

REVIEWS

M. Stanbury, *Norwegian Bay Whaling Station*, Western Australian Museum, Perth, 1985; pp. 75, figures 36, \$6.50 (plus \$1.00 postage).

The importance of maritime industries to Australia's early development has been widely acknowledged by historians. It is only in recent years however, that historical archaeologists have turned their attention to the physical manifestations of those industries. In relation to whaling and sealing, this attention has been focussed on the 'early' period of the industries which took place off the west, south and east coasts of mainland Australia as well as Tasmania and New Zealand.

This 'early' period commenced with sealing in the 1790s which decimated huge populations of fur seals and continued until about the 1820s. Offshore and bay whaling then came to the fore when British import duties on colonial whale oil and the East Indian Company monopoly were abandoned. Offshore and bay whaling continued generally until the 1880s when decreasing whale stocks, falling world prices for whale oil and increasing costs, made the whale oil industry uneconomic.

The renaissance of the Australian whaling industry was brought about by the Norwegians around the turn of the century. This aptly named volume introduces us to the first site developed in the 'modern' period of whaling. The station commenced operations in 1915 and worked intermittently until 1957, harvesting the migrating humpback whales which frequented the Western Australian coast.

The *Historical background* section of the report provides a detailed account of the reasons behind the development of the modern industry, why the Norwegians were behind it, and the implications and importance of this to the industry in Western Australia. The resurgence of whaling resulted from a number of factors — the development of fast steam-driven whale chasers, powerful steam winches, the grenade harpoon and new processing technology. The prey were the large, fast moving baleen whales or rorquals which, unlike the right whale prey of the old whaler, sink after they are killed. A new approach to capitalizing on the resource involved the processing of the entire carcass in large pressure cookers rather than open trypots. The offal was then converted into fertilizer, so utilizing all of the raw materials and maximising the economic return.

To sit and theorize about these concepts is as easy now as it was then. But the Norwegians did more than theorize, they put this new technology into practice at what must be one of the most inhospitable places on the Western Australian coast. Stanbury's account of the choice of the site, the physical construction of the buildings and equipment, and the operation of the enterprise, is excellent. Throughout the report the author has made good use of primary source material that is well cited, a wide range of secondary sources and a number of oral informants who worked at the whaling station. This last evidence was obviously invaluable in identifying equipment and features at the site.

The *Site description and survey* and *Findings* sections of the report, comprise the results of the field survey of the whaling station. Descriptions of the equipment and features of the site are clear and concise even if the functions are not always known. The survey achieves its stated aims of mapping the site, and identifying and recording the physical components and their relation to each other. The author

acknowledges that the survey was limited in scope and does not pretend to have exploited the full archaeological potential of the site. The ravages of the weather on such an exposed site are obviously taking their toll on the physical remains, and the site recording (completed in 1982) will be invaluable in years to come.

On the negative side, a couple of minor things should be mentioned. This reviewer found the labelling on the site plans very difficult to read — especially Figure 2, the 1929 plan of the site. The problem here is that the drawing has been so reduced that some of the letters labelling features have disappeared. Figure 4 has legible labelling but the double page plan of the site has been compromised by the binding which has swallowed up many of the features in the centre of the plan. This is most annoying when one is trying to relate the photographs and descriptions of features to the ground plan. Two other points of purely personal preference which this reviewer believes would have enhanced the report are: (a) a flow chart of the likely processing sequence at different phases of technological development, and (b) a time line or chart showing the different companies operating the station in different periods.

The synthesis of documentary and site based evidence is often the factor that differentiates a good archaeological report from a bad one. The synthesis in this case is excellent and it has turned a four day site recording programme into a meaningful contribution to understanding the development and organisation of the modern period of Australia's whaling history.

Justin McCarthy,
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Hopewell Furnace: A guide to Hopewell Village National Historic Site, Pennsylvania, National Park Handbook 124, Division of Publications, National Park Service, U.S. Department of the Interior, Washington D.C., 1983; pp. 96, plates 75.

If you are at all involved in public archaeology you should obtain this book. It is an outstanding example of interpretation and presentation: clear, scholarly and beautifully produced as a small paperback with a solidly sewn binding. Its purpose is to describe the functioning and history of a typical Pennsylvanian blast furnace and to guide the visitor around the site which is 'the most completely restored ironmaking community' of the eastern United States.

The method of presenting information is similar to that of the *National Geographic*, in which scholarly text alternates with boxed explanations and very well designed interpretive drawings. The introductory section on ironmaking in early America, thus starts with an excellent 3000-word text by Professor David Lewis and is accompanied by double-page spreads on cold-blast furnaces, resources, ironmaking, refining, blacksmithing and 18th-century ironworks in Pennsylvania, this latter being efficiently displayed as a

distribution map with colour photographs of relevant sites. The whole thing takes up sixteen pages and is as full an introduction to ironmaking as most people will ever need.

The Hopewell Furnace was typical of colonial ironworks in Pennsylvania. It was started in 1771, using traditional pre-industrial English methods and continued to use these methods right up to its final blast in 1883. There was one stone-cased furnace, which used charcoal as fuel and relied upon waterpower to operate a blast of cold air. At first the blast came from a huge leather bellows, later from wooden piston tubs. Hopewell's owners experimented briefly with anthracite fuel and with steam power, for a second furnace, in the mid-nineteenth century, but did not find these methods worthwhile. The Furnace's main product was of iron stoves which it made with a dazzling variety of decorated panels, occasionally using patterns brought from Europe by German immigrants, more frequently adapting Biblical or patriotic motifs, such as 'Don't Give Up the Ship', 'Perry's Victory', and, later on, producing conventional floral or animal motifs.

The archaism of the technology at Hopewell and its contemporaries led to a bizarrely anachronistic lifestyle; because the works used enormous quantities of charcoal, they required vast tracts of timbered land. In consequence the act of setting up a blast furnace entailed the acquisition of several thousand acres of land surrounding the furnace site. Workers had to be brought in to this enclave and kept there, which in practice meant housing and virtually all their families as well. At the height of its prosperity in the 1830s Hopewell accommodated 168 workers and 800 of their dependents.

The logistical problems were considerable and were overcome by creating self-sufficient communities, known as 'plantations'. The owner provided food from farms within the estate, the farmers being either independent tenants, or contracted employees. All other necessities were supplied by the village store, which meant that virtually no money changed hands, as the workers were effectively paid by credit at the store. They were, however, free to shop elsewhere and could obtain wages if they wished. When a worker left, the accounts were sorted out.

All in all the situation somewhat resembled that of a pre-industrial English manor, with the added resemblance that the manager lived in the Big House, right at the centre of operations. The Big House was itself part of the workplace, as its basement was the Moulders' Kitchen, where the workmen from the furnace and casting house ate. The first floor was used for offices and the second had guest rooms for visiting buyers. The servants were housed on the top floor and the family occupied a wing. Behind the Big House were the service buildings for the village: smokehouse, bakery, barn and the so-called Spring House, placed over a spring in which food crocks were plunged to keep them cool; this building also served as a water storage and laundry. The headrace for the furnace's waterwheel ran by the Spring House, and through the front garden of the Big House, to the adjacent furnace. The industrial complex included the charcoal store, furnace and casting house and a smithy which serviced both industrial and agricultural activities.

The self-sufficiency of the plantation made it possible for the estate to survive the closure of the blast furnace in 1883. The land was still used for quarrying, timber-getting and farming, by descendants of the original furnace workers, still living in some of the tenant houses. The Big House was retained as a holiday home for the descendants of the Brooke family, when the estate was purchased by the National Parks Service as a recreational reserve in 1935. The blast furnace was thus acquired by accident. Fortunately its machinery and waterwheel had been rescued by Philadelphia's Franklin Institute and it has been possible to rehabilitate it completely.

What the visitor sees today, after forty years of work by National Parks, and fifty reports by archaeologists and architects, is the necessarily sanitised re-enactment of an idyllic village community, hard-working, God-fearing, and under the watchful eye of the manager. The entirely admirable visitor's guide is well aware that this interpretation presents a very distorted picture of the industrial reality and makes a firm statement that 'the atmosphere in the village today is more nostalgic than realistic. The dirt, the sweat — even the occasional suffering — are absent. Life was uncompromising here in the 19th century.'

In the most substantial part of the Handbook, which is about 23,000 words long and is illustrated by eight double-page spreads, Professor Walter Hugins gives a clearly-written short history of the community, paying special attention to the life of blacks, women and children. His brief account can now be supplemented by Paul F. Paskoff's excellent *Industrial evolution: organization, structure and growth of the Pennsylvania iron industry, 1750–1860* (John Hopkins University Press, 1983), which uses a lot of documentation from the Hopewell Furnace.

We have no comparable study of the early Australian iron industry but our first blast furnaces have been recently described by J.L.N. Southern and J.E.A. Platt in *Ironmaking in Australia 1848–1914* (published by the Australian Pig Iron Club, Port Kembla, 1986, and available from Mr Platt, BHP Slab & Plate Division, P.O. Box 1854, Wollongong 2500). The work has as cover illustrations two fine photographs of Lal Lal furnace in Victoria. That site is open to the public and has quite adequate interpretive panels at the entrance, as many Australian sites do. Display panels, however, are only part of a much wider chain of dissemination of information, a chain which should start in the library, bookshop, or tourist centre with an intelligent, clear and attractive handbook. The Hopewell guide provides us with an ideal model which I hope we shall soon emulate.

