

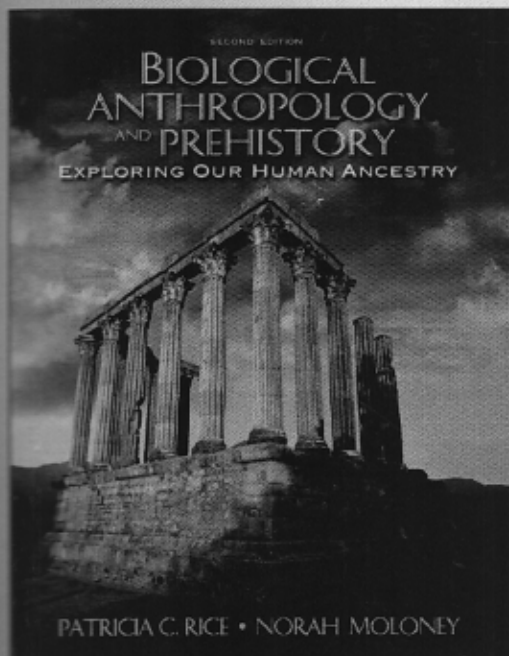
Preface

The study of our human past is fascinating and exciting. What it is to be human is both biological (we are animals) and cultural (we use symbols in complex systems). In order to know how we got to be the way we are today biologically and culturally, we must study our human past relative to both culture and biology. Because the study of our human past falls in the discipline of anthropology, it is the domain of bioanthropologists and archaeologists.

The term *paleoanthropology*—as used in its original sense—not only combines the study of our past biology and culture and the methods of bioanthropology and archaeology, but also studies the interrelationships between our past culture and biology. This book will lead you and your students along the road of discovery of our human past.

Our human past is knowable. But, like all historical sciences, paleoanthropology must grapple with many facts and many unknowns. We will discuss the knowns and hypothesize about the unknowns. When experts disagree about certain points in reconstructing the human past, we introduce the topic, discuss the disagreements, give evidence, and suggest how the disagreements might be alleviated. Instructors can “pick a position” or not. We emphasize paleoanthropology as a science and integrate theoretical and empirical findings.

Our aim in this book is to make the study of the human past understandable to beginning anthropology students. It is more important to us that they understand the processes of change than whether they can memorize dozens of tongue-tying taxonomic terms. We discuss the human past in a population mode rather than describing fossils or artifacts as isolated bits of bone or stone. We have intentionally taken the “lumper” perspective rather than the “splitter” perspective to enhance the understanding of what happened in the past and in an effort to “keep it simple.” Being “lumpers,” we use as few species names as necessary to explain the fossil material, for example. We always mention the alternative taxonomy and say why we will not be using it so that any student going on into advanced courses or reading the literature that uses the alternative taxonomy will not be lost.



How This Book Is Organized

We have organized the book primarily by anthropological subdiscipline (archaeology and bioanthropology) and by chronology. We did so to emphasize the difference between biological happenings and cultural happenings and to highlight the different methods used to understand and reconstruct past events. The introductory chapter provides a context for both biological anthropology and archaeology—the main topics of this book—by introducing the total discipline of anthropology and its four (or five) subfields in terms of what each is and how specialists in that area do their work. The chapter includes a section on the importance of holism and examples of why it is necessary to study both past and present and biology and culture in order to fully understand what it is to be human. Ethics is important to science, anthropology, and all of its subfields, and is covered in Chapter 1 as well. The next several chapters focus on the biological side of what it is to be human, with an introduction to biological anthropology and methods, theories, and dating of fossils and DNA (Chapter 2), followed by a chronologically based evolutionary tracing from first life to modern humans (Chapters 3 through 7). Then, the following chapters focus on the cultural side of what it is to be human, with an introduction to archaeological methods, theory, and techniques of dating artifacts (Chapter 8), followed by a chronological tracing of the making of the first stone tools in the Old World through early civilizations (Chapters 9 through 11) and

earliest migrations to the New World from hunting-gathering to civilizations (Chapters 12 and 13). Two chapters on contemporary primates and humans (Chapters 14 and 15) return the focus to biological anthropology, covering contemporary primates using a case study approach to prosimians, monkeys, and apes and considering contemporary humans as a biological species, asking about variability and whether “biological races” exist. The final chapter—Chapter 16, “Conclusions: Who Are We?”—asks whether biology and culture can be studied as a single unit.

