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The might of Rome: Hadrian’s Wall, near the border of England and Scotland, built by Roman Emperor Hadrian to keep the Scots out of the northernmost Roman province in the first century A.D.
PREVIEW

Chapter 2 distinguishes between scientific archaeology and pseudoarchaeology. We will examine the differences between archaeology, anthropology, and history, the study of the past using written records. There are many specialties within archaeology, some of which will be described in this chapter. This chapter also answers a fundamental question: Why does archaeology matter in today’s world? It is important as a source of information on human diversity; it provides important tools for economic development, especially subsistence agriculture; and it supports national economies through archaeological tourism. We will end with a summary of the major developments of human prehistory as background for the chapters that follow.

*In the absence of history, the spade is no mean historian.*

—William A. Miles, *The Deverill Barrow*, 1826

In 7000 B.C., a small group of foragers camped in a sandy clearing near Meer in northern Belgium. One day, someone walked away from camp, sat down on a convenient boulder, and made some stone tools using some carefully prepared flakes and lumps of flint he or she had brought along. A short time later, a second artisan sat down on the same boulder with a prepared flint cobble, struck off some blanks, and made some borers. Later, the same two stone workers used their finished tools to bore and groove some bone. When they finished, they left the debris from their work lying around the boulder.

When Belgian archaeologist Daniel Cahen excavated the site 9,000 years later, all he found were some scatters of stone debris. He plotted the clusters and painstakingly refitted the stone flakes onto their original stone cobbles. After months of work, he reconstructed the stone workers’ activities and showed that the second one was left-handed.

This story, conjured up from a tiny scatter of inconspicuous stone tools, appears to be a miracle of archaeological detective work. In fact, it emerged from months of careful excavation, and especially laboratory work, which pieced together hundreds of stone fragments into a coherent reconstruction of ancient life. Modern scientific archaeology has an awesome ability to reconstruct the behavior of our forebears. The following pages take you on a journey through the world of scientific archaeology—an adventure as engaging as it is many-sided.

**The Tourist, the Collector, and the Archaeologist**

Any thinking person who visits an archaeological site faces the reality of the past, a vista of human experience that stretches far back in time. How, visitors may wonder, do archaeologists know how old a site is, and what do their finds mean? What do archaeologists really do? How do they unravel the complexities of early human societies? It seems very complicated to dig for the past. And the unchanging, sometimes incredibly ancient structures that surround one add to the sense of romance and awe (see the Discovery box on pages 28–29).
Our complex world is full of unexplained mysteries and hidden surprises—phenomena that sometimes defy obvious explanation. Many people believe that the archaeologist lives in mysterious regions of our world, with “missing links” and long-lost civilizations. Enterprising authors and movie producers take us on fantasy rides into the strange territories of their specially selected archaeologists. From the comfort of our armchairs, via television or the World Wide Web, we can search for lost continents, reconstruct Noah’s Ark, and trace the landing patterns of extraterrestrials’ spaceships. Such searches are not only fantasy fun but are big business as well. Millions of dollars have been made from this type of archaeology—which, unfortunately, bears little resemblance to reality.

The romance of archaeology has taken people all over the world in search of the past. Every year thousands of tourists visit the pyramids of Giza in Egypt (see Figure 2.2). To promote tourism, the Mexican government spent millions of pesos restoring the ancient city of Teotihuacán in the Valley of Mexico. Most popular package tours abroad now include visits to an archaeological site or two (for a map, see Figure 2.3). Many sites—for example, Stonehenge in England and the Stone Age painted cave at Lascaux in France—are in danger of permanent damage from the sheer volume of visiting tourists. As a result, you can no longer wander among the uprights at Stonehenge. The French government has built a magnificent replica of the Lascaux cave paintings for tourists to enjoy, but the original cave is closed to all but scientists (see Figure 2.4).

**Discovery**

**The Jamestown Settlement**

In 1607, a small band of adventurers under the sponsorship of the Virginia Company founded the first lasting English settlement in the Americas at Jamestown in Chesapeake Bay. By 1619, the settlers over a wide area of Virginia had elected their first assembly, a year before the Pilgrims arrived at Plymouth in what was to become Massachusetts. The historical records of the early years of the colony are, at best, ambiguous, but they chronicle social unrest, warfare with the local Indians, and problems with hunger and good water supplies. The introduction of Caribbean tobacco by John Rolfe in 1613 provided the cash crop that ensured the survival of the colony. Jamestown’s importance eroded as tobacco plantations thrived in the interior. The settlement was abandoned when the state capital moved to nearby Williamsburg in 1699. The site of the original settlement was forgotten and assumed to have vanished under the flooded James River.

With inadequate historical records, the National Park Service turned to archaeology in 1955, on the occasion of the 350th anniversary of the settlement. The excavations located a number of seventeenth-century brick structures, ditches, trash heaps, and wells, but not the old fort site, which was still thought to be underwater. A half-century later, in 1994, the Association for the Preservation of Virginia Antiquities decided to search once more for the lost settlement. Archaeologist William Kelso undertook the project, basing his work on existing excavations, maps and other records, and a hunch that the site had survived on dry land. He was fortunate that the land had reverted to agriculture after abandonment, so there was no modern town atop the location. Kelso decided to dig near the church, on the grounds that sacred places do not shift—that worship there was continuous, even if different churches had risen on the same site. There were also finds of seventeenth-century artifacts in the same general location, which lay near a Confederate earthwork from the Civil War.

The 1994 season yielded telltale stains of a large, heavy wooden palisade, as well as more seventeenth-century artifacts. Pipe fragments and other artifacts from the palisade...
post backfill appeared to date the structure to the time of the 1607 fort. The excavation, conducted in 10-foot (3-meter) squares, later revealed a curved trench with accompanying ditch, ending abruptly in what must have been a gate location. By 1996, Kelso was certain that he had located the long-lost Jamestown fort of 1607 (see Figure 2.1).

Like all historical archaeology, the excavation was a complex jigsaw puzzle of artifacts, structures, and historical records. Kelso unearthed the remains of four buildings inside the fort—a barracks, a quarter, and some row houses. A factory for trading with the Indians lay outside the palisade. Each structure was of strikingly similar design: at first a cellar covered with a crude roof, with larger post-supported buildings added later, protected by thatched roofs covering rectangular buildings. The fill of one cellar contained a coin of King James I of England and Scotland, minted in 1606–1607, conclusive proof that the buildings dated to the time of the original fort. The architecture was a form of construction known as “mud and stud,” used in Lincolnshire in eastern England at the time. Some of the colonists were from Lincolnshire, including William Laxton, a carpenter.

