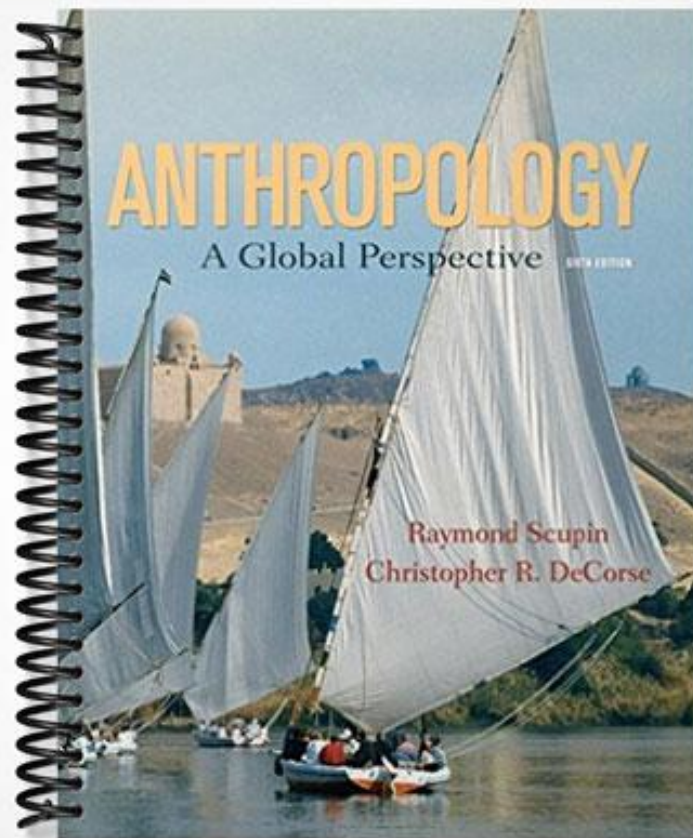


**SOLUTIONS MANUAL**



# CHAPTER TWO

## THE RECORD OF THE PAST

### **CHAPTER OUTLINE**

Critical Perspectives: Engendering Archaeology: The Role of Women in Aztec Mexico

Critical Perspectives: Historical Archaeology

### **ANSWERING QUESTIONS**

Applying Anthropology: Underwater Archaeology

### **PALEOANTHROPOLOGICAL STUDY**

Fossils and Fossil Localities

### **ARCHAEOLOGICAL RESEARCH**

The Archaeological Record

Locating Sites

Archaeological Excavation

### **DATING METHODS**

Relative Dating

Anthropologists at Work: George Fletcher Bass: Underwater Archaeologist

Numerical, or Absolute, Dating

Seriation

### **INTERPRETATIONS ABOUT THE PAST**

### **SUMMARY**

### **CHAPTER OBJECTIVES**

Based on thorough reading and careful consideration of Chapter Two, students should be able to:

1. Distinguish between the roles of the paleoanthropologist and the archaeologist.
2. Identify the importance of the fossil record and fossil localities to paleoanthropology. Understand how fossils form.
3. Define and explain the relationship of the following terms: sites, artifacts, features, and context.
4. Describe the processes of locating archaeological sites, including: survey methods, systematic and unsystematic approaches, subsurface testing, proton magnetometer, electrical resistivity, remote sensing, and aerial photography.
5. Explain the process of archaeological excavation using definitions of *datum point*, *midden*, and *tell*.
6. Identify the applications of various archaeological dating methods including terms such as: relative dating, stratigraphy, Steno's law of supraposition, the principle of faunal succession, faunal correlation, palynology, the FUN trio, numerical or absolute dating, radiocarbon dating, potassium-argon dating, fission-track dating, dendrochronology, and seriation.

7. Explain some of the implications of biased versus balanced interpretations of the archaeological record. Explain what information is hard to access through archaeology.

## **LECTURE AND DISCUSSION TOPICS**

Each of these topics is intended to generate ideas for either a lecture/recitation format or discussion in the classroom. For most topics, students should be able to respond and participate in discussions based solely on reading the text. For others, you may need to provide further reading or other forms of information so that students can develop some personal perspective and become equipped to make independent decisions about the topics.

