

**COLIN RENFREW
PAUL BAHN**

Theories, Methods, and Practice

**COLLEGE
EDITION**

**SEVENTH
EDITION**

**REVISED &
UPDATED**



Thames & Hudson

Archaeology

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PREFACE TO THE COLLEGE EDITION

Since we first published this book twenty-five years ago we have revised it six times. This new edition of *Archaeology: Theories, Methods, and Practice* is the most comprehensive introduction to archaeological method and theory available. It is used by instructors and students for introductory courses on methods and theory, but also for classes on field methods, archaeological science, and a number of other courses.

The book presents an up-to-date and accurate overview of the world of archaeology in the 21st century. We are acutely aware of the complex relationships between theory and method, and of both of these upon the current practice of archaeology – in excavations, in museums, in heritage work, in the literature, and in the media. Throughout, the box features illustrate specific examples of excavation projects, and explain particular techniques or theoretical approaches. The references and bibliography ensure that the work can be used as a gateway to the full range of current scholarship – in that way it is also a work of reference for graduate students as well as professional archaeologists. We hope too that the book is written with sufficient clarity and purpose that it is of real value for the general reader, whether as an overview of the subject today or to be used selectively to follow up particular topics of interest.

We have tried not to duck any of the controversial issues of contemporary archaeology – whether in the field of theory or of politics. And we have tried to include original ideas of our own. We would claim for instance that our chapter on The Bioarchaeology of People (Chapter 11) offers an overview not readily found elsewhere, and that the chapters (10 and 12) on Cognitive Archaeology and on Explanation in Archaeology offer syntheses that present a number of original perspectives. The discipline of archaeology is perpetually in a state of change, and we have tried to capture and to represent where it is at now.

Resources

With this edition students will have access to free online study materials at <http://goo.gl/WTvwu6>. Its quizzes, chapter summaries, flash cards, and web projects will

enable students to test their comprehension of the book and to explore new areas of research. For instructors there is an online instructor's manual, a test bank and images and diagrams (as JPEGs and as PowerPoint presentations) for use in class.

Archaeology in the 21st Century

We set out to convey a sense of the excitement of a rapidly moving discipline that is seeking answers to some of the fundamental questions about the history of humankind. The archaeological record is the only resource we have which can answer such questions about our origins – both in terms of the evolution of our species and of the developments in culture and society which led to the emergence of the first civilizations and to the more recent societies founded upon them. The research is thus an enquiry into ourselves and our beginnings, into how we have become what we are now, and how our world view has come about. That is why it is a discipline of central relevance to the present time: only in this way can we seek to achieve a long-term perspective upon the human condition. And it is worth emphasizing that archaeology is about the study of humans, not just artifacts and buildings for their own sake.

The dynamic pace of change in archaeology is reflected in the continuing evolution of this book, particularly in this seventh edition. Each chapter and every element is reviewed and updated, incorporating new methods, changing theories, and fresh discoveries. This dynamism is driven in part by the range of research constantly underway in every part of the world, which in turn means that the data accessible to the archaeologist are increasing all the time.

But new interpretations are not simply the product of new excavations turning up new information. They depend also upon the development of new techniques of enquiry: the field of archaeological science is a rapidly expanding one. We believe also that progress and deeper understanding come from the continuing developments in archaeological theory, and from the changing nature of the questions we pose when we approach these increasing amounts of data. The questions we ask, moreover, arise not only from academic research but from the

changing needs and perspectives of contemporary society, and from the different ways in which it comes to view its own past.

The archaeology of the 21st century is now well underway. This point can be illustrated in a rather shocking way by the fortunes of war and civil unrest. All conflicts carry with them the risk of damage to the archaeological heritage. In Chapter 15 we describe the destruction of the 16th-century bridge at Mostar after shelling by Croatian guns. We also explore the politics of destruction through the case of the mosque at Ayodhya in northern India, this time by Hindu fundamentalists (Chapter 14). Great Britain is only now, in the wake of devastating attacks on archaeological sites by the “Islamic State” (see Chapter 15), planning to ratify the 1954 Hague Convention and its two Protocols on the Protection of Cultural Property in the Event of Armed Conflict, as the United States did in 2009.

It is sad to note that the religious intolerance underlying the events at Ayodhya was matched or even surpassed by the deliberate destruction by the Taliban of the great Buddhas at Bamiyan in Afghanistan (Chapter 14). Again we see a key part of the heritage of one sect or ethnic group deliberately destroyed by another. More recently, during the “Arab spring” in Egypt of 2011, civil unrest allowed thieves to loot items from the famous Cairo Museum and Egyptian archaeological sites. The world was shocked by the destruction of, among other ancient monuments, the iconic man-faced winged bull at the Nergal Gate of Nineveh, Iraq, announced by “Islamic State” militants through a video released in February 2015. In the digital age, the opportunity to publicize such attacks on cultural heritage serves as a tool for both publicity and propaganda. All these tensions and losses underline the need for archaeologists, heritage managers, and museum curators to be vigilant and to proclaim at every opportunity the value of the ancient heritage for all humanity.

How the Book is Organized

In archaeology as in any scientific discipline, progress is achieved through asking the right questions. This book is founded upon that principle, and nearly every chapter is directed at how we can seek to answer the central questions of archaeology. Part I, “The Framework of Archaeology,” begins with a chapter on the history of archaeology, an overview of how the discipline has grown and developed. In a sense it answers the question “How did we get to be where we are?” Past discoveries and ideas shape how we think about archaeology today.

Then we come to the first major question, “What?” This addresses the subject matter of archaeology, namely the things that are left, and how the archaeological record is formed and how we can begin to recover it. The

“Where?” question of Chapter 3 is answered in terms of archaeological prospection, survey, and excavation. The “When?” question that follows is perhaps the most important so far, since archaeology is about the past, and about seeing things in the perspective of time, so that the procedures of absolute dating are central to the archaeological enterprise.

Following this outline of the framework of what archaeology is about, we then move on to its subject matter. Some commentators and reviewers have expressed surprise that we begin Part II with the question “How were societies organized?” For it sometimes seems easier to speak, for instance, about early subsistence or trade than about social organization. But in reality the scale and nature of the society determines not only those issues, but more particularly governs how we as archaeologists can attempt to investigate them. In general, the rather scanty campsites of hunter-gatherers require a different approach from the formidable and deeply stratified cities of the first civilizations. There are exceptions, of course, and the case study on the Calusa of Florida (in Chapter 13) discusses the approach to one of these, a sedentary and centralized, politically powerful society that was based almost entirely upon hunting, fishing, and gathering.

We go on to ask in successive chapters how to investigate the environment of these early communities, their diet, their technology, and their trade. And when we come to ask in Chapter 10 “What did they think?” we are entering the field of cognitive archaeology, confronting new theoretical approaches such as agency, materiality, and engagement theory, which surface again when we ask “Why did things change?”, encompassing the controversial areas of archaeological explanation.

The structure, then, is in terms of questions, of what we want to know. Among the most fascinating questions are “Who were they? What were they like?” (Chapter 11). Increasingly it is realized that the “Who?” question is a theoretically difficult one, involving matters of ethnicity and what ethnicity really means: here we refer to new work in the fields of archaeogenetics and archaeo-linguistics. The “What were they like?” question can be answered in a number of new ways, including again the increasing use of archaeogenetics and DNA studies.

Part III of the book, “The World of Archaeology,” shows in Chapter 13 how the questions of Parts I and II have been addressed in five exemplary field projects from around the world, from societies ranging from hunter-gatherers to complex civilizations and cities. The remaining three chapters (see below) look more widely at the question of who owns the past and management of the heritage, as well as careers in archaeology.

We understand more clearly now that there are many archaeologies, depending upon the interests and the

perspectives of the communities in different parts of the world that undertake the work, or of those who commission and pay for it, or of the wider public who are, in effect, the “consumers” of what the archaeologist produces. We are also coming to realize more clearly how the world of archaeology is governed by prevailing political beliefs. That is why “archaeological ethics” figures with ever-increasing prominence throughout the book.

New to This Edition

In the sixth edition of this book, we added a new final chapter: “The New Searchers – Building a Career in Archaeology.” We chose five professional archaeologists, in mid-career, from different countries with different histories, and working in different branches of the archaeological field – in research, in heritage management, in the museum. Gill Hey, a contract archaeologist based in the United Kingdom, now joins their ranks, as archaeological survey and excavation is increasingly guided by the need to respond to development projects. The aim is to glimpse the reality of archaeological practice today, or rather the different realities that the practicing archaeologist will encounter in actually doing archaeology – good archaeology – in different parts of the world.

