

Urbanisation and State Formation in the Ancient Sahara and Beyond

The themes of sedentarisation, urbanisation and state formation are fundamental ones in the archaeology of many diverse parts of the world. Hitherto these concepts have been little explored in relation to early societies of the Saharan zone. Discussion of these issues in relation to the precocious civilisations that bordered the vast North African desert has rarely considered the possibility that they were interconnected by long-range contacts and knowledge networks. The orthodox opinion of many of the key oasis zones within the Sahara is that they were not created before the early Medieval period and the Islamic conquest of Mediterranean North Africa. Major claims of this volume are that the ultimate origins of oasis settlements in many parts of the Sahara were considerably earlier, that by the first millennium AD some of these oasis settlements were of a size and complexity to merit the categorisation 'towns' and that a few exceptional examples were focal centres within proto-states or early state-level societies.

MARTIN STERRY is Honorary Research Fellow at Durham University. His research on the archaeology of the Sahara and North Africa makes particular use of GIS and remote sensing. He has undertaken fieldwork on various projects in Italy, Britain, Libya and most recently southern Morocco, where he is co-director of the Middle Draa Project. He has published many articles on the Libyan Fazzan, Saharan trade, urbanisation and oasis settlements.

DAVID J. MATTINGLY is Professor of Roman Archaeology at the University of Leicester. He has worked in the Sahara for forty years and is the author of many books and articles related to Saharan archaeology, such as *Farming the Desert* (2 vols, 1996), which won the James R. Wiseman book award of the American Institute of Archaeology, and *The Archaeology of Fazzan* series (4 vols, 2003–2013). He was the principal investigator of the European Research Council-funded Trans-SAHARA Project (2011–2017) which created the groundwork for this volume, and he is the overall series editor of *Trans-Saharan Archaeology*, in which this is the third of four projected volumes.

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Contributors

Muftah al-Haddad is Professor at the University of Azzaytuna, Tarhuna, Libya.

Youssef Bokbot is Professor at the National Institute for Archaeological Sciences and Heritage (INSAP), Morocco.

Anna Lucille Boozer is Associate Professor at Baruch College, New York.

Maria Carme Belarte is Research Professor at ICREA, Barcelona (Spain), and researcher at the Catalan Institute of Classical Archaeology (ICAC), Tarragona (Spain).

Chloé Capel is Post-Doctoral Researcher at the Université Paris I.

David N. Edwards is Lecturer in the School of Archaeology and Ancient History, University of Leicester.

Francisco José Cantero is Research Associate at the University of Barcelona.

Nabil Kallala is Emeritus Professor at the University of Tunis and the former President of the Institut national du patrimoine (INP), Tunisia.

Dani López is a carpologist at ArqueoVitis SCCL and Research Associate at the University of Barcelona.

Kevin C. MacDonald is Professor of African Archaeology at the Institute of Archaeology, London.

Susan Keech McIntosh is Herbert S. Autrey Professor of Anthropology at Rice University, Houston, Texas.

Carlos Magnavita is Research Fellow in the Frobenius Institute, Goethe-University Frankfurt.

David J. Mattingly is Professor in the School of Archaeology and Ancient History, University of Leicester.

Stefania Merlo is Senior Lecturer at Witwatersrand University, South Africa.

Lucia Mori is Assistant Professor in the Department of Classics, Sapienza University of Rome.

Sam Nixon is Curator and Head of Africa Section at the British Museum.

Marta Portillo is EU Horizon 2020 Marie Skłodowska-Curie Fellow, Department of Archaeology, University of Reading.

Joan Ramon is Research Associate at the University of Barcelona.

Louise Rayne is Research Associate on the Endangered Archaeology Project in the School of Archaeology and Ancient History, University of Leicester.

Joan Sanmartí is Professor in the Department of History and Archaeology, University of Barcelona.

Judith Scheele is Director of Studies at the École des hautes études en sciences sociales (EHESS), Marseille.

Martin Sterry is Honorary Research Fellow in the Department of Archaeology, Durham University.

Pol Troussel is Emeritus Researcher of the Centre Camille Julian, Aix-en-Provence.

Sílvia Valenzuela is Principal Researcher ERC-StG ZooMWest, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona.

Andrew Wilson is Professor of Archaeology of the Roman Empire, University of Oxford.