The recovery of the Jamestown settlement is one of the most remarkable discoveries of recent years. Kelso also excavated a series of settler burials, which provided a portrait of some of the people, including facial reconstructions and insights into the mystery surrounding one colonist who died of a gunshot wound.

Most such archaeological sites now boast a museum. Eagerly, the tourist peers into the display cases and admires the glittering gold of a fine necklace or the crude stone tools made by a human hand more than a million years ago. Perhaps the visitor pauses at the door to buy a replica of the archaeological find in the case. It is a pleasing reminder of a fleeting visit to the past, a memento to be displayed at home. But, unfortunately, many people are greedier—they covet the past and want to own a piece of the real thing.

Collectors and treasure hunters, many of whom regard themselves as legitimate archaeologists, are the curse of archaeology. The spiritual beliefs and vanity of the ancients decreed that they be buried with riches to accompany them in the afterlife. The greed of their descendants decrees that people today covet these riches. The antiquities dealer and the private collector pay enormous prices for painted pots and other fine antiquities looted from otherwise undisturbed sites. Major museums compete to acquire the finest specimens of prehistoric art. In perhaps the most blatant case of all, the Metropolitan Museum of Art in New York paid a cool million dollars for one painted Greek vase, which had been looted from an Italian tomb. The museum has now returned the vase to Italy.

There seems to be some fundamental human desire to collect things and display them in the privacy of one’s home. Collecting is a passion once described as “so violent that it is inferior to love or ambition only in the pettiness of its aims.” People collect everything from barbed wire to beer cans, and many think of archaeology as the
Figure 2.2  The pyramids of Giza in Egypt. These pyramids were the culmination of more than a century of aggressive royal pyramid building by ancient Egyptian kings of the Old Kingdom, c. 2600 to 2100 B.C. Each served as the burial place for a king and was connected by a causeway to a mortuary temple where offerings were made to the deceased. The pyramid shape is thought to represent a symbolic sun-ray descending to earth through the clouds, a symbolic ladder for the divine king to ascend and join the sun god in the heavens.

acquisition of objects. But when people collect archaeological finds, they are collecting a part of an endangered, finite resource that is rapidly vanishing, a unique archive that can never be replaced. Every object they buy or dig from a site is the product of ancient human behavior. This behavior can be partly reconstructed from objects found in the earth, but much of our insight depends on the contexts (positions) in time and space in which the objects occur in the ground. Removing an artifact from its context is an irreversible act that cheats us all of knowledge. (Perhaps it should be mentioned that professional archaeologists also destroy sites as they excavate them, but they record the context of their finds as they go along, a critical ingredient in scientific archaeology.)

Modern archaeology is not treasure hunting or collecting, nor is it a fantasy search for lost worlds; it is the systematic study of humanity in the past, and also stewardship of the valuable record of the past. This general definition includes not only ancient technology and human behavior but also social organization, religious beliefs, and every aspect of human culture.

We must never forget that the archaeological sites that document the past are a finite, not a renewable, resource. All of this raises a fundamental question: Who owns the past?

Who Needs and Owns The Past?

All societies have an interest in the past. It is always around them, haunting, mystifying, tantalizing, sometimes offering potential lessons for the present and future. The past is important because social life unfolds through time, embedded within a framework of cultural expectations and values. In the high Arctic, Inuit preserve their
traditional attitudes, skills, and coping mechanisms in some of the harshest environments on earth. They do this by incorporating the lessons of the past into the present. In many societies, the ancestors are the guardians of the land, which symbolizes present, past, and future. Westerners have an intense scientific interest in the past, partly born of curiosity but also out of a need for historical identity. There are many reasons to attempt to preserve an accurate record of the past. Nobody, least of all an archaeologist, should assume that he or she is uniquely privileged in his or her interest in the remains of that past.

We have no monopoly on history. Many non-Western societies do not perceive themselves as living in a changeless world. They make a fundamental distinction between the recent past, which lies within living memory, and the more remote past. For instance, the Australian Aborigine groups living in northeast Queensland distinguish among kuma, the span of events witnessed by living people, anthantnama, a long time ago, and yilamu, the period of the creation. Furthermore, many societies also accept that there was cultural change in the past. The Hadza hunter-gatherers of East Africa

Figure 2.3  The archaeological sites mentioned in this book. Obvious geographic place names are omitted.
tell of their homeland’s first inhabitants as being giants without fire or tools. These paradigms of the past take many forms, some involving mythic creators of culture—usually primordial ancestors, deities, or animals establishing contemporary social customs and the familiar landscape; others describe a more remote, discontinuous heroic era, such as that of the Greeks, which allowed such writers as the playwright Aeschylus to evaluate contemporary behavior.

Most human societies of the past were nonliterate, which meant that they transmitted knowledge and history orally, by word of mouth. The Aztec oral histories, partially set down after the Spanish Conquest in the sixteenth century A.D., are an excellent example of history transmitted by word of mouth. They were recited according to a well-defined narrative plot, which focused on great men, key events such as the dedication of the sun god Huitzilopochtli’s temple in the Aztec capital in 1487, and the histories of favored groups. In these, as in other oral histories, there were formulas and themes, which formed the central ingredients of a story that varied considerably from
one speaker to the next, even if the essential content was the same. Many oral histories are mixtures of factual data and parables that communicate moral and political values. But to those who hear them, they are publically sanctioned history, performed before a critical group and subject to the critical evaluation of an audience that may have heard the same stories before.

Oral traditions are hard to use scientifically since their antiquity is very difficult to establish. In some cases—in Australia, for example—there are instances where oral histories and archaeology coincide in general terms. For example, the traditions speak of the arrival of the first people from overseas, of the flooding of coastal areas after the Ice Age, and of the hunting of giant marsupials (pouched animals like the kangaroo). So Australia’s past can be said to come from two sources: archaeological data and oral traditions. In some instances, the archaeologists and the indigenous people have shared interests and come together to identify sacred and historic places, often to ensure they are preserved—even if the two groups disagree fundamentally on the significance of a
particular location (for instance, a location where the archaeologist finds no buildings or artifacts, yet the local people consider it a “sacred place”).

