

Vertebrate Paleobiology and Paleoanthropology Series



Sacha C. Jones
Brian A. Stewart *Editors*

Africa from MIS 6-2

Population Dynamics
and Paleoenvironments

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Vertebrate Paleobiology and Paleoanthropology Series

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Preface

Africa, from Marine Isotope Stages (MIS) 6 to 2, approximately 190–12 ka (thousand years ago), witnessed our species' biological development and behavioral florescence. To date, archaeological, paleontological, and genetic research on this period has been dominated by efforts to classify “modernity” and chart the geographic spread of *Homo sapiens* out of Africa. While such themes remain important, reconstruction and explanation of the demographic processes that occurred within Africa from MIS 6-2 are issues that are consistently under-addressed. This is a major drawback given that population dynamics within Africa played a central role in our species' genetic and cultural evolutionary trajectories. Genetic analyses suggest that African populations experienced multiple bottlenecks over the last 200 ka, interspersed with population expansions (releases). The former almost certainly engendered population isolations, extinctions, genetic and cultural drift, and biological and behavioral adaptation; while the latter saw humans radiate and colonize, with some groups eventually dispersing from, and re-entering, the continent. Analogously, recent theoretical advances in cultural evolution suggest that demography was perhaps the single most important factor underlying modern human innovation.

Yet until these insights can be contextualized, dated, and elaborated using the increasingly refined archaeological and paleoenvironmental records for late Middle and Late Pleistocene Africa, they remain mere glimpses of the complex paleodemographic processes that made us what we are today. To begin redressing this problem, we held a conference at the McDonald Institute for Archaeological Research, University of Cambridge in July 2010, entitled *Africa from Stages 6 to 2: population dynamics and paleoenvironments*. This conference was a first attempt to explore the potential of using diverse African datasets—archaeological, paleoenvironmental, paleontological, and genetic—to reconstruct spatiotemporal population histories during MIS 6-2. The principal aim was to investigate continent-wide population dynamics during MIS 6-2 by fostering interdisciplinary discourse between experts working in ecologically comparable zones across Africa. Twenty-three leading researchers in African archaeology, paleoenvironments as well as genetics and paleontology were thus invited to present their work at the conference. The main issues that were raised included: (1) the impact of this glacial-interglacial-glacial cycle on human group sizes, movements, and distributions throughout the continent; (2) the macroevolutionary and microevolutionary processes underpinning our species' anatomical and behavioral evolution; (3) an initial assessment of the state of the relevant data for addressing these issues and; (4) setting an agenda whereby Africa can benefit from, and eventually contribute to, the increasingly sophisticated theoretical and methodological paleodemographic frameworks developed on other continents.

The scope of the conference was pan-continental. This was not because we expected to pin down population dynamics on this grand scale, but rather because we hoped to address three further objectives: (1) to encourage a more balanced geographical coverage than is typical in MSA/early LSA research (wherein eastern and southern Africa are focal points); (2) to facilitate trans-continental comparisons in order to evaluate the current status of the data; and (3) to foster discourse among and between researchers working in different regions and biomes of Africa. The conference was thus organized according to the biome in which the research was taking place, rather than according to a specific region or time period. This organization—wherein research results from the Kalahari, for example, were presented alongside those from the Sahara, or those from highland Lesotho discussed in relation to highland Ethiopia—proved fruitful. This book, therefore, is similarly organized according to the broad ecological zone into which the different authors' research falls. We have subdivided the papers into: (1) coasts; (2) deserts; and (3) grasslands, woodlands and rainforests. In addition to papers focusing on regional African archaeological and palaeoenvironmental records, we also include two broader scale papers by researchers with expertise in physical anthropology and genetics. This multidisciplinary breadth is essential for addressing questions regarding palaeodemography. In the final chapter of the book, Peter Mitchell raises a number of important theoretical issues and addresses how we can begin to model past population dynamics in Africa from MIS 6-2.

Scholarship on Africa has previously lagged behind that of other continents, particularly Europe, in generating models of prehistoric population dynamics that can be tested against high resolution archaeological and paleoenvironmental records. There are many reasons why this is so, some of which have clearly influenced the composition of this book. First, archaeological and paleoenvironmental research coverage on this enormous continent is extremely patchy, dictated by a host of factors including the variable preservation and exposure of ancient remains, differing research traditions and recurrent political instability. The prehistoric records of some areas (e.g., East, North, and southern Africa) are more thoroughly researched, and thus more highly resolved, than others (e.g., central and West Africa), making our chapter balance inevitably, and regrettably, skewed toward the former. A related reason for Africa's dearth of paleodemographic research compared to other continents is the relative paucity of African researchers working on MIS 6-2. Instead, most research teams and funds come from international institutions with geographically circumscribed research foci instead of trans-regional comparative aims or inter-project collaborations. Particularly rare in research on MIS 6-2 are black African scientists, who have generally tended to concentrate more on earlier (Plio-Pleistocene) or later (Holocene) periods of their continent's past. The result is another unavoidable imbalance in this book. By taking a pan-continental, trans-regional approach to the population dynamics of prehistoric Africans, however, we hope this book will inspire researchers in Africa to investigate MIS 6-2 not only in the continent's best researched regions and archaeologically more remote corners, but also, crucially, in the areas connecting these two extremes. For paleodemographic research in Africa, it is still early days. This book, while perhaps raising more questions than providing answers, takes a critical first step toward elucidating the demographic processes that underpinned our species' development during this formative evolutionary phase.

