



THE ARCHAEOLOGY  
*of*  
FAZZĀN

VOLUME 3, EXCAVATIONS OF C. M. DANIELS

Edited by David J. Mattingly

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**The Society for Libyan Studies Monograph 8**

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FRONT COVER: Excavations in progress at Sāniat bin Huwaydī (photo: CMD 1973).

BACK COVER: Cranium and mandible of a young female adult from Sāniat bin Huwaydī (photo: M. Lahr); the Zinkekrā promontory, looking north-east (photo: CMD 1973); the Durham University Expedition of 1959 (Charles Daniels second from left).

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**D. J. Mattingly, C. M. Daniels, J. N. Dore, D. Edwards, J. Hawthorne**

**(with contributions by others)**

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## Dedication

For C.M.D. and J.N.D.

and all honorary members of the Sabhā Rowing Club



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**LIST OF ACRONYMS**

AF: Archaeology of Fazzān  
AM: amphora  
ARS: African Red Slip ware  
CMD: Charles Manser Daniels  
CW: coarseware  
DMP: Desert Migrations Project  
ES: Eastern Sigillata  
FP: Fazzān Project  
FW: fineware  
HM: handmade ware  
ITS: Italian Sigillata  
OES: Ostrich egg shell  
SMC: Sabhā Museum Catalogue  
T: Tomb  
TPQ: terminus post quem  
TRS: Tripolitanian Red Slip ware

## CONCORDANCE OF PLACE-NAMES

Place-names have been, as far as possible, transliterated following *Encyclopaedia of Islam* (E.I.) conventions. In some cases, orthography remains uncertain, while the transliteration of non-Arabic place-names also presents some problems. Some well-established forms have been sacrificed in the interests of internal consistency (for example, Germa for Jarma). The list is arranged in two parts: first the alphabetical listing of place-name forms used in these volumes, and second a listing in italics of older or alternative forms, mainly using the Italian or French colonial transliteration schemes.

Form in AF reports	Variant spellings	Form in AF reports	Variant spellings
al-Abyaḍ	<i>el-Abiad, el-Abiod</i>	al-Ḥajāra	<i>el-Hajara, Hagiara</i>
An Aminān	<i>Aghmenān, Agemennan</i>	al-Ḥamāda al-Ḥamrā'	<i>Hamada el-Hamra</i>
Agīf	<i>Agif, Ageef</i>	al-Ḥaḥīya	<i>el-Hatiya, el-Hatia, el-Hatir</i>
Aghram Nadarif	<i>Ighram Nadārēf</i>		
Aīr	<i>Aīr</i>	al-Ḥuḥfra	<i>Hofra</i>
Āqār	<i>Aggar, Agar</i>	Hūn	<i>Hun, Hon</i>
'Arq Wān Kāsā	<i>Erg Wan Kassa</i>	Ibrayk	<i>Brech, Brek</i>
Bāb al-Maknūsa	<i>see Maknusa</i>	Idrī	<i>Edri, Idrī</i>
al-Bakhī	<i>el-Bakhhki, el-Bachi</i>	Ikhliḥ	<i>Cleff, Chlef, Ikhlayf</i>
al-Bawānis	<i>el-Bouanis</i>	In Ṭafārāt	<i>I-n-Tafarat</i>
al-Bdayir	<i>el-Bdēr</i>	al-Jabal al-Akhḍar	<i>Gebel el-Akdar</i>
Bilmā	<i>Bilma</i>	Jabal 'Awaynāt	<i>Gebel Uweinat</i>
Bin Ḥārith	<i>Ben Herath, Ben Haret</i>	Jabal al-Ḥasāwana	<i>Jebel el-Hassaouana</i>
Bintbaya	<i>Bentbaya, Bintbayah, Gasr Bendbeia</i>	Jabal as-Sūda	<i>Jebel es Souda, Gebel es-Soda</i>
Bi'r Baqqārā	<i>Bir Baghira</i>	Jabal Bin Ghanīma	<i>Gebel Ben Ghnema</i>
Birgin	<i>Berghin, Berghen</i>	Jabal Nafūsa	<i>Gebel Nefusa</i>
al-Birkat	<i>el-Barkat</i>	al-Jadīd	<i>el-Gedid</i>
Brāk	<i>Brayk, Brak, Brach</i>	Jādū	<i>Giado</i>
Būdrinna	<i>Budrina</i>	al-Jaghbūb	<i>Jiarabub, Giarabub, Jaghbub</i>
Bū Nijīm	<i>Bu Ngem, Bu Njem, Bunjaym</i>	Jālū	<i>Jalu, Gialo</i>
ad-Dākhla	<i>Dakleh</i>	Jarma	<i>Germa, Djerma, Jerma</i>
ad-Dlīm	<i>Dlem, Dulaym</i>	Jānit	<i>Gianet, Djanet</i>
Dūjāl	<i>Dujial, Doujal</i>	Jīra	<i>Jeerah</i>
Dahān Murzuq	<i>Edeyen Murzuq, Edeien, Edeiyen Mourzouk</i>	Jirba	<i>Gerba, Djerba</i>
Dahān Ubārī	<i>Edeyen Ubārī, Edeien, Edeiyen Ubari</i>	al-Jufra	<i>Giofra, Jofra</i>
ad-Dīsa	<i>ad-Dīсах, ed-Disa</i>	Jurāra	<i>Gurara, Gourara</i>
al-Fakhfākha	<i>Fakfaka</i>	Kānim	<i>Kanem, Kanim</i>
Fazzān	<i>Fezzan</i>	Kāno	<i>Kano</i>
al-Fjayj	<i>Ffej, el-Fejej</i>	Kāwār	<i>Kaouar</i>
al-Fuḡār	<i>Fougar, al-Foug, Fougar</i>	al-Khara'iq	<i>el-Charaig, el-Kharaig</i>
al-Fuḡhā	<i>el-Fogaha, el-Fougaha, el-Fogar</i>	al-Khārja	<i>Kharga</i>
Gabr 'Awn	<i>Gabr On, Gabr Oun</i>	Knīr	<i>Kneer</i>
Gāo	<i>Gaw</i>	al-Kufra	<i>Koufra, Cufra</i>
Ghadāmis	<i>Gadames, Ghadames</i>	Kukaman	<i>Cocaman</i>
Gharyān	<i>Gharian, Garian</i>	Lārku	<i>Larcu, Laroccu, Larokou</i>
Ghāt	<i>Ghat, Gat</i>	Māfū	<i>Mafou</i>
al-Ghrayf	<i>el-Greifa, el-Gherefa, el Graifa, al-Qraifa</i>	Madrūsa	<i>Madrousa, Medrousa</i>
Ghuddwa	<i>Goddua, Ghedoua, Ghuddurva</i>	Mahrūga	<i>el-Maharuga, Maharouga</i>
		al-Maknūsa	<i>Macmusa, Bab el-Macnusa</i>
		Mandara	<i>Mandarrah</i>
		Marāda	<i>Maradeh</i>
		Matkandūsh	<i>Mattendoush, Mathendusc</i>

Form in AF reports	Variant spellings	Form in AF reports	Variant spellings
Massak Mallat	<i>Amsach, Msak Mallat</i>	Tirbū	<i>Tirbu, Terbu</i>
Massak Şaţţafat	<i>Messak Settafet, Msak Sittafat</i>	Tmakrūt	<i>Tmakrout</i>
Misqwīn	<i>Messegoūn, Mesequin</i>	Tmissa	<i>Tmissa, Tmessa</i>
Mişurata	<i>Misrata</i>	Tmissān	<i>Tmassan</i>
Murzūq	<i>Murzuch, Mouzouk,</i>	Trāghan	<i>Traghen</i>
al-Qal'at	<i>al-Qalaah, Gelah</i>	Tripoli	<i>Tarābulus</i>
Qaşr ash-Sharrāba	<i>esc-Sceraba, Gasr esc-Sceraba</i>	aţ-Ṭrūnah	<i>Trouna, Bahrat et-Truna</i>
Qaşr Bin Dughba	<i>Qasr ben Dougba</i>	Tsāwa	<i>Tessoua, Tsawah, Tesaua</i>
Qaşr Būdrinna	<i>Gasr Budrina</i>	Tubū	<i>Toubu</i>
Qaşr Lārkū	<i>Gasr Laroccu, Larocco</i>	Tūska	<i>Tosca</i>
Qaşr Māra	<i>Gasr Mara</i>	Tuwash	<i>Twesh, Tuasc, Touach</i>
Qaşr Waţwāt	<i>Gasr Uatuat</i>	Tuwāt	<i>Tuat</i>
al-Qaṭrūn	<i>el-Gatrun</i>	Tuwīwa	<i>Towiwa, Tuiua, Touioua</i>
Qarāqra	<i>Gragra</i>	Ubārī	<i>Ubari, Oubari, Awbari</i>
al-Qrāya	<i>el-Gheraia, Greia, el-Graiya</i>	Umm al-'Abīd	<i>Umm el-Abid, Om la Beed</i>
al-Qşir	<i>Leksair, el-Gser</i>	Umm al-Arānib	<i>Umm el-Araneb, Oum el-Araneb</i>
al-Qurayyāt al-Gharbīya	<i>Gheriat el-Garbia</i>	Umm al-Ḥammām	<i>Oum el-Hamam</i>
al-Qurḍa	<i>el-Gorda</i>	Umm al-Ma'	<i>Oum el-Ma</i>
ar-Raqayba	<i>er-Rgheba, Rugheba, Rqaybah, Reguiba</i>	al-'Uwaynāt	<i>el-Uweinat, el-Aweinat, el-Auenat (see Sardalas)</i>
Sabhā	<i>Sabha, Sebha</i>	Wadai	<i>Wadai</i>
Sāniat bin Huwaydī	<i>Saniat Ben Howedi</i>	Waddān	<i>Waddan, Uaddan</i>
Sāniat Jibrīl	<i>Saniat Gebril</i>	Wādī	<i>Ouadi, Oued</i>
Sāniat Sulaymān Krayda	<i>Sāniat Suleiman Craida</i>	Wādī al-Ajal	<i>Wadi el-Agjal, el-Ajal</i>
Sardalas	<i>Serdeles, see al-'Uwaynāt</i>	Wādī Barjūj	<i>Wadi Bergiug, Berjuj</i>
ash-Sharqiyāt	<i>Sharqiyat, ech-Cherguīya</i>	Wādī Būznā	<i>Wadi Bouzna</i>
Sīdī 'Alī	<i>Sidi Ali</i>	al-Wādī al-Gharbī	<i>Wadi el-Gharbi</i>
Sīdī Dāwud	<i>Sidi Daouad</i>	Wādī al-Ḥayāt	<i>Wadi el-Hayat</i>
Sijilmāsa	<i>Sidjilmasa</i>	Wādī Ḥikma	<i>Wadi Hikmah</i>
Surt	<i>Sirt, Sirte</i>	Wādī Irawan	<i>Wadi Iraouen, Irowen</i>
Sīwa	<i>Siwah</i>	Wādī al-Khurmān	<i>Wadi el-Khorman</i>
Sūkna	<i>Socna, Sulnah</i>	Wādī al-Nashw'a	<i>Wadi en-Nesciu</i>
Tabalbala	<i>Tabalbala, Tabatbalet</i>	al-Wādī ash-Sharqī	<i>Wadi esc-Scerghi, ech Chergui</i>
Tadrart Akākūs	<i>Tadrart Acacus, Akakous</i>	Wādī ash-Shāfī	<i>Wadi esc-Schatti, ech Chati</i>
Tāhart	<i>Tahert</i>	Wādī Tanzzūft	<i>Wadi Tanessuft, Tanezzrouft</i>
Tajirhī	<i>Tajarhi, Tejerhi</i>	Wādī Tillizāghan	<i>Wadi Tilizaghen, Tilizahren, Telisaghe</i>
Takarkībah	<i>Tekerkiba, Tekertiba, Techertiba</i>	Wādī Tishūnīt	<i>Wadi Teshuinat</i>
ad Tāmalālat	<i>ad Tamellat</i>	Wādī 'Utba	<i>Wadi 'Utba, 'Atba, Etba</i>
Tānzāwa	<i>Tamzaua</i>	Wādī Zallāf	<i>Wadi Zallaf, Zellaf</i>
at-Tanāḥma	<i>At-Tanahmah, et-Tanahma</i>	Wān Afūda	<i>Uan Afouda</i>
Tāqallit	<i>Taglit, Taglilt</i>	Wān Muhūjjāj	<i>Uan Muhuggiag</i>
Tarhūna	<i>Tarhuna</i>	Wān Tabu	<i>Uan Tebu</i>
Tāssīlī n' Azjar	<i>Tassili n' Ajjer</i>	Wān Talīkīt	<i>Uan Telocat</i>
aţ-Ṭawīla	<i>Touila</i>	Waţwāt	<i>Uatwat, Gasr Uatuat</i>
Tāwurgha'	<i>Tauorgha</i>	Wāw al-Kabīr	<i>Uau el-Chebir</i>
Tegrūtīn	<i>Teggrutin</i>	Wāw an-Nāmūs	<i>Uau en-Namus</i>
Tilimisān	<i>Tilimisan</i>	Zalā	<i>Zalla, Zella</i>
Timbuktū	<i>Timbuctu</i>	Zinkekrā	<i>Zinhecra</i>
Timinhint	<i>Temenhind</i>	as-Zirghān	<i>es-Zighen</i>
Tin Abūndā	<i>Tin Abunda, Tinabonda</i>	Zizāw	<i>Zizaw, Zizau</i>
Tinda	<i>Tindā</i>	al-Zūwīya	<i>Zouayya, Zuaya, Zueia</i>
		Zuwīla	<i>Zuila, Zawila, Zouila, Zuwayla</i>



## FOREWORD

By Hugh McDowell,

**President & General Manager, BP Exploration Libya Limited**

The Fazzān, in south-western Libya, offers some of the most beautiful and spectacular desert landscapes in the world and has captivated the imagination of explorers for hundreds of years. Only now however are some of its fantastic archaeological secrets starting to be told. The story of the highly developed, early Libyan society of the Garamantes people is revealed in this volume through their buildings and artefacts, excavated over many years.

As a geologist and explorer working for BP in Libya, this book and its wonderful illustrations has captivated my imagination and has allowed me to look at the rich history of Libya in a very different way. I now appreciate that Libya's own history of civilization greatly pre-dates the more popularly known Greek and Roman periods. Through this research, conducted by the late Charles Daniels and completed by Professor David Mattingly, the story continues of how this sophisticated and vibrant civilisation drove fundamental advances in technology (such as in irrigation techniques and the introduction of metallurgy, the camel and wheeled vehicles) and pioneered a significant expansion in trade and cultural relations between North Africa, the Mediterranean and Sub-Saharan Africa.

This is all the more extraordinary when it is appreciated that these developments happened after the onset of the current hyper-arid phase of Saharan desertification, which started about five thousand years ago. The rise and fall of the Garamantian civilisation is thus a story of human ingenuity in attempting to adapt to harsh desert conditions.

The new knowledge of the Garamantes presented here has profound implications for our understanding of the earliest phases of another of the great Saharan oases, Ghadames, located within BP Libya's exploration area. The early inhabitants of Ghadames were also most likely an agricultural and urban society employing similarly advanced technologies. This book is therefore an indispensable reference for future research by archaeologists into other ancient Saharan peoples in Libya and beyond.

BP is proud to support this third volume of the *Archaeology of the Fazzān* series – in partnership with the Libyan Department of Antiquities and the British Society for Libyan Studies.



## PREFACE AND ACKNOWLEDGEMENTS

The *Archaeology of Fazzān* volume 3 is focused primarily on the Saharan excavations of Charles Manser Daniels (hereafter CMD). It is in many respects a celebration of the extraordinary pioneering work undertaken by him and the teams of archaeologists he took to Fazzān between 1958 and 1977. Much of the contents of this volume rests ultimately on a rich archive of unpublished notes, photographs, drawings, interim reports, card indexes and rough drafts left behind by CMD at his premature death in 1996. The deposit of his papers in the archive of the Society for Libyan Studies at the University of Newcastle led to a successful bid to the Leverhulme Trust by David Mattingly and John Dore to bring CMD's work in Fazzān to full publication, taking advantage also of the fact that a new British-Libyan project (the Fazzān Project, hereafter FP) directed by Mattingly was in the field from 1997–2002. This more recent phase of work has been continued and amplified as the Desert Migrations Project (DMP) 2007–2011.

With key funding from the Leverhulme Trust, British Academy and the Society for Libyan Studies, work on the Daniels' archive took place alongside the new fieldwork, notably between 1999–2001 when David Edwards and John Hawthorne were employed as Post-Doctoral Research Fellows on the project. The work on the archive was split between the University of Leicester, where David Edwards worked under my supervision, and Newcastle, where John Hawthorne was supervised by John Dore. There were many meetings and much shuttling up and down the M1/A1.

This is the third volume in the series of major reports resulting from that initiative and it is specifically focused on the series of excavations carried out by CMD. It is a pleasure to record my thanks to BP Exploration Libya Limited for generous sponsorship of this volume, which has allowed us to print a large number of illustrations in colour. All of CMD's excavations in Fazzān will be covered here, with the exception of his work at Old Jarma. The latter will be presented in the fourth (and final) planned volume of the *Archaeology of Fazzān* which will be dedicated to that site and will cover survey and excavations there by both CMD and the FP. The present volume also attempts to rescue from obscurity information related to the largely unpublished excavations carried out by Mohammed Ayoub, the Controller of Antiquities in Fazzān in the 1960s. CMD's team worked alongside (and to some extent shadowed) Ayoub's large-scale clearance operations and there is much in the CMD archive that clarifies or expands on the information contained in Ayoub's published and typescript reports.

As stated in previous volumes, bringing together data on the various phases of work has not been a straightforward exercise, with the fieldwork reported on here having been carried out across a 50-year period, with varied recording methods and differing standards of analysis. Many interpretative problems that contributed to CMD's delays in publication have been resolved through the more recent work and this is in part reflected in the analytical sections of the reports that follow. However, it needs to be stated at the outset that the results of the FP and DMP work will feed into further major publications in the coming years and some of the discussion here is deliberately succinct, reflecting this fact. The premature deaths of first Daniels and then my collaborator and friend John Dore has vastly complicated the task (and accounts for part of the delay in bringing this volume to press). Yet I am unshaken in my belief that the combined results, for all the gaps in knowledge and non-comparable aspects of the data, represent far more than the sum of the parts. This is a remarkable dossier of information about a fast vanishing Saharan landscape and facilitates the creation of an entirely new vision of the story of its people across time. It is not yet a definitive picture, but it does represent a new baseline of archaeological knowledge of this central Saharan location.

The Daniels expeditions were funded by a variety of sources, including the British Academy, the Society for Libyan Studies, the University of Newcastle, the Pilgrim Trust, the Royal Geographical Society, the Lawrence Bequest, the Seven Pillars of Wisdom Trust, the Russell Trust, the Craven Committee Oxford, the Universities of Edinburgh and Cambridge. Grateful thanks to all of these funding bodies are recorded here. Although, CMD's work focussed primarily on the Jarma region of the Wādī al-Ajāl, in 1968 his mission accompanied a British army expedition to the Murzuq area, thanks to the good offices of Major P. G. Boxhall. The list of known team members is given in relevant Chapters below.

The work was carried out in collaboration with the Libyan Department of Antiquities. A particular debt of gratitude is owed to the successive Under Secretaries, later Presidents, of the Department of Antiquities, for their support for the work. The creation of a southern Controllershship of Fazzān in the 1960s was a vital step towards creating the conditions for CMD's project and he worked closely with the first Controller, Mohammed S. Ayoub, (1960–1969). A. M. Kilani, Dr Ali Abdusalem, Dr Giuma Anag and Dr Faraj al-Rashedy were other Libyan colleagues who participated in or assisted CMD's work. In recent years, the FP and DMP have been supported by Ali Khaddouri, Giuma Anag and Salah Aghab as successive Presidents of the Department of Antiquities and the following Controllers for Fazzān: Mohammed Mashai, al-Mahdi Mohammed al-Azrak, Dr Ali Abdusalem, Mohammed Arreda and Mohammed Mashai (a second term). At Jarma, the Department's representative, Saad Saleh Abdelaziz, has been indispensable to the well-being of the team and the smooth running of the project, along with other staff based at Jarma.

Illustrators involved in producing final figures used in this volume include Miriam Daniels, Mireya Gonzalez Rodriguez, John Dore, David Edwards, John Hawthorne, Lucy Farr, Mike Hawkes, Birgitta Hoffmann, David Hopkins, David Mattingly, Deborah Miles-Williams, Ian Reeds and Martin Sterry. The majority of the original pottery drawings were the work of Miriam Daniels, with preparation of mounted-up pages carried out by David Mattingly. Photographs in the report were primarily taken by CMD himself; many artefact photographs are the work of David Thomas (who took digital images for the FP of every artefact in the Jarma museum); a small number of other images are from the more recent FP and DMP work (notably the work of Toby Savage, Tertia Barnett, David Mattingly and Marta Lahr). I am particularly grateful to Susanna Mattingly and Mireya Gonzalez Rodriguez who undertook the scanning of the majority of the 100s of photographs and finds drawings used in this book and to Toby Savage for undertaking the final preparation and quality control of images for publication.

The external members of the Society for Libyan Studies Fieldwork Committee have played an important role in steering the work (Professor Mike Fulford, the late Dr Tim Potter, Professor Roger Wilson, Mark Hassall and the late Professor Colin Wells). Much of the work of the FP was carried out during the period that David Mattingly served as Chairman of the Society for Libyan Studies (1996–2001), but particular thanks are due to his two predecessors, Dr Susan Walker and Professor Graeme Barker, and to his successors, Paul Bennett and Professor Andrew Wilson. In addition, special mention is due to the four most recent Society Presidents, the late Stephen Edgerton, Oliver Miles, Claudio Vita Finzi and Anthony Layden, along with the long-serving General Secretary Shirley Strong (who served both CMD and the more recent projects for the Society) and our Honorary Treasurers, Tim Taylor and Dr Philip Kenrick.

A further debt is owed to Professors Andrew Wilson, Colin Wells and Dr Lisa Fentress who acted as external readers of the draft text of this book and made many helpful suggestions for improvement. Discussion with Professor Wilson was so fruitful that it led to the addition of a jointly authored concluding chapter to the book. Remaining errors are, of course, the responsibility of the editor and individual authors. Victoria Leitch undertook the copy-editing and managed the production schedule with great skill and Primavera Quantrell carried out the final typesetting of this book. Finally, we are very grateful to Mustapha Turjman of the Department of Antiquities for translating the Arabic summary with his customary care.

David Mattingly

Leicester, December 2009



# 0. INTRODUCTION: THE WORK OF C. M. DANIELS IN FAZZĀN, SOUTHERN LIBYA

By D. J. Mattingly, J. N. Dore<sup>†</sup> and C. M. Daniels<sup>†</sup>

## CHARLES DANIELS AND LIBYA

### Life and Career

Charles Manser Daniels (CMD) was born on the 10 August 1932 and attended Newcastle Royal Grammar School and Durham University, gaining a BA in Modern History in 1952 and an MA in Archaeology in 1958. After a research fellowship at the University of Newcastle, he was appointed Assistant Keeper of the Museum of Antiquities there – a post he held until 1973, when he was made Lecturer in the Department. He finished his career in 1996 as Senior Lecturer, still at Newcastle, serving also as Keeper of the Museum of Antiquities and Head of the Department. His fieldwork was notably wide-ranging, though the North-east of England and Hadrian's Wall was always a core concern of his (Daniels 1978). In the early 1960s he worked with the British School of Rome, excavating a series of churches in South Etruria (Christie 1991). As early as 1958 he had made his first trip to southern Libya (Fazzān) and his work on the Garamantes took place in a series of ten campaigns spread over the next 20 years. In the 1980s he shifted his focus to excavating in Sudan, but still combining two of his long-term interests, the archaeology of African societies and of churches (see further Jones 1996, for an obituary of CMD in *Libyan Studies*).

Although acknowledged as a fine field archaeologist, it is fair to say that CMD did not excel in delivering final reports on his various projects. The short book (Daniels 1970b) and nine articles on the Garamantes published in his lifetime do not do justice to the extent and significance of his Libyan fieldwork (see further below on the published outputs). The early excavations at Zinkekrā were written up in substantial form (Daniels 1968a; 1970a), but the later phases of the Zinkekrā work and other large-scale excavations at Sāniat Jibrīl and Sāniat bin Huwaydī (and minor excavations at a host of other sites) have remained very largely unpublished. This had nothing to do with lack of ability as a writer and synthesiser, nor

was it the result of disorganisation – his archive of materials was well maintained. CMD published many important articles and a few larger reports in his life, but he was a perfectionist when it came to the point of completion of his major projects. It is a pity that this tendency towards prevarication led to much of his best work only being published posthumously, finally enabling the quality and importance of his contributions to become better known than was the case in his lifetime (see also Rushworth 2009 for the long-delayed publication of CMD's work at Housesteads fort).

