

# A Vision of Melbourne's Past

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Melbourne is famously the world's most liveable city, based on a range of criteria. This article looks at the ways that an understanding of Melbourne's natural and human history can add to the sense of place that individuals have for this city. It is suggested that the physical environment was a major influence on both the location of the original settlement and the shape of the city as it developed. Further, it is suggested that knowledge of the ways in which some elements of those environments operate would be a useful guide in the planning of future urban development.

GARY PRESLAND / NATURAL HISTORY

## INTRODUCTION

In the past century the trend to urbanisation has increased at a dramatic rate. One hundred years ago only three per cent of the world's population lived in a city; today about half the earth's population—almost three billion people—live in urban environments.<sup>1</sup> In some areas, however, the ratio of urban to rural dwellers is considerably higher, with figures in excess of eighty-five per cent. Australia is at the forefront of the most urbanised countries in the world. In this country a huge majority of the population resides in large urban centres.<sup>2</sup>

There is enormous variety in cities around the world, of course; all cities are different because each one has developed in different and quite specific physical, historical and social circumstances. Despite, or perhaps because of, these differences, cities are often compared, using a variety of criteria. In recent years Australian cities have been included in international polls that rate a range of factors such as physical and social environment, cost of living, standard of housing and education. By a happy coincidence of good values in these aspects, Australian cities have been rated highly. Indeed, in 2002 Melbourne was voted the 'world's most liveable city' for the second time, following a two-year world survey of 130 capital cities.<sup>3</sup>

Surveys like this are an interesting way of giving a value to the city, but residents are connected to the place in other ways. To an individual whose life experiences take in parts of Melbourne, the city may be highly liveable, but he or she has a somewhat different appreciation of the place that is based on factors such as knowledge, personal experience and memories, both singular and shared. What that person has is a 'sense of place'. Comparative assessments of cities, such as the reported international poll, take no account of such considerations, although these factors may well contribute to how 'liveable' a person finds the city. It is the array of emotional bonds between place and people, called 'topophilia' by the American geographer Yi-Fu Tuan, which leads to people's attachment to particular places.<sup>4</sup> These bonds develop from attitudes and perceptions of environment, and can take a variety of forms.

Yi-Fu Tuan has pointed out that 'what begins as undifferentiated space becomes place as we get to know it better and endow it with value'.<sup>5</sup> A fundamental means of knowledge acquisition in this process is 'experience', which takes in the use of all the sensory means we have at our command. A sense of place develops out of an increasing experience of a particular location.<sup>6</sup> In a similar vein, Lucy Lippard has described 'place' in the following terms:

*A layered location replete with human histories and memories, place has width as well as depth. It is about connections, what surrounds it, what formed it, what happened there, what will happen there.<sup>7</sup>*

It follows from this that our sense of 'connectedness' to a place can be effected through the experiential process of acquiring understandings of aspects and features of that place—including, I would suggest, its environmental history.

It is a basic premise of this paper, and of my ongoing research, that a sense of place that embraces such understandings is one which provides insights into major influences on both the social and physical shape of the developing city. To know something of what has been lost in the building of a city, and to understand the reasons why that city evolved in the way it did, is to have a new vision of that place.

At first sight, an increased awareness of the natural environment of a city might seem an unlikely step toward enhancing one's sense of place. Of all possible settings for human life, cities are perhaps the most artificial, the most unnatural. In most cases, development of a large urban centre brings about an almost total obliteration of the original nature of the area. At the very least, the elements of that environment have been severely impacted upon. What is there, then, for a natural historian to study in Melbourne?

The answer lies all around us. Beneath the urban landscapes that make up this city are other, more ancient landscapes. It is possible to half-glimpse these vistas occasionally, but to do so requires a practised vision—one that is based on an awareness and understanding of how they came to be created and then overlain with more recent form. To glimpse the ancient landscapes, however, and to appreciate the influence they exerted on Melbourne's development, is to see this city in a new light. Like all cities, this one was born and grew within the context of a range of natural environments. Both the choice of site for initial settlement and the subsequent spread of residential and industrial areas were closely related to specific characteristics of those environments. An understanding of those attributes provides the clues to an understanding of the history of Melbourne's growth.

