

# Book Review Section

Compiled by John Jenkin\*

**Scienceworks, the Museum of Victoria's Centre for Science and Technology—an exhibition review.**

As a suburban teenager, one of the highlights of my school holidays was a trip into 'town'. This expedition into the wilds of central Melbourne always included a wander around the Science Museum, then housed snugly with the National Museum and the State Library behind the imposing columns of 328 Swanston Street.

Naturally I pressed all the buttons I could, making all the engines start and the models come to life. I played noughts and crosses against a 'computer' that regularly cheated. But most of all I just stood in front of the glass-fronted cases and marvelled at the collections—the rows and rows of swords, the wax apples, the radioactive sample with its chattering Geiger counter. Between visits I embroidered complex daydreams, where the deserted building was mine and all its treasures lay waiting.

The Science Museum is now a division of the Museum of Victoria, with a new site, a new building and a new name—Scienceworks. The long queues awaiting entry each weekend are evidence that Scienceworks, opened in March 1992, is a great success. It's fun, it's informative, and everyone should go, ok?

Spotswood, one of Melbourne's inner-western industrial suburbs, provides an ideal location for Scienceworks. The factories surround the museum like an industrial theme park, an authentic landscape where people and technology jostle for space and power. Walking from the station you pass a glass factory where red-glowing bottles can be glimpsed as they are propelled along the production line. Look up and the massive Westgate Bridge looms oppressively near.

The new Scienceworks building is itself styled along industrial lines, but the site has its own measure of Victorian grandeur—a disused sewerage pumping station

constructed in the 1890s. Here visitors can view the steam engines (currently under restoration) that propelled Melbourne's muck along the main sewer to Werribee. Interpretative signs tell not just of the technological achievements involved, but of the disease and sanitation problems of 'Marvellous Smellbourne' and the experiences of workers at the pumping station—including those who had to keep the pumps clear of debris! Sydney may have its Powerhouse but Melbourne has its ... umm ... Pumphouse?

The new Scienceworks building has both permanent and temporary exhibition spaces. The four permanent exhibitions are *Inventions*, *Energy*, *Travel* and *Materials*. Each of these draws on the museum's extensive collections to demonstrate not just scientific principles, but the role of science and technology in our everyday lives. Of course, this latter phrase is one that slips readily from the tongues of science communicators, but how do you encourage people to make this connection?

One way is by using familiar, local examples. The *Materials* exhibition includes sections on the Bionic Ear and the Plastic Banknote. A cable tram and the obligatory Holden feature in *Travel*. The Atomic Absorption Spectrophotometer, which for some time sat forlornly in a corner of the entrance hall at Swanston Street, now occupies a more appropriate position in *Inventions*, together with the Black Box Flight Recorder and a periscopic rifle, invented in the trenches during World War One. Another old favourite from the former site is Carl Nordstrom's detailed models of the Victorian goldfields, built in the late 1850s, which are used in the mining section of *Materials*. In some cases the stories behind the objects could be developed more; nonetheless, they do provide reference points where visitors can make connections with their own experience.

The recognition factor is also cleverly exploited in another section of *Inventions*. Here levers, pulleys and inclined planes are illustrated not just by hands-on exhibits, but by archival photographs called up on touch screens—what we see are the abstract principles at work on farms, in factories or homes. Visitors can begin to recognise pulleys or levers in their own life's history: 'Grandma had one just like that!' In a similar way, the *Energy* exhibition challenges you to provide the energy for some 'old-fashioned' technologies, such as a manually-powered washing-machine and a hand-saw.

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Other more critical connections can be made by focussing on issues related to technological development. This is most successfully achieved in the *Travel* exhibition, which asks visitors to consider, amongst other things, the impact of 'Fordism' and the nature of life on the assembly-line. Likewise, environmental issues are raised in both *Materials* and *Energy*.

What is lacking is a window on to the scientific workplace. There is little attempt to allow visitors to gain a feeling for the actual practice of science. 'Performance science' is presented in the Scienceworks theatre, but this is altogether different from life in the lab. The Museum of Victoria is itself a working scientific institution, though one would hardly know it from the displays at Scienceworks. Presumably this is because of the separation of the Science and Technology and Natural History divisions within the museum structure, but surely there are ways in which the scientific work of the museum can be displayed within the Scienceworks setting. Having been fortunate enough to have toured some of the natural history collections while they were still at the Swanston Street site, I can attest to the fascination of 'raw science'—science observed and experienced rather than interpreted.

This sense of fascination relates to what the Senior Curator of Scienceworks, Martin Hallett, has described as the 'evocative' as opposed to 'evidential' function of museum objects. This 'evocative' role is, I believe, important in allowing people to perceive the significance of science and technology within the context of their own lives. This becomes clearer when Scienceworks is contrasted with the growing band of interactive science centres that supposedly allow you to 'explore' science. The types of exploration that can actually take place are constrained by the programmed nature of the exhibits. The expectation is that you will learn, not feel. Objects, however, can embody a wide range of messages, which need not be articulated for them to be effective. One Scienceworks exhibit that sticks in my mind is simply a display case in *Energy* full of electrical appliances: heaters, irons, tea-makers. Freed from any evidential function, these appliances trigger personal responses—as with the wax apples and swords I remember so clearly. It is not so much the scientific content as the contact that is important. We can't expect that science museums will suddenly make everything clear—'Oh yeah, science, I understand that'—but they can

encourage us to understand science and technology in a meaningful way. We might not be able to explain the science in detail, but we will have made some deep-seated connection with it.

History has an important role to play here, and it is significant that Scienceworks has appointed a Curator of History of Technology, Richard Gillespie. By populating the scientific and technological landscape with people, issues, events, questions and problems, history opens up an intellectual and emotional space around the facts and theories. Is this a different sort of history, or history for a different audience? As the debate over the meaning of 'public' history continues, perhaps it is time for historians of Australian science to join the fray and to begin to consider what public history means in the context of science and technology. If we are serious in wanting to help people understand the role of science and technology in Australian society and culture, it seems to me that we must allow them space to tell their own stories, to mount their personal exhibitions, to build their own daydreams. This is the space I wandered (and wondered) in as a boy, and I was pleased to find pockets of it still at Scienceworks.

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Alice Cawte, *Atomic Australia, 1944-1990*. Sydney: New South Wales University Press, 1992. xiii + 213 pp., illus., \$19.95 pb.