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W. Gemmell, *And so we graft from six to six: the brickmakers of New South Wales*, Angus and Robertson, Sydney, 1986; pp. vi, 90, \$19.95.

New South Wales has a very strong tradition in brickmaking. Bricks were made in Sydney in 1788, the same year the first fleet arrived. These first bricks were made by convicts and were of rather dubious quality. Many were irregular in shape, their size varied markedly, there was a great difference in colour and strength and most were compacted so little and fired to such a low temperature that they were quite porous. With time, standards improved and by the late nineteenth century Australian bricks were as good as any in the world.

Bricks are heavy and their transport has always been expensive. Before the advent of the motor lorry it was possible to cart bricks only a few kilometres before the cost became prohibitive. Every town and village throughout the state therefore had its own brickyard. In many cases small brickworks were created to provide bricks for individual properties such as 'Mulgunnia' at Trunkey and 'Saumarez' at Armidale. The railways also added impetus to the establishment of new brickworks. Yards sprang up close to

bridge and viaduct sites to supply these railway engineering works.

Brickworks were an essential element for the continued growth of any town. They were built usually on the edge of town and were forced to move further out as the town developed. In this way even relatively small country centres could have spawned three or four brickworks. Thus, there have been literally hundreds of brickyards scattered throughout the state. Some of these, both the old and the not so old have produced bricks with distinctive markings. Sometimes these markings, along with other evidence, allow both the brickmaker and time of making of individual bricks to be pinpointed. With the enormous number of bricks of different type, style and manufacture it is not surprising that there has evolved a group of brick enthusiasts who collect bricks from different areas with the same dedication as other collectors of Australiana.

To satisfy the growing interest in collecting and to stimulate interest in our rich heritage of brickmaking Warwick Gemmell has written *And so we graft from six to six*. This is a readable though rather brief introduction to the history of bricks and brickmaking in New South Wales.

The book is written basically in three parts. The first two chapters concern the historic background and the technological revolution of the late 19th century which changed many industries including brickmaking from craft-based units to highly capitalised and highly mechanised manufacturers. The second part deals with the characteristics of sandstocks and early machine made bricks, while the third concerns the identification of bricks.

The strength of the book is this third section, although as Mr Gemmell points out many brickmakers did not place any identifying marks on their bricks, nor did they leave detailed records of their operations yard. The book has excellent photographs of 300 bricks, many with the identification of the maker. Bricks are shown with a bewildering variety of frogs, tally marks, paw marks, hand and foot impressions, marks which were made as the brick was dried on the hock and the striations left from wire cutting machines. Also included is an inventory of early brickmakers and their marks where known. The inventory is given region by region, but is by no means comprehensive; it does not cover all brickmakers in every region, nor all regions in the state.

The sections on history and technology of brickmaking are less satisfying. They have been so condensed that in places the exact meaning has been lost. The aim was obviously to keep these sections short, but the brevity and lack of suitable diagrams, which are readily available, have led to some confusion. Confusion is evident in the section on the introduction to steam powered dry press machines where the impression is given that the steam was somehow injected into the clay in the actual pressing operation which is not the case.

The text would have been improved had a series of subheadings been used to clarify a very complex sequence of events. The book should help stimulate interest in an otherwise neglected area of building technology. It will provide much help to those who have begun to collect bricks and will doubtless stir others to add to the literature on the development of other building technologies. It is a welcome addition to the literature on Australian technology, but it is hoped that future editions are more technically accurate and better illustrated.

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E. Tonks, '*Beneath tidal waters: the story of Newcastle's harbour collieries*', Headframe Publishing, 19 Wakal Street, Charlestown, N.S.W. 2290, 1985; pp. 56, \$11.20 (including postage).

Ed Tonks has a well deserved reputation for his extensive knowledge of the coal-mines of the N.S.W. Northern field and for his recording of cemeteries and war memorials in the Newcastle area. His latest publication examines in some detail the group of collieries working seams which run below the tidal waters of Newcastle harbour. The mines in question operated from the mid-1870s until, at latest, the First World War.

The presentation of the well-documented histories, mine by mine, with ample illustrations, is a double column text fifty pages long. It is not the easiest of works to use and some tabulation of the principal features of the histories would have assisted the reader. The covering dates of the major mines are:

Ferndale.....	1877-1894
Linwood.....	1888-1890
Maryville.....	1884-1889
Carrington (Wickham & Bullock Island, Cowper St.)	1884-1905
Stockton.....	1882-1908
Hetton.....	1885-1916

The common characteristic of these six mines and the numerous 'rat-holes' opened by undercapitalised groups on Tighes Hill in the period 1879 to 1891 was the danger from tidal flooding.

Unlike the major underwater mine in Sydney Harbour, operating from Balmain, these Newcastle mines were imperilled by the direct action of the estuarine tides. Although Tighes Hill is some distance inland from Port Hunter, it was critically affected by the tidal Throsby Creek: Linwood, Carrington and Hetton mines' surface buildings were erected on mangrove flats beside the harbour and Stockton's headframe was close to the sand dunes at the south end of Stockton Peninsula.

It is not surprising that Mr Tonks' account of these mines is punctuated by details of disasters caused by water and sand. Accidents perhaps take up rather too large a proportion of the short book: the Ferndale subsidence and subsequent flooding of 1886 take up five pages and the Stockton Disaster of 1896 (when ten men died) is exhaustively discussed over 16 pages of text and illustration. Mr Tonks makes good use of his own recording of miners' gravestones to amplify the record of these tragedies.

There is also room in the book for some technical information about geology, shafts, tunnels, mining techniques and surface equipment. Although the geology is much better discussed by David Branagan in his *Geology and coal mining in the Hunter Valley, 1791-1861*, 1972, which is omitted from Tonks' bibliography, the details of these individual estuarine mines have not previously been published in so comprehensive and comprehensible a form. The early photographs of head-workings and the harbour context, some taken from private collections, are instructive and unacknowledged, while the use of detailed contemporary maps from Newcastle Regional Library is helpful. Since all these mines are long since closed and their sites redeveloped, this is very much a record of vanished industry useful to the archaeologist primarily as comparative material. But in a few instances Mr Tonks casts light on the perennial question of recycling and it is useful to learn that the second winding engine at Hetton, made by Davidson of Durham (pictured on p.43) was transferred, along with boilers, to the State Mine at Lithgow (p.50), where the winding-engine (though not the boilers) remained in operation until that mine closed in 1964.

The transfer of Carrington machinery to Neath colliery and Stockton equipment to Teralba is mentioned only in passing but would deserve more investigation.

Mr Tonks has clarified many basic questions about thirty or so years of coal-mining in Newcastle and supplied a useful compendium of information about lost sites and lost or recycled machinery. Industrial archaeologists should be aware of this volume published at the expense of the enthusiastic and public-spirited author.

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H. Brown, *Tin at Tingha: the history of Tingha, the greatest tin producing area of New South Wales, and the story of its people*, the author, Armidale, 1982; pp. 160, illustrated, \$9.50 (plus postage from Mrs Helen Brown, 5 McKeon Avenue, Armidale 2350).

I enjoyed reading this book. It is two things, both a local history of the town of Tingha and its surroundings in the New England district of New South Wales, and a study of the tin-mining industry there. Those two topics will interest two very different audiences.

One of those audiences will be more satisfied than the other. As a local history, it succeeds very well. At a time when Australia seems to be knee-deep in recently written histories of country towns or districts — a great many of which I have been variously pleased or appalled to read in the course of my work — this one comes through with flying colours.

One problem with local history is that it can make every town in Australia sound very much the same. There is always the first white child born in the district, the recruits marching off to South Africa, and the story about the day the policeman fell off his bike. You can cross out 'Mungindie' and insert 'Koolyanobbing', and most of the story will still apply.

However, Helen Brown has gone beyond this local gossip level and written a local history which has a strong sense of place. She has talked to all the oldies, walked up the creeks, and generally imbued herself in Tingha. Then she has written well about it. She has clearly recognised the themes which distinguish this town's history from that of other places, and described them well.

The test for the sense of place is that you could erase all placenames in this book, place that mutilated copy in the hands of a knowledgeable local resident or a good historian, and before the tenth page or so, expect the reader to identify its place as Tingha. That means the writer has done her work thoroughly, and described it with authority. Insofar as it concerns the town of Tingha and its residents, this is a good book, and I recommend it strongly.

However, in the application of this book to the wider world, there are some problems. Helen Brown has looked closely at Tingha, but some of her comments touching on other places are based on less scrutiny and come out less happily.

She refers to 'what may have been Australia's first prefabricated house' in the Tingha district, in about 1842 (p. 15). Australia's first prefab came with Arthur Phillip in 1788. She says convict transportation to Australia was abolished in 1840 (p. 11). No, the last convicts arrived in

Fremantle in 1868. She says that Chinese miners were excluded from New South Wales in 1888 and the other colonies then followed suit (p. 34). But Victoria had anti-Chinese legislation in 1855, South Australia in 1857, Queensland in 1878.