This is equally true for all other Australian cities, of course, although few historians have applied the notion. Given the high proportion of Australians who live in our capital cities, and the seemingly strong attachment we have to these large centres, it is surprising that so little

historical attention has been paid to the environments in which they are located. Although many substantial works focus on aspects of the history of Melbourne, none relate the growth of the city to the natural environment in which that development took place. Other Australian cities have likewise received scant study of this kind. Indeed, to date there have been only four monographs that focus on the natural history of a major city in Australia.<sup>8</sup>

A couple of reasons can be adduced for this lack of attention. Probably the principal cause is the current lack of standing of natural history, as a subject, within the academic world. As an area of human enquiry, natural history is an old and honourable study, going back at least to the time of Aristotle. In fundamental respects it was a progenitor of many of the sciences that today deal with the earth, botany and zoology. As an academic pursuit, however, it has long ceased to have any standing. Replaced by its offspring, it has nonetheless remained vibrant, largely as the province of the amateur naturalist.<sup>9</sup>

Perhaps a more telling consideration, however, is that the task of writing a comprehensive natural history of a given locality today is an immensely difficult, if not impossible, one. Since the heyday of natural history, in the eighteenth and early nineteenth centuries, the scope of its subject matter has increased dramatically. Today no individual could hope to master the content of the many specialist botanical and zoological areas that would be relevant to a given location. Those few studies on the natural history of Australian cities, referred to above, were completed more than thirty years ago, and mostly by multiple authors. Since then, such an exercise has no doubt become more difficult.

What is introduced here falls far short of such a detailed natural history. Rather, it is an attempt to indicate some of the ways in which knowledge of relevant natural history elements can be used to explain certain aspects of this city's past. It is aimed at providing insights into why the location, spread and shape of Melbourne occurred as it did. Along the way, an enhanced vision of Melbourne's landscapes will be developed, as well as an appreciation of natural processes that stretch over periods of time much greater than those ordinarily involved in a study of the history of Melbourne.

## THE NATURAL HISTORY OF MELBOURNE

The first Europeans to settle in the region of Port Phillip were sheep farmers, attracted in large numbers by the reports of boundless, rolling grasslands to the west and north of the Bay. There is no doubt that these

sheep farmers saw 'the vision splendid of the sunlit plains extended' to use 'Banjo' Paterson's phrase.<sup>10</sup> The landscape was, as one of them observed, 'of the nature of downs', and thus perfectly suited for the purposes of grazing sheep.<sup>11</sup>

When it came to choosing the site for a township, however, the major consideration was not the luxuriant grasslands but rather the presence of a reliable source of potable water. From the perspective of officialdom, the most strategic location for a government presence was the elevated grassy knoll at the top of the Bay, subsequently given the name of William's Town. It was well placed for easy access by ship but it lacked a sufficient supply of fresh water. Captain Lonsdale was forced to join the settlers already established in an area adjacent to the Freshwater River (as distinct from the Saltwater).<sup>12</sup> This was the site that Fleming noted in 1803 as the only eligible place for a settlement<sup>13</sup> and Batman in 1835 judged to be the place for a village.<sup>14</sup> It was suitable primarily because of the presence of a set of rapids across the river at a point about eight miles upstream from the top of the Bay (see Figure 1). It was 'the falls', as they came to be called, that prevented salt water from advancing any further upstream as a result of tidal action.



