# THE HISTORY OF ARCHAEOLOGY

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**Summary**

From its Enlightenment beginnings, the history of archaeology is the story of humankind's continuing quest to better understand our place in the neighborhood, the world, and the cosmos. Prior to the advent of empirical and problem-oriented research strategies, scholars turned to Biblical and other religious texts for answers to questions having to do with the earth and humankind's place within it. As artifact and fossil evidence of human antiquity began to be found, the insufficiency of Biblical explanations and chronologies became apparent, and slowly but surely new explanations of these phenomena were fostered. By the late 19th century, a discipline recognizable as archaeology coalesced around improvements in analytical method and theory borrowed from other disciplines, like the concept of culture from anthropology, the theory of evolution from biology, and the law of superposition from geology, to name an important few. In the Old World, where written records exist in some places as much as 5,000 years ago, and where an interest in all things Classical has been present since for more than three centuries, archaeology tends to be aligned with historical disciplines. In the New World, where research questions concerning the origins, nature, and continued existence of Native Americans guided archaeology, the discipline is more closely allied with Anthropology. Today, the effects of this multidisciplinary history are clearly evident, and archaeologists enjoy the benefit and utility of a wide variety of analytical techniques from the social and physical sciences. Though our understanding of the prehistoric past has come a long way since fossil human ancestors were first identified in 1848, important questions remain to be answered, and the future of archaeology looks bright.



## 1. The Nature of Archaeology

Classically defined, archaeology is the study of material remains from past human cultures. More broadly, and more recently, archaeologists J. Jefferson Reid and Michael Brian Schiffer have defined archaeology as the study of the relationship between human behavior and material culture in all times and all places. Alfred Kroeber once described anthropology, and by extension archaeology, as the most humanistic of the sciences and the most scientific of the humanities. No matter how it is defined, archaeology in the 21st century is a multidisciplinary social science that uses analytical techniques from disparate fields of inquiry to answer questions about human behavior and material culture in the prehistoric, historic, and recent past.

### 1.1. Distinctions Between Old World and New World Archaeology

In the Old World, where Biblical and other historical texts have for centuries been used

to identify, interpret, explain, and confirm archaeological phenomena and interpretations, university-based archaeologists are usually based in history departments. In the Americas, and particularly in North America, where early historical records did not exist, were not deciphered until relatively recently, or recorded only a small fraction of the past, history departments proved an inappropriate home for archaeologists. Instead, and because their research questions focused on the origin, nature, and future of indigenous peoples, university-based archaeologists in the New World are typically based in anthropology departments. The majority of archaeologists working around the world today are in government or private enterprise positions. This is largely a result of cultural resource management legislation that preserves archaeological sites as cultural heritage and that requires archaeological research as a prerequisite prior to any new construction activity.

### 1.2. The Multidisciplinary Nature (and Strength) of Modern Archaeology

The multidisciplinary nature of modern archaeological research makes the binary divisions just outlined for archaeological practice (e.g. Old World vs. New; History vs. Anthropology, University-based vs. Government- or Private enterprise-based) seem trivial. The fact is that specialists from art history, astronomy, biology, botany, chemistry, Classics, geosciences, history, mineralogy, paleontology, philology, physics, soil sciences, theology, and zoology make significant contributions to archaeological knowledge, method, and theory.

Paleoethnobotanists and archaeozoologists now reconstruct subsistence patterns from botanical and faunal remains respectively. Specialists in Neutron Activation Analysis, Inductively Coupled Plasma Mass Spectrometry, and other types of sourcing studies now discern the origin and movement of raw materials, artifacts, and by extension people, across the prehistoric and historic landscape. Chemists help archaeologists identify activity areas through the identification of phosphates and other chemical signatures. Specialists in remote sensing, from aerial photography to ground-penetrating radar, magnetometry, and other techniques, allow archaeologists to identify patterns and features not readily visible to the naked eye. Geographic Information System specialists help archaeologists analyze and interpret a wide variety of data concerning the site or region. Palynologists, those who study pollen, and specialists in the study of pack rat middens provide archaeologists with astonishingly detailed information on past climatic conditions, land use, and the development and spread of cultigens.

## 2. Writing the History Of Archaeology

### 2.1. Chronicle: Scholars and Their Discoveries

Knowledge creation in archaeology, as in any academic discipline, is cumulative. The history of archaeology can therefore be written as a sequential chronicle of important people and their discoveries. Though satisfying popular and romantic notions about who archaeologists are and what they do, such chronicles can reduce history to a series of "eureka" events that do not examine, much less explain, the contexts and contingencies of archaeological research and discovery. For example, Mary Leakey discovered a fossil human ancestor (*Australopithicus boisei*) at Olduvai Gorge in Africa in 1959.

This is remarkable in its own right, but the fact that she and husband Louis had the perseverance, patience, confidence, and resources to search for ancestral humans for decades prior to that discovery is arguably of greater significance to historians and sociologists of science. Few scholars can make such a dedicated commitment to one research problem even if they so desired.

### 2.2. Chronicle: Development of Archaeological Method and Theory

Archaeology is an empirical discipline; what we know is a function of how we know it. Archaeologists regularly adopt new analytical methods and interpretive theories from other social and physical sciences to wrest better, more accurate, and more precise information from a notoriously incomplete record of the prehistoric past. The history of archaeology can therefore be written by examining the scholarly impact of new techniques on our understanding of the past. For example, the 1912 discovery of the Piltdown "fossils"-- which we now know constitute a fraudulent combination of a modern Orangutan's jaw and a modern human's skull-- is fascinating for two reasons. First, the large cranial capacity of the Piltdown fossils satisfied popular and scholarly notions about the expected nature of the "missing link" between human ancestors and fully modern humans. Europeans expected the brain, and therefore higher intelligence, to be the defining characteristic of modern humans, but then-recent discoveries (see Section 4.3.1) were beginning to suggest that bipedalism and tool use evolved before large cranial capacity, and were therefore the defining characteristics of the human lineage.

