

PREVIEW



This book is about what archaeologists want to learn, how they go about learning it, and what they do with that knowledge. These goals require archaeologists to piece together pictures of the past based on scraps of bone, rock, pottery, architecture, and other remains that are hundreds, thousands, or tens of thousands of years old. And further complicating this already difficult process is the fact that archaeology, by its very nature, carries with it some serious ethical dilemmas.

We will look at some of the very different perspectives that characterize today's archaeology. These approaches sometimes coexist, but sometimes they clash. You should keep two things in mind as we discuss these diverse archaeological perspectives: First, no archaeologist fits perfectly into any single perspective, 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 is it Josh Bernstein or Hunter Ellis, on the History Channel program *Digging for the Truth*?

These aren't real archaeologists, of course, and the media certainly 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 PBS science reality series that sends actual 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 ground-penetrating radar (more on those in later chapters). We document everything we find—*everything*—with a precision that's often mind-numbing. But the results can be equally mind-blowing. We can extract blood from stone tools and determine the age of remains sometimes millions of years old. We can date the last time dirt was exposed to sunlight. We can tell you what season an animal was killed and how it was butchered. We can reconstruct ancient social

and political organizations and can trace out trade networks. From skeletal remains we can tell if a person ate much plant food or meat, what kind of work he or she performed, where they were raised, and what physical traumas they suffered.

This kind of forensic work takes years of careful, precise analysis. But the result is an understanding of humanity that would otherwise remain lost to us. Archaeological field research is sometimes exciting and always fulfilling because of how this fieldwork provides a unique window to the past. You've probably heard the saying (by philosopher George Santayana) that "Those who cannot remember the past are condemned to repeat it." Archaeologists believe this, and in the last chapter we'll show you why archaeological knowledge is crucial to constructing the future.

We think the best way to introduce you to archaeology is through its history. Archaeology is a curiously young field that has changed dramatically over the past century and is still experiencing some growing pains. But whatever the change, the fact remains that archaeology is all about ancient objects—the **artifacts** we retrieve from sites remain the primary source of our information. Archaeologist-philosopher Alison Wylie (University of Washington) says that archaeologists "think from things." This is true, but the history of archaeology reflects a shifting relationship with 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

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.



Looking Closer

AD/BC/BP . . . ARCHAEOLOGY'S ALPHABET SOUP

Virtually everything written by archaeologists contains a blizzard of age-related acronyms. So 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"): Many archaeologists feel more comfortable avoiding the AD/BC split altogether, substituting a single "before present" age estimate

(with AD 1950 as the zero point; we'll explain why in Chapter 6). But this convention is most comfortable in the absence of historical references. By this convention, an artifact from, say, the Hastings battlefield would be dated 884 BP (AD 1950 – AD 1066 = 884 BP); that's why many archaeologists working with historically documented events stick to the AD/BC, CE/BCE conventions. But given the broad time ranges employed in this text, we'll primarily use the BP system as often as the more colloquial "years ago."

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, Western 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. But during the Renaissance (circa AD 1300 to 1700), scholars such as Francesco Petrarch (1304–1374) saw a stark difference between the present and the past. Looking to antiquity for moral philosophy, Petrarch, the "father of humanism," perceived the remote past as an ideal of perfection. His study 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' Pizziccolli (1391–1455) to establish the modern discipline of

archaeology. Inspired while translating the Latin inscription on the triumphal arch of Trajan in Ancona (Italy), he devoted 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 the study of the past is often controversial, and not everyone wants the dead to be restored.

Although Renaissance scholars looked to ancient texts to provide moral philosophy, others have used that same 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. 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, if there was such a person, lived about AD 500). King James asserted that Common Law did not apply to the Anglican Church or to the king because it originated with William rather than with Arthur. 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 this particular piece of the past could lead to riots in the streets, King James ordered the dissolution of the Society of Antiquaries in 1614.

But the die was cast, and the Society for Antiquaries (reformed in 1707) was only the first of many British scholarly associations interested in ancient history. Many private collectors were concerned only with filling their curio cabinets with *objets d'art*, but the result of British antiquarianism was to map, record, and preserve national treasures. By the late 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. This lore was readily digested by eighteenth- and early nineteenth-century minds 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 ax heads in the gravels of the Somme River, associated with 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, and although Ussher was wrong, he did follow very careful reasoning.)

This reckoning, of course, allowed no chance of an ancient human antiquity; there simply wasn't enough time.



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Figure 1-1 Boucher de Perthes found Paleolithic hand axes like this in the Somme River gravels.

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 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 also 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 of natural selection, by which modern



Looking Closer

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 powerful; 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.

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). We'll come back to Darwin's contributions in Chapter 13.

The discovery of deep time—the recognition that life was far more ancient than recognized by biblical scholars 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 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 continues into modern times, although the two fields cross paths frequently today.

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. This accumulating knowledge underscored the profound differences between European and American archaeology. 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?").

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

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.

A Brief History of Archaeology

The history of archaeology is illustrated here by a few individuals whose lives and careers typify archaeology of their time. These individuals were by no means the only ones practicing archaeology over the last 200 years. However, their stories demonstrate stages in the growth of archaeology and show how goals and perspectives have changed. At their heart, though, lies an abiding interest in ancient objects as the source of information about the past.