It is apparent from the archive that a huge amount of work had been achieved in terms of organising the finds, largely in a period when Charlotte Tagart was employed as a research assistant in the early 1980s. However, almost nothing existed in terms of draft stratigraphic reports or overall synthesis. In certain respects, the work of the Fazzān Project (FP) has allowed us to get round some of the mental 'road blocks' that deterred CMD from committing to print – the lack of a pottery type series for anything but the imported wares, or the uncertainty of attribution of a Garamantian date to some of the oasis villages and urban settlements. However, the passage of time has not been entirely helpful to the process of publication and the observant reader of this volume will perceive areas where some crucial piece of evidence was no longer accessible to us, or data are presented less fully than one would ideally hope for in a modern report. Nonetheless, this is an extraordinary body of work – all the more important because there is so little like it from anywhere else in the Sahara or the Maghrib relating to an indigenous people of this time period. The finds assemblage reported on here is quite extraordinary in terms of the range, quantity and quality of imports that reached the central Sahara from the Roman Mediterranean world (see especially Chapters 3, 5, 6 and 8 below). But there is also vital information about the evolution of a highly distinctive local material culture that we can recognise as 'Garamantian' across a period of 1500 years (see especially Chapters 1–3, 5–6, 8).

Table 0.1. Summary of CMD's Fieldwork 1958–1977.

Year	Site	Nature of Work
1958	General visit to Wādī al-Ajāl (GER001, ZIN001–3, TAG001, LAR001, etc.)	Photographic record of selected sites
1959	Tāqallit cemetery (TAG001)	Excavation, sherding
1959	al-Khara'iq cemetery (CHA001)	Sherding, examination
1959	Old Jarma (GER001)	Site visited and described
1959	al-Ḥaḥīya (ELH001–2)	Site clearance
1962/3	al-Ghrayf (LGR001)	Site examined
1962/3	Tuwash (TWE001)	Excavation
1962/3	al-Fuḡār (FUG001)	Excavation
1962/3	Royal Cemetery (GSC030)	Excavation
1962/3	Tāqallit (TAG001)	Sherding
1962/3	Zinkekrā (ZIN001–3)	Site visited
1965	Zinkekrā (ZIN001–3)	Survey, excavation, sherding
1965	Jarma (GER001)	Surveying, excavation
1965	Sāniat Jibrīl (GER002)	Excavation
1965	Tuwash (TWE001)	Excavation
1965	Waṭwāt (UAT001)	Surveying, excavation
1965	al-Fjayj (FJJ002–11)	Surveying, sherding
1965	Tinda (TIN001)	Surveying, sherding
1965	Ikhliif (CLF008–010 f)	Surveying, sherding
1967	Zinkekrā (ZIN001–3 f)	Excavation
1967	Waṭwāt (UAT001–18)	Surveying, sherding
1967	Royal Cemetery (GSC030–31 f)	Surveying, sherding
1968	Qaṣr Māra (MAR001 f)	Exploration, sherding
1968	Qaṣr ash-Sharrāba (SCH020 f)	Exploration

Year	Site	Nature of Work
1968	Bīr Baqqārā (BBG001 f)	Sherding
1968	Wādī al-Nashw'a (NSH001 f)	Exploration
1968	Ghuddwa (GDD001 f)	Sherding
1968	Muzurq/Trāghan (MZQ001)	Exploration
1968	Zuwāla (ZUL001 f)	Exploration, sherding
1968	Murzuq (MZQ001)	Surveying, planning
1969	Jarma (GER001)	Surveying, photography, excavation
1969	Zinkekrā ZIN001–3)	Surveying, sherding, photography
1969	Sāniat Jibrīl (GER002)	Survey
1971	Sāniat Jibrīl (GER002)	Excavation
1971	Qaṣr Lārkū (LAR001 f)	Exploration, sherding
1971	al-Qṣīr (LEK001 f)	Sherding
1971	Tuwash (TWE021)	Exploration
1971	Ikhliif (CLF001–2, 008–010)	Exploration
1973	Ikhliif (CLF008–10)	Surveying, planning, excavation
1973	Tinda (TIN001)	Survey, excavation
1973	al-Khara'iq (CHA003–08)	Survey, excavation
1973	al-Qṣīr (LEK001 f)	Survey, planning
1973	Zinkekrā (ZIN001.3)	Excavation
1973	Sāniat bin Huwaydī (GER011)	Excavation
1973	Sāniat Jibrīl (GER002)	Survey, recording
1977	Sāniat bin Huwaydī (GER011)	Excavation, photography, planning, surveying
1977	Sāniat Sulaymān Krayda (GER027)	Survey, excavation

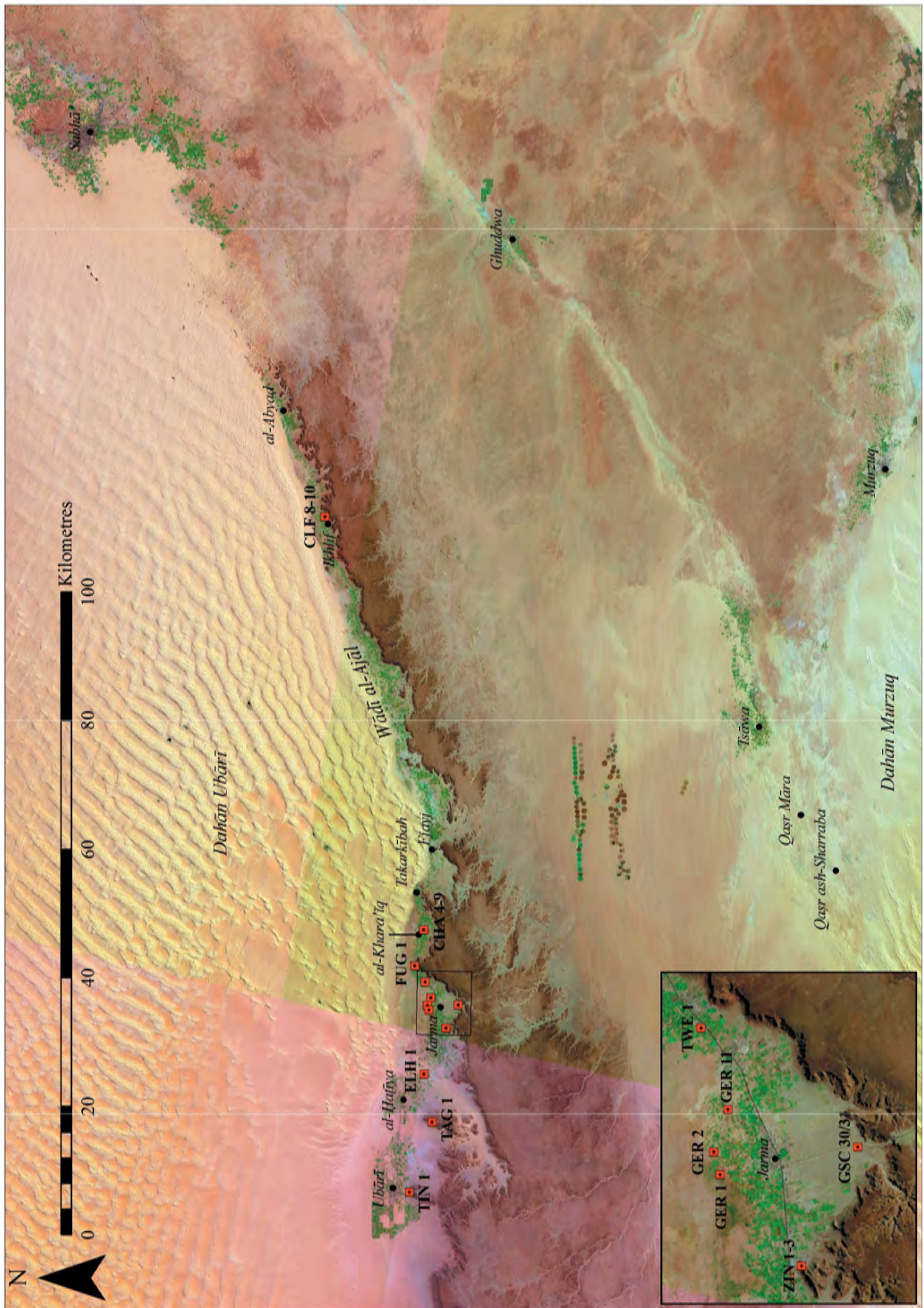


Figure 0.1. Map of the Wādī al-Ajāl, showing location of principal sites excavated by CMD (DMP).



Figure 0.2. Fazzanese farmer in one of CMD's ethnographic photographs (CMD 1959).

The Garamantes have emerged in the last decade much more prominently into the scholarly spotlight as a result of the publication of the *Archaeology of Fazzān* (hereafter *AF*) volumes (Mattingly 2003; 2007). The reports in this volume will make it much more apparent how big a debt is owed to CMD for opening up study of this hugely significant African people.

### The Contribution of Mohammed Ayoub

Another major player in the archaeology of Fazzān needs introducing at this early stage. Mohammed Suleiman Ayoub was a Sudanese archaeologist, who was appointed as Controller of Antiquities for Fazzān in 1961. He quickly became fascinated by the Garamantes and embarked on an ambitious sequence of excavations of Garamantian sites that was continued for much of the 1960s. Some of Ayoub's excavations were conducted on a very large scale, though in truth none of them very scientifically executed. Ayoub had a basic understanding of stratigraphy, but does not seem to have supervised his diggers closely or to have made detailed records as he went along. However,

he was aware of his limitations and several times requested British archaeologists like Olwen Brogan and later Sir Ian Richmond to send him expert assistance. CMD was the man that Brogan and Richmond encouraged to take up the challenge and although for much of the time CMD worked separately from Ayoub, it was inevitable (and fortunate for us) that their programmes frequently overlapped. It is clear from CMD's archive that he devoted considerable resources to making sense of some of Ayoub's published and unpublished work (Ayoub 1962; 1967a/b; 1968a/b/c; no date).

Inevitably, this volume thus represents an attempt to rescue information relating to the excavations of Ayoub as well as those of CMD. The personal correspondence of CMD includes many letters of the early 1960s between himself and Olwen Brogan or Ian Richmond concerning the situation in Fazzān. Ayoub worked at a rapid pace and for extended periods. For example, digging at Old Jarma between mid-February and the end of April 1962 he claimed to have discovered 'a palace built of Roman blocks of stone, 24 gold ornaments and 150 unbroken pots and many other remains' (quoted from letter to CMD from Olwen Brogan of 29 May 1962). Brogan and Richmond saw the potential significance of Ayoub's work, but were anxious about its quality.

CMD clearly worked hard to influence Ayoub and to help him improve his approach, but he also took steps to ensure that something of value could be salvaged from the mess that tended to be left behind from large-scale clearance operations carried out by inadequately supervised untrained labour. At Old Jarma (GER001), CMD followed up Ayoub's destructive clearance with some stratified trenches to try to establish chronological sequence and dating evidence. At the cemetery of Sāniat bin Huwaydī (GER011), which Ayoub initially mistook for a 'pottery shop' from which he was simply quarrying ceramic finds, CMD made detailed records of the finds' assemblages in Sabhā museum as well as conducting his own excavations to clarify Ayoub's rather confusing account. As CMD would have wanted, Ayoub's findings will be frequently reviewed and expanded on in this volume and in *AF* 4 which will be devoted to Old Jarma.

### CMD's Publications on the Garamantes

Some comments are required on the relationship between CMD's published outputs on his Libyan work and the sequence of field seasons described

below. There is an unpublished manuscript report in the archive relating to the 1959 field visit, but it was only from 1965 onwards that regular interim reports were produced. Copies of these unpublished typescript reports exist in the archive and have formed the basis of much of the description below (Daniels 1965; 1967; 1968b; 1969b; 1971c; 1973b; 1977b). CMD's first published contribution on the Garamantes was a substantial report on the excavations at Zinkekrā covering the 1965 and 1967 seasons, published in *Libya Antiqua*, the journal of record of the Libyan Department of Antiquities (Daniels 1968a). A shorter version of the same report was later published in the *Antiquaries Journal* (Daniels 1970a).

In 1969, a summary article on the Garamantes appeared in a volume prepared in relation to the field conference of the Petroleum Exploration Society (Daniels 1969a). This first attempt at a synthesis was swiftly followed (and built on) by two further important studies. The first of these was a slim but masterful monograph (aimed at a popular readership and sadly long out of print), drawing not only on the new evidence from Zinkekrā, but also on CMD's wider survey of cemeteries and settlements in the Wādī al-Ajāl (Daniels 1970b). Most of the book was completed before his work at Old Jarma and Sāniat Jibrīl had proceeded far. A substantial paper presented at a conference held in Libya in 1968 was published and again offers an important statement of CMD's views at this stage of the research (Daniels 1971a). Quite a few of the minor elements of fieldwork from the early campaigns were presented here, including an important discussion of the series of mausolea that CMD had added to the long-known example at Qaṣr Waṭwāt. Another important contribution from this period was a paper on Libyan inscriptions from the Wādī al-Ajāl, drawing on his 1959 research at Tāqallit (Daniels 1975).

The inception of the UK-based Society for Libyan Studies in 1969 soon offered a suitable publishing venue for his interim reports, so the privately circulated 1971, 1973 and 1977 reports all appeared in only slightly modified form in the *Annual Report of the Society for Libyan Studies* – generally known today simply as *Libyan Studies* (Daniels 1971b; 1973a; 1977a). These were quite brief and largely unillustrated statements. In the absence of more detailed reports, this has left the later work carried out by CMD far less well understood, in comparison with his first excavations on Zinkekrā. After 1977 CMD did

not return to Jarma again and by the early 1980s he had begun a new field programme in Sudan (Welsby and Daniels 1991). Although progress was made towards final publication, notably in a period when Charlotte Tagart was employed as a research assistant, the flow of outputs of the early 1970s was not maintained.

With the exception of the briefest of allusions in a general survey of the Roman frontier in Africa (Daniels 1987, 138), only one further study appeared in his lifetime. A special volume of *Libyan Studies*, celebrating the first 20 years' work of The Society for Libyan Studies, included an important updated statement of synthesis (Daniels 1989). The article remains the clearest published statement on the archaeology of the southern and eastern Fazzān (it draws heavily on the unpublished interim for 1968) and on the work undertaken at Jarma, Sāniat Jibrīl, the escarpment settlements excavated in 1973 and Sāniat bin Huwaydī.

### The CMD Expeditions 1958–1977

The reports in this volume are organised in thematic groups – early escarpment cemeteries, oasis-centre villages, cemeteries, finds reports – rather than as a chronological sequence. One function of this introductory essay is to explain the broader context of the CMD campaigns and what was achieved on a year-by-year basis. His work in the Fazzān began with two brief visits in 1958 and 1959 and a third in 1962/63 (with Sir Ian Richmond). Seven full seasons of fieldwork and excavation then followed between 1965–1977 (information on the principal sites investigated each year is summarised in Table 0.1 and locations mapped on Fig. 0.1). The objects of these campaigns were four-fold: to record as much of the archaeology of the Wādī al-Ajāl by fieldwork and survey as possible; to excavate selected habitation and cemetery sites; to recover floral and faunal material against a time when this could be identified; to compare the al-Ajāl sites and material with the Wādī ash-Shāfī to the north and the Murzuq-al-Ḥufra area to the south.

The information below has been drawn from various papers (including personal correspondence), interim reports (both published and unpublished) and articles produced by CMD. The aim is to provide an overall picture of the extent of work carried out and the general results which were achieved. Where possible we have identified the original team members responsible for supervising





Figure 0.3. One of many vehicle problems for the Durham University expedition in 1959 (CMD 1959).

and recording specific excavations. For instance, John Tait was his principal assistant in the early campaigns at Zinkekrā and many of the larger site surveys were the work of Patrick Carmody. The volume is also illustrated by many of the wonderful pottery and finds drawings produced by CMD's wife, Miriam Daniels.

Photography was one of CMD's listed hobbies and his ancient Leicas among his most treasured possessions. His superb photographs are a vivid and priceless record of both the archaeology and the socio-economic conditions in Fazzān between the late 1950s and the 1970s (Fig. 0.2). The region is utterly transformed today. The photographs also convey something of the difficulties of carrying out fieldwork in this hyper-arid region, with its furnace-like mid-summer temperatures and already uncomfortable heat in April. There is hardly any tarmac road visible in CMD's Fazzān photos and there are numerous images of vehicles stuck in soft sand or broken down on the long desert transits from the Libyan coast (Fig. 0.3).

The account books reveal the incredible frugality of the enterprise – many of the field seasons were achieved with less than £1,000 in funding – a large proportion of which went on transporting people and vehicles from the UK. With these tiny budgets, the teams each year were necessarily small and

close-knit groups, united by the tough living conditions and limited diet. Rations were evidently parsimonious in the extreme at times. Honorary membership of the fictitious 'Sabhā Rowing Club' (evidently conveyed by a presentation scarf) was a hard-earned perk for participants. Taking into account the difficult logistical circumstances of his expeditions, the amount that was accomplished is truly astonishing.

CMD was not the first to work on the Garamantes, of course, following on from pioneering Italian work in the 1930s (Pace *et al.* 1951; *Saharo Italiano* 1937; cf. Mattingly 2003, 16–21). In the immediate post-War period, with Fazzān a French protectorate, there was a small amount of work carried out on its archaeology by French teams (Pauphillet 1953).

The appointment of Ayoub as Controller of Fazzān in 1961 opened a new phase of intensive work. Operating with large teams of labourers, Ayoub turned up some spectacular finds, but poor recording and hazy understanding of stratigraphic contexts threatened to reduce the value of the enterprise. He appealed to the British archaeologist Olwen Brogan for help and she consulted with Sir Ian Richmond. As a result of his pioneering visits in the late 1950s, CMD was the obvious candidate to be sent to assist. He was more than willing and



Figure 0.4. Group photo of the Durham University Expedition of 1959. (CMD is second from left).

both Brogan and Richmond worked hard to open doors and help him secure funding. Richmond had been brought on board after a conversation with Brogan in June 1962, agreeing to devote a week or so over the Christmas vacation to accompany CMD and to assess what needed to be done (letter from Brogan to CMD dated 14 June 1962). From that moment Richmond was a firm promoter of the work and his sudden death in 1965, just as the CMD campaigns were getting established on a secure footing, was a set-back. Another senior figure in British archaeology, Mortimer Wheeler, evidently gave CMD support at this time, though he is far less evident in the surviving archive of correspondence than is Richmond.

In so far as we have been able to reconstruct the team rosters, people who took part in the main field seasons from 1965–1977 were as follows: Giума Anag (1973); Chris Arthur (1967); Eric Balley (1973); David Bird (1971); Tony Birley (1965); David Breeze (1967); Olwen Brogan (1958, 1965); David Browne (1969); Patrick Carmody (1965, 1967, 1968, 1969, 1971, 1973); Ian Caruana (1977); Hugh Chapman (1969, 1977); Miriam Daniels (1965, 1967, 1969, 1971, 1973, 1977); John Gillam (1971, 1973); Andy Gilson (1977); Bill Hanson (1973); Mark Hassall (1969); John Hayes (1969); Barri Jones (1965); John

Little (1969, 1973); Tina McGeorge (1973, 1977); S.A. Medd (1967, 1969); Faraj al-Rashedy (1973); John Scott Elliot (1965, 1967); Peter Scott (1973); Jack Tait (1965, 1967, 1968); Ibrahim Tawahni (1977); Tim Tatton Brown (1973, 1977); Humphrey Welfare (1973). In addition the Department of Antiquities provided (and paid for) up to 15 workmen each season.

#### *First visit in 1958*

The Libya expedition of 1958 appears to have been organised by Olwen Brogan and David Smith, in the year following completion of their excavations at Ghirza in the Libyan pre-desert (Brogan and Smith 1984). A party of 10 people travelling in four vehicles departed from Tripoli and in a whistle-stop tour took in the key Roman sites of the pre-desert in addition to visiting the Wādī al-Ajāl, Murzuq, Idri and Sabhā in Fazzān. Only a few days (28–30 April) were actually spent in the Wādī al-Ajāl – focusing on the key sites reported by the Italian mission of the 1930s – Old Jarma (GER001), the Waṭwāt mausoleum and associated sites (UAT001–003), Zinkekrā (ZIN001–003), Tāqallit (TAG001) and other escarpment cemeteries, Qaṣr Larkū (LAR001), plus a large *qaṣr* (fortified building) at Fjayj

(FJJ056). Not all the personnel can be identified, but the group certainly included CMD, David Smith, Olwen Brogan, Joyce Reynolds, as well as the following only referred to by first names in the archive: Lavendar, Patrick, Eric, Pete, Johnny, Phyllida. No excavation took place. CMD focused on recording the sites visited by means of photography, basic notes and sketch plans. This expedition clearly whetted CMD's appetite and laid the foundations for future work.

### *Second visit in 1959*

CMD returned to Fazzān in 1959 as part of a Durham University Libyan Expedition, comprising six people (CMD, with individuals referred to only as Bill S, Dave and Mike plus two unnamed others, see Fig. 0.4) and two vehicles called Clarence and Augustus! Whatever the wider aims of the expedition, CMD clearly saw it as an opportunity to carry out preliminary fieldwork, with a view to establishing a more substantial project. The group arrived in the Wādī al-Ajāl at the hottest time of the year in late July, which may have imposed some limitations on what could be practically accomplished. CMD made his main focus the investigation of two cemeteries at Tāqallit (TAG001) and al-Khara'iq (CHA001), with 'Bill S.' as his main helper. Though no report was published on this season's work, we do have CMD's draft of an intended report (which has been incorporated into Chapter 6). At Tāqallit CMD made a rough plan of the site, with its distinctive stepped tombs, and recorded a large sample of the Garamantian funerary furniture (offering tables and stelae) at the site. A few simple graves were excavated (see Chapter 6 below). A second cemetery, comprising pyramid tombs, was also surveyed, but not excavated, at al-Khara'iq. CMD's observations have been subsumed into the published account in *AF 2* (Mattingly 2007, 168–73).

It appears that a number of other sites were again visited, **Old Jarma** and various fortified buildings (*qsur*) are described in CMD's notebook and photographed to some extent, though no detailed field investigation of them was undertaken. It is possible (on the basis of a single photograph in his 1959 album) that CMD excavated a burial at one of the al-Ḥaṭṭya pyramid cemeteries (ELH001), though he elsewhere claimed to have only discovered these during his next visit (see below, Chapter 6, where the photograph is reproduced as Fig. 6.12).

### *Third visit 1962–63*

In the winter of 1962–63 CMD and Sir Ian Richmond were invited by Ayoub, on behalf of the Libyan Directorate of Antiquities, to spend two and a half weeks in the Wādī al-Ajāl in order to search for new sites and to undertake a limited amount of excavation.

Two cemeteries (ELH001–002) were discovered lying in the sandy gravel desert (*sarir*) near al-Ḥaṭṭya to the west of al-Ghrayf, containing the remains of numerous mud brick tombs of pyramidal shape (Mattingly 2007, 75–83). This type of tomb had previously only been recognised at the foot of the escarpment of al-Khara'iq. No excavation was undertaken at this juncture (though he may have in fact partially excavated a shaft in 1959, see below Chapter 6). Some additional surface sharding appears to have been carried out at the nearby TAG001 cemetery.

A group of mausolea (possibly accompanied by a cemetery) was discovered by CMD a short distance east of Tuwash village (TWE001). Three mausolea were found, with substantial podia (base platforms) but little superstructure surviving (see Mattingly 2007, 149–52 and Chapter 6 below). A further mausoleum was excavated at al-Fuḡār (FUG001). The remains of this structure had been previously noted though not excavated. Excavation was undertaken with the assistance of Ayoub (see Mattingly 2007, 162–64 and Chapter 6 below).

Excavation of Tomb 5 at the **Royal Cemetery** (GSC030) had already begun under Ayoub's control when CMD and Sir Ian Richmond arrived in December 1962. It was agreed that CMD be allowed to complete the work. Though the tomb had suffered as a result of robbing, sufficient pottery and glass of Roman manufacture was recovered to date it (Mattingly 2007, 140–44 and Chapter 6 below).

The site of **Zinkekrā** (ZIN001–003) was again visited, but no fieldwork took place there.

