

Reviews

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Sir Gustav Nossal: *Diversity and Discovery: The Walter and Eliza Hall Institute, 1965–1996*. Miegunyah Press: Melbourne, 2007. xiii + 305 pp., illus., ISBN: 9780522851175 (HB), \$45.00.

Should anyone else manifest, much less lay claim to, ‘my flamboyant ways, naked ambition, ill-concealed arrogance, and tendency to verbosity’, he would surely be looked upon with distrust and probably with disdain. Not so Gustav Nossal, who confesses to these traits early in the book! When Nossal appeared on the international immunological scene some 50 years ago, his ‘flamboyant ways, naked ambition, [and] ill-concealed arrogance’ were viewed with a tolerant amusement (and perhaps even a little envy) by a generally staid community of immunologists. And this acceptance of Nossal’s almost unique affect was surely leavened by the fact that, from the very outset, his science was pertinent and world-class. Moreover, his ‘tendency to verbosity’ was respected, because then, as still today, he spoke sense—and this in elegantly constructed sentences and paragraphs.

It came as no surprise, therefore, that in 1961 Nossal, at age 30, was chosen by Macfarlane Burnet as Assistant Director of The Walter and Eliza Hall Institute, and as Director in 1965 at age 34. Burnet had decided that the future of the Institute lay primarily in the then-expanding and exciting field of immunology, and he could be certain that Nossal would press firmly ahead in expanding upon Burnet’s already impressive contributions to this discipline (such as his prescient theorizing

on tolerance, which won Burnet a share in the 1960 Nobel Prize in Physiology or Medicine). From 1965 to his retirement in 1996, Nossal led the Hall Institute, and this volume constitutes a record of his stewardship. It is, in fact, a sequel to Burnet’s report on the previous era (Burnet, F. M., *The Walter and Eliza Hall Institute 1915–1965*, MUP, 1971).

As might have been expected of Nossal, this book is as much a paean to Nossal himself as it is a description of 30 years in the life of the Hall Institute. Since my dictionary defines ‘paean’ as ‘a song of joy, praise, triumph, and thanksgiving’, use of this word is not inept, since there is good cause for both the Institute and its Director to celebrate each of these attributes. If the Institute was highly regarded in 1965, it depended almost entirely on Burnet’s fame. By contrast, the position of the Institute in 1996 was the product of the quantity and quality of scientific production by an entire faculty of scientists, whose accomplishments were on a par even with those of Nossal himself. This, then, is the story that Nossal summarizes in his report.

The first section of the book is devoted primarily to administrative matters. Amid a welter of primarily local and parochial data, much involving housekeeping and the medical and other politics of Victoria and Australia, there emerges a fascinating picture of the growth of the scientific enterprise in Australia, which matched that taking place elsewhere in the world. The annual budget of the Institute grew from less than \$1 million to more than \$25 million,

and its endowments rose some 120-fold to almost \$50 million. The recruitment of senior scientists was accompanied by the expansion of technical and service staff, and of the facilities to house them. In step with such an expansion was the ability to raise both research and operating funds, not only within Australia but from foreign sources as well, as each of the senior investigators achieved international recognition for significant accomplishments.

The second and major portion of the report covers the principal areas of the biomedical sciences emphasized at the Institute, and the major accomplishments in each area. These summaries pretend to be written for the lay public but, amid the welter of detail and of abstruse terminology, such readers will come away, perhaps, with only an impression of progress in such familiar areas as ‘vaccines’, ‘cancer’, ‘autoimmune diseases’, and the still somewhat mysterious ‘molecular biology’. However, the story that Nossal tells, supported by the list of the many national and international honours bestowed upon the Institute’s scientists, will surely make all Australians proud of the role played by the Institute in assuring Australia a seat at high table in the hall of international science.

In addition, fellow scientists will learn from this summary precisely what Nossal and the Institute are most proud of. To mention only a few: there is Nossal’s own work on the life and times of the antibody-producing B lymphocyte, on its interactions with the germinal centre, and on immunological tolerance; there is the work of Jacques Miller on the role of the thymus and his work with Graham Mitchell on T and B cell interactions; there is the work of the Clinical Research Unit under Ian Mackay on autoimmune diseases, and especially on the pathogenesis and therapeutic approaches to type 1 diabetes; there is the Cancer Research Unit led by Donald Metcalf, with their important work on growth factors; there is the Biochemistry

Unit, first under Gordon Ada and then Ken Shortman, who made significant contributions to the methodology of lymphocyte subset separation; there is the Molecular Biology Unit, led jointly by Jerry Adams and Suzanne Cory, working on the genetic basis of immunoglobulin formation and of tumour transformation; and finally there is the Parasitology Research Unit under Graham Mitchell, studying the susceptibility and resistance to such infections, and working to perfect an effective vaccine against malaria.

Often overlooked in assessing the accomplishments of a private research institution is its contribution to the education of the general scientific community. This is accomplished not only by the in-house advancement of the careers of junior scientists, but also by the exposure of ‘outsiders’ to the latest developments by means of shorter-term, post-doctoral fellowships. Here Nossal is justifiably proud that the Hall Institute has seeded its alumni and alumnae among many prominent research institutions, both within Australia and abroad.

If a single fault may be found with this success story, it is the reinforcement of a growing trend among academic institutions toward the commercialization of the products of their research—an unfortunate trend, at least in the mind of this reviewer. Such institutions are established ‘to do good’; they are usually supported by Government (via grants and awards) and by private individuals (via donations and bequests) to serve the common weal. Surely, then, the fruits of the enterprise and any patents belong to the public. The larger danger, however, is that the prospect of financial gain (be it from patentable research or the direct support of specific research by industry) might unduly influence the choice of problems or the direction of specific efforts. Nossal claims that, without such ownership rights and potential profits, some promising approaches (to the development of therapeutic drugs, for example) might

not be exploited. But surely government, which has developed so many mechanisms for the public good, could solve this problem also, and surely the scientific community, and especially its biomedical research component, could help in this effort.