Giovanni Battista Belzoni: Circus Strongman—and Early Archaeologist

The earliest archaeologists are like the crazy uncle that no one wants to talk about. In fact, we don't call them archaeologists at all, but refer to them as **antiquarians**, people who were fascinated by ancient objects but who rarely used those objects to reconstruct the past.

Giovanni Battista Belzoni (1778–1823) was one of the earliest antiquarians. Though Figure 1-2 suggests Belzoni was a native of the Near East, he was actually born in Italy. The son of a barber, Belzoni came to archaeology by a circuitous route. He left home at 16 to join a monastic order and study hydraulics in Rome. But with Napoleon's entry into Italy, Belzoni found his opportunities curtailed and he left, eventually settling in England in 1802. More than six and a half feet tall, with a broad, powerful torso, his physique earned him employment as a circus strongman. Billed as the "Patagonian Sampson," he traveled England and Ireland lifting heavy weights, carrying a dozen men nightly around the stage, and, using his engineering knowledge, creating stage shows featuring jets of flame and water. In 1812, Belzoni



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Figure 1-2 Giovanni Battista Belzoni, dressed here in Middle Eastern garb, was an antiquarian from Italy.

took his show on the road, leaving England to perform in Portugal, Spain, Sicily, and eventually the island of Malta.

In Malta he met an agent of Mohammed Ali Pasha, Egypt's ruler. Though Mohammed Ali was Albanian, he rose to power in Egypt after a British-Ottoman force defeated Napoleon's army and left a power vacuum that Ali, a member of the conquering force, managed to fill. He immediately set about industrializing Egypt, especially the production of cotton that British textile factories were eager to buy. To do so, he needed to irrigate Egypt's deserts, and to do that, he needed someone, the agent told Belzoni, who knew hydraulics. Tired of his career as a circus performer, Belzoni saw his chance. In 1815, he traveled to Egypt and, after a year, demonstrated an oxen-driven waterwheel to the pasha. Though it first worked splendidly, an unfortunate accident led the pasha to reject it and throw Belzoni out of the palace. Penniless, he was stuck in Egypt, with no prospects in sight.

But the past provided his future. Several European nations were looting Egypt of its antiquities to stock their museums, and the British consul in Egypt had promised associates at the British Museum that he would send antiquities for display. Many of these antiquities were huge statues, and the British consul saw how to put Belzoni's knowledge and strength to work. With Britain's financial backing, Belzoni soon became one of the best of the pillagers. His first task was to move the 8-ton head and torso of a statue of Ramesses II from Thebes. This effort required not only his great physical strength but also his engineering ingenuity, for the statue fragment had to be placed on a sledge and rolled, inch by inch, for two weeks to the Nile River, where it was loaded on a boat and floated north. It also required considerable negotiating skills, for Belzoni had to convince local leaders to provide him with the workmen needed for the effort. Sometimes this required bribery, and sometimes he simply picked up an obstinate tribal leader and "shook

antiquarian Originally, someone who studied antiquities (that is, ancient objects) largely for the sake of the objects themselves, not to understand the people or culture that produced them.



Figure 1-3 Belzoni's crew moved the granite carving of Ramesses II using virtually the same techniques the ancient Egyptians had used. The hole in Ramesses right shoulder was drilled by the French when they tried, unsuccessfully, to move it.

him like a rat." The statue of Ramesses II is still on display at the British Museum.

In only three years, Belzoni "recovered" numerous statues, mummies, and carvings. He was the first European to enter the temple at Abu Simbel (see the chapter's opening photo), and the first European to enter the pyramids on the Giza Plateau outside Cairo. He removed the 6-ton granite obelisk from Philae, and discovered five tombs in the Valley of the Kings (where 100 years later the tomb of King Tutankhamun would be found). Belzoni's spoils, in fact, inspired Shelley's famous 1818 poem "Ozymandias."

Looters vied for the spoils. Belzoni had gun battles with the French and he soon tired of the fighting. In 1819 he returned to England, where he received considerable acclaim for his accomplishments (and booty). An inveterate wanderer, he left again in 1823 to seek the origin of the Nile, but was felled by dysentery, and died in Benin.

Why do we remember Belzoni, and not his rivals, in what is now known as "the rape of the Nile"? Belzoni's methods were destructive enough to make modern archaeologists cringe. Once, crawling nearly naked through a mummy-filled cave, Belzoni tried to sit, but "when my weight bore on the body of an Egyptian, it crushed it like a band-box. . . . I sank altogether among the broken mummies, with a crash of bones, rags, and wooden cases." Valuable information was lost by such carelessness. And no archaeologist today would so thoughtlessly remove another country's cultural heritage. But Belzoni stands out because he took notes and made illustrations and observations of the places he visited. To be sure, the antiquities were first on his mind, but he, and some other antiquarians, were also interested in what those things

had to tell us. There was no professional archaeology at the time; there were no excavation manuals, no national laws protecting antiquities, and no idea that crucial knowledge was being lost. Nonetheless, it was from such humble (and humiliating) beginnings that the science of archaeology arose.

