

Book Review Section

Compiled by John Jenkin*

Graham Pizzey, *Crosbie Morrison: Voice of Nature*. Melbourne: Victoria Press, 1992. vii + 303 pp., illus., \$26.95.

I can see why I was asked to review this book. I share a remarkable number of characteristics with Crosbie Morrison: a passion for natural history, a degree in biology, work in radio and film, newspaper journalism, chairmanship of a great museum, hypertension. But thereafter the comparison gets thinner. He was an authority in his own right, on Australian wildlife, on conservation and on the role of national parks. He was a pioneer in all of these and as a science broadcaster. He was the David Attenborough of his day. Crosbie Morrison died just as David Attenborough was starting his Zoo Quests in the mid-fifties. Only one of them is famous today. Australia should be more mindful of its own.

Until I read Graham Pizzey's accomplished biography, I had little idea myself of our debt to the man with the national health specs and the bank manager moustache. There was little to indicate that such a straightforward lad from Hawthorn would go on to become Victoria's best-known (and loved) broadcaster. But the impression Pizzey gives is that this robust young man rose, almost inevitably, from unspectacular origins through steady, selfless application and hard work.

After a bachelor's degree from the University of Melbourne, Morrison took an MSc. At the same time he was exploring the natural history around Melbourne. Quite early in his biological career Morrison headed north to Cairns and the Great Barrier Reef. This visit coincided with the expedition led by Dr Yonge from the Plymouth Biological Station. This was 1928, and it is interesting to be reminded that a team had to be sent from Europe to study such a mighty body. Sixty years later another expedition was sent, this time to the Kimberley, by the Royal

Geographical Society—our natural heritage remains largely mysterious.

The six months in Queensland gave Morrison the national scope he would later need as a commentator. He began with small articles for the *Argus*, a conservative morning paper according to Pizzey. Morrison's prose found a vital secret early on—the gift of narrative. He wrote with authority, but also with lively enthusiasm. He knew instinctively that too much information is indigestible—in James Thurber's immortal words, 'it told me more than I needed to know about ferrets.'

Morrison knew well how much we might wish to know about ferrets, or in this case, mice: 'The mouse is not only the smallest living mammal, but according to geologists, it is the smallest mammal that ever has existed, and it is highly improbable that there could be a smaller mammal, for it has all the bodily organs of the elephant crowded into the space of an elephant's eyelids. An elephant weighs 10,000 times as much as a mouse, a human weighs 2,500 as much; yet crammed in the tiny volume is the representative of every bone and muscle, every blood-vessel and gland, that the larger animals possess. Its heart beats 600 times a minute, or ten times as fast as the normal human pulse, and it breathes 130 times a minute, five times as fast as humans breathe. Working at this high pressure its life is short. It is old at two years, though it occasionally reaches the hoary old age of two and a half. A mouse aged 3 is a veritable Methuselah ...'

The *Argus* columns went well. They led to a magazine, *Wild Life*, under the Herald and Weekly Times umbrella, which was of startlingly high quality for its time (beginning in October 1938) and for which, under various pseudonyms, Morrison wrote nearly all the articles, be they on bushwalking, star charts, cameras or natural history itself. Graham Pizzey actually purchased the very first edition of *Wild Life* (for sixpence) and clearly has an admiration of very long standing for its editor.

Sir Keith Murdoch was an enthusiast for the magazine, and Morrison was sadly correct in inferring that *Wild Life* was doomed after Sir Keith's death in 1952. The publishers tried to make it more lively for consumers by turning it partly into a tourists' organ; they even put bathing beauties on the cover! It must have broken Morrison's heart, though he gave little public indication of this. The results, predictably, were poor; from being one of the best natural history

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magazines in the world, *Wild Life* became a travesty, then extinct. This episode reminds me of our contemporary efforts to 'market' matters of the mind. The product is usually burlesque, followed by failure.

Crosbie Morrison's broadcasting career began as a brief appeal for *Wild Life*. A dead spot—6.15 on a Sunday evening—was unable to attract other sponsorship or advertising for 3DB (part of the Herald and Weekly Times stable), and so Morrison was offered fifteen minutes there for a six-week period. His narrative voice immediately hit its stride and the chats went on, not for six weeks but for many years. The first five years, typically, Morrison did for no fee.

After building the timeslot from nothing, Morrison found himself the best known broadcaster in Victoria and with a reputation as far afield as New Zealand. His progress, given a love of cameras and photography, went naturally to film-making. This was done similarly on the cheap, splicing original footage to make the final product. His wirey form, squatting behind the tripod somewhere in the middle of Australia, produced classic material.

I suppose the most striking aspect of this biography for me, an inheritor of Morrison's pioneering work, is his prescience on matters environmental. While it is wrong to suggest that nobody knew much about ecological prudence before last week, when we announced the news, it is salutary to read Morrison from the vantage of the weary nineties: 'The most liberal and enlightened forest policy, including extensive reforestation, is the necessary corollary to any soil protection programme that is to be the least effective' (1944), and 'Inevitably, in the pioneer's view, a tree was a thing to be hewn down, its roots to be grubbed out with infinite labour to make room for grain to grow. The kangaroo was an enemy, eating the crops that were the product of such toil; the emu, the wombat, the possum, the majestic wedge-tailed eagle, all appeared as enemies to be subdued' (1940).

And on aborigines: 'You peep into other houses and are assailed by the odour of the family and the family's life-stock. Somewhere behind you there is the hollow cough that betrays the blackman's Nemesis—tuberculosis. A doctor will tell you of worse diseases than that in the little community... These are the Victorian contingent of Australia's last 50,000. In Tasmania there are none left... These poor dregs are none of the tribesmen who roamed free in the bush, and bartered their land with

John Batman. They are the last chapter of the pitiful story of the century of ignorant treatment of a race once proud. Meet them without a blush of shame—if you can...' (1935).

There are glorious passages about the role of forests in absorbing rainfall and preventing flood and erosion. There is an enthusiasm for conservation that is especially remarkable, given the paucity of nature studies available when Morrison set out.

Morrison had intended to become an industrial chemist; instead he became, in Pizzey's words, 'perhaps the most capable and indeed beloved naturalist Australia has produced'. There were hiccups—such as his famous argument with Casey, the External Affairs Minister, on rabbits (Morrison had wrongly implied that there were lots in northern Queensland), and on the evolutionary significance of marsupials (it was received wisdom then that the least fit species survived only in backwaters like Australia)—but generally Morrison's insights stand very well today. Thus, Pizzey rightly presents Morrison's crucial role in establishing National Parks in Victoria as his greatest legacy to us. The campaign for their creation displayed both vision and a capacity for political influence.

