Contents

Preface 9 Introduction The Nature and Aims of Archaeology 12

Part I The Framework of Archaeology 19

The History of Archaeology 20

The Speculative Phase 21 The Beginnings of Modern Archaeology 23 Classification and Consolidation 34 A Turning Point in Archaeology 37 World Archaeology 38 Today's Approaches: Pluralizing Pasts 44 Summary 48 Further Reading 49

Features

Decolonizing Archaeology: The Power of Words 21 Digging Pompeii: Past and Present 24 Evolution: Darwin's Great Idea 27 The Development of Field Techniques 30 Processual Archaeology 37 A History of Japanese Archaeology 39 Interpretive or Postprocessual Archaeologies 40 Çatalhöyük: Interpretive Archaeologies in Action 42 Pluralizing Pasts 45

2 What Is Left? The Variety of the Evidence 50

Satigad ice Cores and Piobal Watering Pierrers Aller and Piobal Watering Pierrers Cores and Piobal Watering Pierrers Cores Sectiments Cave Sectiments Dogsed and Pollen Analysis Reconstructing the Pilori Environment Alforders Aller Pollen Analysis Reconstructing the Animal Environment 20 Pierrers Bay Cave Ancient Gamiens at Kuk Swamp Sec. Types of Archaeological Evidence 50 Formation Processes 52 Cultural Formation Processes: How People Have Affected What Survives in the Archaeological Record 54 Natural Formation Processes: How Nature Affects What Survives in the Archaeological Record 56 The Archaeological Record and Context 74 Summary 75 Further Reading 75

Features

Experimental Archaeology 54 Wet Preservation 1: The Ozette Site 60 Wet Preservation 2: Must Farm 64 Dry Preservation: The Tomb of Tutankhamun 66 Cold Preservation 1: Mountain "Mummies" 69 Cold Preservation 2: Snow-Patch Archaeology 70 Cold Preservation 3: The Iceman 72

6 Contents

3 Where? Survey and Excavation of Sites and Features 76

Discovering Archaeological Sites and Features 76 Assessing the Layout of Sites and Features 100 Excavation 111 Summary 135 Further Reading 135

Features

The Sydney Cyprus Survey Project 80 Sampling Strategies 82 Identifying Archaeological Features from Above 86 AI and Archaeological Survey 89 Lasers in the Jungle 91 GIS and the Giza Plateau 98 Tell Halula: Multiperiod Surface Investigations 102 Measuring Magnetism 106 Mount Pleasant Henge 109 Geophysical Survey at Roman Wroxeter 112 Excavating the Red Bay Wreck 120 Jamestown Rediscovery: The Excavation Process 122 Excavating the Amesbury Archer 126 Excavating an Urban Site 130 Forensic Archaeology 132

Part II Discovering the Variety of Human Experience 177

5 How Were Societies Organized? Social Archaeology 178

The Archaeology of the Individual and of Identity 178 Social Inequality 183 Archaeology of Social Organization 188 Economic Specialization 194 Heterarchies 206 Centralized Societies 214 Further Sources of Information for Social Organization 222 Summary 226

4 When? Dating Methods and Chronology 136

Relative Dating 137

Absolute Dating 143 Summary 175

Further Reading 176

Features

The Maya Calendar 144
The Principles of Radioactive Decay 151
How to Calibrate Radiocarbon Dates 153
Bayesian Analysis: Improving the Precision of Radiocarbon Chronologies 156
CSRA: A New Technique for Dating Pottery 160
Dating the Earliest West Europeans 164
Dating the Thera Eruption 168 Further Reading 227

Features

Early Intermediate Period Peru: Gender Relations 180 Service's Classification Model and Its Problems 196 Conflict Archaeology 200 Conspicuous Ranking at Mississippian Spiro 202 The Formation of Complex Society in China: Liangzhu 204 Monuments, Polities, and Territories in Early Wessex 208 Interpreting Stonehenge 210 Network Analysis 215 Investigating Maya Territories 216

6 What Was the Environment? Environmental Archaeology 228

Investigating Environments on a Global Scale 228 Studying the Landscape: Geoarchaeology 235 Reconstructing the Plant Environment 244 Reconstructing the Animal Environment 252 Reconstructing the Human Environment 259 Summary 269

Further Reading 269

Features

Sea and Ice Cores and Global Warming 230 El Niño and Global Warming 231 Cave Sediments 238 Doggerland 242 Reconstructing the Plant Environment 245 Pollen Analysis 246 Reconstructing the Animal Environment 252 Elands Bay Cave 258 The Amazon and Anthropogenic Change 261 Mapping the Ancient Environment: Cahokia and GIS 262 Ancient Gardens at Kuk Swamp 266

7 What Did They Eat? Subsistence and Diet 270

Information from Plant Remains 271 Information from Animal Remains 286 Evidence of Animal-Resource Exploitation 304 Summary 316 Further Reading 317

Features

Paleoethnobotany: A Case Study 274 Butser Experimental Iron Age Farm 276 Pottery Sherds as Archaeobotanical Assemblages 277 The Archaeology of Beer: Experimental Archaeology 279 Investigating the Rise of Farming in Western Asia 282 Farming Origins: A Case Study 284 Seasonality at Star Carr 290 Quantifying Animal Bones 292 Bison Drive Sites 294 The Study of Animal Teeth 296 Shell Midden Analysis 300 Paleoproteomics 304 Feeding Stonehenge 305 9 What Contact Did They Have? Trade and Exchange 362
The Study of Interaction 363
Discovering the Sources of Traded Goods: Characterization 370
The Study of Distribution 377
The Study of Production 382
The Study of Consumption 387
Exchange and Interaction: The Complete System 388
Summary 394
Further Reading 395

