

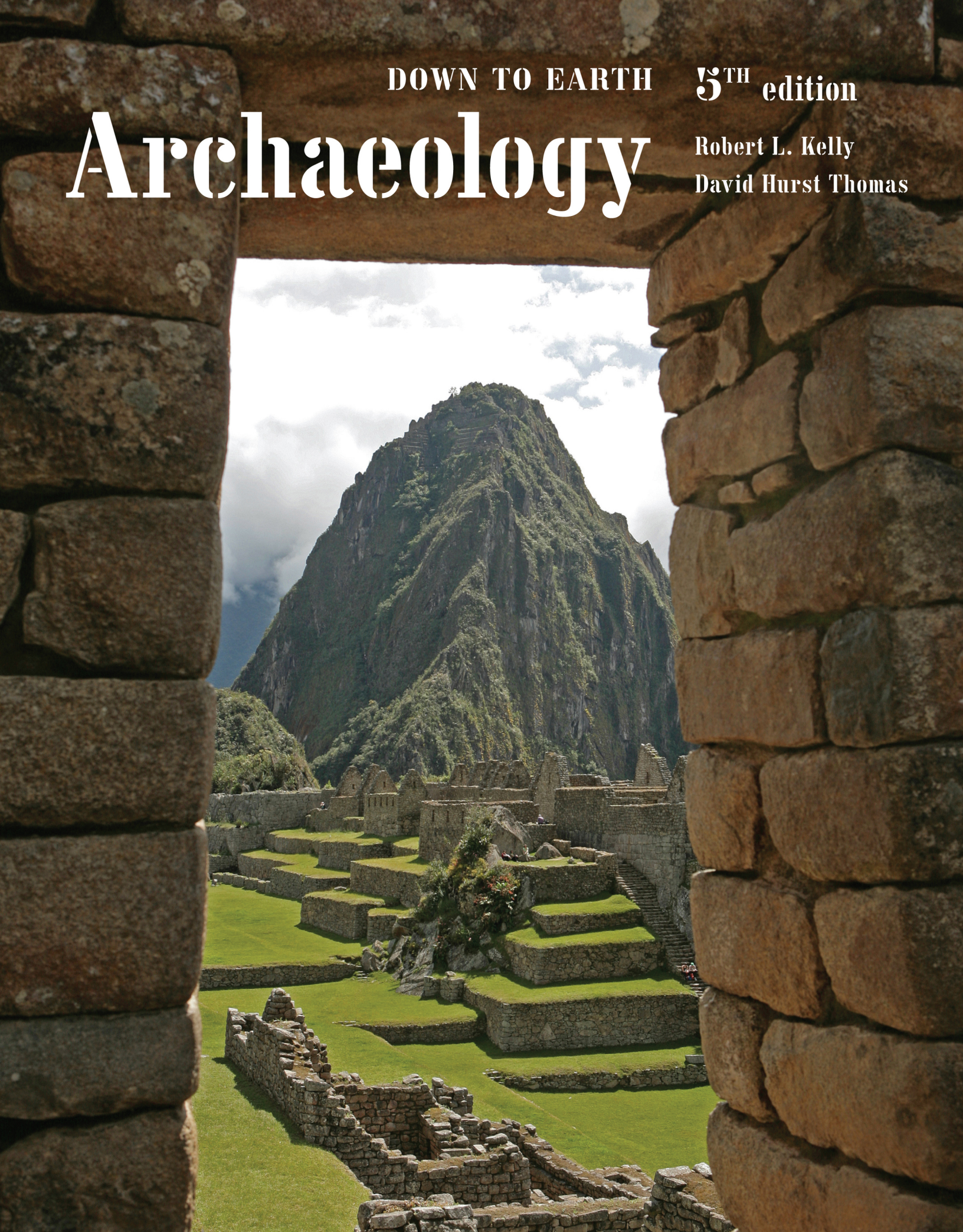
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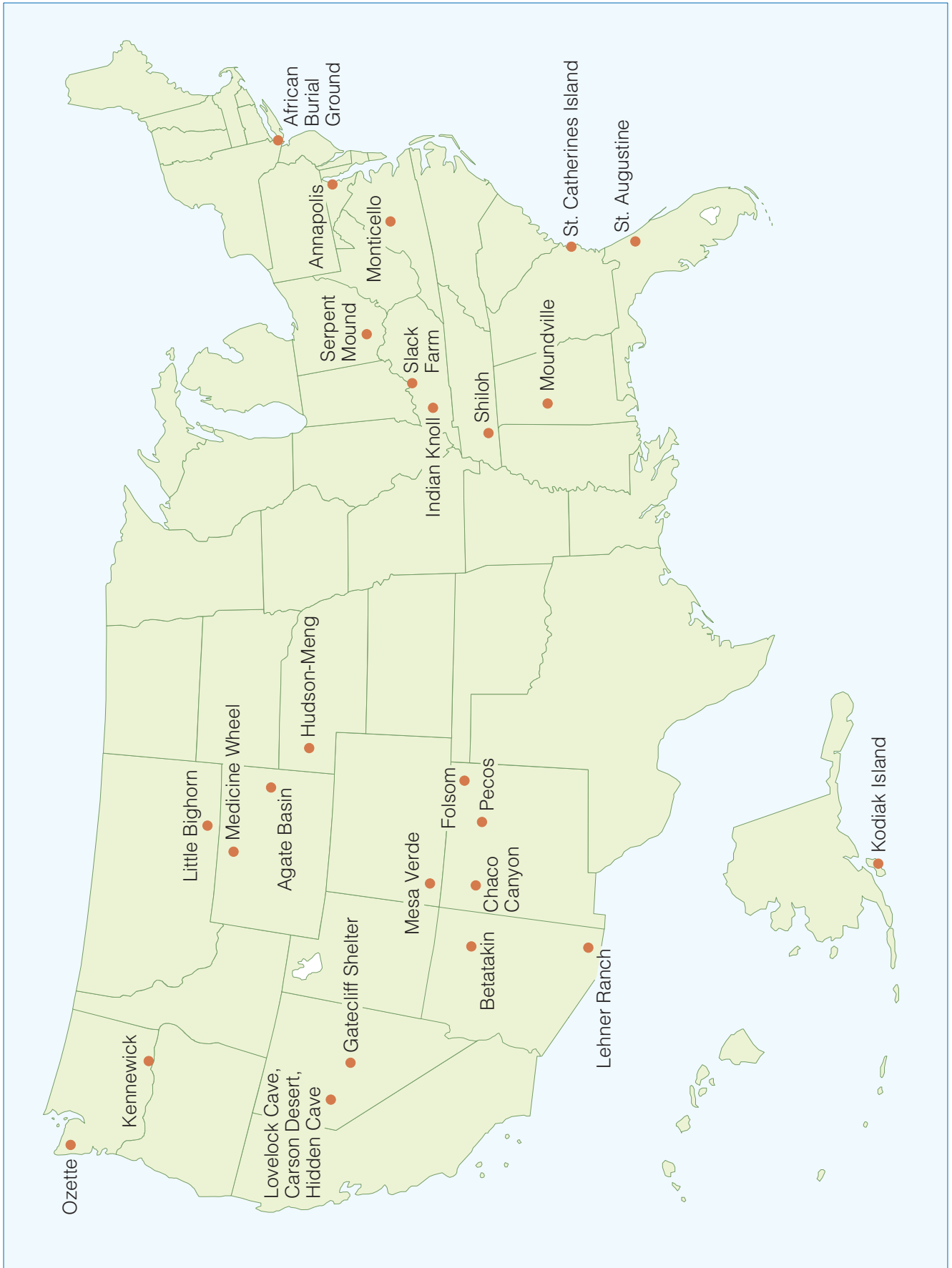
5TH edition