Jens Jacob Asmussen Worsaae: The First Professional Archaeologist

Many of the early antiquarians felt no shame in trashing ordinary mummies or less spectacular sites because they knew little of the potential for ancient objects to tell us something about the past. These men thought they already knew the past, or they

simply didn't care. They thought *about* things, but they didn't think *from* things. This began to change in the mid-nineteenth century.

With hindsight, we can see that the antiquarians' role in the development of archaeology was to create collections of objects from which patterns eventually emerged, patterns that suggested ancient cultures were not static, but had changed over time. Trying to get a handle on the chronology of these changes, then, was the first order of business, and this is what the world's first professional archaeologist set out to do.

Jens J. A. Worsaae (1821–1885; Figure 1-4) was a toddler when Belzoni passed away. Born in Denmark, he was fascinated as a child by artifacts and even dug into a few



Figure 1-4 Jens Jacob Asmussen Worsaae, the first professional archaeologist.

mounds and barrows. Worsaae intended to study law, but before he was 20 he volunteered for Christian Thomsen (1788–1865), who was organizing the archaeological collections at what is now the National Museum of Denmark (Thomsen had devised the now well-known typological scheme of the Stone, Bronze, and Iron Ages). Thus, Worsaae was the first person to receive training, albeit informal, in archaeology. Through connections, Worsaae received financial support from the king of Denmark to write his first book, *Primeval Antiquities of Denmark*, published in 1843, when he was only 22. Later he was appointed Denmark's first Inspector for the Conservation of Antiquarian Monuments and, at age 34, became the first professor of archaeology at the University of Copenhagen.

We recognize Worsaae as the first archaeologist because, unlike antiquarians who excavated to find things, Worsaae *excavated to answer questions*. Because he was interested in what artifacts tell us about the lives of ancient people, Worsaae was clearly *thinking from things*. Moreover, he was not content with studying artifacts found by farmers or pillagers. He argued that “antiquities have a value with reference to the spot in which they are found” and that it was “necessary to examine and compare with care the places in which antiquities are usually found.” In other words, he knew that an artifact's archaeological *context* was as important as the artifact itself. We'll return to the idea of context in Chapter 4.

Here's an example. Large piles of shells once lay all along the Danish shore, and during the mid-nineteenth century, some geologists argued these piles were created by wave action. But Worsaae's excavations demonstrated that these were **middens**, trash heaps created by people. In one of his notebooks he wrote that the “heaps were the places where the people of the neighborhood, in that far-off time, took their meals, as witness, for example, the **potsherds**, charcoal, bones of animals and stone implements.” He also excavated sites to test Thomsen's Three-Age system, showing that the Stone, Bronze, and Iron Ages were real chronological phases, as Thomsen had hypothesized. In sum, Worsaae demonstrated two important attributes of an archaeologist:

midden Refuse deposit resulting from human activities, generally consisting of sediment; food remains such as charred seeds, animal bone, and shell; and discarded artifacts.

potsherd Fragment of pottery.



Figure 1-5 Alfred V. Kidder (right), conducting a survey with Jesse Nusbaum at Mesa Verde, Colorado, in 1907.

He excavated to answer questions, not just to find things; and he knew that an artifact's context was as important as the artifact itself.

Alfred Vincent Kidder: Founder of Anthropological Archaeology

Professional archaeology developed a bit later across the Atlantic, and one of its early figures was Alfred Vincent Kidder (1885–1963), shown in Figure 1-5. Kidder was born in Michigan, and his father, a mining engineer, made sure that his son received the best education available. First enrolled in a private school in Cambridge, Massachusetts, Kidder then attended the prestigious La Villa in Ouchy, Switzerland, and then registered at Harvard. Kidder joined an archaeological expedition to northeastern Arizona, exploring territory then largely unknown to the Anglo world. The southwestern adventure sealed his fate.

When Kidder returned to Harvard, he enrolled in the anthropology program and in 1914 was awarded the sixth American PhD specializing in archaeology—and the first with a focus on North America. Kidder's dissertation examined prehistoric southwestern ceramics, assessing their value in reconstructing culture history. Relying on scientific procedures, Kidder demonstrated ways of deciphering meaning from one of archaeology's most ubiquitous items, the potsherd. Urging accurate description of ceramic decoration, he explained how such apparent minutiae could help determine cultural relationships among various prehistoric groups. Kidder argued that only through controlled excavation and analysis could researchers draw inferences about such anthropological

subjects as acculturation, social organizations, and prehistoric religious customs.

In 1915, the Department of Archaeology at the Phillips Academy in Andover, Massachusetts, sought a site of sufficient merit to justify a multiyear archaeological project. Because of his anthropological training, Kidder was selected to direct the excavations. He evaluated the possibilities and decided on Pecos Pueblo, a massive prehistoric and historic period ruin located southeast of Santa Fe, New Mexico. Kidder was impressed by the great diversity of potsherds scattered about the ruins and felt certain that Pecos contained enough stratified debris to span several centuries. He dug at Pecos for ten summers.

The Pecos excavations were consequential for several reasons. Kidder followed and separated particular strata, distinctive layers of earth, to construct a cultural chronology. He also went beyond the pottery to make sense of the artifact and architectural styles preserved at Pecos. His intensive artifact analysis, done before the advent of radiocarbon dating or tree-ring chronology (methods that we discuss in Chapter 6), established the framework of southwestern prehistory, which largely remains intact today.