In September 1992, the Federal government commissioned a public inquiry into a proposal by the Australian Nuclear Science and Technology Organisation (ANSTO) to replace its aging HIFAR, Australia's only research reactor, located at Lucas Heights, southwest of Sydney. In July 1993, following four days of open sessions and over 500 submissions, the review presented an interim report. ANSTO's task, represented in documents exceeding 1500 pages, was apparently straightforward: to persuade an independent tribunal of three that Australia needs a new research reactor, at a capital cost estimated to lie between \$150 and \$300 million—a very expensive piece of hardware, at a time when the science budget does not exceed \$1.5 billion and when total spending on federal scientific agencies is under \$400 million. The interim report put the matter on hold, recommending that a decision whether to replace the reactor be postponed for five

years, and that in the meantime, ANSTO give first priority to finding a suitable storage site for nuclear waste. Four years of preparation have not brought ANSTO victory. Indeed, larger policy debates in Canberra may threaten its very future. What has happened?

In avoiding what is ostensibly the principal choice, the recommendations of the review have, predictably, satisfied no one—least of all the Sutherland residents who are most deeply concerned. They join a long list of inconclusive, but not totally unexpected, stages in a controversy that has persisted since Australia entered the 'atomic age'. In the subtext of the reactor review, historians find deeply entangled attitudes shaped by fifty years of public engagement with nuclear optimism and official secrecy, with Aboriginal land rights and uranium mining, with British weapons testing and American satellite-tracking facilities, with nuclear ship visits and environmental risks. Alice Cawte provides a useful introduction to the way in which Australia embraced the atom, and reflects on some of the implications of what, in other countries, has sometimes proved a fatal attraction. The Australian public, it would seem, has forgotten nothing; but has it learned something as well? It is not, it seems, a matter merely of technological choice.

At the end of the Second World War, Australians were alive to the challenges and possibilities of the atomic age. Australians were in the forefront of international attempts to contain nuclear weapons, and keen to participate in nuclear science and technology. The promise of nuclear power, combined with hydroelectric power and coal, formed an inspiring trinity at the heart of Australia's plans for postwar national reconstruction. The presence of uranium ore in large quantities implied a key role for Australia in the nuclear fuel cycle and in international affairs. The temptation to embrace the atom was enormous, and few resisted. Notably not the 'nuclear knights'—including Sir Mark Oliphant, Sir Philip Baxter and Sir Ernest Titterton—united by wartime experience in the Manhattan project and confident that unlimited government support for nuclear research would achieve Australia's objectives. Among Australia's chosen instruments was the Australian Atomic Energy Commission, the precursor of ANSTO, established in 1953, and charged with helping the atom to bring, in Oliphant's optimistic words, 'prosperity and fruitfulness such as few nations have known'. Politically the Commission had an even wider function:

to ensure that Australia became and remained an associate member of the international 'nuclear club', its presence ensured by a programme of research of high standard in relevant fields of science and engineering.

An Australian programme of uranium mining and nuclear research thus emerged under men profoundly influenced by their experience of war, whose vision of the future was shaped by a perception of Australia's isolation, vulnerability and economic needs. Over its first twenty-five years, the Commission's budget grew by a factor of thirty. By 1972, it had cost \$170 million, almost twice the price of Sydney's Opera House. By 1986, its annual operating revenues exceeded \$50 million (today, it is in the region of \$70M). At its peak, its operations employed over 1200 staff, working in six divisions, with 310 scientists in research and development alone. While it was neither the nation's largest nor richest scientific organisation (CSIRO was larger and Defence Science was more expensive), it represented an enormous investment and won a broad base of support from many Australians (particularly energy-poor South Australians and mineral-rich West Australians) for whom a nuclear future offered relief from drought and profits for industry.

Much of the most articulate nuclear advocacy can be traced to British-born former ICI research manager and chemical engineer, Philip Baxter, chairman of the AAEC, full-time and part-time, between 1953 and 1972, and Vice-Chancellor of the University of New South Wales between 1955 and 1969. Baxter's position was iterated through AAEC headquarters—until 1982 overlooking the beach at Coogee, near his office in Kensington—and manifested behind the barbed wire of Lucas Heights. But it is wise to remember how general and widely shared were the views he expressed. Indeed, it was in this spirit of hope that Commonwealth and State governments willingly collaborated in the gargantuan visions of Lawrence Livermore, Glen Seaborg and Edward Teller, culminating in Plowshare proposals to blast port facilities at Cape Keraudren in 1968–9 and to mine iron ore in the Hamersley Range of Western Australia in 1969. It was a combination of Australian economic and defence interests that lent their ears to advocates of enrichment facilities, costing millions, and that, at a time of uncertain relations with our northern neighbours, would not rule out the prospect of producing a nuclear weapon.

Australia's nuclear history can perhaps best be grasped in three periods—1953–65, 1965–72 and 1972–86—periods poignantly recalled as ages of faith, hope and charity. Australia began the era of 'faith' in a colonial pattern, by sending chemists and metallurgists to Harwell, where they were trained at Australian expense against the day the country had a nuclear industry in which to employ them. From 1957, they returned to find a research programme whose terms were well-established but whose industrial outcome was ill-defined. Their prospects worsened following the successive abandonment of four major nuclear research and development projects in the 1960s, and were dealt a devastating blow when the McMahon and Whitlam governments decided, first to postpone, then not to proceed with a proposed nuclear power station at Jervis Bay. After 1972, the Commission attempted to regroup and work on other energy projects, but the price of uranium fell and the research enterprise drifted. During and after the Ranger enquiry, the risks of environmental danger were made incontestably clear and criticism mounted. Repeated inquiries spelled an eventual end to the AAEC in 1987, and to the compromise 'three mines policy' current today.

This story is, at one level, briefly told and, in broad outline, will be generally familiar. But, at a deeper level, much remains to be said. Throughout its history, the AAEC found itself unable to escape from a culture of deep secrecy, derived in part from postwar British fears that security leaks 'might prejudice American perceptions of Australia's trustworthiness' (p. 42). The Atomic Energy Act of 1953 contained security provisions by which persons 'reasonably suspected' of conveying restricted information were liable to twenty years' imprisonment. The Act, as Cawte reminds us, also made applicable the Approved Defence Projects Protection Act of 1947, which Atlee had suggested to Menzies as a device to protect the rocket range at Woomera from communist influence. This induced a state of apprehension, both among those working for the Commission and those who wished to assess its activities. These provisions, and this apprehension, remained a feature of its operations until the Commission was superseded by ANSTO in 1987. Since then, the new organization has moved boldly where its predecessor feared to go, in the direction of industrial applications and in its openness with the public. Nevertheless, the memory of the Commission and the Baxter era lives to haunt its public relations.