I once gave the Crosbie Morrison Lecture at the National Museum of Victoria. Even then I had but a sketchy idea of Morrison's importance. I met Lucy, his widow, that night; Morrison himself died at the early age of 57. Graham Pizzey, whose books always delight in their scholarship and presentation, has done his hero proud.

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Neil Barr and John Cary, *Greening a Brown Land: The Australian Search for Sustainable Land Use*. Melbourne: Macmillan Australia, 1992. viii + 343 pp., illus., \$64.95 hb, \$32.95 pb.

The primary thesis of this book is that the search for sustainable land uses in Australia is endless: we are never likely to have systems that will endure for ever, and we must therefore be content with those that achieve local and temporary successes—while we continue to search for new and better ones. The tone of the book is therefore anti-evangelical and critical of simple prescriptions. Some currently popular

prescriptions are examined carefully for their limitations.

For purposes of review, the reasons given that there are no universal or long-term panacea can be grouped under three headings. The first is that there are nearly always trade-offs, the second that there are 'horses for courses', and the third that almost every solution creates or reveals a new problem. An example of the first is that contour planting and contour ploughing in orchards reduce erosion; but they also encourage fungal diseases fatal to the trees.

Examples of 'horses for courses' are legion, beginning with the importation of English farming practices which worked there and failed here, through to recent research. Thus, for example, agricultural scientists at the Rutherglen Research Station in Victoria developed a new way of growing wheat called 'clover ley' farming, using improved subterranean clover pasture to restore nitrogen for four or five years, followed by two years of wheat. This required the application of phosphate to maintain good pasture, but it was self-sustaining in nitrogen, allowed continuous use of the land for grazing or cropping, and reduced erosion by avoiding long periods of bare (and idle) fallow. Rutherglen, however, is a relatively high rainfall area; in the drier Wimmera, the system could not be simply transferred—subterranean clover was unreliable in these drier areas. Farmers tried the small hairy medic, but it contributed little nitrogen. Earlier flowering strains of subterranean clover and the barrel and harbinger medics were introduced. They were more productive; but farmers in the Wimmera and elsewhere then found that the ley could be too successful, causing the wheat to grow too lush in the early spring, only to wilt and die off before setting seed in the hot weather. And when drought came, those who had skipped fallow got by around Rutherglen, where there was still enough moisture stored in the soil to see the crop through, but not in the Wimmera, where long fallow was still an insurance against low rainfall and a protection against root disease, despite its contribution to the loss of topsoil by wind and water erosion.

The 'ley clover' example introduces the third category: that every solution reveals new problems. This thesis is particularly well illustrated by the history of wheat cropping. Early practices were summarized by the Welsh immigrant Joseph Jenkins: 'There are three characteristics peculiar to the farmers of this colony—exhausting the land, abusing

the horses, and exploiting the labour'; or in the equally succinct words of the present authors, 'the inexperienced would be directing the unwilling to farm the unknown' (p. 118). The soil was mined of nutrients, and when yields fell off, as they soon did, the smarter farmers sold out and cleared new land further out, to repeat the process. Yields fell. The wheat farmer was 'trapped between the consequence of unsustainable mining of nutrients and the limited area of well watered land' (p. 128). The first set of experimental remedies comprised the introduction of new, shorter strains of wheat (such as Federation), the use of superphosphate, and the practice of the bare fallow—ploughing a pasture in autumn and keeping it bare of weeds until the following autumn, when a crop was planted. This had a multiple effect: without weeds to transpire soil moisture, rainfall seeped through to the lower root zone where it could be used by the next wheat crop. It increased the amount of nitrogen available to that crop, since bacteria had a year in which to break down organic matter in the soil into a usable form. Bare fallow made weed control easier. It provided a break on the proliferation of root diseases.

It also began to produce a dust bowl, however, and it soon led to a loss of fertility. The gain in nitrogen was illusory: in time all the available organic matter had been broken down. Soil structure deteriorated, as well as fertility. So the tractor became the enemy in the eyes of some. The next step was the introduction of the clover ley system, which had limitations, as we have seen. In time herbicides began to offer an alternative to bare fallow by suppressing weeds without cultivation. Systems such as minimum cultivation, direct drilling and trash farming—in which crops are drilled directly into the soil while the stubble is still standing—all reduced the dependence on cultivation, thus greatly reducing the risk of erosion. There was much talk about the importance of conserving *the living soil*. Casting aside such rhetoric, one scientist *sterilized* some soil and doubled the wheat crop in the following year; not all the organisms in the soil were beneficial to the wheat crop. Root diseases such as *Rhizoctonia*, which is hosted by grasses, presented a problem, especially for direct drilling. New selective weedicides were used to kill the grasses and leave the legumes. Grain legumes were used, both to fix nitrogen but also now as a disease-break crop to control root disease and to reduce weeds in the following wheat crops. 'They had the added

advantage of deep tap roots, which could break through hard pans and help to improve soil structure'. Farmers now had more options to consider, paddock by paddock. Computer simulations and consultants helped them make complex decisions.

Meanwhile, the heavy use of weedicides and insecticides has spawned yet another set of problems, while the superphosphate on which the whole system depends begins to be seen as a diminishing resource and leads to increasing soil acidity in the higher rainfall wheatlands. The only long-term solution appears to be the application of lime. The only effective method of applying lime to pastures is by ploughing it into the soil: 'It seems we cannot avoid the plough' (p. 141). However, the endless round of problems does not lead to the conclusion that agriculture in Australia is a failure, only that it is difficult and has costs. The primary success is that we now produce enough food to feed 17 million people and export as much again.

The rangelands present a tougher story. The geographer J. McDonald Holmes once said that 'the small man must overstock to make a living and the big man overstocks to make enough to get out to better lands near the coast'. The traditional rules for drought management are simple if brutal: 'let the animals run or die, but don't go into debt to feed them'. Drought relief from government sources works against this harsh realism and graziers reduce their efforts to cope with future droughts from their own resources. When the transport of fodder and interest rates are subsidized, conservative stocking policies and the build up of financial reserves are discouraged because these strategies receive no subsidy. The long-term result is an acceleration of rangeland degradation.

