

The Archaeological Heritage of Oman

# PERSISTENT PASTORALISM

*Monuments and Settlements in the Archaeology of Dhofar*

JOY McCORRISTON



Sultanate of Oman سلطنة عُمان  
**وزارة التراث والسياحة**  
Ministry of Heritage and Tourism



ARCHAEOPRESS PUBLISHING LTD

Summertown Pavilion

18-24 Middle Way

Summertown

Oxford OX2 7LG

[www.archaeopress.com](http://www.archaeopress.com)

Ministry of Heritage and Tourism

Sultanate of Oman

P.O. Box 200, Postal Code 115

Thaqafah Street

Muscat, Sultanate of Oman

© Joy McCorrison 2023

Persistent Pastoralism: Monuments and Settlements in the Archaeology of Dhofar  
(Includes bibliographical references and index).

1. Arabia. 2. Oman 3. Dhofar. 4. Pastoralism 5. Antiquities.

This edition is published by Archaeopress Publishing Ltd in association with the Ministry of Heritage and Tourism, Sultanate of Oman.

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective agreements, no reproduction of any part may take place without the written permission of the Ministry of Heritage and Tourism, Sultanate of Oman.

Cover image: High Circular Tomb (D104-001) on a limestone terrace spur overlooking an eastern Wādī Dhahabūn tributary (photograph by J. McCorrison and K. Olson).

First published 2023

ISBN: 978-1-80327-453-9

ISBN: 978-1-80327-454-6 (e-Pdf)

# Contents

<i>List of illustrations and tables</i>	vii
<i>Acknowledgments</i>	xv
<i>Glossary notes</i>	xvii
<b>1 A Story and Its Meaning</b>	1
<b>2 Dhofar’s Pastoral Landscape</b>	11
<b>3 Archaeology in Dhofar: The Arabian Human Social Dynamics (AHSD) Project</b>	23
<b>4 Cultural Inheritance of the Dhofar Pastoralists</b>	37
<b>5 Building Pastoral Communities in the Neolithic (5000–4500 BCE)</b>	45
<b>6 Tribes in the Bronze Age (3200–1500 BCE)</b>	64
<b>7 Cultivating Pastoralism in the Late Iron Age (400 BCE–400 CE)</b>	96
<b>8 Mobility and Community in the Late Iron Age (300 BCE–500 CE)</b>	112
<b>9 Patterns of Monuments and Settlement Shaped Dhofar</b>	126
<i>Bibliography</i>	131
<i>Index</i>	143



# List of illustrations and tables

## FIGURES

- 1.1. D001-001 with the Muḍayy springs in background left (photograph by T. Steimer-Herbet). 1
- 1.2. D001-001 Individual A (‘Awal). In this and all subsequent images, we masked human bone to provide illustration respecting the dead while showing the archaeological context of excavations (photograph by T. Steimer-Herbet and E. Lagan). 3
- 1.3. D001-001 Commingled remains, including neonatal remains (photograph by T. Steimer-Herbet and E. Lagan). 3
- 1.4. Sheikh Suha’il Al-Rujdi (left) and an aide visit an HCT excavated by Drs. Tara Steimer and Kimberly Williams (both right) (photograph by M. Harrower). 5
- 1.5. View of the springs at Muḍayy from D001-001 HCT (photograph by T. Steimer-Herbet). 6
- 1.6. D001-001 HCT on plateau before excavation (photograph by J. McCorrison). 8
- 1.7. Diagram of a (tribal) segmentary lineage kinship system in which contingent and contextual affinity is measured by descent from common ancestors, usually through patrilineal lines. Triangles denote male descent; females not shown (image by K. Olson). 9
- 2.1. Image map of four major ecosystems in Dhofar: coastal plain, wooded escarpment, grassland plateau, and Nejd desert (image by K. Olson). 11
- 2.2. Cloud forest of *Terminalia dhofarica* across the seaward-facing Dhofar escarpment (photograph by J. McCorrison). 12
- 2.3. Parkland of the Dhofar plateau with modern short grassland (photograph by J. McCorrison). 13
- 2.4. Native palms in the sandy channel of Wādī Dhahabūn (photograph by J. Everhart). 13
- 2.5. Travertine deposits, like speleothems, form with the evaporation of water that has seeped through limestone, carrying with it an oxygen proxy signal of temperature and a carbon signal of vegetation (photograph by J. McCorrison and K. Olson). 15
- 2.6. Image map of enhanced Early-Middle Holocene monsoon precipitation and paleolacs in Southern Arabia (precipitation data from Brown *et al.* 2018; Fordham *et al.* 2017) (image by K. Olson). 16
- 2.7. Archaeological evidence of anthropogenic fires can be seen embedded in sediment terraces in Yemen’s highland deserts, an ecosystem comparable to the backslope of Dhofar’s mountain plateau and near Nejd. No comparable sediment terraces exist in Dhofar to preserve such traces of former activity, but the tall grasslands themselves suggest a comparable antiquity to the practice of burning. Here the terrace surface has eroded to reveal a broad swath of grey ash and micro-charcoal, center (photograph by J. McCorrison). 19
- 2.8. Cattle grazing short grassland on the Dhofar plateau (photograph by K. Pustovoytov and K. Olson). 20