We have continued to update Chapter 3 to reflect the immense improvements and new techniques in aerial survey – including the use of drones to identify archaeological sites and features – and the use of digital data capture and recording systems, both on-site and in post-excavation analysis. A new box feature, “Excavating an Urban Site,” illustrates how archaeologists confront the challenges of excavation in continuously occupied towns and cities, using the example of the Museum of London Archaeology’s Bloomberg project.

In Chapter 4, we emphasize new and improved methods of dating archaeological remains, covering the emerging field of archaeogenetic dating and its implications for our reconstruction of human evolution, and the impact of the increased use of the uranium-thorium method on our understanding of the chronology of world cave art, even suggesting the possibility that particular artworks may be credited to the Neanderthals.

Social archaeology, introduced in Chapter 5, continues to provoke lively debate, none more so than the meaning and interpretation of Stonehenge and its surroundings; two new boxes, “Monuments, Politics and Territories in Early Wessex” and “Interpreting Stonehenge,” chart the progress of exciting research in this region, past and present, and discuss some of the latest theories about this iconic monument and its surrounding landscape. Another new box feature, “Conspicuous Ranking at Mississippian Spiro,” demonstrates how archaeological theory informs

our understanding of a site and the ancient society that created it, and how theory has grown with the discipline to inspire new interpretations of archaeological evidence.

In Chapter 11, two new boxes introduce notable individuals from the past and investigate what their physical remains can reveal to us about diet, physique, health, clothing, and status, as well as examining the methods archaeologists employ to learn about these aspects of ancient life and death. The first, Denmark’s Grauballe Man, is one of Europe’s Iron Age bog bodies, unfortunate individuals possibly sacrificed by their community, but astonishingly well preserved due to the conditions of the bogs in which they were interred. The second, England’s King Richard III, was found beneath a Leicester car park in 2013. His discovery captured the imagination of the world’s media, but both individuals – the anonymous and the famous – provide us with opportunities to learn directly about the people of the past.

Once more, numerous specialists and course tutors have assisted with the preparation of this edition, providing detailed comments, information, or illustrations. We thank them by name in the Acknowledgments at the back of the book, together with those many scholars who helped with earlier editions.

*Colin Renfrew
Paul Bahn*

INTRODUCTION

The Nature and Aims of Archaeology

Archaeology is partly the discovery of the treasures of the past, partly the meticulous work of the scientific analyst, partly the exercise of the creative imagination. It is toiling in the sun on an excavation in the deserts of Central Asia, it is working with living Inuit in the snows of Alaska. It is diving down to Spanish wrecks off the coast of Florida, and it is investigating the sewers of Roman York. But it is also the painstaking task of interpretation so that we come to understand what these things mean for the human story. And it is the conservation of the world's cultural heritage – against looting and against careless destruction.

Archaeology, then, is both a physical activity out in the field, and an intellectual pursuit in the study or laboratory. That is part of its great attraction. The rich mixture of danger and detective work has also made it the perfect vehicle for fiction writers and film-makers, from Agatha Christie with *Murder in Mesopotamia* to Steven Spielberg with Indiana Jones. However far from reality such portrayals may be, they capture the essential truth that archaeology is an exciting quest – the quest for knowledge about ourselves and our past.

But how does archaeology relate to disciplines such as anthropology and history that are also concerned with the human story? Is archaeology itself a science? And what are the responsibilities of the archaeologist in today's world, where the past is manipulated for political ends and “ethnic cleansing” is accompanied by the deliberate destruction of the cultural heritage?

Archaeology as Anthropology

Anthropology at its broadest is the study of humanity – our physical characteristics as animals, and our unique non-biological characteristics that we call **culture**. Culture in this sense includes what the anthropologist Edward Tylor usefully summarized in 1871 as “knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society.” Anthropologists also use the term culture in a more restricted sense when they refer to the culture of a particular society, meaning the non-biological characteristics unique to that society which distinguish it from other societies. (An “archaeological

culture” has a specific and somewhat different meaning, as explained in Chapter 3.) Anthropology is thus a broad discipline – so broad that it is generally broken down into three smaller disciplines: biological anthropology, cultural anthropology, and archaeology.

Biological anthropology, or physical anthropology as it used to be called, concerns the study of human biological or physical characteristics and how they evolved.

Cultural anthropology – or social anthropology – analyzes human culture and society. Two of its branches are **ethnography** (the study at first hand of individual living cultures) and **ethnology** (which sets out to compare cultures using ethnographic evidence to derive general principles about human society).

Archaeology is the “past tense of cultural anthropology.” Whereas cultural anthropologists will often base their conclusions on the experience of actually living within contemporary communities, archaeologists study past humans and societies primarily through their material remains – the buildings, tools, and other artifacts that constitute what is known as the **material culture** left over from former societies.

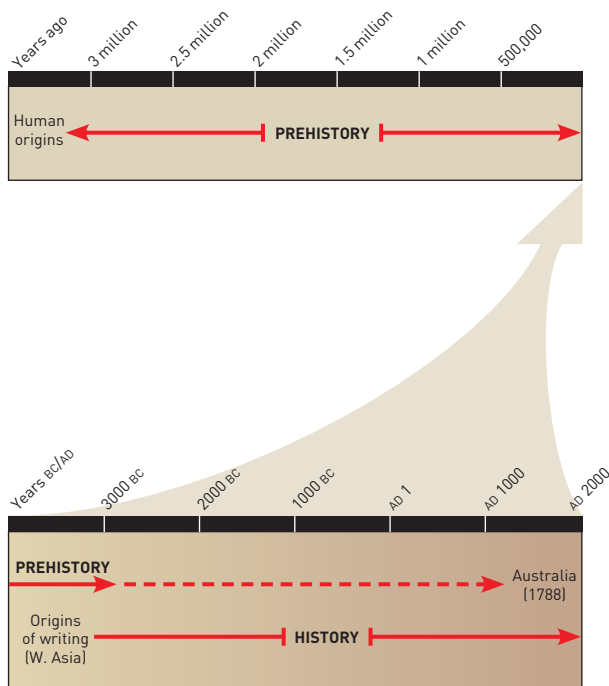
Nevertheless, one of the most challenging tasks for the archaeologist today is to know how to interpret material culture in human terms. How were those pots used? Why are some dwellings round and others square? Here the methods of archaeology and ethnography overlap. Archaeologists in recent decades have developed **ethnoarchaeology**, where like ethnographers they live among contemporary communities, but with the specific purpose of understanding how such societies use material culture – how they make their tools and weapons, why they build their settlements where they do, and so on.

Moreover, archaeology has an active role to play in the field of conservation. **Heritage studies** constitute a developing field, where it is realized that the world's cultural heritage is a diminishing resource, and one which holds different meanings for different people. The presentation of the findings of archaeology to the public cannot avoid difficult political issues, and the museum curator and the popularizer today have responsibilities which some can be seen to have failed.

Archaeology as History

If, then, archaeology deals with the past, in what way does it differ from history? In the broadest sense, just as archaeology is an aspect of anthropology, so too is it a part of history – where we mean the whole history of humankind from its beginnings over 3 million years ago. Indeed for more than 99 percent of that huge span of time archaeology – the study of past material culture – is the only significant source of information, if one sets aside physical anthropology, which focuses on our biological rather than cultural progress. Conventional historical sources begin only with the introduction of written records around 3000 BC in western Asia, and much later in most other parts of the world (not until AD 1788 in Australia, for example). A commonly drawn distinction is between *prehistory* – the period before written records – and history in the narrow sense, meaning the study of the past using written evidence. In some countries, “prehistory” is now considered a patronizing and derogatory term which implies that written texts are more valuable than oral histories, and which classifies their cultures as inferior until the arrival of Western ways of recording information. To archaeology, however, which studies all cultures and periods, whether with or without

0.1 *The vast timespan of prehistory compared with the relatively short period for which we have written records (“history”). Before c. 3000 BC, material remains are our only evidence.*



writing, the distinction between history and prehistory is a convenient dividing line that simply recognizes the importance of the written word in the modern world, but in no way denigrates the useful information contained in oral histories.

As will become abundantly clear in this book, archaeology can also contribute a great deal to the understanding even of those periods and places where documents, inscriptions, and other literary evidence do exist. Quite often, it is the archaeologist who unearths such evidence in the first place.