It is against this background that Cawte traces Australia's nuclear history, reaching from the war to 1990. She takes as her starting point the Allies' wartime demand for uranium, and carries us through the postwar Menzies period, the important if ill-starred efforts of Evatt at the United Nations, and the circumstances that led to the British tests at Monte Bello and Maralinga. She dwells on the faustian promises offered by the advocates of industrial nuclear power in the south and the 'midas mineral' in the north. She devotes one chapter to the history of the AAEC, and ends with a critique of both Liberal and Labor governments in the field of uranium mining and export. Her analysis is at its strongest, perhaps, in dealing with the uranium question, weakest in discussing the internal policies and research programmes of the AAEC. She has not canvassed the history of CSIRO's early interest in nuclear science, which offered a number of alternative pathways; and her account of Australia's contribution to the history of the 'international atom' would have benefitted from a more detailed reading of Australia's role at the IAEA in Vienna.

In her history, personalities are inevitably dominant, and Cawte does not neglect the significance of Oliphant, Baxter and others familiar to those who follow nuclear affairs. But a more sensitive account might have been given of Oliphant's conversion from nuclear emissary to nuclear critic, and to the fluid alliances that ebbed and flowed between Baxter and his entrepreneurial university contemporaries, including Titterton, Messel and Martin. By the mid-1960s, Australian nuclear policy became a tissue of conflicting views, in which the interests of mining, defence, scientific research and diplomacy were easily conflated. In fact, tensions among them make the story far more complex than Cawte suggests. Australians did, indeed, pursue the elusive uranium dream, but in passing, much valuable research was done and important skills were gained. More significant, perhaps, was the fact that, because of the uranium issue, previously silent voices in Australian society found an attentive audience. Today's public scepticism towards the untested assertions of experts, in almost any field, together with an increasingly shared sense of collective responsibility towards the Australian environment, are hardly accidental products of our time; we may find they owe something to the importunity and selective argument associated with incautious nuclear advocacy.

Today, as the reactor inquiry reveals,

nuclear science and technology must answer, in public, to a community in the midst of a recession and in a mood to ask questions. What are the real costs? What are the real benefits? These questions will not go away. And just as the nuclear inquiry has reawakened interest in Australia's nuclear history, so a new generation of scholars, with access to previously closed files, can help show how that history has been shaped and how it continues to inform government policy. Alice Cawte's book is a most useful step in this promising direction.

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**A.H. Brogan**, *Committed to Saving Lives: A History of the Commonwealth Serum Laboratories*. Melbourne: Hyland House, 1990. xv + 336 pp., 32 plates, \$29.95.

Nestling in Royal Park only two kilometres from central Melbourne, the Commonwealth Serum Laboratories would scarcely receive a glance from the majority of people who visit the adjacent zoo, psychiatric hospital or sporting venues. Yet, as Alfred Brogan's book shows, CSL has played a significant part in Australia's public health for over 70 years, whether in its very public triumphs and failures or in its quiet achievements. And at a time when government is trying to encourage the growth of science-based industries, the history of CSL highlights some of the strengths and weaknesses of government intervention.

Australia's isolation from traditional supplies of manufactured goods during wartime has resulted in the development of several local industries, including CSL. A shortage of diphtheria antitoxin during the First World War led to the establishment of CSL by the Commonwealth government, and in 1916 W.J. Penfold was appointed its first director. A bacteriologist from the Lister Institute, Penfold visited public health laboratories in England, France and the United States on his way to Australia, and set up the CSL's first laboratories at the Walter & Eliza Hall Institute. In 1918, CSL took over the buildings of the old vaccination depot in Royal Park, and by 1920 CSL was making five therapeutic sera, 24 vaccines, four tuberculins, diagnostic agents and bacteriological media for sale and distribution throughout Australia.

In the 1920s, CSL came to occupy a central role in public health activities throughout

Australia. In 1921, the government established a Commonwealth Department of Health to assume the government's public health and quarantine functions, and CSL became the headquarters of the department's Laboratories Division and co-ordinated the activities of public health laboratories established in most states. Staff for the new labs were trained at CSL, and the labs in turn sent back bacteriological samples and used and distributed CSL products.

Penfold and the Director-General of Health, J.H.L. Cumpston, promoted CSL as a government agency that worked tirelessly for the national good, and indeed, CSL built up an impressive record of rapid response to new threats to the nation's health. During the influenza pandemic of 1918-19, CSL manufactured vaccine against bacterial organisms isolated overseas, before the disease reached Australia. CSL acquired a licence to manufacture insulin in Australia and was making it available to some patients by July 1923, just over a year after its first use in Canada. Given Australia's reliance on meat and wool exports, veterinary drugs also became an important part of CSL's product lines.

The development of Australian production of penicillin was one of CSL's greatest achievements, exemplifying its ability to respond rapidly to national needs. In 1943, Val Bazeley was recalled from the Army to run the project and was immediately sent to the United States to study American penicillin manufacturing techniques. Short of staff on his return, Bazeley persuaded soldiers awaiting discharge to work at CSL at night until they received their papers. Within ten weeks of Bazeley's return from the United States, penicillin was being sent to the front. Using fermentation bottles to grow the penicillin, the production team was able to produce 750 bottles per day; by 1948, this had grown to 44,000 bottles per day. Production had reached sufficiently high levels by April 1944 that Australia was the first country to release penicillin for civilian use.

AIDS provided a similar challenge. Only five months after the virus was isolated in May 1984, CSL staff were testing for the HTLV-III antibody in the plasma used in Factor VIII products used to treat haemophiliacs. A high security laboratory was established in December, and it rapidly developed a confirmatory test for AIDS antibodies that was used throughout Australia until commercial overseas products were available.

One of the strengths of Brogan's book is his description of the human side of the development and production processes. Prior to the introduction of the deep fermentation tanks, the penicillin workers rugged up to protect themselves from the cold of the refrigerated rooms, and they were constantly exposed to dangerous chemicals. While this work was being carried out at one part of the site, other workers were laboriously inoculating and harvesting 20,000 fertile eggs per day as part of the process of making influenza vaccine. By the 1950s, CSL's staff had expanded to over 1,000. Significant numbers of animals were required for research and production of both human and veterinary products, including sheep, horses, monkeys and poultry, and field stations were acquired on the outskirts of Melbourne.

Much of the repetitive manual work was done by women, many of whom spent their working lives at CSL. Well educated but generally without professional qualifications, these women were a skilled and cheap workforce. Their lack of status was exacerbated by Public Service regulations which stated that married women could not remain in government employment. Many were forced to conceal their marriages from their employer, and only when CSL was placed outside the Public Service in 1961 were these women able to wear their wedding rings and use their married names.

Women were not the only ones to suffer under government regulations. When Bazeley went to work with Jonas Salk at Pittsburgh on the polio vaccine, he was forced to take leave from CSL and was informed that his time in Pittsburgh would not count as government service for the purpose of his pension; yet at the end of his leave he was required to return to CSL for at least five years, so that the government could get the full benefit of his American research.

The tension and outright conflict between CSL directors and government ministers and bureaucrats occupies more pages in this book than any other topic. The first director, Penfold, resigned in 1927 after disagreements with Cumpston. Val Bazeley, director from 1956 to 1961, was sacked by the government after conflict over proposals to remove CSL from the Public Service and to require it to raise its own revenue.