Most political interventions reviewed in this volume are shown to be ineffective. The Ord River scheme is 'one of Australia's most costly development lessons', and irrigation in general is critically examined, especially in the Murray-Murrumbidgee, although its benefits are also recognized. The tone of the book as a whole is akin to that of Bruce Davidson's classic *Australia: Wet or Dry*, but without Davidson's crusading fervour. The current tree-planting jihad is viewed dispassionately. Schemes such as the Potter Farmland Plan are praised, but dependence on subsidy is seen as a basic limiting factor. The authors insist that only those solutions that enable farmers to make a living and that can be substantially funded from their own resources are likely to be effective. The major inputs needed are continuing research in

agricultural science and associated social and economic factors and a broader understanding that this is no easy place. The title, *Greening a Brown Land*, is in part ironic. Only a very small part of the cover is green. By far the greater part is brown, and is likely to remain so. Rose- or green-tinted glasses do not assist in the realistic assessment of land-management options for Australia.

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Ian Jones and Joyce Jones, *Oceanography in the Days of Sail*. Sydney: Hale & Iremonger, 1992. 288 pp., illus., \$49.95.

Oceanography in the Days of Sail is an introduction to the development of oceanography, with particular reference to the seas and oceans surrounding Australia. Ian and Joyce Jones have combined their interests in physical oceanography and voyages of exploration to write a popular account of the history of the science, seen from an antipodean viewpoint.

From the time of Captain Cook until the mid-19th century, the South Seas were visited by a series of expeditions from the northern hemisphere. It was a time when problems of navigation and position-finding had been solved and the surveying of newly discovered coastlines could be combined with systematic exploration of both land and sea for the first time. In recent years, our knowledge of these expeditions has been immensely extended by the publication of both primary and secondary sources. Following the late Professor J.C. Beaglehole's edition of Cook's journals for the Hakluyt Society in the 1950s and 1960s, scholars around the Pacific as well as from Europe have published new editions of printed narratives as well as hitherto unpublished journals and other documentary evidence. These have made possible more sophisticated analyses both of the contributions of individual expeditions and of the wider social, political, cultural and economic framework within which these ambitious enterprises took place. When considering the results of these voyages, scholars have examined the scientific as well as the geographic work they carried out. However, these accounts of the scientific work tend to concentrate of the land-based observations, particularly of botany and natural history. This is not unreasonable because it was the exploitation of new lands

and their potential products that were the motives behind these expeditions, for scientists as well as governments. Yet one aspect of the scientific work of these expeditions that became more prominent as time went on, the study of the sea itself, has been largely neglected in these accounts.

The reasons for this are not hard to find. In spite of the title of this book, no one thought in terms of an identifiable science of the sea until the second half of the 19th century. However, this did not mean that the subject was not of interest. Even if they were indifferent to scientific enquiry for its own sake, by no means always the case, sailors needed to know about currents and tides because of the effect they had on navigation. Gradually other information—on temperature and salinity of sea water, as well as direct wind and current measurements—came to be seen as important by scientists and hydrographers wanting to learn more about the circulation of the ocean and atmosphere and how this affected the climate of the globe. One of the problems in finding out about work of this kind is that it was not categorized in a readily identifiable way. Data about tides and currents, for example, is scattered throughout the records of the explorers. Sometimes these observations were forced upon their notice, as with the well-known occasion when the diurnal inequality of tides, common in Pacific waters but uncommon in Europe, allowed the *Endeavour*, stuck on the Great Barrier Reef during Cook's first voyage, to be floated off safely when she was being given up as lost. In contrast, many painstaking series of observations were published either without comment as appendices to reports or not at all. Though sometimes the data were discussed by scientists or officers attached to the expedition, this work has not traditionally been seen as a significant feature of such expeditions, except in specialized accounts of the history of oceanography. These, however, are usually more concerned with how ideas developed than with the actual data themselves. Furthermore, what observations were made by the different expeditions and how the data were used by scientists and hydrographers to improve the charting of ocean winds and currents and the understanding of the processes involved, are questions of interest not only to historians; modern scientists can use such information to search for possible changes to the marine environment over time.

To present this kind of information,

inasmuch as it relates to the seas surrounding Australia, is the underlying purpose of this book. Starting with the voyages and writings of Dampier, the authors examine the information collected principally by British, French and American expeditions on the physical oceanography of the southern Pacific. From the time of Cook onwards, these observations increased in complexity and importance, but they remained a subordinate feature of the scientific programmes of the great expeditions of the first half of the 19th century. Only after commercial interest in the deep ocean arose through the introduction of submarine cables and stimulated fresh interest by scientists did the first expedition devoted to the study of the deep sea, the voyage of H.M.S. *Challenger*, take place in the 1870s. Yet these earlier expeditions also yielded data from which hydrographers and scientists were able to learn much about the distribution of surface winds and currents around Australia, and which also contributed to early speculations about the internal circulation of the oceans.

The authors have already published some of the material elsewhere, for a more specialized audience; here it is presented for a wider public. The book is not aimed at maritime historians or historians of science, although both groups will find material of interest to them, but rather at present-day seafarers and scientists and any whose professional or recreational interest in the ocean leads them to learn more about the development of ocean science in southern seas. The authors assume—and this will certainly not always be the case—that their readers have little or no prior knowledge of the history of exploration, and they have disguised the scientific research in a chronological retelling of the stories of the principal expeditions, encouraging their readers to go on to the original sources. They do not mention a specific educational objective, but the book is one that could be read very usefully by school and university students. Oceanography has always had a problem in interpreting its works to the general public, and scientists have been aware of the need to explain what they do to other seafarers and to enlist their co-operation. As long ago as 1912, the classic textbook *Science of the Sea* (edited by G. Herbert Fowler) was published as 'an elementary handbook of practical oceanography for travellers, sailors, and yachtsmen', and the idea was not new then. In these days of high technology, oceanographers are not so likely to ask for

help in making their observations, but the two groups still have much to gain by mutual co-operation and understanding.

From a more specialized viewpoint, I am not sure that the mixing of narrative and science is entirely successful, and I would myself have preferred a more thematic approach, with perhaps an historical introduction followed by discussion of the more original scientific material, instead of having it interspersed with the retelling of already familiar narratives; but that would have produced a different book for a different audience. A more serious criticism is that, since the book is not intended as a general history of marine science in Australia but rather of Australian involvement in ocean science, especially physical oceanography, it does give a somewhat misleading impression of the period between the voyage of the *Challenger*, at the end of the 'days of sail', and the development of Australian oceanography in the 20th century, which is usefully summarized in the final chapter. After mentioning the study of coral reefs in connection with the *Challenger*, nothing is said about the ensuing controversy over their origin, between the ideas put forward by Charles Darwin and those of John Murray. Interest in coral reefs later led to the Funafuti borings and the Great Barrier Reef expedition, both significant if largely metropolitan projects. Admittedly marine biology is not part of the remit of this book, but it was an important growth area for marine science in the late 19th century and responsible for its earliest permanent institutions. As well as fisheries research, which attracted government support because of its applied nature, plans to found marine zoological stations were put forward in Australia in the late 19th century. These were small beginnings, but the same was true in other countries. Similarly, and definitely within the authors' remit, mention is made of the *Challenger's* discovery of Pacific 'deeps' and 20th-century exploration of oceanic trenches, but not of the work of the late 19th-century naval and cable survey ships which contributed much to knowledge of these features. In his recently published autobiography, *No Day Too Long* (1992), Rear Admiral G.S. Ritchie describes Commander Andrew Balfour's ambition, while with H.M.S. *Penguin*, to be the first to obtain a verified sounding of over 5,000 fathoms, in the Kermadec Trench. While appreciating that this period and these activities lie outside the authors' main sphere of interest and given that they do present an

