

Archaeology of Ancient Australia

Peter Hiscock



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Australia has been inhabited for 50,000 years. This clear and compelling book shows how it is possible to unearth this country's long human history when our historical records are limited to the few hundred years since its European discovery.

Beginning with the first human colonization and ending with European contact in the eighteenth century, Peter Hiscock traces the ever-changing and sometimes turbulent history of the Australian Aboriginal peoples and their ancestors. While they remained hunters and gatherers throughout this time, their culture continually evolved, with their changes in economics, technology, cosmology, beliefs and social life.

Hiscock shows how this human past can be reconstructed from archaeological evidence in easy-to-read style and without unnecessary jargon or detail, yet reflecting the weight of scientific research. Including information from genetics, environmental sciences, anthropology and history, this book encompasses the wide variety of disciplines in the sciences and humanities which contribute to an archaeological investigation.

World-renowned discoveries such as the human bodies at Lake Mungo, the ice-age art sites of Arnhem Land, the deformed human skulls from Kow Swamp, the early ornaments and paintings from remote desert caves, and the puzzling giant shell mounds of the north coast, are discussed and extensively illustrated.

The result is not only a comprehensive and understandable introduction for beginners in archaeology, but also a challenging and absorbing view about the richness and variety of ancient human civilization.

Peter Hiscock is a Reader at the Australian National University where he teaches the archaeology of Australia. His work on Australian sites has concentrated on ancient technology but has also explored human exploitation of coastal and desert landscapes.

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Preface

Popular texts are needed for teaching the next generation of researchers what is known, stimulating them to overturn that knowledge and build more substantial understandings of the world as their own contribution. Teetering on the edge of the hard sciences and the humanities, archaeology has sometimes seen texts that are scientifically detailed but technical rather than intellectual in nature, while at other times texts have embraced concerns about the complexity of understanding human society but have not engaged with the scientific nature of the evidence of archaeology. Luckily there have always been archaeologists, from Gordon Childe to Peter White, who sought to balance the sciences and humanities in such a way that limitations and ambiguity of archaeological methods were acknowledged but an entertaining story of the human past could still be told. Such was my goal here. I brought to this book the conviction that an introductory text on the science of archaeology could be written without much jargon and still convey the essential logic and evidence of the discipline. The *Archaeology of Ancient Australia* reflects this approach and my perspectives as an archaeologist. Many traits in this book reflect my premise that archaeology is at its best when it is simultaneously easily read, without unnecessary jargon and detail, yet reflects the weight of scientific research; when archaeology tells the stories of our ancestors by developing inferences about their lives, without pretending that our ancestors were like ourselves or presenting fiction in the place of reasoned inference; when archaeology conveys the excitement of what we know and may learn about early people while understanding that scientific research is never diminished by acknowledging the limits of evidence and leaving those things beyond existing evidence as uncertain and mysterious.

Note about the case studies

Answers to many questions about human existence in pre-historic Australia have been offered by scientists studying materials preserved from the past; there is room for only some of them in this book. In *Archaeology of Ancient Australia* a selection of questions that have puzzled researchers are presented – questions that exemplify discoveries about the dynamic and ever-changing human past in the Australian landmass.

No book discussing the human past in a continent can be exhaustive; there are too many pieces of evidence, too many sites with interpretive difficulties, too many studies that repeat the same general interpretation. To give a clear and accessible explanation of the complex and diverse evidence that exists, and of the nature of competing interpretations of the evidence, this book focuses on a small number of outstanding examples to illustrate the archaeological investigations and the understanding of pre-history that has resulted. Places described in this book are a small proportion of the millions of archaeological sites that exist in Australia, but they exemplify the kinds of material that record past human lives in ancient Australia. Similarly the activities of pre-historic people who created this archaeological debris are examples of the many different economic and social lives that were led by ancient humans. Additionally, the few researchers featured here serve as representatives of the many hard-working scientists who have studied archaeological material on the Australian continent. Consequently, this book uses a selection of examples to deliver an account of the archaeology of the ancient Australian people, revealing some of the most remarkable and most thoroughly studied archaeological sites and objects as a way to present an understanding of the pre-historic life of this land.

Note on terminology

Choice of language not only is important for clarity, but also conveys theoretical frameworks with which we describe the world. In this book I made two choices about the use of labels. The first is that it will be clearer for readers without training in archaeology to have as few technical terms as possible, and to have complex ideas distilled to their essential meaning. Of course simplification inherent in this approach alters the content and implications of terms and concepts, and for my professional colleagues who correctly observe that, for example, my use of El Niño is not as technically accurate as ENSO (El Niño – Southern Oscillation) or that the word ‘preservation’ is not quite the same as ‘taphonomy’; I ask only for tolerance. Second, and more importantly, I have been particular with my use of labels that designate the identity of people and groups of people. For example, while I have adopted convention in using ‘Aboriginal people’, ‘Aboriginal’ or ‘Aborigines’ when specifically referring to historical indigenous peoples of Australia, I have seldom used such terms for much earlier humans, despite the wealth of evidence that they were the ancestors of historic Aboriginal people, preferring instead a number of less specific phrases such as ‘humans’, ‘foragers’, ‘pre-historic people’, ‘ancient Australians’ or even occasionally ‘ancient Aboriginal people’. This was done explicitly to give readers a linguistic device to distance their mental images of pre-historic Aboriginal people in this land from the depictions of Aborigines in historical records. This is a response to the concerns voiced in Chapter 1 that the application to archaeological investigations of ethnographic pictures of Aboriginal people has often created the unnecessary view that Aboriginal people of the past and present were unchanging, a static culture uniform across space and time, a culture which had always been as it was in the nineteenth century. I recognize that such an academic distinction brings with it the danger that some readers may misinterpret this as language that denies the Aboriginality of the past inhabitants of Australia or alternatively denies present-day Aboriginal people their long cultural history. In answer I can only point to the arguments presented in this book, that archaeological investigations challenge stereotypes of Aboriginal people as timeless and unchanging, and that archaeological reconstructions of ongoing transformations in language, cosmology, perceptions of land and self, settlement, technology and economy will inevitably raise confronting questions about identity.