We try, whenever possible, to give a global perspective of both human evolution and past cultures. We are limited to the Old World (Africa, Asia, and Europe) for human evolution. The examination of culture and its change through time, however, can be quite global. Of course, we cannot cover all prehistoric cultures worldwide or go into immense detail on those cultures we do cover. We hope that the chapters provide enough information to give a general overview of past human evolution and culture change and stimulate you to want to discover more.

To the Student

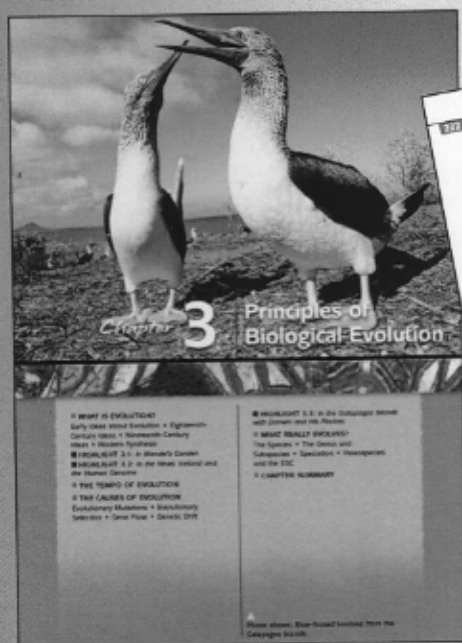
The study of our human past is dynamic. Discoveries of new artifacts or fossils and interesting new interpretations or hypotheses about the human past are in the news on a regular basis; we have tried to pass on many of these recent developments to you. Undoubtedly, further discoveries will have occurred by the time you read this book. However, it is our hope that your interest will be sparked so that you, too, will enjoy the thrill each time you hear of a new find. Hopefully, by taking a course in paleoanthropology and reading this book, you will be able to put each new find into a broader context than just an announcement of a new bit of the distant past.

Special Features

- Each chapter begins with an outline to give readers an overview of what lies ahead.

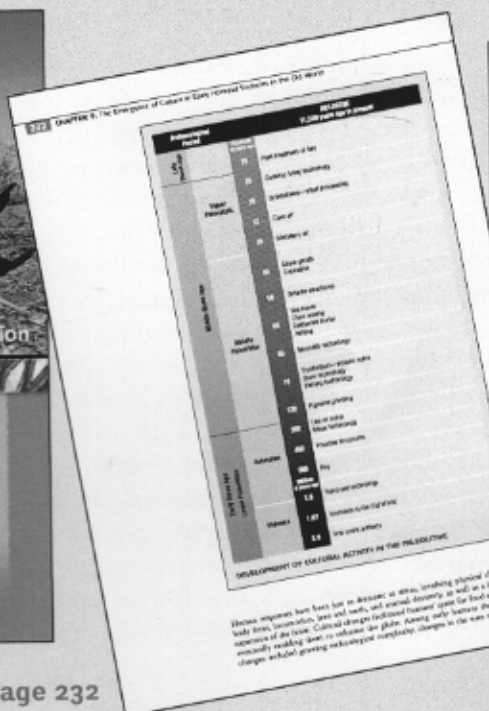
- Many of the chapters include a map of sites mentioned in the text and a chronological time line to help you situate your reading spatially and chronologically. We have tried to give general estimates of dates including many carbon 14 dates that have been calibrated using other dating methods.

page 347



page 38

page 232



- Within each chapter, full-color figures and photographs are used to illustrate key concepts and summarize information. Explanatory captions guide students through the illustrations, which make scientific and technical content easy to understand. Throughout the text, the beautifully rendered figures and carefully chosen photographs provide an excellent reference and study tool for students.