This minor caveat aside, Nossal has told an important story about the growth of an outstanding research institution that has become one of the prestigious leaders in international biomedical science. He left to his successor as Director of the Hall Institute, Professor Suzanne Cory, a shining legacy, which she will undoubtedly enhance in future.

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Kathleen Fennessy: *A People Learning: Colonial Victorians and Their Public Museums, 1860–1880.* Australian Scholarly Publishing: North Melbourne, 2007. xiii + 321 pp., illus., ISBN: 9781740971751 (PB), \$39.95.

The importance of this well-researched, thoughtful and cogently written examination of Victorian public museums lies in the questions it raises about the types of knowledge Australian nineteenth-century institutions created and disseminated. While Fennessy refers to Melbourne's Public Library, National Museum, National Gallery, and Industrial and Technological Museum as 'the Institution', what emerges from her thorough, detailed research is that the gaze of this colonial institution was not based on the panopticon model. Instead, it created multiple leanings tailored to different classes of colonial society.

One of the strengths of the book is Fennessy's ability to chart the ins-and-outs of how learning was disseminated to the wider, colonial community. The book, however, is less successful in dealing with the argument advanced by R. J. Sellick in his 2003 history of the University Melbourne, that colonial institutions were transmitters rather

than creators of knowledge. So, while the author skilfully builds a picture of how the Melbourne Public Library and Technological Museum serviced the artisan's requirements for useful knowledge, she fails to examine critically whether the Institution, in servicing autodidacts, precluded the construction of other forms of knowledge.

Instead, she repeats well-known stories: how, for example, McCoy's National Museum, sited within the grounds of the University, caused heartache for Redmond Barry and others, who wished all branches of knowledge to be under the umbrella of the Melbourne Public Library. Yet a museum within a university was part of a scholarly, global network of scientific ideas that a library could never be. Likewise, the familiar story of the arrival of the exhibits of gorillas at the National Museum is used to demonstrate how evolutionary theory increased the people's learning, but there is no mention of when the Melbourne Public Library acquired Darwin's *The Origin of Species* and whether its acquisition aroused controversy.

The closest the author comes to asking whether the Institution had assembled the right building blocks of knowledge for the colony's long-term needs occurs when she mentions how the subject of reforming engineering education was indifferently received by those who attended the Technological Museum's 1871 public lecture series. While Fennessy explains this in terms of scepticism about the value of a university education, might another explanation lie in how an institution, anxious to be popular with the public, circumscribed the knowledge it transmitted to the people?

It would appear that the Institution also had trouble responding to new ideas about society; for example, it never organized lectures on moral and social philosophy. In the 1870s, this was left to the Melbourne Eclectic Society, some of whose members included the schoolteachers who were determined to broaden the University's

curriculum. Fennessey, however, omits any discussion of this area of colonial intellectual history. While the author is at pains to show how the Institution allowed the people to learn, she is more reluctant to examine how the likes of Barry, Chairman of the Institution and Chancellor of the University, may not have favoured the Institution sponsoring public discussion about new moral and social understandings of civil society.

Nor does the book consider how the artisan, who acquired knowledge from the Institution, could politically challenge existing institutional arrangements. This omission is evident in the final chapter that deals with the Melbourne Botanic Gardens. Although carefully framed by the existing historiography, the author misses an opportunity to strengthen her thesis by showing how, among the most vehement critics of the Director of the Gardens (Ferdinand von Mueller), there were gardeners who practised self-help and self-education—the very values Fennessey ascribes to the artisan users of the Melbourne Public Library.

Despite this challenge to existing institutional arrangements, Fennessey argues that the Institution was important in creating a civil society. Perhaps this claim needs to be tempered by recognizing how, between 1860 and 1880, fundamental political conflicts about the nature of civil society occurred in the colony. While not all these were about the people's learning, the issues of education, self-help and equal representation lay at the heart of these conflicts more often than not.

A People Learning is an important book. It offers a new starting point by which to understand the dissemination of knowledge in British settler societies. It will lead to further investigations about why new bureaucratic and institutional arrangements that were independent of the Institution were put in place. Just as important, it offers a means of evaluating the role of contemporary institutions in creating and

disseminating knowledge in modern, civil societies.

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Geoffrey Gray: *A Cautious Silence: The Politics of Australian Anthropology*. Aboriginal Studies Press: Canberra, 2007. ix + 293 pp., ISBN: 13978085575515, \$39.95.

Geoffrey Gray's *A Cautious Silence* should be read by anthropologists working in Australia. It covers the formative years of Australian anthropology, between the 1920s and 1950s. The book is the result of detailed archival research on the struggles that characterized the early formation of the discipline, and it is substantially shaped by the author's access to 'private correspondence, diaries, field-notes and confidential reports to funding institutions, mission and occasionally to government'. This source material dictates discussion of anthropologists rather than of their work or of anthropology itself. Those looking for the kind of intellectual content and debate generated by George Stocking's numerous volumes on the history of anthropology will find little joy, as this study lacks detailed consideration of the intellectual output, the publications and the ethnographies that have shaped the fledgling discipline. Ethnographies can often yield more complex, ambiguous and contradictory aspects of the field; instead, *The Politics of Australian Anthropology* sheds most light on the relationship between anthropologists and colonial officials. The struggles over limited financial resources and the factional, personal and professional conflicts with other anthropologists, missionaries and colonial administrators are considered at length. The strength of the study is that it reveals the unglamorous and dishevelled tangle of political obstacles and compromises that underpinned anthropological research in this period.