Acknowledgements

Errors found in this work, and in any book this size they can be expected, will, I hope, be judged fairly by readers and corrected by the next generation of Australian archaeologists. Those future archaeologists, and current readers, whatever they may think of the approach taken in this book, will, I hope, also appreciate and applaud the commitment and effort of archaeologists whose labour I have drawn on. The work of scientists, archaeological and other flavours, is exhausting and often unheralded. Fame and wealth come to few in the field of archaeology; toil and even danger have come to many. What I would like readers to take from this book, beyond an insight into the dynamism of past human life in Australia, is an understanding of the lives of so many archaeologists, often supported and aided by local Aboriginal people and interested amateurs, that have worked hard to yield the evidence I summarize here. So many have helped me directly, and deserve to be named as small compensation for their help.

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1 The veil of Antipodean pre-history

In the late decades of the nineteenth century European scientists arrived at a startling conclusion. They realized that not only had the earth existed for a vast length of time, but also humans had lived in that ancient world. The realization that people had existed in a period so remote it was long before the invention of writing brought with it the puzzle of how modern researchers could learn of those ancient lives. Nineteenth century archaeologists sometimes wrote poetically about their concern that we may never have detailed knowledge about the ancient human past before written records. For example, the Scandinavian scientist Sven Nilsson (1868), one of the founders of archaeology, described the lives of ancient people, prior to the advent of written records, as being enveloped in obscurity, while Victorian politician and scientist Sir John Lubbock (1872) employed a similar metaphor, saying the past is hidden from the present by a veil so thick that it cannot be penetrated by either history or tradition. Nowadays the task of seeing beyond this veil of obscurity, to reveal something of the unwritten past, falls mainly on archaeology, a distinctive scientific discipline. By studying the material remains of past human activities archaeologists make statements about the lives of people long dead, and reconstruct an image of their economy, social interactions and perceptions of the world.

Archaeologists now think that Australia was inhabited more than 50,000 years ago by humans who were ancestors of modern Australian Aboriginal people; but we have written records of their lives for only the final centuries of that long occupation. European sailors left written impressions of coastal dwelling Aborigines from the seventeenth century onwards, British settlers wrote of Aboriginal people and their land at the end of the eighteenth century, while in isolated parts of the continent European explorers did not glimpse Aboriginal people until late in the nineteenth century. Their documents form the foundations of many interpretations of Australian Aboriginal life during the historic period. Of the humans who lived in Australia thousands of years earlier, those historical records tell us little or nothing. For knowledge of the long passage of human occupation prior to written records, called the pre-historic period because it precedes the first written or historical documents, we must turn to other kinds of records. Archaeological investigations of the buildings, artefacts, food debris, quarries, art works and skeletons of ancient Aboriginal people who lived in Australia during pre-historic times

2 The veil of Antipodean pre-history

form the primary source of information with which we can tell the story of those people. Additional studies of genetics, reconstructions of past environments, physical and chemical information about the ages of objects, supplement archaeological information and help answer questions about the human occupation of ancient Australia.

The quest to see through the 'veil' that separates us from a view of the human past in Australia must begin with an explanation of why archaeologists find it difficult to interpret ancient materials. One process creating ambiguity is the preservation of only some residues of cultural activities and the subsequent destruction and disturbance of archaeological objects, making it hard for archaeologists to develop detailed anthropological-like reconstructions of ancient events. Another way in which the past is obscured is when the methods used to study it actually prevent ancient activities from being recognized. For example, researchers often used written descriptions of Aboriginal ways of life in the historical period to create detailed stories about the pre-historic past, a practice which imposed images of recent cultures on the lives of ancient people, thereby overlaying the past with reproductions of recent life ways. To the surprise of many people first studying archaeology, the principal complication confronting archaeologists is how our knowledge of the modern, historical world can and should be used to reconstruct stories about the ancient, pre-historic world!

How and why archaeologists used historic records

In precisely the same period that European exploration and settlement of Australia began, the seventeenth through nineteenth centuries, archaeological thinking was emerging in the scientific traditions of Western Europe. At that time people became interested in incorporating ruins and relics into their understanding of the past. Initially it was thought that the age of the world was recorded in biblical genealogies, that it was only about 6,000 years old, and that much of human history was accurately recorded in historical documents such as the Bible (Grayson 1983; Trigger 1990). With those attitudes early archaeologists thought all archaeological ruins were the work of historically known tribes, and their investigations focused on questions of which tribe was responsible for each ruin. This interpretation reflected widely held views that scriptures, classical poems and early histories contained all that could be known about the past, and that ancient monuments or remains alone taught us little of the past. Such an understanding was based on the idea that archaeological and written records documented the same events, and that humans had not existed before the invention of writing.

Gradually, as archaeologists such as Lubbock and Nilsson demonstrated that many of the archaeological objects in Europe were truly pre-historic, it became necessary to find ways of thinking about archaeological discoveries without using the historic records from Europe. In the second half of the nineteenth century European archaeologists such as John Lubbock frequently used observations of indigenous peoples around the world as a source of inspiration in creating their stories of the European past. In Britain this approach, now termed 'cultural evolutionism',

was derived from enlightenment ideas that humans had gradually progressed as past generations had used their reasoning capacities to improve their lives. It was commonly believed that organisms, including humans, had an 'internal drive' propelling them to higher levels of complexity. For archaeologists and historians this encouraged the idea that human cultures around the world inevitably developed in the same direction, progressing through a number of stages until modern civilizations appeared. Sven Nilsson, for example, believed that all civilizations started as hunters and gatherers, became nomadic herds-folk before becoming sedentary farmers, which enabled them to develop a political state with military and bureaucratic organizations. In the nineteenth century this proposition helped to make sense of the archaeological sequence then being discovered in Europe. Researchers such as Edward Tylor (1871) and Lewis Morgan (1877) suggested that if different cultures around the world progressed from one stage to another at different times observations of less 'advanced' societies in remote places could supply details about pre-historic life in Europe.

This intellectual journey of nineteenth century European archaeologists, with their story that all humans developed along the same pathway, had important consequences for how scientists explored the pre-history of Aboriginal people in Australia. Although the idea that all societies must develop in the same way has now been shown to be untrue, these consequences shaped perceptions of Aborigines and their past among early archaeologists, and continue to subtly influence the theory and practice of Australian archaeology.