### *Fourth visit and first season of systematic fieldwork 1965*

The first proper season of systematic fieldwork was carried out in the Wādī al-Ajāl by the 1965 Fazzān Expedition during March, April and part of May 1965 (Daniels 1965).

The main aim of the work was to locate and investigate evidence for the earliest occupation of the Garamantes in the area near Jarma.

The prominent fortified spur of **Zinkekrā**, a few km to the south-west of Jarma, seemed to be the obvious location for such an occupation (ZIN001–003). The work combined survey of the base, scarps and top of the spur site and excavation at selected sites (Mattingly 2007, 93–104 and Chapter 1 below). Of five sample sites excavated, two were on the top of the promontory (ZIN001.034 and ZIN001.037), two were on the north escarpments (ZIN002.11 and ZIN002.013) and one at the base of the southern escarpment (ZIN003.105). The earliest activity consisted of open hearths dug into the hillside, associated with a few fragments of burnished pottery with Neolithic-type decoration, bones and flint scrapers. Later came rough shelters and hearths and finally some buildings with crude stone foundations and rough mud-brick walls and floors. A great amount of pottery, bone and flint was recovered with rubbers, saddle querns, pounders, organic material, dung and beads, but only one vessel of imported type was found and no ARS or other sigillata ware. It was clear from the striking contrast between the content of finds from these sites and those from Jarma, **Sāniat Jibrīl** and many of the cemeteries that Zinkekrā was not occupied after Roman material first began to reach the **Wādī** during the 1<sup>st</sup> century BC.

Further investigation was undertaken of Garamantian buildings previously excavated by Ayoub at **Old Jarma**, in order to establish their precise nature, date and purpose. The best example (GER001.1) was selected for further excavation (Mattingly 2007, 115–20 and to be published more fully in *Archaeology of Fazzān 4*).

It was also decided to begin the task of establishing a chronological sequence of Garamantian pottery types. The importance of establishing a type series lay in the key which such a typology would have provided for the dating of every Garamantian site. One of the existing working faces in Jarma was selected, which promised an unbroken sequence of strata from modern to Roman and immediately pre-Roman levels. This was then cut-straight, cleaned and drawn, and a substantial amount of pottery and other material extracted from its levels. Though not fully achieved by CMD, the strategy outlined here was in fact the basis of the FP work at Old Jarma between 1997–2001 (see Mattingly *et al.* 1997; 1998a/b; 1999; 2000a/b; 2001).

The third task undertaken at Jarma was the survey and record of portions of the medieval city. Demolition of its mudbrick buildings was being carried out by Ayoub in order to make way for the

excavation of lower levels (by this date he had already demolished the two principal mosques). It was felt that an attempt must be made to record the more important features, since Jarma had been one of the major caravan centres of the Chad-Tripoli trade routes for slaves and other merchandise. The *kasbah* (previously the Governor's residence) was still extant though under threat.

An attempt was made to locate 'pottery kilns' reported by Ayoub at a modern farm called **Sāniat Jibrīl** near Old Jarma. It was hoped to recover examples of locally produced pottery together with closely datable imported wares. However, the 'kilns' proved to be the remains of smithing hearths, though traces of four or five separate buildings were discovered and four trial trenches excavated (Mattingly 2007, 119–21 and Chapter 3 below). This settlement site evidently dated to the early centuries AD.

An additional area of work concerned the survey of several km of the dense escarpment cemeteries in the Zinkekrā to **Waṭwāt** area and a second, slightly larger area at **al-Fjayj** (Mattingly 2007, 98–114, 183–95). This was to shed further light on Garamantian burial customs and to collect as many sherds as possible for comparison with and augmentation of the finds from the habitation sites and as part of the overall study of pottery begun in Jarma. No excavation was attempted.

In order to complete the work carried out on various mausolea at **Tuwash** (TWE001) during 1962/3, a trench was cut through the largest podium to ascertain whether there was a burial shaft under the monument, as was the local custom revealed by many tombs in the **Wādī**. Over 1.30 m of solid foundation was removed and the subsoil tested before it became clear that in fact no shaft had existed. A survey was then made here and at **al-Fuḡār** together with their accompanying remains. The mausoleum of **Qaṣr Waṭwāt** (the 'Jarma Mausoleum') was also surveyed afresh and the architectural fragments that had previously been moved to **Sabhā** museum were included in a new paper-based reconstruction.

Fieldwork, sherding and surveying were carried out in several other areas of the **Wādī**. Settlements found at **Tinda** (TIN001) and at **Ikhliḥ** (CLF008–010) were recognised as being akin to the early settlement on Zinkekrā. The site at Tinda is a particularly close parallel, although in its area of about 8 ha, very much larger than Zinkekrā (Mattingly 2007, 54–57, 242–44 and Chapter 2 below).

*Fifth visit/second season of main fieldwork 1967*

The 1967 Expedition was in the field for almost four weeks over the Easter period (Daniels 1967). Work was concentrated on the fortified spur-site of Zinkekrā, where excavation was carried out on 23 habitation sites and survey work was completed on a further five. The sites chosen fell within three areas: the north slopes and terrace area, the top of the spur and the flat plain to the south.

Work on the north escarpment of Zinkekrā focused on site ZIN002.013 where two areas 14.1 x 1.8 m and 4.8 x 4.2 m were systematically stripped to the bedrock (3–4 m below present surface level). A complex sequence of occupation levels and structures was revealed. Eight further sites (ZIN002.119, 120, 125, 204, 209, 213, 217 and 218) were also investigated on the north slopes, several in relation to a prominent terrace wall near the base of the hill, others representing building platforms terraced into the scarp (see Chapter 1 below). Outside the terrace wall two crouch-burials were found in lined shafts (ZIN002.013 T44 and T45). From their position it was clear that they post-dated the construction of the wall, though by how long was not clear. Although no pottery was recovered, in each case the skull was propped on a wooden head-rest (for the burials, see Chapter 6 below). On the summit of Zinkekrā five areas were chosen for excavation, revealing single huts or groups of shelters (ZIN001.39, 51, 60 and 61) and part of a small village (ZIN001.70–75). Although generally less stratification remained here than on the northern and terrace slopes rich layers of animal dung were again associated with every structure. In three areas (ZIN001.39, 51 and 70–75) rock-cut post-holes and palisade slots indicated the possibility of a pre-stone period. In other cases, especially shelter-complex 39, it was clear that timber partition walls had existed contemporaneously with low stone walls (the upper parts of which had been made of wood). Complete excavation of Shelter 39 provided several hearths and trodden floor-surfaces, the earliest of which pre-dated the structure. Area 70–75 revealed itself to be part of a small, tightly packed village of stone or stone-and-frond huts. Thick rubbish levels and internal modifications indicated an intensive occupation, the latest object from which was a single fragment of a black-glaze lamp possibly of Roman Republican date. Other than this example all pottery recovered was from handmade local vessels. The western-most site excavated (ZIN900.0) lay on the narrowest part of the spur a short distance

behind the present stone defensive wall. Here the remains of an earlier stone wall with entrance and at least one projecting bastion were found. In front of this earlier wall an attempt had been made to cut a defensive ditch across the neck. Five rectangular mudbrick buildings discovered on the southern flank of the hill in 1965 were also excavated. The buildings, with one exception, were constructed in good mudbrick and all were well laid-out. The largest (ZIN003.105) was 20 x 5.25 m in size and internally divided into a series of 1–3-room units themselves often subsequently subdivided or modified. Two others (ZIN003.102 and 103) were 2-room buildings, while ZIN003.100–101E–101W proved to be a group of three 2-room dwellings. Linked to ZIN003.105 was another complex, Building ZIN003.306–08, though this was only partly excavated. Little pottery was recovered from this group of buildings and their dates were not clearly ascertained, but the conversion of the area to a cemetery in the late 1<sup>st</sup> century AD provides a *terminus ante quem* for the whole.

In addition an amount of fieldwork, surveying and sherding was carried out on five cemeteries and settlement sites in the eastern Wādī, and the overall field survey of the escarpment graves in the Jarma area continued, covering the 7-km stretch between Qaṣr Waṭwāt and the Royal Cemetery (Mattingly 2007, 105–14; 132–44).

*Sixth visit, survey of southern sites in Wādī Barjūj, al-Hufra and Zuwīla areas 1968*

Plans for the 1968 season were modified at a late date to take advantage of the chance to work with a British Near East Land Forces Expedition that was exploring the southern part of Fazzān (Daniels 1968b; 1989). The offer to take some archaeologists along gave CMD the long-hoped for opportunity to conduct reconnaissance survey in the areas of Wādī Barjūj, Wādī al-Nashw‘a and the vicinities of the Islamic capitals of Fazzān at Murzuq, Trāghan and Zuwīla. Working partly on information supplied by Ayoub, and partly from a consideration of the topography of the area concerned, a series of sites known to contain archaeological material was visited, and many more were added to the list. There was no excavation, but important records were compiled on two key Garamantian sites in the Wādī Barjūj, Qaṣr Māra (MAR001) and Qaṣr ash-Sharrāba (SCH020), though CMD thought both of these Islamic in date (Mattingly 2007, 257–65). The latter site is particularly significant

as a large urban site, which is now proven to have originated in the Garamantian period and continued into the early Islamic period. Some 32 km west along Wādī Barjūj the site of Bi'r Baqqārā (BBG001–3, 006) was also visited and several separate Garamantian cemeteries and a fortified site (*qasr*) identified (Mattingly 2007, 254–56). Two areas of the Wādī an-Nashw'a were studied. One in the Dūjāl vicinity revealed an abundance of tightly packed cairn cemeteries, yielding imported pottery spanning the 1<sup>st</sup> to 5<sup>th</sup> centuries AD, and the other the village of Ghuddwa, where several cemeteries with typical Garamantian stelae and offering tables and imported Roman pottery were found (GDD001–4). Qsur in the area (GDD005–9) were also associated with late Garamantian and Islamic pottery (Mattingly 2007, 267–72). Escarpments on the northern side of the Murzuq-Trāghan area and isolated masses of rock towards the sand sea on its southern side were searched. Those to the north proved somewhat unproductive. Those to the south yielded several hundred cairns, in groups, but no pottery to date them. Habitation of the area at some pre-Islamic date is certain, but precisely when was not known at the time of the expedition. The fortress block and the older mosque of Murzuq were surveyed and planned (Mattingly 2007, 276–81). This work was undertaken to provide comparative material for similar buildings surveyed and planned in Jarma itself. Between Misqwīn and Zuwīla several foggaras were noted, while around Tirbū (to the south of Zuwīla) another six were found. A few escarpment cairns were also searched to the east of Tirbū, but only in one group of 100–200 did they occur in any number. To the north-east of Zuwīla on the sides of Jabal Lowsat, a number of cairns were noted although in no case were sherds of imported pottery recovered, to allow close dating. A group of early Islamic antiquities at Zuwīla was surveyed (Mattingly 2007, 282–88), documented and photographed, including the tombs of the Banū Khaṭṭāb (ZUL003), the early mosque (ZUL002) and the walls of Zuwīla (ZUL001).

*Seventh visit/third season of main fieldwork  
1969*

The 1969 Expedition was in the field for almost a month over the Easter period (Daniels 1969b). Work centred on excavation in Jarma, though an intensive surface survey was also carried out at Sāniat Jibrīl.

It was decided to carry out a complete survey of the standing mudbrick medieval city of **Old Jarma** (GER001), which covered almost 8 ha. A series of enlarged prints had been made from aerial photographs. These were checked, measured and modified, building-by-building, and the results drawn out as a single plan covering the entire city, to which the detailed survey of the *kasbah* carried out in 1965 was then added. Additionally selected buildings were photographed and fully described and a series of overall photographs taken of the town. A section running east to west across the entire site was also surveyed. The survey is summarised in *AF 2* (Mattingly 2007, 115–20) and will be published in fuller detail in *AF 4*. Buildings GER001.3 and GER001.4 were selected for excavation as each still had a section face, complete to the topsoil, standing across it at some point. Both buildings had been partially cleared by Ayoub. GER001.3 was a stone-walled building c. 13 m square, with a stepped façade on its east side. Trenches were cut across the building, and taken down to natural sand 1 m below the surviving traces of floor. These showed that the stone building had been preceded by three phases of mudbrick walls, representing two main periods of building, the second of which had been demolished and purposely levelled for the construction of the stone building. Work on the standing section face and the careful cleaning of the surviving stone course also showed that this had served as a plinth on which mudbrick walls had been built, a state of affairs not hitherto recognised in Jarma. At GER001.4 a continuous section existed, varying from 1.7–3.4 m in height, running the entire length of the building. This section was cleaned and studied. Next the whole of the area already partly cleared was excavated to a depth of up to 1.5 m. This revealed the same basic picture as Building GER001.3, but in much greater detail and complexity.

A surface survey was carried out across the low mound of Sāniat Jibrīl (GER002), some 300 m east of Jarma. The purpose was to enable a general plan of the area to be produced. Enlarged aerial photographs were checked and modified to provide material for this plan. During this work it became clear that although the density of mudbrick building debris and Roman-date pottery lessened considerably as one advanced from the centre of the site, it continued as far west as Jarma itself.

Limited further work at Zinkekrā consisted of an extension of the 1965 survey. Buildings and

other sites to the south (covering 17 ha), which had been put on to the plan in 1967 were now accurately re-surveyed and added to the overall map. This completed the large cemeteries and the western termination of the terrace wall on the northern slopes of the spur and added the outer enclosure banks or walls to the northern and eastern parts of the promontory. In addition field survey, sherding, photography and annotation of the new area was carried out.

#### *Eighth visit/fourth main field season 1971*

The 1971 Expedition was in the field for almost a month over the Easter period (Daniels 1971b/c). The prime object of the season's work was to recover the date, duration of occupation, and nature of the settlement at **Sāniat Jibrīl** (GER002). An area which incorporated two of the 1965 trenches was selected, and within this *c.*500 m<sup>2</sup> was stripped revealing a single, large building complex and the outer wall of an adjoining building. On investigation the building complex disclosed three principal structural periods, which, on the strength of imported pottery recovered, run as follows: (1) the late 1<sup>st</sup> and early 2<sup>nd</sup> centuries; (2) mid 2<sup>nd</sup> to early 3<sup>rd</sup> centuries; (3) the 4<sup>th</sup> and 5<sup>th</sup> centuries. An earlier and a later period produced no diagnostic pottery. The excavation is important for furnishing us with more information about Classic Garamantian domestic architecture in the mudbrick tradition and for the evidence of manufacturing activity at the site (see Chapter 3 below).

Other fieldwork was carried out in the eastern parts of the Wādī. Part of a considerable system of what appear to be large field-enclosures, lying within low banks, was investigated in the vicinity of **Qaṣr Lārki** (LAR001–009, Mattingly 2007, 196–98). In shape and appearance these are remarkably different from the saniat fields of present-day cultivation. Therefore, it was of interest that imported pottery was collected from much of the area. Amphora sherds formed the majority of pieces but a small number of fine red ware sherds was recovered, including one fragment of late 1<sup>st</sup>- or early 2<sup>nd</sup>-century date, a second of the late 2<sup>nd</sup> or early 3<sup>rd</sup> century and two of late 4<sup>th</sup> and early 5<sup>th</sup> century. A new escarpment settlement was discovered (LEK 001–2) and several cemeteries were sherded in the **al-Qṣir** area of the Wādī (Mattingly 2007, 204–12). Additional escarpment settlements were also now recognised

at **Tuwash** (TWE021, Mattingly 2007, 156–57) and **Ikhliif** (CLF001–002, 008–010, Mattingly 2007, 240–44)

#### *Ninth visit/fifth main field season 1973*

The 1973 Expedition was in the field for almost three months (Daniels 1973a/b). The season's work consisted of three main and several subsidiary projects. The general aims were:

- i) to investigate several 'Zinkekrā-type' escarpment settlements along the whole of the Wādī al-Ajāl;
- ii) to excavate a suitable number of datable Garamantian skeletons to provide an adequate group for study;
- iii) to complete the examination of the valley centre settlement at Sāniat Jibrīl;
- iv) to undertake photography, documentation and sherding of further escarpment cemeteries of the Wādī.

Originally noted in 1969 (see above), the promontory site of **Ikhliif** (CLF008–010, referred to by CMD as Cleff 2) was more thoroughly investigated. An area of the western slopes and base of the promontory was surveyed and planned in detail, and selected sites were excavated (Chapter 2 below). In some cases later erosion had removed all traces of occupation, but in most the small platforms or terraces produced hearths, ash, animal droppings and the remains of palm and plant material, similar to the occupation layers on Zinkekrā, although usually considerably thinner in depth. A few fragments of pottery were recovered, in general similar to types known from Zinkekrā. Selected sites were also excavated on the eastern side, with similar results to those on the west. The flat top of the spur was found to be covered by a whole series of dry-stone-wall huts and small scooped shelters, which were tested by preliminary trenches. Considerably deeper deposits of occupation material were encountered here than on either the eastern or western slopes. In addition, part of the ancient pathway up the eastern slopes of the spur was found and recorded (Mattingly 2007, 242–44).

At the escarpment site of **Tinda** (TIN001, by modern Ubārī) a measured survey of between one half and two thirds of the total site was carried out and a series of selected features excavated. The results showed that the occupation was divided into two periods. The first of these was

earlier in date than the arrival of Roman pottery in the Wādī (during the latter centuries BC) and consisted of several ha of small platforms on the steep slopes, each containing a rough shelter and hearth. The whole had been surrounded by an enclosure wall or bank. The second period may not have followed immediately after the first for although roughly similar platforms existed, the later surface indications of shelters and enclosures bore little resemblance in plan to the earlier, and a considerable amount of small stones and scree material had accumulated, or been dumped, in some areas between the first and second periods.

Another escarpment settlement was located on and around the detached flat-topped rocky bluff above the well-known Garamantian pyramid cemetery of *al-Khara'iq* (CHA001), which had first been noticed in 1959. A survey of most of *al-Khara'iq* top sites (CHA003–007) was carried out and chosen sites were again excavated (Mattingly 2007, 168–74). Occupation here evidently extended from early Garamantian features to comparatively recent times, with a Tuareg village, now abandoned, lying over the earlier Garamantian remains. At the *al-Qṣir* escarpment site (LEK001–002) a detailed foot survey and preliminary planning and annotation were carried out, showing an early habitation site occupying the slopes and spur top. A considerably larger area of the village on the *Zinkekrā* promontory top (ZIN001.070–75), first investigated in 1967, was excavated and planned, and more samples of the occupation and its artefacts recovered (all the escarpment settlement excavations are summarised in Chapters 1–2 below).

The main work on Garamantian burials in 1973 focused on the site of *Sāniat bin Huwaydī* (GER011, Mattingly 2007 124–25). A small area on the edge of the cemetery was selected and some 45 tombs isolated. All of these which could be excavated, with the exception of two, proved to be of the 3<sup>rd</sup> century or later, and except for a few of the smaller, each had been robbed or disturbed. Two levels of tombs existed. The lower of these turned out to be of large square mudbrick structures mostly in almost complete condition, but often impinged upon by later tombs. Two of the earlier tombs were excavated completely. Each had suffered from damage in antiquity, but neither had been robbed. Tomb 15 produced three amphorae, one two-handled flagon, one incense burner, one lamp, eight fine red-ware bowls or dishes of Italian manufacture, a saddle quern

and rubber, and a few dark blue beads. Tomb 17 produced an even larger number of grave goods: a saddle quern and rubber, an incense burner, 11 amphorae, the remains of probably five glass and nine small Egyptian faience bowls, and no less than 31 fine red-ware bowls and dishes of Italian manufacture. These included vessels stamped by potters mainly working at Pisa in the mid-late 1<sup>st</sup> century AD (see Chapter 5 below).

The existence of burials overlying some of the occupation deposits on the north escarpment of *Zinkekrā* had been noted during the 1967 excavations (ZIN002.013). In 1973 a larger area was completely cleared to allow the excavation of a good number of graves. However, only five additional graves were discovered and several of the skeletons recovered were already damaged. In most cases, however, the remains of head-rests of wood were noted, although these objects were mostly too badly collapsed to be recoverable. Chance discoveries of individual Garamantian burials also occurred at *al-Khara'iq* and *Ikhliif* (all these burials are reported in Chapters 6–7 below).

A week's work was carried out at *Sāniat Jibrīl* (GER002). This further phase of excavation mostly consisted of solving outstanding problems concerning the buildings previously excavated. In addition the whole of the area of *Sāniat Jibrīl* was surveyed in detail, surface finds were recovered and a detailed description of the area was made (see further, Chapter 3 below – though note that no sign exists in the archive of the records of this survey).

A reconnaissance survey of Garamantian cemeteries covered the eastern-most section of the Wādī *al-Ajāl* from *al-Qṣir* to *Ikhliif* (Mattingly 2007, 204–46).

#### *Tenth visit/sixth main field season 1977*

In 1977 it was decided to concentrate efforts on the cemetery of *Sāniat bin Huwaydī* (GER011) and attempt to resolve certain questions unanswered in 1973 (Daniels 1977a/b). Excavation was concentrated on the earlier tombs. On the periphery of the cemetery three tombs which had been emptied some time before 1972 were recognised as of the early type, cleaned, measured and photographed. Where the mound stood highest it was clear that it consisted mainly of layers of sand, which had drifted over the earliest tombs, and here another six tombs were located and excavated.



All except one proved rich in grave goods. These early tombs were mostly rectangular in shape, up to 5 x 4 m in size, with rectangular chambers (in one case square) at the bottom of which the burial lay. Externally, the tomb consisted of a substantial mudbrick structure standing about 1 m high and with a roughly flat top. The tombs faced either east or west and most had large offering tables placed on this side, together with stelae, both elements of grave furniture often enhanced by red pigment on the visible faces. Additional pots (large round-bottomed local storage jars and imported amphorae) had often been placed beside the table. Several of the tombs were unrobbed and richly furnished with grave goods, including many imported amphorae, fineware vessels and glass vessels from the Mediterranean world (Tombs 42, 51, 52, 53). It appears that the cemetery began to be used in the later 1<sup>st</sup> century AD, when rich burials were placed there in large tombs. As sand built up against the early tombs the ground level was raised and later burials extending in time to the 5<sup>th</sup> century AD were superimposed over the earlier ones or inserted in the gaps and on the periphery of the earlier tombs. Trenches were dug to define the limits of the cemetery, and the whole was surveyed and planned. The cemetery is of exceptional importance for our understanding of Garamantian funerary practices and material culture (Chapter 5 below).

A further element of the 1977 work concerned a surface survey on the nearby mound at **Sāniat Sulaymān Krayda** (GER027, Mattingly 2007, 129). A trial area was then excavated. This produced several rooms of a mudbrick building containing much occupation material. A large number of fragments of imported amphorae was

recovered, together with local pottery similar to that from Jarma and Sāniat Jibrīl. The large amount of imported material, both on the surface and stratified, suggests the building to be an ancient one, and that the mound is another Garamantian oasis settlement or village (Chapter 4 below).

## THE PRESENT VOLUME

A word of explanation is required regarding the length of time it has taken to get this volume into print. Quite a lot of the work on this volume was completed in the years 1999–2001, during the Leverhulme-funded work at the Universities of Newcastle and Leicester, when John Hawthorne and David Edwards were employed to write up elements of the CMD archive. However, when their contracts ended, Hawthorne left archaeology, with quite a lot remaining to complete in his chapters. More pressingly, it had become clear that much more work than had been envisaged remained to be done to complete the pottery type series that was vital to reporting the finds from the CMD excavations (Dore *et al.* 2007). While the efforts of the two project directors (Mattingly and Dore) were engaged with getting out the first two volumes of the final report (including the type series in *AF 2*), *AF 3* remained in abeyance. The tragic death of John Dore in summer 2008 has had a further impact on the work on this volume (and this is particularly evident in the reporting of the finds). In the end the editor of the volume has had to shoulder a much heavier burden of both writing and editing to complete the work, while at the same time directing two new field projects in southern Libya and helping in the mitigation of renewed oil

Table 0.2. Dating correlates of phases of Garamantian civilisation and earlier Pastoral and subsequent Post-Garamantian phases.

Abbrev	Phase	Date BP	Date BC/AD
LPAST	Late Pastoral	5000–3000	3000–1000
PAST	Pastoral (undifferentiated)	7500–3000	5500–1000
EGAR	Early Garamantian	3000–2500	1000–500
PUGAR	Proto-urban Garamantian	2500–2000	500–1 BC
CGAR	Classic Garamantian	2000–1600	AD 1–400
LGAR	Late Garamantian	1600–1300	400–700
GAR	Garamantian (undifferentiated)	3000–1300	1000 BC–AD 700
POSTGAR	Post-Garamantian	1300–900	700–1100
EISLAM	Early Islamic	900–700	1100–1300

prospection in the Jarma area. A good deal has been accomplished in the intervening years, including photography and examination of all the artefacts held in the Jarma Museum, which have allowed the re-identification of many of the key finds from both CMD's and Ayoub's excavations.

