

I N T R O D U C T I O N

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Flaked stone artefacts are *the* most ubiquitous component of the Australian archaeological record and ought to be one of the most important sources of information about past human activities on this continent. However, during the past thirty years, studies of Australian stone artefacts have foundered, as researchers have abandoned or ignored many of the analytical and interpretative tools employed by archaeologists in other parts of the world. The reasons for this have revolved around what Australian researchers have perceived as the unique features of Australian stone artefact assemblages. Ultimately, however, every part of the archaeological record is unique, just as every archaeological occurrence is unique. This does not mean that a unique set of methodological tools is needed for decoding the behavioural information encapsulated in the flaked stone artefacts that were produced on this continent.

Unfortunately, when Australian archaeologists began to turn their backs on the theoretical and methodological developments influencing the interpretation of stone artefacts in other parts of the world, they offered no alternative approaches to the decoding of the local record. Consequently, the information potential of a significant portion of the Australian archaeological record is not being exploited. The aim of this book is to help put the identification, description, analysis and interpretation of Australian stone artefact assemblages back on track, so that the next generation of researchers will have a much better appreciation of the behavioural information that can be generated from the extraordinary variety of assemblages being recovered from a range of different contexts across the continent.

From the outset, it should be understood that *A Record in Stone* makes no pretence to being a prescription for how Australian stone artefacts should be analysed and interpreted. This is not a 'recipe book' of available methods and procedures whose application is guaranteed suddenly to provide detailed images of this continent's remote past. Neither is this volume an encyclopedic compilation of all the theories and methods that bear on the identification, description, analysis and interpretation of artefacts. The contents of this book reflect both the history of its writing and the interests of its authors. The focus

is thus on the macroscopic features of stone artefacts, particularly those attributes that can yield information about the ways in which artefacts were made. Although the underlying rationale is that all research is a creative endeavour, it has to be recognized that all research builds on, and extends, existing knowledge. In one sense, this volume is a summary of that existing knowledge, as it applies to the Australian record, and, as such, is an attempt to help students acquire the basic skills needed for the identification, description, analysis and interpretation of the thousands of stone artefacts that litter this continent. It is anticipated that the application and development of this knowledge will improve the archaeologist's ability to decode the behavioural information encapsulated in Australian artefact assemblages. There can be no doubt that the research problems to which these analytical and interpretative skills are applied will be many and varied, as will the methods and techniques used to generate the information being sought.

Although one of the initial aims of this project was to produce a reference that would update McCarthy's classic typology of Australian artefacts, *Australian Aboriginal Stone Implements* (first published in 1946 and modified only slightly in a subsequent edition (McCarthy 1967, 1976)), the final product differs from McCarthy in a number of ways. That this is the case should not be surprising, as the last fifty years have witnessed a significant expansion in our knowledge of the Australian archaeological record, as well as a burgeoning of the literature dealing with the analysis and interpretation of stone artefacts. In some respects, this volume is broader in scope than McCarthy (1976), offering much more detailed discussion of the purposes for which artefact analyses are undertaken and of the interpretative frameworks employed in those analyses. While this is not a text about the history of ideas, some reference to changing theoretical frameworks was deemed necessary, if only to help explain why researchers from different generations have approached the analysis and interpretation of stone artefacts in different ways. The discussion of analytical and interpretative frameworks draws not only on the Australian literature but also on stone artefact research conducted in other parts of the world. This approach is a deliberate attempt to broaden the range of conceptual frameworks being brought to the study of Australian stone artefacts.

In one respect, this book is narrower in scope than McCarthy (1976), focusing as it does on the flaked stone component of the Australian stone artefact record. This emphasis simply reflects both the strides that have been made over the past thirty years in our understanding of flaked stone technologies and the

greatly expanded literature in this area. Readers interested in ground stone technology will find Dickson's volume (1981) a useful introduction to that topic.

Despite these differences, *A Record in Stone* retains some links with McCarthy's earlier work in that it is pan-Australian in scope, and focuses on the practical aspects of stone artefact identification, description, analysis and interpretation rather than on descriptions of temporally or geographically distinct stone-working traditions. This book does not begin with an outline of the Australian culture-history sequence, which has been discussed at length in a number of recent texts (e.g. Flood 1995; Lourandos 1997; Mulvaney and Kamminga 1999). Rather, our aim is to provide students of the Australian archaeological record with the tools they need to assess these continental prehistories, and to write their own accounts, should they wish to do so. However, in our final chapter we do discuss the relationship between the ways in which artefacts are analysed and interpreted and the way in which twentieth-century accounts of Australian prehistory have been constructed.

In recent decades a number of attempts have been made to write a text on Australian stone artefacts but, until now, none of these projects have been completed. As a consequence, students of Australian archaeology have had to make use of texts that are based on some other portion of the archaeological record and that include discussion of stone technologies and tool types that are not encountered here, or employ theoretical frameworks unfamiliar to most Australian archaeologists (e.g. Inizan et al. 1992). The present volume was written to fill this perceived educational void. However, this book is not aimed solely at university students and it is hoped that the material it contains will be an invaluable reference for the entire range of professional archaeologists (and not just university teachers) as well as for the enthusiastic avocational archaeologist. It is also hoped that this volume will contribute to the ongoing dialogue between archaeologists and the consumers of their research, most notably Indigenous Australians, with respect to whose heritage archaeological research is undertaken.