overview of later developments, some mention of these topics would have increased the book's usefulness to its projected audience, who may find the distinction between what is included and not included confusing, especially given the more generalized treatment of earlier expeditions and their programmes. In an otherwise good-looking and readable volume, it is also a shame that the quality of reproduction of some of the illustrations is poor.

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Lionel Gilbert, *The Orchid Man: The Life, Work and Memoirs of the Rev. H.M.R. Rupp, 1872-1956*. Sydney: Kangaroo Press, 1992. 248 pp., illus., \$49.95.

Son of a German immigrant to Australia who became a minister of the Anglican Church, H.M.R. Rupp was educated at Geelong Grammar School, where his maternal uncle, the well known naturalist John Bracebridge Wilson, was headmaster, and at the University of Melbourne. In due course he, too, took holy orders, spending his working life as an Anglican priest, mostly in rural parishes in central and northern New South Wales.

Encouraged by his uncle, Rupp became an enthusiastic amateur botanist at an early age. Then as a young man he was fortunate enough to be given an introduction by Wilson to Ferdinand von Mueller, and he subsequently corresponded with Mueller during the latter's last years. Rupp's calling gave him many opportunities to pursue his botanical interests. He specialized in orchids and in due course became a recognized authority, publishing two well known books and more than 200 scientific papers in which he described four new genera and over seventy new species. An enthusiastic letter-writer as well, Rupp also established a large botanical correspondence, much of which has survived. Following his retirement from priestly duties, he worked for many years as honorary curator of orchids at the National Herbarium of New South Wales, to which he eventually presented his own splendid collection of these delicate and intriguing plants.

In effect, therefore, so far as position and scientific standing if not salary were concerned, Rupp eventually crossed the divide from amateur to professional orchidologist. His career thus offers much

promise as a case study for the sociologically-minded historian of science, because in the various fields of natural history, including orchidology, amateurs have long played a significant role in advancing knowledge, and the boundary between them and their professional colleagues, while obviously important, has proved notoriously difficult to define. Equally, his career should be of interest to cultural historians concerned to trace the attitudes of Australians to the natural environment, for here we see in microcosm the developing popular interest in and respect for 'native' species that occurred during the early decades of the twentieth century, associated in the public mind particularly with writers such as J.A. Leach, Neville Cayley and P. Crosbie Morrison.

Lionel Gilbert's book will be an essential reference for any analysis that takes Rupp's career as its starting point. Having himself met and corresponded with Rupp during his later years, Gilbert writes of him with the warmth and affection that he evidently inspired in most of those with whom he came in contact, as well as with respect occasioned by Rupp's deep knowledge of orchids. The account draws heavily on Rupp's wider correspondence, assembled systematically in the form of either originals or copies in the Herbarium Library at Sydney's Royal Botanic Gardens some years ago, and also on two substantial autobiographical pieces that Rupp wrote, one in 1932-33 and the other in 1948-49, with amendments in the early 1950s. Both of these are here published for the first time, in full, to accompany Gilbert's text, and this leads to a considerable amount of repetition that perhaps might have been better avoided.

Gilbert's own relatively brief (87pp.) account presents a straightforward narrative of Rupp's life. He describes, too, the way in which, by means of his incessant letter-writing, Rupp gradually built up a network of contacts with other orchid-loving enthusiasts throughout Australia and New Zealand. As Rupp's expertise developed, this network came to include a number of professional botanists from as far afield as Kew Gardens and Harvard University as well as from the leading Australian botanical institutions. It is easy enough to say that correspondence, or the exchange of information, is vital to scientific life. Here, we can see the ramifications of this in a particular historical case. Gilbert's account not only makes clear how central a role Rupp's letter-writing played in his own development as a scientist, it also leaves little

doubt that, by means of his letters, Rupp was functioning more generally as a bridge between amateurs and professionals in Australian orchidology, long before he himself crossed the divide and took up his late-in-life position at the Sydney Herbarium.

Gilbert's book includes a full bibliography of Rupp's scientific publications that was prepared many years ago by one of the professional botanists with whom he corresponded, Dr J.H. Willis, and that has been extended by Gilbert to encompass Rupp's popular and non-scientific writings as well. A number of Rupp's carefully-prepared botanical illustrations are reproduced, several of them in colour. The text is also richly illustrated with photographs and generously annotated, and there is a botanical index in addition to an index of names. The whole is splendidly produced. Gilbert has, indeed, done his subject proud.

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F.R. Moulds, *The Dynamic Forest: A History of Forestry and Forest Industries in Victoria*. Melbourne: Lynedoch Publications, 1991. viii + 232 pp., illus., \$39.95.

As significant features of the landscape and the focus of much discussion and debate, Australia's forests loom large in our current consciousness. They are both useful and beautiful. They are enigmatic. They stand in the way of agriculture but counter salination and soil erosion. Since the earliest days of European occupation, they have been recognised as vital sources of products, from timber to honey. Various non-utilitarian values have also been recognised. As this book reveals, forests are most significant in Australia's recent cultural and economic history.

The author, Dr Francis Robert Moulds, has a lifetime of experience in the field of forest management and exploitation. He has held a range of positions in Victoria's Forests Commission, including Forest Economist, Principal of the School of Forestry at Creswick, Forest Resources Officer, Chief of the Division of Forest Education and Research, and Chief of Forest Management, Commissioner of Forests and Chairman of the Forests Commission. He is well-equipped to present an authoritative, 'insider' account of the management and utilization of Victoria's forests in European times.