2.9.	Hypothetical effect on human transhumance from reduction in forest, fog precipitation, and groundwater recharge. Note the reduced transhumance of (cattle) herders into the Nejd with the replacement of deep-rooted trees by grassland on the plateau. Adapted from Hildebrandt and El-Tahir 2006 (image by C. Hickman and E. Lagan).	21
3.1.	Archaeological survey team recording a circular tomb. Left to right: Sarah Fargo, Matthew Senn, Ali Ahmad Al-Kathīri (photograph by J. Everhart).	23
3.2.	One of many triliths on a rock terrace, seen across a shallow tributary near Hanūn (photograph by M. Harrower and K. Olson).	24
3.3.	Muruẓād (Jibbāli), which appear very like the madhāby (Arabic) grilling hearths and sacrificial commemoratives in Ḥaḍramawt, Yemen. These examples occur in the Wādī Ḥalūf near D014-003 (see Chapter 6) (photograph by M. Harrower).	25
3.4.	High resolution images surveyed across Dhofar (Image 5 not accessed) (image by K. Olson)	29
3.5.	Development of Computational Algorithms for Automated Detection. The process examines each window of an image with a series of filters; the statistic JB measures the relative difference in intensity between the inner and outer windows; the next filter (Jv) calculates the normalized difference vegetation index (NDVI), and so forth (details in Schuetter <i>et al.</i> 2013) (image by J. Schuetter and K. Olson)	29
3.6.	Using GPS rover to register ground control point (GCP) for image rectification in Wādī Haylā', south of Muḍayy (photograph by J. McCorrison).	30
3.7.	To develop automated detection software, the team visited many computer-generated locations that were false positives for monuments. By ground-truthing these sites, the team refined software accuracy (photograph by J. McCorrison).	31
3.8.	Matthew Senn and Joy McCorrison documenting a likely Neolithic platform near Andhur (photograph by J. Everhart).	31
3.9.	Aerial view of D113-001, a prominent, immense, flat-topped boulder beside the track through one of Wādī Dhahabūn's southernmost major tributaries. The elaborate images on its surface can only be seen from above, and there is no nearby overlook. This was a landmark known and shared as cultural memory. It is unlikely that all markings were produced at one time (image by W. AbuAzizeh and T. Everhart).	34
4.1.	Al-'Alīy herder with goats in Southern Yemen (photograph by J. McCorrison).	37
4.2.	Neolithic points from surface collections at Bā Mashnayq, Muḍayy (third from left) and in Wādī Ghārah, a tributary to Wādī Ghadūn (photographs by M.Senn and E. Lagan).	39
4.3.	Neolithic ring of skulls from sacrificed cattle at Shi'ḥ Kheshiya, Yemen. The skulls were inserted fresh into soft mud. Later, visitors erected a commemorative stone platform nearby (photograph by M. Harrower).	40
4.4.	Painted images on the rock walls of natural rock shelters in Dhofar's coastal mountains often include images of domesticated dogs, camels, cattle, and goats. These are at the site of Mthbon, southeast of Jibjat (photograph by J. McCorrison and K. Olson).	42
4.5.	Traditional style cattle byre in contemporary Dhofar mountain village. Confined animals produce a large accumulation of dung, useful as fertilizer or fuel (photograph by J. McCorrison).	43
5.1.	Image map of Neolithic platform monuments located by the AHSD Project survey team (image by K. Olson).	46

5.2.	Bedrock terrace at D028 overlooking vegetation fed by one of Muḏayy's springs; note the stone monuments on the terrace and accumulated sandy sediments in the drainage below (photograph by J. Everhart).	46
5.3.	Finely knapped bifacial points from the surface at D028 (image by M. Senn and E. Lagan).	47
5.4.	Neolithic platform sectioned in one quarter, with exposed fill and large perimeter slabs supported by interior blocks. A second large monument is visible in right background (photograph by T. Steimer-Herbet).	48
5.5.	Found in the lower fill of D028-001, a pierced shell of <i>Impages hectica</i> , a marine shell likely used as an ornament (image by C. Heyne, J. McCorrison and E. Lagan).	48
5.6.	Overview of Neolithic platform D028-001 with excavated northwest quadrant (photograph by T. Steimer-Herbet).	50
5.7.	Plan of Neolithic platform D028-001 (image by T. Steimer-Herbet and K. Olson).	50
5.8.	Hard Umm er-Radhuma limestone layers harbor rock pools at Hanūn (photograph by J. Everhart and K. Olson).	51
5.9.	D038-003 on a low terrace; a trilith in the foreground may have robbed stone from the less preserved Neolithic monument under excavation in the rear (photograph by M. Senn).	52
5.10.	Plan of Neolithic platform D038-003 (image by T. Steimer-Herbet, J. McCorrison and K. Olson).	52
5.11.	Twin coral beads from the fill of D038-003 (image by C. Heyne, J. McCorrison and E. Lagan).	53
5.12.	Deliberate stone arrangement several meters to the north of D038-003 (photographs by J. McCorrison and K. Olson).	54
5.13.	Hearth D103.002 at the east end of the terrace on which sits D103.001. Although the hearth is of indeterminate date, it is one of few signs of subsequent prehistoric visits on this terrace (photograph by J. McCorrison),	56
5.14.	D103-001 looking east before excavation note alignment of upright boulders facing east (photograph by J. McCorrison).	56
5.15.	D103.001 viewed from the east, after excavation. Note the shattered limestone betyl in the left foreground and knife sharpening scars on the central upright (photograph by J. McCorrison).	57
5.16.	D103.001 east-facing interior profile viewed from the east (photograph by J. McCorrison).	57
5.17.	D106-001 SCAB with east-facing alignment of larger uprights. Note the meter-long shaped stone fallen at southeast (orthophoto by W. AbuAzizeh and T. Everhart).	58
5.18.	D106-001 SCAB with east-facing alignment of larger uprights. Note the betyl stone with shaped, tapered end in foreground, approximately 1 meter length (photograph by J. McCorrison).	59
5.19.	Pedagenic carbonates (white, left) formed by the interaction of soil biota and limestone upright after its placement in the monument. Because the living organisms depositing carbon in soil carbonates postdate the monument construction, a radiocarbon age would secure a terminus ante quem for the construction (photograph by J. McCorrison).	59
5.20.	D112-001 viewed from the south (photograph by J. McCorrison).	60