These are embarrassing slips arising from insufficient research outside the immediate topic. The ones above do not matter very much, for they can easily be corrected by an alert reader. But there are other statements in the book which are more worrying. For example, Brown says that on 4 March 1901 'the first tin dredge ever to be used in Australia' (p. 51) commenced work near Tingha. Now, how is that to be confirmed or denied? If it is true, it is both significant and useful information. But Brown does not say where the information comes from, so future researchers interested in the progress of tin dredging in Australia are left to delve in their own pond. There are no footnotes and no bibliography.

From my own research, I suspect that Brown may well be right about the first tin dredge. But I cannot confirm it from her sources, for she gives none. The best confirmation of this I can find is in Geoffrey Blainey's *The rush that never ended*, where I learn that 'From 1900 to 1914 . . . tin dredges were heard through the night from Queensland to Tasmania' (p. 225). (Blainey, like Brown, does not disclose his source for this revealing insight).

Matters of this kind are those that will concern the second, wider audience of this book: those interested in it as a detailed local study of the Australian mining industry. And it is here that the lack of sources will be felt most keenly.

The tin industry has received relatively little attention in the literature of Australian mining history. There are excellent local studies such as Ruth Kerr's *John Moffat's Empire* (St. Lucia 1979) which is a history of the Irvinebank district of North Queensland, and P. Milner and C.J. Pengilley's unpublished 'Glen Valley' (University of Melbourne 1979), which exhaustively documents the mining sites of Victoria's Glen Wills district. But it is not possible to pick up a single volume dealing authoritatively with tin in Australia. The metal has never attracted from historians the attention that gold, copper or even coal have, despite the fact that it is one of the few branches of the mining industry with an uninterrupted record of production from the 1870s to the present.

For this reason, it would be useful to have this book as a contribution which effectively wraps up another area of Australia, and which will eventually be incorporated into the definitive whole. However, the lack of sources renders it ineligible. Whoever writes the history of tin-mining in Australia will have to research Tingha all over again from the primary source material. Much of the mining information appears to derive from the Annual Report of the Department of Mines, with some company records and personal reminiscences. Some of this is easy enough to find, but information from the more ephemeral sources will in future simply be footnoted, 'According to Brown . . .'.

There are several intriguing references to local variations in mining technology such as the 'Willoughby' (p. 38), a form of cradle, and the 'Chinese tread wheel' (p. 41), which sounds very much like a Californian pump. It would be more than useful to know where these descriptions are from. Not only mining historians will be frustrated in this way. Brown mentions an incident in which Europeans drove Chinese diggers off the tin field (p. 33), but it is not clear where or when, or even in what decade, this occurred.

This shadowy repetition of an event archetypal to nineteenth century mineral fields smacks of oral evidence. Brown has drawn heavily on oral sources, without identifying them, and she herself recognises some of the problems that arise:

As I listened to the many stories told by the old folk, I often found it difficult to decide whether the storyteller was recounting a happening that had occurred during his own lifetime, or whether he was repeating an oft told story handed down by his pioneer parents. (pp. 127–128).

It is not helpful to the future historical record to pass this major problem on to the reader unresolved.

To return to the book's strengths. It has an index which works. One section of the book, chapter six, on diamonds, is a tightly-structured, coherent study of this little-known local industry, worth reading in its own right. A less restrained reviewer might describe it as a gem. And the book's feel for the tin industry and how it shaped the district, seen from a viewpoint in the 1980s, is strong. If only it had footnotes and a bibliography.

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I. McBryde (ed.), *Who owns the past? — Papers from the Annual Symposium of the Australian Academy of the Humanities*, Oxford University Press, Melbourne, 1986; pp. 198, \$14.95.

Tolkien's Dragons are alive and well and living in Australia!

By way of explanation, I am inclined to accept Eric Wilmot's suggestion that the authors and custodians of cultural history find a parallel in the Dragons — jealously guarding their treasures for an elite and so becoming the high priests of social myth and the interpreters of the social continuum.

As European Australia nears its Bicentennial year there is an increasing focus on the events and people which shaped those two hundred years. There is increasing polarisation of opinions of the value of retaining physical relics as historical 'prompts'. There is conspicuous uncertainty in resolving the traditional relationship between black and white Australia and accommodating this to the benefit and satisfaction of the population as a whole. The Dragons — the ad-men, the government funding institutions, anthropologists, historians and cultural resource managers — are self consciously creating a cultural mythology and they are reaching tentatively for the threads with which to weave the story.

In the midst of all this national navel-gazing it is refreshing to be confronted with our parochialism: to think about the broader anthropological issues surrounding cultural resource managers and to be reminded that cultural resources are not only tangible but are also the stuff of which a nation's dreaming is formed.

The papers from this symposium explore the question of ownership of the past from a number of perspectives and a number of time frames.

Asking who owns the past raises questions of what is the past. The papers remind us that the past is both tangible and intangible: that it is personal and communal, that it is subjective, shaped consciously or un, out of selected artefacts or events, through a series of present tenses.

Discussion of the tangible past raises questions of legislative protection for physical evidence and discussion of the morality of countries retaining collections of ethnographic material or fine arts, collected during a period of colonisation or 18th-century inquiry.

The book contains ten diverse papers skillfully drawn together by Isabel McBryde which results in a context for the more controversial conservation issues which have characterised the last three decades.

Bruce Trigger writes of the Anthropology of the North American Indian emphasising that the realities of Indian life have often been overlooked because of the subjectivity of anthropologists.

Eric Wilmot applies his 'Dragon Principle' to Australian anthropology. He postulates that the European custodians of Aboriginal culture guarded their treasures in the same manner as Tolkien's dragons, gathering and keeping the information for themselves, excluding the indigenous population.

Les Groube discusses the problems of documenting the national history of New Guinea, a land with 900 ethnic groups. He emphasises that the standard anthropological models relating to homogeneous societies are obsolete here and might better make way for mathematical models demonstrating the scale of change in that country.

Bernard Smith explores the nature of the observable past, reminding the reader of the subjectivity and bias in communal history which is 'constructed' by historians from selected facts.

John Mulvaney with his characteristic pan-cultural vision, relates his discussion of cultural history to specific conservation and anthropological issues — the Gordon Below Franklin Dam, the Aswan development, the Elgin Marbles. He discusses the concept of universal culture and refers to custodianship of the past rather than ownership.

David Wilson expresses a passionate and heartfelt case for museums like the British Museum, which supports and encourages public education and research and which acts as trustees of collections like the Elgin Marbles now under siege from the country of their origin.

Alice Erh Soon Tay in her paper on law and the cultural heritage draws attention to the problems of protecting antiquities in democratic societies which respect the rights of private ownership. She discusses the tendency for legislators to concentrate on immovable property rather than chattels. Alice Tay will be interested to learn of the recent amendments to the Heritage Act, 1977 gazetted in March 1987 which, for the first time, provide a legal mechanism for protecting movable European cultural relics more than 50 years old.

Sharon Sullivan, in her discussion of the custodianship of Aboriginal sites in South East Australia, begins to argue that there may be benefits to the fractured multi-cultural European population in Australia if it embraced the Aboriginal heritage as part of the general Australian history — raising again the concept of custodianship rather than ownership and emphasising its unifying potential.

Elizabeth Jeffreys discusses the political manipulation or rewriting of history in her outline of the Byzantine Chronicles making the point that the general population may be alienated from its history in the process.

Finally, Wang Gungwu champions Confucius' edict to 'love the ancient', as a mechanism for unifying a population and understanding the present.

Who owns the past? led some contributors to discuss the relationship between the 'relativity' of the past and its interpretation/manipulation.

Bernard Smith states that 'the pictures of the past we construct . . . will be determined by the nature of the objects chosen to stand in for the past . . . Events [are] . . . constructed from selected facts . . .' John Mulvaney continued the idea in quoting Robin Winks 'The ways in which people view the past . . . are to a considerable extent

reflected in those objects that they chose as reminders of themselves'.

Before we get too depressed with this notion it is worth remembering that the changes themselves (i.e. changes in the subjectivity) in the choice of objects are also part of the continuum of cultural history.

Who owns the past? — most people would voice an opinion, but if the question turned to ownership of the future, answers would be more hesitantly proffered.

Do we accept the view embodied by Les Groube that the owners of the past are 'not the people or the landowners, but the manipulators who transform the past into words . . . [who] assume a contact which approaches ownership' or can we stand back and embrace John Mulvaney's concept of a universal culture of which we are all custodians?

The latter is more appealing to the humanist in each of us — but then what do we do with those Dragons?

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G. Henderson, *Maritime archaeology in Australia*,
University of Western Australia Press, Nedlands, 1986;
pp. ix, 201, illustrated, \$25.00.

In the 1970s and early 1980s Australia was one of the world leaders in the development of legislation to protect underwater cultural resources. The author of this book, Graeme Henderson, played a pivotal role in this development and it is opportune that as the discipline of maritime archaeology undergoes a period of introspection he has written what is in essence a history of maritime archaeology in Australia. Unlike most books on the subject, this text is not a handbook of fieldwork techniques.

In overview, he first provides a summary of the last two decades discussion of the nature and scope of maritime archaeology. A history of Australian maritime activity follows highlighting the historical and technological information available from the shipwreck resource. Whilst pointing to the broad range of cultural material on the seabed including Aboriginal sites, submerged settlement sites and littoral sites such as whaling camps, the author concentrates on shipwreck sites reflecting the dominance of this type of material in the minds of maritime archaeologists and legislators.