Despite a number of imperfections, it is hoped that the book is a fair tribute to the remarkable work of CMD and his teams.

### Phases of Garamantian Activity

Following the convention established in *AF 1* and *AF 2*, the Garamantian period is sub-divided into a series of phases: Early Garamantian, Proto-Urban Garamantian, Classic Garamantian, Late Garamantian. Table 0.2 summarises the chronological significance of these terms, along with explanation of the chronology of the immediately preceding and subsequent phases in this part of the Sahara.

### A Note on the Presentation of Finds in this Volume

The first part of the volume comprises the stratigraphic reports and interpretative summaries of the sites excavated by CMD (Chapters 1–6). Wherever possible the principal ceramic finds (or at least a representative sample) from each site are presented in the body of the relevant chapter and discussed in relation to the overall site chronology. Ceramic finds have been correlated with established type series – for pottery most notably with that devised for the FP by Dore, Leone and Hawthorne, building on the work achieved by CMD and Hayes (Dore *et al.* 2007, published in *AF 2*). Although many of the same vessels were illustrated in the *AF 2* type series, it has been felt useful to present the material here in assemblages, drawing out the profound visual differences between the ceramic forms of different phases. References to the pottery commonly draw on other work by John Dore (see Dore 1989; Dore and Keay 1989 on Sabratha; Dore 1996 on the UNESCO Libyan Valleys Survey). The fabrics also varied quite a lot – references in the text to Zinkekrā Ware and Berber Red Ware relate to the

broad classification made by CMD between the Early and Proto-Urban period handmade fabrics and the Classic Garamantian fabrics. The sites excavated by CMD provide an interesting cross-section of Garamantian archaeology in terms of site type and period. The characteristic ceramic assemblages from the Early Garamantian and Proto-urban Garamantian phases at **Zinkekrā** can thus be usefully compared with the slightly later site at **Tinda** or with the Classic Garamantian settlement at **Sāniat Jibrīl** and that site with the contemporary funerary assemblages of **Sāniat bin Huwaydī**.

Other categories of finds are dealt with in Chapters 7–9, respectively devoted to human bone, other material culture (glass, beads, metal, stone, wood, textile, etc.) and palaeoeconomic (botanical remains and animal bones). The site of Sāniat bin Huwaydī is a special case because of the fact that a number of tombs produced large intact assemblages of grave goods. The non-ceramic material is listed and to some extent illustrated along with ceramic finds in Chapter 5, as well as being catalogued by material type in Chapter 8.

The finds assemblage from these Garamantian sites is remarkable in many ways and its presentation here will be of great interest to specialists in Saharan archaeology, but also to those working both north and south of the Sahara because of the way in which it illustrates Trans-Saharan connectivity in the pre-Islamic era (a key theme of the current DMP work that seeks to build on CMD's achievements). We have aspired to as detailed a level of publication as possible for the finds. This is justified not only by the intrinsic interest and significance of the material: there is an equally important practical outcome for the Libyan Department of Antiquities as the finds assemblage from CMD's excavations (along with those of Ayoub too) form the core of the historical collections on display in Jarma museum. This remarkable collection has for some years lacked a catalogue and most artefacts are unlabelled and unidentified by site in the display cases. This volume will serve as a vital step in the reconstruction of the Museum Catalogue and in re-attaching provenance and significance to these objects.



## Part I.

### Excavations and Survey at Early Garamantian Escarpment Sites



# 1. ZINKEKRĀ: AN EARLY GARAMANTIAN ESCARPMENT SETTLEMENT AND ASSOCIATED SITES (ZIN001–003)

By J. Hawthorne, D. J. Mattingly, C. M. Daniels<sup>†</sup>

(with contributions by T. Barnett, J. N. Dore<sup>‡</sup>, A. Leone)

## INTRODUCTION

The detached promontory known as Zinkekrā, 4 km to the west of modern Jarma, has been the subject of intensive survey by Daniels (1968a; 1970a), as well as earlier excavations by Caputo (Pace *et al.* 1951, 220–24, 229–33; cf. also Ayoub 1962, 13–14). It is the type site for early Garamantian settlements and also has an unusual set of later Garamantian monuments, including some impressive mudbrick structures, as well as rock engravings and extensive cemeteries (Mattingly 2003, 136–42; 2007, 93–104). The introduction of mudbrick into domestic buildings at Zinkekrā is significant, because this was an imported technology of the later centuries BC, most likely originating in the Nile Valley and transferred along the chain of oases that link the Western Desert with Fazzān. Most attention has focused on the north-east tip of the promontory, where Garamantian settlement activity concentrated. But it is apparent from a glance at the map that the entire promontory has been utilised for a range of activities (Fig. 1.1). In particular there is a sequence of major walls (ZIN900.0–900.5) that indicate that the defensible area extended well beyond the small *éperon barré* promontory of ZIN001–003. CMD made a photographic record of these walls in his very first visit in 1958 (though he never described the full complexity of Zinkekrā's defences in print). His serious work began here in 1965, with further campaigns in 1967 and 1969, when he conducted detailed survey and a series of major excavations on the top of the hill, as well as on its north and south flanks. He subsequently returned for a number of smaller operations, most notably in 1973 when further excavation was undertaken on the north slopes. In addition to CMD, other personnel involved in these campaigns (and whose records have contributed to this account) included: Chris Arthur (1967), Tony Birley (1965); David Breeze (1967); Olwen Brogan (1965); David Browne (1969), Patrick Carmody (1965, 1967,

1969, 1973); Miriam Daniels (1965, 1967); John Gillam (1973); Barri Jones (1965); S.A. Medd (1967, 1969); John Scott Elliot (1965, 1969); Jack Tait (1965, 1967); Humphrey Welfare (1973).

The Zinkekrā massif comprises a roughly triangular, flat-topped outlier of the rock plateau (hamada) of the Massak Ṣaṭṭafat (Fig. 1.1). This promontory is not completely detached from the hamada massif proper – there is a narrow land bridge between the two at a lower level than the hamada plateau and involving a precipitous climb. All around the promontory escarpment there are cliff-like sections limiting access to the plateau to a few points only (notably up a gully on the south side of ZIN001 and a zig-zag path up the north side). The south part of the hill is roughly level with the hamada proper to the south (c.150 m above the pediment), while a thin lower spur (c.100 m high) at the north-east side was more readily accessible from the valley below (Fig. 1.2). Although this north-east spur has been the focus of most previous research and encompasses the densest archaeological remains, the upper plateau area also contains many interesting features. With steep escarpments all around and difficult access even across the bridge from the south, the hill is a natural fortress and the defensive potential of the site seems to have been enhanced by the construction of various walls and embankments, with perhaps the most obvious being the dry-stone wall (ZIN900.001) that cuts off the north-east peninsula from the rest of the plateau to the south-west. On top of the hamada there are a number of other dry-stone walls that enclose a far larger area than the north-east spur. Less easily visible but no less arresting are the many rock-carved inscriptions and engravings which crowd around the edges of the promontory (see below). Some of the most famous Garamantian images come from this site, including the horseman and the male head (Fig. 1.84). Zinkekrā is also famous for the inscription which reads 'AOYPEAIOYC' (Aurelius, in Greek; see the description of



Figure 1.1. Overall plan of the Zinkekrā outlier of the Massak, showing principal archaeological sites by CMD and FP. Note in particular the numbering of the walls and embankments (ZIN900.0–10) (FP).

ZIN001.90 and Fig. 1.34 below). This is the only ancient Mediterranean script known from the wadi, with the exception of graffiti found on imported terra sigillata vessels and amphorae (see Chapter 5 below). The hill and its surroundings are dotted with numerous occupation and burial sites. These include a series of Roman-date (1<sup>st</sup> century AD) buildings built partly in ashlar blocks and partly in mudbrick (see sites ZIN003.1–7 on the south side). Roman-date cemeteries are also well represented, with some particularly large examples on the



Figure 1.2. First encounter: the Zinkekrā promontory top looking north-east (CMD 1958).

south side (for example, cemetery ZIN003.109). However, the most interesting aspect of the site concerns the abundant evidence here for activity and occupation in the first millennium BC, making this the type site for the Early and Proto-Urban Garamantian phases (broadly 1000–500 and 500–1 BC). These earlier occupation phases are attested by dry-stone walls and debris spreads of habitation sites. These were not only traceable on the top of the hill, but were also to be found terraced into the steep south and north slopes. On present evidence, activity here seems to date from at least the 8<sup>th</sup> century BC to the 2<sup>nd</sup> century AD, though not necessarily continuously. A case can be made for occasional use before and after this date.

### Previous Work at Zinkekrā

The principal work at Zinkekrā undertaken before CMD's work was that of the Italian Caputo in 1933–34 (Pace *et al.* 1951). Although Caputo carried out excavations of house ZIN003.3 on the south side of the hill, the resulting publication was rather sparse. He noted the presence of six Roman-period part-ashlar buildings, and suggested

that an associated wall might have been engaged in trapping rainwater for irrigation (Pace *et al.* 1951, 233–4). However, he did also observe that in the event of rainfall, the water would simply have drained through the gaps in the supposed *cuniculus* (Pace *et al.* 1951, 230). There were certainly Garamantian irrigation works (*foggaras*) on this side of the hill (Fig. 1.3), but they were unconnected with the walls observed by Caputo. Despite his uncertainty as to the viability of Zinkekrā as a place to live, due to water scarcity, Caputo also observed that the walls above the site on the hamada could be construed as defensive measures, an idea subsequently taken up by CMD. Ayoub carried out some minor excavation work in 1962 – clearing house ZIN003.2 on the south side. He reported finds of preserved organic materials, including cordage and dung-rich occupation layers, as well as beads, fragments of copper alloy and pottery. He also noted Roman lamps and offering tables, presumably from cemetery ZIN003.109. He was responsible for the consolidation of various structures, especially on the south side. In the main though, Ayoub's references to Zinkekrā summarised, in slightly garbled fashion, the work of Caputo and CMD (Ayoub 1962, 13–14; 1968b, 22; 1968c, 46–47).

### The Relationship between CMD's Publications and the Present Report

Unlike CMD's other major sites, such as Jarma, Sāniat Jibrīl and Sāniat bin Huwaydī, the earlier work at Zinkekrā was actually published to a reasonable extent, with a long article in *Libya Antiqua* in 1968. CMD wrote of this report:

It is not a complete or final report, for more excavation is necessary before such can be written, nor does it present all the sites noted or finds recovered so far: such would require more space and illustration than taken even by this paper. Instead, the aim is to present a representative selection of sites, pottery and artefacts recovered in order to let others interested in the field gain some impression of results (and problems) to date. (Daniels 1968a: 113).

A shorter summary was also included in the *Antiquaries Journal* (Daniels 1970a). These publications mainly focussed on the 1965 and 1967 seasons, so much of the later work is unpublished,



Figure 1.3. View from the plateau above Zinkekrā, showing the cemeteries, embankments and dense *foggara* systems (small circular patches in the foreground, now almost totally destroyed) on the south and east sides of the promontory, looking north-east (CMD 1958).

or has been published in isolation. In particular, the results of radiocarbon dating samples taken after the initial publications need to be reintegrated with other information from the site. They were mentioned by CMD (1989, 51, 57) and Van der Veen (1992, 12–13), but need to be considered more fully in relation to the structural sequence of the site. Moreover, CMD's assertion that he had found 'over 300 habitation or burial sites' at Zinkekrā (Daniels 1968a, 117) needs to be qualified. Many of the sites turn out to be little more than slight terracings in the escarpment slopes where deposits of animal dung were noted. There is therefore a case for a re-examination and concise summary of CMD's work at Zinkekrā, as well as its augmentation with unpublished material.

Taking account of the fact that some areas of his report did amount to near complete publication, the present report thus has the following aims:

- 1) To publish for the first time a complete listing of all the structures that were surveyed on the top of the promontory (ZIN001), on its north side (ZIN002) and on its south side (ZIN003). Many of these were not previously published.
- 2) To summarise CMD's report on the stratigraphic excavation at ZIN002.13 (his Site 13) and the area excavation at ZIN002.011 (his Site 11). The published accounts of these are adequate, and full re-publication would be wasteful. There are however two important additions. One is the



first explicit phasing of the sites, with the use of radiocarbon dates and the other is the first complete publication of the burials (which are included in this volume in Chapter 6).

- 3) To re-publish selected sections of CMD's descriptions of smaller excavated sites, and their finds' assemblages.
- 4) To provide a description of the complete sequence of defensive walls and embankments on and around the Zinkekrā promontory, some of which had been recorded by CMD, with others added by the FP survey.
- 5) To republish CMD's finds from the site, relating pottery to the *AF 2* ceramic type series, and to use the radiocarbon dates and phases from ZIN002.013 to allow improved phasing of the pottery.
- 6) To review CMD's original interpretation of the site in the light of more recent work.

## THE SITE

The Zinkekrā promontory (Figs 1.1 and 1.4) is a large outlier of the hamada, separated from the main escarpment front by a narrow and difficult isthmus. Most attention hitherto has focussed on the narrow north-east extremity of the peninsula (ZIN001), which lies at a lower elevation than the

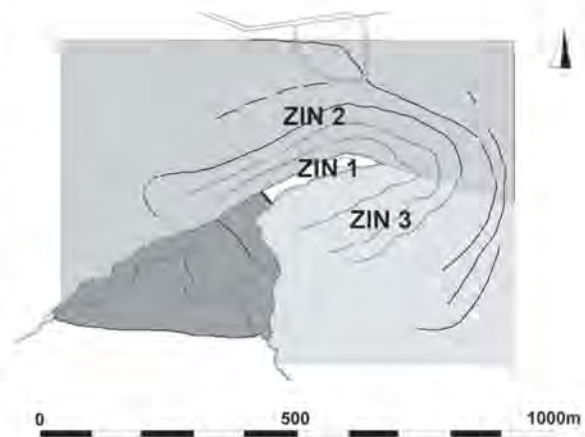


Figure 1.4. The recording of Zinkekrā sites in terms of three zones, ZIN001–ZIN003 (FP).

plateau to the south. It is aligned broadly north-east to south-west, forming the west end of the Jarma embayment and the distinctive pyramidal shape of a rocky protrusion towards its tip can be seen from some distance away (Fig. 1.36).

This report will describe the surveyed and excavated features starting with the sequence of enclosure or defensive walls and embankments (ZIN900), proceeding with structures on the top of the headland (ZIN001) then describing features

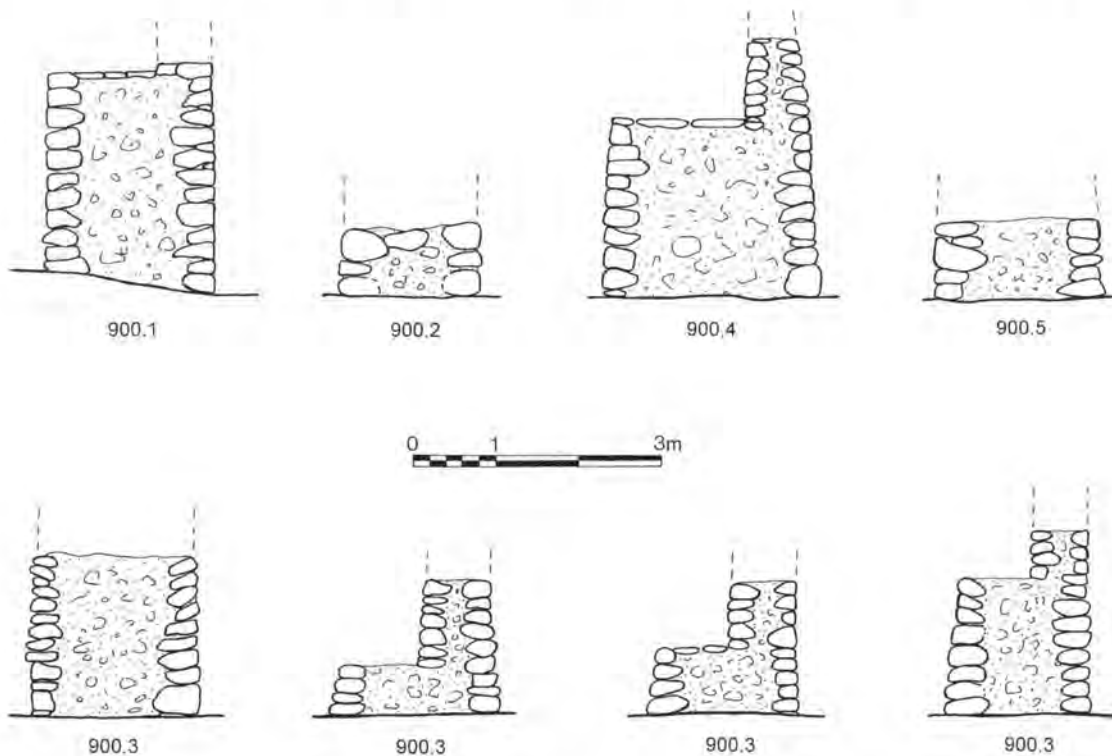


Figure 1.5. Cross-sections of the defensive walls of the upper plateau (FP).

on the north side (ZIN002), followed by those on the south side (ZIN003). Summary listings are also included of the radiocarbon dates, rock art and inscriptions. Botanical remains are dealt with in Chapter 9 and human bone in Chapter 7. The report concludes with a summary of the phasing and an interpretative essay covering the whole of the Zinkekrā complex.

## Defences (ZIN900)

### Upper Plateau

A sequence of six 'defensive' walls has been recorded on the top of the plateau, complementing the evidence of a series of earthen embankments and a stone wall around the foot of the hill. It is likely that the upper walls were not all of contemporary construction, but that they reflect changing conditions and priorities. Accurate dating is impossible. However, several of the walls are extremely well-built and are unlikely to belong to the early Garamantian phase. The stone walls on top of the plateau are labelled ZIN900.000 to 900.005. The stone walls and earthen embankments around the base of the promontory are labelled ZIN900.006 to ZIN900.010 (Figs 1.1, 1.5).

### ZIN900.000 Wall 26°31.17/13°1.98

This set of features (labelled ZIN087 by CMD) may be the earliest defensive feature on the top of the ZIN001 site. It constitutes a poorly preserved wall across the neck of the promontory, 35 m east of the probably later wall ZIN900.001. The structure was of two-faced construction in rough blocks, but had been extensively robbed (Fig.1.6). There is a trace of a bastion on the south side and a central approach track (suggesting an original gate?). Situated on the true neck of the promontory, on investigation this feature proved to be



Figure 1.6. The heavily robbed traces of wall ZIN900.000 (ZIN001.087), looking west (CMD 1967).

the remains of an earlier defensive wall now almost entirely robbed and only partly recoverable in plan. The wall possessed the remnants of a projecting bastion on its south side, traces of a central entrance approached by a worn (and now debris-filled) track or depression, and some signs of a later lean-to shelter constructed against the outer face of its north section.

By itself the plan of the wall was not perhaps completely convincing, but to the west, the remains of rock-cut trenches were visible in front of the wall cut in from the south and north cliffs. This consisted of a partly-cut ditch running from the south edge of the spur, 1.1 m deep. Inspection showed that the feature could not have been the result of natural splitting and slipping of the bedrock – and it was balanced by a slighter but matching cut on the north edge of the spur. For some reason the work had been abandoned before it was completed and in fact only about one quarter of the neck had been crossed. It is unclear whether the work was unfinished, or whether its function was simply to narrow the approach to the wall. Pottery includes a handmade form of Early Garamantian date (HM 352).



Figure 1.7. The outer (western) face of wall ZIN900.001, showing the close jointing and the centrally placed large polygonal block in distinctively dark stone (a decorative feature?) (CMD 1973).

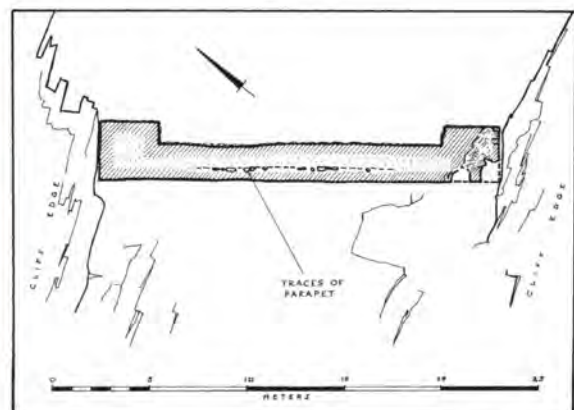


Figure 1.8. Plan of wall ZIN900.001.

**ZIN900.001 Wall 26°31.16/13°1.96**

This is the best known and best preserved of the walls (Figs 1.2, 1.7–1.8). It completely blocks the approach to the promontory from the south-west, 2.8 m high x 2.07 m wide x 20.5 m long. There is a slight trace of a parapet along the south-west face on top of the preserved wall (0.66 m wide x 0.10 m high). On the assumption that the parapet would originally have stood at least 1.5 m high, the total height of the obstacle is likely to have been c.4.3–4.5 m. At the north-west and south-east ends there are rearward projections or abutments (c.3 x 1.1 m), which presumably supported stairs or a ladder to give access to the parapet. They would also impede attempts to climb around the ends of the wall. CMD and Caputo suggested that only the north-west example may have supported a stair, but the similarity of the features suggests an identical function for each. The coursing of the wall is irregular, but carefully done, with much packing of cracks with smaller stones. The wall has a packing of mud and small rubble between two faces. The total volume of stone used in the wall is about 120 m<sup>3</sup>.

The outer face of the wall is of noticeably superior construction to the inner. The outer face-stones were possibly better worked than the inner; they were definitely picked more carefully and laid more closely, even the cracks between them being more neatly packed in an attempt to give the wall a sheer face without toe or hand holds. By contrast the inner face was more roughly built with wider gaps between individual stones, which were themselves generally rougher and less regular. Nowhere was dressing certain although some of the west face-stones had smooth (probably naturally weathered) surfaces.

Precise dating is uncertain, though the quality of the outer stonework would suggest a Proto-Urban Garamantian date. The lack of a gate might be an argument for this wall being the latest of the sequence of walls, at a point when regular access to the upper plateau was no longer required.

**ZIN900.002 Wall 26°31.12/13°1.961**

To the south-west of wall ZIN900.1, the ground rises up a long gully, at the head of which there is a pronounced scarp giving access to the upper plateau. About half way up the rise, there is a ruinous wall running across virtually the whole of the peninsula. Although almost entirely collapsed, the wall was evidently of similar construction to walls 900.003–5, comprising two rough-coursed faces of medium blocks, with a rubble infill. The wall rises up the sides of the gully to north-west and south-east of the channel, where there was either a gap left or a 4-m section has been lost over time.

The best-preserved section was 1.7 m wide x 0.85 m high, the visible length c.70 m, though it may originally have spanned the entire 100 m wide promontory neck. The wall is shown on CMD's plan (1968a, 118, fig. 3); cf. also Pace *et al.* 1951, 227, fig. 13), but was not discussed in these publications.

**ZIN900.3 Wall 26°31/13°1.89**

The upper plateau is bisected by a slightly sinuous north-west to south-east wall, c.400 m long, standing 1.8–2 m high and c.2–2.15 m wide at the base (1.75–1.80 m in its upper part). Construction was of rough coursed blocks, two-faced with a rubble fill. The number of courses varies from 8–20 according to the size of blocks used and the preserved height. There are three possible gates in the wall: A is a 1.45-m-wide gap, with straight-built joints to either side, B is a c.2-m-wide gap, with some collapse concealing the exact edges to north-west and south-east, C is a rubble-strewn gap, 1.25 m wide, with a possible straight-built edge on the south-west side. Between 'gates' B and C there are two stretches of the wall with a preserved parapet walkway on the north (interior) side, though the height of the walkway varies considerably (0.60 m nearest to gate B, elsewhere heights of 0.82 m and 1.66 m have been recorded), with the parapet itself 0.70–0.80 m wide x 1 m maximum surviving height. There are no traces of the rear abutments noted on ZIN900.001 and 900.004, and it is likely that access to the parapet in this case was via a step or ladder directly onto the lowest section close to gate B. There is no evidence for the parapet having been built in any section other than between gates B and C. Assuming average dimensions of the original wall of 2 m wide x 1.8 m high x 400 m long, the total volume of stone involved will have been in the order of 1,440 m<sup>3</sup>.