The Piltdown episode is also interesting because many respected scholars accepted the Piltdown fossils as genuine for nearly half a century. The fraud was highly sophisticated-- points of articulation between the skull and jaw were destroyed, so there was no way to definitively prove that they were *not* from the same animal. The various pieces were also dyed to suggest that they had lain in the same depositional context for millennia. The fraud was not revealed until 1949, when fluorine dating, a new relative dating technique based on the chemical analysis of bone, demonstrated that the jaw and skull were significantly younger than the other bones in the same deposit and were therefore intrusive. When these results were published in 1953, they forced archaeology into a period of critical self-examination that illuminated the effects of biases and preconceived notions on archaeological research. The perpetrator of the Piltdown hoax has not been identified.

### 2.3. Biography

The history of archaeology has also been told via biography and autobiography. Biographies of important archaeologists do a better job of illuminating relevant contexts, unstated assumptions, and previously undocumented connections, but they run competing risks of hagiography, in which archaeological predecessors are hailed without criticism, and presentism, in which early archaeologists are held to standards that were not justified, warranted, or acceptable at the time the archaeologist was working. For example, Paul Sidney Martin of The Field Museum in Chicago deserves credit for his contributions to southwestern archaeology from 1929 to 1972 and is rightfully hailed as a pioneer in archaeological method and theory. Martin had a

publication record that was the envy of his peers, for he usually published site reports a year or two after fieldwork completion. The untold story, however, is that Martin did *not* publish anything on more than half of the sites he excavated, nor did he catalog many of the objects he collected of behalf of The Field Museum. Though it is now easy to criticize Martin for these failures, the nature of archaeological research and collecting activity were very different at the time he was working, and indeed we should be thankful he collected and saved this material, which is still available for research and exhibition. As but one example of the analytical utility of the Martin collection, scholars studying the development of agriculture in the New World recently extracted DNA from 1500-year-old maize cobs collected at Tularosa Cave, New Mexico, in 1950.

### 2.4. Autobiography

In contrast to biographies, autobiographies run the risk of selective memory and revisionist history. Individuals sometimes claim, or fail to deny, credit for research for which others, particularly subordinates, often deserve recognition. For example, Neil Judd, an archaeologist at the Smithsonian Institution, played a key role in the development of archaeological tree-ring dating in North America in the 1920s, especially from an administrative standpoint. He garnered funding from the National Geographic Society when research support from the American Museum of Natural History waned. Throughout the 1920s, he applied pressure on astronomer Andrew Ellicott Douglass, the developer of tree-ring dating, to keep up his efforts at dating archaeological sites, despite the fact that Douglass has nearing retirement age, and had other responsibilities, commitments, and interests. The 15-year, and ultimately successful, effort to establish tree-ring dating in the American Southwest certainly would not have developed without Judd's contributions and influence, but historical analysis reveals that his contributions were less central to the archaeological problem than he maintained in his autobiography of 1968. To make matters worse, archaeology graduate student Lyndon Lane Hargrave did not receive the credit he deserved, though it is clear that his study of prehistoric pottery helped target the sites in which appropriate tree-ring specimens would ultimately be found.

### 2.5. Issues of Professionalization, Confirmation, And Verification

The history of science is replete with such episodes in which individuals fail to get credit, either while alive or posthumously, for their contributions. The reasons for this situation are many and complex, but often have to do with questions of academic credentials, professionalization, gender, socioeconomics, and the nature of verification and confirmation processes in the academy. For example, George McJunkin, an African-American cowboy working in west-central New Mexico, discovered in 1908 projectile points that were associated with the skeleton of an extinct form of bison. The academic establishment did not confirm McJunkin's discovery until 1926, four years after his death, and indeed did not formally recognize McJunkin's efforts until the mid-1960s (see also Section 5.3 below). History is the story of those who are in power, and the history of archaeology is no exception. Critical evaluation of all sources of information, not just publications, is therefore warranted and necessary.

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**Biographical Sketch**

**Stephen E. Nash** has been Head of Collections in the Department of Anthropology at The Field Museum in Chicago since 1999. In this role, he oversees all collections-based activity and supervises a staff nearly two-dozen collections managers, conservators, and registrars. Primary tasks include grant writing and other administrative duties, though he continues to publish on a variety of topics.

Prior to become Head of Collections, Nash served as Post-Doctoral Research Scientist at The Field Museum, cataloging Paul Sidney Martin's 585,000-object collection of archaeological materials from Colorado, New Mexico, and Arizona, which was collected during Martin's tenure from 1929 to 1972. In 2003, Nash edited and published *Curators, Collections, and Contexts: Anthropology at The Field Museum 1893 - 2002*, which examines The Field Museum's place within the history of anthropology, museums, and archaeology.

Nash received his Ph.D. from the University of Arizona in 1997 with a dissertation on the development, application, and implications of archaeological tree-ring dating. This effort was published in 1999 as *Time, Trees, and Prehistory: Tree-Ring Dating and the Development of North American Archaeology 1914 - 1950*. A corollary project led to the 2000 publication of *It's About Time: A History of Archaeological Dating in North America*. His Master's Degree, awarded by the University of Arizona in 1991, analyzed the concept of curation as a heuristic device in archaeological research.

Nash earned his bachelor's degree from Grinnell College in 1986 has conducted archaeological fieldwork in France, Israel, Arizona, California, Colorado, Illinois, and Utah.