Following a discussion of the development of state and Commonwealth legislation to protect 'historic' shipwrecks, he outlines the growth (or in some cases the lack of growth) of maritime archaeological programs in each of the states. He finishes with a short chapter on how he sees the future direction of the discipline, in particular the need for permanent courses at the university undergraduate level.

The work is naturally biased towards the activities of the Western Australian Maritime Museum although Graeme was scrupulous in consulting with the heads of the other state programs. The text is well written. However, I was struck by the lack of graphics and colour photography resulting in a very traditional layout not in keeping with a dynamic author and discipline.

This book is essential reading for anyone interested in maritime archaeology. Historical archaeologists will also gain much from the text although it is very worrying that

there is little mention of historical archaeology or prehistory in the work. Maritime archaeology developed to some extent in an academic vacuum with only minor contact with the other branches of archaeology. Now, with the establishment of maritime archaeology units in organisations such as the Victoria Archaeological Survey long held beliefs and practices have been questioned. This book gives the background to those questions.

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Australian National Maritime Museum.

R. Gould (ed.), *Shipwreck anthropology*, A School of American Research Book, University of New Mexico Press, Albuquerque, 1983; pp. 273, \$38.50.

This volume emanated from a seminar series, the goal of which was, according to the editor 'to explore the relatively new and untried idea that shipwrecks offer the possibility of anthropologically significant discoveries'. Essays by the participants, 'land' and underwater archaeologists, represent principally anthropological, but also historical and classical traditions, as well as more specialised approaches like ethnoarchaeology, experimental archaeology and public archaeology. These essays have been loosely structured with an introductory chapter by Gould on shipwreck archaeology as anthropology and a final chapter by Gary Stickel pointing the way to research designs for underwater archaeology. Among the topics are 'Method and theory in shipwreck archaeology' by Patty Jo Watson, 'A plea for historical particularism in nautical archaeology' by George Bass, and 'A trial classificatory model for the analysis of shipwrecks' by William Cockrell.

Predictably the participants all touch upon the debate between particularists and generalists. Gould, without wishing to diminish the scholarly importance of the classical and historical approaches, feels it is time for anthropologically oriented archaeologists to recognise and explore shipwreck archaeology in an intelligent and convincing manner. He believes that with the use of appropriate generalisations the 'Seafaring Revolution' now has as much potential to change the direction of archaeology as Gordon Childe's concept of the Neolithic Revolution once did.

Two of the writers would disagree with Gould's assessment: Bass, although confident of the potential of the 'Seafaring Revolution', does not accept that the anthropological approach will add anything to our understanding of human behaviour connected with shipwrecks: 'when I find them trying to formulate a design — Can you distinguish contraband from cargo on a wreck? Can you determine if women were on board? — I find it rather pathetic'. Watson cautions archaeologists about jumping onto an anthropological bandwagon when the anthropologists themselves are uncertain about what kind of social science, if any, they are involved with, and she adds the sober factor that in the present real world of shipwreck archaeology the only thoroughly published work is ideographic. As the generalists have yet to prove themselves by designing projects, carrying them out, and publishing them for evaluation the discussion is therefore only academic.

Peter Schmidt and Stephen Mrozowski attack the antihistorical school of archaeology in their survey of eighteenth-century Narragansett Bay smuggling under the Navigation Acts. As they see it the significant anthropological advantage inherent in historical archaeology is that it allows access to many more interpretative constructs than are available to prehistorians: 'Ironically, that advantage is cast aside if, like South, we adopt an antihistorical perspective or if we mistake chronicle or chronology for history'. Schmidt and Mrozowski find that each domain of historical documentation provides a distinctive, partial and biased account from which we may derive a cultural construct. Synthesis of these data allows us to develop a systemic context, integrating behaviour and material culture. With that systemic context, derived from history and archaeology, we may proceed to ask questions of anthropological value that shipwreck archaeology can help to solve.

Other writers generally champion the anthropological approaches. Daniel Lenihan looks at the development of shipwreck archaeology from the history of ideas viewpoint. He argues that archaeological approaches have been limited to 'historical' and marine architectural concerns, and advocates the application of analytical archaeology, marine biology, marine ethnology, industrial archaeology, archaeometry, ethnohistory, and cultural resource management to broad cultural questions. Instead of focussing narrowly on the evolution of gun decks, for example, shipwreck archaeologists should ask in reaction to what social and environmental stimuli does ship armament evolve over time?

Cockrell starts his paper pondering why shipwreck archaeology has not transcended simple description and explication and addressed processual topics with scientific explanation. He suggests that archaeologists attempting explanatory studies have traditionally confined their analyses to social groups assumed to be less culturally 'complex' in the hope that data from these 'simpler' societies will prove manageable. Most papers dealing with the archaeology of shipwrecks have as the normative type wrecks of Western origin, from the seventeenth to the nineteenth centuries. Cockrell feels that in directing more sophisticated anthropological approaches to shipwrecks it would be helpful to examine the unique nature of ships as loci of a specific type of human interaction. Following Keith Muckelroy, Cockrell goes on to examine the ship as a closed community — as a community existing as a temporarily closed social unit. A study comparing group behaviour in the closed community with behaviour in an open community contains the potential for controlling variables in experiments. He proposes a functional classification system in which the ship is a family — subsistence conveyance, an exploratory conveyance, a military conveyance, a commercial conveyance, a pleasure conveyance, and a ceremonial conveyance. He then examines the interacting networks between each of the elements of his classificatory scheme and the respective parent cultures, and poses potential applications ranging from the intrasite or intraship study of a single vessel to the combination of comparative interfleet and related terrestrial cultures. Cockrell concludes:

The isolation of the ship community creates a rare human situation, a limited option network. We are provided with a singular laboratory situation, which, if comprehensible, will enable us to transcend description in an approach to that elusive and perhaps unattainable goal of scientific archaeology, explanation — and consequent prediction.

Larry Murphy also sees the ship as a closed community. Observing that waterborne craft have been basic human tools since prehistoric times, he examines shipwrecks as a data base for human behavioural studies. The ship is seen as

an artifact, the shipwreck as an archaeological site, the ship as part of a cultural system, and the ship as a cultural system — a closed community, and suggestions are made for directions of useful enquiry which might contribute to the knowledge of human social processes.

Using a survey of drowned archaeological resources (Paxtent River, Chesapeake Bay), Mark Leone demonstrates the potential of the underwater archaeology of rivers and of an anthropological treatment of the results. The survey showed that boat form changed as the shape of the river changed, and that the river's evolution was shaped by the economy of the land. Leone develops the hypothesis, built on the data established by the survey, that the relationship among land use, river conditions, towns, and boat life is a function of capitalism, as a particular kind of economic system, and is not just a function of ecological change or industrial development.

Cheryl Claassen reviews the history of experiments in nautical archaeology — almost exclusively vessel replication to determine whether specific kinds of craft are seaworthy. Claassen argues that any tool kit that contains adzes and axes could be used experimentally to produce a serviceable boat, so 'experiments' offering this conclusion have not enlarged our knowledge at all. Suggestions are offered for improvements in the conception and implementation of experiments as well as of topics for future investigation. These include experimental work on the process of a shipwreck, that is, testing natural and cultural processes.

The archaeology of war is explored by Gould who uses the material bi-products of human conflict as researched on the Spanish Armada and Battle of Britain wrecks to provide signatures of particular kinds of behaviour.

In the final chapter Gary Stickel ponders the question of whether we can afford to have researchers excavate (which destroys a site and precludes future analysis unless sampling theory is utilised) to investigate only cultural and historical questions: 'An ideal situation, it seems to me, is to have well organised interdisciplinary excavations and analyses of shipwrecks (and any other subaqueous site) address all three sets of research questions — those of culture history, internal culture system dynamics, and cultural process and change over time'. He provides a research design for the 'Chinese anchors' site, in the Pacific Ocean off California, consisting of some 30 stones which may have been shaped by man. It is by no means certain that the site is a shipwreck, and Stickel's basic questions are: who made these stones, what culture are they a product of, and why and how did they come to be located in 15 to 25 feet of water? Stickel uses an explicit research design based on a deductive — induction testing process. He explains the steps in his hypothesis testing format (which begins with 'archaeological phenomena of real world' and ends with 'enunciation of general covering law') and then concludes with the suggestion that if the site should indeed prove to be a shipwreck then the cultural processes that determined the operation of the vessel could be addressed. For instance, was the ship an exploratory vessel, or a trading vessel?

I was disappointed that Stickel chose the 'Chinese anchors' as his example. As a 'paranormal' site, research might well indicate that it is only a trivial one adding nothing to our knowledge of the past. Stickel does not answer the basic questions he has posed, and so does not advance effectively (in the explanation of his hypothesis testing format) beyond the stage of offering and exploring various hypotheses. The section 'Testing for cultural processes at the site' is a mere addendum. The basic thrust of his design is to give information about the site in an objective, scientific manner, but what about the enunciation of general covering laws — his conclusions about the real world? He does not illustrate

adequately the latter part of his testing format, and I doubt that he has taken the resolution of his basic research problem any further than a competent classical archaeologist would. With this reservation about his choice of illustrative example I found Stickel's explanation of his research design very useful. More challenging research problems will doubtless emerge as research designs become more widely implemented.