page 133



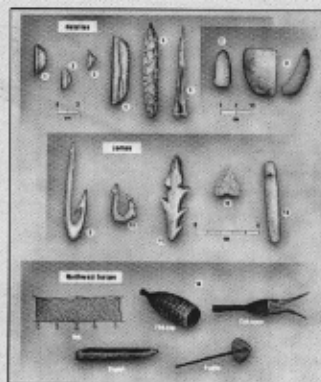
page 437



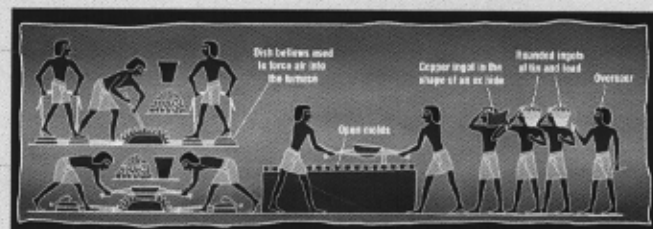
page 26



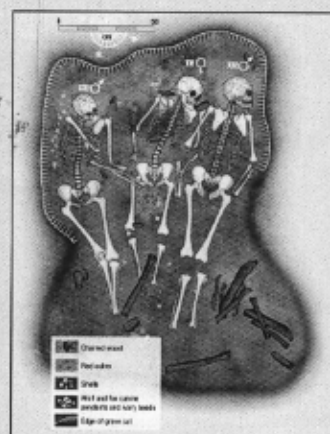
page 496



page 278



page 320

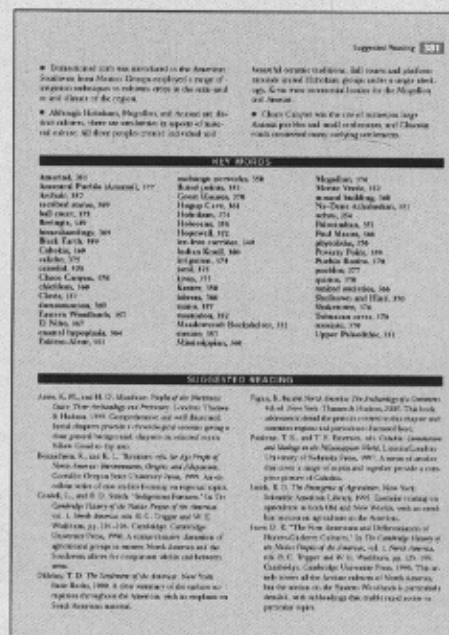


page 262



page 416

- Each chapter concludes with an illustrated summary of major points covered in the chapter.



- Boldfaced key words throughout each chapter, highlighting the most important terms, are listed at the back of the chapter along with the page number where the term first appeared. All key words are defined in the margins within the chapter and in an alphabetized glossary at the back of the book as well.
- Suggested readings for those interested in looking further into particular subjects are also provided at the end of each chapter.

Boxed Features

Highlight boxes in each chapter show the relevance of current issues in bioanthropology and archaeology to today's world and present certain subjects in greater depth. Readers will learn more about Josef Mengele and how forensic anthropologists were able to identify his bones in "In the News: Identification of Josef Mengele" (Chapter 15). They will read about recent research on chimpanzee and orangutan culture in "Checking Out Chimpanzee and Orangutan Culture" (Chapter 14). They will read the latest analysis of the Iceman in "In the Alps with the Iceman" (Chapter 1). In "In the Fayum Depression" (Chapter 5), readers discover how more early primates have been found in one relatively small location in northern Egypt than in any other area of the world. Highlights in Chapters 9 and 10 inform readers of the potential information that archaeologists can get from stone tool and pottery analysis, while highlights in Chapters 11 and 13 address the development and use of writing in the Old and New Worlds. "Cahokia, Crown of Mississippian Chiefdoms" (Chapter 12) considers complex chiefdoms—an aspect of regional development that was contemporary with state societies.

Highlight 5.1

In the Fayum Depression

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The second level is 100 m (110 feet) above the base and has yielded only one early primate fossil track, called *Oligopithecus*, found at about 10 m.y. ago. The third level, about 176 m (578 feet) from the base, has produced two families of anthropoids, each having several genera and species. The uppermost level, some 240 m (786 feet) from the base of the formation, continues to produce new species of the same two families and a new, closely related, anthropoid.