But, all too often, archaeologists and local communities have different interests in the past. To archaeologists, the past is scientific data to be studied with all the rigor of modern science. To local people, the past is often highly personalized and the property of the ancestors. Such accounts are valid alternative versions of history, which deserve respect and understanding, for they play a vital role in the creation and reaffirmation of cultural identity. And they raise a fundamental question, which lies behind many Native American objections to archaeological research. What do archaeologists have to offer to a cultural group that already has a valid version of its own history? Why should they be permitted to dig up the burial sites of the ancestors or other settlements and sacred places under the guise of studying what is, to the people, a known history? It is a question that archaeologists have barely begun to address. We should never forget that alternative, and often compelling, accounts of ancient times exist, and they play an important role in helping minority groups and others to maintain their traditional heritage as it existed before the arrival of the Westerner. There are many stakeholders in the past, not just archaeologists.

**What Do Archaeologists Do?**

What, then, do archaeologists do? Quite simply, we are a special kind of anthropologist and a special type of historian.

**Anthropology, Archaeology, and History**

Anthropology is the scientific study of humanity in the widest possible sense. Anthropologists study human beings as biological organisms and as people with a distinctive and unique characteristic—culture. They carry out research on contemporary human
societies and on human development from the very earliest times. Thus, there is a close relationship between archaeology and anthropology, as there is between archaeology, history, and other disciplines.

This enormous field is divided into four major subdisciplines. Physical (or biological) anthropology involves the study of human biological evolution and the variations among different living populations. Physical anthropologists also study the behavior of living nonhuman primates such as the chimpanzee and the gorilla, research that can suggest explanations for behavior among very early humans. Cultural anthropology deals with the analysis of human social life both past and present. It is primarily the study of human culture and how culture adapts to the environment. Among cultural anthropologists, ethnographers describe the culture, technology, and economics of living and extinct societies, and ethnologists engage in comparative studies of societies, a process that involves attempts to reconstruct general principles of human behavior. Social anthropologists analyze social organization, ways in which people organize themselves. Finally, linguistic anthropologists study human languages, a field of research that is sometimes important to the study of the past.

Archaeology and cultural anthropology are part of the same discipline. However, archaeologists study past societies, ancient and relatively modern, which means that they cannot speak to their informants. Their excavations and site surveys yield the material remains of human behavior in the past—stone tools, pot fragments, broken animal bones, and so on—all manufactured or modified by deliberate actions possibly centuries, even millennia, ago. The archaeologist links these material remains to actual human behavior by developing theoretical models to explain such behavior and cultural change over long periods of time. As we have said, archaeology is a unique way of studying human cultural change from the time of the earliest human beings 2.5 million years ago up to the present.

By studying ancient societies, archaeologists are also studying human history on a broad and long canvas, but with a difference. They use the material remains of the past to reconstruct the past, whereas historians use documents of all kinds. History reconstructed by archaeologists tends to be more anonymous, for archaeological chronologies rarely rival those of historians and can only occasionally pinpoint someone’s lifetime. But we are a special kind of historian—an emphasis that is stronger in Europe, where there is continuity in history over thousands of years, than in the Americas, where continuous written records date back just a few centuries to Christopher Columbus in A.D. 1492.

Archaeologists on the Job

Modern-day archaeologists are far removed from the pith-helmeted professors beloved by cartoonists. As recently as the 1940s, you would have been correct to assume that most archaeologists spent their time in the field engaged in excavation and surveys. A half century ago, there were only a few hundred archaeologists throughout the world, most of them in Europe and North America. Today, there are archaeologists working in every corner of the globe—in Australia and on the Pacific Islands, in China and Siberia, in tropical Africa, in Latin America, and in the high Arctic. No one knows how many archaeologists there are worldwide, but the number must be near 15,000. Today, archaeology is a global science, a profession as much as an academic pursuit. There are even archaeologists engaged in the study of modern urban garbage.

The change began after World War II, as archaeologists became concerned about the wholesale destruction of archaeological sites with no effort being made to investigate them first. “Salvage archaeology” was born, notably with the international effort sponsored by UNESCO (United Nations Educational, Scientific, and Cultural Organization)
to find archaeological sites in the vast area of the Nile Valley scheduled to be flooded by the Aswan Dam in the 1960s, and with the Glen Canyon Dam project in Utah. The realization that archaeological sites were vanishing rapidly in the face of looters and industrial development, and also due to deep plowing and mining, led to a stream of federal and state legislation from the 1960s through the 1980s designed to protect the past. Archaeology itself changed character in Europe and North America, as pure academic research gave way to field and laboratory research aimed at assessing and preserving the past and also mitigating the effects of construction and other activities. Such **cultural resource management (CRM)** is a type of archaeology concerned with the management and assessment of the significance of cultural resources such as archaeological sites. It is now the dominant activity in North American archaeology; many examples appear in these pages.

The shift toward CRM is mirrored in employment figures. In the 1960s, nearly all archaeologists were university or college professors or worked in museums. In a 1998 study of American archaeologists, Melinda Zeder of the Smithsonian Institution chronicled a dramatic shift in archaeological employment. Now only 35 percent of American archaeologists are academics; 8 percent labor in museums, and 23 percent work for federal, state, or local governments, many in purely administrative functions. The fastest-growing segment of archaeological employment is in the private sector. In 1997, 18 percent of all American archaeologists worked for private consulting firms engaged in environmental monitoring and cultural resource management. A decade later, the figure is still climbing.

The Zeder study shows that archaeology is changing rapidly from a purely academic discipline into a profession with strong roots in both government and private business. This is because the past is under siege from industrial civilization in the forms of deep plowing and mining, industrial development, road construction, and the inexorable expansion of huge cities—not to mention looters and pothunters, who think nothing of ravaging sites for valuable finds they can sell. Increasingly, archaeologists are managers rather than professors, supervising a precious and rapidly vanishing resource: the human past. The pith-helmeted professor of yesteryear is the cultural resource manager of today. An image further removed from the adventurer of a century-and-a-half ago is hard to envision.

### Many Sites, Many Archaeologists

Archaeology is now a discipline and profession of specialists, often in dauntingly obscure topics. During the course of my career, I have worked with prehistorians, Egyptologists, and underwater archaeologists, to mention only a few relatively broad specialties. But I have also collaborated with experts on ancient Egyptian wine, cultural resource management, Ice Age earthworms, southern African mice, reindeer teeth growth rings, and eighteenth-century Colonial American gardens—all this without mentioning the many federal and state government archaeologists and private sector specialists who have crossed my path.