**ZIN900.004 Wall 26°30.96/13°2.01**

This was a two-faced dry-stone wall with rubble core, cutting south-west to north-east across a narrow neck of land near the southern limits of the promontory, dimensions: 51 m long, x 2.60 m wide (max. at base) x 3 m high. The coursing is irregular using large blocks (generally 0.60–0.70 m in length), with some packing of joints with smaller stones, especially on external (south-east face). The wall stands c.0.75–0.80 m high at the north-east end (6 courses) and 3 m at the south-west end (26 courses). At the north-east end, there is a small gap between the preserved end of the wall and the cliff edge and a well-worn track leads across the rock plateau to this point, suggesting that this was a gate or control point. There is a well-preserved section of parapet walk (1.2–1.7 m wide, 2.16 m above ground)

and parapet wall (0.65 m wide x 1 m high) towards the south-west, along with a rectangular internal abutment (3.8 m south-east to north-west x 1.5 m north-east to south-west x 2.05 m high) that directly parallels the abutments on wall ZIN900.001. There is no sign of a stair against the abutment, but it remains likely that it was used in part to support a stair or ladder. Assuming that the wall was originally of regular size, it will have had a volume of 300 m<sup>3</sup> of stone.

#### **ZIN900.005 Wall 26°30.94/13°2.046**

About 100 m further south-east along the narrow neck of land joining the Zinkekrā plateau to the main mass of the hamada, there are the remains of a further, heavily robbed wall. Despite its ruinous condition, it is clear that this was originally a similar style of construction to walls 900.001–900.004, that is, rough-coursed, two-faced dry-stone construction with a rubble core. For most of its 50 m length the facing stone had been robbed out, with the ‘wall’ reduced to a dense line of the slumped rubble core, but traces of the original faces survive here and there, indicating a width of c.1.96 m. The maximum preserved height is 0.80–0.95 m. The only other description is Caputo (in Pace *et al.* 1951, 225, figs 11, 13), who gave dimensions as 53 x 1.1 x 0.75 m high. There are no traces of internal abutments, though a very narrow gap exists around the south-east end of the wall – again with a faint worn trackway. The ruinous state of this wall in comparison to wall 4 would suggest that this was an earlier structure, succeeded by the latter.

#### *The Lower Embankments*

The base of the slope around the north-east promontory site was enclosed by a series of major walls or embankments (Fig. 1.1 and cf. Figs 1.9 and 1.69). Where these were excavated (as at ZIN002.013), they proved to be walls of two-faced construction with a rubble fill. Similar features are recorded at Tinda (TIN001), al-Khara‘iq (CHA003) and Ikhlif (CLF002, 008–010). The scale of these features is far larger than the normal terrace walls built here and there along the escarpments to provide suitable building platforms.

#### **ZIN900.006 Wall**

This dry-stone wall was some 450 m long and just over 3 m wide, running close to the base of the hill and partly encircling the northern and eastern slopes. It appears to have been built with two good faces and a rubble core and formed a prominent terrace behind which there was a considerable accumulation of occupation deposits. It was also recorded as wall ZIN002.119 and a section

of it was excavated when CMD dug site ZIN002.013. This excavation revealed that the wall overlay earlier occupation levels and structures. Radiocarbon dating and the presence of Phoenician glass ‘eye beads’ indicate that the wall was built at around 300 BC (see Table 1.5 for C14 dates and Table 1.2 for summary phasing).

#### **ZIN900.007 Earth embankment**

This earth embankment was originally c.100 m long, but exists today in three sections, gullying having broken its line. It was built c.75 m north-west of wall 900.006 and followed the same roughly east-west alignment as the neighbouring section of wall 900.006.

#### **ZIN900.008 Earth embankment**

This was the longest earth embankment at Zinkekrā at c.800 m. It encircled the northern, eastern and southern slopes of the hill. It is today broken into four sections, and gullying action in the northern area has largely destroyed its line there. It is possible that, as with walls 900.006 and 900.009, at least some of the gaps in the wall may originally have been gates.

#### **ZIN900.009 Earth embankment**

This earth embankment encircled the eastern slopes and was c.450 m in length. Today it is broken into five sections, seemingly the result of gullying although these gaps may originally have functioned as gates.

#### **ZIN900.010 Earth embankment**

This earth embankment was the most southerly of the embankments that encircled the lower slopes of the hill. It survives to a length of c.200 m and appears to turn inwards towards the hill at its southern end.

#### *Dating*

The dating of the walls and embankments is very uncertain. There is a small amount of Early Garamantian pottery on the upper plateau (for example HM 302 from ZIN904), but this cannot be used to date the nearby walls. It seems plain that there was a sequence here and that not all walls were in contemporary use. In particular, wall ZIN900.001 clearly replaced ZIN900.000 and ZIN900.004 must similarly have superseded ZIN900.005. There may well have been a similar evolutionary sequence in the lower embankments, but this would need testing by further excavations. The upper plateau walls seem to have had a defensive function, presumably to counter any attempt to launch an attack on the main occupation

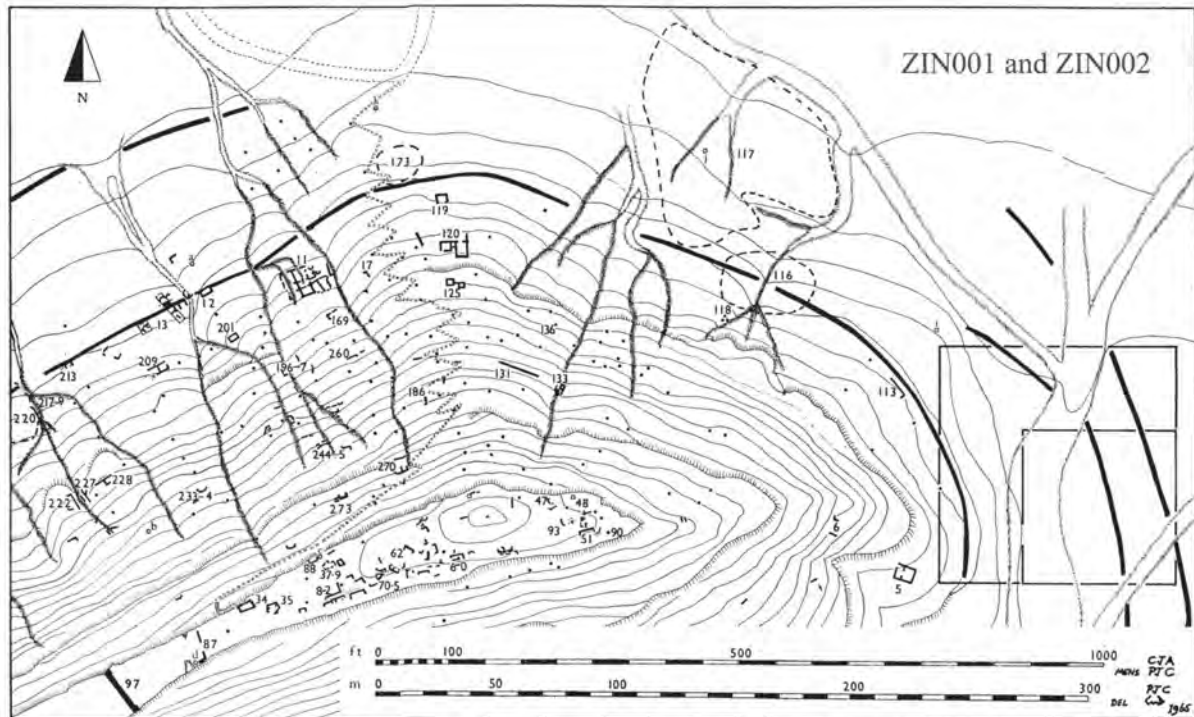


Figure 1.9. ZIN001 and ZIN002: survey of main sites identified on top of spur and on north slopes of Zinkekrā.

area of the lower promontory by climbing up to the higher plateau to its south. These upper walls presumably date to the same broad phases as the lower embankments as it is hard to see how the site's defences would be improved by the construction of one without the other. The only reasonably securely dated feature is ZIN900.006, though other features could be earlier or later than the suggested date of *c.*300 BC. Both sets of artificial defences perhaps related to the Proto-Urban phase of the site, with the developmental sequence potentially spreading across the period 500–1 BC.

#### Sites on Zinkekrā Top (ZIN001)

Structures and features recorded on the plateau top of the north-east spur of Zinkekrā hill were recorded by CMD as part of a continuous number sequence covering the whole of his Zinkekrā survey area (Fig. 1.9). We have simply prefixed the numbers relating to structures on the top of the hill with the code ZIN001. – giving a six numeral site code (e.g. ZIN001.034). Both surveyed and excavated structures are included in the running list below, with most space being accorded to the excavated features.

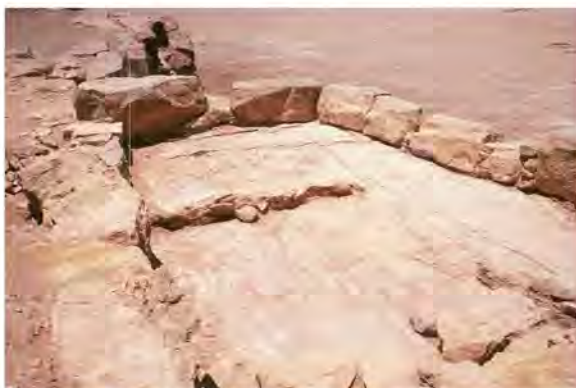


Figure 1.10. Structure ZIN001.034, looking west (CMD 1965).

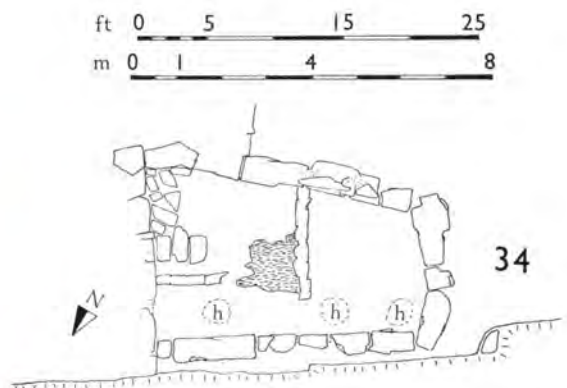


Figure 1.11. Plan of structure ZIN001.034.

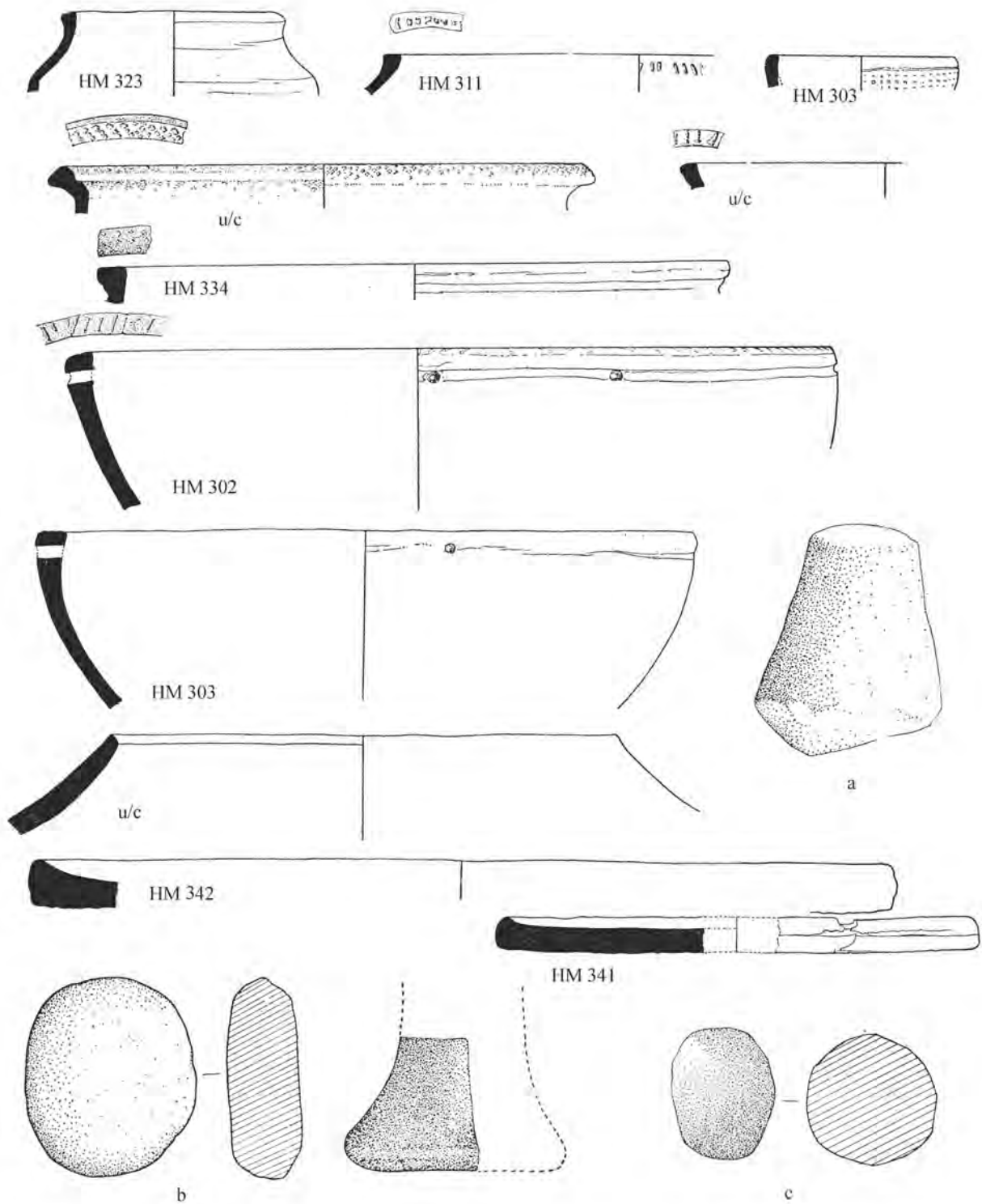


Figure 1.12. Pottery and stone rubbers (a, b, c) from structure ZIN001.034. Scale 1:3. These and subsequent illustrations taken from CMD 1968a and correlated with AF Type series.

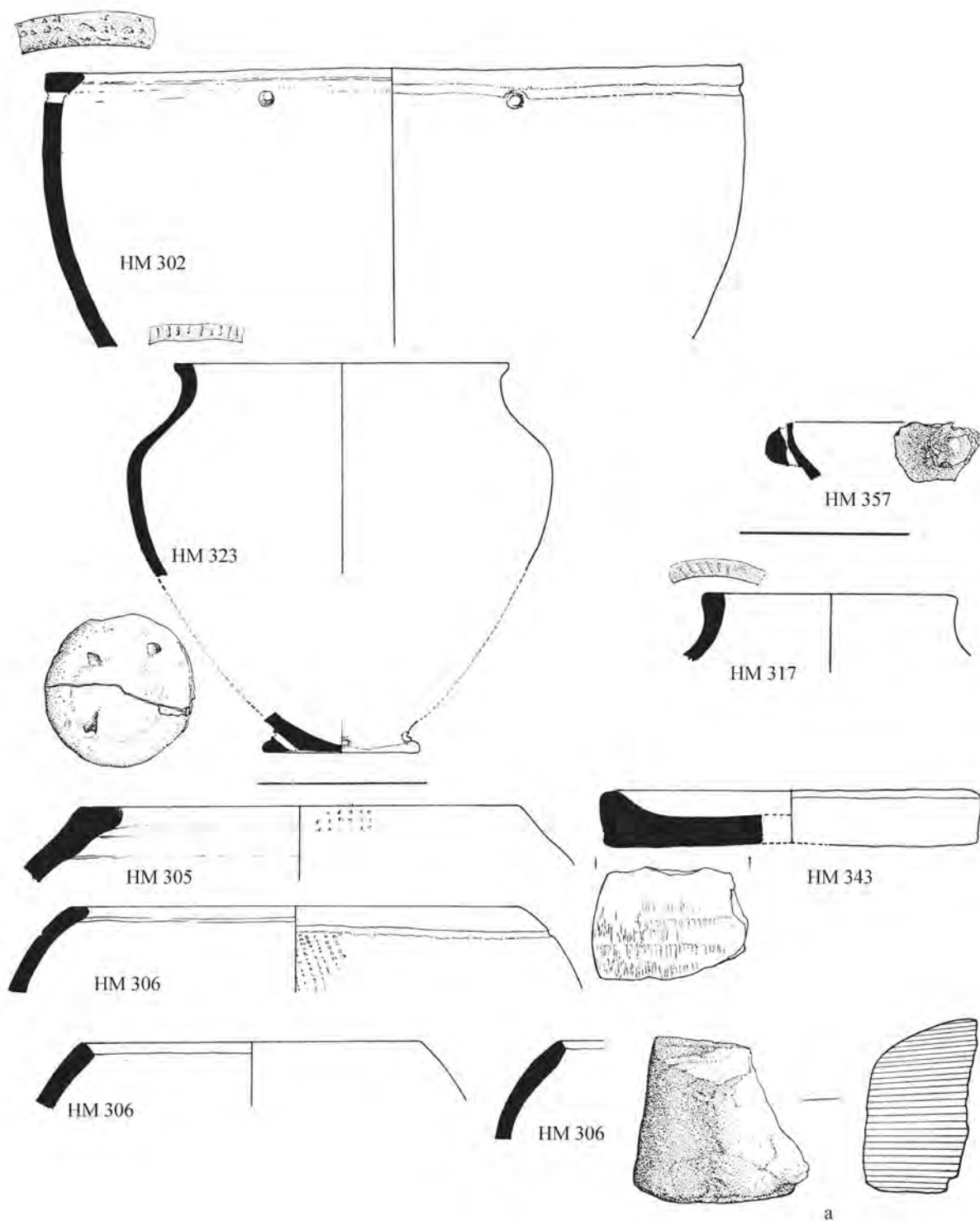


Figure 1.13. Pottery and a stone rubber (a) from sites ZIN001.034, 047, 087, 118. 1:3.

**ZIN001.034**

A house situated beside the modern steps giving access to the promontory top and exceptional in that it is built of unworked, large stone blocks (several of which were over 1.2 m in length) rather than the smaller material employed elsewhere (Fig. 1.10). It also made use of a natural step in the rock for its east wall.

On excavation the building turned out to be trapezoidal rather than rectangular, c.3.8 x 6.1 m at maximum and divided into east and west rooms by a thin partition wall of stone c.0.3 m in thickness (Fig. 1.11). The remnants of a stone bench survived in the south-eastern corner of the room, with traces of a partition wall shutting it off to the north.

The building's interior was filled with occupation material and sand. On excavation it was clear that although the fill did not seem to have been disturbed it was of the same consistency from top to bottom, lacking stratification, so that fragments of vessels sealed under the lowest stones also occurred generally at higher levels. In places fragments of a trodden mud floor survived. A pair of hearths lay on the bedrock, others existed at higher levels in the filling. Dung layers occurred fairly thickly over the south side of both rooms and burnt date stones were recovered especially from the east half. A small knot of twine, similar to those found at ZIN002.011, suggested the possibility of a thatch roof here too. Finds were kept in arbitrary groups according to their depth, with the exception of pieces found sealed under the lowest stones of the floor. Handmade pottery forms represented here include (Figs 1.12–1.13): **HM 302–303** (inturned rim bowls), **HM 311** (necked jar), **HM 323** (jar with out-turned/everted rim), **HM 341–342** (*dokas*), all with a general 1<sup>st</sup>-millennium BC date. At least one base was of flat pedestal type (pierced with four holes). The predominance of Zinkekrā Ware fabric favours the Early Garamantian phase for much of the material. Several rubbers and pounders were also recovered.

**ZIN001.035**

This was a roughly pentagonal building of small size, measuring 4.6 m east to west and north to south at maximum. The walls were slight, built of smallish stones and only surviving to a height of one course. They rested on dung and occupation material.

**ZIN001.036**

Occupation material.

**ZIN001.037–39**

A complex of two or more shelters – or rooms – of which some fragments of walling had survived

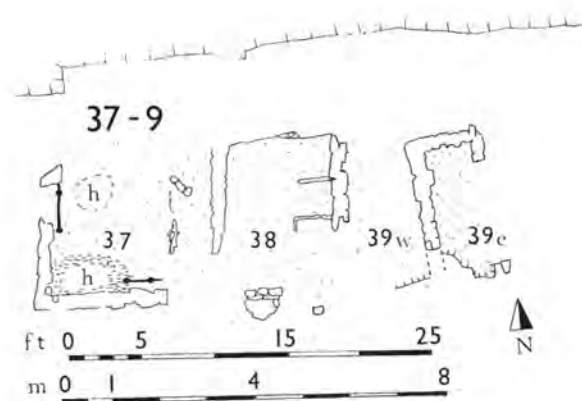


Figure 1.14. Plan of structures ZIN001.037–039.

(Fig. 1.14). ZIN001.037, the western-most, still retained its south and west walls, with traces of the others. Generally only one course of stones survived, usually small pieces under 0.3 m in size. On clearing the small stones away the shelter was seen to be filled with a thick layer of occupation material consisting of burnt date stones, palm husks, wood and dung, and a few knotted loops of twine. Below this were two hearths, in places dug into the rotting yellow sandstone bedrock which formed the lowest floor. One hearth stretched under and was clearly earlier than the south-western corner of the shelter. The other was later, but also probably pre-dated the remaining walls. Earlier still than these hearths were two stretches of palisade slots, 0.12 m wide and about 0.15 m deep, each with two post-holes. More knotted twine was found in the lower level.

**ZIN001.038**

To the east of ZIN001.037 lay slight traces of a wall and another room 2 x 3 m in size. Little remained *in situ*, but careful cleaning revealed the position of three walls in the occupation debris. The top floor was patchy; below it was a good thick occupation level (especially rich in dung) on top of the lower floor. In the lower floor seven or eight post-holes were clearly visible. Further



Figure 1.15. View of structures ZIN001.038–039, looking north (CMD 1967).



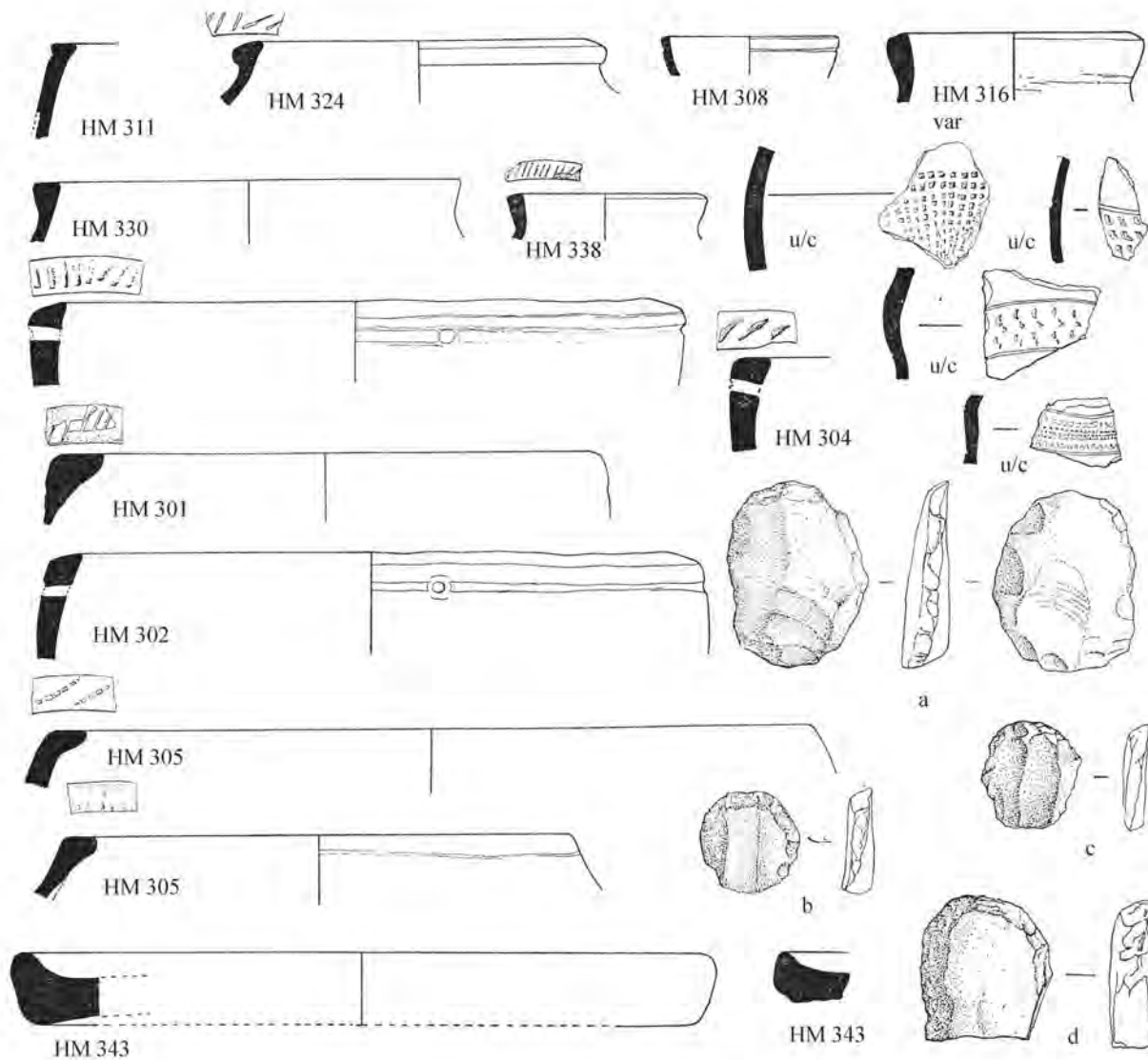


Figure 1.16. Lithics and pottery from structures ZIN001.037–039. 1:3.

traces of the robbed stone walls recovered later in the excavation were more clearly contemporary with the upper occupation and merely sat upon the lower dung and mud floor. The lower floor was not removed as to have done so would have been to destroy the last traces of this building.