5.21.	D112-001 SCAB after clearing to expose rocks in-situ. Note the shallow excavation 1 meter wide in the northwest against a perimeter stone (orthophoto by T. Everhart).	61
5.22.	D027-001, D027-003, and D027-002 at Muḍayy (photograph by J. McCorrison).	62
6.1.	Matthew Senn documents the perimeter of an HCT monument using kinetic high-precision GPS (photograph by J. Everhart and K. Olson).	64
6.2.	Image map of Bronze Age tombs documented in survey and excavation (image by K. Olson).	65
6.3.	D001-001 after excavation (photograph by T. Steimer-Herbet and K. Olson).	66
6.4.	Chamber fill of D001-001 with minor collapse of corbelled roof (photograph by T. Steimer-Herbet and K. Olson).	67
6.5.	Two beads from the base of D001-001 chamber (photographs by C. Heyne and E. Lagan).	68
6.6.	D013-001 overlooking Wādī Haylā' (photograph by K. Williams and J. McCorrison).	69
6.7.	Chamber of D013-001 at the end of excavation. Note the dry-wall technique, here consisting of an inner facing and outwardly faced or buttressed with heaped stone (photograph by J. Williams and E. Lagan).	69
6.8.	Articulated left tibia, fibula, and foot of the male buried in D013-001 (image by K. Williams and E. Lagan).	70
6.9.	Right maxilla with erupted third molar from the adult male buried in D013-001 (image by K. Williams and E. Lagan).	70
6.10.	Mother-of-pearl ornament from D013-001 (image by C. Heyne, J. McCorrison and E. Lagan).	71
6.11.	Section D013-001 (image by K. Williams, T. Steimer-Herbet and K. Olson).	71
6.12.	D013-002 Overlooking Wādī Haylā' (photograph by K. Williams and J. McCorrison).	72
6.13.	Chamber of D013-002 after excavation (photograph by K. Williams).	72
6.14.	Pierced <i>Conus</i> shell recovered from D013-002 chamber (image by C. Heyne and E. Lagan).	73
6.15.	D013-002 Plan and section (image by K. Williams, T. Steimer-Herbet and K. Olson).	73
6.16.	Overview of D014-001 (fore and center) before excavation. Behind and left is D014-002 and D014-003 (photograph by C. Heyne and J. McCorrison).	74
6.17.	Chamber of D014-001. The original desert reg terrace surface has been cleared to bedrock at the base of the chamber (photograph by C. Heyne and J. McCorrison).	75
6.18.	D014-001 Plan and elevation (image by C. Heyne, T. Steimer-Herbet and K. Olson).	75
6.19.	D014-002 Plan and elevation (image by C. Heyne, T. Steimer-Herbet and K. Olson).	76
6.20.	Long bone shaft at the base of the chamber in D014-002 (image by T. Steimer-Herbet and E. Lagan).	77
6.21.	D033-001 Documented by survey team (photograph by J. Everhart).	77
6.22.	D033-001 Plan and elevation (image by T. Steimer-Herbet and K. Olson).	78
6.23.	D036-002 in overview with D036-001 in the background (photograph by T. Steimer-Herbet).	79
6.24.	D006-001 before excavation (photograph by J. McCorrison).	80



6.25.	D104-001 viewed from southwest (photograph by J. McCorrison and K. Olson).	81
6.26.	D104-001 base of chamber with mother-of-pearl ornament in situ (photograph by J. McCorrison).	82
6.27.	View of sealed chamber (center) D022-005 after cleaning the monument, probing construction, and before excavation of the chamber (photograph by T. Steimer-Herbet and K. Olson).	84
6.28.	D022-005 Plan and elevation (image by T. Steimer-Herbet and K. Olson).	84
6.29.	Ḥalūf tomb D014-003 after excavation (photograph by J. McCorrison and K. Olson).	85
6.30.	D014-007 Unexcavated Ḥalūf monument (photograph by J. McCorrison).	86
6.31.	Excavated chamber in Ḥalūf tomb D014-003 (photograph by J. McCorrison and K. Olson).	87
6.32.	Detail of undressed stone work, Ḥalūf tomb D014-003 (photograph by J. McCorrison and K. Olson).	87
6.33.	Copper dagger recovered from inner face of Ḥalūf tomb D014-003 (and shown in situ) (image by C. Heyne, J. McCorrison and E. Lagan).	88
6.34.	D014-003 Plan with hearths aligned to the west (image by J. McCorrison, T. Steimer-Herbet and K. Olson).	88
6.35.	Heat-treated agate bead from the upper fill of D014-003 (image by C. Heyne, J. McCorrison and E. Lagan).	89
6.36.	View of D014-003 (background) from excavated D014-002 (foreground). Note the alignments of cobble rings in front of Ḥalūf tomb D014-003 (photograph by J. McCorrison).	90
6.37.	D001-006 on horizon viewed from the south; black cobble heaps align between tomb and cliff edge (photograph by T. Steimer-Herbet).	91
6.38.	Ḥalūf tomb D001-006 after clearing one half of the exterior, viewed from the south (photograph by T. Steimer-Herbet and J. McCorrison).	92
6.39.	Ḥalūf tomb D001-006 Plan and elevation (image by T. Steimer-Herbet and K. Olson).	92
6.40.	View of the chamber of Ḥalūf tomb D001-006 after excavation and exterior cleaning (photograph by T. Steimer-Herbet and K. Olson).	93
6.41.	Exterior detail, Ḥalūf tomb D001-006 (photograph by T. Steimer-Herbet).	94
7.1.	Image map of Shakeel and Halqoot (image by K. Olson).	96
7.2.	Occupation site D114 viewed from the east (photograph by J. McCorrison).	97
7.3.	D114 architecture and graves. Excavated sites indicated in red (image by A. Buffington, W. AbuAzizeh and T. Everhart).	98
7.4.	D069 Map of architectural sites (image by M. Senn and B. Baaske).	98
7.5.	D114-016 Boulders form a corral perimeter, possibly once topped by brush (photograph by W. AbuAzizeh and K. Olson).	99
7.6.	D114-004 A. Interior of a room with paver floor and dry-stone facing to the interior. Steps lead from a courtyard accumulation to the interior living surface (photograph by W. AbuAzizeh and K. Olson).	100
7.7.	D114-004A South section (image by A. Buffington, W. AbuAzizeh, B. Baaske and K. Olson).	101