Gray shines a light on the encounter of anthropology with government administrations. He assembles the principal characters and the situations in which the anthropologist is reduced to the role of either opponent or accomplice. The criticism of administrators by Piddington in Australia and Fortune in New Guinea can readily be juxtaposed with the complicity of Elkin in Australia and Williams in New Guinea. We glimpse something of the authoritarian nature of the social politics and oppressive racism inherent in Australian colonial administrations. The tensions and the anxieties of control under colonial rule and the problematic nature of research are evident, although colonialism is not the subject of this research and surfaces indirectly. It is not coincidental that Grey's book is written at a time when critical social-science research and intellectual independence from government is under attack, and when familiar demands from government for more practically orientated research outcomes are again current.

The task set by Elkin for anthropological research was that it should enable indigenous people to adjust to 'great changes', by 'overseeing legal and administrative weaknesses, anomalies and injustices'. It was simply impractical and illusory to seek an understanding of social and cultural complexity, he thought. Instead, Elkin attempted to forge ties that would bind anthropology to the State rather than see it pursue academic or independent research. Anthropologists in this period were generally reluctant to speak out or criticize the conditions on the colonial frontier. The critique came in the fictional form of Xavier Herbert's book *Capricornia*. As Asad has pointed out and Grey's study confirms, the role of anthropology was relatively limited and unimportant to colonialism and colonial administrations (Asad, 'Afterword', in Stocking (ed.), *Colonial Situations*, 1991). The reverse was not the case, because anthropology emerged, perhaps more than any other discipline,

under the umbrella of European colonial expansion. In Gray's study, the anthropologist is subordinate to governments, colonial administrators and missionaries, who determined access to research funds and field research. The anthropologist in the Australian situation could research subject populations, but could not consider colonial power or engage in criticism of its effects. Anthropology operated under the umbrella of colonial authority and was structurally subordinated to it.

A more comparative study of the similarities and differences may have been useful. Thus, the research of the Manchester School, in a comparable period and colonial context, was apparently more methodologically innovative and more radical in its theoretical approach to the ethnographic presentation of fieldwork materials (Evens and Handleman (eds), *The Manchester School*, 2006). The engagement of anthropologists with colonial administrations was a perennial problem because of their commitment to fieldwork and participant observation. It was not only the constitutive experience of producing anthropological knowledge, but also a rite of passage for the anthropologist. Gray's research does much to disrupt anthropology's own mythologizing of the fieldwork experience, which depicts the anthropologist as hero. Nor does he confirm those images of anthropology's post-colonial critics: images of the fieldworker as lord and master of the colonized 'informants', dictating the terms of their interaction.

Fortune's anthropological experience, as recorded by Gray, reveals some of this complexity. The colonial administration of Papua New Guinea indirectly created the conditions of his research through its Native Regulations, which suppressed sorcery. The Tewara were suspicious of Fortune and suspected that he was a spy for the government. Conversely, he incurred the displeasure of the colonial administrator, Hubert Murray, because he would not act as

a spy, as he considered it ‘a befouling of the materials of my science’. Fortune objected to the Native Regulations, which made certain aspects of sorcery and ritual practice illegal, and thus made him an accomplice by conducting his research. Yet Fortune was not averse to the use of force; as he said, ‘a little suppression is in the interests of the white residents’. Fortune accepted the umbrella of colonial authority without question, but his criticism of policy nevertheless subverted research in Papua New Guinea for a decade.

A Cautious Silence argues that the discipline was shaped by research directed towards pragmatic concerns, and the author asks whether this makes it a distinctive Australian anthropology. For Gray, ‘Australian anthropological practice was characterised by a reification of the traditional Aborigine, a discourse of helping and a close relationship with government’. It affirms Elkin’s vision for Australian anthropology; namely, its usefulness in training colonial officials and acquiring knowledge to support colonial governance. Yet the evidence produced in this book suggests that Elkin’s intentions for anthropology were as narrow as they were politically naïve: a limited vision complimented by equally limited possibilities.

Studying authors’ intentions does not exhaust the meaning of their texts or actions. The questions Gray asks needed wider frames of analysis and a consideration of the ethnographic studies, but the book is ambitious and gives access to an important body of new material. It is especially welcome because it reveals a side of research that is seldom open to public scrutiny.

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Norman Etherington (ed.): *Mapping Colonial Conquest: Australia and Southern Africa*. University of Western Australia Press: Perth, 2007. x + 220 pp., illus., ISBN: 9780980296440 (PB), \$39.95.

A comparative exercise in colonial cartography and its unmapping, inspired by the work of J. B. Harley, is something that ought very much to be welcomed. Etherington in his introduction to this collection of articles makes some strong and important claims about ‘the new history of cartography’ initiated by Harley:

Chief among [its] insights is that many cultures of mapping have flourished in widely separated parts of the globe, and that each deserves to be understood on its own terms rather than dismissed as primitive or unscientific. Another insight is that the European exploration and later colonization depended crucially on cartographic knowledge obtained from indigenous guides... Yet another is that the proliferation of maps produced by the colonizers, erased, wrote over, and displaced indigenous conceptions of space and power – so that in the long run the colonizers’ view of the world prevailed.

But does this collection live up to these claims? Sadly, no. There is nothing on Aboriginal mapping in Australia or indigenous mapping in South Africa. There is not even a mention of the work of people such as Peter Sutton and Jane Jacobs, who have brought to light indigenous cartography. Nor is there any reference to Woodward and Lewis (eds), *The History of Cartography, Vol 2, Book 3: Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies* (1998), which is the single most important volume in the series begun by Harley and Woodward and which has changed the history of cartography forever by providing the evidence for the very points Etherington claims.

Etherington ends his introduction by noting that, while the South African Government has a Millennium project mandated to unmake the colonial map, the need for such unmapping is only dimly perceived in Australian corridors of power. How can one account for the purlblindness of this project, which seems to have aided in that failure of perception?