Archaeology as a Science

Since the aim of archaeology is the understanding of humankind, it is a humanistic discipline, a humane study. And since it deals with the human past it is a historical discipline. But it differs from the study of written history – although it uses written history – in a fundamental way. The material the archaeologist finds does not tell us directly what to think. Historical records make statements, offer opinions, pass judgments (even if those statements and judgments themselves need to be interpreted). The objects that archaeologists discover, on the other hand, tell us nothing directly in themselves. It is *we* today who have to make sense of these things. In this respect the practice of archaeology is rather like that of the scientist. The scientist collects data (evidence), conducts experiments, formulates a hypothesis (a proposition to account for the data), tests the hypothesis against more data, and then in conclusion devises a model (a description that seems best to summarize the pattern observed in the data). The archaeologist has to develop a picture of the past, just as the scientist has to develop a coherent view of the natural world. It is not found ready made.

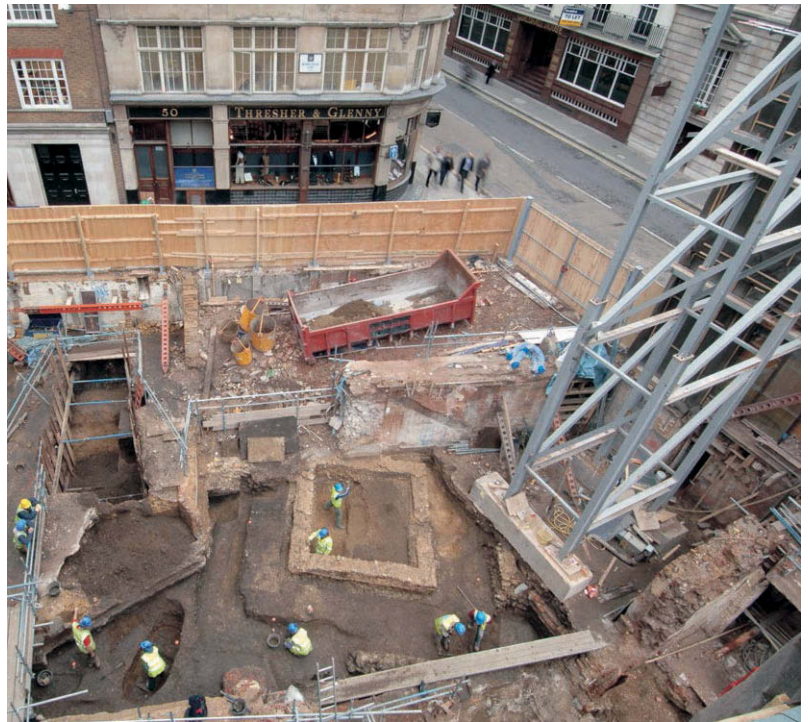
Archaeology, in short, is a science as well as a humanity. That is one of its fascinations as a discipline: it reflects the ingenuity of the modern scientist as well as the modern historian. The technical methods of archaeological science are the most obvious, from radiocarbon dating to studies of food residues in pots. Equally important are scientific methods of analysis, of inference. Some writers have spoken of the need to define a separate “Middle Range Theory,” referring to a distinct body of ideas to bridge the gap between raw archaeological evidence and the general observations and conclusions to be derived from it. That is one way of looking at the matter. But we see no need to make a sharp distinction between theory and method. Our aim is to describe clearly the methods and techniques used by archaeologists in investigating the past. The analytical concepts of the archaeologist are as much a part of that battery of approaches as are the instruments in the laboratory.

INTRODUCTION: THE NATURE AND AIMS OF ARCHAEOLOGY

The diversity of modern archaeology

This page: **0.2** (right) *Urban archaeology:* excavation of a Roman site in the heart of London. **0.3** (below left) *Working in the on-site archaeobotanical laboratory on finds from Çatalhöyük in Turkey* (see pp. 46–47). **0.4** (below right) *An ethnoarchaeologist in the field in Siberia, sharing and studying the lives of modern Orochen people, here making blood sausages from the intestines of a recently butchered reindeer.*

Opposite: **0.5** (above) *Underwater archaeology:* a huge Egyptian statue found in the now-submerged ruins of an ancient city near Alexandria. **0.6** (below left) *An Inca “mummy,” now known as the “Ice Maiden,” is lifted from her resting place high up on the Ampato volcano in Peru* (see p. 67). **0.7** (center right) *Piecing together fragments of an elaborate mural from the early Maya site of San Bartolo in Guatemala* (see p. 426). **0.8** (below right) *Salvaged in advance of development: a 2000-year-old Western Han dynasty tomb is excavated at a construction site in Guangzhou, China.*





The Variety and Scope of Archaeology

Today archaeology is a broad church, encompassing a number of different “archaeologies” which are nevertheless united by the methods and approaches outlined in this book. We have already highlighted the distinction between the archaeology of the long prehistoric period and that of historic times. This chronological division is accentuated by further subdivisions so that archaeologists specialize in, say, the earliest periods (the Old Stone Age or Paleolithic, before 10,000 years ago) or the later ones (the great civilizations of the Americas and China; Egyptology; the Classical archaeology of Greece and Rome). A major development in the last two or three decades has been the realization that archaeology has much to contribute also to the more recent historic periods. In North America and Australia historical archaeology – the archaeological study of colonial and postcolonial settlement – has expanded greatly, as has medieval and post-medieval archaeology in Europe. So whether we are speaking of colonial Jamestown in the United States, or medieval London, Paris, and Hamburg in Europe, archaeology is a prime source of evidence.

Cutting across these chronological subdivisions are specializations that can contribute to many different archaeological periods. Environmental archaeology is one such field, where archaeologists and specialists from other sciences study the human use of plants and animals, and how past societies adapted to the ever-changing environment. Underwater archaeology is another such field, demanding great courage as well as skill. In the last 40 years it has become a highly scientific exercise, yielding time capsules from the past in the form of shipwrecks that shed new light on ancient life on land as well as at sea.

Ethnoarchaeology, too, as we discussed briefly above, is a major specialization in modern archaeology. We now realize that we can only understand the archaeological record – that is to say, what we find – if we understand in much greater detail how it came about, how it was formed. Formation processes are now a focus of intensive study. It is here that ethnoarchaeology has come into its own: the study of living peoples and of their material culture undertaken with the aim of improving our understanding of the archaeological record. For instance, the study of butchery practices among living hunter-gatherers undertaken by Lewis Binford among the Nunamiut Eskimo of Alaska gave him many new ideas about the way the archaeological record may have been formed, allowing him to re-evaluate the bone remains of animals eaten by very early humans elsewhere in the world.

Nor are these studies confined to simpler communities or small groups. Contemporary material culture

has now become a focus of study in its own right. The archaeology of the 21st century already ranges from the design of Coca-Cola bottles and beer cans to the forensic pathology increasingly used in the investigation of war crimes and atrocities, whether in Bosnia, West Africa, or Iraq. Actualistic studies in archaeology were pioneered in the Garbage Project set up by William L. Rathje, who studied the refuse of different sectors of the city of Tucson, Arizona, to give insights into the patterns of consumption of the modern urban population. Sites such as airfields and gun emplacements dating from World War

0.9 Today the conventions, idioms, and findings of archaeology are increasingly referenced in contemporary society, including contemporary art. Antony Gormley's Field for the British Isles is made up of thousands of terracotta figures resembling prehistoric figurines from excavations in Mesoamerica or southeast Europe. For the viewer in front of them the effect is overpowering.



II (1939–45) are now preserved as ancient monuments, as are telecommunication facilities from the era of the Cold War, and surviving fragments of the Berlin Wall which once divided East from West Germany but which was opened and torn down in 1989. The Nevada Test Site, established in 1950 as a continental location for United States weapons testing, is similarly now the subject of archaeological research and conservation.

The archaeology of the 20th century even had its looters: artifacts raised from the wreck of the *Titanic* have been sold for large sums to private collectors. And the archaeology of the 21st century had a grim start with the recovery work following the catastrophic destruction of the twin towers of the World Trade Center in New York on 11 September 2001. Ground Zero, the conserved and protected site where the twin towers once stood, has taken its place as one of the most notable of the commemorative monuments of New York.