7.8.	D114-001 corral and D114-004 attached dwelling in overview; lintels-supported entrance intact and stepped-down entrance highlighted (image by W. AbuAzizeh, J. McCorrison and B. Baaske).	102
7.9.	Beads and ornaments from D114 (image by J. McCorrison, C. Heyne and E. Lagan).	103
7.10.	Radiocarbon calibrations from D069 Shakeel and D114 Halqoot (image by J. McCorrison).	104
7.11.	D069-002 Trench A northeast section (image by J. McCorrison and B. Baaske)	105
7.12.	D069-002 House plan after excavation (image by J. McCorrison, B. Baaske and K. Olson).	106
7.13.	D069-002 Overview after excavation. Note construction style matches D114 houses (photograph by L. Proctor and K. Olson).	107
7.14.	D069-001 Quad A Platform or partial re-pavement with house entrance at upper left (photograph by J. McCorrison and K. Olson).	107
7.15.	Handstone abandoned on the floor of D069-004 (image by M. Senn and E. Lagan).	108
7.16.	High circular tombs and houses or corrals on the southern slope of Wādī Kharshīt (photograph by J. McCorrison).	109
7.17.	Images of camels in a rockshelter beside a Late Iron Age site; nearby images show camels, men with swords and shields, and perhaps a ship (photograph by J. McCorrison).	111
8.1.	Trilith schema after Yule 2014:73 (image by E. Lagan).	114
8.2.	Image map of trilith locations surveyed. Details in Harrower <i>et al.</i> 2014 (image by K. Olson).	115
8.3.	Excavation of trilith hearth D043-004a (photograph by C. Heyne).	116
8.4.	Trilith D005-004 (photograph by Joy McCorrison).	117
8.5.	Within recent memory, bedouin used dry walls to seal niches in the cliff face, behind which multiple burials may be found (photograph by J. McCorrison).	118
8.6.	D102-003 looking north to D102-001 (photograph by J. McCorrison).	118
8.7.	D102-001 Excavation to the original ground surface on which D102-001 was constructed. Note the thin pedogenic carbonates on the underside of the stone (photograph by J. McCorrison and K. Olson).	119
8.8.	Excavation beside D102-005 reveals insufficient carbonate formations on underside of perimeter cobbles (photograph by J. McCorrison).	120
8.9.	Hearth beside D102-005 sectioned (photograph by J. McCorrison and K. Olson).	121
8.10.	Syntax of a trilith: platform (rear), 4 small boulders squared (mid), and hearths in front (foreground) (photograph by J. McCorrison).	121
8.11.	Tombs D001-005 (foreground) and D001-004 before excavation (photograph by T. Steimer-Herbet).	122
8.12.	D001-004 Plan and section (image by T. Steimer-Herbet).	123
8.13.	Flexed adult male burial in D001-004 (image by K. Williams and E. Lagan).	124
8.14.	D001-005 Adult female buried in D001-005 (image by K. Williams and E. Lagan).	124
8.15.	D001-005 Plan and sections (image by T. Steimer-Herbet).	125

9.1.	Chronology of monuments in Dhofar. Yellow bars are labelled by tomb type; the gray bars represent (left to right) Ḥalūf tombs, Wall tomb, Chamber cairns, and Islamic graves (image by J. McCorriston).	127
------	---	-----

#### TABLES

3.1.	Excavated Monuments	33
5.1.	Bayesian analysis (Chronomodel software) with 210-year marine calibration per Southon <i>et al.</i> 2002, Saliège <i>et al.</i> 2005.	54
5.2.	Volume mean and variance by monument type.	63
6.1.	Survey results 2009-2018. Bronze Age tomb types, numbers per type, and chronology in Dhofar.	66



## Acknowledgments

*To Thuwaiba Al-Riyami and 'Ali Aḥmad Al-Kathīrī in gratitude for your friendship.*

Often have I sat in the offices of the Ministry of Heritage and Tourism in Muscat, gazing at the hazy horizon where heavy tankers ply the territorial waters. Endlessly, they stream slowly by where sea meets sky, funneling petroleum flow to a thirsty planet. Oman is at the pulse of the world, extracting copper, dates, stallions, incense, cloves, and oil across a rich maritime trade that stretches far into prehistory. And all throughout, there have been the persistent pastoralists of the interior, ancestral Omanis whose mobile lives and oral traditions left few traces in the desert lands. These pastoral folk herded cattle, goats, and camels. This other Oman sometimes engaged with maritime traders and oasis farmers, and yet at other times, the pastoralists eschewed them, living lives of relative isolation.