The first chapter here is devoted to the role of the United Kingdom Hydrographic Office, an institution at the heart of the colonial enterprise, and fairly typically, while it discusses the roles of Flinders and King in mapping the Australian coast, there is no mention of the assistance of Bungaree, the Australian Aborigine they took with them. But equally, there is no mention of the difficulties encountered in putting Australia on the map; for example, the Java la Grande controversy. The chapter goes straight to the progressivist scientific approach to coastal mapping, without allowing that a good deal of laborious and occasionally flawed empirical exploration preceded it.

Very curiously, the next chapter is devoted to fantasy maps, which gets even further away from recognizing any of the introduction's manifesto and fails to make the connection to the imaginative nature of all mapping that Carter, Ramaswamy and many others have so richly illustrated (Carter, *The Road to Botany Bay*, 1987; Carter, 'Plotting: Australia's Explorer Narratives as "Spatial History"', *Yale Journal of History*, 1990; Rabasa, 'Allegories of the ATLAS', in Barker (ed.), *Europe and Its Others*, 1985; Ramaswamy, 'Catastrophic Cartographies: Mapping the Lost Continent of Lemuria', *Representations*, 1999; Ryan, *The Cartographic Eye: How Explorers Saw Australia*, 1996).

Janda Gooding deals with the tensions of colonial dispossession in her chapter on Dale's panoramas of King George Sound in Western Australia, but does not deal directly with mapping. The strange direction of the volume is perhaps most apparent in Etherington's own chapter 'Putting Tribes on the Map', where he even fails to mention the huge controversy in Australia over tribal mapping (see Davis and Prescott, *Aboriginal Frontiers and Boundaries in Australia*, 1992; Sutton, *Country: Aboriginal Boundaries and Land Ownership in Australia*, 1995).

Though Etherington makes some very important points about the ways in which 'savages' were initially left off the map and then were later included in the South African case in order to display them as fragmented, in Australia he claims Horton's map as a natural and readily adopted version of Tindale's map, whereas Horton's map deliberately blurred the boundaries of Tindale's map and was frequently displayed simply to demonstrate the ubiquity of Aboriginal presence. What is at issue is the question of whether there are fixed and determinate boundaries of Aboriginal territories and the possibility of appropriation by mining companies. This controversy plays out in a context where there have been radical developments in Aboriginal mapping of their land and in the associated land claims that came into effect after the Mabo decision; all of which goes unmentioned.

The final chapter considers the African renaissance and the attempt at unmapping colonial conquest in a mapping exhibition in Pretoria. Curiously, this also has very little indigenous content and very little about the possibility of counter-mapping. (For an approach drawn from the African context, see Moore, 'Remapping Resistance: "Ground for Struggle" and the Politics of Place', in Pile and Keith (eds), *Geographies of Resistance*, 1997.) But what about the comparison of this case to unmapping in Australia?

So why is this collection characterized by a lack of the relevant and obvious materials, given its stated aims? Collective projects often fail to deliver, since many participants drop out and do not contribute their chapter, either through disagreement or the press of other commitments. Given the paucity of indigenous cartographic materials, it is hard to resist the conclusion that what this collection reveals, despite its best intentions and avowals to the contrary, is not only that maps colonize, but that the history of colonial mapping contains within it the same tendencies to domination

and appropriation as the colonizers and their maps. Perhaps such a conclusion is overdrawn, but the collection also fails to capture the ways in which western cartographic rationality presents territory as available for exploitation and appropriation, and how it achieves that effect; while at the same time it effectively denies the indigenous perspective by simultaneously acknowledging its existence and failing to represent it.

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Ross Jones: *Humanity's Mirror: 150 Years of Anatomy in Melbourne.* University of Melbourne Department of Anatomy and Cell Biology: Melbourne, 2007. xviii + 318 pp., illus., ISBN: 9780646473000 (HB), \$35.00.

The teaching of anatomy at the University of Melbourne began in 1855, seven years before the medical school opened its doors to students. However, the subject taught in the 1850s was not human but comparative anatomy, and it was taught to Arts students. In the mid-nineteenth century, there was particularly widespread public interest in Australian fauna, and curiosity as to where marsupials and the platypus fitted in the scheme of creation. Comparative anatomy continued to be an important focus once George Britton Halford arrived in 1862 to head the Anatomy Department of the new Medical School. He taught it as a disciple of the creationist, Richard Owen, and in opposition to the evolutionists, including Charles Darwin and Thomas Huxley. Halford was also interested in phrenology and dissected the heads of a range of individuals, including the bushranger 'Mad Dog Morgan', in search of a relationship between their character, intelligence and skull shape. In the first decade of the Medical School, the intake rose from three to just thirteen students, and Halford took advantage of

what must have been a very light teaching load to engage in research. However, this did not always go down well with his colleagues, and in August 1864, in what the local paper described as the 'battle of the brains', Halford was caught up in heated arguments with other members of faculty over who had the right to dissect the skulls of executed criminals. As Ross Jones then describes in some detail, Halford was the first of several of Melbourne's Professors of Anatomy to embroil himself in controversy.

Humanity's Mirror is a commissioned history of the first 150 years of the Department of Anatomy (since 1993, the Department of Anatomy and Cell Biology) at the University of Melbourne. It has been beautifully produced, with forty black and white illustrations and eleven colour plates. It deals with one of Australia's most important anatomy departments, and covers an era when anatomy was a matter of widespread public interest and controversy, in a manner comparable, perhaps, to climate change in the early twenty-first century. Palaeontology, comparative anatomy, anthropology and evolutionary theory were all both highly political and very much topics for research and discussion among late-nineteenth and early-twentieth century anatomists.

Jones is at his best when setting the views of the various anatomy professors in the context of the heated debates that followed the work of Darwin. Three of his nine chapters are effectively mini-biographies of the more famous—or should that be infamous?—professors: Richard Berry, Frederic Wood Jones and Sydney Sunderland. The contrasting vignettes of the eugenicist Berry and the Lamarckian Wood Jones make particularly interesting reading. Berry continued the Department's traditional interest in comparative anatomy, but his focus was on humans rather than animals. Berry and Wood Jones both had international reputations and they were

public intellectuals, frequently lecturing to packed audiences on the small brains of the criminal classes or the neglected state of Australia's Aboriginal population respectively.