One consequence of cultural evolutionary views was the establishment of a tradition of archaeological interpretation that relied on the use of information about recent indigenous people. Use of written, historical records about recent societies to provide details about the lives of pre-historic peoples represents an 'analogy'. Using this analogical argument involved identifying features in a historical society which archaeological debris shows also existed in an ancient society, then inferring both societies shared further similarities not demonstrated by archaeological evidence (Salmon 1982). Although analogies can be potentially helpful to archaeologists they can also be dangerous, because they can produce narratives of pre-historic life that merely borrow from stories of recent life, implying that little has altered over time. Archaeologists therefore need to be careful that their use of analogies from history does not hide change in the nature of human life during pre-history.

Because pre-historic humans lived differently from the way present-day scientists live, it is important to recognize that some stories created about the past reflect modern perspectives on the world rather than the behaviour and attitudes possessed by ancient people. For this reason archaeologists have used historical accounts of non-European societies to give them insights into other cultures, and assist them to imagine societies unlike their own. With a greater understanding of subsistence strategies, technology, and social systems foreign to their own socio-economic lives, archaeologists believed they could interpret the archaeological record without imposing inappropriate European images on ancient peoples. Using this argument, generations of Australian archaeologists sought to avoid 'Eurocentric'

interpretations of evidence for the ancient Aboriginal past by immersing themselves in historical descriptions of Aboriginal life. Of course this approach never really avoided European visions: depictions of historical Aboriginal people were still interpretations by Europeans of what they saw. Furthermore, as cultural outsiders, early European explorers and settlers altered the way Aboriginal people behaved and often recorded situations that they themselves were responsible for creating. Even worse, it would be curious if archaeologists had such limited imaginations that they relied on historical descriptions of recent societies, such as the ethnographies compiled by anthropologists, as their sole source of inspiration. Societies which existed in the historic period probably represented only a fraction of the cultural diversity that existed throughout pre-history; recent societies do not necessarily resemble all societies which existed in the distant past (Wobst 1978; Bailey 1983; Murray 1988). Nevertheless, the idea that understanding of Aboriginal life in historic times helps archaeologists reconstruct Aboriginal life in ancient times has been very popular in Australia.

A second consequence of the cultural evolutionist idea that all human societies passed through the same stages of development was the belief that Australian Aborigines had progressed only a small distance along the evolutionary path, and had therefore changed little during their occupation of Australia. Adam Kuper (1988) pointed out that images of naked, black, hunters and gatherers, combined with the recentness of European discovery of the continent and the notion that Australia had been isolated, led to the thought that nineteenth century Australian Aborigines represented the kind of early society that had died out elsewhere. This perception promoted notions of Aborigines as a simple, unchanging society. Late nineteenth century anthropologists were convinced that Australia reflected 'primitive' society, and important observers of Aboriginal society were influenced by the interpretation of Aborigines as the epitome of the unchanged primitive. This shaped the nature of the diverse nineteenth century observations of Aborigines; from the focus on religion (Kuper 1988) to the search for rigid concepts about stone tools (Wright 1977) many of the early records of Aboriginal life reflected these attitudes. Since historical observers expected that Aborigines had lived since the earliest periods without substantial change it was easy to think that descriptions of Aboriginal life and society during the eighteenth and nineteenth centuries could give archaeologists an insight into how Aborigines lived in more ancient times.

Australian archaeology was therefore considered privileged to have a large number of historical records of eighteenth, nineteenth and twentieth century Aboriginal life; many researchers made use of those records to imagine how the past might have been. Australia is also frequently cited as an outstanding example of long-term continuity of economy, ideology and social life; an idea that promoted rhetoric of Aboriginal society as the longest continuous culture in existence. These propositions are not separate but are actually two parts of a single idea, each sustaining the other: if the culture has not changed, historical Aboriginal practices tell us of the operation of pre-historic society, while using historical records helped create an image of the past that looks like the present and invites us to think there has been little or no change. How pervasive and hazardous is this tradition of incorporating

historical images of Aboriginal people into archaeological reconstructions of ancient human life in Australia? Let us take, as an example, stories offered by archaeologists about one well-known archaeological site.

Lake Mungo and the historic image

The acclaimed World Heritage site of Lake Mungo, a dry inland lake in the southeast of Australia, is one of the oldest archaeological sites in the continent. Discovered early in the archaeological exploration of Australia, the interpretations of this site influenced not only generations of archaeological thinking but also the public understanding of Australia's human past. Food debris, artefacts, fireplaces and human skeletons preserved in the sands and clays at the side of the lake are some of the most significant and well-studied archaeological materials in the continent. Surprisingly, many interpretations offered by archaeologists were more strongly influenced by images of historical Aboriginal life than by the archaeological material. Ethnographic images can be seen in Figure 1.1, Giovanni Caselli's remarkable reconstruction of life at Lake Mungo published by Bernard Wood (1977) as an aide to depicting daily life there more than 30,000 years ago. As Stephanie Moser (1992) has pointed out, this figure reveals the pervasive influence of ethnography on thinking about the past. While some objects and activities in the painting are similar to those that are known to have occurred at ancient Lake Mungo, others do not reflect the archaeological record. For example, the species of animals being captured and cooked by people in the painting are the same as those species whose bones were found in the archaeological deposits. However, some stone artefacts shown in the painting, such as the stone axe being ground by the man in the lower left, are not known in the excavations of Lake Mungo. When the lake existed, axes were used only in distant regions, thousands of kilometres away; they were recovered from sites near by Lake Mungo but only tens of thousands of years after the time represented in the painted scene. Evidence for many things shown in the painting, such as the nature of clothing, existence of jewellery, kinds of fishing gear, construction of huts, sexual division of labour and 'initiation' scars on the bodies of men, have never been found in the archaeological deposits at Lake Mungo. All those details in the painting reflect a generalized, even stereotyped, scene of Aboriginal life as presented in historical ethnographies of Australian deserts rather than a reconstruction of the past from the archaeological evidence. The image of ethnographic life contained within the picture has merely been given the veneer of antiquity by the addition of archaeological objects acting as props.