Features

Modes of Exchange 366 Materials and Craft Goods of Prestige Value 368 Characterization 370 Roman and Neo-Persian Glassware in Japan 373 Amber from the Baltic in the Eastern Mediterranean 375 Fall-Off Analysis 380 Distribution: The Uluburun Wreck 383 Production: Greenstone Artifacts in Australia 386 Interaction Spheres: Hopewell 393

8 How Did They Make and Use Tools? Technology and Material Culture 318 The Evidence 318 Unaltered Materials: Stone 323 Other Unaltered Materials 336 Synthetic Materials 344 Archaeometallurgy 351 Summary 360 Further Reading 361

Features

Artifacts or Geofacts at Pedra Furada? 321 Artifacts Made from Unaltered Materials 323 Refitting and Microwear Studies at Rekem 326 How Were Large Stones Raised? 335 Woodworking in the Somerset Levels 338 Artifacts Made from Synthetic Materials 345 Ceramic Styles and Learning in the American Southwest 346 Metallographic Examination 352 Copper Production in Ancient Peru 354 Early Steelmaking: An Ethnoarchaeological Experiment 359 10 What Did They Think? Cognition, Art, and Religion 396 Theory and Method 397 The Evolution of Human Symbolizing Faculties 398 How Symbols Were Used 406 Writing 406 Establishing Place: The Location of Memory 409 Measuring the World 413 Planning: Maps for the Future 415 Symbols of Organization and Power 417 Symbols of Power in Hierarchical Societies 420 Symbols for the Other World: The Archaeology of Religion 420 Depiction: Art and Representation 430

Music and Cognition 434 Mind and Material Engagement 434 Ontology 437 Summary 438 Further Reading 439

Features

Clues to Early Thought 401 Paleolithic Art 402 Neanderthal Art 404 The Ness of Brodgar: At the Heart of Ceremonial Orkney 410 Maya Symbols of Power 418 The World's Oldest Sanctuary 422 Sacrifice and Symbol in Mesoamerica 425 Cult and Ritual in South America: Chavín and Nazca 428 Identifying Individual Artists in Ancient Greece 432 Early Musical Behavior 435 Cognition and Neuroscience 436

8 Contents

11 Who Were They? What Were They Like? The Bioarchaeology of People 440

The Variety of Human Remains 441 Identifying Physical Attributes 442 Assessing Human Abilities 454 Disease, Deformity, and Death 460 Assessing Nutrition 476 Population Studies 477 Diversity and Evolution 479 Identity and Personhood 484 Summary 484 Further Reading 485

Features

Spitalfields: Determining Biological Age at Death 445 Facial Reconstructions 449

Part III The World of Archaeology 517

13 Archaeology in Action Five Case Studies 518

Oaxaca: The Origins and Rise of the Zapotec State 519 The Calusa of Florida: A Complex Hunter-Gatherer Society 52 Research among Hunter-Gatherers: Upper Mangrove Creek, Australia 533

Ban Non Wat: The Rise of Metalworking in Southeast Asia 538 York and the Public Presentation of Archaeology 543 Further Reading 554

14 Whose Past? Archaeology and the Public 556

Finding a Neolithic Family 451 Life and Death among the Inuit 452 Ancient Cannibals? 460 Examining Bodies 463 Tracing Pandemics 465 Grauballe Man: The Body in the Bog 466 Microbial Archaeology 468 Richard III 472 Genetics and Language Histories 480 Studying the Origins of Populations in the Americas and Australia 483

12 Why Did Things Change? Explanation in Archaeology 486

The Form of Explanation: General or Particular 486 Migrationist and Diffusionist Explanations 487 The Processual Approach 496 Applications of Processual Archaeology 496 Attempts at Explanation: One Cause or Several? 499 Postprocessual or Interpretive Explanation 504 Cognitive Archaeology 509 Agency, Political Economy, and Material Engagement 510 Into the Present: Global Warming and Climate Change 514 Summary 514 Further Reading 516 The Meaning of the Past: The Archaeology of Identity 556 Archaeological Ethics 558 Community Archaeology 562 Popular Archaeology versus Pseudoarchaeology 563 Who Owns the Past? 565 The Responsibilities of Collectors and Museums 571 Summary 575 Further Reading 575

Features The Politics of Destruction 560 Destruction and Response: Mimbres 569

15 The Future of the Past How to Manage the Heritage? 576 The Destruction of the Past 576 The Response: Survey, Conservation, and Mitigation 579 Archaeology, Politics, and Social Justice 589 Publication, Archives, and Resources: Serving the Public 592 Heritage Management, Display, and Tourism 592

Who Interprets and Presents the Past? 594 The Past for All People and All Peoples 595 Modern-World Archaeology 596 What Use Is the Past? 598 Summary 598 Further Reading 599

Features

Molecular Genetics and Population Movements 490 Diffusionist Explanation Rejected: Great Zimbabwe 492 Language Families and Language Change 494 Origins of the State: Peru 501 The Classic Maya Collapse 505 Explaining the European Megaliths 508 The Individual as an Agent of Change 512 Investigating a Possible Mega Drought 514

Features

Conservation in Mexico City: The Great Temple of the Aztecs 582 Cultural Resource Management in Practice: The Metro Rail Project 584

Portable Antiquities and the United Kingdom 587 Cultural Sites on the UNESCO List of World Heritage in Danger 588 Authorized Heritage Discourse: Who Decides? 595 Archaeology of the African Diaspora: Cafetal Biajacas, Cuba 597

Glossary 600 Notes 607 Bibliography 615 Useful Websites 650 Acknowledgments 651 Illustration Credits 651 Index 654