After joining the Carnegie Institution of Washington, DC, as director of the Division of Historical Research, Kidder launched an ambitious archaeological program to probe the Maya ruins of Central America. He directed the Carnegie's Maya campaigns for two decades, arguing that a true understanding of Maya culture would require a broad plan of action with many interrelated areas of research. Relegating himself to the role of administrator, Kidder amassed a staff of qualified scientists with the broadest possible scope of interests. His plan was a sea change in archaeological research, enlarging traditional archaeological objectives to embrace the wider realms of anthropology and allied disciplines. Under Kidder's direction, the Carnegie program supported research by ethnographers, botanists, geographers, physical anthropologists, geologists, meteorologists, and, of course, archaeologists. With help from the early aviator Charles Lindbergh, Kidder even employed aerial reconnaissance to discover new ruins and map the boundaries of various types of vegetation. Today the interdisciplinary complexion of archaeology is a fact of life, but when Kidder proposed the concept in the 1920s, it was revolutionary.

Through his research in the Maya region and in the American Southwest, Kidder helped shift archaeology toward more anthropological purposes. Kidder maintained that archaeology should be viewed as "that branch of anthropology which deals with prehistoric peoples," and that archaeologists were merely a "mouldier variety of anthropologist." Although archaeologists continue to immerse themselves in the nuances of potsherd detail and architectural specifics, the ultimate objective of archaeology is to move from *things* to *people*.



© Courtesy The Principal and Fellows, Newnham College, Cambridge

Figure 1-6 Gertrude Caton-Thompson, one of the pioneers of modern excavation in Egypt.

Gertrude Caton-Thompson: Looking Beyond Tombs

Born in England to a wealthy family, Gertrude Caton-Thompson (1888–1985; Figure 1-6) had the physical and intellectual grit required in archaeology. Several trips to Egypt, Greece, Palestine, and Malta as a youth generated a deep interest in prehistory, but initially she led the carefree existence typical of the wealthy around the turn of the century. But she had a serious side. In 1911 she was active in the women's suffrage movement, and during World War I she volunteered for various offices. In that capacity she attended the Paris peace talks in 1919 as a personal assistant. There she met T. E. Lawrence ("Lawrence of Arabia"), who had done some archaeology, as well as Gertrude Bell, an archaeologist and student of Arabia (she helped found the Baghdad Museum and create the modern national borders of Iraq). Her encounter with Lawrence and Bell encouraged Caton-Thompson to return to her childhood passion, and she began studying archaeology formally in 1921. Recognizing, like Kidder, that archaeology requires a knowledge of many fields, she studied geology, zoology, paleontology, Arabic, and, of course, anthropology.

A quick learner, she soon found herself in Egypt working with Sir Flinders Petrie, an important figure in archaeology. Working in remote parts of Egypt or other parts of Africa was and still is difficult, but Caton-Thompson was up to the task. On one trip, she slept in an empty stone tomb, with a revolver under her pillow for protection against hyenas and cobras. On another, she hiked across the desert one night to find help for a crew that was running out of water. And in southern Africa, she mapped a site while keeping an eye on a leopard nearby on the edge of a cliff.

More important, she advanced archaeology intellectually. At the time, most archaeologists in Egypt focused their attention on tombs and temples, but Caton-Thompson



Figure 1-7 Great Zimbabwe, a medieval-age ruin in Zimbabwe, Africa. Caton-Thompson disproved hypotheses that it was built by European or Asian peoples.

thought they were missing something by not excavating settlements. In the 1920s, she became the first archaeologist to excavate a village site in Egypt, using the same careful methods that she had learned under Petrie. A few years later she undertook a survey of the northern Faiyum Desert in Egypt. Like Kidder, Caton-Thompson broke new ground by working with a geologist to reconstruct the sequence of settlements and their relationships to ancient lake levels preserved in sediments and landforms.

Caton-Thompson continued to work in Egypt and elsewhere, but her work in Zimbabwe (then Southern Rhodesia) shows an important element of modern archaeology. For decades, the colonial powers had known of the massive ruins of a site known as Great Zimbabwe (from which the modern nation took its name after independence). Sitting atop a hill, the site contains massive stone walls and buildings (Figure 1-7). Several investigators (whose methods were those of the worst of the antiquarians) argued that the site was Ophir (the location of the biblical King Solomon's mines) or the palace of the Queen of Sheba. None wanted to believe that indigenous African people were capable of creating such a structure. Some asserted the Phoenicians had built the site, and used its alleged biblical connections to justify European colonization and control of southern Africa.

stratigraphy A site's physical structure produced by the deposition of geological and/or cultural sediments into layers, or strata.

In 1929, the British government invited Caton-Thompson to resolve the controversy. Reasoning that previous efforts failed because they had ignored the site's **stratigraphy** (we'll discuss this concept in Chapter 5), she approached the problem with two straightforward questions: How old is the site, and was it built by Africans? Caton-Thompson carefully excavated deep trenches to bedrock in several places, and even tunneled under the site's massive solid stone conical tower. Studying glass trade beads, she eventually demonstrated that the site had been inhabited in the thirteenth and fourteenth centuries—far too late for its alleged biblical associations. She also found that the pottery and other implements, as well as the architecture, were little different from those of later known African peoples. By thinking from things, Caton-Thompson concluded that Great

Zimbabwe was African in origin. She took considerable flak for this conclusion because it did not support colonial rule of southern Africa. The past is often used to justify the present—and archaeologists are often called upon to judge these claims. This is one of the realities of archaeology that we will touch upon in later chapters.