Moulds has attempted the difficult and important task of weaving together the story of the parts played by government and private enterprise in the management and exploitation of Victorian forests, especially the extraction of timber. The factors which have provoked use and over-use of forests, and the subsequent regulation of that exploitation are considered. Moulds discusses the way in which goldmining, bush fires, unemployment, World War II, and the demand for hardwood, softwood and paper have shaped our forests, forestry practice and legislation. Non-utilitarian values are mentioned, but in general the book reflects the ethos and philosophy of Victoria's Forests Commission and is primarily a history of the utility of Victorian forests. Not surprisingly, it is essentially uncritical of changes in forestry practice. Although he himself played a crucial role in influencing such changes, Moulds provides only rare clues to the pressures and discussions which preceded such important changes as the practice of clearfelling. Contentious issues, such as the preservation of certain forests from logging, are not explored.

For the purpose of this review, I should ask to what extent forests have contributed to the history of Australian science. Briefly, the answer is 'rather briefly'. Not surprisingly, most of the research described relates to the generation and processing of timber. The establishment of a field research station at Creswick is mentioned, but there are no details of the research carried out there. The State Seasoning Works, which housed experiments in seasoning practices to help local timbers replace costly imports, is also mentioned only cursorily. Some of the Forests Commission's studies of forest fauna are discussed briefly—research provoked in the 1970s as increasing numbers of people included forests in their recreational itinerary.

In the chapter 'Research and Education', Moulds mentions various aspects of research relating to tree regeneration and timber processing carried out by CSIRO and Forests Commission researchers from the 1950s onwards. An Advisory Panel, which included the Chairman of the Forestry Board of Examiners and Professor of Botany at the University of Melbourne, J.S. Turner, and Dr H.E. Dadswell of CSIRO's Division of Forest Products, was set up to advise and assist the Commission in organizing and expanding its forestry research programme, but the origins and influence of that Panel are not discussed. Research on die-back fungus, silviculture,

hydrologic studies, salt tolerance, aerial seeding, and fire protection are summarily mentioned.

Two significant research projects in the 1960s are, however, discussed in some detail. Forests Commission research on the germination, establishment and survival of river-red-gum seedlings in the Barmah forest is described and its influence on forest management practices discussed. Research, which included CSIRO's biological control investigations, led to the control of the European wood wasp, *Sirex noctilio*, which threatened valuable softwood plantations of *Pinus radiata*. Moulds point out another important consequence of that research: the success of the National Sirex Fund, which was filled from Commonwealth and State coffers, was influential in the establishment in 1964 of the Australian Forestry Council, in which ministers responsible for forests could discuss matters of mutual concern.

For Victoria's forests, as for other exploitable features of the Australian landscape, ecological wisdom has straggled far behind the economic demands placed upon those ecosystems. Moulds' book is primarily about changing economic forces and consequences, with only rare glimpses of the slowly burgeoning ecological understanding of our forests. This book is not a history of ideas, nor an analysis of theories; that is not its intention. It charts legislative and administrative changes. It follows forestry personnel through the public service and government, and sawmillers through the forests. All these it documents but does not question.

As a botanist and historian, I am pleased to have the information collected together in Moulds' data-rich, albeit progressivist, history—although I would prefer a more adequate documentation of both text and illustrations, especially of the earlier photographs. I longed for more endnotes. Moulds' book is a valuable reference for past forestry policies, practices and participants. However, for pre-1920 Victorian forestry history, I will still refer to Darver's unpublished history. Moulds' compilation of names, dates and data provides an essential springboard for more sceptical, outside evaluations of our forestry past. Only with a knowledge of that past can we properly understand current forestry debates and dilemmas.

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Marie Sanderson, *Griffith Taylor: Antarctic Scientist and Pioneer Geographer*. Ottawa: Carleton University Press, 1988. xi + 218 pp., illus., no price given.

Griffith Taylor (1880–1963) was the brilliant, fascinating and controversial founder of academic geography in two countries. Born in England, but receiving much of his secondary and university education in Australia, he has always been claimed as Australia's pioneer geographer. After serving on Scott's Antarctic expedition (1910–12), he worked for the Commonwealth Weather Service before establishing the Geography Department at the University of Sydney in 1921. He was virtually hounded out of Australia, however, as the result of his views (which have subsequently been proved accurate) on the arid interior and on the possibility of establishing substantial settlements there. This was not what the politicians of the day wanted to hear, and he was censured in the Commonwealth Parliament and his books were banned by the Education Department of Western Australia! His sojourn in Sydney was followed by seven years at the University of Chicago, before he moved to Toronto to establish the first university geography department in Canada. He retired to Australia in 1951. Throughout his life he positively courted controversy, so that in many ways he provides a splendid subject for a biography.

The writer of the biography of an academic or scientist has a difficult task, however. On one hand, he or she must emphasize the subject's ideas and how they developed, changed and influenced the discipline; while on the other hand, this material must be interwoven with personal details to make the account lively and intimate. In this, Marie Sanderson succeeds extremely well. We trace Griffith Taylor's journey from geology and 'physiography' to an integrated geography that emphasizes the relationship, at every scale from the local area to the world as a whole, between humans and their environment. Here too is the determinist Taylor, the man who pointed out, in a series of careful studies, that some areas of the planet impose serious restrictions on settlement. And yet, Taylor's own career was on occasions very much a matter of serendipity; thus, his landlady in Sydney encouraged him to apply successfully for a scholarship for post-graduate study in Cambridge, and personal acquaintances were responsible for his appointments at

Chicago and Toronto. This contrast is one of the themes of the book.

The structure of the volume is conventional and chronological. Chapters 1 and 2 are entitled 'Early Years' and 'Cambridge'; the next four deal with preparations for the Antarctic expedition, the expedition itself, its aftermath, and 'Taylor's Contribution to the Scott Expedition'. Chapters 7 and 8 are accounts of his early career in Australia; while Chapter 9 is entitled 'The Chicago Years', and sections on Toronto, retirement and an assessment of Taylor's contribution to geography complete the book. As one would expect of an academic biography, there is a detailed listing of archival sources and a bibliography of Griffith Taylor's own publications. The book is illustrated by 21 photographs, some of which are well known, but others have been hitherto unpublished. The absence of an index is a significant defect. One might also expect a book by a geographer, about a geographer and with an expected readership including many geographers, to include more than one map.

The author allows Taylor to speak for himself where possible, and almost every page has several extracts from Griff's letters and diaries. A fascinating parade of twentieth-century figures passes before us: we meet Captain Robert Falcon Scott, Sir Douglas Mawson and Bill Wilson, all of Antarctic fame, and also the great geographers W.M. Davies, Isaiah Bowman and Ellsworth Huntington. W.S. Churchill and Robert Menzies make fleeting appearances.