Archaeology

Robert L. Kelly

David Hurst Thomas





Archaeology



Archaeology

DOWN TO EARTH *Fifth Edition*

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University of Wyoming

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American Museum of Natural History



Australia • Brazil • Japan • Korea • Mexico • Singapore • Spain • United Kingdom • United States

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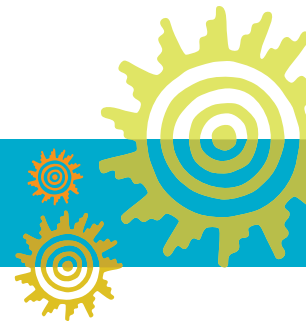
For Matt and Dycus, for their love of big piles of dirt.

—R.L.K.

For LSAP(T), colleague, companion, advocate, and mother of my son. And, most significantly, still my very best friend.

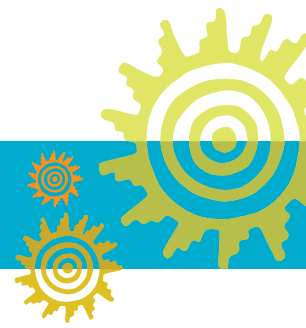
—D.H.T.

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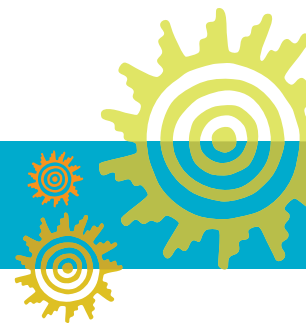
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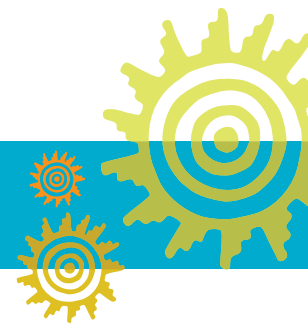
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Preface



Archaeology: Down to Earth, fifth edition, is a user-friendly introduction to archaeology: what it is, who does it, and why we should care about it. This text addresses archaeological methods and theory, yet it departs in some important ways from the standard introductory textbook.

Students tell us that they sometimes don't bother reading the introductory textbooks they've purchased—whether the books are about archaeology, chemistry, or whatever. We've heard several reasons for this paradox: The instructor covers exactly the same material, using the same examples as the text—so why bother reading what you can get condensed in a lecture? Or their textbooks are deadly dull, written in arcane academic jargon that no one can enjoy reading. Still others tell us that they take an archaeology course just because it sounds like a fun way to fulfill a distribution requirement—but the text actually has nothing to say to them.

We want students to know that we've heard them. Accordingly, we picked many of the book's topics with these students in mind.

As it turns out, these are the very subjects that budding career archaeologists should know. We don't shy away from controversial subjects—in fact, the text begins with one in its introduction—that touch upon sensitive issues that influence both professional archaeologists and the public. Many archaeology texts avoid these sensitive issues, such as the excavation of the dead or what archaeology has to say about climate change. But we think that these are precisely the issues that matter most to students and to instructors, so we've not backed away from them.

In fact, instructors tell us they have used previous editions of this text precisely because their students will actually *read* it.

Personal Examples, High-Interest Topics

In most archaeology texts, the approach is fairly encyclopedic and dispassionate. But we cannot do it that way. To be sure, modern archaeology is a specialized and complicated academic discipline, with plenty of concepts, several bodies of theory, and a huge array of analytical methods—all things we'd like students to learn about.