This book offers some results of ten years' field and analytical research into the lives of pastoral Arabians. Fundamentally, it represents the work of multi-talented, multi-disciplinary, multi-cultural teams and multi-national teams. Furthermore, the results reported here reflect the collaborations and contributions of many. While this book presents some new ideas that are mine, it presents data and results previously reported under joint authorship with the colleagues and students who produced them. To them I offer both acknowledgement and profound gratitude. Thank you, Michael Harrower, Matthew Senn, Tara Steimer-Herbet, Kimberly Williams, Jennifer Everhart, Catherine Heyne, Mas'ūd Al-Hādhari, Mas'ūd Al-Kathīrī, 'Ali Ahmad Al-Kathīrī, Ali Salim Al-Mashaanī, Ali Mehri, Prem Goel, Jihaye Park, Jared Schuetter, Dorota Grejner-Brzezinska, Louise Martin, Kyle Olson, Lucas Procter, Anne Skidmore, Mark Moritz, Ian Hamilton, Lawrence Ball, Sarah Ivory, Abigail Buffington, Tim Everhart, Konstantin Pustovoytov, Wael AbuAzizeh, Annalee Sekulic, Anna Berlekamp, Sarah Fargo Evinsky, and Jean-François Saliège.

This work has been supported logistically, financially, and with infinite patience by Oman's Ministry of Heritage and Tourism (formerly Heritage and Culture). I honor the leadership of former Minister of Heritage and Culture, H.M. Sultan Haitham bin Tariq Al-Said, and former Undersecretary for Heritage, H.E. Sultan Al-Harthy, who first authorized this research. In Muscat, I particularly thank H.E. Salim M. Almahruqi, Minister of Heritage and Tourism, for commissioning this book and for his patience and support through the fieldwork that preceded it. I also speak for our team in appreciation of Biubwa Al-Sabri, Rahma Al-Farsi, Sultan Al-Bakri, Khamis Al-Asmi, Sumaya Al-Busaidi, Mohammad Al-Waili, Khalid Awad Al-Swafi, Ibrahim Al-Maqbali, Khalil Masood Al-Nadabi, Sheikha Khalifa Al-Rasbi, and Qais Al-Mazrouai. In Salalah, we thank Salim Al-Amry, Abdul Aziz Ahmed Suhail Al-Mushaikh, and Khalid Al-Abry, and especially appreciate all the help and hospitality from Ali Salim Al-Mashaanī. I also recognize the many unnamed Omani hosts and guest workers who supported us, from tea to trenches.

This research has been principally funded by the United States National Science Foundation (Grants BCS-0624268, BCS-0957179, BCS-1617165), Ministry of Heritage and Culture (now Heritage and Tourism) of the Sultanate of Oman, National Geographic Society, American Institute of Yemeni Studies, and The Ohio State University. The opinions, findings, and conclusions or recommendations expressed are those of the author and do not necessarily reflect the views of the National Science Foundation.

Finally, I thank the colleagues who have inspired me in Oman and beyond, especially Juris Zarins, Jeff Rose, Paul Yule, Rémy Crassard, Andrew Anderson, Darach Lupton, Annette Patzelt, Birgit Mershen, and Tony Miller. Kyle Olson, Emma Lagan, and Benjamin Baaske did invaluable work on illustrations.

*In appreciation for all they taught me of Oman's history and cultural traditions,  
I dedicate the book to Thuwaiba and 'Ali.*

## Glossary notes

There are challenges to the consistent transliteration of Arabic place names and terminology into English/Roman orthography. In this book, there are also place names in modern South Arabian languages—Shehri, Mehri, and the vernacular Jibali. To guide the text I used the following rules:

Where a transliteration already exists in common use in archaeological and geological literature, I use it, even if the transliteration follows neither Library of Congress nor Deutsche Morgenländische Gesellschaft convention. For example, “Wadi Suq” and “Umm er-Radhuma.”

Where researchers use non-standard transliteration throughout other books in the AHO series, I have opted for consistency, thus, “Nejd.”

Where transliteration appears on official signage and maps in Oman, such as road signs leading to “Ayboot,” or “Mudayy,” I have opted for that use. In the case of “Mudayy,” the Arabic clearly indicates that “Muḍayy” represents the correct consonant. Likewise, I retain transliterations from road signs using Mehri, Shehri, and Jibali place names.

Where a person’s name appears in published form and especially as an author, I retain the transliteration as published.

In other cases, including the names of wadis and mountains, I follow *Library of Congress* transliteration rules.





## Chapter 1

# A Story and Its Meaning

As one crests a rough track near the springs at Muḍayy, the desert pavement comes into view, a vast mosaic of taupe bedrock and black, dolomitic limestone, polished by sun and wind and broken only by the sentinels of long-dead ancestors. These sentinels are cairns, dry-stone walls that served an ancient purpose. Away from one – or perhaps toward it – leads an enigmatic line made of low heaps of black stone. Each heap is one pace further, and the line falls away at a precipice overlooking the wide Wādī Ghārah. Behind you is another cairn, this one topped by a silver sail and emitting periodic puffs of desert dust. Drawing closer one can see it teems with archaeologists. A dusty pair of workmen in *shalwar-khameez* lean rhythmically to and for clasping small screens, and the rasping of metal on rock accompanies patter in Bengali alongside sylvan Jibali and ineloquent English. Under the sunshade a curious covey of visitors watches the expert, a small and quick woman in a white headwrap. She is removing human bone, calling out to her graceful peer the bone elements, their positions, and the details of their ages, sexes, and life sufferings. In a short time, she and her colleague have lifted and documented the burials that lay undisturbed here for nearly five thousand years.



Figure 1.1. D001-001 with the Mudayy springs in background left (photograph by T. Steimer-Herbet).