There were many reasons for misunderstandings and conflict between the two parties. CSL was both a research and development organization and a manufacturing and marketing enterprise, operating within a government department

and public service bureaucracy that was not always sympathetic to its academic and industrial functions. Yet CSL's very existence was firmly tied up with government policy. As a local pharmaceutical manufacturer, CSL was protected by government tariff policies; for example, duty was quickly introduced on imported insulin and penicillin to ensure the viability of CSL's ventures. Overseas competitors were constantly trying to get the government to lower import duties or prohibit CSL from producing some drugs. The government was particularly susceptible to arguments that it was protecting an inefficient and expensive local manufacturer, because after the Second World War the government began to bear a major share of the cost of pharmaceuticals in the health care system.

Gradually, and through several debates over three decades, the government came to see CSL as a production company that should be expected to make a profit. CSL protested that it was also a public health and research institution and should receive direct government funding for these activities. In 1961, CSL was established as a statutory commission and funded separately for its research activities, while in 1990 it was established as a government-owned limited company and permitted to seek alliances with multinational drug companies so as to gain access to new technology, products and markets. In the face of increasing exposure to international drug prices, CSL ceased production of penicillin in 1980 and of insulin in 1990, while moving into more sophisticated drugs that promised better rates of return.

Australia has had a strong tradition of government ownership of manufacturing and service industries, including airlines, public transport, aircraft manufacture, shipbuilding, munitions and telecommunications. In this context, the history of CSL is part of a larger story of government attempts to nurture local industry, in a country that does not enjoy the economies of scale of its competitors. It is a story, too, of the complex relationship between scientific research, development and production, and of the role of government in facilitating industrial growth without protecting and encouraging inefficient industries.

All these issues are apparent in Brogan's book, although he does not deal with them directly or at length. As a long-serving staff member at CSL, Brogan naturally tends to see CSL's history from the inside looking out. There is therefore a tendency to side with the directors, to see government bureaucrats as

interfering and politicians as dishonest and capricious. This is sometimes a function of the documents he uses; for example, in recounting the political crises between CSL and Canberra, Brogan relies on CSL and Health Department records without seeking out the relevant documents from Treasury or the Public Service Board.

It is perhaps more appropriate to look at how CSL has managed to survive and adapt in a changing environment. Indeed, it is possible to assess the effectiveness of the directors by their ability to foresee and control this change. In this regard Neville McCarthy, director of CSL from 1974 to 1990, recruited from a private pharmaceutical manufacturer and the first director not to have had prior CSL service, proved to be particularly adept at steering the organization through the worlds of government and industry.

There is also a tendency in the book to deal only with CSL's viewpoint when telling the history of the scientific and medical controversies in which the organization has at times become embroiled. These include arguments about the effectiveness of its influenza vaccine in the early 1920s, and the tragic death of 12 children in Bundaberg resulting from a contaminated diphtheria toxin-antitoxin mixture. This is not to say that CSL's actions might not have been reasonable on each occasion, but rather that Brogan never quite gives readers sufficient information to make up their own minds.

Brogan and CSL are to be congratulated on their commitment to documenting the history of the organization. It should be noted that CSL's commitment also extends to the maintenance of a small museum on the Royal Park grounds, an institutional archive, and a pictorial historical publication for schools. It is to be hoped that institutional and company histories such as this, which rightly address a predominantly in-house audience, will encourage researchers to undertake more synthetic histories of medical research and the pharmaceutical industry in Australia.

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**Bernard Smith, *Imagining the Pacific: In the Wake of the Cook Voyages*.** Melbourne: MUP Miegunyah Press, 1992. xiii + 262 pp., illus., \$89.95.

In this beautifully presented and lavishly illustrated book, Bernard Smith takes up once

more the twin themes of the interaction between art and science and of European awareness of and reaction to the South Pacific that he first adumbrated in 1945 in *Place, Taste and Tradition: A Study of Australian Art Since 1788* and subsequently developed into his classic study, *European Vision and the South Pacific*, published in 1960. In the main a collection of previously published essays, revised and unified around these central themes, the book makes available in a convenient and attractive form a number of widely dispersed studies.

The first chapter, the only essay written specifically for the book, outlines the origin of scientific illustration in late medieval depictions of exotic or game animals, voyages of discovery, and the medicinal drawings of plants. Noting that the discovery of the Americas 'gave new impetus to art in the service of science and travel', Smith examines the 'exotic' processing for European consumption of the information gained, a processing that further transformed the first-hand field studies already coloured by preconceptions based on ideas of classical origin. By the eighteenth century, new standards of scientific accuracy in recording contributed to a shift towards increasing naturalism in the fine arts and challenged the traditional conception of drawing in art theory. The impact of naturalism on the traditional categories of history painting, portraiture and landscape is discussed, and the development of landscape is set in the context of the new conceptual framework of the Enlightenment. This chapter provides a background for issues taken up later in the book and introduces those 'interactive relationships between perception and conceptualising' which are among its central concerns.

The second chapter surveys the history of scientific exploration from Cook's first voyage (1768-71) to that of Flinders (1801-4), exploration which resulted in major advances in the sciences of astronomy and meteorology, botany and ethnography. A large part of the unprecedented influx of information contained in journal accounts and a huge corpus of drawings were subsequently published. Much of this account of Cook's voyages is drawn from *European Vision and the South Pacific* as Smith again takes up the theme of the noble savage so extensively discussed in his earlier book.

Chapter 3, 'Art as Information', discusses the influence of the documentary art of Cook's voyages on the 'triumph of empirical naturalism over classical naturalism' in

European art of the nineteenth century. The three voyages represented a progressive programme of empirical naturalism, beginning with the botanical and biological studies of the *Endeavour*, extending to weather and light in the second voyage, and to a concentration on ethnography in the third voyage. Smith argues that the artists concerned, and especially William Hodges and John Webber, developed new, alternative compositional structures more suited to the empirical intention of their work. Hodges particularly is praised for the increased naturalism of his depictions of light and weather, and is claimed as a forerunner to the optical painting of Constable and the French Impressionists.

Smith suggests an important role for the work of these artists, and especially Hodges, in the development of progressive European painting. Yet his argument is not supported by evidence showing the influence of scientific drawing on mainstream artistic practice. These artists in their exhibited works, and their engravers, invariably show the more factual or informative drawings transformed by aesthetic considerations. The public face of Cook's voyaging therefore reinforces established pictorial, and especially Picturesque, conventions. If tenuous parallels may be drawn between Hodges and Constable, it is because both share in the scientific attitudes underlying the establishment of the voyages and both owe much to developing Picturesque theory and its visual conventions and sources.