This subtle yet powerful use of ethnographic information, not to assist archaeological interpretations but to supplant them, is not confined to pictorial representations of ancient Lake Mungo; it is also found in many texts written by archaeologists. The idea revealed in Caselli's painting, that Aboriginal life in the past was much the same as it was in the historic period, reflects interpretations of archaeological evidence from Lake Mungo. For example, as a youthful field archaeologist Harry Allen (1974) interpreted the sparse archaeological evidence in the light of his knowledge of the seed collecting and consumption of Bagundji Aboriginal group,



Figure 1.1 Artistic image of life at Lake Mungo by Giovanni Caselli. Is it ancient past or historical Aboriginal life? (Courtesy of G.Caselli.)

who lived in the area during the historic period. He concluded that in the nineteenth century Bagundji relied on cereals as a seasonal food, their cereal processing used grindstones, and that grinding stones found in archaeological sites more than 15,000 years old had similarly been used to process cereals. He therefore argued that seed consumption was part of the subsistence pattern for much or all of the last 15,000 years. By filling ‘gaps’ in his archaeological evidence with details obtained from historical observations of Bagundji life, Allen created a vision of the ancient past at Lake Mungo which implied very little change during long periods of time. Allen and others have now shown that this and many other interpretations of unchanging behaviour were wrong. Archaeological evidence at Lake Mungo documents a series of economic and social changes, but many archaeologists imposed ethnographic images on the past instead of ‘reading’ the material evidence recovered by archaeological fieldwork.

A quarter of a century after his initial, ethnographically loaded interpretations of Lake Mungo, it was a more mature and reflective Harry Allen (1998) who recognized that his reconstruction of long-term cultural continuity at Lake Mungo arose from the projection of recent ethnographic relationships onto the archaeological data rather than detailed interpretations of the archaeological evidence itself. Allen’s revised vision emphasized archaeological evidence and acknowledged the dangers of placing ethnographic details within archaeological interpretations. However, the presentation of the human past in Australia as corresponding to historical Aboriginal

life remained entrenched in interpretations of many other archaeologists, resulting in implicit or explicit claims for relentless cultural continuity and changelessness in Aboriginal life.

Connections between the uncritical use of ethnographic information and the development of ethnographic-scale reconstructions and statements of long-term cultural continuity can be seen in the writings of archaeologists who relied on detailed analogy with historical observations to build images of the pre-historic period. For example, claiming historical records of post-contact Aboriginal life were a major asset, John Mulvaney and Johan Kamminga (1999) based many interpretations of archaeological materials from Lake Mungo on ethnographic information. They compared each piece of archaeological evidence with objects from the historical period to build a story of similarity between past and present. They wrote that freshwater molluscs and fish were eaten by nineteenth century Bagundji people, and that bones and shells of these creatures are found in archaeological sites at Lake Mungo; Aboriginal people speared and netted fish in the historic period, and one sharpened bone found in the archaeological deposits may be a prong from a fish-spear of the historic type; historical Aborigines hunted land animals such as wallabies, bandicoots and wombats, and archaeologists find the bones of these animals at Lake Mungo; Bagundji people lived on the Darling River during the summer but dispersed into the dry hinterland during the winter. Interpreting emu egg shells at Lake Mungo as a seasonal indicator Mulvaney and Kamminga (1999) suggested that ancient people had a seasonal settlement pattern similar to the historical people.

By juxtaposing interpretations of historical reports and archaeological objects in this way, the archaeologists subtly suggested that the lives of ancient people at Lake Mungo were the same or very similar to the lives of Aboriginal people in nearby regions nearly two thousand generations later. Like the earlier approach of Allen, the way Mulvaney and Kamminga (1999) intertwined ethnography with archaeological props led them to a vision of the static society painted by Caselli. By assuming continuity from pre-historic to present times, what is termed 'direct historical analogy', archaeologists created a story of the past that was embedded within and repeated European understandings of Aboriginal life during the historical period. Archaeologists have often made their idea of the past conform to their idea of the historic period.

The pervasive idea of an unchanging Aboriginal society is also observed in the way ethnographic images are the foundation of interpretations of ancient human ideology at Lake Mungo. Take for example Alan Thorne's assertion that, because Aboriginal people in the historic period sometimes buried males with their hands placed over their groin, protecting their penis, the similar body position of a human buried at Lake Mungo nearly 45,000 years ago revealed that the person was a male (Thorne et al. 1999). Biological evidence for the sex of this person, known as WLH3 to archaeologists, is actually ambiguous, and during pre-history women as well as men were sometimes buried with their hands over the pubic region (Brown 2000a). Thorne's interpretation assumed there had been no cultural changes throughout the human occupation of Australia; his conclusion that this particular

burial practice and ideology has a long history is therefore a circular argument built on ideas of an unchanging Aboriginal past.

Another ethnographically augmented interpretation of ancient life at Lake Mungo is Josephine Flood's (1989) discussion of the burned bones of a woman called WLH1 by archaeologists. Drawing on images of historical Aboriginal societies, implying that social norms were not only the same in all Aboriginal groups but were also identical from the colonization of Australia until the historical period, Flood (1989) made four extraordinary statements about WLH1. First, she suggested that because in the nineteenth century gathering food was often women's work, only women collected the molluscs discarded in archaeological sites at Lake Mungo more than 30,000 years earlier. Next, Flood (1989) asserted that women had always provided the staple foods for human groups in Australia and had therefore always been 'respected'. Then, interpreting the burned bones of WLH1 as a cremation, Flood hypothesized that this was evidence of complex rituals symbolizing respect for women. Flood concluded that the evidence demonstrated cultural continuity in Aboriginal society from the earliest times to the present day. Of course this conclusion, that archaeology showed pre-historic people had similar social beliefs and activities to those observed in historic times, is untrustworthy because in using historical patterns to interpret archaeological evidence Flood had already assumed continuity. Her method did not investigate the nature of ancient life but instead developed interpretations of the past that merely recreated the format of Aboriginal life in the historic period.

These examples of archaeological interpretations at Lake Mungo clarify the way assumptions of cultural continuity and completing reconstructions of pre-history with details of daily life borrowed from historical Aboriginal lives can construct images of a changeless Aboriginal society. When this happens archaeologists are not assisting us to understand what life was like for pre-historic people in Australia. Instead, they are reproducing images of what life might have been like during European colonization. If Aboriginal societies were not changeless, if in reality they had been regularly altering, then embedding archaeological objects within stories built around the experience of Aborigines after European contact not only fails to illuminate the pre-historic past, but also actively constructs a veil that obscures the past and misleads us into thinking it must have been like the present.