FIGURE 1 'Melbourne at the Falls, 1838' by Robert Russell

A map drawn by John Helder Wedge to help Batman substantiate his 'treaty' with the local Kulin clans puts the proposed township on the left or southern bank of the river, but this was unlikely to happen.<sup>15</sup> The land surface on the southern side of the river was a low-lying area containing extensive swamps and mudflats. This was an alluvial area of comparatively

recent origin that was in fact part of the river's estuary. On the northern side, however, the land surface was higher and drier and presented a much more appealing location for a town. Governor Bourke described it as 'a beautiful and convenient site'.<sup>16</sup> Beauty may well be in the eye of the beholder but convenience is a purely practical consideration, and in this case no doubt it stemmed from the ready availability of fresh water in the recently named (but misnamed) Yarra Yarra River.<sup>17</sup>

The river was the life-blood of the young settlement, but it also presented the settlers with several problems. Paramount among these was access to the town by shipping. Although it was reasonably wide at the falls—about seventy metres—and even wider in the basin immediately downstream, the river became progressively narrower as it flowed through its estuary. At its junction with the Saltwater River it was only about twenty metres wide. And like many Australian rivers, the Yarra was choked with fallen woody debris. These features, as well as the sand bar that partially restricted the mouth, made it difficult for ships to navigate along the river as far as the settlement. John Helder Wedge described the Yarra as 'a twisted cantankerous river ... so choked with the trunks and branches of trees and other obstructions that it renders its navigation a matter of difficulty and delay to even the smallest of coasters'.<sup>18</sup> As the settlement grew to be a town and then—suddenly, as a result of gold—into an important urban centre, the problem of access for shipping also assumed larger proportions.

Another major difficulty was the river's propensity to flood. Melbourne's streets had been laid out on the higher banks of the northern side of the river but the town was still subject to flooding caused by sudden increases in the river's level. In the 1840s there was serious flooding in the town in four separate years.<sup>19</sup> At such times the water would back up through the little valley along which Elizabeth Street ran. Following periods of heavy rain, an ephemeral stream would flow down the middle of this valley, adding to the water level. This watercourse probably began on the slightly elevated area to the north of the settlement, where the university now stands, and flowed down the gully where Bouverie Street runs, and thence into the Elizabeth Street valley. In the years following European settlement, the removal of vegetation around the margins of streams like this one, here and in other places in the growing Melbourne area, led to increased erosion along creek courses.<sup>20</sup> This turned the natural beauty of the Elizabeth Street valley into 'a brawling impassable torrent in winter and a snake-haunted gully in summer'.<sup>21</sup>

Both the problem of flooding and the difficulties for shipping were bound together in the nature of the river. In the latter case, since the town had been situated to have ready access to fresh water, it could not easily be moved. It was easier indeed, given the nature of the landscape, to (effectively) move the Bay closer to the town. The solution for both these problems was to be sought in a series of major engineering schemes that focused on the Yarra River. Work on these various projects went on for decades and, in the end, completely reshaped the course of the river from Herring Island to its mouth. Today, the Yarra River that flows between the Central Business District and Southbank, providing so many opportunities for river-side living, is as artificial as the high-rise buildings that currently line its banks. It is also about two kilometres shorter than the original stream course.

From the earliest days, a number of schemes had been put forward to solve the problem of Melbourne's port. It was not until 1878, when a scheme proposed by English engineer Sir John Coode was accepted, that a serious effort was made to rectify the situation.<sup>22</sup> Coode's proposal was to straighten the Yarra's course and reduce its length by cutting a channel from just west of Spencer Street directly into the Saltwater River. This canal (subsequently named after him) cut across a large bend in the river's course, the area known as Fishermen's Bend, thus straightening the course and reducing the potential for flooding. The falls opposite Market Street—originally the *sine qua non* of Melbourne—were also removed as part of this major project in flood mitigation. Over the following years the river upstream of Princess Bridge was also straightened, widened and deepened, and its edges lined with bluestone pitchers, in a further effort to reduce the likelihood of the Yarra overflowing its banks. In 1900, two large bends in the river near the Botanic Gardens were removed, and the southern bend was incorporated in the design of the Gardens.<sup>23</sup> In 1929 the Melbourne and Metropolitan Board of Works created Como Island (later named Herring Island) by cutting a channel across a bend in the river at Richmond.<sup>24</sup>