Smith uses the word 'picturesque' loosely to describe paintings based on the pictorial tradition, yet the Picturesque came to be quite closely defined in the period under discussion as a set of specific subjects and visual effects, among them an emphasis on light and weather, strong contrasts of light and shade, and the looser application of paint, all aspects of Hodges' work on board the *Resolution*. The concept of the Picturesque grew out of the confluence of the Italianate and Dutch landscape traditions and English topographical landscape painting, and embraced the interest in optics and the physics of light initiated by the publication of Newton's *Opticks* in 1704. The advances towards naturalism occurring in Hodges' painting done on the voyage were also occurring in England, for example in the work of the scientifically minded Joseph Wright of Derby, whom Hodges had probably met before his departure for the South Seas. As Smith notes, Hodges' master, Richard Wilson, had already practiced *plein air*

painting, and we may add that Wilson's work of the 'sixties and 'seventies anticipates Picturesque theory. Moreover, in the 1770s William Gilpin's first statements of the theory were circulating in manuscript form. All this is not to deny the influence of his scientific companions of the voyage on Hodges' increasing naturalism, but rather to set his work in a broader context of change, of which Hodges is a product rather than the catalyst.

In his description of Hodges as 'before his time', Smith appears to subscribe to the outworn 'genius' theory current in the eighteenth century but replaced long since by a contextual approach which, in its examination of the cultural matrix of the work of art, shows the artist to be very firmly embedded in his period. The scientific voyages may indeed have given impetus to a tradition of increasing naturalism already underway, but to suggest, as Smith does at the end of this chapter, that Hodges and Webber were on the threshold of impressionism is to claim far more than can be substantiated historically.

In Chapter 4, Smith identifies allegorical and ethnographic conventions in the portrayal of native peoples and discusses the development of the 'typical' landscapes of Hodges and Webber 'in which people are depicted as the natural productions of natural environments'. Their sympathetic portraits, seizing the character and expression of each individual, replaced earlier portraiture depicting natives as type specimens. Obtaining such portraits necessitated a friendly, mutually trusting approach. This improvement in social relations was double-edged, for portraiture weakened the traditional way of life by loosening the bonds of indigenous community life and altering its power structures. The artist thereby participated in the ultimate destruction of native societies. The converse impact of native artifacts on European culture is also explored. The inference that the history of European taste for the primitive is substantially unwritten is allowed to stand in the text, even though an endnote reference acknowledges the extensive recent scholarship that makes such a claim unfounded.

Chapter 5 takes up again the discussion of William Hodges' depictions of light and atmosphere. Hodges painted directly in oils from the great cabin of the *Resolution*, a kind of *plein air* painting. The practice of sketching in oils in the open air derived from his master, Richard Wilson. Although Smith



notes that Hodges 'clung to traditional methods whenever these were the most convenient', he argues that he was beginning to realise the immediacy and freshness made possible by *plein air* painting. This chapter depends a great deal upon how one defines 'plein-air' painting and how it differs from the out-of-doors sketch later reworked in the studio into the 'finished' painting. *Plein air* painting is for Smith the 'freshness of touch' expected from direct, on-the-spot observations, and he claims for Hodges that 'fusion of the landscape sketch and the finished work, where . . . the pure sensation of the first response to nature could be carried over into a grander scale', which is usually reserved for the generation of Constable and Corot. Yet the New Zealand and Tahitian paintings are large-scale sketches, to which the unusual circumstance of a mobile studio allowed a greater degree of finish. These paintings do not seem to have been exhibited in their own right, but rather used for more elaborate and conventionally composed exhibition pieces, or reworked for engraving. The 'finished' versions of the voyage paintings have lost the brilliance and sparkle of the *plein air* sketches. It is difficult to reconcile the harder, smoother technique and conventional Picturesque composition of his post-voyage painting with a conscious intention on Hodges' part to supplant the traditional aesthetic.

In Chapter 6, Smith turns to the influence of scientific exploration and recording on literary rather than visual art, and skilfully argues a germinal role for William Wales in the genesis of Coleridge's famous poem, *The Rime of the Ancient Mariner*. Wales was astronomer and meteorologist on the *Resolution* during Cook's second voyage, and subsequently mathematics master at Christ's Hospital during Coleridge's school days there. Smith believes that the origin of the poem lies in Coleridge's early contact with the account of Wales and others of Cook's second voyage. He argues convincingly, if from circumstantial evidence, for Coleridge's exposure to Wales during his school days. Applying the comparative methodology of art history, he seeks to establish not 'close verbal parallels between Wales' writing and Coleridge's poems, but rather the creation of a substantial repertoire of imagery, as in dream formation, from tales of the *Resolution's* voyage told in the school, either by Wales himself or in garbled form by the boys'. Smith demonstrates that the visual imagery contained in descriptions of phenomena observed on the voyage reappear

in the poetic transformations of the *Rime*, and that the plan of the poem follows the sequence and events of the *Resolution's* voyage to the South Seas. Less convincing is his association of the theme of the killing of the albatross, the central moral issue of the poem, with similar taking of these birds on the voyage. An important aspect of the evidence—the comparisons with Wales' journal—depends on the unresolvable issue of whether Coleridge ever had access to this personal account.

This is the earliest essay in the book, and was included, as the Preface tells us, as a result of its virtual neglect by Coleridge scholars in the years since its first publication in 1956. In *Imagining the Pacific*, Smith is at last able to give this intriguing insight into the genesis and poetic process of a great poem the wider audience it deserves.

Chapters 7 and 8 deal with European perceptions of the peoples of the Pacific and the reworking of an apparently documentary art to serve poetic truth or to promote the view of a peaceful exploration by suppressing the representation of conflict. Ultimately two polarized views emerged, presenting Pacific peoples as classical Arcadians or alternatively as pagan savages, each viewpoint providing motivation for the thousands of Europeans who would migrate to and eventually come to dominate the Pacific region.

Chapter 9 explores the source of European imaginings of the Pacific in its own 'primitive' source, the civilisation of ancient Greece and the enduring cultural model which that civilisation produced. Smith presents interesting parallels between Greek colonization of the ancient world and European colonization of the Pacific, and notes that the explorers themselves had seen the Pacific in terms of Greek analogy. The establishment of market economies in the Pacific region had a destabilising effect and led to a rearrangement in the balance of power. At the same time, the effects of scientific exploration on European culture led to the dissolution of classical standards and systems of classification in both science and art.

The book ends with a fascinating account of the ways in which Cook's posthumous reputation was shaped by contemporaries and historians for ideological ends.