As discussed throughout this book, scientists have abundant evidence demonstrating that Aboriginal lifestyles and societies were not fixed in a format recorded for the period after contact with Europeans. Subsequent chapters discuss archaeological evidence for changes in social life, beliefs, economy and technology throughout pre-history. Written records from the historical period also offer evidence that activities and social life represented in the ethnography of the eighteenth, nineteenth and twentieth centuries are not reliable indicators of the details of human life during Australian pre-history.

Diversity of Aboriginal people in the historic period

It was easy for Western thinkers to imagine the lives of Aboriginal people were unchanged during pre-history because of a common impression that Aboriginal societies were all the same. Stereotypes of Aborigines everywhere leading lives as mobile hunters, stalking kangaroos, congregating in small, independent tribes without leadership, and having a religion based on the notion of a 'Dreamtime', were prevalent and contributed to the idea that uniformity of Aboriginal societies across the continent reflected a uniformity of social and economic systems through time. In fact historical records of Aboriginal life in the eighteenth, nineteenth and early twentieth centuries provide abundant evidence for different beliefs, politics, customs, technologies and resource use across the continent.

Aboriginal people in the early historical period were often depicted as hunters and gatherers who collected plants and captured animals without a systematic process of domesticating those creatures. While women collected vegetables and fruits and caught small animals using digging sticks and bowls or bags, men typically concentrated on killing larger animals. However, these generalized descriptions do not reveal how procurement of foods, and associated processing of the plants and animals for cooking and consumption, involved many different types of activities. Hunters searched for game as individuals, in groups, and in cooperative communal events where animals were driven into nets. Individual and cooperative hunting occurred in many situations: on land, on beaches and in the open ocean, even with the help of other animals such as dolphins (Hall 1985). The image of a lone Aboriginal hunter stalking kangaroos in a barren landscape derived from life in the deserts; in the tropical north historical hunters harpooned large marine animals such as dugong and turtle from boats; in the south hunters clubbed seals and caught mutton birds; in the freshwater wetlands of Arnhem Land people wrestled snakes from lagoons; in the woodlands of the east men struck possums from tree branches; and in the southeastern highlands people feasted on moths during the summer. When Europeans entered the continent and made these observations in the nineteenth and twentieth centuries they were recording the Aboriginal exploitation of diverse resources in different environments.

The historical evidence also reveals the diversity and sophistication of recent Aboriginal hunting and collecting. Some hunting was 'passive', using artificial barriers in rivers or tidal traps on shorelines. Hunting and collecting were sometimes enhanced by artificially altering the landscape, setting fire to the vegetation, digging ditches to change drainage and regulate water animals, and so on. Careful management of resources to enhance future productivity, even tending of plants in ways that have similarities with agriculture, was common. Once plants and animals were caught they were sometimes eaten immediately, but in other situations they were prepared in complex ways, and in some instances stored for future consumption. The diversity of food procurement and processing observed historically in Australia is so large that anthropologists and archaeologists prefer the term *foraging* rather than hunting and gathering for the complex ways that Aboriginal foragers obtained a living. The plants and animals exploited in each region, the techniques foragers

used to capture and process them, and the ways foragers organized themselves, are all components of the economy that varied across Australia during the historic period (Keen 2004).

Of course the economy of historic Aboriginal foragers involved not only their acquisition and consumption of food, but also procurement and use of other materials as tools. Tools varied regionally: spears, traps and grinding stones all differed in construction between environments (D. S. Davidson 1934; Anell 1960; Dickson 1981; Cundy 1989). Even tools that are seen to be emblematic of Aboriginal people were absent from or distinctly different between regions. For instance, boomerangs were not used in Tasmania, spear throwers were not used in the Lake Eyre region, while edge-ground stone axes were not used in southwestern Australia or Tasmania. Tools varied across the continent for many reasons; toolkits were matched to the resources that people were procuring and reflected the materials from which the tools were made. Toolkits were also articulated with the ways people organized the procurement and processing of resources and the size of territory over which they ranged.

In the historic period the number of people also varied regionally, reflecting the productivity of each group's territory as well as the strategies for extracting resources from the landscape. The geographic pattern of population density was complex; in historic times densities were generally higher near coasts and in major river corridors, and least in arid and semi-arid landscapes. Differences in the density of people were related to territory size, as showed by Joseph Birdsell (1953), who offered an iconic illustration of the connection of population density and environmental characteristics, comparing the recorded territory of 123 'tribes' living away from the coast or major rivers with the mean annual rainfall for each territory (Figure 1.2). Groups in higher rainfall environments had smaller territories; those living in drier environments had larger territories, partly because in less productive landscapes foragers required far greater areas in which to obtain resources. Despite uncertainties involved in Birdsell's calculations, the clear relationship between landscape productivity and number of people occupying the land during the historic period hints at fundamental connections between environments and the organization of human societies.

These relationships were linked to the diversity of social lives observed in nineteenth and twentieth century Aboriginal groups by Ian Keen (2004), who demonstrated that in a number of historical groups access to territory and resources was regulated through social convention. Rules differed across the continent in response to the abundance and predictability of resources: in rich environments social conventions often restricted who could access resources, while in uncertain environments, such as deserts, diversified social affiliations enhanced people's access to essential resources.

One of the ways that social practice provided or denied access to resources was through kinship. In every society kinship systems described socially acknowledged relationships and obligations, but the nature and complexity of kinship rules varied. Some groups simply distinguished generations, others emphasized the different lines of descent by distinguishing two or four categories of descent into which