Here are some of the major specialties among academic archaeologists: **Prehistoric archaeologists** (prehistorians) study prehistoric times, from the time of the earliest human beings to the frontiers of written history. The numerous specialties within prehistoric archaeology include **paleoanthropology**, the study of the culture and artifacts of the earliest humans, of stone technology, art, and hunter-gatherers. There are specialists in the **prehistory** of the Old and New Worlds, Europe, the American Southwest, and many other regions.

**Classical archaeologists** study the remains of the great Classical civilizations of Greece and Rome (see Figure 2.5). While many classical archaeologists study art and
architecture, others study the same kinds of economic, settlement, and social issues that interest prehistorians.

**Biblical archaeologists** are experts on a variety of ethnic groups living in what is now Israel, Lebanon, and Syria. They attempt to link accounts in biblical and Canaanite literature with archaeological data.

**Egyptologists, Mayanists, and Assyriologists** are among the many specialist archaeologists who work on specific civilizations or time periods. Such specialties require unusual skills—for example, a knowledge of Egyptian hieroglyphs or ancient Maya script.

**Historical archaeologists** work on archaeological sites and study problems from periods from which written records exist. They excavate medieval cities, such as Winchester and York in England, and study Colonial American settlements, Spanish missions, and nineteenth-century frontier forts in the American West.

**Historical archaeology** (sometimes called text-aided archaeology) is concerned mainly with the study of ancient human societies with the aid of written texts (see Chapter 5).

**Underwater archaeologists** study ancient sites and shipwrecks on the seabed and on lake beds, even under the rapids in Minnesota streams where fur traders once capsized and lost canoe loads of trade goods. Underwater archaeology uses diving technology, but its objectives are identical to those of archaeology on land—to reconstruct and interpret past cultures as well as ancient seafaring (see the section on the Uluburun shipwreck in Chapter 13).
Industrial archaeologists study buildings and other structures of the Industrial Revolution such as Victorian factories.

Apart from area specialists, there are experts in all manner of archaeological methods, including paleoethnobotanists, who study ancient food remains; lithic technologists, who are experts on stone technology; and zooarchaeologists, specialists in ancient animal bones. There are even some archaeologists who specialize in forensics—ancient (and modern) crime.

Why Does Archaeology Matter?

Archaeology exercises a curious fascination. Cave people, golden pharaohs, lost cities hiding in swirling mist: the fantasies abound. So do spectacular discoveries, such as the Moche lords of Sipán, Peru, found intact in an adobe platform where they were buried in A.D. 400 with all their gold and silver regalia (see Figure 2.6 and Figure 3.5 on page 58). Finds like Sipán or that of Ötzi the Ice Man, a Bronze Age traveler found deep-frozen high in the Italian Alps (see Figure 13.4 on page 277), are indeed fascinating, even romantic, discoveries. Such scientific treasure troves appeal to the explorer and adventurer in all of us and bring the past to life in dramatic ways.

Few modern-day discoveries generate the excitement experienced by three French cave explorers when they entered a 30-inch-wide (76-centimeter-wide) cavity in the wall of a gorge in the Ardèche Mountains of southeastern France on December 18, 1994. Eliette Deschamps, Jean-Marie Chauvet, and Christian Hillaire squeezed through the narrow opening. They felt a draft flowing from a blocked duct, pulled out the boulders that blocked it, and saw a vast chamber 12 feet (3.6 meters) below them. Using a rope ladder, they descended into a network of chambers adorned with natural calcite columns. Calcified cave-bear bones and teeth lay on the floor, on which shallow depressions marked where the long-extinct beasts had hibernated. Suddenly, Deschamps cried out in surprise. Her lamp shone on a small mammoth figure painted on the wall. The explorers moved deeper into the chamber and came across more paintings—positive and negative hand imprints and figures of mammoths, rhinoceroses (Figure 2.7), and cave lions. As they gazed at the paintings, the three explorers felt as if time were abolished, as if the artists had left the cave only a few moments earlier. As one of them put it, “The artists’ souls surrounded us. We felt we could feel their presence” (Chauvet, Deschamps, and Hillaire, 1996: 42).

The Grotte de Chauvet, named after one of the discoverers, lay undisturbed from the time of the late Ice Age. Hearths on the floor looked as if they had been used the day Figure 2.6 A mannequin wears the full regalia of a Moche lord of Sipán, northern coastal Peru, c. A.D. 400.
before. The explorers found an extraordinary frieze of black wild horses and oxen and two woolly rhinoceroses facing one another. One 30-foot-long (9-meter-long) frieze of black figures depicted lionesses, rhinoceroses, bison, and mammoths. Far to the right stood a human figure wearing a bison-head mask, perhaps the shaman supervising the immense frieze. Radiocarbon tests reveal that Grotte de Chauvet was visited repeatedly between about 31,000 and 24,000 years ago, making it one of the earliest painted caves in the world.

**Mysteries of the Past**

Chauvet’s Ice Age animals caused an international sensation, like Tutankhamun’s tomb and Ötzi the Ice Man. But the fascination with archaeology is much wider, for the past is redolent with unsolved mysteries and unexplained phenomena. You have only to watch fantasy movies—which cover such hoary old favorites as the search for Noah’s Ark, the curse of the pharaohs (made especially realistic in a memorable performance by Boris Karloff as a hyperactive mummy in a movie of the 1930s), or the lost continent of Atlantis—for an example of this fascination with the past. But such fantasy stories are little more than pseudoarchaeology, no more historical fact than the Indiana Jones adventure movies. More legitimate archaeological puzzles, such as how the ancient Egyptians built the pyramids, or why the Ancestral Pueblo (Anasazi) people of Chaco Canyon, New Mexico, built roadways leading to nowhere (see Figure 5.10 on page 106), intrigue audiences that are much wider than merely archaeologists. Today, archaeology is as much a part of popular culture as football or the automobile. Thousands of people read archaeology books for entertainment, join archaeological societies, and flock to popular lectures on the past.
A Sideline: Pseudoarchaeology