Archaeological desecration demands a story, that of these long-ago Dhofari bedouin and their persistent pastoralism. The excavation of this tomb, D001-001, brought to light the stories of those buried therein and some details of the kin who buried them. By beginning with their lives and experiences, we honor their places in Dhofar's pastoral prehistory. And by telling their stories, this book populates the archaeological surveys and excavations documented in subsequent chapters of data, analysis, and data patterns in the archaeological record. All told, this record describes what we know of Dhofar's pastoral peoples from the monuments and settlements they left behind, and it explains why pastoralism persisted for thousands of years at the core of Dhofari life.

"Individual A" (let us call him "Awal") was the first person buried in D001-001, sometime between 6000-5500 years ago. He was elderly when he died at about age 55, and he had lived a painful old age after a tough life. He'd broken a few toes and survived a serious back injury, albeit with consequences. 'Awal couldn't move for some time, and part of his spine was fused below his neck, attesting to the pain that some movements caused him. He also had bone spurs of old age on his vertebrae (which probably did not hurt) and had lost a molar in his jaw long before death. 'Awal had none of the dental caries and decay that come with a diet of carbohydrates (cereals and dates), which he clearly did not eat regularly. Yet his teeth troubled him. Without the attentions of a dentist, the pain from a bone abscess under another jaw tooth was deeply distracting, and he bore this pain in his last years, even to his death.

'Awal had probably made his home near the twin springs at Muḍayy. True, there were other springs not far away in the Wādī 'Aybūt system, but his goats and perhaps the few cattle he tended needed frequent watering, and the springs kept them tethered close for most of the year. Only when summer mist-drip or the rare tropical cyclone shed substantial moisture inland could 'Awal and his animals forage southwards down the Wādī Ghārah toward the coastal mountains. In his later years, he probably walked less, and there were others nearby who were faster at catching game and chasing away predators. But old 'Awal carried with him the wisdom of years, and his tribe relied on his memories to know who and what and when and where. At his death, a small group gathered, surely just about everyone who used the springs and the limited browse in this dry region. Perhaps there were two or three families in all. They wrapped his body into a fetal bundle until it stiffened, and then they carried him up to the skyline in view of the green spring. They laid him on the bare desert pavement. Around him they built a strong stone tomb with a ring wall of flat-laid rough limestone slabs, the kind one could prise from nearby bedrock and shift in teams of three or four. They faced the inside and outside with these slabs, then packed the wall core with cobbles and pebbles. Someone in the group had done this work before, copying and teaching a style learned in another tomb-building event, perhaps for a relative near another spring or stream channel. Tombs like 'Awal's were beginning to appear on horizons across the mountain back-slopes and coastal ridges of Arabia, using new building styles learned from one family to the next. By corbelling the interior face, 'Awal's kin narrowed the top of the tomb, covering the last gap with a capstone. Then we may simply guess that they slaughtered a goat in 'Awal's honor and to share a hearty meal at the end of their labors.

At least three hundred years passed by. No one alive still remembered 'Awal directly of course, but some memory of his importance lived on, retold at feasts. After all, nearly everyone who buried him was likely related to him, and his tomb had been on the horizon all the lives of his many times great-grandchildren, who traced their lineages back to him and knew which of their cousins was permitted in marriage. He was an anchor for people on the move. Through 'Awal, or The Ancestor he had become, they knew this as a place they belonged.





Figure 1.2. D001-001 Individual A ('Awal). In this and all subsequent images, we masked human bone to provide illustration respecting the dead while showing the archaeological context of excavations (photograph by T. Steimer-Herbet and E. Lagan).



Figure 1.3. D001-001 Commingled remains, including neonatal remains (photograph by T. Steimer-Herbet and E. Lagan).

“Individual B” (let’s call him “Bir’am”) died in his prime near the Muḍayy springs. Perhaps a wolf pack had grown bolder in attacking goats and children, and Bir’am had faced down the wolves and lost. Although his throat was torn out and his belly eaten, his corpse was otherwise untouched. (Let’s suppose that) his kin opened The Ancestor’s tomb. They found ‘Awal’s desiccated corpse not yet completely disarticulated. Carefully they pushed aside his remains, setting a stone boundary around him and covering what remained with rough slabs. Nearby they placed Bir’am on the soft bed of desert loess that had seeped between the chinking in the winter windstorms.

Maybe food was scarce that year. (Possibly) Bir’am’s mate, already pregnant at his death, died in childbirth, but people said there wouldn’t have been enough to feed her and the infant anyway. She died far from home, but in another season they retrieved the bones of “Individuals C and D” (let’s call her “Chafat” and her fetus “Delot”), bundled them in a leather carry-cloth and put them into The Ancestor’s tomb with Bir’am. On the way back, they passed the place where Bir’am’s father (“Individual E”) El-ram was left. They gathered up his remains also, and with Chafat and Delot, El-ram went into The Ancestor’s tomb, their remains and their ornaments commingled over that of their kin.

Time passed, and our understanding of The Ancestor’s tomb is even less clear. When the old people re-told the stories, when people stopped at the spring, they recalled something, and they pointed to The Tomb. Was there ever an Ancestor Eve, before the Ancestor Star appeared? Or a Feast Day of The Ancestor? (We will never know) On some occasions people gathered. True to tradition, they sacrificed a goat and placed a meaty offering inside The Tomb. It lay there in darkness, gently cushioned by the soft desert loess and dusting over in the winter storms. And that is how we found them – sealed tomb, goat bones, commingled remains, and two partially articulated male skeletons at the bottom.

## Behind the Story: Archaeology and the Lives of Pastoralists

### *Archaeology and the Lives of Pastoralists*

The story told here is based on archaeological data from excavations conducted in 2009 at a 3<sup>rd</sup> millennium BCE high circular tomb (henceforth HCT). This tomb, D001-001, was built on the bedrock plateau overlooking one of Muḍayy’s two springs. Tara Steimer and Kimberly Williams conducted the excavations, aided by Mas‘ūd Al-Kathīrī, Mas‘ūd Al-Hādhari, and two Bengali workmen (Williams *et al.* 2014; Chapter 6 this volume). There was the first of many small-scale stone monuments excavated and documented through systematic archaeological survey between 2009 and 2019 (McCorrison *et al.* 2014, Everhart *et al.* 2014, Harrower *et al.* 2014).