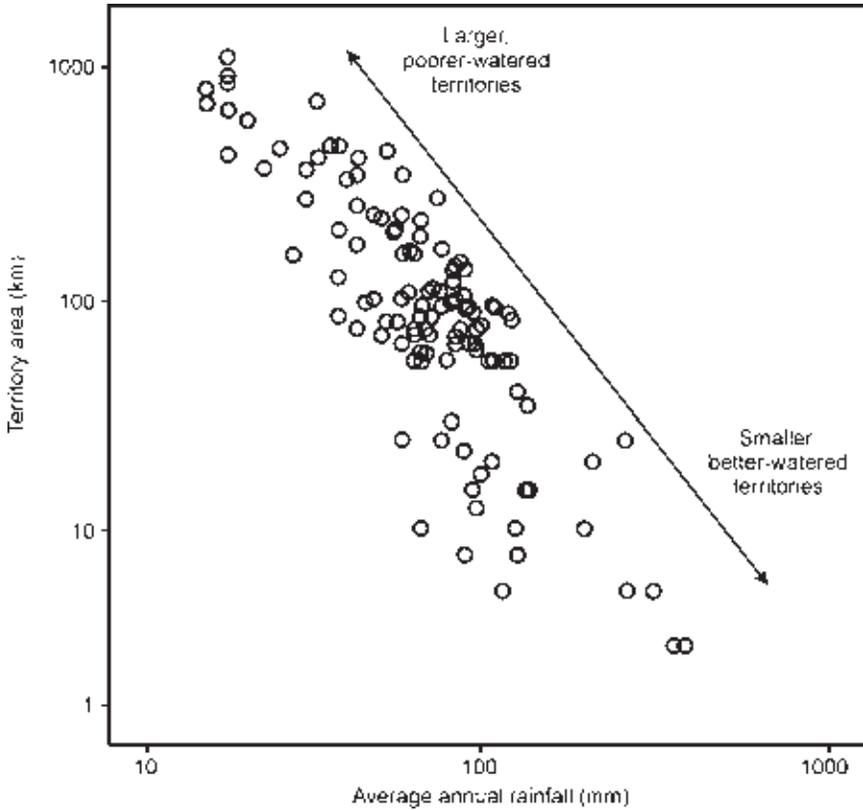


Figure 1.2 A graph plotting average annual rainfall against the territorial area of 123 historically recorded Aboriginal 'tribes' with relatively uniform environments. When rainfall was high, Aboriginal groups used smaller territories, but when rainfall was low, groups had larger territories. (Data in the graph comes from Birdsell (1953) with rainfall re-expressed in mm and territory in km, and both axes plotted using a logarithmic scale.)

individuals of any generation were classified. These different kinship classifications were related to differences in marriage patterns, often because socially acceptable partners were defined through the kinship position assigned to an individual. In some parts of Australia historical marriage systems involved fathers or brothers bestowing their daughters or sisters for political reasons or for compensation. In other regions more elaborate systems involved arranging marriage partners through 'asymmetrical' social rules, such as a long chain of matrilineal relationships leading to young women being married to men up to 50 or 60 years (three or four generations) older than them. Another dimension to marriage patterns was the level of polygyny (the marriage of a man to more than one woman concurrently). While in some regions it was uncommon for many men to have been married to more than two wives at one time, in other regions multiple wives were common, and among Yolngu who lived on the northern coast some men married more than

twenty women. Keen (2004) suggests that the level of polygyny displayed by different historical groups was related to whether or not they had particular social practices, such as asymmetrical marriage rules, but that it was also indirectly related to population density which in turn probably reflected environmental productivity.

It is no surprise that during historic times, Aboriginal people had many social and economic practices. They occupied many different environments, and only a limited range of foraging and social patterns would be suited to each environment. Across the continent each Aboriginal group's response to its environment was shaped by its social organization, which was conditioned by their past economic and social trajectories. The adjustment of each group to the natural and social environment in which it lived ensured that in a large, environmentally diverse continent difference in lifestyles and customs would have emerged. As significant environment changes occurred through time the economy and social life of Australian foragers would have been modified in response. Consequently the practices of historical Aboriginal groups were different from those of human groups occupying the same regions in pre-historic times. Historically documented differences between Aboriginal groups were the outcome of this long process of social and economic change; by acknowledging those differences archaeologists are forced to recognize that the historical cultural diversity of Aboriginal people cannot have existed throughout pre-history. Furthermore, accepting that there were dynamic, significant adaptations of economic, social and ideological systems to the changing physical environment makes it appropriate to situate archaeological interpretations of past human life in a framework of the ancient environments reconstructed for each time and place, rather than in a framework of much later cultural systems recorded in historical records. For this reason archaeological interpretations in this book are embedded in descriptions of the ever-changing environments of ancient Australia.

The recognition that historic records of Aboriginal life cannot simply be imposed on archaeological residues of earlier lives is amplified by the realization that many Aboriginal societies observed during the historic period were not 'pristine' examples of pre-historic life; they were actually highly modified by the process of contact with Europeans. One of the most dramatic examples of the rapid, complex and far-reaching nature of post-contact change is the response of Aboriginal people to the introduction of diseases such as smallpox.

Smallpox: a mark of contact

Shortly after British colonists arrived in Sydney in 1788 they witnessed the coming of smallpox to Aborigines of the east coast. Smallpox was then a feared and deadly disease, caused by the *variola* virus and spread directly from person-to-person or indirectly through contact with clothing contaminated by an infected person. Symptoms emerged between one and three weeks after the virus was contracted, and infected people travelled, meeting other humans, before anyone else realized they carried the illness. The disease began with a dangerous, extremely high fever followed immediately with headaches, muscle aches, convulsions, vomiting and delirium (Fenner et al. 1988). Most infected people survived for several days,



Figure 1.3 Smallpox pustules on the face and body. (Courtesy of the National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, DC [Reeve 48135].) This man is not an Aborigine.

developing ugly and painful lesions all over the body, including the mouth and throat (Figure 1.3). These lesions erupted to form leaking pustules, releasing large amounts of virus-filled mucous. Body temperature then increased and the pustules grew. At this stage many people succumbed to these awful torments. Other people survived the fevers and gradually recovered, although they often suffered ongoing afflictions such as blindness and respiratory problems. In survivors the lesions formed scabs and healed, leaving depigmented and pitted scars on the face or limbs which marked them for life. These 'pock marks' visibly altered survivors, revealing to all who saw them that they had once been infected with smallpox. Pock marks were often observed on Aboriginal people by European explorers and settlers, long after the active form of the disease had passed.

Although the origin of smallpox in Sydney in 1789 puzzled the British, we now know that it was contracted by Aborigines living on the coast of Arnhem Land after contact with fishermen from island southeast Asia (Butlin 1985; Macknight 1986; Campbell 2002). The disease spread across Australia, unobserved by any Europeans, but the face of smallpox, those pock marks on survivors, was a record of the epidemic seen by explorers and settlers who traversed inland southeastern

Australia in the early 1800s. Except around Sydney, this was a hidden epidemic, concealed from historic records by its transmission across the vast inland areas, beyond the gaze of the coastal hugging European settlers. Nevertheless, we know it was widespread and devastating in its effects on Aboriginal people.