Immediately to the west of the town, adjacent to the Spencer Street rail yards, was an area of about seventy-five acres containing a more-or-less permanent wetland originally known as The Swamp.<sup>25</sup> Being within the river's estuary, the land was low-lying, flat, and prone to flooding (see Figure 2). Nonetheless, the area had scenic appeal to some residents, one early observer remembering it as 'a beautiful blue lake ... nearly oval, and full of the clearest salt water; but this by no means deep'.<sup>26</sup> Others noted



FIGURE 2 Map drawn by Major Henry Cox in 1864

the great biodiversity of the area, commenting on the abundant birdlife as well as fish.<sup>27</sup>

While it was attractive to some people, however, the very nature of the area restricted its utility in the eyes of many others. Although close to the expanding town, the flats were not suitable for residential use and were considered by many residents to be wasteland. It was a perfect location, however, for the construction of a dock complex close to the city. The area became a major component of Coode’s scheme to improve the port in the 1880s, and also provided space for later expansion of those docking facilities.

With the initial development of docking facilities, there was an added incentive to use this part of the Yarra’s estuary for a range of purposes related to freight movement. Ships needed coal, and this had to be moved to the wharves from its point of arrival in Melbourne at the railway yards on the western side of the city. Fortuitously, the Moonee Moonee Chain of Ponds—one of the sources of water to The Swamp—provided a natural means to transport the coal. In the early 1890s the stream was extended to flow into the Yarra by the construction of a canal. The reclamation of this swampy area was still going on in 1905 when the

Melbourne Harbor Trust established a depot in the old stream bed of the Yarra to store material it had dredged from the Bay for use in raising the level of the West Melbourne Swamp.<sup>28</sup>

With the opening of Victoria Dock in 1893, the bringing of the port into the ambit of the city forever changed both the original landscape and the face of the western edge of the city. This part of Melbourne has long since ceased to be used for maritime purposes, and the area we know as Docklands today is prime real estate. Water views fetch high prices in today’s world, even where these aquatic features have been constructed and in some cases have replaced previously natural examples.

### THE SHAPE OF THE CITY

Melbourne grew in size, as more and more of the area surrounding the site of first settlement was taken up for purely residential use. This urban spread did not occur equally in all directions, but proceeded differentially according to a combination of natural and psychological characteristics. This uneven growth has occasionally been the subject of attention by historians and others. Various explanations have been advanced, including the availability of fresh water, geography, and a ‘linkage’ theory of urban development.<sup>29</sup> In this context, John Lack’s suggestion that ‘the suburbanisation of Melbourne must be considered in relation to the city’s physiographic setting’ is worth expanding.<sup>30</sup> The shape that the city assumed over time can be seen largely as a function of the environments in which it was originally sited, as mediated by human choice. Cities are born of necessity, but they are equally a product of their environments and, as with all organisms, their growth is dictated to some extent by the environment in which they develop. This is no less the case with Melbourne, and if we understand what that environment consisted of we might understand why the city grew in the way it did.

The land surface over which the city spreads consists of three ancient plains, each formed at a different period in the geological past, and each possessing different qualities.<sup>31</sup> In broad and very general terms, the nature of these plains, and their location, can be characterised in the following way. Within the present metropolitan area, the oldest geological formation extends as a peneplain from Darebin Creek to east of the Dandenong Ranges and from north of Kangaroo Ground to near Lysterfield. The sediments that make up this bedrock were deposited in a marine environment during the Silurian period, about 400 million years ago (mya). To the south and west of this plain, underlying the metropolitan

area from Prahran, through the southern and south-eastern suburbs almost to Western Port Bay, is a much younger plain. The sediments making up this formation are of both marine and terrestrial origin and were laid down during the Tertiary System, between 65 and 7 mya. The third major formation, much younger still at only about one to two million years of age, is a plain of volcanic origin that underlies most of the northern suburbs and all of the area west of the Maribyrnong River. In a number of places around the metropolitan area, the course of the Yarra forms a dividing line between two formations, as, for example, in the stretch from Alphington to Richmond, where it winds its way between the recent lava flows and the ancient Silurian sediments.<sup>32</sup> Geologists distinguish these formations on the basis of rock type, but to most Melbourne residents they are apparent only through their manifest differences in topography, soil and vegetation. What will be less apparent is the role these environments have played in the development of Melbourne.