Archaeology at Mid-Twentieth Century

Archaeology began as a pastime of the rich, but developed into a professional scientific discipline. Most professional archaeologists were affiliated with major museums and universities; others joined the private sector, working to protect and conserve America's cultural heritage. This institutional support not only encouraged a sense of professionalism and fostered public funding, but also mandated that public repositories care for the archaeological artifacts recovered. Twentieth-century archaeologists were not collectors of personal treasure: All finds belonged in the public domain, available for exhibit and study.

We can also see a distinct progression toward specialization in our target archaeologists. Scholars accumulated knowledge of the past so rapidly that by the early twentieth century, archaeologists specialized in particular regions. It is difficult today to find someone like Caton-Thompson doing seminal work in Egypt while simultaneously tackling challenging issues in southern Africa. Possibly the greatest change, however, has been the quality of archaeologists' training. Worsaae was more or less self-taught, but Kidder and Caton-Thompson received more formal training, much of it hands-on. American archaeologists were also well

versed in the broader field of anthropology, although this was less true for European archaeologists.

Archaeologists by mid-century wanted to transcend mere cultural chronology, but classifying artifacts and sorting out their patterns in space and time left little time for more anthropological objectives, such as reconstructing society. Most archaeologists by the middle of the twentieth century practiced what is called **culture history**, documenting how material culture changed over time and space. Their main goal was to track the migrations and development of particular prehistoric cultures. Some archaeologists tried to explain changes by relating them to climatic change, for example, or to vague ideas about cultural evolution. But for the most part, archaeologists attributed differences in artifact frequencies between sites to the presence of different cultures or ideas. Changes in artifact frequencies over time, such as the types of pottery found in different layers of earth at a site, were attributed to the diffusion of ideas from other cultures or the replacement of one culture by another. Worsaae, for example, thought that the Stone, Bronze, and Iron Ages marked the diffusion of new ideas or the migration of new people into Denmark, rather than a technological evolutionary sequence.

By the 1950s, the basic prehistory of many world regions was sufficiently well understood that some archaeologists could move beyond simple documentation to more in-depth reconstructions of prehistory. Worsaae wanted to paint a picture of life alongside the growing shell middens of Denmark. Caton-Thompson excavated village sites because she knew that she could not draw a complete picture of life in ancient Egypt by excavating tombs alone. But only later, as methods and basic cultural chronologies developed, could archaeologists move on to more anthropological goals and seek explanations for the prehistory they were reconstructing.

H. Marie Wormington: Ancient Man in North America

Born in Denver, Colorado, H. Marie Wormington (1914–1994; Figure 1-8) was part of the generation that began to take archaeology further. Like many archaeologists before her, she had originally intended to pursue another career—zoology or medicine, in her case. But while taking an archaeology class at the University of Denver, she discovered her passion. “Once I discovered there was such a thing as archaeology,” she later said, “I just never looked back.” Wormington continued her education in France, working on a cave excavation in the Dordogne in 1935, then joined the staff at what is now the Denver Museum of Nature and Science. She left temporarily to obtain her doctorate from Radcliffe, but remained employed at the museum until 1968, when she left to occupy several teaching positions. She was among the first American anthropologists to enter the former Soviet Union, as well as the People’s Republic of China.



© Denver Museum of Nature and Science

Figure 1-8 Marie Wormington, a female pioneer in American archaeology.

This vignette exposes some of archaeology’s dirty laundry. The many women involved in the earliest days of archaeology faced a difficult time and hard decisions because women were often considered unsuited for the rigors of archaeology. Some, such as Caton-Thompson, sacrificed marriage and family. Marie Wormington once had to sit in a Harvard corridor because, as a woman, she was prohibited from entering the lecture hall. She signed her work “H. M. Wormington,” concealing her gender because the director of the Denver museum feared that no one would read a book on archaeology by a woman. Into the late 1960s, many male archaeologists refused to take women on their field crews.

Times have changed—fully half of the several thousand archaeologists in the United States today are female—but in the 1930s, women like Marie Wormington were in the vanguard. She was only the second woman admitted to study in Harvard’s anthropology department, and was the first female president of the Society for American Archaeology. Though remembered as eminently polite and diplomatic, she was no shrinking violet: She once told the dangerous Nicaraguan dictator Anastasio Somoza Debayle that a site in Nicaragua was not as old as he hoped.