Smallpox caused a shocking number of Aboriginal people to die. Medical knowledge of smallpox epidemics in other parts of the world, in populations without a long history of previous exposure to smallpox, demonstrates that mortality rates were catastrophically high (Butlin 1983; Hopkins 1983; Campbell 2002). The death toll in isolated parts of Africa during the eighteenth and nineteenth centuries was more than 70 per cent, sometimes as high as 90 per cent. Similarly, in North American Indian peoples, mortality greater than 60 per cent was common, and in some cases 98 per cent of people died. Noel Butlin (1983) argued that prior to the 1780s Aboriginal people had been previously unexposed; he estimated that in 1789 more than 80 per cent of them died. Of course we shall never know the actual number of Aboriginal people who died from smallpox, and some groups may have had lower death rates, but the magnitude of Butlin's estimate is plausible.

The consequences of this smallpox epidemic are difficult to envision, but imagine, if you can, four out of every five people you have ever known dying within a few weeks. The social and psychological toll on Aboriginal people cannot be underestimated, and historic documents from the early Sydney settlement demonstrate this. Governor Arthur Phillip (1789) described finding elderly people and young children dead around Sydney harbour. He estimated that half of the local Aboriginal people had died, and noted that many others walked inland away from the settlement in the hope of escaping the disease. We might speculate that this retreat from the smallpox onslaught was a common response across the continent, and that it often did little except spread the disease to neighbours.

A similarly sombre image of the impact of smallpox was presented by Lieutenant-Governor David Collins (1798) in his memoirs. Collins recalled finding a lone Aboriginal man, unable to find another living member of his group, despairing on a beach, and another 'tribe', being reduced to three survivors, negotiated a merger with a different Aboriginal group for their mutual survival. It is clear that the consequence of the 1789 smallpox epidemic on Aboriginal people near Sydney was disastrous.

Shortly after the arrival of English observers on the east coast of Australia in 1789, smallpox altered the operation of Aboriginal life. Near Sydney the massive death toll radically changed the functioning of Aboriginal society. The immediate alteration to social life was obvious: people mourning the dead, caring for the ill, fleeing to distant places to avoid disease, depopulation of areas, mergers between groups, invasion of abandoned lands, and so on. In the years that followed, after the smallpox epidemic had run its course and vanished from the territory of a forager group, the consequences continued. Aboriginal societies needed to respond to the political and knowledge vacuums created by the deaths of many high status elders. Survivors were obliged to consider the meaning of the apocalypse within the framework of existing cosmologies, a process that might have been associated with the emergence and spread of new ideologies. Conventions of obtaining marriage partners might

have changed following demographic shifts. Land use patterns probably altered as survivors remembered the places where people died or were buried. Foraging strategies may also have been modified in light of lost knowledge or reduced pools of labour. In the Sydney region, where we have historical observations of some of these processes, the effects of smallpox were combined with the direct impacts of contact with European settlers themselves, such as the disruption of hunting, dispossession of land, and the economic and social effects of new foods, technologies and ideologies.

Because smallpox spread rapidly, changes in Aboriginal society caused by the epidemic preceded the arrival of European observers in areas beyond Sydney, and for most parts of Australia we have no historic records of the process of change. Across the continent most historic records describe Aboriginal societies that had already been transformed, not only by the 1789 smallpox outbreak but also by the effects of subsequent smallpox epidemics and a spate of many other diseases. A further three smallpox outbreaks occurred during the nineteenth century, in 1829–30, 1858 and 1869, and the first of these was probably as widespread and devastating as the 1789 epidemic. Other diseases also spread ahead of European observation. Deadly and infectious tuberculosis was probably introduced by the English. Nowadays it continues to be one of the world's greatest killers and the effects of tuberculosis on Aboriginal people might have rivalled those of smallpox. Influenza also spread rapidly across the land, probably severely affecting Aboriginal health. Venereal infections, such as syphilis and gonorrhoea, were very common among English settlers and spread to the Aboriginal population, not only causing ill-health but also reducing fertility (Littleton 2005). These, and other ripples of change, spread out to many parts of the continent, altering Aboriginal life before Europeans recorded it.

The consequences of smallpox were magnified by its uneven impact on members of a society. We know from records of the disease in many parts of the world that there was an age- and sex-related pattern to the frequency of deaths from smallpox (Butlin 1983; Campbell 2002). Older people, over 45 or 50 years, had very high rates of death. Children less than about 4 years old and adults older than 20–25 years also had high mortality rates. Even among young adults mortality rates were not the same: women were more likely to die than men, pregnant women more likely to die than non-pregnant women, and so on. Differing patterns of death within a community added to the disruption of disease by creating power, status and knowledge imbalances.

One estimate of disease-induced changes in Aboriginal society comes from central Australia, where European accounts of Aboriginal life date only from 1860 onwards, decades after the two major smallpox epidemics. Dick Kimber (1988, 1990, 1996) speculated that in this region smallpox started a cascade of social changes. The deaths of more women than men would have created a sex imbalance, leaving many men without marriage partners. Increased fighting between men within the group, perhaps raids on other groups, resulted. Laws resolving conflicts between men over women were developed, resulting in the rules requiring lending of wives observed by Europeans at the end of the nineteenth century. The shortage

of women also led to the adoption of new, more complex kinship systems from people to the north as a way of restructuring the rules of relationships and marriage. Reciprocal exchange systems also expanded and intensified during the eighteenth and nineteenth centuries, not only facilitating negotiations that brought wives, ceremonies and goods into any community but also providing ways for new magic to spread to central Australia, as people sought magic to combat the disease and its aftermath. For example, distinctive incised pearl shells were brought to central Australia from the northwest coast for use in men's love magic, only after the middle of the nineteenth century (Akerman and Stanton 1993), and the popularity of such magic was only one of many responses to men's increased difficulty of obtaining wives after smallpox.

The deaths of so many women had ramifications beyond the search for wives. With fewer mouths to feed people probably targeted their preferred foods (Kimber 1996), and perhaps with fewer women to gather reliable plant foods, men's success in hunting became more valued. With greater reliance on hunting, people altered their use of the central Australian landscape, focusing on areas with higher densities of game and other preferred foods. Land management practices, such as where and when fires were started, may also have altered. Since an emphasis on hunting facilitated movement into unfamiliar localities, the territorial boundaries of groups may have shifted. Kimber pointed out that altered foraging patterns might have been accompanied by a changed emphasis on toolkits.