Despite its wealth of material, insights and graceful learning, this book lacks the coherence of design and purpose of *European Vision and the South Pacific* and the pioneering presentation of new research that

made the earlier work the classic it has deservedly become. Many of the essays in *Imagining the Pacific* present a new perspective, but there is still much of the book that is a re-presentation of old material, albeit with many modifications, additions or revisions; and the philosophical underpinnings and methodology of the earlier work do not seem to have much changed in the decades since. But for readers unfamiliar with the earlier publications, *Imagining the Pacific* presents in a highly readable form a wealth of information, observation and insight. For those already familiar with the concerns of Bernard Smith's earlier scholarship, it provides a rich embroidery upon familiar themes.

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**Milton Lewis, *A Rum State: Alcohol and State Policy in Australia, 1788-1988*. Canberra: AGPS, 1992. vi + 231 pp., \$24.95.**

This reviewer's indication that he was no authority on modern concepts of alcoholism and also a devoted consumer of the substance in its most sophisticated form produced from the editor only the book in response. This limitation and vested interest must therefore be accepted!

Lewis brings to his subject considerable historical experience of socially important disorders, including madness and sexually-transmitted diseases, as well as of Australian medical history generally. He has produced a detailed and meticulous work, within his frame of reference, which will be of long-standing value to workers in the field. It is not light reading, largely because of the rather complex approach to the subject matter, although this is set out clearly in the introduction.

The first two chapters deal respectively with historical trends in consumption and related social problems, and with Government revenue, each covering two centuries. The next deals with the evolution of liquor laws and the influence of the temperance movement (and very effective it is) to around 1930, followed by a chapter on developments to the 1980s. Chapter 5 takes us back to the nineteenth century in its consideration of the management of inebriety, both administrative and medical, and this theme is continued to the 1980s in the following chapter. Chapters on alcohol and Aborigines, and on recent national

developments and concerns, both certainly deserve their status.

For those requiring a birds'-eye view of this complicated arrangement, Lewis provides an admirable summarizing chapter on the lessons of history. There is an excellent bibliography and index. The author deserves special commendation for putting many of his references in summary form in the text. The source, and especially the date, are immediately available without the need to read minute superscript numerals and search for the reference somewhere in the back pages; page footnotes are a luxury that today's authors must surely learn to forego. Thorough use is made of official reports and government papers, which have often tended to be overlooked by historians.

While there is logic in the form of presentation, it cannot be said that it makes for easy reading; whether the repetition is real or merely apparent, there is overlap among several of the chapters, and it is not easy to retain the data of the first two chapters in reading the later ones, especially as all are heavily factual in terms of statistics and sources. The book reflects immense diligence in research and documentation, but strictly within the scope of the book's subtitle. The latter leaves room for only limited consideration of consumer patterns, especially as between the various types of alcoholic liquor, and no room for consideration of what forms of alcohol contribute to the problems posed by alcohol consumption, if indeed the relevant data exist. Even granting that increased taxation or reduction of personal income reduces 'average' consumption (Lewis adduces evidence on these points), how much does either influence the 'alcohol problem'? Or does it just reduce the quality of alcohol consumed? (I have seen blindness from wood alcohol in a community to whom legitimate alcohol was unavailable.)

What indeed does the average annual per capita consumption of alcohol mean? Lewis unavoidably has to use this international 'gold standard', but an average is meaningful only if consumption is normally distributed in the community, which it certainly is not, and nor does it take into account the manner and form in which the alcohol is consumed. Correlations do not imply cause and effect, at least without other evidence; the decline of cirrhosis of the liver (which takes years to develop) in the Depression, and its more recent rise, are not necessarily evidence for or against alcohol as a cause. One may similarly question the validity of arrests for

drunkenness as an index of the social problems posed specifically by alcohol at different places and in varying periods; except for asylum admissions, there may be no other index to use, but its limitations need to be appreciated. These comments, of course, extend far beyond Lewis's survey, which relates these indices to policy.

'Medicalization' of a disease in the nineteenth century is a popular view for modern social historians seeking to assert the doctors' desire for power. Lewis rightly identifies this trend in relation to alcoholism, but also indicates that, to some extent, the responsibility was thrust upon medicine by the failure of other conceptual approaches, and by the often unwilling involvement of psychiatrists who had to suffer the admission of alcoholics into their lunatic asylums. Here I do have a criticism of Lewis's simplistic approach, in that he fails to attempt any definition of the 'disease/diseases' related to alcohol, although he is aware of the problem. What disorders were the psychiatrists in the nineteenth century really talking about (I admit to uncertainty myself)? To what extent are the problems seen by the psychiatrists relevant to the general problems of alcohol in the community, either in the nineteenth century or today? The problem of defining a disease has been controversial for centuries and is still not clarified, but there would be few today who, rightly or wrongly, would not want to include in the definition some social maladaptation in addition to a florid physical or mental disorder. In future historical considerations of alcohol and the community, effective definition of the problems associated with alcohol must be an essential prerequisite to any attempt to deal with them; to a degree Lewis's historical background fails to provide a clear medico-historical basis.

On the other hand, I do not underestimate the difficulties, which lie largely in the lack of adequate data, both in the past and for recent times. Lewis has defined his scope accurately in his subtitle, and it is therefore inappropriate to criticize the lack of data on detailed patterns of consumption, their distribution in the community, and their relation to 'disease', however that may be defined. A simple illustration of the problems is the beneficial influence of a modest table wine intake on coronary vascular disease, for which there is now convincing data. Lewis has provided the essential groundwork in a comprehensive review of policy, but much remains to be done before there is a fully adequate socio-medical history of alcohol and alcoholism in our society.

At the publication level, some illustrations, so evocative of the past to elderly reviewers, would have lightened the solid text of Milton Lewis's volume. The book is essential for libraries to which it has any relevance, and necessary reading for the professional in drug-related problems.

Many readers of this important book will see a link with the problems of the State in relation to tobacco. Robin Walker's survey of this less complicated subject (*Under Fire: A History of Tobacco Smoking in Australia*, MUP, 1984) allows the author to range a little more widely, but the similarities, and to a lesser degree the contrasts, are thought-provoking.

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**Tom Griffiths**, *Secrets of the Forest: Discovering History in Melbourne's Ash Range*. Sydney: Allen & Unwin, 1992. viii + 224 pp., illus., \$24.95 pb.

*Secrets of the Forest* is an appealing but unusually structured volume. In the first half, Tom Griffiths—who teaches in Monash University's Public History programme—has written an environmental history of the mountain ash (*Eucalyptus regnans*) forests of Central Victoria. In the second half, a variety of other authors—most associated with the Historic Places Section of Victoria's Department of Conservation and Environment or the Public History programme—have described twenty-six historic sites in the region. The volume is saved from this disjunct structure by Griffiths' polished style, the diversity of pieces in the second half, and above all by the excellent presentation and illustrations. Even if its coherence is more stylistic than thematic, it is done so well that it succeeds.