Wormington worked in many places and on various research topics, but her first love was “paleoindian” archaeology—the archaeology of pre-8000-year-old North America. In 1939, at the age of 25, she published *Ancient Man in North America*,

culture history The kind of archaeology practiced mainly in the early to mid-twentieth century; it “explains” differences or changes over time in artifact frequencies by positing the diffusion of ideas between neighboring cultures or the migration of a people who had different mental templates for artifact styles.

which went through four editions, the last published in 1957. These editions demonstrate how archaeology matured over time. In 1939, the American scientific community was only able to estimate how long people had lived in the New World; by 1957, radiocarbon dating gave certainty to those estimates. The last edition contains discussions of genetic data (blood typing), geology, skeletal data, and comparisons to archaeological material in South America and Siberia. Importantly, Wormington wrote *Ancient Man* (as well as *Prehistoric Indians of the Southwest*, 1947) for the general public, anticipating the present-day concern that the results of archaeology be accessible to the public that supports the field.

The various editions of *Ancient Man* chronicle not only the astonishing growth in the amount of information available, but also the progress in interpreting archaeological data in terms of technology, subsistence, migratory routes, and age. The book evolved from a straightforward catalog of sites and finds to a discussion of what those finds *mean* in terms of the lives of the ancient people who left them behind. That is, the various editions of *Ancient Man* demonstrate the shift from a concern with *things* to a concern with *thinking from things*. “Artifacts themselves are not important,” Wormington once said, “it’s the information they can provide about cultures and about people.” She closed *Ancient Man in North America* with a clear statement of why modern archaeology abandoned the misguided confidence of the antiquarians in favor of a more rigorous concern for methods and techniques:

To the casual observer the growing list of unanswered questions regarding the ancient inhabitants of North America may seem appalling; actually it should be regarded as encouraging. With a new subject the tendency is to oversimplify through lack of knowledge. Only with increased knowledge comes the realization of the complexity of the problem, for with each solution which is reached new fields are opened and new perplexities arise. To find an answer one must first have sufficient knowledge to formulate the question.

As the knowledge of prehistory accumulated, the methods and objectives of archaeology changed, as demonstrated by archaeologists who were trained in the 1960s.

Lewis R. Binford: Archaeology’s Angry Young Man

If archaeology has ever had an “angry young man,” it was Lewis R. Binford (1931–2011; Figure 1-9). After a period of

new archaeology An approach to archaeology that arose in the 1960s, emphasizing the understanding of underlying cultural processes and the use of the scientific method; today’s version of the “new archaeology” is sometimes called processual archaeology.



© Courtesy of Lewis R. Binford, photo by Grant Spearman

Figure 1-9 Lewis R. Binford (right) at Tulugak Lake in Alaska in 1999 with a Nunamiut friend, Johnny Rulland. Binford helped develop the “new archaeology” of the 1960s.

military service, Binford enrolled in 1954 at the University of North Carolina, wanting to become an ethnographer. But when he entered the graduate program at the University of Michigan, Binford had become a confirmed archaeologist.

The 1960s were a watershed time for American college campuses. Baby-boom demographics and the GI Bill inflated enrollments. Campuses became the focal point for the waves of social and political confrontation that roiled the nation. Clashes over the war in Vietnam and civil rights created a revolutionary atmosphere. Archaeology was firmly embedded in this intellectual climate. Everyone, including archaeologists, braced for the change.

Binford thrived in this cultural climate. He could lecture, sometimes for hours, with the force and enthusiasm of an old-time southern preacher, and he rapidly assumed the role of archaeological messiah. His students became disciples spreading the word: As the study of cultural change, archaeology has obvious relevance to modern problems. To fulfill this role, Binford argued, archaeology must transcend potsherds and spear points to address larger issues, such as cultural evolution, ecology, and social organization. Archaeology must take full advantage of modern technology by using scientific methods and sophisticated, quantitative techniques. Archaeology must study the remaining preindustrial peoples to scrutinize firsthand the operation of disappearing cultural adaptations. And archaeology must be concerned with methods for reconstructing the past. In the 1960s, this became known as the **new archaeology** (see “In His Own Words: The Challenge of Archaeology” by Lewis R. Binford). Archaeology had, in Marie Wormington’s words, sufficient knowledge to start asking more complex and difficult questions.

The new archaeology (a now-antiquated term for us all, and especially to today’s students) emphasized a new way of studying the past and a new agenda for doing archaeology. The master plan was set forth in a series of articles published through the 1960s and early 1970s, many by Binford and his students.



In His Own Words

THE CHALLENGE OF ARCHAEOLOGY

— by Lewis R. Binford

As I was riding on the bus not long ago, an elderly gentleman asked me what I did. I told him I was an archaeologist. He replied: "That must be wonderful, for the only thing you have to be to succeed is lucky." It took some time to convince him that his view of archaeology was not quite mine. He had the idea that the archaeologist "digs up the past," that the successful archaeologist is one who discovers something not seen before, that all archaeologists spend their lives running about trying to make discoveries of this kind. This is a conception of science perhaps appropriate to

the nineteenth century, but, at least in the terms in which I myself view archaeology, it does not describe the nature of archaeology as it is practiced today. I believe archaeologists are more than simply discoverers. . . .

Archaeology cannot grow without striking a balance between theoretical and practical concerns. Archaeologists need to be continuously self-critical; that is why the field is such a lively one and why archaeologists are forever arguing among themselves about who is right on certain issues. Self-criticism leads to change, but is itself a challenge—one

which archaeology perhaps shares only with palaeontology and a few other fields whose ultimate concern is making inferences about the past on the basis of contemporary things. So archaeology is not a field that can study the past directly, nor can it be one that merely involves discovery, as the man on the bus suggested. On the contrary, it is a field wholly dependent upon inference to the past from things found in the contemporary world. Archaeological data, unfortunately, do not carry self-evident meanings. How much easier our work would be if they did!

