

PREFACE

So, a new edition! New cover, new layout, lots of new pictures and graphs, and many, many pages of new text . . . and, yes, there's more: We even have a new coauthor. With the retirement of William Turnbaugh, who ably contributed to this book through eight editions, Barry Lewis, an archaeologist with extensive field experience in North America and South Asia, joins the author team.

But why a new edition? Our biology is still the same, our primate cousins haven't perceptibly changed, and both the fossil record and archaeological record of the human past are still in the past. So what's the big deal? Why not trundle on with the same edition? The answer's simple—we learn so much more about the world with each passing year. The new discoveries, fresh theories, new methods and technologies force changes, sometimes fundamental changes, in the *understanding* of how the world around us works.

Consider this: There are probably more physical anthropologists and archaeologists at work right now than in all the preceding generations combined. The sheer number, diversity, and global distribution of their research projects would have been unthinkable to scholars 60–70 years ago and laughably improbable in the eyes of researchers just a century ago (when physicists speculated that their field would likely soon disappear because there was so little left to discover!). The net result of the scale of recent research is that our understanding of the world around us, not just in physical anthropology and archaeology, but in all scientific disciplines, unfolds with fresh perspectives at an increasing rate year after year.

The ninth edition of *Understanding Physical Anthropology and Archaeology* stays true to our 25-year tradition of providing introductory students and their instructors with a current and comprehensive understanding of human biological and cultural development from an evolutionary point of view. Fresh perspectives and new discoveries will be found in nearly every part of this book. To mention only a few important examples (see the next section, "What's New in the Ninth Edition," for detailed highlights), recent advances in molecular biology are having profound effects on the biological understanding of the human past. The implications of these advances are so fundamental that they even impact archaeology, where the emerging subdiscipline of "archeogenetics" is now defining itself! New archaeological discoveries around the world also are driving major theoretical changes. For example, at the 23,000-year-old campsite of Ohalo II in the Near East, archaeologists have found abundant, well-preserved evidence of extensive dependence on plant foods more than 10,000 years older than the oldest known cases when the eighth edition of this text went to press. Critical

finds such as Ohalo II often poke holes in major theories and send researchers back to their workbenches to hammer out fresh ideas.

Today's learning environment is also changing. Although every edition of *Understanding Physical Anthropology and Archaeology* is committed to providing up-to-date subject content for students and their instructors, we authors are also teachers and even sometimes students ourselves. We know that instructional software, the Internet, multimedia, new teaching approaches, and a host of other factors (including technologically adept students!) are reshaping classrooms and the ways in which students and instructors engage the course material. To meet the pedagogical challenges of today's classrooms, we work hard to enhance each edition with in-chapter learning aids (see the appropriately titled "In-Chapter Learning Aids" section below) to help ensure that learning (and teaching) the course material continues to be a positive and productive experience.

What's New in the Ninth Edition

Since the eighth edition of this text went to press in Spring 2001 much in the world around us has changed—in many cases disconcertingly so. When the prior edition came out, the September 11th terrorist attacks hadn't yet occurred, iPods hadn't been invented, reality TV didn't exist, the United States briefly enjoyed its second largest budget surplus in history, and approximately 450 million fewer people were living on the planet. In science and in our world, so much has happened that it's no surprise that the ninth edition of *Understanding Physical Anthropology and Archaeology* is the most dramatically revised new version of this text since its first appearance a quarter century ago.

First, as noted, we have a new lead author, archaeologist Barry Lewis. Second, there have been several major organizational changes. The number of chapters has been reduced from 18 to 16. The two chapters in the eighth edition on modern human variation have been combined into one chapter (Chapter 4); likewise, the two chapters dealing with methods of understanding the past from paleoanthropological and archaeological perspectives have been combined into an integrated single chapter (Chapter 8). A new chapter order will also be evident, with the earlier placement of the chapter (Chapter 5) on macroevolutionary processes. We believe this organization will work better since the broad evolutionary processes influencing vertebrates, and more specifically, mammals, are now discussed prior to the materials on primates.

Another obvious change from the eighth edition is found in the between-chapter features. While in the prior edition we had several photo essays, in this one we have focused on short and, we

hope engaging, discussions of the latest “cutting edge” research in physical anthropology and archaeology.

And, of course, the content of the book has been updated throughout with new information derived from molecular studies of DNA and exciting, in some cases even shocking, accounts of new finds of early human fossils from Africa, Asia, and Europe. To show how these two kinds of new data can blend together, there’ve been several remarkable new determinations of ancient human DNA from fossils as much as 70,000 years old (which we discuss in Chapters 11 and 12 and the “Cutting Edge Research” feature between these chapters). Discussion of the entry of the first humans into the New World (Chapter 13) takes a broader perspective, both in time depth and spatial coverage, and examines the three main competing hypotheses and their strengths and weaknesses. The theoretical perspectives on the origins of agriculture (Chapter 14) and the origins of the first civilizations (Chapter 15) have been completely rewritten to consider fresh views on these crucial developments in the human past.

Students will be glad to know there are also several new learning aids in every chapter to help them master more easily the sometimes complex material. These include focus questions at the beginning of each chapter, “At a Glance” boxes summarizing key concepts through a simple visual presentation, and thought-provoking critical thinking questions at the end of each chapter. And, lastly, the photos and artwork have been substantially expanded and updated, not just to make the book more visually appealing, but also to provide a better sense of what physical anthropologists and archaeologists do, and why they enjoy doing it!

FEATURES

Cutting Edge Research boxes are major between-chapter features, highlighting some of the newest and most innovative research in physical anthropology and archaeology. Five areas of research are covered, including:

- Molecular Applications in Forensic Anthropology (following Chapter 3)
- Molecular Applications in Primatology (following Chapter 6)
- Reconstructing the Diets of Earlier Humans (following Chapter 8)
- Ancient DNA (following Chapter 11)
- Geomatics: Analyzing Spatial Patterns of the Past (following Chapter 14)

Boxed highlights titled “Digging Deeper” are high-interest features found throughout the book. They expand on the topic

under discussion in the chapter by providing a more in-depth perspective.

IN-CHAPTER LEARNING AIDS

- **Chapter outlines**, at the beginning of each chapter list all major topics covered.
- **Focus Questions**, a new feature that appears at the beginning of each chapter, highlight the central topic of that chapter.
- A **running glossary** in the margins provides definitions of important terms on the page where the term is first introduced. A **full glossary** is provided in the back of the book.
- **At a Glance**, a new feature for the ninth edition, briefly summarizes complex or controversial material in a visually simple fashion.
- **Figures**, including numerous photographs, line drawings, and maps, most in full color, are carefully selected to clarify text materials and are placed to directly support discussion in the text.
- **Critical Thinking Questions** at the end of each chapter have been completely revised to reinforce key concepts and encourage students to think critically about what they have read.
- Two new features, **Most Significant Fossil Discoveries Discussed in This Chapter** and **Most Significant Sites Discussed in This Chapter**, are included at the end of relevant chapters to help students as they review the chapter material.
- **Full bibliographic citations** throughout the entire book provide sources from which the materials are drawn. This type of documentation guides students to published source materials and illustrates for them the proper use of referencing; all cited sources are listed in the comprehensive bibliography at the back of the book.
- A “Click” Icon at the beginning of most chapters directs students to the media relevant to that chapter. One or more of the following media will be listed when appropriate: *Virtual Laboratories in Physical Anthropology CD-ROM, Third Edition* (an online version is also available), *Basic Genetics for Anthropology CD-ROM: Principles and Applications*, and *Hominid Fossils CD-ROM: An Interactive Atlas*.

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