But we think that the best way for students to begin to understand archaeology (or any subject, for that matter) is through a few well-chosen, extended, personalized examples—stories that show how archaeologists have worked through actual problems in the field and in the lab. So that's the approach we take here.

Writing a textbook is not easy. We must provide a solid foundation for students who intend to become professional archaeologists. This requires a thorough review of the discipline, including all its major concepts and jargon. But we must also write for the many students who will *not* become professional archaeologists.

About This Edition

The first edition of *Archaeology: Down to Earth* was published back in 1991; succeeding editions have retained the coverage and personalized writing style that users praised, while also reflecting up-to-the-minute changes in the discipline. By the time the third edition rolled around, David Hurst Thomas decided one person simply couldn't cover the field adequately anymore, and he invited Robert Kelly to join in the project. These two first met more than 30 years ago, when Thomas was excavating Gatecliff Shelter in Nevada and Kelly was a gangly, enthusiastic high school kid. They worked together for several years, after which their careers diverged. When the time came to expand the authorship, Thomas turned to Kelly as the obvious choice for a coauthor. This partnership continues with the present fifth edition of *Archaeology: Down to Earth*. We've further streamlined this edition, keeping the same number of chapters, but removing some material from a few that seemed too long. We've continued to update the examples, especially in the areas of remote sensing and genetic analyses, and the photos and graphics for a better visual presentation that enables students to see more clearly the key points of a concept or example. We have also added several new features, upon which the following elaborates.

Aids to Learning, Old and New

What Does It Mean to Me? Throughout the text, we address issues about archaeology that should resonate with students, such as buying artifacts from online

auction houses, climate change, human alteration of the environment, and the excavation of human burials. We think that students will find these topics thought provoking (and these sidebars could easily form the basis of writing assignments or group discussions).

Looking Closer

A popular feature from earlier editions, these sidebars cover ancillary topics in each chapter. In addition, some seek to be helpful to budding archaeologists, suggesting equipment students will need for survey and excavation, or what courses they might take. Others look at the lighter side of archaeology, such as how sites get their names, or give personal glimpses into fieldwork—what it's like to do survey or ethnoarchaeology.

In His/Her Own Words In several places, we found that others told their own first-person stories better than we could, so we've included their words to help personalize the text.

Profile of an Archaeologist We've kept these sidebars to emphasize the diversity of today's working archaeologists and to illustrate the varied ways in which archaeologists make a living.

These features combine with the following learning aids to help students master this complex, fascinating discipline:

- ♦ New student learning objectives provide students with the material they are expected to master after reading each chapter.
- ♦ Each chapter has a running glossary (with glossary terms defined at the bottom of the page on which the term is introduced), plus the text has an alphabetized Glossary at the end.
- ♦ Each chapter's preview contains several questions that students should be thinking about while reading.
- ♦ At the end of each chapter, we've provided brief answers to those questions to help students review the chapter's key points.
- ♦ Each chapter contains Rapid Reviews, mid-chapter bulleted or tabular features that summarize especially important key concepts.
- ♦ At the end of chapters, there is a list of media resources pertinent to each chapter.

A Distinctive Approach

The following strategies all contribute to a fuller, more up-to-date exploration of the field:

Discussions of Archaeological Objects in Context

You'll notice that we eschew an encyclopedic approach, which tends to encourage students to simply memorize a laundry list of techniques without context. Instead, we've embedded and contextualized discussions of things like stone tools and ceramics in substantive examples. These presentations ensure that students learn about these basic archaeological objects in ways that carry significance for

them—so that they see why, for instance, it might be useful to know where a sherd's temper comes from.

Balanced Coverage: Depth, Breadth, Theory

The text is not encyclopedic, but it is a comprehensive review of the field. Given the background knowledge that a first- or second-year college student brings to an introductory course, this text strikes a balance among the different directions that archaeologists take. This text is thoroughly readable, not at all dumbed down, and places the thought process of archaeology within a wider context. Students learn about science and challenges to it, the Enlightenment, and evolutionary thought.

Expanded Geographic Coverage As before, many of the examples used in this text are drawn from the archaeology of western North America. Between the two of us, we've spent nearly eight decades working there and, frankly, it's what we know best. But we've continued the expanded geographic coverage of the fourth edition, drawing upon work in the eastern United States, Central and South America, Egypt and the Near East, Madagascar, France, Australia, Micronesia, and other places. Although the text is focused, it is not provincial—and should inspire classroom discussions of research projects from around the world.

All in all, we think you'll find this text is one that both instructors and students will appreciate.

Organization of the Text

We constructed this text so that various ideas build upon one another. We know that each archaeologist teaches his or her introductory course differently, but you should keep in mind that many chapters cross-reference material discussed in other chapters. We note each instance within the text.

The text begins with an introduction that focuses on the legalities that surround the Kennewick Man case—a purposeful selection because it shows both the potential of what archaeologists can learn about the past and the ethical issues that confront archaeology in doing so.

Chapter 1 addresses the history of archaeology, with an emphasis on several individual archaeologists who have defined the field. In Chapter 2, we relate archaeology to the rest of anthropology and wrestle with the diversity of theoretical paradigms evident in contemporary archaeology. We also discuss the intellectual process of archaeology in terms of low-, middle-, and high-level theory. This somewhat simplified presentation provides an easy entry into the diversity of contemporary archaeology. And rather than come down on the side of processual or postprocessual archaeology, we take a centrist position that we believe characterizes the majority of working archaeologists today.