Then there is pseudoarchaeology, which is not archaeology at all. Take a few intrepid adventurers in an ancient sailing vessel, some startlingly new religious cult, a handful of pyramids, lots of gold, and exotic civilizations swirling in ever-parting mists and you have the irresistible ingredients for an epic “archaeological” tale. Pseudoarchaeology is all the rage in a world where many people are fascinated by adventure, escapism, and space fiction. A distinctive literary genre tells compelling tales of a long-lost past. For instance, British journalist Graham Hancock has claimed that a great civilization flourished under Antarctic ice 12,000 years ago. (Of course, its magnificent cities are buried under deep ice sheets, so we cannot excavate them!) Colonists supposedly spread to all parts of the world from this Antarctic home, colonizing such well-known sites as Tiwanaku in the Bolivian highlands and building the Sphinx by the banks of the Nile. Hancock weaves an ingenious story by piecing together all manner of controversial geological observations and isolated archaeological finds. He waves aside the obvious archaeologist’s reaction, which asks where traces of these ancient colonies and civilizations are to be found. Hancock fervently believes in his far-fetched theory, and, being a good popular writer, he has managed to piece together a best-selling book, which reads like a “whodunit” written by an amateur sleuth.

Pseudoarchaeology appeals to people who are impatient with the deliberate pace of science and who like to believe that “there is always a faint possibility that. . . .” Some of these “cult archaeologies” show all the signs of becoming personality cults, even religious movements. The theories espoused by the leaders become articles of faith, the object of personal conversion. They are attempts to give meaning to being human and are often steeped in symbolism and religious activity. Almost invariably the cultists dismiss archaeologists as “elitists” or “scientific fuddy-duddies” because they reject wild theories that are unsupported by scientifically gathered evidence.

This book describes the science of archaeology, which, ironically, can be more interesting than the best fantasy tales.

Archaeology and Human Diversity

Archaeology’s unique ability lies in its capacity to reach back over the millennia to reconstruct and explain the cultures and lifeways of unimaginably ancient societies as they changed over many centuries and thousands of years. Why did some societies vanish without a trace while others developed agriculture or highly complex urban civilizations? Who first tamed fire or invented the plow? How did bronze and iron smelting change the course of human history? Archaeology is fascinating because it enables us to study not only the remotest human origins but also the ever-changing biological and cultural diversity of humankind.

We live in a complex world of almost bewildering human diversity. We can land people on the moon, send space probes to Mars, establish our position in the midst of tropical rain forests within inches, and build computers of mind-numbing speed and complexity. Yet our collective understanding of human diversity and our ability to collaborate with others from different cultural backgrounds and cultural heritages remains at an elementary level. We tend to fear diversity—people who are different from us, who speak alien languages or look at the world with cultural perspectives that differ from our own. We fear diversity, out of bigotry, but often just out of plain ignorance. Archaeology is one of the major educational weapons in the fight against such ignorance.

The most important lesson about diversity that archaeology teaches us is that we are all descended from what Harvard University biologist Stephen J. Gould once called “a common African twig.” As long ago as 1871, the great Victorian biologist Charles
Darwin of *Origin of Species* fame theorized that humanity originated in Africa, because this was where the greatest variety of apes dwelt. Today, we know that he was right. More controversially, thanks to DNA studies and archaeological finds, we also suspect that our own direct ancestors, *Homo sapiens*, originated on the same continent, then spread out of Africa, replacing much older human populations. Most important of all, both archaeology and DNA studies have shown that the relationships among all modern humans are closer than they are different. Above all, we are all humans with identical abilities to conceptualize and shape our world, to make inventions, to love and hate, and to adapt to any environment on earth. We just happen to do it in different ways.

Archaeology studies diversity at its very beginnings, millennia before our intermingled industrial world was changed forever by the massive population movements of the nineteenth and twentieth centuries. We seek answers to fundamental questions. Why are we biologically and culturally diverse? In what ways are we similar or different? When did the great diversity of humankind first come into being, and why? Both geneticists and archaeologists suspect that we modern humans originated in tropical Africa, then spread throughout the world during the late Ice Age, after 100,000 years ago. This complex set of population movements and cultural changes was perhaps the seminal development of early human history. From it stemmed not only the brilliant biological and cultural diversity of modern humankind but also art and religious life, agriculture and animal domestication, village life and urban civilization—the very roots of our own diverse and complex world.

Archaeology provides a constant reminder of our common, and recent, biological and cultural heritage in a world where racism is commonplace. Human artifacts are excellent barometers not only of ancient behavior but also of cultural diversity. Early historic American society was much more diverse than we realize (see Chapter 13). Archaeologist Kathleen Deagan has excavated the site of Florida’s *Fort Mose*, the first free African American community in North America. This tiny hamlet of some thirty-seven families, 2 miles (3.2 kilometers) from Spanish St. Augustine on the Atlantic coast, was founded in 1738 and occupied until the Spanish abandoned Florida in 1763. In its heyday, the settlement of twenty-two thatched houses, a church, guardhouses, and a well lay behind earthen fortifications. Many of the inhabitants were of West African origin and used not only African artifacts but also objects of English, Native American, and Spanish origin. Eventually, Deagan and her researchers hope to use the artifacts to decipher what cultural elements were important in the lives of the inhabitants.

### Archaeology as a Political Tool

Rulers and governments have used the past to justify the present since civilization began. The Sumerians, who created the world’s first urban civilization between the Euphrates and Tigris rivers in southern Iraq, created a heroic past personified by the Epic of Gilgamesh, the story of a legendary king who ruled before a mythic flood that frightened even the gods. When the waters subsided, they restored kingship to earth at the city of *Kish*, where recorded history began.

The past has always served the present, for every society manufactures history. The Aztecs of highland Mexico were an obscure farming society in A.D. 1200. Only three centuries later, they ruled over all of *Mesoamerica*, that area of Central America where indigenous civilizations arose—an area straddling much of highland and lowland Mexico, Guatemala, Belize, and Honduras—from a dazzling capital, *Tenochtitlan*, in the Valley of Mexico (see Figure 6.4 on page 124). In 1426, a powerful official named Tlacaelel became the right-hand man to a series of fifteenth-century Aztec rulers in highland Mexico. He prevailed on his masters to burn all earlier historical records of other cities in the valley. In their place, he concocted a convincing rags-to-riches story that recounted the Aztecs’ mercurial rise from obscurity to become masters of Mexico as
the chosen people of Huitzilopochtli, the sun god himself. The new history was blan-
tant political propaganda that justified a century of militant imperialism that made the
Aztecs the rulers of a vast empire.