#### ZIN001.039 West

To the east lay a further room now so robbed that even its outline plan was difficult to recover: its west wall survived to a maximum height of two courses, 0.23 m in height (Fig. 1.15). The floor of the room lay on a good build-up of dung, and preserved a presentable mudbrick surface. On top of it lay another accumulation of dung, 0.05–0.10 m thick over most of the room. Against the robbed east wall were the remnants of a hearth. Again the lowest level was not removed completely.

Finds from the complex of structures ZIN001.037–39 included (Fig. 1.16): **HM 301–302** (deep bowls), **HM 304–305, 311** (inturned rim jars), **HM 308** (small bowl), **HM 330** and **338** (jar with slightly everted rim), **HM 343** (*dokas*). The material was associated with lithic scrapers and some unclassified decorated pottery sherds of probable Pastoral type.

#### ZIN001.040

This was an area of yellow clay-like material, with occupation debris found underneath.

#### ZIN001.041

A low semi-circular wall, open to the north side, surrounding a hearth.

**ZIN001.042**

A rough line of wall (stone?) with two courses of mudbricks. Traces of burning and occupation material on the north side.

**ZIN001.043**

Traces of a short wall at a slight angle to ZIN001.042. Only a slight trace of occupation material.

**ZIN001.044**

A slight wall near the central path. Slight occupation traces.

**ZIN001.045**

Probably only a hearth.

**ZIN001.046**

Slight wall on a scree slope. Some traces of occupation material.

**ZIN001.047**

Small fragment of a wall with a hearth to the north-west. Occupation material recovered from hearth. Pottery includes inturned-rim jar **HM 305** (Fig. 1.13).

**ZIN001.048**

This was a large indeterminate area of occupation material exceeding 3 x 4.6 m in size. No trace of structures remained, but one small fragment of handmade pottery was recovered.

**ZIN001.049**

This was an area with ‘scoop-holes’ in the rock surface, close to the edge of the point and the cliff. They are interpreted as stone mortars for food processing.

**ZIN001.050**

An open hearth.

**ZIN001.051**

A small building situated on the south-east corner of the promontory and chosen for excavation on account of the post-hole alignment visible on its east side, which gave promise of substantiating the finds from ZIN001.037–39 and ZIN001.072–75 and presenting the plan of an all-timber shelter (Fig. 1.17). However, no satisfactory plan was recovered on excavation and it was clear that either the timber structure had been in the nature of a windbreak rather than a hut, or that that timbers had been used in conjunction with stone walls (Fig. 1.18). Remembering the association of timber and stone in building ZIN001.038 the second of these seems the likelier solution, although it must be admitted that



Figure 1.17. Rock-cut postholes associated with structure ZIN001.051, looking west (CMD 1973).



Figure 1.18. Plan of walls and postholes of site ZIN001.051.

the plan recovered was a very unhelpful one, excavation hardly adding anything.

Of the building the north wall survived 7.5 m in overall length with a 0.9 m doorway slightly nearer its west than its east end. A short strip of the west wall survived and an even shorter length of the east. Unlike most of the other buildings investigated the foundations of this one were bedded onto, and even cut into, the rock. There was no stratification in the building and only a thin spread of stone and occupation material covered the bedrock. Pottery includes (Fig. 1.13): an example of a globular jar with inturned rim (**HM 306**) and a *doka*, **HM 343**. A fragment of a burnt pounder was also recovered.

**ZIN001.052**

This was a 1.5 m long fragment of wall, with traces of occupation debris and burning on the east side.

**ZIN001.053 / 54**

This comprises a series of three walls at slightly different angles, probably from three separate ‘buildings’, with occupation debris visible in two places.

**ZIN001.055**

A small corner of a wall, no occupation material.

**ZIN001.056**

This appears to be a semi-enclosed space, open on the north side. There appears to have been several phases of walling on different alignments. The overall length was c.10 m.

**ZIN001.058**

A wall, several courses high, associated with a hearth. A rubber was found on the surface.

**Summary of Area 001.060–75**

The area between building ZIN001.060 and ZIN001.075 – if not ZIN001.082 – must have formed a small village or huddle of huts and shelters perched on the south side of the Zinkekrā spur top (Figs 1.19–1.20). There is no comparable density of features on the east point of the promontory or in the area lying further west. Buildings ZIN001.060, ZIN001.070–72 and ZIN001.074–75 were excavated to recover some idea of individual plans and stratification.

**ZIN001.060**

This small hut was built against one of the steeper slopes of the slight mound which sits on the promontory top (Fig. 1.21), and was excavated in the hope that some stratification might remain inside the building. The building consisted of two rooms, the western one

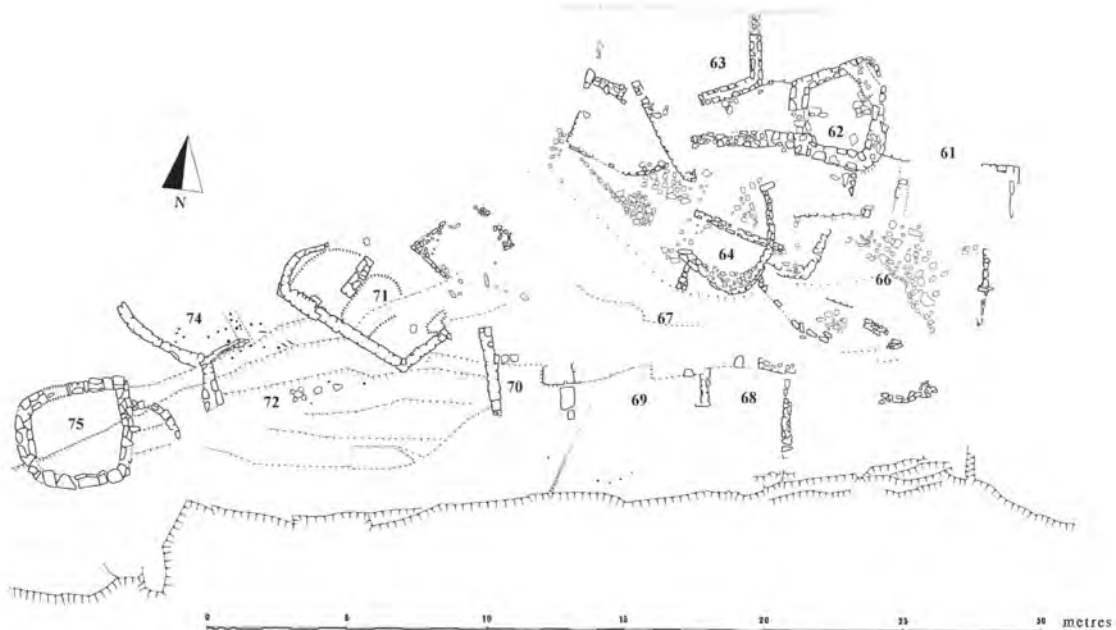


Figure 1.19. Plan of complex of structures ZIN001.061–075.



Figure 1.20. Site ZIN001.061–063 looking east (CMD 1973).



Figure 1.21. Site ZIN001.060, looking west (CMD 1967).

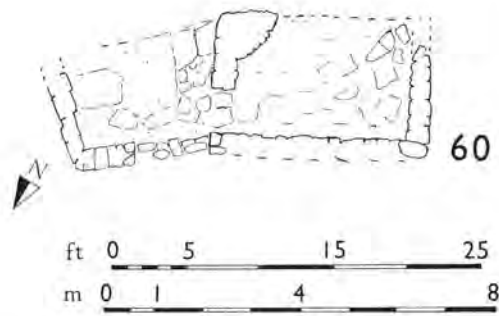


Figure 1.22. Site ZIN001.060 plan.

measuring 3.96 x 5.5 m internally with a door at the north end of its east wall (Fig. 1.22). The floor levels remained undisturbed 0.56 m below the top of the north wall (0.25 m below its base). The first floor level was

of cobble stones 0.13 x 0.13 m to 0.23 x 0.23 m in size and was very rough indeed. Most of the finds occurred on or above this floor. Below the top floor lay a second floor consisting of a spread of fine dusty material and below this lay the earliest floor, another rough stone-paved one. The east portion of the south wall survived but was of noticeably different construction from the outer walls. Presumably it represented rebuilding after a collapse on this downhill side of the building. The north wall, by contrast, was much higher and in places sitting on rather loose material, the natural rock having been cut straight to continue its face to floor level.

The eastern room was secondary to the western one and neither bonded to nor properly aligned with it. Its south wall had gone completely but the north preserved two details. First, there had originally been a

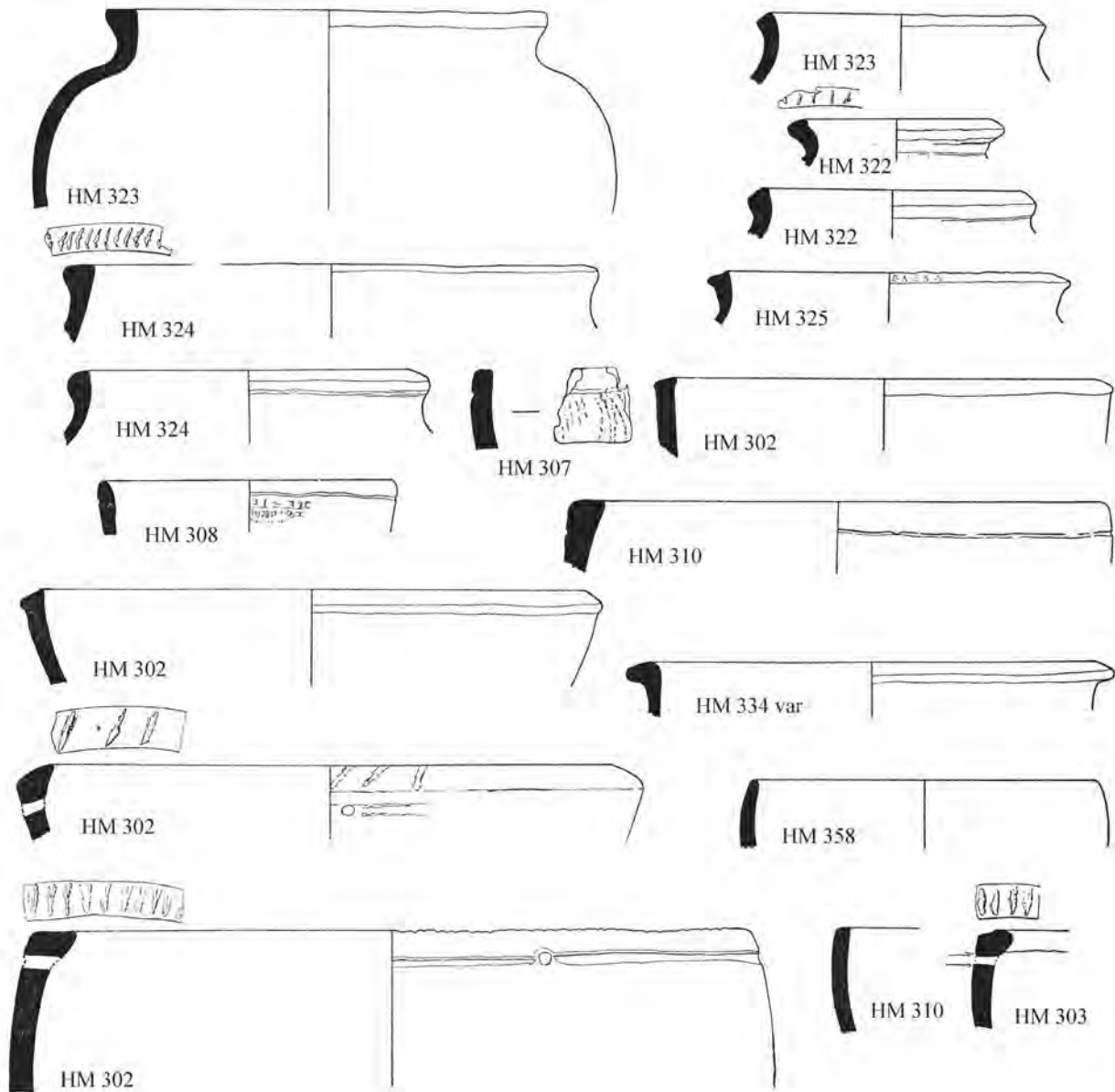


Figure 1.23. Pottery from ZIN001.060. 1:3.

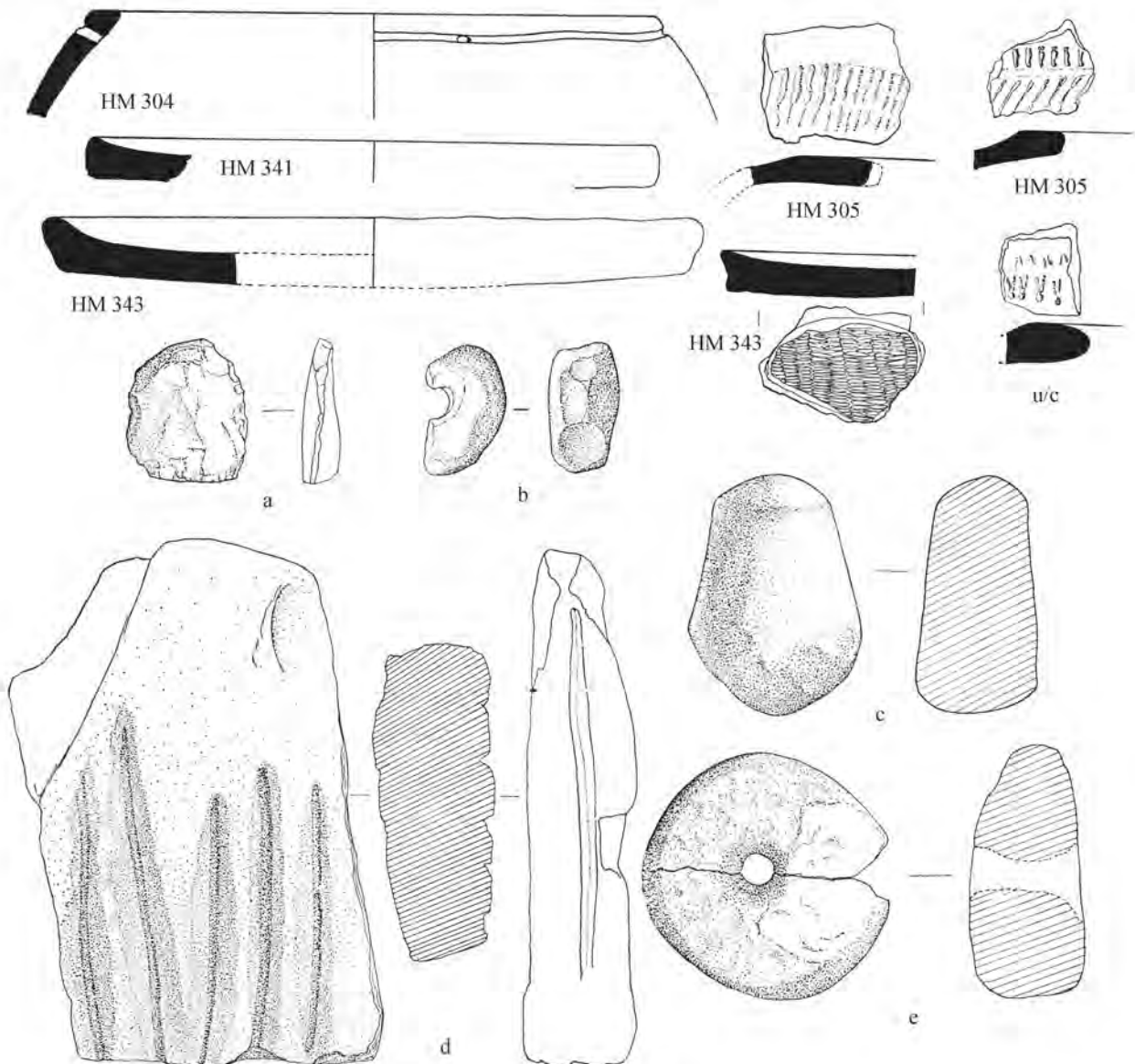


Figure 1.24. Pottery from ZIN001.060 continued, with lithic items. 1:3.

1.52 m-gap between the west and east room, which later had been narrowed to a 0.67 m doorway and, later still, completely blocked. Second, what looked like a sheep gate had been constructed through the east part of the west wall and later blocked with debris and dung. The interior of the room was full of rubble and tumble under which a rough paved floor covered all except its south-east corner. Later the use of the room had been changed for a small amount of dung lay in the upper fill together with palm roofing material. To the north of the east room a yard or pen (or additional shelter) had existed, now filled with small rubble and dung, 0.76–0.83 m in depth against the wall of the building. A hearth lay in the north-eastern part of the area.

Pottery from the structure included (Figs 1.23–1.24) a wide range of the typical Early and Proto-Urban Garamantian forms in Zinkekrā Ware fabric (HM 302–308, 310, 322–325, 341, 343). Other small finds

included some lithic scrapers, stone pounders, a pierced stone (loomweight?) and a grooved stone (the v-profile of the grooves suggest this was using for sharpening a metal blade and not for grinding or shaping beads – cf. the bead grinders in Chapter 8).

#### ZIN001.061

An area of occupation material to the south-east of ZIN001.062.

#### ZIN001.062

The north, south and east walls of a building 2.9 x 1.5 m in internal size and standing two courses at highest. A layer of stone and mud-wash covered this site originally. Clearing revealed what might have been an irregular floor built from small stones. Beneath these stones there was an occupation layer, some 0.20–0.25 m deep and rich in dung, palm fibres, wood, ash, with some



Figure 1.25. Site ZIN001.062, looking south (CMD 1973).

charcoal (Fig. 1.25). The original excavators suggested the dung was that of sheep or goats.

#### ZIN001.063

Immediately to the north-west of ZIN001.062 there was a similar structure, ZIN001.063. Only the south and east walls of this structure survived, the modern path which runs along the middle of the plateau top had destroyed the north part of it. The site was originally covered in stones and a mud-wash. Excavation revealed a layer of dung. Some of this dung clearly extended beneath the south wall.

#### ZIN001.064

A few metres to the south of ZIN001.63, ZIN001.64 comprised a semi-circular dry-stone wall, with the open side facing towards the north-west. A straight dry-stone wall bisects the site, and may have been either a partition wall or simply left over from an earlier phase. In the enclosure formed by the semi-circular wall and the 'partition' wall careful cleaning revealed a rich occupation layer. It consisted of green-brown sandy silt with much dung and bone, as well as fragments of charcoal. A similar layer was found outside the semi-circular wall, but neither of these occupation deposits was excavated.

#### ZIN001.065

An area of occupation debris between the building ZIN001.060 and the area of ZIN001.066.

#### ZIN001.066

This comprised a series of large stones set in dirty orange sand. They did not appear to have been placed deliberately, but were surrounded by occupation material. This consisted of dung, fragments of palms, some bone and pottery. An ostrich eggshell bead was also recovered. This layer of material extended into ZIN001.067.

#### ZIN001.067

Like ZIN001.066, this site was little more than a layer of occupation material. It had the same occupation material as ZIN001.066, but this area was notable for the find of a fragment of African Red Slip Ware (ARS), recovered during surface clearance. There is no indication that this ARS sherd related to the occupation deposit and it represents the only Roman fineware sherd from the top of the spur.

#### ZIN001.068

This was a series of three dry-stone walls, seemingly making an enclosure. One wall ran east-west and bordered ZIN001.67, with two parallel walls aligned north-south, although only the shorter west wall actually abutted the east-west wall. There may have been a doorway in the north-east corner. The whole area was covered in occupation material: dung, bone, palm, date stones, charcoal, pottery and sandy wash. There may have been a trodden floor beneath the occupation layer. The lowest layer, directly on top of bedrock, was a patch of grey-blue ash and charcoal some 3–4 cm thick and covering the area between the walls. Careful analysis of the stratification suggested that the east wall was actually built on top of some occupation debris, indicating at least two periods of use. Finds of note from initial cleaning included two small ostrich eggshell beads, part of a wooden utensil and a piece of metallic slag.

#### ZIN001.069

A wall almost 6 m long, associated with occupation material.

#### ZIN001.070

A short length of wall standing seven courses at highest. No satisfactory plan was recovered.

#### ZIN001.071

An apsidal-ended structure 6.1 x 3 m in external measurement and still standing 0.58 m (five courses) high at its south wall. Two overall periods were clear. The earliest consisted of a rectangular room 3.96 x 3 m entered by a door through the south end of its east wall. The west wall was not of a uniform construction. A thick layer of trodden dung was visible under the inner face, but did not extend beyond the wall on its outer side, which was carried right down to the bedrock. A wide rectangular slot or trench had been cut into the rock at this point and ran across the room. It was filled with rubble debris and sealed by the dung layer. Inside the south-west corner of the room a large hearth had blackened the wall and formed a considerable

depression in the stepped bedrock. There were traces of a further hearth in the north-west corner and a much larger hearth in the north-east corner. A fourth hearth (or oven) lay in a small pit cut into the natural rock a short distance inside the door of the room, which would suggest that it antedated the structure, possible going with the east to west slot already mentioned. At some later date an apsidal-ended north room had been added in much more crudely piled stone. It was entered by a door in the west half of the party wall. A large hearth lay against the south-east sector of the apse. The floor of the room was of a rough and uneven nature. The walls of both rooms, though rough, were clay-bonded. The floors were cut back into the sloping rock so that there was a step against each south wall-face (Fig. 1.26). This artificial terracing had preserved the line of parts of the east wall where it was robbed away.

The filling of some of the interior of the building consisted of a top layer 1–15 cm deep of light brown sand and stones. Below this a fairly consistent mass of dung, roofing material (palm) and occupation refuse (including matting fragments, Fig. 1.27) stretched right down to the bedrock, some 0.83 m lower. No real



Figure 1.26. Sites ZIN001.070–072, looking north (CMD 1967).



Figure 1.27. Fragments of matting recovered at site ZIN001.071 (CMD 1967).

stratification existed but finds were separated by depth and, where appropriate, those from hearths or pits were also differentiated.

#### ZIN001.072

The area lying between ZIN001.075 and ZIN001.071 and to the south of ZIN001.074 was not really a building but was cleared to see if the area of post-holes and the slot visible along its north side could be extended to give the plan of a timber building.



Figure 1.28. Site ZIN001.072, looking west (CMD 1967).



Figure 1.29. Detail of rock-cut stone mortars at site ZIN001.072 (CMD 1967).

This proved not to be the case; although part may still lie below the unexcavated plot in the south-east area of the site (Fig. 1.28). In the centre of the site four small rock-cut circular depressions were uncovered with a fill of charcoal, ash and debris (Fig. 1.29). Above them lay a sealing layer of dung and the stone bottom of a later hearth. These depressions appear to be similar to rock-cut mortars elsewhere on the promontory top that were presumably used for grinding food. The fill might suggest that sometimes these features were also used for cooking.

#### ZIN001.073

A low wall associated with occupation material.

**ZIN001.074**

This area was another that was investigated because of visible evidence of post-holes. Unfortunately, no overall plan for these emerged on clearing nor for any of the lengths of wall recovered; though they were presumably remnants of dismantled huts or shelters. Most of the area had been occupied by hearths and fires which were sealed by a thick layer of dung.