The staff of the Anatomy Department was very small for most of its history, and it is therefore not surprising that Jones devotes so much space to the Professors and their ideas, but there are also chapters on the changing sources of cadavers for dissection and on developments in the ways in which human anatomy was taught. Given the importance of anatomy in the medical curriculum, relatively little space is devoted to what the students actually studied, and how that changed over time. The role of the surgeon/demonstrators is discussed, but not at any great length, and it would also have been valuable to examine the changing role of anatomy as a rite of passage for medical students.

Jones has tapped a rich vein of student songs and poems about dissection, however, which offers a tantalizing glimpse of the world-view of generations of Melbourne's medical students. He also uses the views of successive anatomy professors to illustrate very well some of the diverse ways in which evolutionary theory engulfed and transformed late-nineteenth and early-twentieth century thinking about anatomy. With the exception of the complex topic of Richard Berry's collection of Aboriginal skeletal remains which, as Jones quite rightly points out, deserves a separate history of its own, *Humanity's Mirror* does not avoid historical issues that might embarrass the current Department. On the contrary, Jones devotes considerable space to past controversies, and in the process helps to illuminate the ways in which conventional wisdoms and consensus views in science, as in other fields of study, are so often here today and gone tomorrow.

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Roslyn Russell: *Two People and a Place: The Family Who Lived in Sydney Observatory*. Roslyn Russell Museum Services: Sydney, 2008. vi + 219 pp., illus., ISBN: 9780646485324 (PB), \$30.00.

There are few studies that reveal the domestic side of a scientist's life, although the image of Charles Darwin appropriating the family bath for his research on barnacles has always stuck in my mind. Roslyn Russell's joint biography of New South Wales Government Astronomer Harley Wood and his wife Una is therefore particularly welcome. Commissioned by Harley and Una Wood's daughter, this book is intentionally more a family history than a history of Sydney Observatory, where Harley worked from 1936 to 1974 and the family lived for thirty-three years. It draws primarily on oral histories with Una Wood and her son and daughter, so the Harley Wood we get to know is primarily through the recollections of his family.

Harley Wood was born in 1911 in Gulgong, New South Wales, the son of a small allotment farmer and general carrier. Harley clearly showed academic promise as a young boy and was encouraged by his parents. In order to attend high school in Mudgee, Harley lived for a time with another family, until his father could find a new job and move the family. His father would bring home cases of apples from his rural mail run, which Harley then sold to raise funds for his first telescope. In 1929, Harley won a state bursary and a scholarship to the University of Sydney, but regrettably, there is little on Harley's university student years. Without an oral history with Harley, or more extensive research, this seminal period in his life passes quickly, and within two pages he has graduated in 1932 with an honours degree in physics.

Una Johnston was born in 1913 in Leichhardt, a Sydney suburb, the eldest daughter of two teachers. Like Harley, she did

well at high school and went to the University of Sydney on a Teachers' College scholarship. Harley also attended the College while working as a teacher during the Depression; they met there and were married in 1936, just as Harley started as Assistant Astronomer at Sydney Observatory. Their lives together were shaped by astronomy, especially after Harley took over the running of the observatory in 1941 and they moved their modest belongings into the large four-bedroom house that was part of the main observatory building. Their son Chris was born the same year.

The relationship between the domestic and the scientific at Sydney Observatory is symbolized by the door that separated the offices from the residence. The children knew that they were not to enter the offices unless invited to do so—unless their father was on duty on Saturday, in which case they could go in to help him lower the time ball at 1 pm. Observatory staff would knock on the interconnecting door if they wished to see Harley while he was at home, and once a month staff and family enjoyed a morning tea prepared by Una. Sometimes the family would be briefed on an astronomical event likely to attract public attention, so that Harley could answer the Observatory phone while they responded to calls to the residence. Harley would sometimes disappear from the dinner table through the interconnecting door to observe an occultation. If on night shift, Harley would return briefly for what his daughter Ros called his 'midnight snack'.

Sydney Observatory, perched on Observatory Hill and with magnificent views of Sydney Harbour, was a curious place to bring up a family. There were few children in the neighbourhood, the public would stroll through the grounds, and drunks would camp in the laundry. The family were tenants in a poorly maintained government building, forbidden to repaint the rooms. But the streets and attractions of central Sydney were just down the hill, and the

house became an attractive base for the teenage children's friends.

Clearly it was also a happy family home, and Una was actively involved in supporting the social aspects of the astronomical community. Local and international colleagues of Harley's came frequently for dinner, many becoming close family friends. When, mainly due to Harley's organizing skills, the International Astronomical Union met in Sydney in 1973, a dinner for sixty was held in the residence. Harley and Una's daughter, Ros, did the cooking, and her friends waited on the tables. The large entrance hall of the residence served as a banquet hall; at other times it resounded to the music of The Beatles and the Rolling Stones for the children's 21st birthday parties. My favourite photograph in the book is of the family bottling wine in the Observatory's courtyard.

The astronomical work of the Observatory is recounted, drawing on the existing secondary literature and including Harley Wood's own brief history of the Observatory, selections from which are reprinted at the start of the book. The Observatory's work through Harley Wood's directorship focused on the publication of the remaining volumes of the *Astrographic Catalogue* for both the Sydney and Melbourne zones, which involved measurement of the coordinates of 940,000 stars, an immense task. A new photographic project was undertaken with Yale University from 1955, and other studies were made of double stars and minor planets. Sydney remained a highly regarded source of southern hemisphere star observations until its closure in 1982. (The Observatory was transferred to the Museum of Applied Arts and Sciences, and continues to be a centre of public education in astronomy.)