Preface

When I was working on my PhD thesis on the Roman province of Tripolitania (north-west Libya) in the early 1980s, I became intrigued by a desert people who inhabited Fazzan, the area of the Central Sahara to the south of Tripolitania. This was my first introduction to the Garamantes. They were regularly mentioned in the ancient Greek and Roman sources, though seldom in complimentary terms – for the most part being depicted as nomadic and uncouth barbarians.¹ However, some pioneering archaeological work in the 1930s and then again in the 1960s–1970s had revealed their physical traces to be considerably more sophisticated than would be assumed on the basis of the literary stereotypes.²

This volume arises out of my subsequent direct engagement across more than 20 years now with the archaeology of Fazzan. In 1996, I was given the chance to renew field research in what were effectively the Garamantian heartlands. Following an initial scoping visit that year, I directed the Fazzan Project across six years, carrying out excavations and survey around the capital of the Garamantes at Garama (Old Jarma), with an emphasis on tracing evidence for their settlements, but also mapping other archaeological features including cemeteries and irrigation systems.³ A notable result of this work was the clear demonstration of the sophisticated and substantial network of oasis farming settlements that lay at the heart of the Garamantian territory. Rather than being ‘nomadic barbarians’, the Garamantes now appear to have been predominantly sedentary oasis farmers, living in substantial permanent and complex settlements of mudbrick buildings. That is not to say that the Garamantes did not also incorporate pastoral elements, as will be further discussed at various points below, but simply to highlight the unexpected density and sophistication of sedentary oasis settlements. There

¹ See in particular, Mattingly 2003, 79–81; 2011, 34–37 on the concept of ‘progressive barbarisation’ imposed by ancient authors as a factor of distance from the Mediterranean.

² Ayoub 1967; Daniels 1968; 1970; 1971; 1989; Pace *et al.* 1951.

³ There were five seasons of fieldwork (1997–2001) and a finds study season (2002). The results are now fully published as Mattingly 2003; 2007; 2010; 2013 (now free to download from the Society for Libyan Studies website). Funding for the Fazzan Project came primarily from the Society for Libyan Studies, the Leverhulme Trust, the British Academy and the Arts and Humanities Research Council.

is strong evidence to identify the top level of their settlement hierarchy as 'urban' in character and their overall society as an early Saharan state.⁴ The prime aim of this volume is to evaluate those claims in a broader geographical and chronological framework.

My work on the Garamantes has subsequently evolved through a series of further projects. Between 2007 and 2011, I directed the Desert Migrations Project, with a particular focus on Garamantian burials and funerary traditions.⁵ The increasing availability of high resolution satellite imagery opened a new avenue of research in 2011, the Peopling the Desert project, which extended research on the Garamantes to another of the major oasis bands in Fazzan, the Murzuq depression.⁶ Another survey on the oasis of Ghadamis in Western Libya was cut short by the Libyan civil war in 2011 and it has so far been impossible to complete that work. The Trans-SAHARA Project (2011–2017) marked a further evolution of this body of work, seeking to place the Garamantes in their Saharan context and to address the wider implications of the results obtained in the earlier work.⁷ As part of the Trans-SAHARA project, although unable to return to Libya for fieldwork, we continued to work closely with Libyan colleagues – who followed up with ground visits to sites we identified through satellite image analysis. This has contributed to a number of specific studies of historic oasis clusters that are reported on below. We also commenced a new phase of work on early oases in the Wadi Draa area of southern Morocco (see below, Chapter 6). The widening of our field of investigation has been hugely beneficial to our thinking about the Garamantes.

One of the major obstacles hindering understanding of the Sahara through history is that the study of the desert and the neighbouring zones of North Africa, the Nile Valley, Sudan and West Africa has tended to be compartmentalised into chronologically or regionally specific investigations. Broader synthesis across the vast Trans-Saharan zone has been lacking. The term 'Trans-Saharan' should be understood in the context of this book as referring to the connected spaces of the Sahara and its eastern, northern and southern peripheries. The Sahara has often been likened to a great sea and no sea can be understood without reference to its adjacent

⁴ Mattingly 2013, 530–34; Mattingly and Sterry 2013.

⁵ Five planned seasons of fieldwork were completed by 2011, but the scheduled study season could not take place in 2012 because of the Libyan civil war. Interim reports have been published in *Libyan Studies* from 2007 to 2011, Mattingly *et al.* 2007; 2008; 2009; 2010a; 2010b; 2011a.

Funding for the Desert Migrations Project came primarily from the Society for Libyan Studies.

⁶ Sterry and Mattingly 2011; 2013; Sterry *et al.* 2012. The Peopling the Desert Project was funded by the Leverhulme Trust.