Amongst the most interesting sections of the book are those dealing with Taylor's role in Scott's Antarctic expedition; it is almost as if we were present in the hut at Cape Evans and out on the ice with the explorers. Although Taylor was obviously fond of Scott, he had serious reservations about his leadership that he expressed at the time in his diaries. Another fascinating section deals with Taylor's difficulties at the University of Sydney, the controversies over the future population growth in Australia, the banning of his books, and his ultimate decision to leave Australia. Incidentally, it looks as though his prediction for the population of Australia in the year 2000 of around 20 million will prove to be very accurate! Perhaps Taylor's rehabilitation in Australia could have been more fully documented.

Marie Sanderson writes well, and the story unfolds at a brisk pace; she has some interesting expressions—for example, she describes Griff's boundless energy by saying

that he 'kept his motor running'—and there are plenty of interesting tit-bits. The biography is affectionate, but a 'warts and all' one rather than a eulogy; thus, Griffith Taylor's rather grasping attitude to money comes through in several places. Regarding Grif as one of our own, we might be a little disconnected by some of the author's North American phrasing, but this nowhere protrudes conspicuously. There is the occasional error: for example, on page 11 a series of Canberra limestones is mentioned in South Australia when presumably the author means Cambrian limestones, and those who know the city well will find the description of the relative positions of some of the Cambridge streets and colleges later in the same chapter somewhat confusing.

This is a good book, and although not without minor defects, one that tells the story of an interesting life well; but it is not, I suspect, the last word we shall hear on the life of this pioneer scientist and great Australian.

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John D. Lines, *Australia on Paper: The Story of Australian Mapping*. Melbourne: Fortune Publications, 1992. ix + 343 pp., illus., \$33.00.

This book is primarily concerned with twentieth-century topographic mapping of the Australian continent, dealing especially with policies and practices and the details of their implementation. The author has spent the major part of his working life in the mapping field, and he was appointed Director Designate of the Division of National Mapping but had to retire for medical reasons before he was able to take up the appointment. Apart from working in the civilian sphere, he also had military experience in World War II, where he was engaged in map making in the Middle East, Papua New Guinea and the Philippines.

The book is arranged in fourteen chapters, with an appendix, references and an index. The first two chapters are introductory, setting the scene for what is to follow. In chapter one Lines deals with the origins of the name Australia, although one might take issue with his statement that Matthew Flinders was the first to use this name on a map or chart. The chapter concludes with a series of thumbnail sketchmaps showing the progressive development of the internal

political boundaries of Australia from 1786 to 1969. Chapter two covers the colonial period, and deals with early concepts of inland Australia and the search for the expected great rivers. A similar series of nine small sketch maps shows the progressive exploration of the continent from 1808 to 1888. There is some discussion of the origins of the Ordnance Survey as an organization that was 'to exercise a major influence on topographic mapping in Post-Federation Australia', and the end of the chapter deals with the early requirement to map the land for the purposes of regulating settlement and documenting land holdings. This single requirement alone was to prevent any serious attempt to initiate systematic topographic mapping, although isolated and unco-ordinated trigonometric surveys were undertaken.

Chapters three and four, 'Advent of Federation' and 'Mapping between the Wars', discuss the beginning of twentieth-century efforts to map the continent. At the outset it is suggested that the Australian constitution contained a serious deficiency, providing no recognition of the need to transfer from the States to the Commonwealth powers relating to mapping and the co-ordination of surveys. Geodetic survey and triangulation, which are necessary precursors to accurate and comprehensive topographic surveys, do not succeed with a piecemeal approach. The opportunity provided by federation was missed, however, and mapping for Commonwealth purposes had to be invoked through the powers provided for naval and military defences. This was the origin of a mapping unit within the Department of Defence, which today is known as the Royal Australian Survey Corps.

Lines described the early efforts to set up an Army mapping unit, following it through all its vicissitudes. He described the map products, the methodology for their creation, the source materials, the equipment used and the key personnel, both Australian and British. The depressing part of this account is the lack of understanding by our political leaders of their obligation to provide for the defence and development of Australia with an adequate map base. By 1929, only one percent of the country had been adequately mapped; as late as August 1938, Federal Cabinet deferred consideration of a national surveying and mapping scheme for twelve months, and yet again in August 1939. At the outbreak of the Second World War there was therefore a mapping crisis.

The invention of the aeroplane and the camera each played a major role in revolutionizing the making of maps. Aerial photography is dealt with in two chapters—five and ten—the first dealing with the period prior to 1945, when the Royal Australian Air Force entered the mapping scene and the development of a new civilian industry became possible, but only after a policy decision in 1935 that required the Air Board to confine its activities to work for Commonwealth departments alone. The later chapter deals with the post-1945 period and the rapidly escalating pace of technological change, with its attendant impact on methods and practices. The chapter concludes with a discussion of satellite imagery and high-altitude photography. Readers will find much of interest throughout this book in the identification and description of the equipment used, be it aeroplanes, cameras, survey equipment, plotters or electronic distance measuring devices, both terrestrial and airborne, and their use and efficiency as mapping tools.

Lines deals with the various mapping committees set up since federation to oversee Commonwealth mapping activities and which were crucial in policy making and the course of subsequent events. Individuals, policy decisions, disagreements and conflicts are all dealt with, and one sometimes wonders how so much was achieved despite all the impediments.

Chapters six, seven and eight are devoted to the end product, the maps, and there is some very interesting reading for those who are more interested in this side of the story. The author deals with the International Map of the World and Australia's part in this scheme; also discussed are the Australian Geographical Series and the Australian Aeronautical Map, which was replaced by the World Aeronautical Chart (WAC). Chapter seven is an interesting account of early aeronautical mapping, particularly the strip map, which was later superseded by the Australian Aeronautical Map, introduced in 1939 and phased out in 1952 when it was replaced by the WAC series. The story of aeronautical mapping ceases at this point and takes no account of the plethora of specialized map products produced for aviation, such as the Visual Enroute Chart, the Radio Navigation Chart, the High Altitude Chart, the Operational Navigation Chart and so on.

Chapter eight tells the story of war-time mapping. In particular, the account of the Emergency Mapping Scheme is fascinating,

revealing, as the maps do not, the debt to civilian volunteer labour from the various State surveying and mapping organizations. It is salutary to reflect that finally only dire threats to national safety accounted for co-operation between the States and the Commonwealth. This part of co-operation was continued post-war when the National Mapping Council was established to further the aims of reconstruction. There then followed a period—from 1945 until the middle 'seventies—when a huge amount was achieved through mutual goodwill and co-operation.

Chapters nine to fourteen deal with post-1945 events in Australian surveying and mapping. Chapter nine describes the various committees established, the personalities involved, administrative changes and policy decisions made. Problems still existed between the two Commonwealth mapping organizations, the civilian and the military, but these were managed until 1972, when the Advisory Committee on Commonwealth Mapping met its demise. This was the beginning of disintegration in the mapping sphere.