Harley Wood had already retired in 1974, but threw himself into the campaign to save Sydney Observatory as a centre for astronomy research. After a life of work building up the Observatory, he could not accept its closure. Roslyn Russell also

tends to support the astronomers' predominant view that the closure was an act of scientific vandalism by a short-sighted State government. Yet, seen in a broader context, Sydney was just one of several colonial observatories the existence of which was steadily undermined following Australian Federation in 1901, as astronomy, like meteorology, became a Commonwealth Government function. Melbourne and Adelaide observatories closed during the Second World War, and Commonwealth funds for astronomy were channelled into universities, Mount Stromlo Observatory, and international telescopes, such as the Anglo-Australian Telescope at Siding Spring (a site Harley had proposed and helped assess). Ben Gascoigne, Stromlo astronomer and family friend, wisely tried to reconcile Harley to the closure of Sydney Observatory, telling him that astronomy is a scientific practice more than an institution, and that Sydney Observatory had left a huge legacy of useful data.

Harley died in 1984, two years after the closure. Una lived until 2005, and it is her oral history, and that of Ros and Chris, that give this book its character and strength. It is intentionally much more a family memoir than a history of Australian astronomy or Sydney Observatory; yet it is because of this that it provides a refreshing insight into the domestic side of astronomy.

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Pauline Payne: *The Diplomatic Gardener: Richard Schomburgk, Explorer and Botanic Garden Director.* Jeffcott Press: North Adelaide, 2007. xi + 201 pp., illus., ISBN: 9780646485287 (PB), \$50, 9780646487885 (HB), \$80.

Dr Richard Moritz Schomburgk (1811–1891) was appointed second Director of Adelaide Botanic Garden in September 1865 and died in his eightieth year while still in office in March 1891.

Born in Saxony, Schomburgk had been apprenticed as a gardener before joining a three-year expedition to British Guiana (now Guyana), led by his older brother Robert. On returning to Berlin, Richard established an international reputation through his account of the expedition, *Reisen in Britisch Guiana*, and became a protégé of Alexander von Humboldt. However, having supported the liberal cause in the 1848 revolution, Schomburgk and another brother, Otto, joined a group of like-minded people who formed a small emigration society and moved to South Australia in 1849. The brothers established a farm, orchard and vineyard at Buchsfelde, near Gawler, north of Adelaide.

The author of *The Diplomatic Gardener* and Schomburgk descendant, Dr Pauline Payne, has woven together in this book the four strands of Schomburgk's life: his youth and entry into the world of science and learning, with an enquiring mind and gardening apprenticeship; the expedition to British Guiana; his emigration to South Australia and experiences in that State's rural community as a German settler; and his Directorship of the Adelaide Botanic Garden.

As second Director of the Garden, Schomburgk followed on from the tenacious and talented first Director, George William Francis (1855–1865). Here, Schomburgk consolidated Francis's first ten years of development, and much of the brilliant landscaping, horticultural and scientific achievements of that institution are due to his planning and foresight. Indeed, the period (1865–1880) is often referred to as a 'Golden Age'—revisited in the Adelaide Botanic Garden, I would venture to suggest, in the present decade (2000–2010).

Richard Schomburgk, like myself, inherited a well-designed garden, 'which had passed the awkward, early stage'. In its first ten years, Francis had incredibly also established the Adelaide Botanic Garden's scientific and educational roles. The next

twenty-five years under Schomburgk saw the addition of features that are now Adelaide Botanic Garden icons: the Entrance Gates on North Terrace, the much-loved Moreton Bay Fig. Walk, the Palm House, the Museum of Economic Botany, and Botanic Park, while the Victoria House was built for the amazing Guyanan, the Victoria lily, a plant with leaves so large they can support the weight of a small child.

Schomburgk also brought to his Directorship an international reputation and, for the Board of the Garden, a list of recommendations for improvements which, at its meeting on October 1865, it largely approved! Francis's Rosary was enhanced and its collection expanded, and classical statuary was introduced by public subscription, to provide an important visual contrast. A Pinetum and Araucaria Avenue and an extraordinary Arboretum of now mature trees in Botanic Park are further legacies of the Schomburgk years, along with the 'Class Ground' and the Greek-revival style 'Museum of Economic Botany'. Schomburgk was an early conservationist and advocate for suitable tree planting in South Australia. He contributed to the zoological collections in the Garden, which were later moved to their own site and the five acres they initially occupied given over to growing feed.

Richard Schomburgk's formidable role in the Adelaide Botanic Garden can be attributed to his earlier life experiences as a child in Freyburg, Saxony, apprenticed as a gardener. His expedition to British Guiana is well researched and recreated by Dr Payne from his own accounts of the expedition as a representative of the Prussian Government. An historical tome is always enhanced by appropriate photographs and in this book they are delightful, including the front-cover colour illustration from Richard's elder brother Robert's *Twelve Views of the Interior of Guiana* (Ackermann: London, 1841).

Having walked in Schomburgk's footsteps through the Adelaide Botanic Garden's Museum of Economic Botany, down the Moreton Bay Fig. Walk, and out into Botanic Park almost daily for the four years of my internship, and charged for a similar period of time with establishing a new Botanic Garden in Brisbane, this book has particular resonance and appeal to me, as it will to anyone interested in the history of gardens in particular and of 'place' more generally. Congratulations to Dr Payne on a sterling, objective and affectionate reconstruction of her forebear's worthy contributions to the fledgling State of South Australia.

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Peter Donovan: *Anticipating Tomorrow's Defence Needs: A Century of Australian Defence Science*. Defence Science and Technology Organization: Canberra, 2007. x + 216 pp., illus., ISBN: 9780975779835 (PB), download or order from DSTO website.