I found this to be a stimulating volume. The various authors share (without needless repetition) a concern for some issues, desiring survey rather than search, partial instead of total excavation, and explicit instead of implicit research designs. All the authors express concern about commercial salvors operating on culturally significant sites. Most called for anthropologists to become involved in shipwreck archaeology, and for amalgamation of effort — for cooperation between generalists and particularists — rather than methodological pureness of thought. The use of seminar essays resulted in little delay in bringing this timely discussion to press. I wonder if the time is approaching when such a broadly based forum could be contemplated within Australia.

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A. Davies and P. Stanbury, *The mechanical eye in Australia — photography 1841–1900*, Oxford University Press, Melbourne, 1985: pp. xi, 270, \$45.00.

In the past decade visual images have been used increasingly as a primary documentary resource by genealogists, restoration architects, historians and historical archaeologists alike. Photographs, in particular, as literal photomechanically produced accounts of people, places and events have assumed paramount importance in material culture analysis.

Since the introduction of photography, then a newly discovered process, in Sydney in 1841, photographs have been produced and collected in vast and evergrowing numbers. Collections of colonial photographs now available to the researcher range from extensive publicly-accessible photographic archives containing hundreds of thousands of images to those of regional museums and historical societies and albums or boxes of pictures stored in family living rooms, attics and sheds. An irritatingly large percentage of images are neither identified nor dated. The major hindrance to their use by researchers has been the difficulty in reading undocumented photographs intelligibly. There is, to date, no widely accepted system of cataloguing. The documentation of photographs has been done in a piecemeal manner in different places. Even major collecting institutions are hampered by a shortage of specialist staff to undertake the daunting task.

The publication of *The mechanical eye in Australia* in 1985 was a giant step forward in gathering, organising and disseminating source material on photography in Australia. It is not and does not claim to be an interpretive history of Australian photography. But it is an exemplary and authoritative reference for the photographic researcher and the historian that concentrates on photography and photographers rather than photographs *per se*.

The illustrations in the book, drawn from the collections throughout Australia are a fascinating cross section which illustrate the developing technology of the medium from the earliest daguerrotype through many different methods on

varying supports, metal, glass, paper and others, to albumen prints off dry plate negatives. The selection is equally diverse in subject and treatment, ranging from the most formal portraits like that of *Mrs Jane Day and her daughters, Jane, Eliza and Mary* by Sydney photographer Thomas Glaister, a hand-coloured ambrotype illustrated in colour on the cover, to the seemingly casual and witty work of that 'virulent camera fanatic', Judge Docker, an early amateur photographer who snapped from behind them his three daughters gazing at a trio of more famous sisters in *The Three Sisters*. Well known and influential works are included, such as J.W. Lindt's pioneering essay in photo-journalism which shows the photographer M. Burman of Melbourne crouched under a dark cloth focussing his lens on the macabre spectacle of Kelly gang member Joe Byrne, strung up for the occasion like a butcher's carcass two days after he burned to death in the Siege of Glenrowan. Many of the images selected depict photographers, like the triple self portrait of Adelaide photographer, Bernard Goode, their studios or their activities in the field.

The illustrations are arranged in chronological order placed on the right hand page alongside text on the left where detailed catalogue entries are followed by extracts from contemporary accounts and advertisements, each referenced, with a linking text that provides contextual information. Combined, they form a history of the development of photography in Australia.

The section entitled *Clues for dating photographs* clearly outlines the steps in dating nineteenth century photographs, giving approximate dates for the introduction and demise of successive processes used, detailed guidance on the identification of each and references for available sources of costume history. A chronological diagram of photographic processes and a key to image sizes follow.

The major part of the book is taken up with an alphabetical listing of over 3000 nineteenth century Australian photographs, arranged alphabetically under the name of photographer or studio, giving dates and changes of address. Based on contemporary sources including directories and almanacs, gathered during seven years research by the authors and from correspondence with interstate researchers listed in the sources given, it covers all professional photographers to 1900 and amateurs to 1880. Because most nineteenth-century photographs bear an imprint which usually states the names and addresses of their makers, examples of which are illustrated on the endpapers, it is possible, with the help of the list, to date almost any photograph of the period and to place many unidentified urban views with further help from directories. The list is interspersed with reproductions of photographers' advertisements and newspaper cartoons relating to photography. These are not only entertaining but add further information and another dimension — the ambience of the period. We discover that, when sitting for daguerrotype portrait, 'Ladies are recommended to wear Dark Figured or Black, always avoiding Light Blue or White' and that in 1867, G.W. Perry, a Melbourne photographer was able to advertise an 'Important Discovery. Abolition of Torture in Photography. Head Rests no longer used' with the introduction of 'instantaneous' photography.

The book is attractively produced and clearly laid out, marred only by the use of an unnecessarily coarse screen which detracts from the quality of the half-tone photographic illustrations and does not do justice to the book's importance.

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G. Ogleby and L.J. Rivett, *Handbook of heritage photogrammetry*, Australian Heritage Commission, Special Australian Heritage Publication Series No. 4, Australian Government Publishing Service, Canberra, 1985; pp. 115, illustrations, \$11.95.

In the course of this century, especially during the last two decades, photogrammetry has developed into a highly specialised field of considerable technical and professional importance. Photogrammetric techniques have been increasingly applied as a recording and measuring tool in many other areas outside the realm of topographic mapping, whenever indirect and rapid spatial measurement may be required, including the problem of recording and subsequent measurement of cultural monuments. The capabilities of this particular application of photogrammetry have been demonstrated with great success in a number of overseas countries, notably in Europe, where it became firmly established as a routine production method, with a number of institutions specially dedicated to the task of undertaking comprehensive recording programs. It is therefore somewhat surprising, not to say disappointing, to find that in spite of a worldwide increase in the use of photogrammetry for the recording of heritage, photogrammetry in Australia has not been applied to the recording of heritage in any systematic manner nor are there any organisations dedicated to programs of work and research in this field. No doubt many factors have contributed to this situation, including poor communication between photogrammetry practitioners and potential users of the method. Although there have been quite a few pertinent technical papers on the subject delivered at conferences or published in various outlets, including this journal, relatively little has been done to collate and present the evidence that photogrammetry has very much to offer to its prospective users, be they architects, engineers, planners or archaeologists, in a single publication. This small, soft covered book of 115 pages, Number 4 of Australian Heritage Commission Special Heritage Publication Series, fills this void. Apart from being long overdue, *Handbook of heritage photogrammetry* is unhappily also a memorial to Leo Rivett, a Senior Lecturer in Surveying at the University of Melbourne, who at 43 met an untimely death in Melbourne in February 1984 before completion of the publication. A tribute to Leo is given in Dr Baker's foreword to this publication as well as by Cliff Ogleby, a former student of Leo's, who was left an unenviable task of completing this Handbook. All that remains to be said by this reviewer is that Leo Rivett, who was the driving force behind heritage photogrammetry in Australia, was highly regarded by his peers and by the Australian heritage community in general. His important pioneer work in the field of heritage photogrammetry will be remembered.

The text is presented in six chapters in logical progression. An introduction is followed by chapters on principles of photography, principles of photogrammetry, architectural and archaeological photogrammetry, non-metric photogrammetry, and archival systems.

The authors in their introduction state that 'this handbook is intended to be a reference manual for all people currently using or considering the use of photogrammetry in recording all types of cultural artefacts', and '... those readers unfamiliar (but enthusiastic) should be able to use this handbook as the theoretical basis and field guide for a photogrammetric project' (p. 3). The readers can thus expect considerable help and guidance from such a source and overall they will not be disappointed. Yet I feel that no one handbook, especially one this short, can fulfill these overly ambitious objectives, and that at the outset its authors should

acknowledge the fact that they have not covered all aspects and all techniques in sufficient depth and refer the readers to a number of other texts on subject matter for supplementary reading. The authors rather belatedly concede this in an introduction to Chapter 3, Principles of photogrammetry. It seems a pity because there is an extensive bibliography provided by them which scans a wide range of books, monographs, journal articles and other publications, a testimony to the volume of work that has been undertaken over the last two decades.

The book begins with a concise explanation of the need to record, followed by an equally concise history and definition of photogrammetry. It is pertinent that the authors in their coverage of history of photogrammetry refer to pioneer work by German architect Albrecht Meydenbauer (1834–1921), the founder of architectural photogrammetry. Little known fact is that Meydenbauer also wrote the very first handbook on the application of photogrammetric techniques to heritage recording *Handbuch der Messbildkunst in Anwendung auf Bandenmalerei — und Reise-Aufnahmen* (Handbook for the application of image measurement to building monuments and travel photographs), in which he established the geometrical, optical and instrumental principles for the development of the technique.

Missing, however, in this otherwise succinct coverage of history of photogrammetry is a comment on the status of heritage photogrammetry in this country inclusive of the work by other workers in the field. The readers are thus left with the impression that the Surveying Department of the University of Melbourne, from which the authors come, is the only one carrying out work in this field.

Following a short introductory chapter, two chapters are devoted to the fundamentals of photography and photogrammetry. They lay a foundation for the discussion of architectural and archaeological applications of photogrammetry which follows.