Binford asked why archaeology had contributed so little to general anthropological theory. His answer was that, in past studies, material culture had been simplistically interpreted. Too much attention had been lavished on artifacts as passive traits that "blend," "influence," or "stimulate" one another. Binford proposed that artifacts be examined in their cultural contexts and interpreted as reflections of technology, society, and belief systems. That is, Binford underscored the need to change from thinking *about* things to thinking *from* things.

Binford also emphasized the importance of precise, unambiguous scientific methods. Archaeologists, he argued, must stop waiting for artifacts to speak up. They must formulate hypotheses and test these on the remains of the past. Binford argued that, because archaeologists always work from samples, they should acquire data that make the samples amenable to statistical analysis. He urged archaeologists to stretch their horizons beyond the individual site to the scale of the region; in this way, an entire cultural system could be reconstructed (as we discuss in Chapter 3). Such regional samples must be generated from research designs based on the principles of probability sampling. Random sampling is commonplace in other social sciences, and Binford insisted that archaeologists apply these scientific procedures to their own research problems.

Binford's ideas about methodology fostered projects designed to demonstrate how this approach can help comprehend cultural processes. Intricate statistical techniques were applied to a variety of subjects, from the nature of Mousterian

(some 150,000 years old) stone tools to the archaeology of historic forts. He proposed new ideas, rooted in the field of human ecology, to explain the origins of plant domestication. These investigations were critical because they embroiled Binford in factual, substantive debate. Not only did he advocate different goals and new methods, but Binford also gained credibility among field archaeologists because he was arguing about specifics, not just theory. Binford conducted his own ethnographic fieldwork among the Nunamiut Eskimo, the Navajo, and the Australian Aborigines, testing the utility of archaeological concepts and methods on the trash of living peoples.

The "new archaeology" of the 1960s has today evolved into so-called processual archaeology. In subsequent chapters, we explore the tenets of this position and also examine how yet another wave of archaeological criticism—postprocessual archaeology—finds fault with Binford's approach and suggests some alternative directions.

Archaeology in the Twenty-First Century

So, what about today? Who is a mover and shaker of the twenty-first century?

Perhaps in another 50 years or so, hindsight will suggest one person who truly captures the spirit of these times. But right now, we do not detect a single, defining trend that



Figure 1-10 Archaeology students Matthew Neff (standing) and Rachel Reckin recording artifacts with a Trimble GPS at 11,400 feet in the mountains of Wyoming.

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dominates archaeology; instead, the discipline has several branches, each growing and intersecting with the others in interesting ways. Throughout these pages, we will meet some archaeologists who exemplify those trends (in boxes labeled “Profile of an Archaeologist”). For now, we want to give you a sense of the diversity of modern archaeology.

The Jobs of Modern Archaeology

All archaeologists today are concerned with learning something new about the past, with communicating that knowledge to the public, and with protecting archaeological sites. But archaeologists serve in various specific jobs that usually emphasize one or two of these concerns. Prior to the 1960s, virtually all archaeologists made a living by working in a museum or university. Many, including this textbook’s authors, still work in such places, but today federal agencies and especially private cultural resource management (CRM) firms employ the majority of archaeologists.

University-based archaeologists are responsible for both teaching and research. How much they do of each depends on their educational institution. Those in community colleges do much more teaching than research, while those in large, “research universities” teach fewer classes and devote more time to research. Doing archaeological research means spending time in excavation or analysis, as well as in writing grant proposals to secure funding to pay for research as well as publications describing the research. The expression

“publish or perish” aptly describes life for a professor in a research university.

Archaeologists employed as curators in museums are responsible for research, maintaining exhibits and constructing new ones, and public outreach. How much they do of each is again a product of the institution’s mission: Curators in large museums tend to do more research, while those in small museums work more on exhibits and outreach.

In both of these cases, archaeologists’ research is what they decide it to be. Both of your textbook’s authors are required by their institutions to do research, but neither institution tells us what to research. We can switch, depending on where our research leads us, from lowland caves to high-altitude sites (Figure 1-10).

Archaeologists working for federal, state, or local governments or for a private archaeological consulting (CRM) firm have different responsibilities. Their role is to make sure that companies and the federal government are in compliance with federal laws, regulations, and statutes. Government archaeologists are not required to do research (though many do); instead, they oversee the protection of archaeological properties on federal land, do some public outreach, and track archaeological sites through databases (e.g., Wyoming’s state archaeological database contains more than 136,000 sites even though only a fraction of the state has been surveyed for sites). CRM firms arose in response to federal legislation passed in the 1960s designed to protect the nation’s archaeological resources (more about these laws in Chapter 15). Archaeologists in such firms work on the sites that lie in the paths of coal mines, roads, pipelines, well pads, and wind towers. As such, they don’t have much choice over what sites they excavate and study. They do, however, have to be aware of current research to justify which sites are excavated and which are to be let go (we’ll return to this in Chapter 15 when we consider the concept of “significance”). Although they are not required to conduct that research, many CRM archaeologists do so anyway. But because their primary obligation is to ensure compliance with laws, their first job is to conduct fieldwork and analysis to the highest standard possible using the latest techniques and methods. Each of these occupations, different as they might be in day-to-day practice, blend together because the goal of all archaeology is to reconstruct and understand

the past. CRM and federal archaeology, for instance, generate enormous amounts of data that university and museum archaeologists can use in their research. Each member plays a role in making the results of archaeology relevant to the public.