⁷ The Trans-SAHARA project was funded by the European Research Council (grant no. 269418).

shore-lands. The idea of Trans-Saharan perspectives on historical developments thus shares much in common with recent studies of the Mediterranean, which have stressed the importance of connectivity and supra-regional influences.⁸

The work of the Trans-SAHARA project was organised around a series of four workgroups, each one supported by early career post-doctoral research associates and each dealing with a discrete group of themes: trade; migration, burial practice and identity; mobile technologies; urbanisation and state formation. As a key element of the work programme, a workshop was held at Leicester for each of the workgroups, to which international scholars working on neighbouring areas of the Trans-Saharan zone were invited. From the outset, these workshops were conceived as offering a chance to engage a group of leading experts in the field in a high-level debate about the implications of the new information on the Garamantes for studies of the wider Trans-Saharan world. Papers were commissioned for an intended series of agenda-setting volumes on Trans-Saharan Archaeology and pre-circulated so that the workshop sessions focused entirely on discussion of their content. The volumes in this series are thus unusual edited books in that each one has at its core an extended and detailed presentation of the key results of the Trans-SAHARA research team's work, combined with the comparative perspectives of invited external experts. As the Cambridge University Press reviewers of the volumes have noted, in the interests of promoting debate we also invited critique and contradiction from these external specialists. We think that adds to the special character of the resulting books, integrating new evidence with a broad overview of the state of the field and combining agenda-setting ideas with different perspectives.

This third volume in the resulting series of four, thus presents some of the key work of the Trans-SAHARA team and an international pool of collaborators on the themes of urbanisation and state formation. The territorial expanse of the Trans-Saharan zone is vast and, given the hostile climate and environment of the Sahara across the last 5,000 years, it is perhaps unsurprising that scholarly research has become regionally segmented. Archaeologists have most commonly self-identified with one of the great civilisations bordering the Sahara: the Classical or Medieval Maghrib, the Nilotic civilisations or the precocious polities of West Africa. Saharan historical archaeologists have been fewer in number, vastly outnumbered by prehistorians (and especially the

⁸ Abulafia 2011; Broodbank 2013; Horden and Purcell 2000. See Lichtenberger 2016 for the explicit comparison of Mediterranean and Sahara.

devotees of rock art). The Trans-Saharan archaeology series seeks to explore the interconnections across this zone in new ways, bringing together archaeologists, anthropologists and historians from different regions, varied academic traditions and multiple time periods and cultural phases.⁹ The volumes are designed to reassess traditional assumptions about the history and archaeology of the zone, to present and assess alternative hypotheses and to set a fresh agenda for future studies. The Sahara has for too long been seen as a vast empty space, separating and keeping apart areas of precocious state formation and urbanisation along the Nile valley, in the Mediterranean zone of Libya and the Maghrib, in Sub-Saharan territories around Lake Chad and the West African Niger Bend area. Recent archaeological studies have started to cast doubt on this for certain parts of the Sahara and it seems an appropriate time to review the larger picture of pre-Islamic and early Islamic developments across this entire zone.

As we are asking our readers to often step outside their core areas of knowledge and expertise to engage with material from other parts of the Trans-Saharan zone, place names and their mapping have exercised us all. Systems of transliteration and spelling of place names across the Trans-Saharan region vary enormously and the same site can be presented in several distinct ways. We have tried to impose a measure of consistency in the transliteration of names, following the practice I adopted for the *Archaeology of Fazzan* series. However, for ease of recognition some exceptions have been allowed for sites whose canonical spelling is so well established in the literature. We trust that the maps provided will prove helpful with the identification of places named in the text, but hope that readers will share our sense of being on a journey of discovery as they read the following contributions. Most of the site mapping on satellite imagery is the work of Martin Sterry. Thanks are also due to Mike Hawkes for the production or revision of many other line drawings in the volume.

David Mattingly

References

Abulafia, D. 2011. *The Great Sea: A Human History of the Mediterranean*. London: Allen Lane.

⁹ This book is a prime output of an Advanced Grant (269418) awarded by the European Research Council, the Trans-SAHARA Project (principal investigator David Mattingly at the University of Leicester) 2011–2017.