In Principles of photography, following a brief history of photography, the physics of the photographic process, film, filters, as well as taking care and keeping of processed photographic emulsions, are described in considerable detail. It could be argued that an inclusion of this chapter was unnecessary and indeed somewhat superfluous because of quite a few good books on the subject. I, for one, feel that it is axiomatic that the principles of photography are dealt with herein. A knowledge and realisation of photography's obvious links with photogrammetry should be appreciated. After all, photogrammetry could not have been contemplated without the prior invention of photography. While well-exposed and correctly processed photographic negatives may be only an intermediate step of the whole photogrammetric survey, it is still the theoretical heart of photogrammetry, a basis from which the desired end-product, whatever its form may be, will eventually be derived.

The chapter, albeit very well written, incorporates some unnecessary asides such as subheading 'Disasters', where the authors state that 'the worst disaster that can happen in the darkroom, especially when processing glass plates in open tanks, is becoming disoriented in the dark and immersing the plates in the fixer before the developer' (p. 15). While disasters can and do occur, from time to time, a disaster of this magnitude is inconceivable. Speaking from experience, there are mishaps not mentioned here that have happened such as not realising the difference between the orthochromatic and panchromatic black and white emulsion types when loading glass plates in the darkroom.

Chapter 3, Principles of photogrammetry, as its heading proclaims is concerned with fundamental concepts and methods of photogrammetry, the means to an end. The chapter gives the reader a general understanding and basic

appreciation of the subject without creating an atmosphere of complexity and mystery, which seems endemic to the topic. Space is given to a group of core topics considered essential in any text dealing with photogrammetry such as the underlying geometric principles of single and stereo photographs, rectification, orthophotography as well as dealing with the analogue and analytical approaches of the data evaluation stage of the photogrammetric process, and the cameras providing the necessary imagery. Mathematics are kept to a minimum, with only a few necessary equations given. The treatment is thus at a level any archaeologist with only a modicum of mathematics could cope with. The chapter is not intended as a definitive text on the subject and the authors in their introduction to this chapter are aware that only to a certain limited extent can this explanation of the fundamental aspects of photogrammetry be covered in sufficient detail and readers are accordingly advised to refer to a bibliography provided by them. Even so, one surprising omission is the absence of any reference to approximate graphical rectification methods of acquiring planimetric detail from single photographs. While the overriding consideration concerning their applicability should always be the accuracy of the desired end-product, there are many situations which do not warrant employment of rigorous photogrammetric procedures because a highly accurate object three-dimensional description is not required. If this handbook, as the authors state, is primarily aimed at the non-photogrammetrist then space should be given to approximate methods since their utilisation can be highly advantageous in many recording situations. Moreover, the methods should be of particular interest to the non-photogrammetrist motivated either by a desire to deploy ones own resources or perhaps having to rely on them owing to financial constraints. In as far as the technicalities are concerned, there seems to be an error in giving the accuracy of measurement of x-parallax using a parallax bar as 0.1 mm. Surely an experienced observer can easily achieve accuracies better than that?

Chapter 4, Architectural and archaeological photogrammetry, is concerned with applying photogrammetric techniques to actual recording projects. It gives authors the opportunity to include their considerable experience in this application of photogrammetry through discussing the various recording projects undertaken by them. The case studies are interesting and well chosen to illustrate not only a variety of photogrammetric techniques that can be employed but also problems encountered by the photogrammetrist on a particular site and the ingenuity required to solve them. One recording project undertaken by the authors, Rouse Hill and Bella Vista homesteads and outbuildings typical of early Australian vernacular architecture, is discussed in considerable detail in order to demonstrate a sequence of operations involved in most recording projects using photogrammetry. Other case studies discussed briefly under the heading of Architectural photogrammetry include the projects carried out by the authors in Melbourne as well as several examples of recording projects overseas, namely the photogrammetric mapping of the Indian pueblos of New Mexico and Arizona, the photogrammetric recording of the salient features of the historic ship in Canada by the Heritage Recording Service of the National Parks Organisation, and mapping of a Buddha statue in Thailand by the Department of Fine Arts in conjunction with the Chulalongkorn University, Bangkok. An interesting account is also given of the work carried out by Ogleby in a remote region of Papua New Guinea, where photogrammetry has been used to record several 'haus tamabran', the men's spiritual houses. It is made clear that the field expeditions in a developing country are very much different to those where most sites are relatively accessible.

Difficulties faced by the survey executioner include the effect of the tropical climate on his camera and film as well as the logistics which in case of this trip to the villages on the lower Sepik River involved a regular air service flight, a trip in a utility, and when the unmade road stopped, a canoe journey.

Of particular importance to archaeologists is the section of this chapter devoted to archaeological photogrammetry. The authors, apart from describing their recording experiences of the excavations at El Qitar, Syria; rock art sites at Whale Cave, New South Wales; and Quinkin, North Queensland; discuss some of the problems associated with archaeological sites recording by photogrammetry. A major problem cited by the authors in recording horizontal excavations is how to elevate the camera to obtain near vertical stereo coverage for mapping and interpretation purposes. Numerous elevated camera platforms used by the photogrammetrist to overcome this problem are described here, ranging from simple and thus low cost devices such as ladders, scaffolding, bipods, tripods, wire rope lines, usually constructed by photogrammetrists themselves, to more sophisticated camera platforms that include hydraulic hoists, cranes, manned balloons, small fixed wing aircraft or helicopters. However, not all sites require the use of elevated camera platforms and can be mapped successfully from horizontal photography. One case in point cited by the authors is the remains of a Roman bath-house in England where 90 per cent of a 40–50 m excavated area was recorded from stereopairs taken from all four sides even though the excavated area was 3 m deep in places. Rock art sites pose a special problem for the photogrammetrist engaged in recording them. The pictographs are, in a great majority of sites, not painted on vertical surfaces and although stereometric cameras can be oriented to the mean plane of the surface, distortions are introduced in the photogrammetric portrayal of them, if the surface is complex.

The importance of the analytical approach utilising non-metric cameras is emphasised by the devotion of Chapter 5, Non-metric photogrammetry, to this area. The analytical treatment is a very versatile and extremely powerful tool, assuming ever greater importance in photogrammetry. It opened the door to other imaging systems termed collectively non-metric that may include cameras of 'non-metric' quality, such as the 35 mm single lens reflex amateur camera. The benefits of such non-metric camera systems are many. The authors give their very accessibility, low cost, light weight, and the comparative ease with which the photography can be acquired as the characteristics that make them extremely attractive, compared with the capital investment needed for metric equipment. While there is little doubt that such a non-metric system, in conjunction with recent advances in analytical data reduction schemes, will have a significant role to play, the authors wisely point to a dilemma recognised by researchers, namely that the initial cost savings for the camera are more than compensated by higher data evaluation costs.

The authors then proceed to discuss some analytical data evaluation methods particularly suitable for non-metric imagery such as Direct Linear Transformation approach, the 11-parameter solution, and the analytical self-calibration. Mercifully (for the non-photogrammetrist), the methods are only discussed briefly. Even so, the readers are soon aware of the complexity of the programs needed to compensate for some of the shortcomings inherent in the use of imagery acquired by non-metric cameras.

The potential and limitations of a typical non-metric camera system relying on off-the-shelf cameras is illustrated in the mapping of the archaeological site at El Qitar, Syria. An Olympus OM 10, the 35 mm single lens reflex automatic exposure camera, coupled to a motor winder and a radio

remote control and attached to a kite string, was used to acquire the necessary stereoscopic coverage of the excavated area. A self-calibration method of data evaluation was used where the photo coordinates of the ground control points necessary for the successful orientation and scaling of the stereomodels, together with the points of interest, were measured. Since a very large number of discrete points would have to be observed to adequately portray the site, only the points around dominant features were observed and the missing detail obtained by approximate method of rectification. The project thus illustrates one of the main drawbacks of the analytical approach, namely a point-by-point portrayal.

The chapter is concluded with the section on Historical photography and snapshots. Given several known dimensions of some features in a single photograph it is possible to extract dimensions of other objects. Some methods of data retrieval from historical photographs are briefly described by the authors, ranging from a simple reverse perspective geometric analysis to a full self-calibration method of analytical processing. The methods are particularly useful in cases of objects that have been destroyed.

In all, these two chapters are extensive and well worth careful reading. The technical phases pertaining to various case studies are described and illustrated in sufficient detail to provide adequate insight into the special procedures and problems associated with this application of photogrammetry. The case studies themselves are useful in helping the reader to place the technique in perspective.

While the previous chapters have been concerned primarily with the data acquisition, processing and restitution of single and stereo pairs of photographs of cultural monuments of all types, the concluding chapter, Archival systems, is devoted to the preservation of such record for posterity and contains information to its proper storage and cataloguing.

To sum up, the authors have provided a coherent and lucid introduction to the subject that has been long overdue. The text, packed with information concerning many aspects of this photogrammetry application and thus covering a lot of ground, is written in an informal and at places almost chatty style and well illustrated by diagrams and black and white photographs. The organisation of the material has been carefully thought out and well presented. The book should prove to be most useful not only for archaeologists with an awakening interest in this absorbing subject but also much information of interest will be found for those more experienced.

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P. Bridges, *Historic court houses of New South Wales*, Public Works Department, N.S.W., History Project, Hale & Ironmonger, Sydney, 1986; pp. 104, \$19.95

When *The heritage of Australia* was published in 1981, it was noticeable that court houses were prominent among the entries of places in the Register of the National Estate in New South Wales. For the early recognition of the importance of these buildings we can thank Peter Bridges, who initiated their nomination by the N.S.W. Government.