**ZIN001.075**

This was a building, or hut, sub-rectangular in plan, measuring 2.75 x 2.5 m at maximum, and built across a step in the bedrock (Figs 1.30–1.31). The west wall was standing 0.43 m at highest (three to four courses of rough stonework), with a doorway situated a little west of centre. Later this door had either been blocked with small stones or become choked with occupation accumulation. The east and south walls were less well built and had been robbed to a lower level than the north. The curved projecting wall on the east side was a later addition founded on a pronounced layer of dung and burnt material. The interior of the shelter was capped with 5–8 cm of light sandy debris. Below this were layers of dung and accumulation material, including palm debris, extending down from just below the wall tops to the bedrock.



Figure 1.30. Site ZIN001.075, looking west (CMD 1967).



Figure 1.31. Site ZIN001.075, looking east (CMD 1967).

An interesting range of finds was recovered from structures ZIN001.070–75 (Figs 1.32–1.33). Fragments of inturned rim bowls and jars predominated, along with *dokas* and bowls and jars with slightly everted rims (HM 301–302, 305, 310.1–311, 317, 322, 325, 342). Various lithic scrapers and a possible spindle whorl made from a pierced sherd were also recovered.

**ZIN001.076**

Two pieces of walling, possibly not related.

**ZIN001.077**

Very slight traces of what once might have been a wall.

**ZIN001.078**

A cairn of stones next to ZIN001.082. It has the appearance of a grave, but this was not examined in detail.

**ZIN001.079**

An area with a possible wall and possible hearth.

**ZIN001.080**

Possible hearth.

**ZIN001.081**

Natural stepping in bedrock enclosing an area of occupation material.

**ZIN001.082**

An area on the west limits of complex ZIN001.060–75 and visible as a platform 5.5 m square cleared of large stone and containing occupation material. On the south and east sides there were traces of collapsed walls.

**ZIN001.083**

Occupation material.

**ZIN001.084**

Occupation material under the south-east corner of a pile of stones.

**ZIN001.085**

A mound of gravel, possibly a burial.

**ZIN001.086**

A possible piece of a curved wall.

**ZIN001.087**

This was the number assigned by CMD to the earliest defensive wall at the neck of the promontory (see above ZIN900.000). Finds included HM 306 inturned jar fragments (Fig. 1.13).



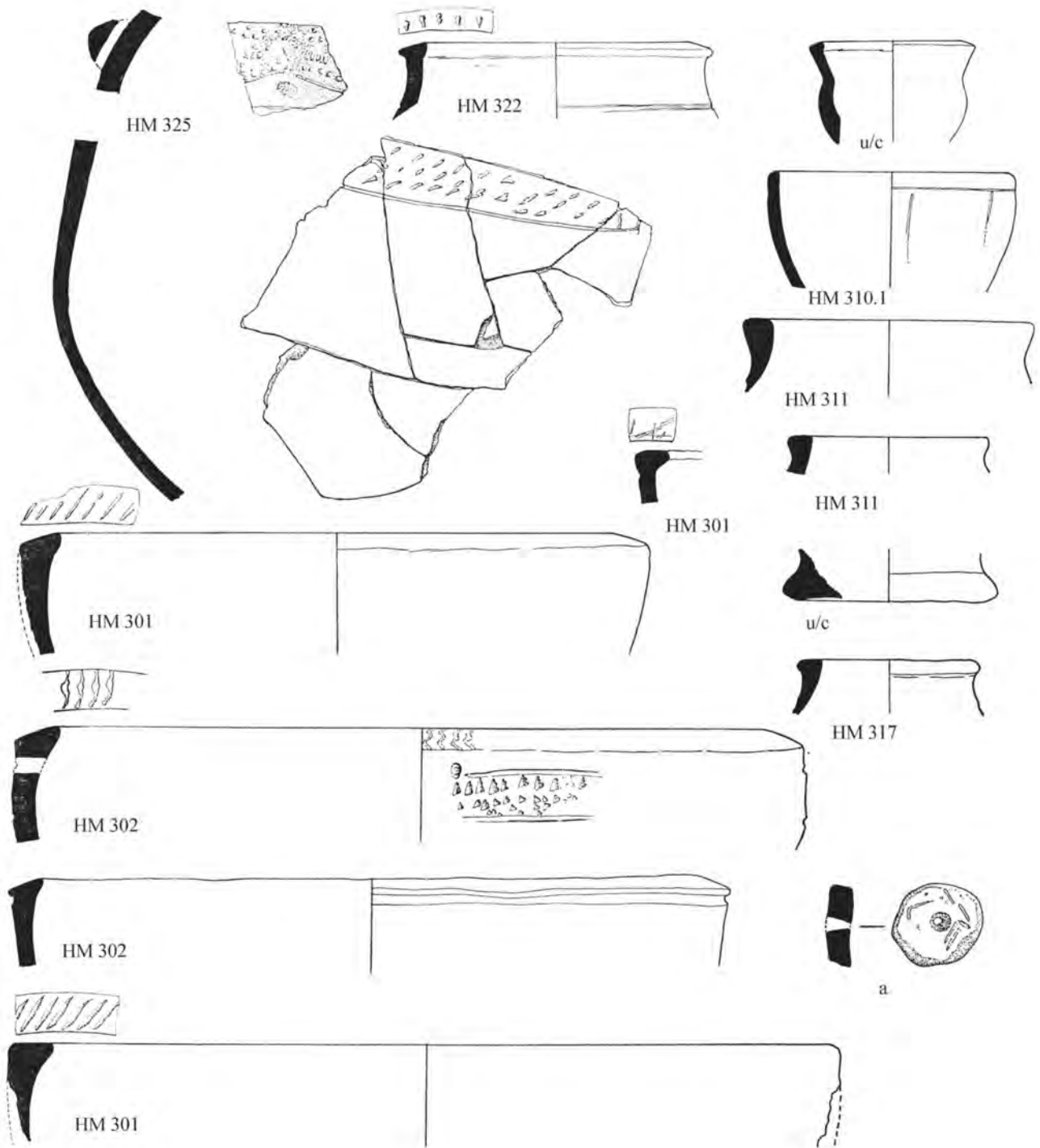


Figure 1.32. Pottery and pierced disc from ZIN001.070–075. 1:3.

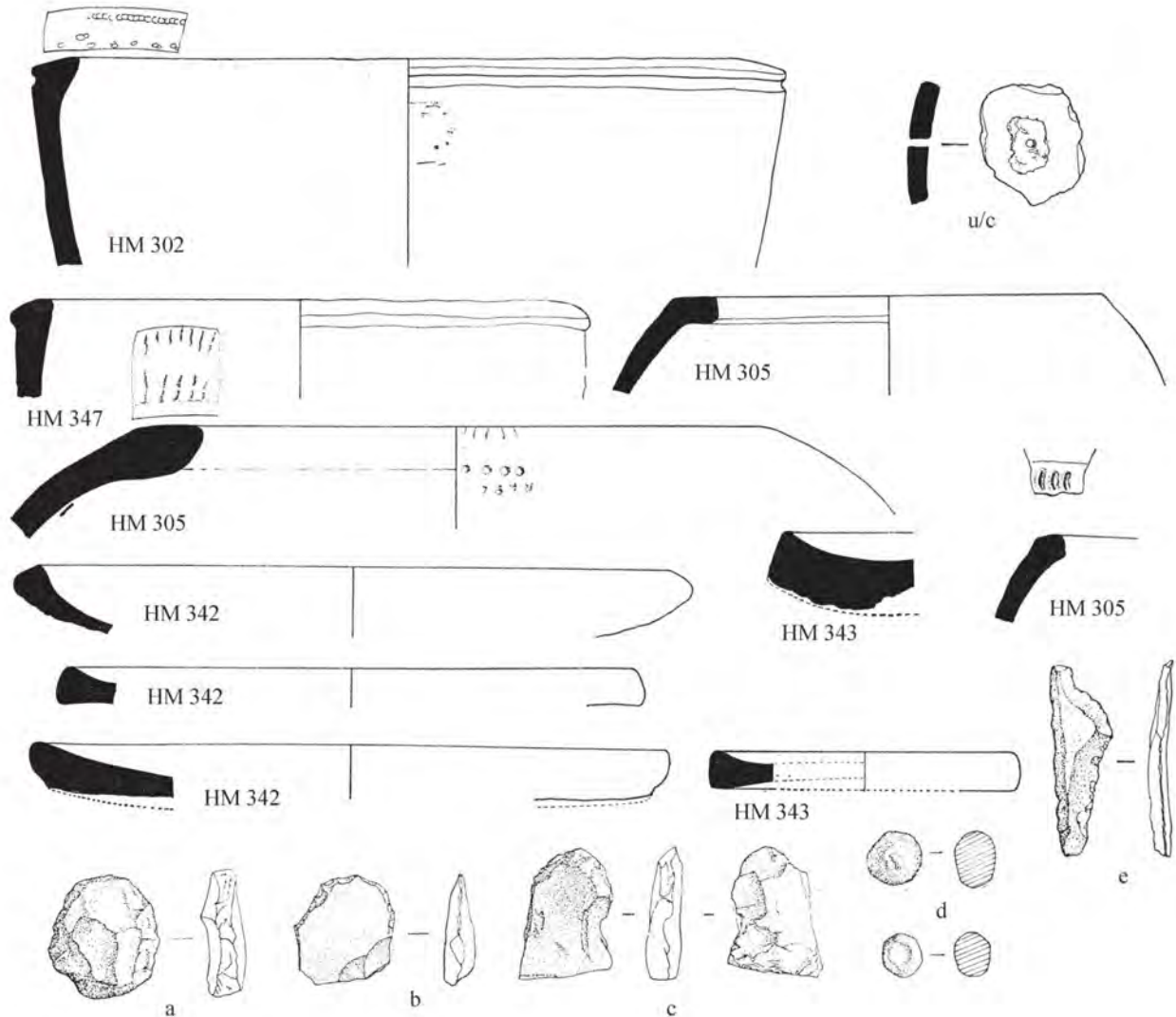


Figure 1.33. Pottery and lithics from ZIN001.070–075. 1:3.

**ZIN001.088**

A crudely constructed shelter lying on the north edge of the promontory. It consists of a south wall 3.65 m in length with only slight traces of both the east and west end walls. Occupation debris lay both in and outside the building.

**ZIN001.089**

Traces of occupation material.

**ZIN001.090**

A rock-cut inscription in Greek script 0.41 m in length carved c.6 cm in from the edge of the promontory top, but cut by someone who must have been perched precariously with their back to the steep drop (Fig. 1.34). It reads:

ΑΟΥΡΕΛΙΟΥΣ 7  
Aurelius C(enturion)

Although it presents problems, the inscription is probably genuine. P. Fraser who has studied a photograph of it comments, ‘The earliest possible date is the 3<sup>rd</sup> or 4<sup>th</sup> century AD, but even that must be uncertain.’ If the



Figure 1.34. The Aurelius inscription and associated graffiti ZIN001.090 (DJM 2005).

'7' is accepted as a centurial sign indicating Aurelius' rank as a Roman centurion, the 4<sup>th</sup> century is the latest date it could be, but, unfortunately, it is not altogether certain that the sign and the name are by the same hand. In spite of this the inscription is of great interest as the only one in either Greek or Latin discovered to date in the area of the Garamantes, excepting scratched graffiti on imported ceramic vessels.

#### ZIN001.091

Occupation material.

#### ZIN001.092

Remains of a hearth with occupation material inside it.

#### ZIN001.093

A series of post-holes and small pock-marks.

#### ZIN001.094

An area with traces of some crude walling.

#### ZIN001.095

Cleared area, roughly circular. This looks like an area cleared of rocks for a tent. Dimensions: c.3 x 3 m.

#### ZIN001.096

A rough platform.

### Sites on the North Slopes of Zinkekrā (ZIN002)

Structures and features recorded on the north slopes and pediment of the north-east spur of Zinkekrā hill were recorded by CMD as part of a continuous number sequence covering the whole of his Zinkekrā survey area (Figs 1.9, 1.35–1.36). We have prefixed the numbers relating to this side of the hill with the code ZIN002. – giving a six numeral site code (e.g. ZIN002.012). Both surveyed and excavated structures are included in the running list below, with most space being accorded to the excavated features.

#### ZIN002.008–10

Occupation material recorded a few metres upslope to the west of ZIN002.011.

#### Summary of ZIN002.011 and ZIN002.013

In addition to the many small trenches put in across the whole of the hill, CMD conducted two larger excavations at the foot of the north slopes of Zinkekrā, at ZIN002.011 and ZIN002.013 (sites ZIN 11 and ZIN 13 in the CMD archive). Both of these have been extensively published (Daniels 1968a and 1970a) and the reader is referred to these publications for CMD's

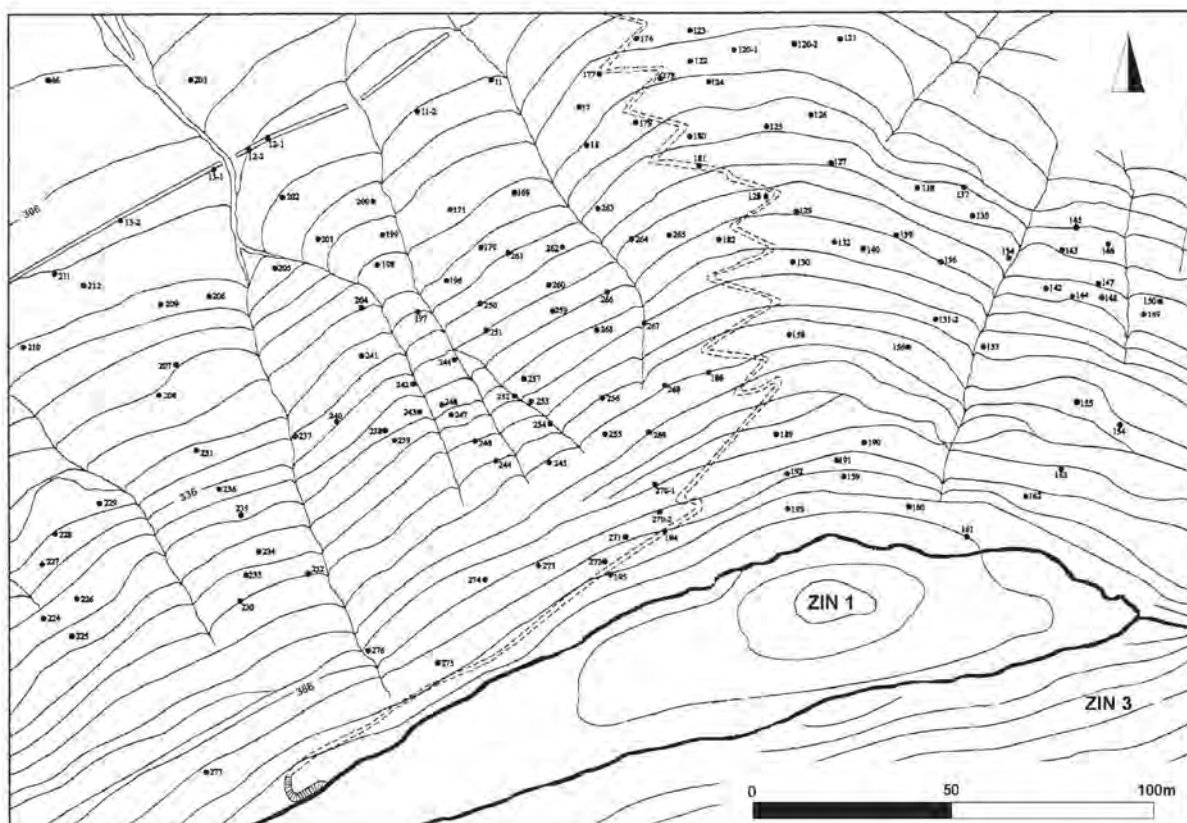


Figure 1.35. Numbering of sites, structures and occupation traces on northern slope of Zinkekrā.



Figure 1.36. General view of northern slope (ZIN002), looking south towards sites ZIN002.011 (centre) and ZIN002.013 (right) (CMD 1967).

original discussion. CMD did however conduct further fieldwork at ZIN002.013 after these publications, producing a number of well-preserved burials and good radiocarbon evidence, which allows us to place the site stratification into a series of dated phases. The discussion of these sites is therefore limited to a

summary of CMD's publications and the presentation of the new phasing.

**ZIN002.011**

Whereas ZIN002.013 was excavated to provide a stratigraphic sequence, ZIN002.011 was excavated to furnish some idea of the plans of the structures on the north slopes of the hill (Fig. 1.37). At the steeply terraced site of ZIN002.011 (Figs. 1.38–39), the stratification was very shallow, although in a few instances test pits were dug below the occupation levels to determine if there was earlier activity. The latest building on the site was a multi-roomed and fairly rectangular complex combining stone footings and mudbrick walls and extending across a 20 m-front. The building was markedly different to the small oval units encountered on the top of the hill. It was found that the site was contemporary with the post-terrace wall phase of ZIN002.013 (Phase 4), roughly 300 BC to the 1<sup>st</sup> century BC, or possibly until the 1<sup>st</sup> century AD (Daniels 1968a, 150).

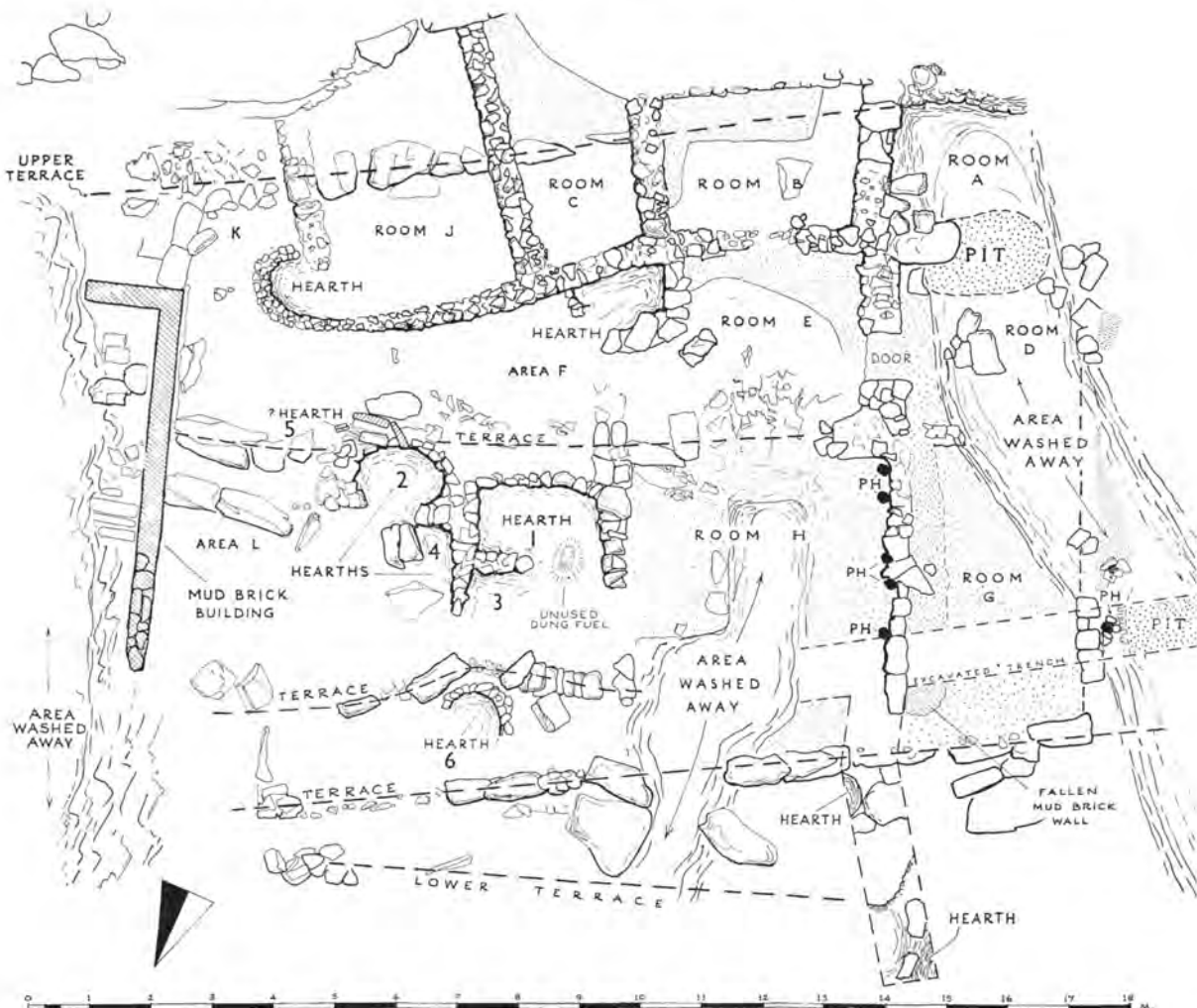


Figure 1.37. Plan of site ZIN002.011.

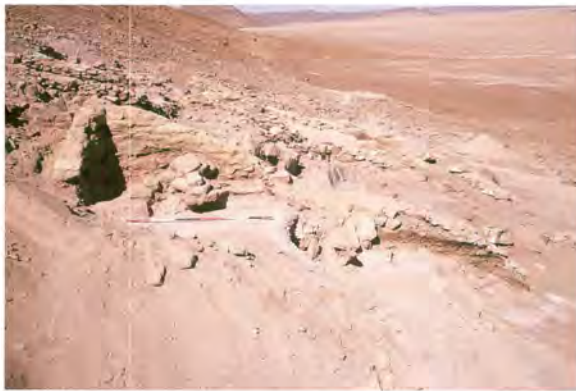


Figure 1.38. General view of mudbrick building on east side of site ZIN002.011, looking west (CMD 1965).



Figure 1.39. General view of structures building on south side of site ZIN002.011, looking east (CMD 1965).

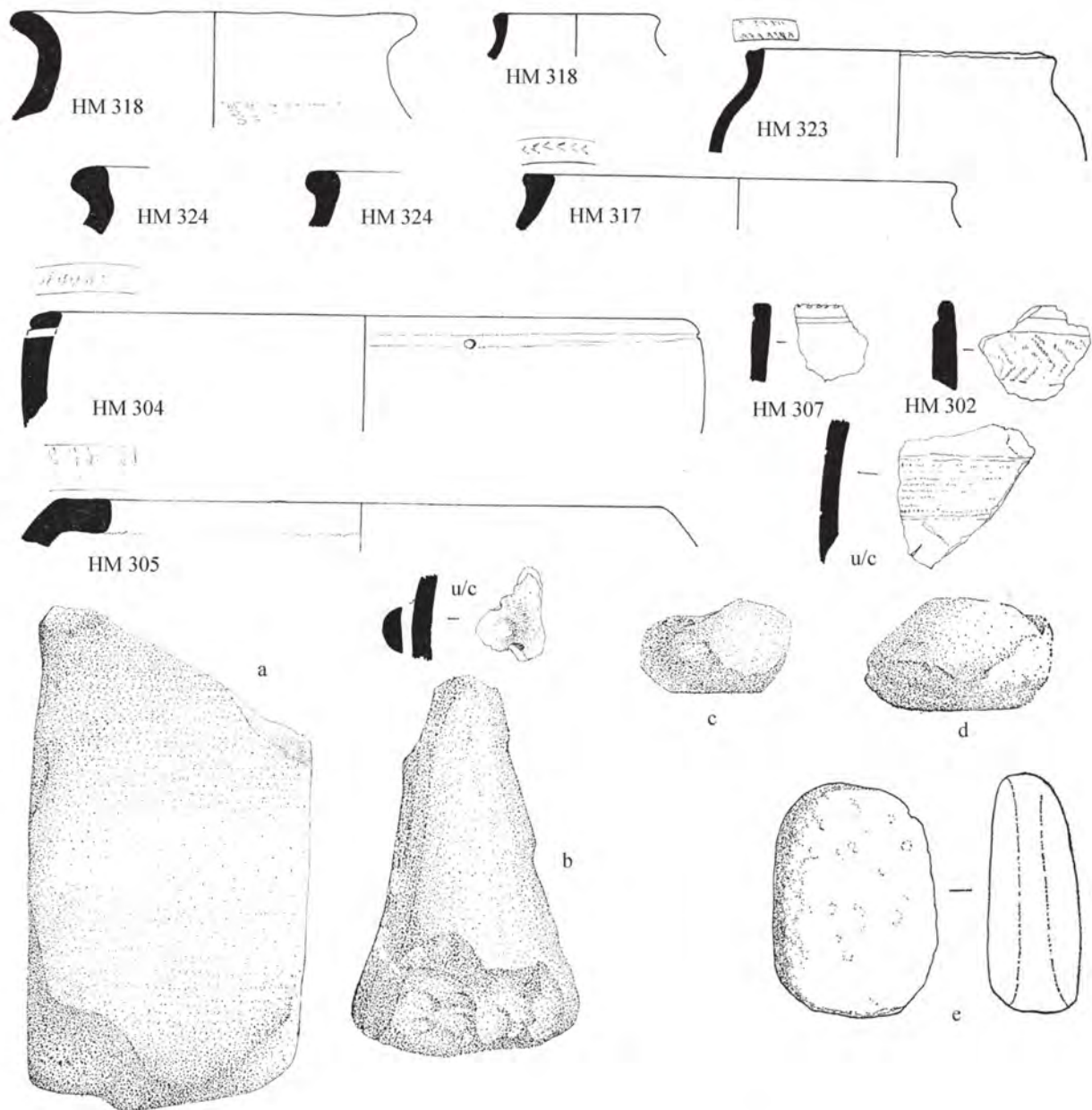


Figure 1.40. Pottery and stone rubbers from site ZIN002.011. 1:3.