Despite the multiple ways that archaeologists can make a living, we all share a broad set of theories, approaches, and interests. This is partly due to increased diversity of the field's membership. Before the 1970s, most American archaeologists were white and male; today the archaeological profession comprises equal numbers of men and women, and more minorities, including Native Americans, are actively involved in the field. And the sheer number of archaeologists has increased dramatically over the past few decades. In the 1960s, you could put all the archaeologists in the country in a modest-sized university classroom. Today, there are more than 7000 professional archaeologists working in the United States alone.

If you flip through the pages of a professional journal such as *American Antiquity*, you'll find articles on everything from 13,000-year-old stone tools to tin cans found in the trash dump of a historic cabin. You'll find articles that make use of complex mathematical models, statistical techniques, and stable isotope and protein residue analysis (more on those in later chapters), but you'll also find humanistic efforts that connect the past to living, descendant communities and reconstruct ancient cosmologies from carvings and paintings. Some archaeologists today focus less on excavation, and more on compiling existing information into large databases. Others have hung up their trowels, and conduct research with living communities to develop ways to link human behavior with material remains. Some focus on public outreach; others on statistical techniques. Some specialize in the study of a particular class of material things—stone tools, pottery, metallurgy, animal bones, or sediments. Some are regional specialists, and some are experts in the application of a particular piece of technology, such as ground-penetrating radar (more on that in Chapter 3).

The point is simple: Archaeologists make a living in multiple ways. If you are interested in working toward a career in archaeology, you'll find a place for you and your particular interests.

Conclusion: Archaeology's Future

Archaeology's future is a lively and vibrant one. Archaeology enjoys enormous public interest, as shown by the popularity of places such as Mesa Verde National Park, expanding television programming, and popular college courses. This level

of public support suggests that more, not less, archaeology will be needed in the future.

Archaeology evolved from a pastime of the wealthy to an established scientific discipline. But with these changes has come the realization that studying the human past raises numerous ethical issues. Nobody can practice archaeology in a political or cultural vacuum. We argue that archaeology remains a science that insists on high standards of evidence and must continue to examine how we make inferences from evidence. Science in this sense is self-correcting, making it essential to most inquiry (including archaeology). But we also recognize that scientific inquiry is susceptible to cultural biases. We think that archaeologists must continue to work closely with indigenous peoples and descendant communities, attempting to recognize and correct cultural biases (as in Figure 1-11, which shows a working example of this compromise). We'll return to this matter in our final chapter.



Figure 1-11 Archaeology today confronts both scientific and ethical challenges. Yet there are many signs that archaeology need not be antagonistic to indigenous peoples. Here, Bryceson Pinnecoose (Hopi/Cheyenne, on right) and Ron Winters use a power sifter to screen archaeological deposits at Mission San Marcos, New Mexico.

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SUMMARY

1. What makes an archaeologist an archaeologist?

- ◆ Archaeologists reconstruct and explain the past by “thinking from things,” using their analyses of material remains as the basis for knowledge of the past.

2. Why is the study of the past controversial?

- ◆ People typically use their vision of the past to justify their actions in the present. The assumption that Great Zimbabwe was built by Europeans justified Europeans’ taking southern Africa. Archaeologists can (and should) question any beliefs about the past.
- ◆ New World prehistory is largely studied by people of European descent, setting up inevitable and important disagreements about the past and its use in the present.

3. How was the rise of archaeology connected to the discovery of humanity’s “deep” antiquity?

- ◆ Studying the past depends on *recognizing* a past.
- ◆ Although many early scholars were aware of the classical civilizations, the discovery in France of human artifacts with extinct animals made evident the need to study that past in great detail, without ancient documents as a guide.

4. Who were the antiquarians, and why include them in a history of archaeology?

- ◆ For better or worse, these looters helped spark an interest in the ancient world. They built museum

collections that inspired later generations to create the profession of archaeology (which would reject the methods and attitudes of antiquarians).

5. What trends have characterized archaeology over the last century?

- ◆ The evolution from antiquarianism to professional archaeology has involved the movement from thinking *about* things to thinking *from* things.
- ◆ Archaeologists have always sought to build cultural chronologies, reconstruct ancient societies, and explain why cultures change over time. Today we can see they were initially successful with the first objective, then the second, and eventually the third. Along the way, archaeologists have increasingly borrowed information and techniques from many fields—geology, zoology, mathematical statistics, astronomy, climatology, and others—as they develop ways of making solid inferences from material remains using solid scientific methods.
- ◆ Archaeology today covers both prehistoric and historical eras and uses a wide diversity of approaches. Archaeology is concerned with bringing knowledge to a broader public, with making research relevant to contemporary society, and with understanding the opinions and needs of indigenous and descendant communities.