Archaeology today continues to develop new specialisms and sub-disciplines. Out of the environmental approach widely emphasized at the end of the 20th century bioarchaeology has emerged: the study of plants and animals (and other living things) in the human environment and diet. So too geoarchaeology: the application to archaeology of the geological sciences, for the reconstruction of early environments and the study of lithic materials. Archaeogenetics, the study of the human past using the techniques of molecular genetics, is a rapidly expanding field. These, and other emerging areas, such as forensic anthropology, are the product both of developments in the sciences and of increasing awareness among archaeologists as to how such developments can be exploited in the study of the past.

The Ethics of Archaeology

Increasingly it is realized that the practice of archaeology raises many ethical problems, and that the uses of archaeology, politically and commercially, nearly always raise questions with a moral or ethical dimension (see Chapters 14 and 15). It is easy to see that the deliberate destruction of archaeological remains, such as the demolition of the Bamiyan Buddhas in Afghanistan or the leveling of Nineveh and other sites by the so-called “Islamic State,” are essentially evil acts, judged by most moral standards. Comparable in its damaging consequences was the deplorable failure of the coalition forces that invaded Iraq to safeguard the archaeological treasures and sites of that country. But other issues are less obvious. In what circumstances should the existence of archaeological sites be allowed to impede the progress of important construction projects, such as new roads or new dams? During the Chinese Cultural Revolution,

Chairman Mao coined the slogan “Let the past serve the present,” but that was sometimes used as an excuse for the deliberate destruction of ancient things.

The commercial exploitation of the past also raises many problems. Many archaeological sites are today over-visited, and the large numbers of well-meaning tourists pose real problems for their conservation. This has been a long-standing problem at Stonehenge, the major prehistoric monument in south Britain, and the failure of the UK government to do anything effective about the situation over many decades brought general condemnation. Most serious of all, perhaps, is the connivance of major museums in the looting of the world’s archaeological heritage through the purchase of illicit and unprovenanced antiquities. The settlement of the restitution claims made by the Italian government against the Metropolitan Museum of Art in New York, the Getty Museum in Malibu, and the Cleveland Museum of Art and the return to Italy of looted antiquities raise questions about the integrity of some museum directors and trustees – well-informed people whom one would expect to be the guardians and defenders of the past, not participants in the commercial processes which lead to its destruction.

Aims and Questions

If our aim is to learn about the human past, there remains the major issue of what we hope to learn. Traditional approaches tended to regard the objective of archaeology mainly as reconstruction: piecing together the jigsaw. But today it is not enough simply to recreate the material culture of remote periods, or to complete the picture for more recent ones.

A further objective has been termed “the reconstruction of the lifeways of the people responsible for the archaeological remains.” We are certainly interested in having a clear picture of how people lived, and how they exploited their environment. But we also seek to understand *why* they lived that way: why they had those patterns of behavior, and how their lifeways and material culture came to take the form they did. We are interested, in short, in *explaining* change. This interest in the processes of cultural change came to define what is known as *processual archaeology*. Processual archaeology moves forward by asking a series of questions, just as any scientific study proceeds by defining aims of study – formulating questions – and then proceeding to answer them.

The symbolic and cognitive aspects of societies are also important areas emphasized by recent approaches, often grouped together under the term *postprocessual* or *interpretive archaeology*, although the apparent unity of this perspective has now diversified into a variety of

concerns. It is persuasively argued that in the “postmodern” world different communities and social groups have their own interests and preoccupations, that each may have its voice and its own distinctive construction of the past, and that in this sense there are many archaeologies. This becomes particularly clear when one looks at the newly formed nations of the Third World where different and sometimes competing ethnic groups have their own traditions and interests, and in some senses their own archaeologies.

There are many big questions that preoccupy us today. We want to understand the circumstances in which our human ancestors first emerged. Was this in Africa and only in Africa, as currently seems the case? Were these early humans proper hunters or merely scavengers? What were the circumstances in which our own species *Homo sapiens* evolved? How do we explain the emergence of Paleolithic art? How did the shift from hunting and gathering to farming come about in western Asia, in Mesoamerica, and in other parts of the world? Why did this happen in the course of just a few millennia? How do we explain the rise of cities, apparently quite independently in different parts of the world? How are identities formed, both of individuals and of groups? How do we decide which aspects of the cultural heritage of a region or nation are worth conserving?

The list of questions goes on, and after these general questions there are more specific ones. We wish to know why a particular culture took the form it did: how its particularities emerged, and how they influenced developments. This book does not set out to review the provisional answers to all these questions – although many of the impressive results of archaeology will emerge in the following pages. In this book we examine rather the *methods* by which such questions can be answered.

Plan of the Book

The methods of archaeology could be surveyed in many different ways. As mentioned in the Preface, we have chosen to think in terms of the many kinds of *questions* to which we wish to have answers and we list them briefly again here. It could be argued that the whole philosophy of archaeology is implied in the questions we ask and the form in which we frame them.

Part I reviews the whole field of archaeology, looking first at the history of the subject, and then asking three specific questions: how are materials preserved, how are they found, and how are they dated?

Part II sets out further and more searching questions – about social organization, about environment, and about subsistence; about technology and trade, and about the way people thought and communicated. We then ask what they were like physically. And finally the interesting question is posed: *why* things changed.

Part III is a review of archaeology in practice, showing how the different ideas and techniques can be brought together in field projects. Five such projects are chosen as case studies: from southern Mexico, Florida in the south of the United States, southeastern Australia, Thailand, and urban York in England.

In conclusion there are two chapters on the subject of public archaeology, discussing the uses and abuses of archaeology in the modern world, and the obligations these things have placed on the archaeologist and on all those who exploit the past for gain or for political purposes. Finally, our last chapter gives the personal stories of six archaeologists working in different areas of the world and in various fields. In this way we plan that the book should give a good overview of the whole range of methods and ideas of archaeological investigation.

FURTHER READING

The following books give an indication of the rich variety of archaeology today. Most of them have good illustrations:

- Bahn, P.G. (ed.). 2000. *The World Atlas of Archaeology*. Facts on File: New York.
- Bahn, P.G. (ed.). 2001. *The Penguin Archaeology Guide*. Penguin: London.
- Cunliffe, B., Davies, W., & Renfrew, C. (eds.). 2002. *Archaeology, the Widening Debate*. British Academy: London.
- Fagan, B.M. (ed.). 2007. *Discovery! Unearthing the New Treasures of Archaeology*. Thames & Hudson: London & New York.
- Forte, M. & Siliotti, A. (eds.). 1997. *Virtual Archaeology*. Thames & Hudson: London; Abrams: New York.

- Renfrew C., & Bahn P. (eds.). 2014. *The Cambridge World Prehistory*. Cambridge, Cambridge University Press. 3 vols.
- Scarre, C. (ed.). 1999. *The Seventy Wonders of the Ancient World. The Great Monuments and How they were Built*. Thames & Hudson: London & New York.
- Scarre, C. (ed.). 2013. *The Human Past. World Prehistory and the Development of Human Societies*. (3rd ed.) Thames & Hudson: London & New York.
- Schofield, J. (ed.). 1998. *Monuments of War: The Evaluation, Recording and Management of Twentieth-Century Military Sites*. English Heritage: London.

PART I

THE FRAMEWORK OF ARCHAEOLOGY

Archaeology is concerned with the full range of past human experience – how people organized themselves into social groups and exploited their surroundings; what they ate, made, and believed; how they communicated and why their societies changed. These are the engrossing questions we address later in the book. First, however, we need a framework in space and time. It is little use beginning our pursuit of ideas and methods concerning the past without knowing what materials archaeologists study, or where these might be found and how they are dated. Indeed, we also want to know how far previous generations of archaeologists have traveled and along which roads before setting off on our own journey of discovery.

Part I therefore focuses on the fundamental framework of archaeology. The first chapter looks at the history of the discipline, showing in particular how successive workers have redefined and enlarged the questions we ask about the past. Then we pose the first question: “What?” – what is preserved, and what is the range of archaeological materials that have come down to us? The second question, “Where?,” addresses methods for finding and surveying sites, and principles of excavation and preliminary analysis. Our third question, “When?,” considers the human experience of time and its measurement, and assesses the huge battery of techniques now available to help the archaeologist date the past. On this basis we are able to set out a chronology summarizing the human story, as a conclusion to Part I and a prelude to Part II.





THE SEARCHERS

The History of Archaeology

The history of archaeology is commonly seen as the history of great discoveries: the tomb of Tutankhamun in Egypt, the lost Maya cities of Mexico, the painted caves of the Old Stone Age, such as Lascaux in France, or the remains of our human ancestors buried deep in the Olduvai Gorge in Tanzania. But even more than that it is the story of how we have come to look with fresh eyes at the material evidence for the human past, and with new methods to aid us in our task.