No one can look at the past objectively. We all bring our individual cultural biases
to the study of history and archaeology, for we tend to look at past developments and
events through the blinkered eyes of our own value system and society. Thus, any ar-
chaeological interpretation of the past is a form of narrative, which, by the nature of
its evidence, is both a scientific and political or literary enterprise. As part of this enter-
prise, archaeological theory aims to explain the past as well as describe it.

Archaeology is peculiarly vulnerable to political misuse because it deals with
ancient societies and events that are little known, even from archaeological sources.
Most people who use the past for nationalistic or political ends are searching for a glori-
ous past, a simple story that justifies their own political agenda. The Nazis unashamedly
used archaeology before World War II to propagate notions of a true “Nordic” race in
ancient Europe. In the former Yugoslavia, the past has been a prize in endless political
squabbles that go back centuries. Construction and ownership of a real or imagined
past and its monuments serves as a vital political resource when seeking to sway public
opinion. Such archaeologies are rarely based on scholarly standards of logic and evi-
dence. Most, at best, stretch historical facts to their breaking points and promote big-
otry, nationalism, and chicanery.

On the other side of the coin, archaeology, with its extended time perspectives,
has added entire new chapters to human history in areas of the world where written
records go back little more than a century. In parts of central Africa, for example, the
first documentary history begins with the establishment of colonial rule in about 1890,
with only a few Victorian explorers’ accounts dating from earlier decades. The primary
goal of archaeology in much of Africa is to write unwritten history as a way of fostering
national identity not from archives and documents but from long-abandoned villages
and rubbish heaps, the material remains of the past.

**Archaeology and Economic Development**

Bone-chilling cold descended on the high plains around Lake Titicaca, Bolivia, that
night. White frost covered the dry hillsides where local farmers planted their potatoes
in thin soil. Many families watched all night as their growing potatoes withered and
turned brown before their eyes. As dawn spread, they wandered through their ruined
fields, glancing down at a thin, white blanket of warm air covering some experimen-
tal plots on the plain below. They had watched suspiciously as the archaeologists dug
across long-abandoned ancient fields in the lowlands, then given one of their neighbors
seed potatoes to plant in a replica of such a field. He piled up layers of gravel, clay, and
soil, then dug shallow irrigation canals alongside the raised fields. The green shoots
of the new potatoes grew far higher than those on the arid slopes. As the temperature
dropped below freezing, a white cloud of warm air formed above the raised fields, hid-
ing them from view. Now the warming sun dispersed the white blanket, revealing lush,
green potato plants, their leaves only slightly browned by frost.

After months of ground survey, excavation, and controlled farming experiments,
archeologists had rediscovered the forgotten genius of ancient Andean farmers for the
benefit of their descendants. The ancestors had used water to protect their crops against
frost with such success that they supported the glittering city of Tiwanaku and its pow-
nerful kingdom for more than five centuries. Today, more than 1,500 modern farmers
have rediscovered the benefits of raised fields (Figure 2.8). Dozens of nearby communi-
ties now clamor for training in ancient agriculture.
Archaeology shows how the traditional system has many advantages—high crop yields, no need for fertilizer, and much-reduced risks of frost or flood damage. Furthermore, high yields can be obtained with local labor, local crops, and no expensive outside capital. At last count, nearly 2,125 acres (860 hectares) had been rehabilitated, and many more fields are planned.

The Lake Titicaca raised-field experiments have been so successful that archaeologists are now actively involved in several other such projects in the Americas. Governments are slowly discovering something that archaeologists have known for a long time. The ancients knew their environments intimately and exploited them efficiently without expensive twentieth-century technology. There is nothing wrong with their often-forgotten ways of cultivating the soil and raising several crops a year, or with their successful animal husbandry. Industrial-scale agriculture is not the universal answer to the world’s food crisis.

Archaeologist William Rathje has applied archaeological methods to the study of modern garbage dumps in Tucson and other American cities for a long time. He has found that bags of abandoned household garbage never lie, for empty beer cans and liquor bottles are more eloquent testimony to a family’s drinking habits than a questionnaire response that denies heavy alcohol consumption. Rathje’s long-term research has revealed fascinating differences between the wasteful discard habits of many lower-income families and the habits of the wealthy, who are often more careful to consume leftovers. It’s very easy to trivialize such research as being of greater use to cat-food companies than to archaeologists, but “garbagology” has much to tell us about the discard habits of modern industrial society. There are also important theoretical lessons for archaeologists investigating the middens of ancient Rome, Nineveh, or Thebes.
The Irresistible Lure of the Past

Armchair archaeology is one thing; to experience the sites and objects of the past firsthand is another. The monuments of antiquity cast an irresistible spell. The jetliner, the cruise ship, and the package tour have made archaeological tourism big business. Fifty years ago only the wealthy and privileged could take a tour up the Nile, visit Classical Greek temples, or explore Maya civilization. Now cruise ship excursions and package tours can take you to Egypt, to the Parthenon (see Figure 2.5 on page 37), and to Teotihuacán, Mexico (see Figure 7.18 on page 160). The immense pyramids of Giza in Egypt (see Figure 2.2 on page 30) and the prodigious labor that built them, the white columns of the Temple of Poseidon at Sounion, Greece, touched with pink by the setting sun, the ruins at the Maya city of Tikal bathed in the full moon’s light—as sights alone, these overwhelm the senses.

I once sat in the great Classical amphitheater at Epidauros, Greece (Figure 2.9), on a spring evening as the setting sun turned the world a pale pink. As I sat high above the stage, a small group of German tourists gathered around their learned guide. He sent them to the stall seats, stood at the center, and recited evocative stanzas from Euripides’ play Ion. The ancient verses rolled and resonated through the still air. For a moment, I shut my eyes and imagined the theater crowded with a festive audience, incense wafting on the spring air, the stanzas gripping everyone’s attention with electric tension, then pathos. The guide’s voice ceased. A deep silence fell and the magic of Epidauros’s acoustics faded.

Visiting the past can be a deeply moving experience—the north wind blowing across Hadrian’s Wall in northern England on a winter’s day with a promise of snow (see the chapter opener photo on page 26), or a muggy afternoon at Moundville, Alabama, when the air stands still and the thatched huts and imposing mounds come alive in your mind with fresh color, with the smell of wood smoke and the cries of children and barking of dogs.