From the earliest period in the history of this city particular areas of the region have been favoured for residential use; others have become industrial areas. With respect to which locations became desirable places to live, there is little doubt that people prefer to live where there are variations in elevation, presenting possibilities for a view, and in areas with mature tree coverage. In Melbourne these features are characteristic of the older plains, that is, the areas to the east and south of the original settlement. On the other hand, the volcanic plain to the immediate east, north and west of the town presented none of these attractions.

As the city grew, people who had the financial ability to do so bought into the areas that offered attractive surroundings; those who did not, lived in less appealing settings. It should come as no surprise, then, to realise that suburbs such as Richmond and Collingwood, perched as they are on a flat lava plain, were originally given over to industrial use. In residential terms they were taken up by working-class communities. The social demarcation drawn by the Yarra River in its course between Richmond and South Yarra is supported by a geological division.

The western areas of Melbourne have been particularly affected by these considerations. The largely featureless plain that stretched away from the Maribyrnong offered little attraction as a place to live, so land was cheap and more available for industrial use. While expansion was occurring toward the east and south, little land was being developed for housing in the west. This led to a lop-sided urban spread that was evident by the early twentieth century. By 1920 the western edge of the urban area

was a mere eight kilometres from the GPO in Elizabeth Street. This can be compared to twenty-four kilometres in the east and thirty-two kilometres in the south and south-east (see Figure 3). Since then, although the western boundary of the metropolitan area has almost trebled to about twenty-two kilometres (to Caroline Springs, where an artificial lake has been created to give residents some aquatic scenery), the sprawl to the east and south-east is at least double that distance, at about forty-five kilometres.

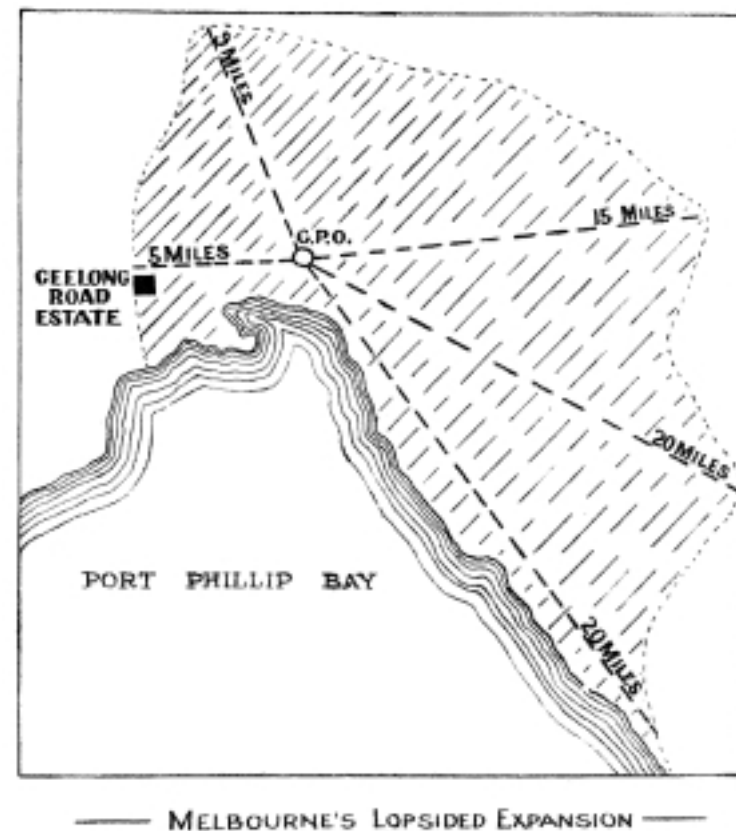


FIGURE 3 Urban Sprawl – 1922

### FUTURE DEVELOPMENT

A detailed understanding of the underlying physical environment is of more than historical interest and value. The concept of deep time—a history of the natural world, the timespan of which is measured in thousands of years—is of relevance here.<sup>33</sup> The earth itself has a history,

and a greater awareness of this and of the processes such history can encompass might be a guide in our relationship with the natural world.