### *Structure and content*

This book comprises a series of thematic, self-contained chapters, each of which builds on the information presented in the chapters that precede it. The text begins with a description of stone-working techniques, and the types of debris they produce, before introducing the approaches employed by different researchers to generate behavioural information from stone artefact assemblages; this section

includes discussion of what is involved in undertaking the analysis and interpretation of a specific assemblage of artefacts: from the formulation of a research problem to the choosing of a database and design of a data matrix. Subsequent chapters discuss in more detail the three main products of stone-working – flakes, tools and cores – in each case focusing on the significance of particular features, or attributes. Specific tool types characterize most stone artefact assemblages, including those in Australia. For this reason, the penultimate chapter is devoted to describing the tool types that are recurring features of this continent's archaeological record. The final chapter examines the relationship between the way Australian artefact assemblages have been studied and the way in which the continent's early history has been written. A historical perspective is adopted as a basis for assessing the current, and future, status of Australian stone artefact studies.

The chapters are broad in scope, each involving discussion of one major component of the flaked stone record, like flakes, tools or cores, or a group of interpretative approaches, like the functionalist models that have dominated much of the Australian research. Sections focus on specific attributes of flakes, tools and cores, or on specific analytical and interpretative frameworks. Each section concludes with a summary of the critical points elaborated in the text.

Integrated with the text are a series of boxes. Some of these provide examples that relate to discussion in the text of specific artefact attributes and the information that can be generated from their analysis; these boxes are intended to illustrate how the analysis of particular artefacts can be used to answer specific research questions. Other boxes provide definitions of the terms and concepts that are part of the language used by archaeologists in describing and discussing stone artefacts; another group of boxes elaborate the concepts introduced in the main text, with some boxes presenting information about the origins of these concepts, others providing more detailed discussion of them.

### *Illustrations*

Most books on stone tools use line drawings to illustrate different artefact types and their distinguishing features (e.g. Andrefsky 1998). However, in this book all the illustrations are photographs, of either experimental or archaeological specimens.

There are several reasons why photographs of actual artefacts have been used in preference to line drawings. Firstly, all illustrations are abstractions of reality, but line drawings involve more abstraction than do photographs. There are, of course, conventions for drawing stone artefacts, and some extended

discussions of these standardized approaches have been published (e.g. Addington 1986). However, there is much variation in the ways in which they are applied. Secondly, drawings do not illustrate features of the materials from which artefacts were made. Artefacts made from different raw materials can exhibit subtle, and sometimes marked, variations with respect to particular flaking features. These differences are best illustrated in a series of photographs of the same type of artefact made from different raw materials. Thirdly, line drawings are both expensive and time-consuming to produce. It takes less time to produce photographs and, with modern computer software, photographic images can be manipulated as readily as line drawings.

The dozens of labelled photographs that accompany this book are intended to help the reader identify the features that distinguish one artefact type from another, and to facilitate the identification of these features on archaeological specimens being studied in either the field or the laboratory.

Each illustration is based on photographic images of single artefacts. The slides made from these images were digitized, and then edited using Adobe Photoshop. This made it possible to work with the images in such a way that they could be used to best advantage in illustrating specific information presented in the text. In addition to the selection of images that appear as black and white figures in the book, a much larger collection of colour images is provided on the accompanying CD-ROM. These can be viewed via the html site provided on the CD-ROM itself, and can be viewed in conjunction with the text or studied on their own. These figures provide multiple examples of the same artefact type, often made from different raw materials, and thus illustrate the range of variation in overall form as well as variation in terms of specific attributes.

Each illustration is identified by three separate digits, e.g. *fig. 1.2.1*. The first of these refers to the number of the chapter in which the illustration appears: *fig. 1.2.1* is an illustration in chapter 1. The second digit refers to the order in which the illustrations appear in the chapter: *fig. 1.2.1* is the second illustration in chapter 1. The third digit refers to the location of the illustration. Figures whose third digit is 1 appear as black and white illustrations in the text and as colour illustrations on the accompanying CD-ROM. Illustrations whose third digit is greater than 1 (e.g. *fig. 1.2.2*) are found only on the CD-ROM.

There are a few figures for which there is no illustration in the text. *Fig. 1.13.2*, for example, shows the angle at which a core is struck in order to remove a flake,

while fig. 1.13.3 shows how a flake is removed from a core. Both of these are colour illustrations on the CD-ROM, and both are referred to in a box in the text. There is no corresponding fig. 1.13.1 in the book because certain features of stone artefacts are readily apparent in colour but not in black and white.

A note on the orientation of the artefacts that appear in the illustrations is also needed. Most Palaeolithic archaeologists orient all artefacts with identifiable platforms, and/or bulbs of percussion and/or ripple marks and/or terminations, so that the platform points towards the bottom of the page, and the distal end points towards the top of the page (terms are defined in section 3A). Australian archaeologists have reversed this convention and usually present flakes and retouched flakes with their platforms orientated towards the top of the page. As the platform represents the part of the core from which the flake was struck, intuition suggests that this orientation is more likely to conform to the orientation of the flake as it was struck from the core. However, in this book all those artefacts whose flaking orientation could be determined have been orientated according to the usual convention: with their platforms (or proximal ends) pointing towards the base of the page.

Finally, it is worth reiterating that *A Record in Stone* is not a prescription for the analysis of Australian flaked stone artefacts. Rather, this book should be regarded as a springboard for the development of new approaches to the problem of decoding the behavioural information embedded in artefact assemblages, and as a yardstick against which alternative approaches can be compared. Not all artefact studies share the same purpose or are undertaken using the same analytical and interpretative frameworks, or even the same definitions of terms and concepts. Agreement about purpose, method and definitions is not necessary to achieving an understanding of the Australian artefact record, although an understanding of why differences arise, and of the contexts in which the different concepts and approaches are most appropriately applied, is essential. It is hoped that this volume will contribute to that understanding and, as a consequence, to a greater flow of information from the analysis and interpretation of Australian flaked stone artefact assemblages.