Chapters 3 and 4 provide the nuts and bolts of archaeology, explaining how archaeologists go about doing surface survey, using remote sensing equipment,

and excavating sites. In these chapters, we try to give students some sense of how much fun fieldwork can be. We also introduce the field of geoarchaeology, emphasizing formation processes, but also covering archaeological stratigraphy, showing students how a site's stratigraphy can be "read" to provide a context for the artifacts contained there. Chapter 5 covers dating methods used in prehistoric and historic archaeology. The range of dating technology seems to increase annually, and we had to make some tough choices about what to include. The major purpose of this chapter is not to write an encyclopedia of available methods, but instead to provide enough information about key techniques so that students can relate dating technology to ancient human behavior. Chapter 6 discusses various archaeological concepts—types, cultures, and phases—that help construct large-scale patterns in space and time. Our goal is to help students see the world as an archaeologist views it, as an ever-changing spatial and temporal mosaic of material culture.

Chapters 7 through 11 consider how archaeologists go about breathing some anthropological life into this spatial and temporal mosaic—how they actually use material remains to infer something about past human behavior. Chapter 7 is about middle-range theory—how it differs from standard analogy and how archaeologists construct it through taphonomic, experimental, and ethnoarchaeological research. Our goal here is to convince students that archaeologists don't just make up stuff, but instead give plenty of thought to how they infer ancient behavior from material objects and their contexts. Chapter 8 recounts how archaeologists reconstruct diet from faunal and floral remains and how they infer hunting strategies and symbolic meanings attributed to the natural world. In Chapter 9, we consider what we can learn—about diet, disease, and workload—from human skeletal remains; this chapter also explores the field of molecular archaeology. Chapter 10 shows how archaeologists can reconstruct social and political systems of the past and looks at gender, kinship, and social hierarchies. Chapter 11 presents how archaeologists address the symbolic meanings once attached to the material remains; here, we look at the nature of symbols and what archaeologists can realistically hope to learn about them.

Chapter 12 explores historical archaeology, especially those aspects that set the field apart from prehistoric archaeology—the ability to uncover "hidden history," the ability to provide a near-forensic analysis of historical events, and the ability to present alternative perspectives on U.S. history. Finally, Chapter 13 examines the legal structure of modern archaeology, emphasizing the field of cultural resource management (how it came to be and the critical role it plays in archaeology today). This chapter also covers the subjects of reburial and repatriation in some detail, and it looks at the future of archaeology, especially the ways in which archaeologists apply their knowledge to contemporary problems. We conclude by discussing the increased involvement of indigenous peoples in the

archaeology of themselves and asking whether we are on the brink of another revolution—one that might produce a newer "new" archaeology.

Supplemental Materials

This text also comes with a strong supplements program to help instructors use their class time most effectively and to aid students in mastering the material. (Each item is followed by its ISBN.)

Online Instructor's Manual with Test Bank (9781133950936)

The instructor's manual offers chapter outlines, learning objectives, key terms and concepts, and lecture suggestions. The test bank consists of 40 to 60 test questions per chapter, including multiple-choice, true/false, and essay questions.

Doing Fieldwork: Archaeological Demonstrations CD-ROM, Version 2.0 (9780495604242)

Granted that students can learn field techniques only from actually participating, this CD shows professional archaeologists involved in various digs (many of which are referenced in the text), illustrates field techniques, gives students perspective about what they're learning, reinforces concepts and techniques through live examples, and encourages students to participate in a dig themselves. The presentation is organized by the main techniques that one uses on a dig. Users are taken through each step automatically or can navigate to any point via the navigation bar. Students review illustrations and video clips of each technique. After reviewing a step in the dig process, students are taken to "Check Points," which are concept questions about each step of the dig. Students can see the answers, receive their score, and e-mail the score to the instructor.

PowerLecture™ with ExamView® for Archaeology: Down to Earth, fifth edition (9781133950929)

A complete all-in-one reference for instructors, the PowerLecture CD contains Microsoft® PowerPoint® slides of images from the text, zoomable art, image library, PowerPoint lecture slides that outline the main points of each chapter, Microsoft® Word files of the Test Bank and Instructor's Manual, and ExamView testing software that allows instructors to create, deliver, and customize tests and study guides (both print and online) in minutes.

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Keeping in Touch with Your Authors

We see this textbook as an opportunity to become more available to both instructors and students. With e-mail, we can all have casual conversations with people around the globe, in more or less real time. We want to know what you think about this text and about archaeology—what you like and what you don't care for—so we can improve future editions. We encourage you to write us at the following e-mail addresses. Provided that we're not off on some remote dig somewhere, we'll get back to you right away. Drop us a line—we'd enjoy hearing from you.

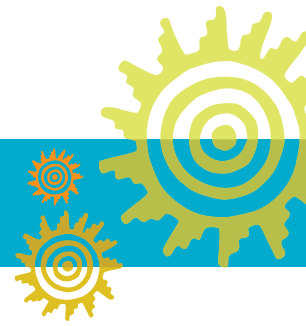
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A Note about Human Remains

In several instances, this book discusses important new frontiers of bioarchaeological research. But we also recognize the need to deal with human remains in a respectful and sensitive manner. Several Native American elders have requested that we refrain from publishing photographs or other depictions of American Indian human remains. Although we know that not all Native Americans feel this way, no images of Native American skeletal remains appear in this book. Should other groups express similar concerns, their requests will be addressed in succeeding editions as appropriate.