With the publication of this book we can understand more of the background to the design and construction of these splendid examples of public buildings which dignify the communities they serve.

This is the first in a series of books to be published as part of the N.S.W. Public Works Department History Project, which will highlight the rich heritage of public works in New South Wales. I found the book revealing as a history of a particular aspect of the development of the colony, illuminated by the court houses which have survived in considerable numbers and in good condition. This is not intended to be a complete study of court houses as a building type. The subject is nicely encapsulated in an early drawing of the 1836 Hartley Court House, which conveys the sense of the court house's role as a civilising element in the invasion of the wilderness.

Much of the book is devoted to the beginnings of providing for justice in the pre-Victorian era in and around Sydney, while the more numerous buildings designed by Barnet and Vernon are treated, understandably, in less depth. The theme is the history of responses, in the form of buildings, to the needs of the government, first in the infant colony, then as settlement spread and towns were built. The link between these two eras was Mortimer Lewis's Darlinghurst building — a milestone in the history of the evolution of court houses in the State. With the exception of Greenway's Windsor court house, it was the first to be designed and completed for its purpose. Lewis created a distinctly new building type to meet the special need of the colony. This set the pattern for such buildings for the sixty years after 1835. Bridges makes this key point along with many others in his well-planned text.

Separate sections of the book deal with 'Origins', 'Sydney's first court houses', 'Court houses in the County of Cumberland', 'The country court houses' (taking up almost half the book) and 'The architects of the court houses'. It is in this last section that architectural design is discussed in any depth. After Lewis had introduced the new architectural concept, Blacket and Dawson followed his pattern until 1860, when Barnet came to the office of Colonial Architect. For the next thirty years he directly influenced the character of public buildings including court houses, in New South Wales. Bridges reveals that the 130 court houses built during Barnet's term of office reflect his personal architectural philosophy, though they are not always personally designed by him.

The last architect dealt with is Vernon, who succeeded Barnet in 1890. At that time the Public Works Department was reorganised and the position of 'Colonial Architect' renamed 'Government Architect'. In summing up, Bridges explains that Barnet can be seen as the last of the traditionalists of the Victorian era, while Vernon pointed the way to the architecture of the twentieth century. His buildings retain dignity and civic character in keeping with their status, while being planned for the convenience and comfort of their occupants. I was pleased to see Vernon's Bourke court house illustrated. On a recent visit I made to a relatively modern court house, the sheriff pointed out how inferior the design concept of its cramped internal jury room was, compared with the facilities at Bourke, where Vernon had provided for the jurors' comfort with a pleasant and practical garden court.

Architectural design is a relatively minor aspect of this book, which achieves the aim of tracing the development of court houses in New South Wales from the colony's beginnings. The way the author explains how the court houses such as Bathurst and Goulburn owe their magnificence to British bankers looking beyond the Americas for investment opportunities, impressed me.

Although the names of official architects are revealed in an appendix and there is a long list of places where court houses were proclaimed and built, the book's use as a reference is limited by the lack of an index. Many excellent archival photographs complement the text. Criticisms are that no captions identify the court house in the frontispiece (which strangers would not know is at Bathurst) and on pages 74–75, which after a flick through *The heritage of Australia*, I can confirm is at Orange.

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Australian Heritage Commission.

J. Faull and G. Young, *People places and buildings — rural settlements in the Adelaide Hills, South Australia*, South Australian Centre for Settlement Studies Inc., Adelaide, 1986; pp. 120, illustrated, maps, \$25.00.

A taste of life in a small, nineteenth century colony is offered to readers of *People places and buildings* by Jim Faull and Gordon Young. This book is a collection of essays based on the work of the South Australian Centre for Settlement Studies.

If you are looking for an introduction to the colonisation of South Australia, especially a look at the sharp-end of settling in a new land; if you are interested in the idea of multidisciplinary studies; if you want to learn a little about the distinctive settlement patterns and buildings in rural South Australia, then this book will be of interest to you. This book is not, however, a detailed reference work and it could have presented its material in a more informative and rigorous way.

People places and buildings is a book intended to publicise the work of the Centre for Settlement Studies. The Centre combines studies in geography, history and architecture to introduce the history of South Australian settlement through the lives of people. In particular there is an emphasis upon understanding the cultural 'baggage' of the colonists and how this influenced the development of South Australia.

The authors, Faull (a geographer) and Young (an architect), are respectively the Deputy Director and Director of the Centre and have presented in this book some of the Centre's work. All of the settlements described are in the hills behind Adelaide, otherwise known as the Mount Lofty Ranges. The book begins with some introductory remarks before moving onto a series of chapters which focus on particular settlers and particular places. Such chapters include the 'Scotts of Kersbrook', the 'Pflaums of Birdwood' and the 'Danckers of Macclesfield'. These chapters typically describe the reasons for a settlement arising, the early settlers and a few of their buildings.

The work of the Centre is difficult to judge from just the book. Although it presents an interesting account of both people and their settlements, the book does not clearly demonstrate the scholarship of the original studies. Many of the chapters are referenced to other studies of the Centre and the quality of scholarship is impossible to judge without checking the original studies. The desire to check such matters arises from the frequent reporting of the attitudes or motives of settlers. For example, one chapter describing a particular settlement is on the Pflaums of Birdwood. The authors write that:

Rathmann farmed [a] portion of section 6601 at the Williamstown Road node and opened a small store in that area before 1850. He obviously believed that a site opposite the new roadside inn was a better commercial prospect . . . (p. 27).

Without the benefit of the original study it is not possible to tell if there are letter books or other primary sources which indicate Rathmann's motives for opening his store. In other cases there are statements about intentions, motives or feelings which do not seem to have a referenced source. Such examples can be found in the chapter on Thomas Scott of Kersbrook:

Thomas undoubtedly came to South Australia to better himself and to give his family an opportunity to succeed in a new land. He made a courageous decision . . . (p. 11).

This chapter also discusses William Carmen who settled in the Kersbrook valley:

Carmen thought he saw a business opportunity in the area midway between the southern and northern extremities of the valley . . . Carmen thought he saw another opportunity so . . . he employed a surveyor . . . to layout a town . . . Carmen did not succeed in making his fortune . . . (p. 13).

The chapter then goes on to record the efforts of William Scott, the second son of Thomas: 'William Scott . . . was a 25 year old bachelor in 1858 and probably felt the time had come to move out of the family home . . .' (p. 13). Without a clear indication of sources we might gain the impression that this is the level of scholarship which is content to impute motives to people in history on the strength of their actions. I would not raise this point except that this sort of commentary, on the motives of the colonists, is found frequently in this book.

A matter of concern in settlement history is the extent to which reconstructions of settlement processes can be supported by evidence. A common pitfall is the romanticisation of settlement, and notions of its civilising influence. Such ideas can over-simplify an analysis and distort the view of history. Some traces of the 'civilising influence' are found in the introduction to the book. There is a passing reference to Aboriginal occupation and the nature of the pre-European landscape:

Before 1836 the area . . . between Kersbrook and Macclesfield, was a heavily timbered, undulating terrain inhabited by groups of Aborigines. Today it is a lush landscape of farms, roads, buildings and towns. (p. 9).

This 'lush landscape' has been much modified and is apparently valued by the authors given this turn of phrase. We might equally value the pre-1836 countryside as a 'lush', heavily timbered terrain. Indeed we are offered such a comment by Randell who wrote of a substantial land grant as: ' . . . beautiful, undulating park-like country' (p. 21). In context it would appear that he is describing the land before colonial settlement. The date for the quote is not given but it would appear to be in the 1840s.

There is a sense of purposeful, Christian, civilising colonists reflected in this book. Scott came to 'better himself' and 'succeed' (p. 11); Randell was successful, generous as well as 'a pious and excellent man' (p. 25); Dunn was prosperous and esteemed but 'his world crashed around him' when his wife divorced him (p. 47); and Kleinschmidt had a penchant for business speculation (p. 53). While all of this may be true, there is a certain simplicity in these descriptions which may reflect the authors' analysis rather than reality. The simple view of the colonist is also used to explain his settlements. An expanding settlement is always explained by successful enterprise. George Dunn:

. . . began with a single room and gradually extended the building as they became prosperous. George concentrated on sheep raising . . . He seems to have been successful almost immediately because he was soon leasing additional land . . . (p. 41).

These thoughts cannot be developed here but an interesting extension to this book would have been a critical examination of this perceived colonising ethic. This might then lead to a re-analysis of the physical expression of settlement. As a footnote, it is interesting that this is a history of the contribution of men only, women never seem to have made a significant contribution.

The central message of *People places and buildings* could have been more strongly argued. Key items of cultural baggage are mentioned in the text, but are often not drawn together and highlighted as special features distinguishing South Australian settlement patterns. Hufens are referred to several times before an explanation of these distinctive long narrow strips, which cross-section the available land types, is offered on page 54. Other pieces of cultural baggage are mentioned far too briefly; Lutheran belltowers, the origin of the hufendorf settlement, and English company town plans are referred to but not adequately discussed or referenced for the reader to follow up. Why such traditions were applied, how long they survived, and why they were abandoned or adapted, are intriguing questions not addressed in this book.