You can get the same emotional connection the first time you see Pharaoh Tutankhamun’s golden mask or the countenance of another great Egyptian, King Rameses II, which lifts us to a realm where achievement endures and perceptions seem of a higher order. Even humble artifacts such as a stone chopper or a finely made clay pot can evoke emotions of wonder and insight. Years ago, I turned a 2-million-year-old, jagged-edged chopper end over end in my hands. Suddenly, I realized from the flake scars that the ancient maker had been left-handed, and I felt a sudden bond with the past.

There are moments when the remote past reaches out to us, comforting, encouraging, offering precedent for human existence. We marvel at the achievements of the ancients, at their awesome legacy to all humankind. This book describes some of the basic methods and theoretical approaches that archaeologists use to study the human past, to reconstruct the long prehistory of humankind.

The Prehistory of Humankind According to Archaeologists

This book is concerned with the science of archaeology. So, before exploring the basic principles of archaeology, we need to take a brief journey through the 2.5 million years of human prehistory so that you have a framework of the basic developments at the back of your mind as we delve deeper into archaeology (see Table 2.1).

Prehistory, the human past before written records, covers an enormous span of time, starting more than 2.5 million years ago with the emergence of the first toolmaking hominins (human-like beings) in East Africa and extending right into modern times.
A common, and conventional, distinction between prehistory and history is the existence of written records for historic times. In these periods, archaeological finds can be amplified with documentary evidence. For example, there are inscribed clay tablets that form the archives of the Sumerian peoples of Mesopotamia some 5,000 years ago, so they are technically in historic times.

Prehistoric archaeologists are trying to document and understand the ways in which humanity adapted itself to the many and diverse environments of the globe. By studying these adaptations, we can begin to understand the astonishing diversity of human cultures that make up our world.

For the sake of convenience, we can divide prehistory into a series of broad chapters, each spanning long periods of time and increasingly complex cultural developments. In fact, it is more appropriate to refer to these chapters as “developments,” for archaeologists are concerned, in the final analysis, with the study of evolving human cultures over very long periods of time.

**Early Prehistory**

The immensely long span of prehistoric time, from the emergence of toolmaking, upright-walking hominins in tropical Africa 2.5 million years ago, up to the time around 200,000 years ago when modern human beings first appeared, is known as early prehistory (Figure 2.10). This was the archaic world of early prehistoric times, when the hominins evolved slowly into more advanced *Homo erectus* some 1.9 million years ago. (The African form is sometimes called *Homo ergaster*, but I use the more generic term here for clarity.) Cultural and social change was even more glacially slow, with little fundamental change in human lifeways or technology for more than a million years.

About 1.8 million years ago, human beings spread north out of the tropics into more temperate latitudes, into Europe and Asia, adapting to far greater climatic extremes. That they were able to do so was in part the result of the control of fire—for heat, perhaps for cooking, and certainly for protection against predators living in deep caves that were natural shelters for human beings.
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000 B.C. or earlier</td>
<td>Agriculture in China</td>
</tr>
<tr>
<td>4000 B.C.</td>
<td>Urk in Mesopotamia, a sizable settlement, near-city</td>
</tr>
<tr>
<td>5000 B.C.</td>
<td>Agriculture in Mesoamerica</td>
</tr>
<tr>
<td>1200 B.C.</td>
<td>Olmec civilization in Mesoamerica</td>
</tr>
<tr>
<td>3100 B.C.</td>
<td>Ancient Egyptian and Sumerian civilizations emerge in the Near East</td>
</tr>
<tr>
<td>1600 B.C.</td>
<td>Cretan and Mycenaen civilizations in Mediterranean, Shang civilization in China</td>
</tr>
<tr>
<td>2700 B.C.</td>
<td>Harappan civilization, Indus Valley, Pakistan</td>
</tr>
<tr>
<td>A.D. 1000 or later</td>
<td>First settlement of New Zealand, Mesa Verde, Chaco Canyon</td>
</tr>
<tr>
<td>A.D. 1</td>
<td>Teotihuacán, 200 B.C. to A.D. 750</td>
</tr>
<tr>
<td>A.D. 1492</td>
<td>Columbus lands in the New World</td>
</tr>
<tr>
<td>10,000 to 20,000 years</td>
<td>Neanderthals widespread in Europe and Eurasia, also the Near East</td>
</tr>
<tr>
<td>200,000 years ago</td>
<td>Anatomically modern humans emerge, probably in tropical Africa</td>
</tr>
<tr>
<td>250,000 years ago</td>
<td>Early Homo sapiens evolving in many areas</td>
</tr>
<tr>
<td>400,000 years ago</td>
<td>Homo erectus in Europe and northern China</td>
</tr>
<tr>
<td>1.8 million years ago</td>
<td>Homo erectus spreads from tropical Africa into Asia</td>
</tr>
<tr>
<td>1.9 million years ago</td>
<td>Emergence of Homo erectus in Africa</td>
</tr>
<tr>
<td>1.75 million years ago</td>
<td>Homo habilis at Olduvai Gorge</td>
</tr>
<tr>
<td>2.5 million years ago</td>
<td>First toolmaking hominins in East Africa</td>
</tr>
<tr>
<td>4.5 million years ago</td>
<td>Earliest nontoolmaking, but bipedal (standing on two feet) hominins in Africa</td>
</tr>
<tr>
<td>For at least 800,000 years ago, these widely scattered Homo erectus populations evolved in the general direction of anatomically modern humans, showing great genetic and anatomical variation subsumed under the general term early Homo sapiens. Among these populations were the squat, heavily built Neanderthals of Eurasia, who flourished from before 100,000 until about 33,000 years ago, during the intensely cold climate of the last Ice Age glaciation.</td>
<td></td>
</tr>
</tbody>
</table>
The Origins and Spread of Modern Humans

About 200,000 years ago, perhaps somewhat earlier, anatomically modern humans evolved in the savanna woodlands of eastern and southern Africa. A minority of scientists believe, however, that *Homo sapiens* emerged in many parts of the Old World at roughly the same time. These modern people, known to us more from genetic studies than from fossils, were still hunter-gatherers, but apparently they were more efficient in their adaptations than their predecessors. By 100,000 years ago, small numbers of *Homo sapiens* had spread out of Africa into southwestern Asia, coming into contact with other, earlier, archaic *Homo sapiens* hunter-gatherer populations. The main out-migration from sub-Saharan Africa occurred later, some 60,000 years ago, by which time *Homo sapiens* had acquired the full cognitive abilities that humankind possesses today—the ability to plan ahead, to reason logically, and to innovate when the need arises.