About the Authors

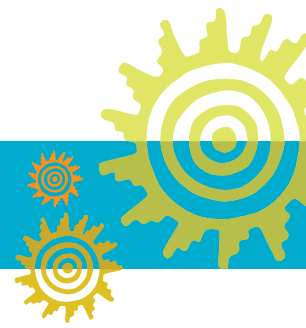


Robert Kelly began collecting arrowheads in farmers' fields when he was 10 years old and has participated in archaeological research since 1973, when he was a high school sophomore. He has worked on excavations in North and South America and conducted ethnographic research in Madagascar. He is currently conducting research into the paleoindian archaeology of Wyoming's Bighorn Mountains. A former president of the Society for American Archaeology and a past secretary of the Archaeology Division of the American Anthropological Association, Kelly has published more than 100 articles and books, including the 1996 Choice's Outstanding Academic Book *The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways*. He has been a professor of anthropology at the University of Wyoming since 1997.



David Thomas has served since 1972 as curator of anthropology at the American Museum of Natural History in New York City. A specialist in Native American archaeology, Thomas discovered both Gatecliff Shelter (Nevada) and the lost sixteenth-/seventeenth-century Franciscan mission Santa Catalina de Guale on St. Catherines Island, Georgia. Since 1998, he has led the excavation of Mission San Marcos near Santa Fe, New Mexico. A founding trustee of the National Museum of the American Indian at the Smithsonian since 1989, he has published extensively, including 100 papers and 30 books—most recently, the best-selling *Skull Wars: Kennewick Man, Archaeology, and the Battle for Native American Identity*. As an archaeologist, Thomas likes “old stuff,” including his 1961 Corvette, his 120-year-old house, and the Oakland Raiders.

Introduction



July 1996: The two college students never intended to make a federal case out of the day's fun. They never meant to rock the ethical foundations of U.S. archaeology, either. All they wanted was to see hydroplane boat races for free.

The month of July in the city of Kennewick (Washington) is a series of festivals topped off by hydroplane races on the Columbia River. To avoid paying admission to the races, the two young men snuck through a brushy area of riverbank where they could get a good view, even if it meant getting wet. Trudging along the river's edge, they spied a smooth white object. One of them picked it up and jokingly pronounced it a skull. Imagine his surprise when he saw two dark eye sockets staring back at him. It *was* a skull.

After the races, the students reported their find to police, who called in the coroner to see if the remains were those of a murder victim. The coroner eventually called in archaeologist James Chatters. Although there was no evidence of a burial pit, the skull's near-pristine condition suggested that it had eroded from the riverside only days earlier; in fact, Chatters eventually found much of the skeleton in the shallow water.

Who Was “Kennewick Man”?

The analyses that followed showed that the individual was male and roughly 45 years old when he died. He stood about 5 feet 9 inches tall. Laboratory analysis showed that two-thirds of his protein probably came from fish and that he ate limited amounts of starchy foods. In his time, the man might have been considered healthy, but today we would call him a “survivor.” He suffered from severe disease or malnutrition when he was about 5 years old. He had minor arthritis in his knees, elbows, lower back, and neck from a lifetime of daily, intense physical activity. As a young adult, he had damaged the nerves to his left arm. He'd also suffered a serious chest injury, a blow to the head, and an injury to his right arm and shoulder in his youth. And, as if that weren't enough, he had a stone spear point embedded in his hip. He had survived this injury, too.

Chatters knew that spear points like the one in the skeleton's hip were manufactured thousands of years ago, but he was still surprised when a radiocarbon date indicated that

the man had died 9400 years ago. “Kennewick Man” was one of the oldest human skeletons ever found in the Americas.

Even more intriguing was that the skull did not look like other Native American skulls; some people even thought it might be European! It's not, but that suggestion titillated the media, which created sensationalist stories of how Europeans, rather than the ancestors of American Indians, first colonized the Americas. One group, the Asatru Folk Assembly, which says it practices an ancient Celtic religion, even claimed that Kennewick Man was their ancestor.

Who Controls Human Remains?

Many laws govern archaeology in the United States (we'll examine some of these in Chapter 13). One such law, the 1990 Native American Graves Protection and Repatriation Act (NAGPRA), provides for the repatriation of Native American human remains to their culturally affiliated tribes. Several tribes from the Kennewick area claimed the new find to be their ancestor and requested that the remains be turned over to them under this law. Kennewick Man had been discovered on lands administered by the U.S. Army Corps of Engineers, and that agency quickly agreed to halt all scientific studies and return the skeleton to the tribes.

But a group of eight archaeologists and biological anthropologists filed a lawsuit, arguing that handing over the remains would actually violate NAGPRA—because, they argued, the skeleton was not affiliated with the modern tribes, it might not be Native American, and doing so would violate the scientists' First Amendment rights.

Eventually, the Ninth District Circuit Court heard the case, which presented the judge with uncharted legal waters: Was this 9400-year-old man a Native American or not? And if so, was he culturally affiliated with the modern tribes who claimed him as an ancestor? These are tough questions, both legally and scientifically. And the answers could potentially forever change the direction of American archaeology.

Five years after the boys found the skull, the judge ruled that Kennewick Man was not Native American. And even if he were, the judge ruled, the bones could not be culturally affiliated with any modern tribe. In February 2004, the

appeals court upheld the district court's ruling: Kennewick, the courts said, is not Native American.

What Does It Mean to You?

The Kennewick decision shows two facets of archaeology. It shows how much archaeologists can reconstruct about the past from remarkably limited material remains. We know what Kennewick Man ate, when he died, how old he was, what his life was like. But Kennewick Man also shows the difficult ethical issues that confront archaeology: What gives archaeologists the right to study the dead? Who owns the past, anyway? And who gets to decide? This is also what archaeologists do: They make difficult ethical and moral decisions about the past (and the present).