[illegible][illegible]

with small feeding streams, ponds, large pools, and rippling undergrowth—all providing a diverse context for arboreal primates and for eight additional mammals as well. The figures managers will include: insectivores, birds, ruminants, small herbivores, water birds, and omnivores.

Systematic comparisons with modern primates using palaeontological data make inferences about the anatomy and behavior of the primates that preceded them. As Figure 1 illustrates, apes fit



Pronghorns and other mammals left behind in the Pappin Depression in Egypt. Typical of the mammalian *in situ* was recorded was 12 to 30 cm ago were several of the animals shown here. Photo: Peter Day.

the DASH program and a variety of other lifestyle changes, such as smoking cessation, are also recommended for risk reduction. The DASH diet is a low-fat diet that is rich in fruits, vegetables, and whole grains. The diet is based on the findings of the DASH trial, which showed that a diet rich in fruits, vegetables, and whole grains can significantly reduce blood pressure. The diet is also low in sodium, which is another important factor in blood pressure control. The DASH diet is a healthy diet that can help reduce the risk of heart disease and stroke. It is a diet that is based on the latest scientific evidence and is a diet that is easy to follow. The DASH diet is a diet that is based on the findings of the DASH trial, which showed that a diet rich in fruits, vegetables, and whole grains can significantly reduce blood pressure. The diet is also low in sodium, which is another important factor in blood pressure control. The DASH diet is a healthy diet that can help reduce the risk of heart disease and stroke. It is a diet that is based on the latest scientific evidence and is a diet that is easy to follow.

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pages 118-119

Supplementary Materials

A wealth of supplementary materials is available to support your use of *Biological Anthropology and Prehistory: Exploring Our Human Ancestry*.

Instructor's Manual and Test Bank

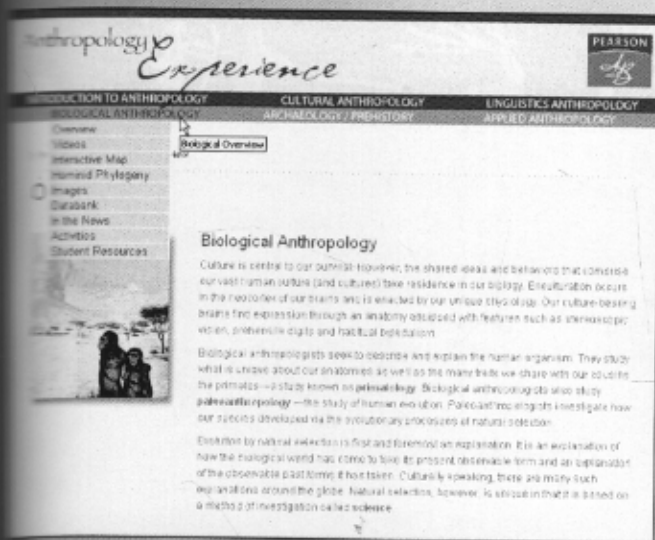
This **author-written supplement** includes learning objectives, lecture suggestions, discussion topics, in-class projects and research ideas, chapter summaries, and suggested readings. The Test Bank portion includes a wealth of multiple choice, true-false, short answer, and essay questions.

Computerized Test Bank

This computerized version of the test bank is available with Tamarack's easy-to-use TestGen software, which lets you prepare tests for printing as well as for network and online testing. Full editing capability for Windows and Macintosh.

AnthropologyExperience Web Site

AnthropologyExperience is an online destination designed to help students visualize how anthropologists conduct scientific and humanistic studies. AnthropologyExperience addresses individual teaching and learning needs by providing multiple modes of visual media, which include videos, "in the news" articles, activities, pictures, graphs, tables, interactive timelines, a student resource center (including an interactive glossary, flashcards, and web links) and more!