It is important to remember that just a century and a half ago, most well-read people in the Western world – where archaeology as we know it today was first developed – believed that the world had been created only a few thousand years earlier (in the year 4004 BC according to the then-standard interpretation of the Bible), and that all that could be known of the remote past had to be gleaned from the surviving pages of the earliest historians, notably those of the ancient Near East, Egypt, and Greece. There was no awareness that any kind of coherent history of the periods before the development of writing was possible at all. In the words of the Danish scholar Rasmus Nyerup (1759–1829):

Everything which has come down to us from heathendom is wrapped in a thick fog; it belongs to a space of time which we cannot measure. We know that it is older than Christendom, but whether by a couple of years or a couple of centuries, or even by more than a millennium, we can do no more than guess.

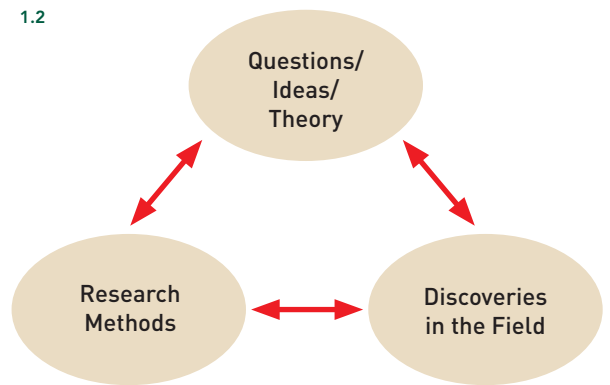
Today we can indeed penetrate that “thick fog” of the remote past. This is not simply because new discoveries are being made all the time. It is because we have learnt to ask some of the **right questions**, and have developed some

1.1 *The Roman city of Pompeii lies in the shadow of Mount Vesuvius in Italy. When the volcano erupted in AD 79, the entire city was buried, all but forgotten until excavations began in the mid-18th century. Spectacular discoveries generated huge interest in the past, and greatly influenced the arts (see box, pp. 24–25).*

of the **right methods** for answering them. The material evidence of the archaeological record has been lying around for a long time. What is new is our awareness that the methods of archaeology can give us information about the past, even the prehistoric past (before the invention of writing). The history of archaeology is therefore in the first instance a history of **ideas**, of theory, of ways of looking at the past. Next it is a history of developing **research methods**, employing those ideas and investigating those questions. And only thirdly is it a history of actual discoveries.

We can illustrate the relationship between these aspects of our knowledge of the past with a simple diagram:

1.2



In this chapter and in this book it is the development of the questions and ideas that we shall emphasize, and the application of new research methods. The main thing to remember is that every view of the past is a product of its own time: ideas and theories are constantly evolving, and so are methods. When we describe the archaeological research methods of today we are simply speaking of one point on a trajectory of evolution. In a few decades or even a few years’ time these methods will certainly look old-fashioned and out of date. That is the dynamic nature of archaeology as a discipline.

THE SPECULATIVE PHASE

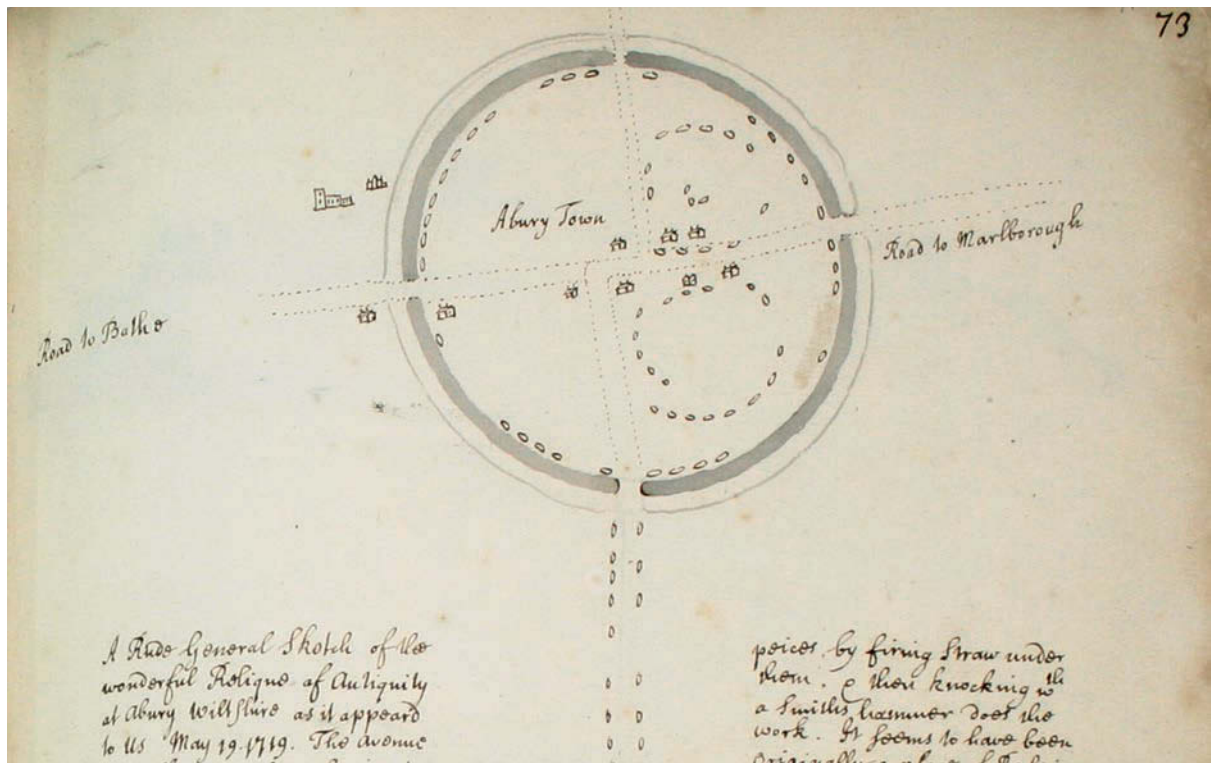
Humans have always speculated about their past, and most cultures have their own foundation myths to explain why society is how it is. The Greek writer Hesiod, for instance, who lived around 800 BC, in his epic poem *Works and Days* envisaged the human past as falling into five stages: the Age of Gold and the Immortals, who “dwelt in ease and peace upon their lands with many good things”; the Age of Silver, when humans were less noble; the Age of Bronze; the Age of Epic Heroes; and lastly his own time, the Age of Iron and Dread Sorrow, when “men never rest from labor and sorrow by day and from perishing by night.”

Most cultures, too, have been fascinated by the societies that preceded them. The Aztecs exaggerated their Toltec ancestry, and were so interested in Teotihuacan, the huge Mexican city abandoned hundreds of years earlier which they mistakenly linked with the Toltecs, that they incorporated ceremonial stone masks from that site in the foundation deposits of their own Great Temple (see box, pp. 570–71). A rather more detached curiosity about the relics of bygone ages developed in several early civilizations, where scholars and even rulers collected and studied objects from the past. Nabonidus, last native king of Babylon (reigned 555–539 BC), took a keen interest in antiquities. In one important temple he dug down

and discovered the foundation stone which had been laid some 2200 years before. He housed many of his finds in a kind of museum at Babylon.

During the revival of learning in Europe known as the Renaissance (14th to 17th centuries), princes and people of refinement began to form “cabinets of curiosities” in which curios and ancient artifacts were displayed with exotic minerals and all manner of specimens illustrative of what was called “natural history.” During the Renaissance also scholars began to study and collect the relics of Classical antiquity. And they began too in more northern lands, far from the civilized centers of ancient Greece and Rome, to study the local relics of their own remote past. At this time these were mainly the field monuments – those conspicuous sites, often made of stone, which immediately attracted attention, such as the great stone tombs of northwestern Europe, and such impressive sites as Stonehenge, or Carnac in Brittany. Careful scholars, such as the Englishman William Stukeley (1687–1765), made systematic studies of some of these monuments, with accurate plans which are still useful today. Stukeley and his colleagues successfully demonstrated that these monuments had not been constructed by giants or devils, as suggested by local names such as the Devil’s Arrows, but by people in

1.3 A page from the commonplace book of William Stukeley, with a sketch plan of standing stones at Avebury, southern England.



antiquity. He was also successful in phasing field monuments, showing that, since Roman roads cut barrows, the former must be later than the latter. In the same period, around 1675, the first archaeological excavation of the New World – a tunnel dug into Teotihuacan’s Pyramid of the Moon – was carried out by Carlos de Sigüenza y Góngora.