These sorts of questions should matter to you. Archaeologists often say that we study the past to help chart the future. But Kennewick Man points to a dilemma buried in this aphorism. By claiming the skeletal remains as their own, the Indian tribes asserted that scientists should conduct no studies. The tribes believed that they already knew their past and resented attempts by non-Indians to probe the remains of their ancestors. Although

not all Native Americans agree with this position, many do, and this dispute underscores the important point that archaeology is not just about the dead; it is also about the living—you. How can we “study the past to create a better tomorrow” if scientific study is curtailed? Yet how can we pursue this laudable goal if the very act of conducting research offends the living descendants of the ancient people being studied? Archaeologists have to deal with these difficult ethical issues.

We don't expect every reader of this book to become a professional archaeologist. Many of you are probably taking this course to fulfill a distributional requirement, and because archaeology interests you. But throughout this text, we will demonstrate that *the past matters to you*. We will do this through text boxes labeled, appropriately enough, “What Does It Mean to Me?” Sometimes these ask you to confront ethical issues, such as the excavation of burials or the buying and selling of artifacts. And sometimes they show you how knowledge of the past is crucial to planning for the future. After we learn something more about the practice of archaeology, we will return to the case of Kennewick Man to explore its implications for the future of archaeology.

Meet Some Real Archaeologists



Christie's Images/CORBIS

Learning Objectives

After reading this chapter, you should be able to answer these questions:

- What makes an archaeologist an archaeologist?
- Why is the study of the past controversial?
- How was the rise of archaeology connected to the discovery of humanity's "deep" antiquity?
- Who were the antiquarians, and why include them in a history of archaeology?
- What trends have characterized archaeology over the last century?

"Excavation of the Sphinx" by Ernst Koerner, 1883. The Sphinx was built about 2500 BC and is the largest monolith statue in the world. It was not fully excavated until 1936.

Preview

THIS BOOK IS ABOUT what archaeologists want to learn, how they go about learning it, and what they do with that knowledge. These tasks require archaeologists to piece together a picture of the past from scraps of bone, rock, pottery, architecture, and other remains that are hundreds, thousands, or tens of thousands of years old. To further complicate this already difficult process, the very nature of archaeology carries with it some serious ethical dilemmas.

In this book, we will also look at some of the different perspectives that characterize today's archaeology. Sometimes these approaches coexist; sometimes they clash. As we discuss these various archaeological perspectives, you should keep a couple of things in mind: First, no archaeologist fits perfectly into any of these named categories, and second, there is more than one way to do good archaeology.

Introduction

Who is an archaeologist? Is it Indiana Jones, fighting Nazis and grabbing gold statues from curse-laden catacombs? Is it Lara Croft, battling all manner of beasts to retrieve some ancient treasure that holds the secret of time? Sydney Fox on *Relic Hunter*? Or was it Josh Bernstein or Hunter Ellis, on the History Channel program *Digging for the Truth*?

Of course, these are not real archaeologists. The media play up the physically thrilling side of archaeology, the mystery of discovery, and the potential threats. Archaeology is indeed exciting, even if we don't do our research with whips and guns, have a camera crew trailing behind us, or battle ancient beasts. Closer to the mark is *Time Team America*, the recent science reality series on PBS that sends archaeologists on a race against time to excavate historic sites around the nation. But even with urgency, we certainly don't just grab the good stuff and dash out of the temple. We work with notebooks and pencils, measuring tapes, calipers, graph paper, and some high-tech tools like laser transits and fluxgate magnetometers (more on those in later chapters). We document everything we find—*everything*—with a precision that we admit is often mind-numbing. But the results can be equally mind-blowing. We can extract blood from stone tools. We can determine the age of remains that are millions of years old. We can reconstruct ancient social and political organizations. We can tell if a person ate much plant food or meat based on their skeletal remains. This kind of work takes years of careful, precise analysis. But from it comes an understanding of a realm of humanity that otherwise would remain lost to us, the realm of the past. Although archaeological field research is exciting, the knowledge that comes from fieldwork provides the reason we do archaeology.

We think that the best way to introduce you to archaeology is through its history. Archaeology is a young field that has changed dramatically over the past century. As a relatively young discipline, archaeology is

still experiencing some growing pains. What does not change, however, is that archaeology is about ancient objects—the **artifacts** we retrieve from sites are the primary source of our information. To borrow a phrase from archaeologist-philosopher Alison Wylie (University of Washington), archaeologists “think from things.” The history of archaeology reflects a changing relationship to those things: from a fascination with objects themselves, to a concern with objects' ages, to what they tell us about the lives of ancient peoples, to a recognition of their power and ethical treatment.

Who Was the First Archaeologist?

Many historians ascribe the honor of “first archaeologist” to Nabonidus (who died in 538 BC), the last king of the neo-Babylonian Empire (see “Looking Closer: AD/BC/BP . . . Archaeology's Alphabet Soup”). A pious man, Nabonidus's zealous worship of his gods compelled him to rebuild the ruined temples of ancient Babylon and to search among their foundations for the inscriptions of earlier kings. We are indebted to the research of Nabonidus's scribes and the excavations by his subjects for much of our modern picture of the Babylonian Empire. Though nobody would call Nabonidus an “archaeologist” in the modern sense, he remains an important figure for one simple reason: *Nabonidus looked to the physical residues of antiquity—things—to answer questions about the past.* This may seem like a simple step, but it contrasted sharply with the beliefs of his contemporaries, who regarded tradition, legend, and myth as the only admissible clues to the past.