Research Navigator™: Anthropology

Allyn & Bacon's new Research Navigator™ is the easiest way for students to start a research assignment or research paper. Complete with extensive help on the research process and three exclusive databases of credible and reliable source material (EBSCO's ContentSelect Academic Journal Database, *New York Times* Search by Subject Archive, and "Best of the Web" Link Library),

Research Navigator™ helps students quickly and efficiently make the most of their research time. Research Navigator™ is free when packaged with any Allyn & Bacon textbook but requires an Access Code. Access Codes are value-packed with textbooks. Contact your local representative for more details.

Recent Finds: Paleoanthropology

A six-month update of new fossil and artifact finds (and redates, updates, and interesting items in paleoanthropology) appears in each issue of the last 14 years of *General Anthropology*. This journal is published by the American Anthropological Association and is a perk of membership in the General Anthropology Division. Instructors and students can use an integrated list of new finds (a paragraph for each, plus the original

publication source) as references for short or long term papers. They work well in assignments that focus on how a new find changes science's realm of knowledge. Write to Patricia Rice for that integrated resource at pat.rice@mail.wvu.edu.

New to This Edition

The organization of the book has been changed so that biological anthropology and prehistory are in two distinct parts: Chapters 1–7 cover biological anthropology, and Chapters 8–13 cover archaeology. Discussions of theory and methods have been updated and expanded and placed in the appropriate chapters (Chapter 2 for biological anthropology and Chapter 8 for prehistory/archaeology). This new organization, along with the addition of many key words with their definitions placed in the page margins and in the expanded glossary, makes the book more accessible to students.

Every chapter has been thoroughly updated with discussions of new sites, new findings (including the three potential hominids found since the publication of the first edition), or new analyses. Of particular note is the addition of a new chapter (5, Primates in Evolution), devoted to the evolution of primates. It covers taxonomy, contemporary primates, primate traits, evolution, missing links, primates after the major splits to prosimians, monkeys, apes, the last common ancestor (LCA), potential early hominids (*Orrorin tugenensis*, *Sabelanthropus chadensis*, and *Ardipithecus ramidus*), and the evolution of primate behavior.

Acknowledgments

We started out writing a book that integrated the content of the classes we teach. Along the way, the book changed with the help of numerous people, perhaps our students more than any other group. The librarians at the Institute of Archaeology, University College London (UCL), particularly Robert Kirby and Katie Meheux, have been especially helpful in finding odd materials, and we are grateful for access to libraries in the UCL system, especially the Institute of Archaeology and Watson Science Library. Access to collections at the Smithsonian (Burgess Shale) and the Natural History Museum London (the Darwin finches at Tring) is greatly appreciated. Jennifer Jacobson at Allyn & Bacon had faith in our final product from the beginning and we thank her and Dave Repetto for their constant support and encouragement, and for pushing us when needed. Although it was sometimes difficult to coordinate the evaluative suggestions of the reviewers of the original manuscript and the first edition, we took each comment seriously and thank them for making this a better book. They include Pat Anderson, Western Illinois University; Joanna Casey, University of South Carolina; Joseph L. Chartkoff, Michigan State University; Joan Coltrain, University of Utah; James Delle, Kutztown University; Barbara G. Hornum, Drexel University; John Krigbaum, University of Florida; Randall McGuire, Binghamton University; Jack H. Prost, University of Illinois at Chicago; Patricia B. Richards, University of Wisconsin Milwaukee; Teryl Schessler, California State University, Fullerton; and Terance L. Winemiller, Louisiana State University. Finally, we have profited greatly by discussions with biologically minded colleagues, particularly Chris Stringer, John Relethford, Milford Wolpoff, Frank Harold, and Fred Smith; and with archaeologically minded colleagues, particularly Jim Aimers, Sue Colledge, Ignacio de la Torre, Dorian Fuller, Andrew Garrard, Elizabeth Graham, Ole Grön, Stuart Laidlaw, Roger Matthews, Kevin McDonald, Luisa Mengoni, Mary Ann Murray, Andrew Reid, Tobias Richter, Arlene Rosen, Steven Rosen, Jane Sidell, Bill Sillar, Ulrike Sommer, Dietrich Stout, Gudrun Sveinbjarndottir, and Michele Wollstoncroft. We also thank friends and family who have given us encouragement and moral support during the preparation of the book.