As an example of these processes, consider the movement of sediment away from eroded surfaces. This is one of the roles of a river system such as that of the Yarra. The process is generally episodic and can take thousands of years.<sup>34</sup> Because of this long duration, the process often involves the storing (and re-storing) of sediment at different points along the river's course. The period of storage can be short or long, depending on the flood regime of the river. One of the more permanent means of storage is a flood plain, of which there are many examples within the Yarra system.

Being adjacent to the rivers that create them, these flood plains are naturally attractive situations in which to reside. However, to see them in such a way is perhaps short-sighted and a view that has led to disaster, time and again. The span of human life does not easily equip us to take the long view; we often see elements of the natural world as stable and permanent. But in fact nothing is stable in the natural world; it is a system in which everything is dynamic. A river that has overflowed its banks and deposited sediment at some time in the past, sooner or later will return for that sediment. It may be a 'once-in-a-hundred-year event' when it happens but that rare instance can be devastating. The inundation of houses and other buildings in the Preston and Fairfield areas in December 2003 is a case in point.<sup>35</sup>

If further indication is needed of recurring long-term natural processes, consider the occasional resurgence of the Elizabeth Street stream, most recently and to spectacular effect in February 1971.<sup>36</sup> The location of a major train station on what was once (and occasionally still is) a natural watercourse was an unfortunate development of a kind that will hopefully not be repeated.

An optimistic view of future development within the metropolitan area would suggest that planners will learn to take account of the long timespans involved in natural history. This is by no means a simple task, but the benefits should be obvious. Since the 1970s there has been a rapidly increasing rate of construction undertaken on the margins of the Yarra, essentially within the old estuary. This is an area that presents a range of potential problems to builders, and has thus evoked a range of counter-strategies. The major concerns relate, on the one hand, to the time-honoured problem of flooding, and on the other to an alluvial surface overlying the bedrock which is rather loosely consolidated, often with a high watertable. In some instances it is clear that these environmental

factors have been allowed for in the original design of the building; in other cases changes to the shape of the building have been necessitated.

One of the first major developments on the southern edge of the river close to the city was the construction of the Victorian Arts Centre in the 1970s. Originally planned as a single complex housing both concert hall and theatres, the structure had to be radically altered when it was realised that the underlying strata was unsuitable for the planned construction. It was discovered that at some time in the past the course of the Yarra River had been somewhat to the south of its present line, as evidenced by an unexpected layer of river gravel at depth below the surface. The intended design could not therefore be achieved at the desired site. The complex was constructed as separate structures, the Concert Hall opening in November 1982 and the theatre building almost two years later, in October 1984.<sup>37</sup>

At another construction site from the same period, downstream and on the other side, cognisance was taken of historical circumstance in the design of a new complex. The World Trade Centre was begun in March 1979 and completed in 1983. To allow for the possibility of an abnormally high flood level, the design of the building dedicated the first two levels to car parking, which rise to the height reached by flood waters in the disastrous floods of 1934.

The contingent features of other buildings in the area are not as readily apparent. On the south side of the river and a little upstream of the World Trade Centre, the architects of the Eureka Building, currently under construction, have opted for a single-level car park beneath the building, which does not intrude into the watertable. To obviate flooding, in the case of the Yarra overflowing its banks, impervious concrete slabs have been inserted into the ground throughout the base of the building. Because of the depth of overlying alluvium on this site, special underpinnings were designed to anchor the tall building into the bedrock, which extends as much as twenty metres below the surface.<sup>38</sup>

## CONCLUSION

Like the prophet Hosea, I have 'multiplied visions and used similitudes' to make my case.<sup>39</sup> The argument presented here is a simple one: were we to understand the rhythms and cycles that are all around us, our vision of the environments in which we live would indeed be splendid. From the perspective of being a resident, this may also be a means of enhancing the attachment we have to a place.