Cecil Napier Hake, a well-qualified and experienced English industrial chemist whose very name conjures visions of empire, came to Victoria in 1892 as inspector of explosives. After 1901, he was courted by the new Commonwealth Government, travelling to the old country on its behalf in 1907 and joining the Department of Defence as chemical adviser in 1909. Peter Donovan's history of defence science in Australia starts with Hake and proceeds 'with an emphasis on people and institutions rather than on projects'. It differs, therefore, from a number of other histories that have, over the last fifteen years or so, dealt with aspects and periods of defence science. It also has more pictures, those from recent years in full colour, organizational charts of the present Defence Science and Technology

Organization (DSTO), and a splendid Timeline that occupies fourteen pages.

The text is extensively referenced, although information about the early years comes mainly from the papers of Sir John Jensen, who is notorious in archival circles for having squirreled material from other files into his collected working papers, thus making it almost impossible to locate them in any systematic way. Among newer sources is Mrs Joyce Welsh, who is identified as 'a descendant of Cecil Napier Hake'. For all of Donovan's diligent mining of the records, however, the text is curiously monolithic, often lacking contextual information and, in line with the author's stated intention, avoiding even a mention of projects.

One of these was the involvement of scientists from Defence Standards Laboratories (DSL) in Melbourne in the Maralinga atomic bomb tests. Nor is Manus Island mentioned, a DSL tropical outpost for materials testing, nor the production of optical glass in Australia in the early 1940s, thus largely overlooking the work of the Optical Munitions Panel. The list of articles included with other sources is mostly concerned with organizational rather than scientific matters. It is easy to form the view that the defence science culture is more than a bit insular; secrecy and all that, you know?

Through the personal profiles provided, we can see the way the nature of defence science changed to encompass pilotless aircraft, and then, as the electronic age dawned, computer modelling, satellite tracking, automatic sounding buoys, laser depth sounding and—a perennial for the navy—mine sweeping. Women appear late in the history, the first one identified by name being Dr Jackie Craig, who is pictured with the Global Hawk High Altitude Endurance Unmanned Aerial Vehicle system; a titular mouthful to be sure, and a spectacularly ugly aeroplane (picture p. 157). Chemical warfare is mentioned in connection with the work of Dr Peter Dunn,

who led a 1991 United Nations mission to inspect Iraqi chemical weapons facilities, and his successor, Bob Mathews, who is active in international efforts to counter chemical weapons.

Donovan's story flows best when he is discussing relatively recent times, and the dryness of the account of the first eighty years is enlivened by the personal knowledge of the author and of those from DSTO who were interviewed. Even then, however, the shortcomings identified earlier can surprise the reader. Corporatization of DSTO started in the mid-1980s, but Donovan misses the chance to make comparisons with other agencies, such as CSIRO. A key driver of change at DSTO was Dr Bob Ward, who was appointed Chief Defence Scientist in 1991, an appointment that was unusual since Ward came from industry (BHP) and not from within the organization. He was there only briefly, but was successful in leading the DSTO into greater collaboration with Australian industry and, in particular, involvement in two of the new Cooperative Research Centres. Before his time, some staff had made their own connections; for example, Alan Butement declined to move to Canberra when the Department of Supply relocated there in 1967, instead accepting the position of Director of Research for the Plessey group in Australia. In office, 'Butey' (as he was known) is described as 'a good leader, though he had an off-putting manner that took some time to appreciate', and his continual pounding of his staff with his bright ideas prompted the remark that 'a thing of Butey is a chore forever'.

Although readers will need to dig for them, there are some revealing comments about relations between the services and the scientists, and between the latter and their political masters. On the latter theme, Donovan comments that Henry d'Assumpcao, who became Chief Defence Scientist in 1987 after a long career within the organization, 'found the bureaucracy wearing' and 'retired in 1990 to take a

position with the embryo University of South Australia'. And regarding the man who headed the organization from 1978 to 1986, Donovan comments that, while Tom Fink had been a very successful academic, 'he had a tough time in charge of DSTO. He entered the job with little appreciation of the nature of the grinding mill of the Public Service environment, particularly in the biggest department. . . . He worked hard, but underestimated the importance of politics, believing that intelligence and lucid arguments would prevail. He continued to be perceived as an academic'.

Despite my criticisms, the DSTO story is an interesting one, and there is more in it than meets the eye of the casual reader. For example, we can read between the lines and see how an early dependence on Britain—for ideas and people—changed through the period when many Australians were sent there for training before returning to take up positions in the organization, to the present, when Australia can undertake joint ventures with Britain or the USA as an equal partner.

The story of changing government departments, ministers and structures within the defence science organization is interesting too, and there is quite a bit about the growth and decline of the organization's various research sites in south-eastern Australia. And, as promised, there are lots of people. We outsiders will note that the scientists and the soldiers did not always agree on *Anticipating Tomorrow's Defence Needs*, but that some excellent applied-science and technology products were developed. The people will enjoy seeing their work eulogized in the book, and there are other places where many of them have been honoured: in election to Fellowship of the Australian Academy of Technological Sciences and Engineering, or as the winner of a prestigious Ian Clunies Ross Award.

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Claire Muir: *The Medical History Society of Victoria, 1953–2006.*

Medical History Society of Victoria:
Melbourne, 2007. 116 pp., illus.,
ISBN: 9780646477213 (PB), \$35.00.

In an era when medical research has a brief shelf life and medical careers can disappear into oblivion more quickly than ever, this work is a timely insiders' chronicle of the important work accomplished by members of the Medical History Society of Victoria in keeping alive the memory of important Victorian medical careers and institutions.