1. Lecture on the distinctions between the roles and activities of paleoanthropologists and archaeologists, emphasizing the different methods, materials, and results in each area of study.
2. Lecture on the importance of the fossil record, how fossils form, the information that they yield, and the difficulties inherent in interpretation of the fossil record. Explain the concepts of fossil localities and the processes of fossil collection.
3. Lecture on the basic concepts of archaeology. Explain the relationship of sites, artifacts, features, context, and preservation. Include in your discussion an explanation of previous attempts at studying the past, such as antiquaries' collections, with contemporary research designs, or archaeological methods.
4. Lecture on the comparative contributions of different methodological approaches to studying the past, including historical archaeology, ethnoarchaeology, the direct historical approach, and underwater archaeology.
5. Lecture on the various processes of locating archaeological sites. Include in your discussion an explanation of survey methods, systematic and unsystematic approaches to archaeological surveys. Discuss the benefits and limitations of the methods for subsurface testing, including the proton magnetometer and electrical resistivity. Explain the process of remote sensing using aerial photography and satellites.
6. Lecture on the process of archaeological excavation, distinguishing the types of information that excavation yields, and the expectations for the use of such information (for instance, the results of an excavation of a midden or tell).
7. Lecture on the applications of various archaeological dating methods. Illustrate, with examples, the distinction between relative dating and numerical, or absolute, dating using relevant terms, such as: strata, Steno's law of superposition, the principle of faunal succession, faunal correlation, palynology, the FUN trio; radiocarbon dating, potassium-argon dating, fission-track dating, dendrochronology, and seriation.
8. Lecture on the mechanics of radiocarbon dating and its value to anthropology and archaeology. You could also discuss other forms of radioactive dating, such as the potassium-argon method. You might also show the film *The Tree That Put the Clock Back*, which describes the relationship between radiocarbon dating, dendrochronology, and the collapse of diffusionism. It cites Colin Renfrew as a primary source.

9. Lecture on the implications of biased versus balanced interpretations of the archaeological record. Use historical examples with which students may be familiar.

## **CLASSROOM ACTIVITIES**

1. One very vivid way to illustrate the processes of archaeological methods is to have students participate in a mock dig. Construct a "site" with various levels and artifacts, which may be used to simulate the process of archaeological discovery of artifacts.
2. Invite professionals from other disciplines to guest lecture: a geologist to discuss stratigraphy, a biologist on faunal succession/faunal correlation and palynology, a chemist on the FUN trio, and a physicist on radioactive decay dating (e.g., potassium-argon dating, fission-track dating, and Carbon-14 dating).
3. Students can debate the methods and merits of artifact and site preservation, based on outside reading from news articles and current research. Also have students look at recent Internet websites. A few are included under the Additional Resources section at the end.
4. As an application activity, have students assume the role of a historical archaeologist, an ethnoarchaeologist, or an underwater archaeologist. Ask them to explain the relative merits of each of their methods to others in the group, to compare the difficulties and reliability of each of their approaches to studying the past. Create scenarios or problems, which require their unique skills, or require a combination of these methods to find a solution. Encourage students to find out what archaeological experiences may be available in their community.
5. Simulate or use actual site maps to give students experience in the techniques involved with locating archaeological sites. Viewing slides, aerial photographs, or diagrams of artifact scatters, students could define where a site might be and indicate what methods might be used to test the site.
6. One way to encourage reflection on the implications of biased versus balanced interpretations of the archaeological record, is to have students investigate some of the frauds that have been perpetrated throughout history using archaeological "facts." Students might read about social, political, and economic conditions, and theoretical perspectives that affected the interpretation of archaeological investigations. Have them explain what the current perspective is on the interpretation of such finds.

## **RESEARCH AND WRITING TOPICS (Research Navigator)**

Encourage your students to utilize the free tool [OneSearch with Research Navigator](#), included with this textbook as a supplement. They will have to register to use this service. Once registered, students can use this tool to research the Internet to find valid sources for research papers, saving them much time in their efforts to identify relevant sources.

1. Research the roles of the paleoanthropologist and the archaeologist; report on the similarities and differences of these two fields, using actual practitioners as examples.
2. Based on a mock excavation, students might write a report, including the need for site preservation, modeled after actual site preservation documents.