My vision of Melbourne is thus borne of a familiarity with the natural and historical past of this place. It is a vision that sees the present as a function of multiple pasts, all of which have an influence in shaping the city. At the same time it is a vision that looks forward to a future in which this greater awareness mediates the way that we both construct and value our surroundings.

#### ENDNOTES

- <sup>1</sup> United Nations, *Global Environment Outlook 2000*, New York, 2000.
- <sup>2</sup> In 1999 more than seventy per cent of Australia's population of 19.8 million lived in the sixteen largest cities alone. See *2001 Yearbook Australia*, Australia Bureau of Statistics, Canberra, 2000, 138.
- <sup>3</sup> Martin Boulton, 'Melbourne judged the place to be', *The Age*, Friday February 6, 2004, 2.
- <sup>4</sup> For a detailed study of this subject, see Tuan Yi-Fu, *Topophilia: A Study of Environmental Perceptions, Attitudes and Values*, Columbia University Press, New York, 1990.
- <sup>5</sup> Tuan Yi-Fu, *Space and Place: The Perspective of Experience*, University of Minnesota Press, Minneapolis, 1977, 6.
- <sup>6</sup> Yi-Fu, 8–18.
- <sup>7</sup> Lucy Lippard, *The Lure of the Local: Senses of Place in a Multicentered Society*, New Books, New York, 1997, 7.
- <sup>8</sup> These four studies focus on Sydney: various authors, *The Natural History of Sydney*, The Australian Museum, Sydney, 1972; CR Twidale, MJ Tyler & BP Webb (eds), *Natural History of the Adelaide Region*, Royal Society of South Australia, Adelaide, 1976; George Seddon & David Ravine, *A City and its Setting: Images of Perth, Western Australia*, Fremantle Arts Centre Press, Fremantle, 1986; George Seddon, *Sense of Place*, University of Western Australia Press, Nedlands, 1972.
- <sup>9</sup> Within Victoria there are many locally based field naturalist groups, all of which are connected in some way to the major club of this kind, the Field Naturalists Club of Victoria, which has been active since 1880.
- <sup>10</sup> AB Paterson, *The Penguin Banjo Paterson Collected Verse*, Clement Semmler (ed.), Penguin Books, Ringwood, 1993, 23.
- <sup>11</sup> John Helder Wedge, 'On the country around Port Phillip, South Australia', *Journal of the Royal Geographic Society of London*, no. VI, 1836, 419–424.