In chapter eleven, the story of the geodetic surveying of Australia is told. This was one of the great achievements of the National Mapping Council and was crucial as a first step towards integrated topographical mapping. Lines discusses the various techniques used and notes that the advent of electronic distance measuring equipment was largely instrumental in doing the job so quickly. Geodetic and topographic control by the end of 1975 was sufficient for the horizontal control required for the 1:100 000 mapping programme.

A new piece of equipment, the automatic level, again played a vital part in the next task, the National Levelling Survey, described in chapter twelve. Here Lines also deals with the National Adjustment and the Australian Height Datum. A bathymetric mapping programme was established to map the continental shelf, and by mid-1991 seventy-five percent of this was completed.

Chapter thirteen, 'The topographic base takes shape', discusses the use of photogrammetry and the photomaps which were the interim product. The change from imperial to metric scales takes place, and the one-mile and four-mile series are replaced by the 1:250 000 and the 1:100 000 scales. In 1968 the first map coverage of the continent was finalized at 1:250 000 scale. The 1:100 000 programme was finally achieved in 1986, with a total of 1646 sheets published out of a total of 3059 compiled.

The last chapter tells the story of the disintegration of Commonwealth mapping infrastructure. It is a sorry tale of petty interdepartmental squabbling, the principal losers being the Australian people.

This book relies heavily on archival sources, both Commonwealth and State. The author has visited all the State 'lands' departments and State libraries, and has corresponded with over one hundred people 'to clarify and augment particular passages'. In this privately-produced work, the constraints of financing the venture must be largely responsible for the lack of map extracts. This is unfortunate but understandable. For those who are interested, many of the maps described can be seen as foolscap-sized extracts in B.T. Tyson's *The Topographical Maps Series of Australia*, which was published, again privately, in 1965 in a limited edition of 125 copies. I must take issue, however, with the lack of subject analysis in the index, which is primarily a list of proper names. This work, a solid piece of research and the first and only one at present treating the subject, deserves to be fully indexed. In my opinion this is essential rather than desirable.

Lines write with authority and knowledge about his subject and with a minimum of personal comment, which must have taken some forbearance. The work stands alone in the field of Australian mapping; it should be on all library shelves and on the shelves of all those who claim to be professionals in the field.

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Brian Lloyd, *Engineers in Australia: A Profession in Transition*. Melbourne: Macmillan Australia, 1991. vii + 232 pp., \$39.95.

Engineering is the profession in which knowledge and skills in mathematics, science and technology and the principles of management and business are applied to the application of technology and associated human, physical and financial resources for the creation and operation of products, processes, systems, works and services, in fulfilment of commercial and social needs.

In framing this definition of the profession of engineering, Brian Lloyd sets the scene for a unique modern analysis of the profession

by a professional engineer who is also a social historian.

The author is the Deputy President of the Institution of Engineers, Australia, and will become President this year. He has written several other books on engineering and Australian social history, including *The Education of Professional Engineers in Australia* (with William Wilkin, 1962), *Engineering Manpower in Australia* (with Michael Rice, William Roebuck and Eric Stokes, 1979), *Manpower and Education for the Water Industry* (with Jonathon Nevill, 1981), and *The Organisation of Engineering Work* (1979). Lloyd is probably the most informed 'insider' on the engineering profession in Australia.

The book is a thoroughly researched volume and is well structured to explore how Australian engineering began and how it became a profession. It traces the history of Australian engineering from its beginnings circa 1850 to 1990. It tells the story of how the earliest engineers formed societies and began the teaching of engineering. It describes how engineers began to aspire to professionalization after Australian federation in 1901 and how the Institution of Engineers Australia (IEAust) was formed in 1919. It traces the clamour for better status and salaries for engineers, the formation of the Association of Professional Engineers Australia (APEA), and the successes and wider effects of the Professional Engineers' cases of the 1960s.

Australian engineering springs from British and American origins, and comparisons here are made in tracing the organization of the professions in each country. The book looks at how statutory registration operates and describes the striving for registration in Australia before World War II. Among the conclusions is the judgement that Australian engineering has a unique process of occupational control, through the partnership between IEAust and APEA. The book concludes with an analysis of trends in the professionalization of engineering in Australia; it identifies attitudes among modern engineers and indicates changes needed to the profession if engineering is to adapt to modern needs.

Undoubtedly the book was written principally to stimulate engineers to review and think about the future of their profession; but, in making the case for the engineer's key role in Australia's future, it will appeal to scientists and other technical professions who make up the 'cutting edge' of Australia's technological expertise. It is clear that

Australia will not assume its proper place in the world scene unless science and technology are harnessed by governments and private enterprise to match products and services developed by competitor nations.

As an intricate documentary of the history and structure of the engineering profession, the detail of the book is somewhat daunting and is designed for the inquisitive consumption of readers with a considerable degree of interest in the profession or in the social questions raised therein. Research by the author has been very widespread, as is testified by the lengthy list of references at the end of each chapter. These references themselves could be of interest to readers wishing to enlarge their knowledge of particular aspects of the book.

Amongst a wealth of material, I found the following items of particular interest:

The long history of consideration of 'across the board' statutory registration as the tool to confirm the boundaries of the engineering profession is charted, ending with this issue being dropped from current thinking. The author also notes a new engineering culture, brought about by the introduction of computers, which are to the post-industrial age what mechanization was to the Industrial Revolution. There has been substantial social change resulting from the application of technology, and extensive social change in the organization of engineering work itself.

The penultimate chapter of the book, 'The Profession 1986-1989', sets out a very detailed record of achievement and, at the same time, notes warning signs of the loss of impetus by the profession. Some very pertinent statistics are included, exemplified by the following observations: In 1990, Australia had 92,000 professional engineers (as against 2,500 in 1920), representing 5,500 engineers per million of population and 1.14 per cent of the labour force. By contrast, Britain had 7,000 engineers per million of population and 1.40 per cent of the labour force, and the USA had 10,000 engineers per million of population and 2.2 per cent of the labour force. In Australia, the proportion of engineers in the private sector rose from 40 to 60 per cent from 1960 to 1989, whereas the proportion of civil engineers dropped from one half to one third between 1920 and 1989.