For archaeology to become an intellectual field, scholars first had to grasp the idea of “the past.” Through the Middle Ages, Europeans recognized only a remote past, which they reified through myth and legend. This remote past was accessed largely through the Bible, as well as Roman and Greek texts. During the Renaissance (circa AD 1300 to 1700), however, scholars such as Francesco Petrarch



AD/BC/BP . . . Archaeology's Alphabet Soup

In anything written by archaeologists, you'll encounter a blizzard of acronyms that refer to age. Let's clear the air with some concise definitions of the most common abbreviations:

BC ("before Christ"): For instance, 3200 BC; note that the letters follow the date.

AD ("anno Domini"): Meaning "in the year of the Lord," indicates a year that falls within the Christian era (that is, after the birth of Christ). Given the English translation of the phrase, archaeologists place the "AD"

before the numerical age—we say the Norman Invasion occurred in "AD 1066" rather than "1066 AD." The earliest AD date is AD 1; there is no AD 0 because this year is denoted by 0 BC and double numbering is not allowed.

CE ("Common Era"): Basically the same as AD, except that it is intended to avoid religious connotations or privilege.

BCE ("Before Common Era"): The same as BC, but as with CE, it avoids the religious connotation.

BP ("Before Present"): Most archaeologists feel more comfortable avoiding the AD/BC split altogether, substituting a single "before present" age estimate (with AD 1950 arbitrarily selected as the zero point; we'll explain why in Chapter 6). By this convention, an artifact from, say, the Hastings battlefield would be dated 884 bp (AD 1950 – AD 1066 = 884 BP). We will primarily use this system in the text, or we will use the more colloquial "years ago."

(1304–1374) saw a stark difference between the present and the past. To Petrarch, the "father of humanism," the remote past was an ideal of perfection, and he looked to antiquity for moral philosophy. Of course, to imitate classical antiquity, one must first study it. This led to a rediscovery of the past by those in the Western European intellectual tradition, and Petrarch and his contemporaries began to collect ancient texts and to make systematic observations on archaeological monuments.

It remained for the fifteenth-century Italian scholar Ciriaco de' Pizzicolti (1391–1455) to establish the modern discipline of archaeology. Upon translating the Latin inscription on the triumphal arch of Trajan in Ancona, Italy, he was inspired to devote the remainder of his life to studying ancient monuments. His travels took him into Syria and Egypt, throughout the islands of the Aegean, and to Athens. When asked his business, Ciriaco is said to have replied, "Restoring the dead to life"—which today remains a fair definition of the everyday business of archaeology.

Archaeology Can Be Controversial

But not everyone wants the dead to be restored. Ever since Petrarch looked to ancient texts to provide moral philosophy (and probably even before), people have used the past to justify their actions in the present. For example, in 1572, Matthew Parker, Queen Elizabeth's archbishop of Canterbury, formed the Society (or College) of Antiquaries, devoted to the study of Anglo-Saxon law and writings. At the same time, Parliament upheld English Common Law, said to have been granted by William the Conqueror upon his conquest of England in

1066. English Common Law was based on the laws and customs of the Anglo-Saxons. Unfortunately, British kings had persistently claimed that their authority to rule—the "divine right of kings"—originated in their descent from the legendary King Arthur (who probably lived about AD 500, but no one really knows). King James therefore asserted that Common Law did not apply to the Anglican Church or the king because it originated with William rather than with Arthur. But the Society of Antiquaries used ancient documents to demonstrate that William the Conqueror did not actually create English Common Law—instead he had simply allowed it to stand and to be fused with his own ideas of justice. This was a problem for King James, for in English Common Law people had the right to rebel against an unlawful and unjust king. Seeing that meddling with the past had the potential for starting riots in the streets, King James ordered the dissolution of the Society of Antiquaries in 1614. The study of the past is often controversial.

But the die was cast, and the Society for Antiquaries (re-formed in 1707) was only the first of many British scholarly associations interested in the relevance of the past to the present. Of course, many private collectors were concerned only with filling their curio cabinets with *objets d'art*, but the overall goal of British antiquarianism was to map, record, and preserve national treasures. By the late

artifact Any movable object that has been used, modified, or manufactured by humans; artifacts include stone, bone, and metal tools; beads and other ornaments; pottery; artwork; religious and sacred items.

eighteenth century, members of Europe's leisure classes considered an interest in classical antiquities to be an important ingredient in the "cultivation of taste."

The Discovery of Deep Time

Archaeological research until the eighteenth century proceeded mostly within the tradition of Petrarch—that is, concerned primarily with clarifying the picture of classical civilizations of the Mediterranean. The eighteenth- and early nineteenth-century mind readily digested this lore because nothing in it challenged the Bible as an authoritative account of the origin of the world and humanity.

But a problem arose when very crude stone tools like that shown in Figure 1-1 were discovered in England and continental Europe. About 1836, a French customs official and naturalist, Jacques Boucher de Crèvecœur de Perthes (1788–1868), found ancient axe heads in the gravels of the Somme River. Along with those tools, he also found the bones of long-extinct mammals. To Boucher de Perthes (as he is more commonly known), the implication was obvious: "In spite of their imperfection, these rude stones prove the existence of [very ancient] man as surely as a whole Louvre would have done."