- <sup>12</sup> Lonsdale's despatch to William Hunter, dated 21 October 1836, in Pauline Jones, *Historical Records of Victoria*, Victorian Government, Melbourne, 1985, 84.
- <sup>13</sup> James Fleming, 'A journal of the explorations of Charles Grimes, Acting Surveyor-General of New South Wales', in JJ Shillinglaw, *Historical Records of Port Phillip*, Victorian Government, Melbourne, 1879.
- <sup>14</sup> Alastair Campbell, *John Batman and the Aborigines*, Kibble Books, Malmsbury, 1987, 97.
- <sup>15</sup> The circumstance of Batman's exploration of the area, and the drawing of a map by Wedge, have been well documented by historians, most recently by AGL Shaw. See Alan Shaw, 'The founding of Melbourne', in Pam Stratham (ed.), *The Origins of Australia's Capital Cities*, Cambridge University Press, Melbourne, 1989; Alan Shaw, *A History of Port Phillip District: Victoria Before Separation*, The Miegunyah Press, Melbourne, 1996.
- <sup>16</sup> Richard Bourke, Journal, in Pauline Jones, *Historical Records of Victoria*, Victorian Government, Melbourne, 1981, 101.
- <sup>17</sup> The name 'Yarra Yarra' was Wedge's transcription of the local Koorie term for 'flowing, flowing', which he mistakenly took to be the name of the river. The Koorie term for the river at this point was actually 'Birrarung'.
- <sup>18</sup> John Helder Wedge, 'Letter to Mr Frankland on settlement at Port Phillip', *Van Dieman's Land Monthly Magazine*, 1835, 127–129.
- <sup>19</sup> Judith Buckrich, *The Long and Perilous Journey: A History of the Port of Melbourne*, Melbourne Books, Melbourne, 2002, 40.
- <sup>20</sup> Thomas Hall, *Victorian Hill and Dale: A Series of Geological Rambles*, Thomas Lothian, Melbourne, 1909.
- <sup>21</sup> B Hoare, *Jubilee History of the Melbourne Harbor Trust*, Peacock Bros P/L, Melbourne, 1927, 11.
- <sup>22</sup> David Dunstan, *Governing the Metropolis: Melbourne 1850–1891*, Melbourne University Press, Melbourne, 1984, 152–81.
- <sup>23</sup> Arthur Kitson, 'Geological notes on the River Yarra improvement sections at the Botanical Gardens and vicinity, Melbourne', *Proceedings of the Royal Society of Victoria*, vol. 13 (NS), 1900, 243–52.
- <sup>24</sup> Tony Dingle & Carolyn Rasmussen, *Vital Connections: Melbourne and its Board of Works 1891–1991*, McPhee Gribble, Melbourne, 1991, 156.
- <sup>25</sup> Subsequently it was also referred to as West Melbourne Swamp or Batman's Swamp.
- <sup>26</sup> George McCrae, 'Some recollections of Melbourne in the "forties"',

*Victorian Historical Magazine*, vol.2, no.3, 1912, 114–136, 117.

- <sup>27</sup> A Mattingley, 'The early history of North Melbourne, Part 1', *Victorian Historical Magazine*, vol.10, no.2, 1916, 80–92, 83.
- <sup>28</sup> *Annual Report*, Melbourne Harbor Trust, Melbourne, 1905, 12.
- <sup>29</sup> See for example Alan Hodgart, 'Melbourne and its urban sprawl', *Melbourne Historical Journal*, vol.10, 1971, 24–28; John Lack, "Melbourne and its urban sprawl"—a critical commentary', *Melbourne Historical Journal*, vol.11, 1972, 48–53.
- <sup>30</sup> Lack, 50.
- <sup>31</sup> Hall.
- <sup>32</sup> For detail of the extent of different geological formations in the Melbourne area, see David Thomas (ed.), *Bulletin No. 59 Geology of the Melbourne District, Victoria*, Geological Survey of Victoria, Melbourne, 1967.
- <sup>33</sup> For an interesting discussion of the application of such a concept in the field of Australian history, see Tom Griffiths, 'Travelling in Deep Time: *La Longue Durée* in Australian History', *Australian Humanities Review*, vol.18, 2000, [www.lib.latrobe.edu.au/AHR/archive/Issue-June-2000/griffiths4.html](http://www.lib.latrobe.edu.au/AHR/archive/Issue-June-2000/griffiths4.html).
- <sup>34</sup> Sandra Brizga, Brian Finlayson, Ian Campbell, MC Peel and L David, *Effects of Water Resource Management on the Yarra River Environment from the Upper Yarra Dam to Warrandyte to 1994*, Melbourne Water & Melbourne Parks and Waterways, Melbourne, 1998.
- <sup>35</sup> Jamie Berry & Andrea Petrie, 'Huge storm leaves trail of damage', *The Age*, 4 December 2003, 1.
- <sup>36</sup> Sally White, 'Cars float in record rains', *The Age*, 18 February 1972, 1.
- <sup>37</sup> Don Garden, *Victoria: A History*, Nelson, Melbourne, 1984, 440; for the latter date, see a plaque on the building.
- <sup>38</sup> Geoff Sanderson, Site plumber, Eureka Building, personal communication.
- <sup>39</sup> Hosea 12:10.