I am led to question whether we are able, on the basis of the book, to establish or better understand the cultural significance of these places. The significance of the settlements is explained to an extent but the assessment of significance requires information on the context of a place. The context offered in *People places and buildings* is too narrow to allow us to judge the value of the places concerned. The context offered is frequently no more than a description of the settlement itself.

This book would have been much better if it had included a longer introduction on the history and nature of South Australian settlement generally. References to such events, features or people as the arrival of the H.M.S. Buffalo, special surveys, hufens, the South Australian Company and George Angas could have been more fully explained to begin with rather than sprinkled through the text. The reader is left floundering somewhat by the passing references to these significant matters. One example is the minor reference to the purchase of land by Pastor Fritzsche at what was to become Lobethal. We are told that:

A purchase was made with the assistance of J. F. Krumnow who was German, but also a naturalised British subject and could therefore buy land. Krumnow transferred . . . the two sections to the emigrants . . . (p. 53).

This innocuous passage is the only clue to an aspect of land purchases which excluded German emigres from purchasing land from the colonial Government in their own right. Another example is the policy of Angas and the South Australian Company to rent rather than sell their land (p. 27). The significance of both these points is not explored.

The concept of multidisciplinary studies seems to have grown in popularity and is now influential in many areas. This movement to treat places and history (in its broadest sense) as multifaceted things seems to bring us a greater understanding of these things. We come closer to understanding the *whole* story and not just one or several aspects.

This book does not tell us how the three disciplines are combined within the workings of the Centre for Settlement Studies. However, there is some unease in the format of the book because of the apparent compartmentalisation of the history and architecture. The chapters are typically laid out such that the history of settlement is written up first. After a substantial introduction the text is then illustrated with maps, drawings or photographs. These are accompanied by a short written description which frequently represents the only analysis of the physical features of settlement. The geography is found in both the initial text, the illustrations

and to an extent, also in the analysis. However, the impression given by this format is that history and architecture can be separated. The format seems to perpetuate the divisions between these disciplines and this is unfortunate given the intentions of the book. The integration of the history with the analysis might have proved a more successful format, and may have stimulated a better understanding of the whole settlements under study.

The illustrations in *People places and buildings* are a source of disappointment. The text is generously illustrated with photographs, maps and drawings of particular buildings. Some of the photos and drawings are, however, not well chosen or reproduced. The township maps are potentially very useful in locating natural and settlement features, however they are rarely used to their maximum benefit. The use of drawings to describe particular buildings is also a good idea but the potential is not fully realised. For example, Primrose Cottage was apparently built in several stages but this is not clearly described (p. 14). The section line is not shown on the plan and the detail of the wall is too small and not well annotated. The drawings of Rathmann's building could also be more helpful and there would appear to be discrepancies between the drawings and the photograph. Both drawings show quoins around doors and windows although these do not appear on the photograph.

In summary I think this book is satisfactory as a brief introduction to the subject of colonial settlement in the Adelaide Hills. Unfortunately it could have been much better presented, and it could have drawn more on the scholarly researches of the S.A. Centre for Settlement Studies than it has. For several reasons I cannot recommend it to those with a deeper interest in such matters. May I suggest that these readers search out the original studies to form their own opinions.

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S. Pikusa, *The Adelaide House 1836 to 1901, the evolution of principal dwelling types*, Wakefield Press, Netley, 1986; pp. 128, illustrated, \$19.50.

This is a book which at the same time is totally absorbing yet difficult to master. Stefan Pikusa has diligently gathered a wonderful set of data. After establishing South Australia's architectural beginnings, he continues his story in four sections, dealing first with early small detached cottages, then with the first row cottages and maisonettes, then the later and larger detached houses, and lastly the terraces and semi-detached houses which characterise the close of the colonial period.

It is a book not about style, but about building plan and form as a reflection of community growth. By means of case studies analysed against the general background of social and technological history, Pikusa succeeds in bringing these houses to life. The ones he has chosen are generally not the dwellings designed by famous architects for important people, but the ordinary habitations of commonplace folk, which are too seldom the subject of architectural study.

In trying to define the distinction of South Australia the author sees these pioneers as free adventurer-settlers in a virtual province of Britain, dedicated essentially to puritan values, their community growing more steadily and

gradually than elsewhere in Australia. Adelaide is a preconceived plan, notable for its green-belt separation of city from suburbs. The architectural character of the place became clear by 1842, when G. S. Kingston's town survey was made. In this map the main house types — detached, semi-detached and attached houses — are already evident, and the message of the book begins here. By reference to the same map the author also attributes wide streets, building set-backs, and the presence of verandahs, to British experience of India's hot climate.

The British genesis of the earliest small detached cottage type is apparent. In Adelaide (as, for example, in Scotland) the typical cottage had two or three rooms; it was either 'single-fronted' or 'double-fronted' — that is, either along the site or across the site; and it generally lacked a verandah. Stefan Pikusa barely defines 'cottage' beyond implying that it was a smaller, low-cost dwelling, while the larger house of better quality earned the name 'villa'. His terminology for joined houses is similarly particular. Early single-storey groups are 'row cottages', while those of two or more storeys, mostly built after 1850, are 'terraces', the latter term connoting higher standard. Early paired houses, locally known as 'maisonettes', progressed later to 'semi-detached houses'. The book traverses these changes and improvements until the time when they were overtaken by the depression at the century's end.

The development from cottages to villas, homesteads, and the houses of the 'great folk', reflected changes not only in colonial social conditions, wealth and status, but importantly, also in technology. Stefan Pikusa sprinkles his discussion of these over the last two chapters of the book, dealing with the period 1850 to 1901. He does not treat social change very thoroughly, but there is much valuable discussion of public utilities, building materials, methods and services. He quotes, for instance, the surprising census statistic that nearly 10 per cent of all dwellings standing in 1861 were of concrete. He properly points out that the combination of face-brick quoins and dressings with irregularly-shaped stonework walling is acknowledged as 'the hall-mark of pre-1860 colonial architecture in South Australia'. Yet his consideration of this unique style-key is largely relegated to an end-note, in which its source is said to lie in the south of England, and to be a reversal of Georgian practice. In fact, in many parts of England and Scotland this combination of rubble walling and smooth corners and dressings can be seen as part of the mainstream Georgian tradition. Explication of its use in South Australia thus needs more attention. Pikusa goes on to consider other stone types, bricks, corrugated and cast iron, stucco, water supply, sewerage, plumbing and human comfort generally. But the discussion is spread thinly. In a book like this, the influence of technology merits a chapter of its own, which should also include such things as carpentry, joinery, paint, and gardening.

There are some truly interesting houses. Delano House, Norwood, a triple-fronted 'gentleman's residence' of 1884, is in the Italianate tradition, marking the change from dignity to aggression in facade design. Lathlean House, 1877, given by Daniel Garlick 'the best finishes and finest workmanship that money could buy', is the first two-storey detached house in the book. However, even after Stefan Pikusa's

explanations, the reader is not very clear about why these and similar houses developed as they did in size and complexity. The Rugless House, an 1895 design of English & Soward, by virtue of its cavity walling and angled verandah heralds the Queen Anne style and the end of the 'colonial' era. The Noltenius House of 1900 is wholeheartedly Queen Anne; its massive roof, extensive verandahs, side entrance and diagonally projecting alcove make it very different from any other house in the book. Stefan Pikusa's discussion of the social and technical innovations characterised by these houses is effective.

The terrace house, wherever it appeared, seems to have represented economic buoyancy. In Adelaide this occurred in the years from 1870 to 1885, whereas in the eastern states the boom period continued into the nineties. Unlike Melbourne and Sydney, there were no extensive areas of working-class terraces on the city fringe; conversely, terraces provided housing mainly for the more affluent middle-class. As in the eastern cities, they reflected the spread of public transport and speculation. It is very surprising that there was so little development around Adelaide's city squares, in the British manner that must have been so familiar to William Light. Strangely, Adelaide's longest terrace was built facing the non-residential Victoria Square.

Terrace development makes fascinating reading, and there were definite regional subtleties. Some of those pertinent to Adelaide are well presented and illustrated by Stefan Pikusa: the light-well, or 'tunnel-back'; the 'key house', the one occupied by the terrace owner; the lower rear section, containing humbler service rooms and accessible off the stair half-landing; the use of roof space for rooms, rare in Adelaide; and the development of 'marine residences', typified by the magnificent three-storey terrace near the waterfront at Grange.

The development of the Adelaide semi-detached house needs more attention than Stefan Pikusa has been able to give in the last part of his book. He cites the 'semi' (also called the 'duplex' or maisonette) as the forerunner of the terrace in Australia, and gives the instance of Glover's houses in Sydney, of 1823. This is highly questionable, as Glover's might well be later than 1823, and was a group of three anyway. The earliest known Australian terrace houses were Underwood's 'tenements' in George Street, Sydney, built by about 1814 — well before any known pair of semi-detached dwellings. In Sydney, the 'semi' was not popular until *after* the terrace-house had had its run: it was intermediate in development between the terrace and the suburban detached house. The Melbourne story was somewhat the same. This makes Adelaide's 'maisonette' all the more significant in the story in Australian architecture, because it appeared so much earlier and there were so many more of them than anywhere else. Why, for example, were nearly a quarter of Adelaide's dwellings in 1842, of the semi-detached type? This is one of the many intriguing figures that Stefan Pikusa's very good book turns up but does not elucidate. He must do another work on the subject.

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