The First Excavations

In the 18th century more adventurous researchers initiated excavation of some of the most prominent sites. Pompeii in Italy was one of the first of these, with its striking Roman finds, although proper excavation did not begin there until the 19th century (see box overleaf). And in 1765, at the Huaca de Tantaluc on the coast of Peru, a mound was excavated and an offering discovered in a hollow; the mound’s stratigraphy was well described. Nevertheless, the credit for conducting what has been called “the first scientific excavation in the history of archaeology” traditionally goes to Thomas Jefferson (1743–1826), later in his career third President of the United States, who in 1784 dug a trench or section across a burial mound on his property in Virginia. Jefferson’s work marks the beginning of the end of the Speculative Phase.

In Jefferson’s time people were speculating that the hundreds of unexplained mounds known east of the Mississippi river had been built not by the indigenous

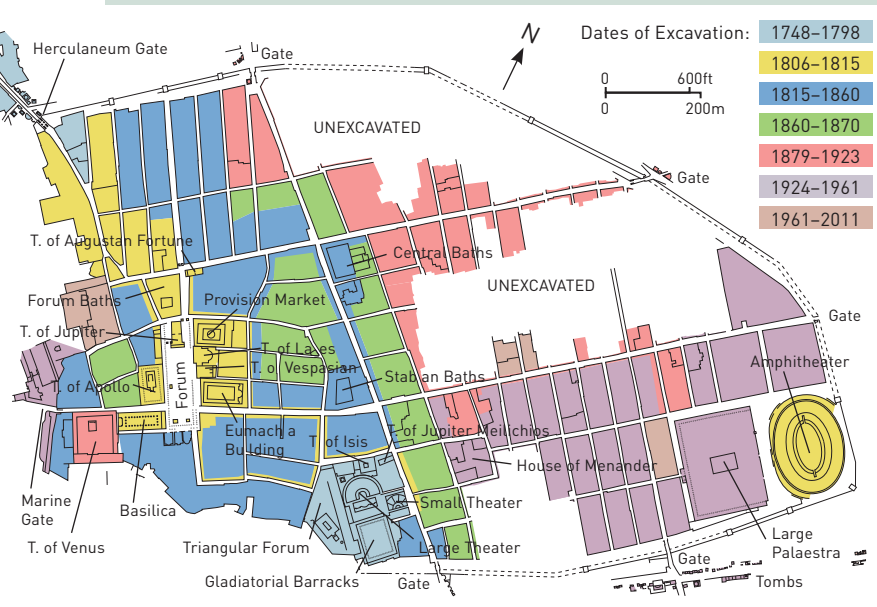
Native Americans, but by a mythical and vanished race of Moundbuilders. Jefferson adopted what today we should call a scientific approach, that is, he tested ideas about the mounds against hard evidence – by excavating one of them. His methods were careful enough to allow him to recognize different layers in his trench, and to see that the many human bones present were less well preserved in the lower layers. From this he deduced that the mound had been reused as a place of burial on many separate occasions. Although Jefferson admitted, rightly, that more evidence was needed to resolve the Moundbuilder question, he saw no reason why ancestors of the present-day Native Americans themselves could not have raised the mounds.

Jefferson was ahead of his time. His sound approach – logical deduction from carefully excavated evidence, in many ways the basis of modern archaeology – was not taken up by any of his immediate successors in North America. In Europe, meanwhile, extensive excavations were being conducted, for instance by the Englishman Richard Colt Hoare (1758–1838), who dug into hundreds of burial mounds in southern Britain during the first decade of the 19th century. He successfully divided field monuments into different categories, such as bell barrow, which are still in use today. None of these excavations, however, did much to advance the cause of knowledge about the distant past, since their interpretation was still within the biblical framework, which insisted on a short span for human existence.

1.4 Early excavations: Richard Colt Hoare and William Cunnington direct a dig north of Stonehenge in 1805.



DIGGING POMPEII: PAST AND PRESENT



1.5 Sketch plan of Pompeii, showing the excavated areas.

In the history of archaeology, the sites of Pompeii and Herculaneum, lying at the foot of Mount Vesuvius in the Bay of Naples, Italy, hold a very special place. Even today, when so many major sites have been systematically excavated, it is a moving experience to visit these wonderfully preserved Roman cities.

Pompeii's fate was sealed on the momentous day in August AD 79 when Vesuvius erupted, a cataclysmic event described by Pliny the Younger, a Roman writer. The city was buried under several meters of volcanic ash, many of the inhabitants being asphyxiated as they tried to flee. Herculaneum was buried to an even greater depth. There the complete cities lay, known only from occasional chance discoveries, until antiquarian curiosity grew in the early 18th century.

In 1709 the Prince of Elboeuf, learning of the discovery of worked marble in the vicinity, proceeded to investigate by shafts and tunnels

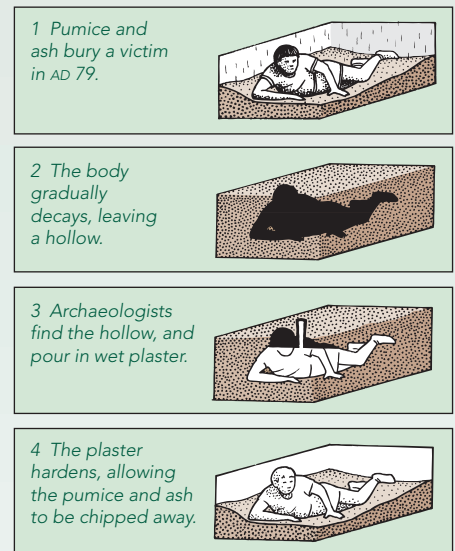
what we now know to be the site of Herculaneum. He had the good luck to discover the ancient theater – the first complete Roman example ever found – but he was mainly interested in works of art for his collection. These he removed without any kind of record of their location.

Following Elboeuf, clearance resumed in a slightly more systematic way in 1738 at Herculaneum, and in 1748 Pompeii was discovered. Work proceeded under the patronage of the King and Queen of Naples, but they did little more than quarry ancient masterpieces to embellish their royal palace. Shortly afterwards, on the outskirts of Herculaneum, the remains of a splendid villa were revealed, with statues and an entire library of carbonized papyri that have given the complex its name: the Villa of the Papyri. The villa's dimensions were closely followed by J. Paul Getty in the construction of his museum at Malibu, California.

The first catalogue of the royal collection was published in 1757. Five years later the German scholar Johann Joachim Winckelmann, often regarded as the father of Classical archaeology, published his first Letter on the discoveries at Herculaneum. From that time onward the finds from both cities attracted enormous international attention, influencing styles of furniture and interior decoration, and inspiring several pieces of romantic fiction.

Not until 1860, however, when Giuseppe Fiorelli was put in charge of the work at Pompeii, did well-recorded excavations begin. In 1864 Fiorelli devised a brilliant way of dealing with the cavities in the ash within which skeletons were found: he simply filled them with plaster of Paris. The ash around the cavity acted as a mold, and the plaster took the accurate shape of the decayed body. (In a more recent technique, the excavators pour in transparent glass fiber. This allows bones and artifacts to be visible.)

1.6 How a body shape is retrieved.



During the 20th century, Amedeo Maiuri excavated at Pompeii between 1924 and 1961, and for the first time systematic excavations were carried out beneath the AD 79 ground level, revealing remains of earlier phases of the town. In recent years his work has been supplemented by targeted excavations by many international teams of archaeologists. This work has uncovered a complex history of changing property boundaries and land use, revealing how Pompeii grew from a small rural settlement into a sophisticated Roman town and throwing much new light on its social and economic development.

Pompeii remains the most complete urban excavation ever undertaken. The town plan is clear in its essentials; most of the public buildings have been investigated, along with innumerable shops and private houses. Yet the potential for further study and interpretation is enormous.

Today it is not difficult for the visitor to Pompeii to echo the words of Shelley in his *Ode to Naples*, written more than a century and a half ago: "I stood within the City disinterred;/ And heard the autumnal leaves like light footfalls/Of spirits passing through the streets; and heard/ The Mountain's slumberous voice at intervals/Thrill through those roofless halls."