3. Students might research eighteenth- and nineteenth-century accounts and records of antiquaries collectors. Compare the collections and the intent of the collectors with those of researchers today and of the current threat of damage to archaeological sites by pot hunting.
4. Research and write a comparative paper on the methods and contributions of each of the following approaches to studying the past: historical archaeology, ethnoarchaeology, the direct historical approach, and underwater archaeology.
5. Write a descriptive paper on the processes of locating archaeological sites, including an evaluation of current practices in one or more of the following: survey methods, systematic and unsystematic approaches, subsurface testing, proton magnetometer, electrical resistivity, remote sensing, and aerial photography.
6. Write an evaluative paper on one or more of the applications of various archaeological dating methods, such as: relative dating, strata, Steno's law of supraposition, the principle of faunal succession, faunal correlation, palynology, the FUN trio, numerical or absolute dating, radiocarbon dating, potassium-argon dating, fission-track dating, dendrochronology, and seriation. Compare their benefits and drawbacks and their usefulness to archaeology and the study of human development.
7. Evaluate various writers on the implications of biased versus balanced interpretations of the archaeological record.
8. Write a website that operates like a time capsule. What sort of information would you include in it so that people of the future could understand our generation, its problems, and its successes?
9. Evaluate some of the popular fictional literature that makes use of archaeology such as Tony Hillerman's Westerns (*Dance Hall of the Dead*). Select one author and demonstrate how he or she uses concepts of archaeology correctly or incorrectly.
10. Investigate what students and faculty do who participate in "garbology" studies at the University of Arizona Department of Anthropology. Why would they do this?

## **PRINT RESOURCES**

- ALDENDERFER, MARK S. 1987. *Quantitative Research in Archaeology: Progress and Prospects*. Newbury Park, CA: Sage Publications, Inc. A good book on formal and quantitative methods.
- BEAUDRY, MARY C. 1988. *Documentary Archaeology in the New World*. New York: Cambridge University Press. A fine collection of essays on the role of documents in historical archaeology.
- BINFORD, LEWIS R. 1983. *In Pursuit of the Past: Decoding the Archaeological Record*. New York: Thames and Hudson. An informative look at our archaeological past. A revealing account of Binford's thinking.
- BRAY, W., and D. TRUMP. 1973. *The Penguin Dictionary of Archaeology*. Baltimore: Penguin. A good dictionary on the subject.
- CARR, CHRISTOPHER. 1989. *For Concordance in Archaeological Analysis: Bridging Data Structure, Quantitative Technique and Theory*. Prospect Heights, IL: Waveland Press. A fine series of papers on theory.

- COURBIN, PAUL. 1988. *What Is Archaeology? An Essay on the Nature of Archaeological Research*. Chicago: University of Chicago Press. An interesting critique of the New Archaeology.
- DANIEL, GLYN. 1981. *A Short History of Archaeology*. New York: Thames & Hudson. A brief introduction to the history of archaeology by one of the leading scholars on the subject. This volume concentrates on developments in Europe, Africa, and Asia and makes a nice contrast with the Willey and Sabloff volume listed below.
- DAVIS, SIMON J. M. 1987. *The Archaeology of Animals*. New Haven, CT: Yale University Press. A fine introductory book on zooarchaeology.
- DEETZ, JAMES. 1977. *In Small Things Forgotten: The Archaeology of Early American Life*. New York: Anchor Books. A popular, highly readable overview of historical archaeology in the United States by one of the leading scholars in the field. It discusses the sources of information and special dating methods that can be used by archaeologists studying the recent past, as well as how archaeologists have addressed specific research questions.
- EDDY, FRANK W. 1991. *Archaeology: A Cultural-Evolutionary Approach* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall. An interesting work that takes an uncommon approach to archaeology.
- EHRENBERG, MARGARET. 1989. *Women in Prehistory*. Norman: University of Oklahoma Press. A good retelling of European prehistory to include women.
- FAGAN, BRIAN. 1994. *Quest for the Past: Great Discoveries in Archaeology, Revised edition*. Prospect Heights, IL: Waveland Press. An interesting look at some exciting discoveries in archaeology.
2001. *In the Beginning: An Introduction to Archaeology* (10th ed.). New Jersey: Prentice Hall. A very good introduction to general archaeology.
2003. *Archaeologists: Explorers of the Human Past*. Oxford University Press, USA.
2005. *Ancient North America*, 4th ed. Thames and Hudson.
- GIBBON, GUY. 1984. *Anthropological Archaeology*. New York: Columbia University Press. An interesting look at anthropological archaeology.
- HODDER, IAN. 1986. *Reading the Past: Current Approaches to Interpretation in Archaeology*. New York: Cambridge University Press. An insightful examination of post-processual archaeology.
- HUME, IVOR NOEL. 1991. *Martin's Hundred*. University of Virginia Press. An excellent account of how the Martin's Hundred way of life was reconstructed using historical archaeological techniques. This book provides a view of life in Virginia during early colonization.
- Also, a series of excellent monographs about Colonial Williamsburg for a popular audience:  
*Archaeology and the Colonial Gardener; Archaeology and Wetherburn's Tavern; Digging for Carter's Grove; Discoveries in Martin's Hundred; Food, Glass in Colonial Williamsburg's Archaeological Collections; James Geddy and Sons; Pottery and Porcelain in Colonial Williamsburg's Archaeological Collections; and The Wells of Williamsburg: Colonial Time Capsules.*
- JOUKOWSKY, MARTHA. 1980. *A Complete Manual of Field Archaeology*. Englewood Cliffs, NJ: Prentice Hall. An excellent field and lab manual.