Few contemporaries believed him. Why? Some 200 years before Boucher de Perthes's discoveries, several scholars had figured the age of the earth as no more than about 6000 years. The most meticulous of these calculations were those of James Ussher (1581–1656), archbishop of Armagh, Primate of All Ireland, and vice-chancellor of Trinity College in Dublin. Using biblical genealogies and correlations of Mediterranean and Middle Eastern histories, Ussher concluded that creation began at sunset on Saturday, October 22, 4004 BC. His effort was so convincing that the date 4004 BC appeared as a marginal note in most Bibles published after AD 1700. (The precision of his date sounds silly today, but though Ussher was wrong, he followed very careful reasoning.)

This reckoning, of course, allowed no chance of an extensive human antiquity; there simply wasn't enough time. Therefore, the thinking went, Boucher de Perthes must be mistaken—his rude implements must be something other than human handiwork. Some suggested that the "tools" were really meteorites; others said they were produced by lightning, elves, or fairies. One seventeenth-century scholar suggested that the chipped flints were "generated in the sky by a fulgurous exhalation conglobed in a cloud by the circumposed humour," whatever that means.

But customs officials have never been known for their reserve, and Boucher de Perthes stuck to his guns. More finds were made in the French gravel pits at St. Acheul (near Abbeville), and similar discoveries turned up across the channel in southern England. The issue was finally resolved when the respected British paleontologist Hugh Falconer visited Abbeville to examine the disputed



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FIGURE 1-1 Boucher de Perthes found Paleolithic handaxes like this in the Somme River gravels.

evidence. A procession of esteemed scholars followed Falconer's lead and declared their support in 1859; the idea that humans had lived with now-extinct animals in the far distant past was finally enshrined in Charles Lyell's 1863 book *The Geological Evidences of the Antiquity of Man*.

The year 1859 was a banner year in the history of human thought: Not only was the remote antiquity of humankind accepted by the scientific establishment, but Charles Darwin published his influential *On the Origin of Species*. Although Darwin mentioned humans only once in that book (on nearly the last page he wrote, "Much light will be thrown on the origin of man and his history"), he had suggested the process by which modern people could have arisen from ancient primate ancestors. In the beginning, though, Darwin's theory (which had to do with the transformation of species) was unconnected to the antiquity of humanity (which was a simple question of age).

Nonetheless, the discovery of deep time—the recognition that life was far more ancient than biblical scholars recognized and that human culture had evolved over time—opened the floodgates. British archaeology soon billowed out across two rather divergent courses. One direction became involved with the problems of remote geological time and the demonstration of long-term



American Indian or Native American?

Some years ago, as Thomas was telling his son's third grade class what it's like to be an archaeologist, a small (but adamant) voice of protest came from the back of the room.

"How come you keep saying 'Indians'? Don't you know they want to be called 'Native Americans'?" a girl asked.

She had a good point. Many people are confused about these terms. In fact, our Native American colleagues tell us that people often correct them when they say "Indian," as if the term has become a dirty word.

Names are important because they are power; the people who name things

are generally the people who control them. The word "Indian," of course, is a legacy from fifteenth-century European sailors, who mistakenly believed they'd landed in India. "Native American" arose among Indians in the 1960s and 1970s, during the civil rights movement. But many Indians point out the ambiguity in this term. Although your authors are not American Indians, both are native Americans (because we were born in the United States).

Most indigenous people of North America today simply accept the imprecision of today's terms and use American

Indian, Canadian Native, First Nations, Native American (or Native Hawaiian), Indian, and Native interchangeably; we follow this lead.

Of greater concern to most Indian people is the tribal name. Many Navajo people, for instance, wish to be known as Diné (a traditional name meaning "The People"). When discussing particular tribes, we attempt to use the term preferred by the tribe in question.

human evolution. The other continued the tradition of Petrarch and focused on classical studies, particularly the archaeology of ancient Greece and Rome, a field now known as **classical archaeology**. This philosophical split has continued into modern times, although some signs suggest that these fields are coming back together.

Archaeology and Native Americans

Across the Atlantic, American archaeology faced its own vexing issues of time and cultural development. How, nineteenth-century scholars wondered, could regions such as the Valley of Mexico and Peru have hosted the civilizations of the Aztecs and the Incas while people in many other places—such as the North American West—seemed impoverished, even primitive? When did people first arrive in the New World? Where had these migrants come from, and how did they get here?

Speculation arose immediately. One idea held that Native Americans were one of the lost tribes of Israel. Another suggested that Indians came from Atlantis. Others said they were voyaging Egyptians, Vikings, Chinese, or Phoenicians.

Gradually, investigators came to recognize considerable continuities between the unknown prehistoric past and the Native American population of the historic period. As such knowledge accumulated, the profound differences between European and American archaeology became more apparent. While Europeans wrestled with their ancient flints—without apparent modern correlates—American scholars saw that living Native Americans

were relevant to the interpretation of archaeological remains. In the crass terms of the time, many Europeans saw Native Americans as "living fossils," relics of times long past.

New World archaeology thus became inextricably wed to the study of living Native American people. Whereas Old World archaeologists began from a baseline of geological time or classical antiquity, their American counterparts developed within an anthropological understanding of Native Americans. The study of American Indians became an important domain of Western scholarship in its own right, and North American archaeology became linked with anthropology through their mutual interest in Native American culture (see "Looking Closer: American Indian or Native American?").

We must stress an important point here: As Europeans refined the archaeology of Europe, they were studying their own ancestors (Anglo-Saxons, Celts, Slavs, Franks, and so forth). But New World archaeology involved Euro-Americans digging up Native Americans' ancestors. This has led to some fundamental issues in the ethical treatment of archaeological remains in the New World compared to Europe. We will return to some of these issues in later chapters.

classical archaeology The branch of archaeology that studies the "classical" civilizations of the Mediterranean, such as Greece and Rome, and the Near East.