Tom Griffiths takes us through the environmental history of the region in a series of short chapters introducing the ecology of the forest, clearing and settlement, mining, early sawmilling, the disastrous bushfires in 1939, silvicultural research, hydrological research, tourism, and finally the heritage values of the region. Like Eric Rolls' account of the Pilliga Scrub in *A Million Wild Acres* (Nelson, Melbourne, 1981), Griffiths writes an environmental history in which the forests are not merely scenery behind the human drama, but are agents in themselves. He seeks a history which is 'intensely local in its concerns and that also embraces the non-human world'. The

shores of the Russian Empire. Bering proved that Asia and North America are separated by what came to be known as the Bering Sea. The most extensive Russian exploration of the Pacific Ocean was, however, carried out in the first quarter of the 19th century; the first Russian expedition to circumnavigate the world did not sail from Kronstadt, in the Baltic, until 1803. In the years that followed, there was an almost constant stream of Russian ships passing through the Pacific. Indeed, as Glynn Barratt has written: 'The Russian hydrographic record in Central Polynesia in the post-Napoleonic era (1816-1826) is a proud one, equal to that of the British and superior to that of the United States and France.'

The first section of the present volume is devoted to an account of Russian observations of the islands to the east and north-east of Tahiti—referred to as the Tuamotu Archipelago or sometimes as the 'half-drowned' islands of the Dangerous Archipelago. They are relatively small and low-lying, and are therefore a substantial danger to shipping even today. A few of these had been seen by Spanish, Dutch, English and French explorers, and some landings had been made; but few positions had been accurately determined until the Russians remedied this situation. The Russians also recorded information about the botany, zoology and many of the artefacts they observed: ornaments, weapons and canoes, for example. Translations of substantial parts of the original Russian accounts are included in the present book.

The second (and larger) part of the volume is concerned with Russian observations of the social situation in Tahiti. It will be recalled that Tahiti was first 'discovered' by Europeans in June 1767 when Captain Samuel Wallis in the *Dolphin* observed this beautiful mountainous island, landed there and established friendly relations with the Polynesian inhabitants. The French explorer Louis-Antoine de Bougainville, with the *Boudeuse* and *Etoile*, independently 'discovered' Tahiti in April 1768. The account of Tahiti provided by Samuel Wallis was sufficient to persuade the British Admiralty and the Royal Society that the observation of the transit of Venus should be made at Tahiti, and in due course this was done by Captain James Cook and astronomer Charles Green (in June 1769).

The Russian expeditions to Tahiti were in the first quarter of the 19th century, and their accounts showed that many changes had occurred since the days of Bougainville and

Cook. The initial accounts, by the English and French, showed Tahiti to be a pagan paradise, so much so that the London Missionary Society had determined to bring the Christian religion to the island. The senior missionary was the Reverend Henry Nott, who quickly established himself as an extremely powerful figure in relation to the Tahitian royal family and to the ordinary people. As Glynn Barratt comments:

When *Vostok* and *Mirnyi* called at Matavai Bay in July 1820, English missionaries had been toiling there for twenty years with conspicuous success. Bellingshausen and his people were obliged to gain the missionaries' favour, or at least their understanding, before dealing with the islanders around the bay. The Russians liked neither this fact nor the rule imposed on the Tahitians in the name of God the Father by the Reverend Henry Nott and his companions.

There is a wealth of information and comment included in this volume on aspects of the practical ethnography, zoology, botany, hydrography, geology and meteorology that Russian expeditions undertook. Some details are also given of the navigational methods; for example, it seems that the sextants and chronometers used by the Russians were of English make, and their admiration for Captain Cook is illustrated by the fact that they were able to calculate the errors of their chronometers by comparing the longitude of Point Venus, as determined by Cook, with that obtained by their chronometers. Of course, Cook and his astronomers had determined the longitude of Point Venus by numerous observations on all three voyages.

The book is illustrated with drawings by Russian artists (Ludovik Choris, P.N. Mikhailov) and by photographs of several artefacts; the dust-cover reproduces Mikhailov's portrait of King Pomare. Professor Barratt deserves our thanks for this account of Russian exploration in the Pacific.

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Gregory Haines, *Pharmacy in Australia: The National Experience*. Sydney: Australian Pharmaceutical Publishing Co. for the Pharmaceutical Society of Australia, 1988. x + 433 pp., illus., \$35.00.

*Pharmacy in Australia* challenges. Haines takes on a tremendous task to review a broad

professional field in a large, diverse country. He accomplishes much in a chronological approach: 'Beginnings', 'A National Sense', 'Depressions', 'National Beginnings', 'War', 'Commercial Union' and 'A New World, but Brave?' Additionally, Haines' introduction includes reference to early developments outside Australia as well as to Aboriginal practices.

Developments in the Australian colonies, prior to Federation in 1901, are outlined, with appropriate reference to societal concerns over poisons and poisoning (as was also the case in Britain at the time). Regional rivalries are highlighted: 'Criticisms, their mode and manner, deepened the colour of jealousy in which pharmacy organisations in Victoria and New South Wales cherished each other'. The protracted period—beset by countless personality clashes—of creating national unity is considered; while this is viewed primarily as an internal story of pharmacy, such external factors are noted as 'the war of 1914–1918 [that] shocked and changed the new Australia'. The war raised, for instance, such issues as inadequately trained army compounders, new opportunities for women, and the emergence of 'Buy Australian' campaigns. Haines also gives the reader a feel for the prolonged and complex build-up to the formation of the Pharmaceutical Society of Australia during the 1970s.

Such broad sweeps offer many challenges to keep the general reader, if not the specialist, committed to the text. Many will enjoy Haines' more vigorous passages. For instance, writing about the 1920s and the 'teens, he comments (p. 247):

A type of sexism was to develop in pharmacy—the real men were the businessmen, leadership stock. The champions of professional standards were feminine, effete or academic. They lived in a fairy land of ideas and were out of touch with the world where the real men lived.

Maybe, but no documentation is given for such assertions. Indeed, many readers, historians especially, will be frustrated that the book is not documented. It is always unfair for a reviewer to ask for material deliberately excluded, but judgements—of publisher as well as of the author—must be questioned when the first national history, presumably intended to become the 'standard', appears without offering ready means—and the bibliography is also cursory—for students of pharmacy and others to assess and to follow up many of Haines' interpretations.

Haines certainly does not hold back his views, many of which appear coloured by today's values and standards. In one place, commenting on the period around the 1920s, he says (p. 239):

While new drugs and products and techniques were calling for changes in practice and education, pharmacy persisted in concentrating most of its efforts and attention on the easier world of commerce.

Not so medicine. Its status covered its slow and imperfect adaptation to the range of new techniques and preparations, and its areas of backwardness. One example of the latter was the polypharmacy of the 1930s.