In perhaps the most dramatic chapter of the human past, *Homo sapiens* now spread widely over the Old World and into the New World (the Americas) during the closing millennia of the Ice Age. Human beings had crossed into Australia by 45,000 years ago. By about 10,000 years later, people had developed the intricate technology needed to survive months of subzero winter cold. They flourished in a deep-frozen Ice Age Europe and on the open plains that stretched far northeast into Siberia. By 15,000 years ago, perhaps earlier, some tiny human bands had probably crossed into Alaska and the Americas. Only the far offshore islands of the Pacific remained uninhabited by humans, awaiting the development of deep-water canoes and offshore navigational techniques.

Figure 2.10  Two hominins of the species *Australopithecus afarensis* walk across a soft bed of volcanic ash at *Laetoli*, Tanzania, 3.5 million years ago. Their footprints were perfectly preserved in the ash and were excavated by the great paleoanthropologist Mary Leakey in the 1970s.
The Origins of Food Production

The worldwide thawing at the end of the Ice Age some 15,000 years ago led to dramatic changes in global climate and geography. Human populations in the Old World and the Americas had to adapt to radically new circumstances, to highly diverse postglacial environments. It was in about 10,000 B.C. that some largely sedentary hunter-gatherer communities in southwestern Asia started cultivating wild cereal grasses such as wheat and barley, partly in response to a severe drought triggered by a sudden cold snap that signaled a partial return to glacial conditions in the north. The new adaptation was highly successful, even if it was first adapted as a means of perpetuating traditional lifeways. Within a few centuries, village farmers were flourishing in many parts of the region and soon further afield. The herding of goats, and then of cattle and pigs, soon replaced hunting as a primary means of subsistence.

The new economies spread like wildfire, south through the Nile Valley and north deep into Europe. Independent centers of plant and animal domestication may have developed in India, Southeast Asia, and China within a few millennia. The cultivation of indigenous plants and cereals began in the Americas by at least 4000 B.C., probably considerably earlier.

Some of the major controversies in archaeology surround the origins of food production. Why did humans turn from hunting and gathering to agriculture and animal herding, a development that led to immediate, long-term changes in global environments because of overgrazing, forest clearance, and plowing? The first scholars to speculate about early agriculture searched for the village occupied by the genius who had first planted wheat grains and watched them germinate into a new and predictable food supply. No one has ever found this mythical genius. We now realize that farming and the domestication of animals were complex changes in human culture that took place over thousands of years, not only in southwestern Asia but in other areas of the world as well. Was climate change responsible for food production, or was a multiplicity of environmental, cultural, or social factors involved? The debate continues.

Throughout prehistory, human societies experimented with new ideas and technologies. Only a few caught on, and only a handful—among them agriculture, metalworking, writing, and wheeled transport—have profoundly affected the development of human societies on a global scale.

The Origins of States (Civilizations)

Before 3000 B.C., new, highly centralized urban societies appeared in Egypt and Mesopotamia (now southern Iraq). These were state-organized societies, preindustrial civilizations headed by supreme rulers and governed by a bureaucracy of officials and priests (for more discussion of states, see Chapter 13). (Preindustrial civilizations depend on animal and human power; industrial civilizations depend on fossil fuels as well.) People lived in much larger communities than in the past, in cities of more than 5,000 people, in societies with ranked social classes, under a social order where conformity was assured by the threat of force, and under an official religion that sanctified the deeds of the tiny minority who ruled the state.

The Sumerians of Mesopotamia, the ancient Egyptians, the Harappans of the Indus Valley in Pakistan, the Shang of northern China, and other early peoples were followed by much larger empires and imperial civilizations—for example, those of the Persians, Greeks, and Romans. The process of early state formation—still only partially understood—also took hold in the Americas, where European explorers like Hernán Cortes came into contact with amazingly sophisticated native American civilizations, such as the Aztecs of Mexico and the Inka of Peru, in the fifteenth century A.D.
A continuous historical record takes us from the Sumerians of Mesopotamia through biblical times right up to the conflicts and economic and technical achievements of Western civilization.

**European Expansion**

The final chapter of prehistory coincides with the expansion of Western civilization outward from its European homeland during the Age of Discovery after A.D. 1430. The five centuries that followed found Westerners coming into contact with all manner of human societies, covering the entire spectrum from Tasmanian hunting bands to the civilizations of the Khmer of Cambodia and the Inka of the Andes. These were the centuries when the world’s diverse societies were first drawn into what historians and anthropologists sometimes refer to as a nascent world system—the system of economic and political interconnectedness that is a dominant trend in today’s global economies.

Prehistory, then, is the compelling story of unfolding human existence, a story that began at a few locations in tropical Africa. The recorded archives of history take us back to only a tiny fraction of our long past, which means that the study of prehistory has much to tell us about why we are so similar and why we are so different.

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**SUMMARY**

1. Archaeology is the systematic study of humanity in the past, not only of human behavior and technology but also of every aspect of human culture.
2. The discipline is an integral part of anthropology, the study of humanity in the broadest sense, with archaeologists studying past societies from all time periods.
3. There are many types of archaeologists. Classical archaeologists study ancient Greece and Rome. Historical archaeologists study sites and societies that are also recorded in written documents. Underwater archaeologists are specialists in shipwrecks and other underwater features, which are excavated like those on land to acquire information about ancient societies. Cultural resource management (CRM) is a major area of archaeology that involves managing the finite remains of the past.
4. Archaeology faces a major crisis as archaeological sites vanish in the face of looting and industrial development. Tourism, too, is having a major impact on popular sites now visited by tens of thousands of people.
5. Archaeologists have no monopoly on the past, for each society has its own worldview and perceptions of history.
6. World prehistory as practiced by archaeologists is a global study concerned with the following developments: early prehistory and human origins, the emergence and spread of modern humans, the origins of food production, and early civilization.

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**QUESTIONS FOR DISCUSSION**

1. What is archaeology’s unique contribution to human knowledge?
2. What is the difference between archaeology and pseudoarchaeology?
3. What is the major crisis facing archaeology, and what is causing it?