As Muir briefly points out, even before the foundation of the Society in 1953, medical history was a lively scene in Melbourne. While the first permanent course in Australian history was taught by Manning Clark at the University of Melbourne from 1946 (an irregular offering had been offered from 1927), Frederic Wood Jones had instituted lectures on medical history in the medical course in 1933. Concurrently, another member of the staff, Edward Ford, began a life-long devotion to medical history. Ford took this interest, which resulted in the publication of important Australian medical bibliographies, to the medical school in Sydney after 1937; an early example of the rich cross-fertilization in early Australian medical history circles. Also, while the earliest journal of Australian history (now *Australian Historical Studies*) began appearing intermittently in the Melbourne history school from 1940, the *Medical Journal of Australia* was regularly publishing articles on Australian (including Victorian) medical history from the 1920s. Why was medical history such an important subject? Perhaps the early doctors were attempting to create a clinical history for their new environment, in order to understand its particular benefits and pathologies.

The influence of the Professor of Anatomy from 1930 to 1937, Frederic Wood Jones, was strong in medical history, as

in other areas, with two of his students, Kenneth Russell and Sydney Sunderland, playing an important role in establishing the medical history library and museum at the University of Melbourne. Perhaps even more extraordinary is that one of Wood Jones' students, James Guest, was President of the Society for 2003 to 2005. As a consequence of the abundance of medical historians, the early editors of the *Australian Dictionary of Biography* had little difficulty in finding writers for the medical entries. This rich climate of interest meant that the Society began in 1953 with great vigour. As there was no established group of professional medical historians at this time, a number of the earliest members—Brian Gandevia, Boyd Graham, David O'Sullivan, Graeme Robertson—published extensively on early medical Melbourne, preserving and providing important source material for contemporary historians.

Muir records the disappointment of many in the Society in failing to establish both a permanent chair in medical history at the University of Melbourne and a national institute of medical history. The legacies of the Society are significant, however, because it played a seminal part in the foundation of the national body, now the Australian and New Zealand Society for the History of Medicine. It also has been guilty of bringing about its own partial redundancy, since the Johnstone-Need Medical History Unit at the University of Melbourne was founded by a bequest from one of its important members, thus providing an alternative home for medical historians. Both the national Society and the Unit have been central in establishing medical history securely in the national intellectual landscape. And, whilst it may seem to the reader that the Society has struggled at times to increase its numbers and broaden its base, in fact it has successfully evolved with the times, first allowing non-medicals and then women to play significant roles in its operation, right up to the most senior positions.

Although brief, Muir's history (with a forward by Geoffrey Blainey) is an important and well-written record of a small but important Australian institution.

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Valda McRae: *Chemistry @ Melbourne 1960–2000*. University of Melbourne School of Chemistry: Melbourne, 2007. iv + 576 pp., ISBN: 9780734037435 (PB), \$45.00.

Many decisions lie between the archives and memories and the emergence of institutional history. Choosing a historian and deciding on a budget are two important ones, the first being critical to the quality of the work and perhaps to its scope, and the second to the depth of study, the gathering of information and photographs, and the method of publication (book, CD or internet). So, what have we here? Well, a large and extraordinarily detailed account of forty years in the life of a complex organization, by 'an insider' who has seen just enough of 'the outside' to bring some perspective to the work. Valda McRae's experience as an undergraduate and postgraduate at Melbourne, and her work as a teacher and administrator at department and faculty level, made her well suited to undertake this labour of love during her sort-of-retirement.

Some would criticize the work as being not 'a history', because it lacks context that would show the place of the School of Chemistry in the Faculty of Science or the University of Melbourne, or compare it with other chemistry departments, or even note changing patterns of enrolment or career development. It is a criticism that is often levelled at institutional histories and sometime fairly, but not in this case. The book, as sub-titled, is 'the story of four decades in the School of Chemistry' and a *story* it is, with copious internal detail and no less than 1,450 entries in the name index!

Taking up the story where Joan Radford finished her landmark history of Melbourne University chemistry, McRae begins with 'new beginnings' in 1960, and goes sequentially through 'the years of a thousand cuts' (1970s), 'renovation and review' (1980s), and finally 'towards the millennium' (1990s). A professor who was active during the respective decades introduces each of these chapters, each of which includes a running account of academic and general staff, lecture and organizational matters, and 'life' as it is portrayed at social and sporting events. My era in the department seems to be well covered, even down to the score sheet for an intradepartmental cricket match in which I mopped up the opposition tail (2/3 off my one over)!

A novel feature of the data compilation is that each chapter has six appendices, dealing in turn with BSc Honours lists; prizes, awards and scholarships; meetings of the Melbourne University Chemical Society (founded by David Orme Masson in 1903); the academic staff list (including post-doctoral fellows); details of subjects and sample examinations; and biographical details of research students. Although they are uneven, there is fascinating material in these stories, which cover experience in the department and afterwards, career highlights and retirement activities. The longest story was contributed by Alan Davies (PhD 1971), who describes his career as the 'defrocking as a chemist and an incarnation as an action researcher, social scientist/educationalist'.

McRae has unearthed an astonishing collection of photographs and placed them

at strategic locations throughout the text. The usual collection of staff 'mug shots' is enriched by the inclusion of pictures of graduate students and technical staff at work, academic staff pretending to be at work, happy faces at retirement and farewell functions, and a few cricketers. One photograph I especially liked was taken at the 1979 launch of the Radford history, and shows Joan flanked by staff members Ian Calder and Tom O'Donnell and a visiting J. S. Anderson, who was head of department in my undergraduate days.

Twenty years ago I reviewed a history of the Faculty of Science at the University of Sydney and described it as not so much a history as a source book that would be invaluable to later researchers. I and others have used it in exactly this way to open leads into careers and situations that merited deeper investigation. I think Valda McRae's book will serve the same purpose; time will tell. Meanwhile, the book serves another function for a group of almost tribal proportions—the Melbourne chemistry graduates. Those 1,450 people, poring over text and photograph, will be reminded of the good times they had and the people they shared them with in *Chemistry @ Melbourne*. People get pleasure (or is it pride?) in seeing themselves memorialized. I know I did, but then, as my old supervisor would have said, 'we might have expected that'.

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