- KELLEY JANE H., and MARSHA P. HANEN. 1988. *Archaeology and the Methodology of Science*. Albuquerque: University of New Mexico Press. A book that addresses the relationship between archaeology and philosophy, between archaeological theory and archaeological practice.
- KENT, SUSAN. 1984. *Analyzing Activity Areas: An Ethnoarchaeological Study of the Use of Space*. Albuquerque: University of New Mexico Press. A pioneering work on this subject.
- MacNEISH, RICHARD S. 1978. *The Science of Archaeology?* North Scituate, MA: Duxbury. A very readable account of an individual archaeologist's look at things.
- McINTOSH, JANE. 1986. *The Practical Archaeologist: How We Know What We Know about the Past*. New York: Facts on File. A well-illustrated introduction to archaeology.
- PRICE, DOUG, and GITTE GEBAUER. 1989. *Adventures in Fugawiland*. Mountain View, CA: Mayfield. A good archaeological simulation (disk [IBM compatible] and workbook) that has a regional focus.
- PROTHERO, DONALD R. 1989. *Interpreting the Stratigraphic Record*. New York: W.H. Freeman. An authoritative work on the principle, techniques, and methods used in dating and interpreting the geological record.
- RENFREW, COLIN, and PAUL BAHN. 2000. *Archaeology: Theories, Methods, and Practice*, 3rd ed. New York: Thames and Hudson. An interesting inquiry into general archaeology from a problem-oriented point of view.
- RICE, PRUDENCE M. 1987. *Pottery Analysis: A Sourcebook*. Chicago: University of Chicago Press. An excellent synthesis and reference text on pottery analysis.
- SCHIFFER, MICHAEL B. 1987. *Formation Processes of the Archaeological Record*. Albuquerque: University of New Mexico Press. A favorably-reviewed book on the process of archaeological site formation.
1989. *Archaeological Method and Theory*. Tucson: University of Arizona Press. A good collection of papers.
- SCHUYLER, ROBERT L. 1978. *Historical Archaeology: A Guide to Substantive and Theoretical Contributions*. Farmingdale, NY: Baywood Publishing Company. An excellent collection of articles about historical archaeology.
- SPENCER-WOOD, SUZANNE M. 1987. *Consumer Choice in Historical Archaeology*. New York: Plenum Press. A novel collection of articles that recovers consumer choice of the past from the archaeological record.
- STEIBING, WILLIAM H. 1993. *Uncovering the Past: A History of Archaeology*. Oxford: Oxford University Press.
- THOMAS, DAVID H. 1989. *Archaeology*, 2nd ed. New York: Holt, Rinehart & Winston. A good book on archaeology.
- THROCKMORTON, PETER, ed. 1987. *The Sea Remembers: Shipwrecks and Archaeology from Homer's Greece to the Rediscovery of the Titanic*. New York: Weidenfeld & Nicholson. A compilation on nautical archaeology by one of the pioneers in the field. It provides an enjoyable, broad survey of the variety of sites and discoveries that have been recovered from shipwreck sites.