Not only is there a lack of examples to support the interpretation, but also the resulting discussion on polypharmacy—which was perhaps not so widespread as implied—does not consider the context of therapy at the time, nor does Haines wonder if modern treatments are any more effective, especially in the area of self-care which has been increasingly the responsibility of pharmacists.

Pharmacists will probably have no problem with the smorgasbord of topics covered, but non-pharmacists may have some difficulty in comprehending fully the parameters of pharmacy. How significant, for instance, was the issue of narcotic abuse? Indeed, although there is much on the central dilemma of pharmacy—namely, commercialism versus professionalism—questions about what defines the profession and its practices are given little analytical attention. When topics such as the introduction of sulphonamides are mentioned, the precise impact is assumed rather than explored.

Among an inevitable number of misprints and the like, the spelling *minum* rather than *minim*—a unit of measurement once commonplace in pharmacy practice but no longer in general use—seems especially symbolic. Haines glides over detail to give a sense of change in the big picture, but all those interested in the history and the future of a complex profession must look at much of the minutiae, especially in terms of pharmacy's relations with society. Haines notes links between trends in pharmacy and concerns over poisoning in the nineteenth century, yet he does not address the question of whether pharmacy's success in utilizing a 'coat-tail' effect was self-serving rather than in the best interests of society. In the last chapter, Haines looks to the future and

recognizes that this will not be altogether of pharmacy's own devising. However, societal trends and concerns, past and present, need detailed consideration if history is to help with the analysis of current and future trends. Scholars of Australian pharmacy and of pharmacy in general have Haines' book as a springboard.

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**D.C. Blood**, *The University of Melbourne School of Veterinary Science: A Recent History, 1962-1992*. Melbourne: Veterinary School, University of Melbourne, 1992. viii + 306 pp., illus., \$50.00.

In 1962, the Melbourne Veterinary School was re-established after a lapse of 34 years. Douglas Blood describes this re-emergence and subsequent growth over 30 years. It is a book full of meticulously recorded detail. It describes the fund-raising, the building, the enrolment of students, and the recruitment of staff, both academic and ancillary. It outlines the research effort and post-graduate training, the establishment and functions of the clinic and hospital, and the Faculty's public relations.

The move to re-establish the School began in 1957. The Committee on Australian Universities (the Murray Committee) in that year recommended that future needs for veterinary graduates could be satisfied by the existing schools in Sydney and Brisbane, with upgrading of the latter. Veterinarians were not in short supply, neither was there an urgent demand for student places. Increased livestock numbers in Victoria matched a transitory rise in sheep numbers at the 1950/51 wool boom, but cattle numbers, far more important for veterinary practice, declined.

It was difficult to argue a case for a new school in Melbourne, and funding was elusive. Straitened circumstances still show in noisy laboratories with low ceilings and poor ventilation. The author comments with emotion on the failure of Australian governments to complete veterinary schools with internationally acceptable facilities.

Doug Blood was appointed Dean in 1962. He worked desperately to organize finance, buildings and staff. The first year of the course was taught in 1963, and completion of the plan by 1967 was urgent. Blood only

suggests his pivotal role and under-rates the force of his effort.

Much information is presented as lists: the appeal committee, the building committee, graduates, post-graduates, staff, successful theses, textbooks, academic associates; all are enshrined, but some explanations are needed. I was astonished by the variation in the proportions of students who graduated with honours; until about 1972 there were approximately 20%, while later this rose to be as high as 69%.

Chapter seven demonstrates why training of veterinarians for skilled practice is expensive. At least 85% enter practice and must confront owners of production and companion animals. A school has to have well equipped clinics in several locations. It must cultivate good relationships with producers of animals at all levels. It must accommodate students.

Blood has run very successful clinical departments in at least three veterinary schools. Writing with insight, he describes modification of facilities that the Melbourne School had to make following changes in land use. He illuminates clinical research on innovative services to livestock owners through herd health programs.

The School ignored recommendations from the Murray Committee that large research organizations—CSIRO, ANU, AEC—could contribute training, particularly to post-graduates. The Veterinary Preclinical Centre shared a campus with the CSIRO Animal Health Research Laboratory, and in the early 1980s an agreement between Melbourne University and Animal Health permitted PhD students to undertake their candidature at the Laboratory. There is no explanation for the delay of thirty-one years in the first of such conferrals.

There is a chapter on external relations but no account of the stance of the Veterinary School in such public veterinary issues as animal welfare, intensive animal production, or facilities for study and control of exotic diseases. There is nothing about a policy concerning food from genetically engineered animals, nor concerning the meat substitution scandal.

A work like this, which chronicles events without much discussion, is not a great read. It is more nearly a source book, to which one can turn for data; it doesn't provide much enlightenment about why things were done. As a source it has some disadvantages. It has a table of contents with no page numbers, and though there are chapter numbers, these are not repeated on the chapter headings;

while in the text, reference to chapters is made by numbers.

Putting the difficulties aside, this history is of considerable value, for it accurately reports in detail the process that enabled this institution to form and develop the maturity it now displays. Given the initial handicaps, its initiation and success are testimony to farsighted planning and a deep resolve to succeed.

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**Rod Andrew and Alf Barnett (eds), *In Their Day: Memoirs of Alumni, The Baker Medical Research Institute*.** Melbourne: Hyland House Publishing, 1992. xii + 188 pp., illus., \$24.95.

This is a collection of essays by alumni and current staff members of the Baker Medical Research Institute in Melbourne. They were originally published in the 'in-house' magazine of the Institute, *Baker Institute News*, and are reprinted in the book with the addition of a brief biography of each author, and illustrations. The editors are themselves alumni and contribute their own recollections.

The Baker Medical Research Institute was founded in 1926. Since Dr T.E. Lowe became Director, and especially during Professor Paul Korner's directorship, its research work has been concentrated on cardiovascular

disease and the physiological and biochemical mechanisms that underlie it. But, like several other biomedical research institutes in Australia, its origins were very much in the setting of a hospital. Indeed, it can be said that the Baker Institute was the research arm of the Alfred Hospital until the establishment there of Monash University academic departments in the 1960s. It is not surprising, therefore, that the research undertaken within the Institute up until the late 1970s was eclectic and heavily biased towards clinical research.

The collected essays published in this book are personal recollections of the time spent by the authors at the Baker Institute, of the people with whom they worked, and of events that occurred; testimonies to the benign influence that the Baker Institute had on their subsequent careers; and, in some cases, accounts of the authors' personal careers. They are, in a sense, written-down oral history and autobiography.

The editors have assembled this collection of essays very professionally. The book should be of great interest to the 'in' group of Baker alumni (among whom I number myself, with pride and pleasure), though the reminiscences may not be compelling reading for the outsider or compulsory reading for the scientific historian.

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