1.7–10 (Top) Early 20th-century excavations of the Via dell'Abbondanza, Pompeii's main thoroughfare. (Above) Wall painting from the House of the Chaste Lovers; a slave-girl watches two couples enjoying a banquet. (Left) Plaster, poured into the cavity left by the body, recreates the shape of a Pompeian struck down in flight. (Right) Preservation conditions at Pompeii are remarkable: carbonized eggs are among the survivors.



THE BEGINNINGS OF MODERN ARCHAEOLOGY

It was not until the mid-19th century that the discipline of archaeology became truly established. Already in the background were significant achievements in the newly developed science of geology. The Scottish geologist James Hutton (1726–1797), in his *Theory of the Earth* (1785), had studied the stratification of rocks (their arrangement in superimposed layers or strata), establishing principles which were to be the basis of archaeological excavation, as foreshadowed by Jefferson. Hutton showed that the stratification of rocks was due to processes still ongoing in seas, rivers, and lakes. This was the principle of “uniformitarianism.” Charles Lyell (1797–1875) also argued, in his *Principles of Geology* (1833), that geologically ancient conditions were in essence similar to, or “uniform with,” those of our own time. This idea could be applied to the human past also, and marks one of the fundamental notions of modern archaeology: that in many ways the past was much like the present.

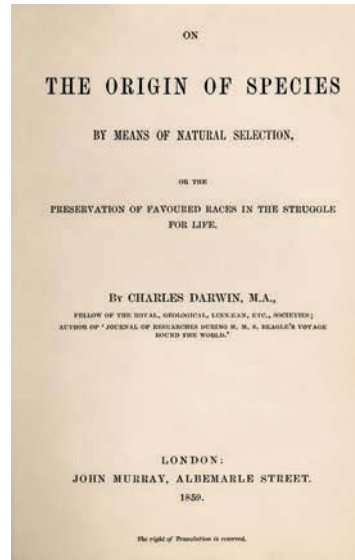
The Antiquity of Humankind

These ideas did much to lay the groundwork for what was one of the significant events in the intellectual history of the 19th century (and an indispensable one for the discipline of archaeology): the establishment of the antiquity of humankind. It was a French customs inspector, Jacques Boucher de Perthes (1788–1868), working in the gravel quarries of the Somme river, who in 1841 published convincing evidence for the association there of human artifacts (of chipped stone, what we would today call “hand-axes” or “bifaces”) and the bones of extinct animals. Boucher de Perthes argued that this indicated human existence for a long time before the biblical Flood. His view did not at first win wide acceptance, but in 1859 two leading British scholars, John Evans (1823–1908) and Joseph Prestwich (1812–1896), visited him in France and were persuaded of the validity of his findings.

It was now widely agreed that human origins extended far back into a remote past, so that the biblical notion of the creation of the world just a few thousand years before our own time could no longer be accepted. The possibility of a prehistory of humankind, indeed the *need* for one, was established; the term itself came into general use after the publication of John Lubbock’s (1834–1913) book *Prehistoric Times* in 1865, which went on to become a bestseller.

The Concept of Evolution

These ideas harmonized well with the findings of another great scholar of the 19th century, Charles Darwin (1809–1882), whose fundamental work, *On the Origin of Species*,



1.11 The title page of Darwin's book; his ideas about evolution proved highly influential, not least in archaeology.

published in 1859, established the concept of evolution as the best explanation for the origin and development of all plants and animals. The idea of evolution itself was not new – earlier scholars had suggested that living things must have changed or evolved through the ages. What Darwin demonstrated was *how* this change occurred. The key mechanism was, in Darwin's words, “natural selection,” or the survival of the fittest. In the struggle for existence, environmentally better-adapted individuals of a particular species would survive (or be “naturally selected”) whereas less well-adapted ones would die. The surviving individuals would pass on their advantageous traits by heredity to their offspring and gradually the characteristics of a species would change to such an extent that a new species emerged. This was the process of evolution. Darwin's other great work, *The Descent of Man*, was not published until 1871, but already the implications were clear: that the human species had emerged as part of this same process. The search for human origins in the material record, by the techniques of archaeology, could begin.

The Three Age System

As we have seen, some of these techniques, notably in the field of excavation, were already being developed. So too was another conceptual device which proved very useful for the progress of European prehistory: the Three Age System. As early as 1808, Colt Hoare had recognized

EVOLUTION: DARWIN'S GREAT IDEA

The idea of evolution has been of central significance in the development of archaeological thinking. In the first place it is associated with the name of Charles Darwin, whose *On the Origin of Species* (1859) effectively explained the problem of the origin and development of the plant and animal species, including humankind. It did so by insisting that within a species there is variation (one individual differs from another), that the transmission of physical traits is by heredity alone, and that natural selection determines survival. Darwin certainly had precursors, among whom Thomas Malthus (1766–1834) was influential with his notion of competition through population pressure, and the geologist Charles Lyell with his insistence upon gradual change.

The Impact on Archaeology

Darwin's work had an immediate effect on archaeologists such as Pitt-Rivers, John Evans, and Oscar Montelius, laying the foundations for the study of the typology of artifacts. His influence on social thinkers and anthropologists was even more significant: among them was Karl Marx (Marx was also influenced by the American anthropologist, Lewis Henry Morgan – see p. 29).

The application of the principles of evolution to social organization does not always follow the detailed mechanisms of hereditary transmission which apply to the biologically defined species. For culture can be *learned*, and passed on between generations more widely than between parents and their children. Often, indeed, the term “evolutionary” applied to an argument or an explanation simply means “generalizing.” Here it is important to be aware of the great swing in anthropology at the end of the 19th century away from the



1.12 Charles Darwin caricatured as an ape, published in 1874. The drawing was captioned with a line from William Shakespeare's *Love's Labour's Lost*: “This is the ape of form.”

broad generalizations of Lewis Henry Morgan and Edward Tylor in favor of a much more detailed, descriptive approach, often termed “historical particularism,” and associated with the anthropologist Franz Boas. In the years before and after World War II American anthropologists like Leslie White and Julian Steward were therefore innovators in rejecting Boas and seeking to generalize, to find explanations for long-term change. White was for many years the only protagonist of what may be termed

cultural evolutionism, with books such as *The Evolution of Culture* (1959). White and Steward strongly influenced the New Archaeologists of the 1960s and 1970s, in particular Lewis Binford, Kent Flannery, and D.L. Clarke.

Recent Approaches

Evolutionary thinking has naturally continued to play a major role in the consideration of human origins. Drift, and all it implies, was an important factor in biological evolution in addition to natural selection. It has been appreciated that the process of evolution does not need to be gradual; the concept of “punctuated equilibrium” has come into play. Nor need it be simple: the role of self-organizing systems and catastrophe theory are discussed in Chapter 12. Nor does the debate, dominant in the United States, on “intelligent design” seem helpful: it is no more than an update of traditional arguments for the existence of God, modified to avoid the identity of the designer – it is not science. But increasingly it is realized that Darwinian evolutionary thought has not yet produced mechanisms which adequately describe the processes involved in human cultural development. Richard Dawkins' notion of the “meme,” supposedly a specific and transmissible agent for change based on the concept of the “gene,” has not proved useful in practice. Nor has the application of evolutionary psychology yet solved many problems. There is no suggestion here that the application of Darwinian evolutionary theory is incorrect or inappropriate; in fact there are indications now that computer-aided simulation studies and approaches to diversification (phylogenetic studies) applied to linguistics and material culture as well as to molecular genetics are opening new avenues to its application.



1.13 C.J. Thomsen shows visitors around the Danish National Museum, arranged according to his Three Age System.

a sequence of stone, brass, and iron artifacts within the barrows he excavated, but this was first systematically studied when, in 1836, the Danish scholar C.J. Thomsen (1788–1865) published his guidebook to the National Museum of Copenhagen. This appeared in English in 1848 as the *Guide to Northern Archaeology*. Thomsen proposed that the collections could be divided into those coming from a Stone Age, a Bronze Age, and an Iron Age. This system was soon found useful by scholars throughout Europe. A division in the Stone Age was later established between the Paleolithic (“Old Stone Age”) and the Neolithic (“New Stone Age”). These terms were less applicable to Africa, where bronze was not used south of the Sahara, or to the Americas, where bronze was less important and iron was not used before the European conquest. But it was conceptually significant. The Three Age System established the principle that by studying and classifying prehistoric artifacts one could produce a chronological ordering, and say something of the periods in question. Archaeology was moving beyond mere speculation about the past, becoming instead a discipline involving careful excavation and systematic study of the artifacts unearthed. Although superseded by chronometric dating methods (see Chapter 4), the Three Age System remains one of the fundamental divisions of archaeological materials today.