This book is about what we know. Although we will never know the names of people buried in D001-001, nor the name of the tomb itself, archaeological research has provided important insights into the lives they lived. Through a partnership between Oman’s Ministry of Heritage and Culture (now Heritage and Tourism) and foreign archaeologists, we present new evidence of the lives of Dhofar’s ancient inhabitants – the pastoral people who herded cattle and goats in the green enclaves at the edge of Arabia’s desert landscapes.

Even from one tomb, the first excavated in this research program, archaeologists understood some essential parameters of Dhofari pastoral life and death 5000 years ago. Pastoralists sometimes died near where they were buried, and sometimes their bones were transported after their bodies decomposed. They were buried in family-type groups, and they depended on the springs. In arid regions like Muḍayy, their livelihood and diet was goats and game without the compliment of farmed cereals or dates. They did some limited trading to get sea shells and frit beads; they needed gatherings like burials and commemoration to





**Figure 1.4.** Sheikh Suha'il Al-Rujdi (left) and an aide visit an HCT excavated by Drs. Tara Steimer and Kimberly Williams (both right) (photograph by M. Harrower).

share in community, find marriage partners, and exchange livestock and crucial information. Their beliefs included burying the dead, conjoining people into social groups in death, revisiting and sacrificing near tombs, even when burial was not involved, placing prominent burials near springs and water, and including personal ornaments that marked people even in death (Figure 1.5). But as with all good research, our first excavations brought up new questions that require more research to answer.

The AHSD Project (Arabian Human Social Dynamics Project) set out to understand how people maintained their social attachments across landscapes often empty of people. Where people build houses and settle down in permanent agricultural populations, they maintain households, the core social unit in most societies today. But Dhofar's people maintained a persistent pastoralism, and on the move, they maintained social communities that supported each other in life and in death. By opening a tomb to conjoin the dead as in the case of D001-001, people attached themselves to a social community, sometimes one spanning centuries. What defined social communities in Dhofar's prehistory and how were they maintained? Were they always based on ancestors? How long did communities and identities persist, and what were the continuities and ruptures in the mobile pastoral groups that shaped Dhofar's prehistoric landscapes?

Figure 1.5. View of the springs at Mudayy from D001-001 HCT (photograph by T. Steimer-Herbet).



## Theoretical Frameworks

### *Social Cohesion and the Material World*

As early as the fourteenth century CE, Arab historian Ibn Khaldun attributed human success in harsh environments to *‘aṣabiyyah*, or “group feeling.” In the lengthy introduction to a study of world history, Ibn Khaldun sought to explain history in terms of abstract social principles. He differentiated between people of the civilized world and those living in desolate lands, describing the processes that strengthened social cohesion among desert tribes and made them the frequent conquerors of cities. Ibn Khaldun’s major point was that social dynamics explain history (and prehistory). And by linking these social dynamics – that is, the attachments people have to each other and the changes in those attachments – to the different environments in which people lived, Ibn Khaldun fundamentally tied social dynamics to material conditions, a critical point in understanding ancient social dynamics in Dhofar (McCorriston 2013a).





Material conditions include wealth and access to it, environmental resources, and their fluctuations. These are sources of data that archaeologists can collect, even while social behavior of ancient people can no longer be observed. Social cohesion, social bonds, social lives, and social dynamics are invisible in the archaeological record, but the material remains that people left behind – even the small constructions, simple funerary remains, and food scraps from Dhofar’s ancient people – provide rich indications of people’s behaviors in space and time. These archaeological remains were the target of the AHSD Project research, and they were the source of the data – that is observations of the archaeological record – described in this book.



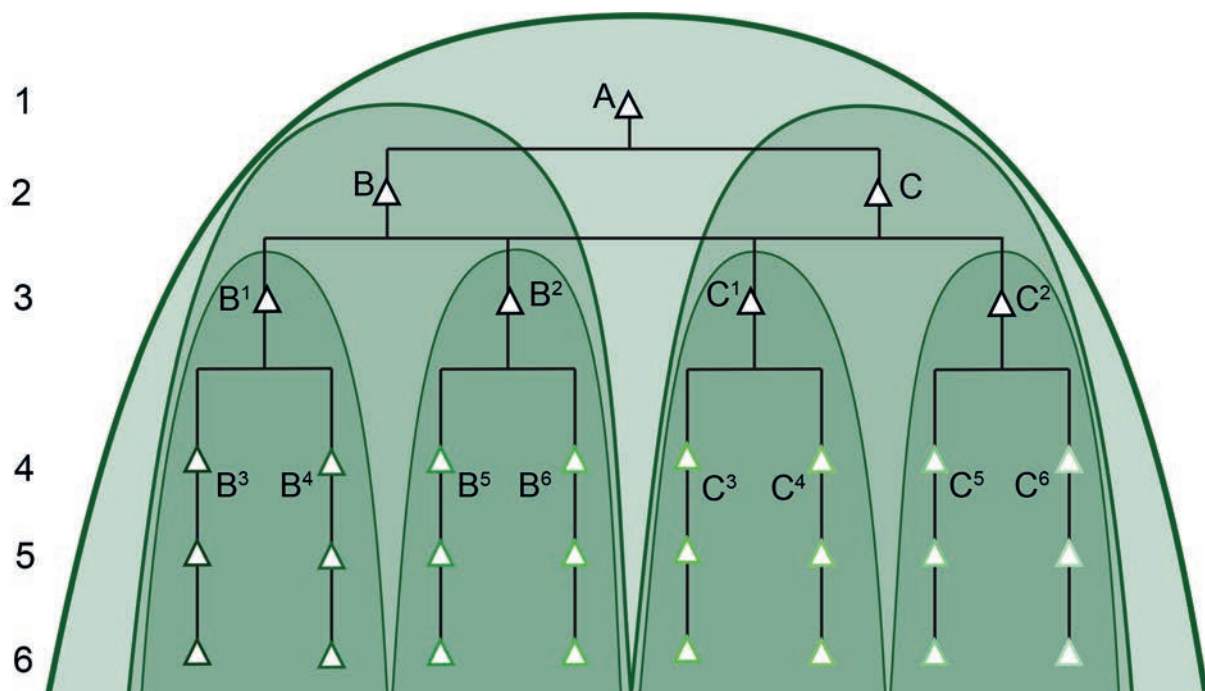
Figure 1.6. D001-001 HCT on plateau before excavation (photograph by J. McCorriston).