The *Africa from Stages 6 to 2: population dynamics and paleoenvironments* conference was generously funded by the D.M. McDonald Grants and Awards Fund at the McDonald Institute for Archaeological Research at the University of Cambridge. We are sincerely grateful to the McDonald Institute for funding the conference. This three-day event was also sponsored by the Centre of African Studies at the University of Cambridge. We thank the speakers who presented their research at the conference, most of whom have contributed to this volume, as well as the conference's attendees, who contributed to stimulating, important discussions on the topics raised in this book. We are grateful to Katherine Clahassey of the University of Michigan's Museum of Anthropological Archaeology for skillfully creating the cover illustration. Finally, we dearly thank all those who have supported the creation of this book and who have been instrumental in its completion. First, we are grateful to Springer's Series Editors, Eric Delson and Eric Sargis, for their commitment, help and support throughout all stages of this volume's development. We thank all fifty-two peer-reviewers for their comments on the book's chapters. Last but not least, we are indebted to all the chapter authors who have contributed so generously to this volume. We are most grateful for their time and patience and we sincerely hope that they will enjoy being part of this book.

Sacha C. Jones
Brian A. Stewart

Contents

1	Africa from MIS 6-2: The Florescence of Modern Humans.	1
	Brian A. Stewart and Sacha C. Jones	
Part I Coasts		
2	Mid to Late Quaternary Landscape and Environmental Dynamics in the Middle Stone Age of Southern South Africa	23
	Andrew S. Carr, Brian M. Chase, and Alex Mackay	
3	Technological Change and the Importance of Variability: The Western Cape of South Africa from MIS 6-2	49
	Alex Mackay	
4	Cultural Change, Demography, and the Archaeology of the Last 100 kyr in Southern Africa	65
	Judith Sealy	
5	Patterns of Hominin Occupation and Cultural Diversity Across the Gebel Akhdar of Northern Libya Over the Last ~200 kyr.	77
	Sacha Jones, Annita Antoniadou, Huw Barton, Nick Drake, Lucy Farr, Chris Hunt, Robyn Inglis, Tim Reynolds, Kevin White, and Graeme Barker	
Part II Deserts		
6	Climate Change and Modern Human Occupation of the Sahara from MIS 6-2	103
	Nick Drake and Paul Breeze	
7	Climate, Environment, and Population Dynamics in Pleistocene Sahara . . .	123
	Emanuele Cancellieri, Mauro Cremaschi, Andrea Zerboni, and Savino di Lernia	
8	Technological Systems, Population Dynamics, and Historical Process in the MSA of Northern Africa	147
	Philip Van Peer	
9	Late Quaternary Environmental Change and Human Occupation of the Southern African Interior	161
	Sallie L. Burrough	

10	The Kalahari During MIS 6-2 (190–12 ka): Archaeology, Paleoenvironment, and Population Dynamics	175
	Lawrence H. Robbins, George A. Brook, Michael L. Murphy, Andrew H. Ivester, and Alec C. Campbell	
11	Paleoenvironments, Sea Levels, and Land Use in Namaqualand, South Africa, During MIS 6-2	195
	Genevieve Dewar and Brian A. Stewart	
Part III Grasslands, Woodlands and Rainforests		
12	Human Evolution in Late Quaternary Eastern Africa	215
	Marta Mirazón Lahr and Robert A. Foley	
13	Environmental Change, Ungulate Biogeography, and Their Implications for Early Human Dispersals in Equatorial East Africa	233
	J. Tyler Faith, Christian A. Tryon, and Daniel J. Peppe	
14	Follow the Senqu: Maloti-Drakensberg Paleoenvironments and Implications for Early Human Dispersals into Mountain Systems	247
	Brian A. Stewart, Adrian G. Parker, Genevieve Dewar, Mike W. Morley, and Lucy F. Allott	
15	Across Rainforests and Woodlands: A Systematic Reappraisal of the Lupemban Middle Stone Age in Central Africa	273
	Nicholas Taylor	
16	The Later Pleistocene in the Northeastern Central African Rainforest.	301
	Els Cornelissen	
Part IV Broader Perspectives		
17	The Late Quaternary Hominins of Africa: The Skeletal Evidence from MIS 6-2	323
	Frederick E. Grine	
18	A Genetic Perspective on African Prehistory	383
	Pedro Soares, Teresa Rito, Luísa Pereira, and Martin B. Richards	
19	Africa from MIS 6-2: Where Do We Go from Here?	407
	Peter Mitchell	
Index	417

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