1.14 The influence of Darwin is evident in these early typologies. (Left) John Evans sought to derive the Celtic British coinage, bottom, from the gold stater of Philip of Macedon, top. (Right) Montelius’ arrangement of Iron Age fibulae (cloak pins), showing their evolution.

These three great conceptual advances – the *antiquity of humankind*, Darwin’s *principle of evolution*, and the *Three Age System* – at last offered a framework for studying the past, and for asking intelligent questions about it. Darwin’s ideas were influential also in another way. They suggested that human cultures might have evolved in a manner analogous to plant and animal species. Soon after 1859, British scholars such as General Pitt-Rivers (whom we shall meet again) and John Evans were devising schemes for the evolution of artifact forms which gave rise to the method of “typology” – the arrangement of artifacts in chronological or developmental sequence – later greatly elaborated by the Swedish scholar Oscar Montelius (1843–1921).

Ethnography and Archaeology

Another important strand in the thought of the time was the realization that the study by ethnographers of living communities in different parts of the world could be a useful starting point for archaeologists seeking to understand something of the lifestyles of their own early native inhabitants who clearly had comparably simple tools and crafts. For example, contact with indigenous communities in North America provided antiquarians and historians with models for tattooed images of Celts and Britons, and

scholars such as Daniel Wilson and John Lubbock made systematic use of such an ethnographic approach.

And at the same time ethnographers and anthropologists were themselves producing schemes of human progress. Strongly influenced by Darwin's ideas about evolution, the British anthropologist Edward Tylor (1832–1917), and his American counterpart Lewis Henry Morgan (1818–1881), both published important works in the 1870s arguing that human societies had evolved from a state of *savagery* (primitive hunting) through *barbarism* (simple farming) to *civilization* (the highest form of society). Morgan's book, *Ancient Society* (1877), was partly based on his great knowledge of living Native Americans. His ideas – particularly the notion that people had once lived in a state of primitive communism, sharing resources equally – strongly influenced Karl Marx and Friedrich Engels, who drew on them in their writings about pre-capitalist societies, thus influencing many later Marxist archaeologists.

Discovering the Early Civilizations

By the 1880s, then, many of the ideas underlying modern archaeology had been developed. But these ideas themselves took shape against a background of major 19th-century discoveries of ancient civilizations in the Old World and the New.

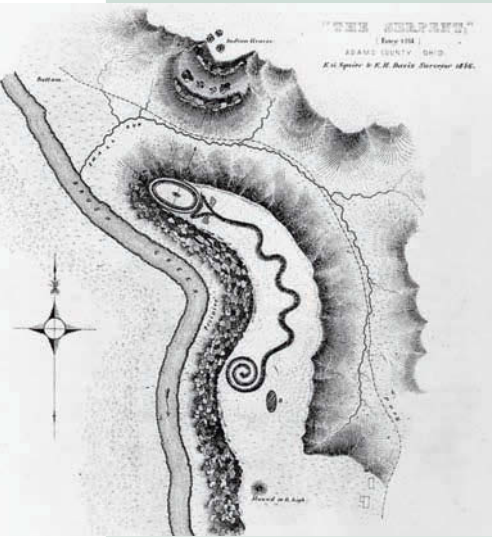
The splendors of ancient Egyptian civilization had already been brought to the attention of an avid public after Napoleon's military expedition of 1798–1800. It was the discovery by one of his soldiers of the Rosetta Stone that eventually provided the key to understanding Egyptian hieroglyphic writing. Inscribed on the stone are identical texts written in both Egyptian and Greek scripts. The Frenchman Jean-François Champollion (1790–1832) used this bilingual inscription to decipher the hieroglyphs in 1822, after 14 years' work. A similar piece of brilliant scholarly detection helped unlock the secrets of cuneiform writing, the script used for many languages in ancient Mesopotamia. In the 1840s the French and British, under Paul Emile Botta (1802–1870) and Austen Henry Layard (1817–1894) respectively, had vied with one another using crude "excavations" to see which side could obtain from the Mesopotamian ruins the "largest number of works of art with the least possible outlay of time and money." Layard became famous for his discoveries, which included huge Assyrian sculptures of winged bulls and a great library of cuneiform tablets from the site of Kuyunjik. But it was only the final decipherment of cuneiform by Henry Rawlinson (1810–1895) in the 1850s, building on the work of others, that proved that Kuyunjik was biblical Nineveh. Rawlinson spent 20 years studying a 6th-century BC trilingual inscription located on an inaccessible cliff-face between Baghdad and Tehran before cracking the cuneiform code.

Egypt and the Near East also held a fascination for the American lawyer and diplomat John Lloyd Stephens (1805–1852), but it was in the New World that he was to make his name. His travels in Yucatan, Mexico, with the English artist Frederick Catherwood (1799–1854), and the superbly illustrated books they produced together in the early 1840s, revealed for the first time to an enthusiastic public the ruined cities of the ancient Maya. Unlike contemporary researchers in North America, who continued to argue for a vanished white race of Moundbuilders as the architects of the earthworks there (see box overleaf), Stephens rightly believed that the Maya monuments were "the creation of the same races who inhabited the country at the time of the Spanish conquest." Stephens also noted

1.15 Frederick Catherwood's accurate, if somewhat romantic, drawing of a stela at Copan; at the time of his visit to the site in 1840 Maya glyphs had not yet been deciphered.



NORTH AMERICAN ARCHAEOLOGICAL PIONEERS



1.16 Squier and Davis's 1846 plan of Serpent Mound, Ohio (see ill. 3.14).

Two themes dominate the study of North American archaeology in the 19th century: the enduring belief in a vanished race of Moundbuilders; and the search for “glacial man” – the idea, sparked off by Boucher de Perthes’ Somme river discoveries in mid-century, that human fossils and Stone Age tools would be found in the Americas in association with extinct animals, as they had been in Europe. One way to gain insight into these issues is to view them through the work of some of the main protagonists.

Caleb Atwater (1778–1867)

The newly formed American Antiquarian Society’s first Transactions, *Archaeologia Americana* (1820), contained a paper by Atwater, a local postmaster, on burial mounds and earthworks around Circleville, Ohio. His survey work is valuable since the mounds he studied were already disappearing fast, and are now gone. But he took little interest in their contents, and his interpretations were idiosyncratic. Atwater divided the mounds into three periods – modern European, modern Native American, and those built by the original Moundbuilder people whom he believed to have been Hindus from India who later moved on to Mexico.

Ephraim Squier (1821–1888)

Squier was an Ohio newspaperman who later became a diplomat. He is best known for his work on the prehistoric mounds with Edwin Davis (1811–1888), an Ohio physician. Between 1845 and 1847 they excavated over 200 mounds, and accurately surveyed many other earthworks. Their landmark volume of 1848, *Ancient Monuments of the Mississippi Valley*, was the first publication of the newly founded Smithsonian Institution, and is still useful. It recorded hundreds of mounds, including many being destroyed as settlers moved westward, gave cross-sections and plans, and adopted a simple

classification system which inferred function in a general way (burial places, building platforms, effigies, fortifications/defense, etc.).

Like most of their contemporaries, Squier and Davis considered the mounds to be beyond the capabilities of any Native Americans, thought of as “hunters averse to labor,” and so they maintained the myth of the intrusive race of Moundbuilders.

Samuel Haven (1806–1881)

As Librarian of the American Antiquarian Society, Haven built up an encyclopedic knowledge of publications on American archaeology. From this wealth of reading he produced a remarkable synthesis in 1856, *The Archaeology of the United States*, published by the Smithsonian Institution, which is considered a foundation stone of modern American archaeology.

In it, Haven argued persuasively that the Native Americans were of great antiquity, and, through cranial and other physical characteristics, he pointed to their probable links with Asiatic races. Disagreeing strongly with Atwater and Squier, he concluded that the mysterious mounds had been built by the ancestors of living Native Americans. The controversy continued to rage, but Haven’s rigorous approach paved the way for the resolution of the issue by John Wesley Powell and Cyrus Thomas.



1.17 Squier



1.18 Haven



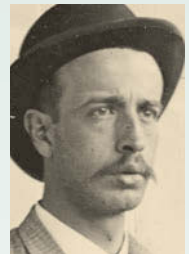
1.19 Powell



1.20 Thomas



1.21 Putnam



1.22 Holmes