The author shows that there has recently been a large drop in interest in the engineering professional organizations, IEAust and APEA, and analyses the probable reasons. In looking at the burgeoning private sector of the profession,

four interesting case studies are documented: BHP, John Holland, Minenco, and Gutteredge Haskins and Davy, a diverse group of engineering-based organizations. The declining public sector of the profession is also reviewed, with the conclusion that the Senior Executive Service policy of the Commonwealth Public Service has 'de-engineered' the senior section of that profession. The junior section also comes in for criticism in comparison with other professions, where rewards and preparation for management are better.

In the final chapter, 'A New Professional Model', the author confirms a period of change for the profession, even though IEAust and APEA (now APESA) jointly still command the agenda through regulation of the educational and industrial scenes. Modern engineers do not appear to have the same spirit of mission regarding status and reward, the author suggests; junior engineers seem to be centred on being 'clever engineers' without adequate attention to human and physical resources management and business processes. Fortunately, academic establishments and IEAust, together with APEA, are taking steps to redress the situation.

The author suggests that, for the future, the engineer must look for a new professional model. In the past, IEAust has been said to be 'the mind' of the profession and APEA 'the heart'. The two have drifted apart, but are now working to bring heart and mind together again. APEA has recently enlarged its horizons and links with other professions by merging with the Association of Professional Scientists Australia, to form APESA. IEAust has set up a new membership structure to encompass engineering technologists and engineering associates as well as professional engineers, thus strengthening its position and status in the whole engineering sector.

Brian Lloyd, with over forty years of experience and a keen interest in the engineering profession, is quite clear that it is a profession in major transition and must adapt to change. He states:

Engineering is significant. We engineers have an importance out of all proportion to our numbers, and our numbers are now significant. We are central to Australia's industrial ambitions and future prosperity. Yet we have to make our contribution, and find our vocational satisfaction, in a community that neither understands us nor accords us

unambiguous occupational identity. We must adapt our profession to the social, managerial and business environment in which engineering has to be practised in the modern world. The community will understand us when we are united in our purpose, when we are strong in the support of our professional bodies, and when we are seen to perform.

Anyone interested in the engineering profession or allied professions in the technology field will find much in this book, and Brian Lloyd is to be commended for the thoroughness of his research and the clarity of his presentation.

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Lesley M. Williams, *No Easy Path: The Life and Times of Lilian Violet Cooper MD, FRACS (1861-1947), Australia's First Woman Surgeon*. Brisbane: Amphion Press, 1991. xiv + 138 pp., illus., \$24.95.

This biography adds another publication to the lengthening list in medical history produced by the Child Health Publishing Unit within the University of Queensland and the Royal Children's Hospital of Brisbane. Like so many of the previous productions from this Unit, this study brings to popular attention two little known figures from Australian history.

Lilian Cooper, as the preface points out, achieved many firsts in Australian medicine. She was the first woman medical practitioner to be registered in Queensland, and only the second in Australia; she was the first woman appointed to a consultancy in an Australian hospital, and the first woman to be awarded Fellowship of the Royal Australasian College of Surgeons. Dr Cooper apparently left few reflective materials and the biography tells us very little about her personal life. Self-effacing and never a feminist in the modern sense of the term, Dr Cooper worked tirelessly to reach the top in her field while at the same time ensuring that the special needs of women were addressed through her work and her personal life. She was particularly interested in the diseases of women, and she and her long-time companion, Mary Josephine Bedford, supported after-school care for working mothers and were involved in campaigning for extended kindergarten services in Queensland.

Williams' biography briefly traces Dr Cooper's training at the London School of Medicine for Women, her first appointment as an assistant to a practitioner and surgeon in Essex, and her acceptance of an assistantship in Brisbane. Miss Bedford accompanied Dr Cooper to Australia as her chaperone, the two women arriving in Brisbane in May 1891. At the end of that year, Dr Cooper announced the opening of her own practice specializing in the diseases of women and children.

One of the most interesting but nevertheless frustrating chapters in the biography is that which traces the work of Dr Cooper and Miss Bedford in Serbia during the First World War. Williams contends (p. 48) that Dr Cooper 'inwardly digested' an advertisement from the Scottish Women's Hospitals in the *British Medical Journal* calling for female science and medicine graduates to work in Serbia or France. Although Williams laments that the contributions of women to the war effort through this programme are relatively unknown, she adds little to our knowledge of its origins or operations through her brief explanation of Cooper's and Bedford's apparently sudden decisions to join the Scottish women's war effort and their arrival in Serbia. The work was arduous, the conditions horrendous, but both Cooper and Bedford were highly commended by the Serbian commandant for their efforts over an eight-month period during which Dr Cooper performed some 144 operations. The story which this chapter has to tell is assisted by several photographs that emphasize the difficult conditions under which the women worked. However, as so often happens in this book, the author concludes that the efforts of Cooper and Bedford 'opened the doors to further fields of opportunity... for all women everywhere' (p. 72) but fails to demonstrate that this did indeed happen.

Herein lies the major difficulty with this book. Williams has clearly worked hard to gather material and much of what she found has been reproduced in the biography, but by failing to set her research within a larger framework of women's history or medical history or perhaps Queensland history, she is forced to rely upon assertions of the importance of Dr Cooper's work rather than demonstrating it. The historian's responsibility is to present the evidence to the reader, but equally she must explain and argue her case. Unfortunately, this is not apparent here, and the reader is asked to accept sometimes repetitive examples rather

than reasoned explanations of the contributions of these clearly remarkable women.

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Peter Winterton and Des Gurry (eds), *The Impact of the Past upon the Present: Second National Conference of the Australian Society of the History of Medicine, Perth, July 1991*. Canberra: Australian Society of the History of Medicine, 1992. ix + 259 pp., illus., \$24.00.

When the Australian Medical Association (Victorian Branch) and units of the University of Melbourne commenced their publication series entitled 'Occasional Papers on Medical History Australia', they little realised, perhaps, the fine tradition of historical medical documentation which they were establishing in this country. The latest book in this series, entitled *The Impact of the Past upon the Present*, consists of some 55 papers from the Society's biennial conference

which was held in Perth in July 1991. Like all conference proceedings, the style and content of the published contributions varies significantly. Some of the papers consist of two or three pages only, whereas other, more scholarly works have a run of six pages or more, with copious references. The book is presented as a series of widely varying themes on topics ranging from the early history of dentistry in Australia, through the history of Australian ethnobotany, to modern-day questions of teratogenesis and diabetes. Many of the papers cover international themes, such as 'The origins of school medicine in New Zealand', 'Child-bed experience in 19th century America', and a study of the origins of malaria and its transmission in 'The aetiology of malaria—the race for the prize'. The book is a further addition to the growing reference material relating to the history of medicine, health, dentistry and nursing in this country, and for that reason it is recommended to all who work and have special interests in this area.

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