TRIGGER, BRUCE G. 1989. *A History of Archaeological Thought*. Cambridge: Cambridge University Press. This volume provides the best available synthesis of the history of archaeology in worldwide perspective. The intellectual and social context in which archaeology emerged is also discussed.

UBELAKER, DOUGLAS H. 1989. *Human Skeletal Remains: Excavation, Analysis, Interpretation*, 2nd ed. New York: Taraxacum. An interesting perspective.

WILLEY, GORDON R., AND JEREMY A. SABLOFF. 1993. *A History of American Archaeology*, 3rd ed. New York: W.H. Freeman. A comprehensive and very readable overview of the origins and development of American archaeology, beginning with the first descriptions of monuments by European explorers to the present theoretical approaches.

### **ATLASES:**

*The Atlas of Archaeology*. New York: St. Martin's Press, 1982.

*Hammond Past Worlds: The Times Atlas of Archaeology*. Maplewood, NJ: Hammond, 1988.

*The World Atlas of Archaeology*. New York: Portland House, 1988.

### **FILM, VIDEO, AND NONPRINT RESOURCES**

(Color unless otherwise noted)

OMOHUNDRO, JOHN T., and KATHLEEN GOODMAN. 1990. *Mystery Fossil: A Physical Anthropology Laboratory Exercise for the Macintosh*. Mountain View, CA: Mayfield. An excellent computer simulation that has students evaluate fossil skulls and fit three mystery fossils into the known material.

*The Ancient Mariners* (60 minutes) PBS Video, 800/424-7963

*Archaeological Dating. Retracing Time* (17 minutes) Penn State, 800/826-0132

*Atom and Archaeology* (24 minutes) Penn State, 800/826-0132

*Ben's Mill* (60 minutes) PBS Video, 800/424-7963

*Body in the Bog* (30 minutes) Penn State, 800/826-0132

*Buried in Ice* (57 minutes) Penn State, 800/826-0132

*Dating the Past* (29 minutes) (B&W) Penn State, 800/826-0132

*Five Foot Square* (30 minutes) University of California, 415/642-0460

*4-Butte-1: A Lesson in Archaeology* (33 minutes) Penn State, 800/826-0132

*Hedeby: The Salvage of a Viking Ship* (42 minutes) Penn State, 800/826-0132

*Other People's Garbage* (59 minutes) Penn State, 800/826-0132

*Place in Time* (28 minutes) Penn State, 800/826-0132

*Rock Engravings* (7 minutes) Penn State, 800/826-0132



## **INTERNET EXERCISES**

1. Refer to the Critical Perspectives box titled “Engendering Archaeology: The Role of Women in Aztec Mexico.” After surveying the following website, <http://www.uwm.edu/~barnold/gender.html>, how do you think the conference ties to this box? What is the significance of “A Landscape of Ancestors: The Heuneburg Archaeological Project” found at <http://www.uwm.edu/~barnold/arch/index.html>?
2. The website <http://www.maxwell.syr.edu/anthro/anarchoe.htm> discusses the focus of historical archaeology. What is it? How does this compare to the Critical Perspectives box titled “Historical Archaeology”? What is the overall value of historical archaeology compared to history?
3. Underwater archaeology, as exemplified in the Applying Anthropology box titled the same, is a rather unique field. By looking at the two related websites, <http://aima.iinet.net.au/> and <http://www.science.ulster.ac.uk/cma/>, list the requirements for becoming an underwater archaeologist. What personality traits might be important for this type of work? What are the rewards of underwater archaeology?
4. Review the Anthropologists at Work box titled: “George Fletcher Bass: Underwater Archaeologist.” Compare this to the following websites: <http://nautarch.tamu.edu/index.htm> and [http://archnet.asu.edu/topical/Selected\\_Topics/Underwater%20Archaeology/general.php](http://archnet.asu.edu/topical/Selected_Topics/Underwater%20Archaeology/general.php). What type of background does an underwater archaeologist need? What types of training does it take to work in the discipline of underwater archaeology?
5. <http://archnet.asu.edu/>  
This site provides a number of hotlinks to other interesting archaeological sites as well as copious information on regional archaeology and access to archaeological data. One feature of this site is a list of museums around the world that have New World archaeology, Old World archaeology, or exhibits on culture.