excessively vulgar, and always a good hater'. The author's sense is of 'a man who was emotionally scarred and ... often unhappy. ... he compartmentalised his life, only very rarely making himself vulnerable by exposing his inner demons to friends'.

'Pansy' Wright was a complex man of many-sided accomplishments and personality, firm views, and often distressing personal life. He is remembered very fondly by generations of Melbourne University people as a fighter for the underdog, a supporter of unpopular causes, and a visionary. How the biographer is to handle such a life—at once scientific, administrative, political and personal—is a perennial problem. McPhee alludes to such difficulties and is clearly aware of the task. We wish him well; this little snapshot is a commendable beginning.

John Jenkin
Faculty of Humanities
La Trobe University

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