- Ayoub, M.S. 1967. *Excavations in Germa between 1962 and 1966*. Tripoli: Ministry of Education.
- Broodbank, C. 2013. *The Making of the Middle Sea. A History of the Mediterranean from the Beginning to the Emergence of the Classical World*. London: Thames and Hudson.
- Daniels, C.M. 1968. Garamantian excavations: Zinchecra 1965–67. *Libya Antiqua* 5: 113–94.
- Daniels, C.M. 1970. *The Garamantes of Southern Libya*. London: Oleander.
- Daniels, C.M. 1971. The Garamantes of Fezzan. In F.F. Gadallah (ed.), *Libya in History*. Benghazi: University of Libya, 261–87.
- Daniels, C.M. 1989. Excavation and fieldwork amongst the Garamantes. *Libyan Studies* 20: 45–61.
- Horden, P. and Purcell, N. 2000. *The Corrupting Sea: A Study of Mediterranean History*. Oxford: Blackwell.
- Lichtenberger, A. 2016. ‘Sea without water’ – Conceptualising the Sahara and the Mediterranean. In M. Dabag, D. Haller, N. Jaspert and A. Lichtenberger (eds), *New Horizons. Mediterranean Research in the 21st Century*. Paderborn: Ferdinand Schöningh, 267–83.
- Mattingly, D.J. (ed.). 2003. *The Archaeology of Fazzan. Volume 1, Synthesis*. London: Society for Libyan Studies, Department of Antiquities.
- Mattingly, D.J. (ed.). 2007. *The Archaeology of Fazzan. Volume 2, Site Gazetteer, Pottery and Other Survey Finds*. London: Society for Libyan Studies, Department of Antiquities.
- Mattingly, D.J. (ed.). 2010. *The Archaeology of Fazzan. Volume 3, Excavations Carried out by C.M. Daniels*. London: Society for Libyan Studies, Department of Antiquities.
- Mattingly, D.J., 2011. *Imperialism, Power and Identity Experiencing the Roman Empire*. Princeton: Princeton University Press.
- Mattingly, D.J. (ed.). 2013. *The Archaeology of Fazzan. Volume 4, Survey and Excavations at Old Jarma (Ancient Garama) Carried out by C.M. Daniels (1962–69) and the Fazzan Project (1997–2001)*. London: Society for Libyan Studies, Department of Antiquities.
- Mattingly, D.J. and Sterry, M. 2013. The first towns in the Central Sahara. *Antiquity* 87.366: 503–18.
- Mattingly, D.J., Lahr, M., Armitage, S., Barton, H., Dore, J., Drake, N., Foley, R., Merlo, S., Salem, M., Stock, J. and White, K. 2007. Desert Migrations: People, environment and culture in the Libyan Sahara. *Libyan Studies* 38: 115–56.
- Mattingly, D.J., Dore, J. and Lahr, M. (with contributions by others) 2008. DMP II: 2008 fieldwork on burials and identity in the Wadi al-Ajal. *Libyan Studies* 39: 223–62.
- Mattingly, D.J., Lahr, M. and Wilson, A. 2009. DMP V: Investigations in 2009 of cemeteries and related sites on the west side of the Taqallit promontory. *Libyan Studies* 40: 95–131.

- Mattingly, D.J., Abduli, H., Aburgheba, H., Ahmed, M., Ali Ahmed Esmaia, M., Baker, S., Cole, F., Fenwick, C., Gonzalez Rodriguez, M., Hobson, M., Khalaf, N., Lahr, M., Leitch, V., Moussa, F., Nikita, E., Parker, D., Radini, A., Ray, N., Savage, T., Sterry, M. and Schörle, K. 2010a. DMP IX: Summary report on the fourth season of excavations of the Burials and Identity team. *Libyan Studies* 41: 89–104.
- Mattingly, D.J., Al-Aghab, S., Ahmed, M., Moussa, F., Sterry, M. and Wilson, A.I. 2010b. DMP X: Survey and landscape conservation issues around the Taqallit headland. *Libyan Studies* 41: 105–32.
- Mattingly, D.J., Abduli, H., Ahmed, M., Cole, F., Fenwick, C., Gonzalez Rodriguez, M., Fothergill, B.T., Hobson, M., Khalaf, N., Lahr, M., Moussa, F., Nikita, E., Nikolaus, J., Radini, A., Ray, N., Savage, T., Sterry, M. and Wilson, A.I. 2011. DMP XII: Excavations and survey of the so-called Garamantian Royal Cemetery (GSC030–031). *Libyan Studies* 42: 89–102.
- Pace, B., Sergi, S. and Caputo, G. 1951. Scavi sahariani. *Monumenti Antichi* 41: 150–549.
- Sterry, M. and Mattingly, D.J. 2011. DMP XIII: Reconnaissance survey of archaeological sites in the Murzuq area. *Libyan Studies* 42: 103–16.
- Sterry, M. and Mattingly, D.J. 2013. Desert Migrations Project XVII: Further AMS dates for historic settlements from Fazzan, South-West Libya. *Libyan Studies* 44: 127–40.
- Sterry, M., Mattingly, D.J. and Higham, T. 2012. Desert Migrations Project XVI: Radiocarbon dates from the Murzuq region, Southern Libya. *Libyan Studies* 43: 137–47.