*Tribes, Territory, and Landscape: The Spatial Implications of Monuments*

Dhofar's landscape is rich in small-scale stone monuments. These are not everywhere but cluster in some places and are absent from others. We suspect that mobile pastoralists placed bodies in tombs and built monuments across Dhofar to mark the territories of mobile social groups. But bodies and burials are not the only way in which people shape vistas and create a landscape rich in social memory and cultural meaning.

Prior research in Arabian archaeology and adjacent regions has demonstrated that mobile pastoralists constructed stone monuments, some of which held burials, and some of which did not. There were monuments throughout regions and through time periods in which no settlement appeared. Serge Cleuziou (2002, 2007) and Jessica Giraud (2010) have suggested that the placement and contents of 3<sup>rd</sup> millennium BCE tombs are material reflections of social accommodations to the opportunities and constraints of oasis life. In western Yemen, Alessandro de Maigret (1996) also suggested that tombs reflect social behavior by marking the territory of mobile peoples refusing integration into urban enclaves. The assumption that tombs mark the territory of a socially cohesive group is widely asserted across the Syrian-Arabian region (e.g., Porter 2002; Steimer-Herbet 2004; Yule 2018). Because they may anchor people in place through kinship with fixed dead, tombs may be hallmarks of tribes and their landscapes. Groups socially constituted as tribes generally maintain historical, genealogical narratives of contingent and contextual kinship (segmentary lineages) that regulate their economic and political activities (Tapper 1990; Evans-Pritchard 1940). Such tribes exist as political and loosely-bounded social entities. Archaeologists widely accept that tombs offer a material link to the social communities – like tribes – that buried their dead within them. This link between tombs and societies suggests that spatial frameworks for communities of practice in ancient Dhofar are identifiable through their hallmark tombs. While not every group that practiced the same tomb construction would have traced a common genealogy as a tribe, those groups that practiced different tomb constructions almost certainly identified themselves as distinct groups.





**Figure 1.7. Diagram of a (tribal) segmentary lineage kinship system in which contingent and contextual affinity is measured by descent from common ancestors, usually through patrilineal lines. Triangles denote male descent; females not shown (image by K. Olson).**

And some groups built stone monuments that did not contain burials. These monuments are also markers of communities, at least in cases where they commemorated events shared by many practitioners. As markers of communities, stone monuments shape landscapes, which are the constellations of places significant in people's lives.

#### *When did Tribes First Appear? The Chronological Implications of Monuments*

Most studies of tribes as social communities lack the long-term perspective afforded only through archaeology, in which material correlates of behavior rather than behaviors themselves are available from the archaeological record. Therefore a study of monuments, including tombs, across different time periods reveals dynamics and conservatism in social behaviors. Because social dynamics are essentially behavioral, it is difficult to monitor them over long time frames like the archaeological past. Nonetheless, tribes are a heritage feature of modern-day Oman. Tribal societies have been largely studied using historical methods, ethnography, and other tools of social and political science (Khoury and Kostiner 1990). Such studies are a microcosm of efforts to document and analyze long-term trends in human behavior that cannot be directly observed in the short span of a research project (or even one researcher's lifespan). But archaeology offers an important tool in its focus on material remains of human behavior.

Tombs are but one category of small-scale stone monument; pastoralists used many types, through time. Through an archaeological spatio-temporal understanding of small-scale stone monuments we expected to document and reconstruct the historic and prehistoric human social dynamics, including the emergence and dynamics of tribes in ancient Dhofar. We explored whether the use of monuments for burials in Dhofar can be explained by significant correlation with the forces of change that elsewhere have been implicated in the emergence of tribes (Alizadeh 2010; Frachetti 2009; Rowton 1975).

*Forces of Change and Socio-ecological Dynamics*

As everywhere, human social dynamics are finely tuned to the environmental circumstances in ancient Arabia. Anthropologists have long understood that environmental conditions play powerful shaping roles in the maintenance and reproduction of social groups and that in turn, social and cultural exigencies shape the ways in which people exploit available resources and environments. Dhofar offers a broad temporal and spatial framework that encompasses both environmental and cultural changes affecting pastoralists. Dhofari pastoralists experienced both the dynamic forces of change and the legacies of history. We already know of several inflection points for pastoral life during the past 7000 years (e.g. Avanzini 2008; Lézine *et al.* 2010; Lézine *et al.* 2017). Major aridification (5200 calendar years ago), the appearance of oasis cultivation, and the development of far-away urban enclaves (2900 years ago) offered profound environmental and cultural changes. Such changes rippled the social networks of adjacent communities and perhaps even those in Dhofar. These changes should have constrained and impacted social relationships of herders in the arid hinterlands of Southern Arabia.