Smallpox even triggered changes in politics and ritual. The deaths of many elderly people probably meant a reduction in conservative tendencies within many central Australian groups. Kimber (1996) suggested that in the new situation some men acquired status and power by persuading others that their sorcery had the capacity to evoke or ward off disease. There may even have been changes in the ideologies of male and female powers, as men were increasingly seen to possess greater metaphysical power than women, a mystical explanation for the imbalance in male and female deaths. Combined with the drastic reduction in senior women, those altered social conceptions of women's powers led to a reduction in women's ritual roles and the ownership of sacred objects, resulting in the male domination of those spheres noted by historical observers. Because women were more severely affected by smallpox there was an increase in the political and religious power of males, reflected in their dominant roles in intensified magical, ritual and ceremonial activities. Kimber (1996) argued that transformations of social practice could explain many aspects of the historical use of the sacred objects called *tjurunga*: the relatively young age of many objects, the association of women in the mythology of these objects even though women were not allowed to see them, and the role of *tjurunga* exchange in developing and maintaining gift-giving relationships with others.

Kimber's (1996) interpretations of the social transformations in central Australia suggest that while the spread of disease hastened the deaths of many people, and reduced the birthrates with which another generation could be created, these were merely the start of a prolonged period of social and political change. Land use and foraging territory changed; political and kinship systems were substantially altered;

trade networks intensified and new trade goods were sought; all of which initiated changes in myth, ritual and ideology. The outcome was a reshaping of Aboriginal culture before European observers reached the area.

Social and economic changes caused by highly infectious diseases in the eighteenth and nineteenth centuries do not represent the 'destruction' of traditional Aboriginal societies. On the contrary, as the example of central Australia illustrates, many changes in Aboriginal society were ways of dealing with, even limiting, the enormity of social damage wrought by disease. The magnitude of social and economic change during this period is an indication of the capacity of Aboriginal societies to adjust to new circumstances; transformation rather than stability was the means by which these societies continued. Concepts of traditional society being destroyed merely give credibility to the notion that before these diseases, and European contact in general, Aboriginal society had changed little for vast stretches of time. In reality, as this book demonstrates, ancient societies of Australia were repeatedly transformed in response to altered cultural and environmental circumstances. Consequently the nature of Aboriginal economies, social organizations and beliefs immediately before smallpox hit is no more a record of the earliest human life in the continent than the historic records of post-smallpox societies are a record of the functioning of societies in the centuries before the disease. The dynamic, changing past of humans in Australia leaves no value in the proposition that there was ever a single, permanent, unchanging Aboriginal way of life. This fundamental revelation of archaeological research in Australia is revisited in Chapter 14. What matters here, at the start of the book, is the implication of this conclusion for the archaeological investigation of ancient Australia.

How the present helps us understand the past

It is a chilling coincidence that at almost the same time British colonists in Sydney observed the devastating spread of smallpox among Aboriginal people on the east coast, the foundations of historical sciences were being created by a British thinker, James Hutton (1788: 66), who wrote that 'In examining things present we have data from which to reason with regard to what has been'. Present-day scientists still accept his notion that we can reconstruct the past only because of our knowledge of how the world operates at the moment. It is inevitable that we will use knowledge of the present in our archaeological interpretations. What we must decide is *how* we should use our understanding of the present. As described above, some ways of using historic records will be misleading, including the use of post-smallpox observations of Aboriginal society to reconstruct details of Aboriginal life during pre-history.

Evidence that Aboriginal lifestyles and social systems have changed in even recent times makes it obvious that archaeologists should avoid building stories about pre-historic Australian society through simple analogies that suggest ancient societies were almost identical with societies observed historically. Instead, this book seeks to use evidence from archaeological research and investigations in related disciplines to describe the timing and nature of social change in the past,

without inserting details of ethnographic events which would imply that people in Australia were changeless. Reconstructions of the human past that are focused on archaeological evidence operate through a number of rules, one of which involves 'uniformitarianism'.

Scientists have long differentiated between two ways of using information about the present. Both are 'uniformitarian' arguments, in which a researcher acts as though the past is in some way like the present in order to make the past more comprehensible. One form of argument, called 'substantive uniformitarianism', is based on the idea that the nature of our world, including the past operation of human societies was little different from that which can be observed in historical times. This argument usually leads to stories in which pre-historic people and their societies are described as either being the same as historic people and societies, or else changing at the same speed and in the same ways as in history (Bailey 1983). This was the basis for the interpretations of ancient Lake Mungo discussed above, in which details of nineteenth and twentieth century Aboriginal life were used to reconstruct the lives of people tens of thousands of years earlier. This kind of argument, drawing on historic patterns of Aboriginal society and then proceeding to use the reconstructions obtained to study the emergence of those historical societies, is circular in structure and unsatisfactory because it often hides differences in pre-historic life.

The alternative kind of argument, called 'methodological uniformitarianism', is based on the idea that we should make only one assumption about the past: that during pre-historic times the 'laws' established for physics, chemistry, geology, biology and other sciences were the same as they are now (Bailey 1983). Regularity in the operation of the world structures the processes of human behaviour and provides a basis for identifying the ancient physical environments in which humans operated. The advantage of this approach is that archaeologists can reconstruct a story about humans in ancient times without making assumptions about whether people and societies in the pre-historic past were the same as those recorded historically. As a result archaeologists are able to develop conclusions about the extent and nature of economic, technological and social change over time, without creating the problematic circular arguments that result from telling stories of the ancient past using details simply borrowed from ethnographic records. For example, medical knowledge of modern diseases can be used to estimate their spread and impact in past societies, as illustrated by the discussion of smallpox provided above. In the following chapters there are descriptions of how archaeologists study the antiquity of objects, the manufacture and use of ancient artefacts, the sex of human skeletons and the environmental contexts of past economic systems through the application of this form of methodological uniformitarianism. Reconstructions of environments in which ancient foragers lived and constructed their social and economic activities form the foundation of statements about past human activities throughout the book.

This and other principles are regularly employed by many archaeologists to reduce the degree to which their methods obscure the pre-historic past, to avoid imposing familiar images from the historical period on the debris that survives from

ancient times. These approaches are used in this book to peer through the veil of obscurity that Victorian archaeologists felt separated them from the ancient lives that created archaeological debris, with the goal of summarizing what archaeological investigations have now revealed about human life in ancient Australia.

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