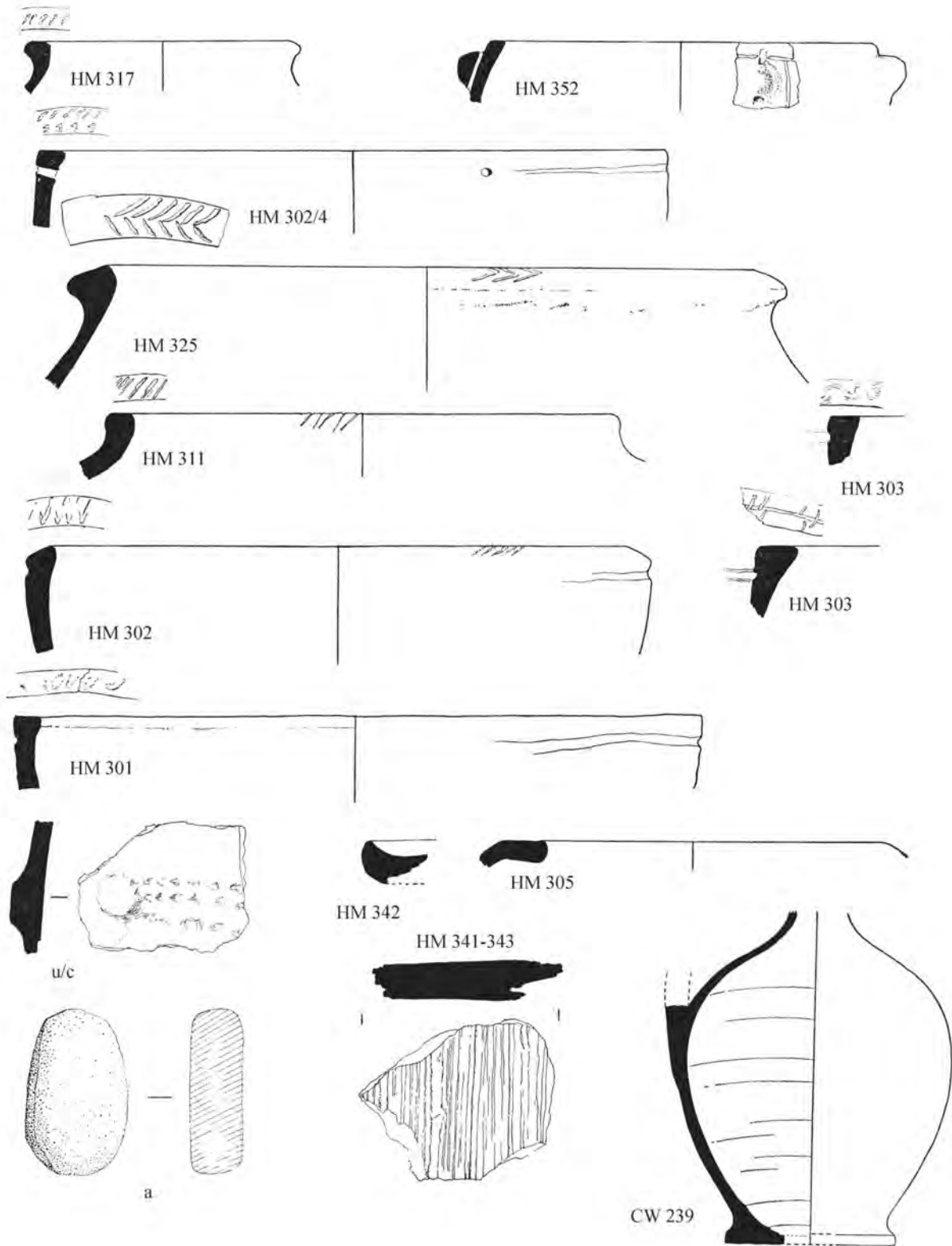


Figure 1.41. Pottery and stone rubbers from site ZIN002.011, continued. 1:3.

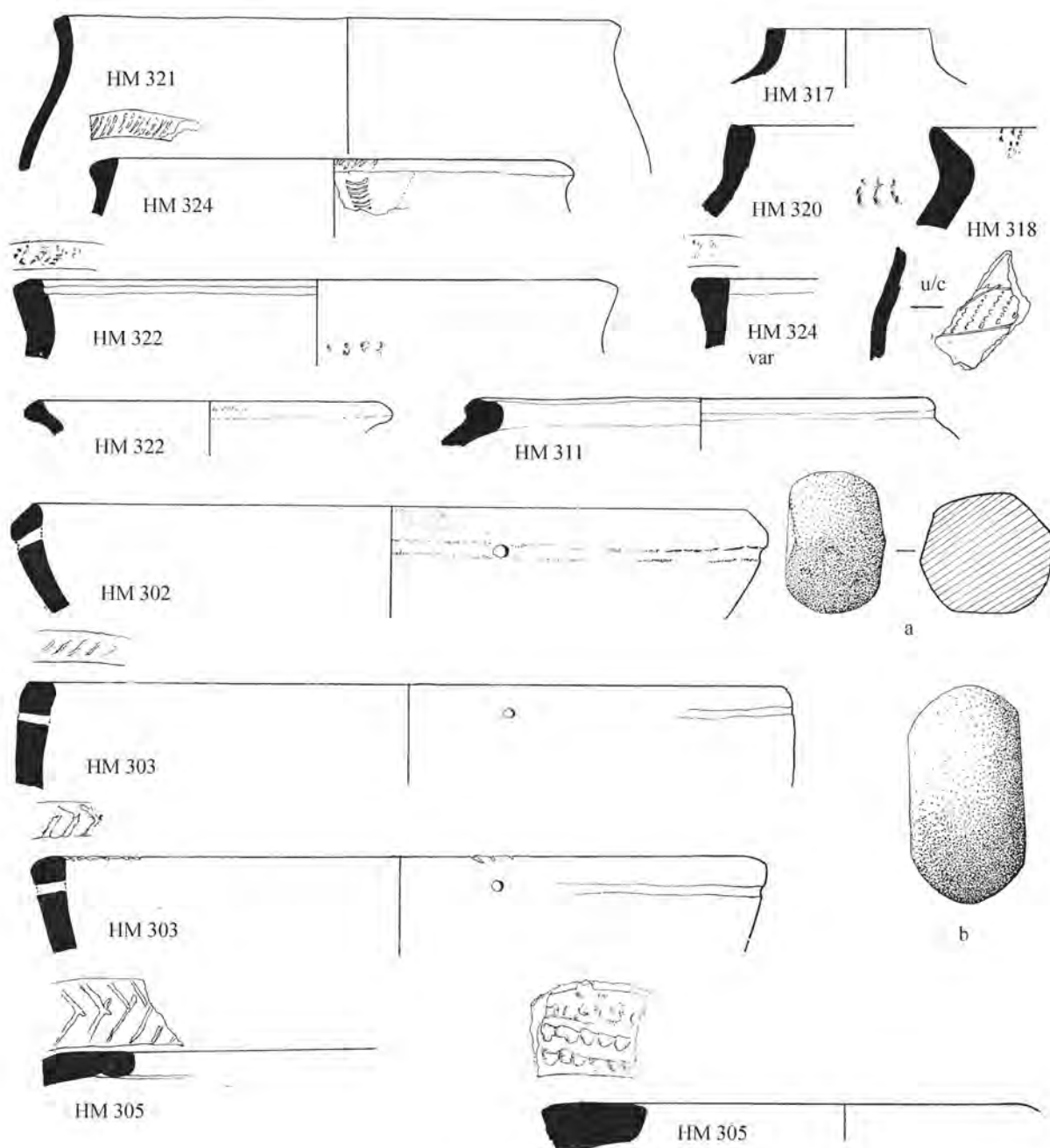


Figure 1.42. Pottery and stone rubbers from site ZIN002.011, continued. 1:3.

Table 1.1. Diagnostic pottery in AF type series from ZIN002.11.

Ware	Form code	CMD no.	Context
CW	239	429	ZIN 011 (30)
HM	302	53	ZIN 011 (10)
HM	303	1237	ZIN 011 (17)
HM	303	1172	ZIN 011 (24)
HM	305	99	ZIN 011 (20)
HM	308	1077	ZIN 011
HM	308	1077	ZIN 011

Ware	Form code	CMD no.	Context
HM	311	113	ZIN 011 (17)
HM	311	96	ZIN 011(20)
HM	315	1369	ZIN 011 (surface)
HM	322	27	ZIN 011 (8)
HM	324	61	ZIN 011 (10)
HM	325	70	ZIN 011 (20)

Handmade pottery from the excavated structures included forms **HM 301–305, 307–308, 311, 317–318, 321–322, 324–325, 342, 352** (Figs 1.40–1.42 and Table 1.1). Some of this material may have been residual or washed down from higher up the slopes, as it includes forms that appear diagnostically earlier than the Proto-Urban Garamantian date assigned to the terrace wall. The forms that appear to be diagnostically earlier are **HM 303, 305, 311** – comprising a range of globular pots with inturned rims, necked jars and deep bowls with pierced suspension holes below the rim. The top of rims were sometimes decorated with impressed chevrons, diagonal lines, with some wall sherds exhibiting zones of packed rocker or impressed decoration. The presence of *dokas* (**HM 342**) and an everted rim jar (**HM 318**) are perhaps more typical of the Proto-Urban phase. The finds also included some stone pounders and rubbers and beads in stone, ostrich eggshell and glass. The dating evidence was principally in the form of eye beads, although most of a Hellenistic flask (**CW 239**) was also found.

#### ZIN002.012

A small single-roomed building, 4.59 x 5.79 m in size, constructed on top of rather than against the terrace wall (Fig. 1.43). Its walls, although of undressed stone, were well laid and in cases had been bonded with clay. Its floor was of yellow mudbrick surviving now only along the south wall. Where it was absent multiple layers of sandy deposit were visible, comparable to those which formed the later layers of ZIN002.011. Below them the ubiquitous dung occupation lay, visible now in the gully to the west of the site.

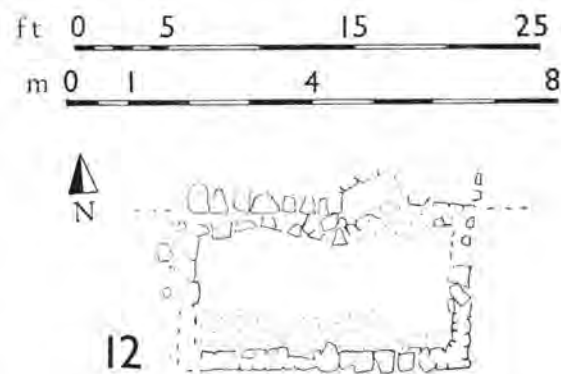


Figure 1.43. Plan of structure ZIN002.012.

#### ZIN002.013

An area immediately to the south of the principal east-west terrace wall (ZIN900.6) at the foot of the north slopes of the hill was selected for excavation (Fig. 1.44). Partial destruction of the terrace wall by gullies and hill-wash in a few places seemed to indicate that there might be substantial deposits behind it. Two trenches were laid out in north to south lines extending across the terrace wall, the East Trench (13E) and the West Trench (13W). Two principal phases of building were attested, separated by a period of abandonment (Figs 1.45–1.46). The first involved the construction of what appears to have been a rough dry-stone building in the East Trench (building 52–61 in Daniels 1968a). This seems to have had an apse on its north side (Fig. 1.47). This building eventually filled with occupation debris and at some point seems to have been abandoned, its south wall buried beneath a stony layer 42. Subsequent to this abandonment, the terrace wall was built, the south face of which gradually became buried by hill-wash and further organic occupation layers.

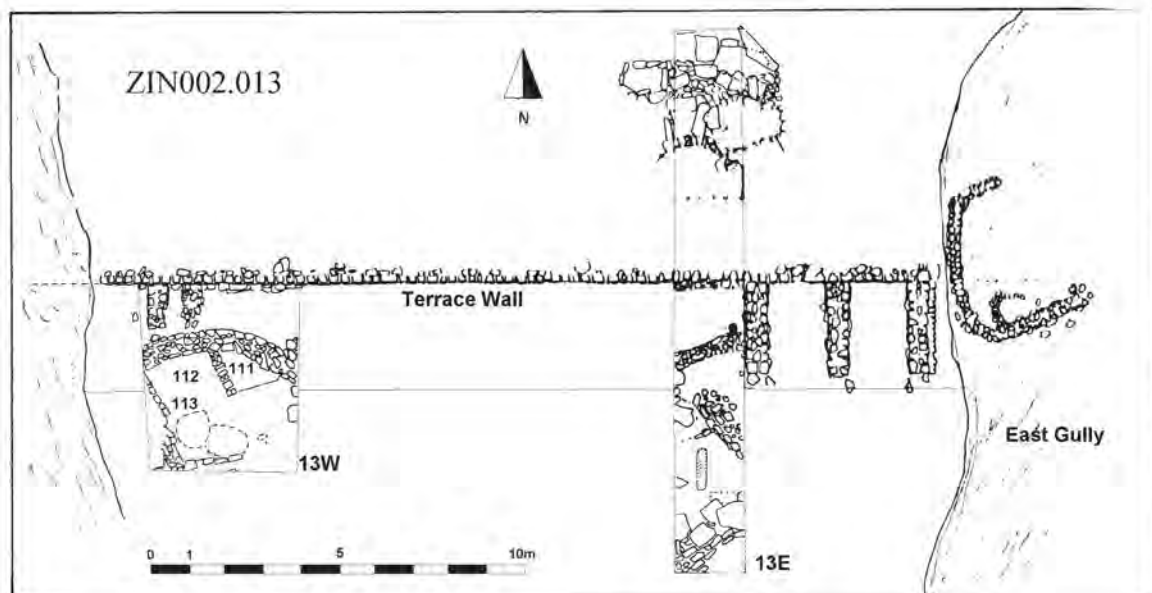


Figure 1.44. Plan of site ZIN002.013, trenches by terrace wall ZIN002.119/900.006.



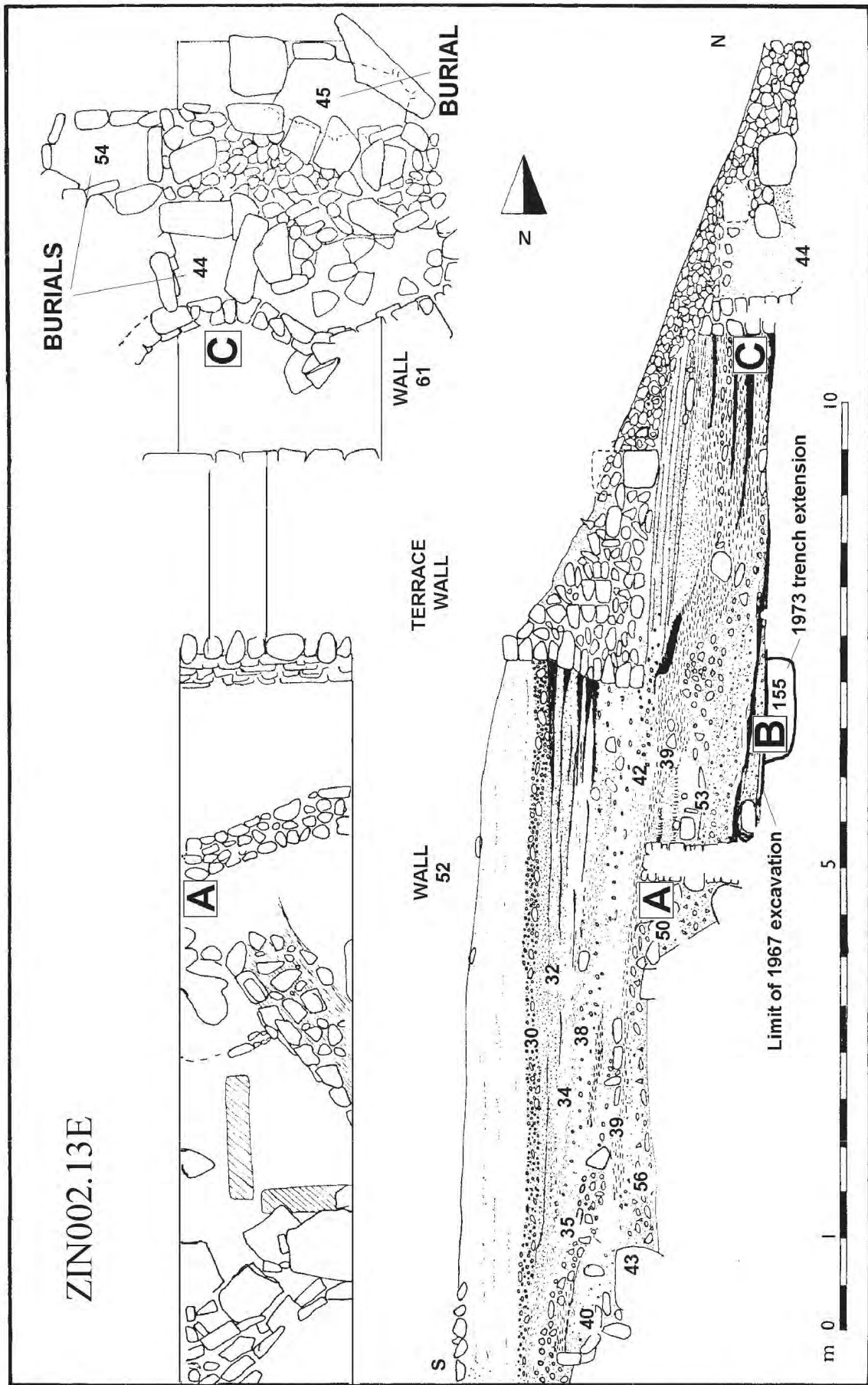


Figure 1.45. Plan and section of site ZIN002.013E, showing locations of key AMS dating samples A-C.

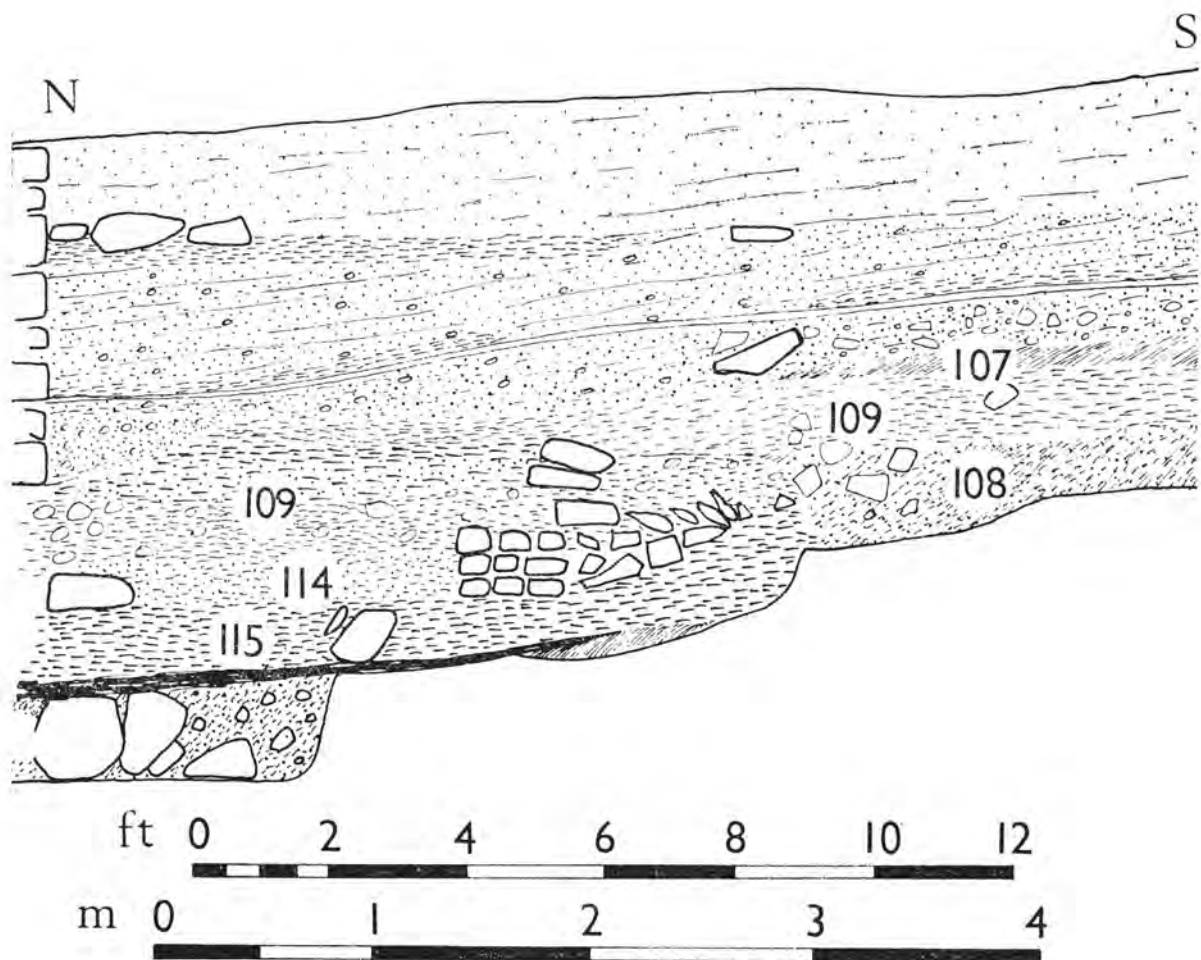


Figure 1.46. East section of trench ZIN002.013W.

Essentially the same pattern was found at the West Trench. The pattern was clear enough that the layers in the two trenches could be equated with one another with confidence. The radiocarbon data allows us to put some dates to this sequence (Table 1.2). The dating for the later phases, from the end of Phase 2 onwards, comes from the presence of eye beads in the accumulation

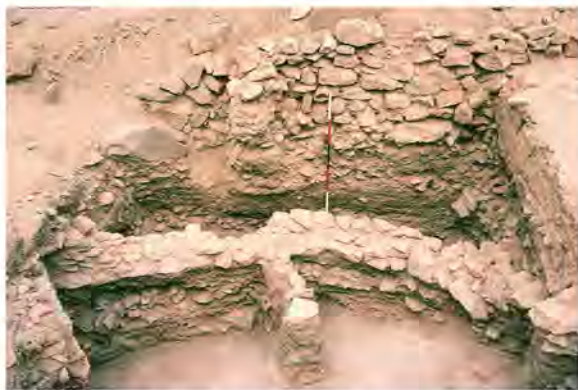


Figure 1.47. Pre-terrace wall features 111–113 in ZIN002.013W, looking north (CMD 1967).

levels behind the terrace wall, which date to between the 3<sup>rd</sup> and 1<sup>st</sup> centuries BC (Daniels 1968a, 150). These dates are only approximate; the actual radiocarbon dates as returned by the labs are given in Table 1.5:

The material culture recorded from the excavations at ZIN002.013 represents a good sample of Early and Proto-Urban Garamantian material, including a range of handmade pottery forms, lithic tools (predominantly scrapers), glass, stone and ostrich eggshell beads, a bead-grinder and various stone rubbers or pounders (Figs 1.48–1.55). The pottery forms include HM 301–305, 308, 310–311, 313–315, 317, 322–27, 330, 332, 337, 341–343, 345, 347, 349 (see Table 1.3). Forms that seem to have been characteristic of the earlier levels of activity include globular necked jars with the upper surface of the rim commonly decorated (HM 311) and deep globular jars with in-turned upper walls, again often with bands of decoration on the rim and sometimes also on the upper walls (HM 305–306). Other typical forms are deep bowls with horizontal piercings just below the rim (HM 303), presumably suspension points.

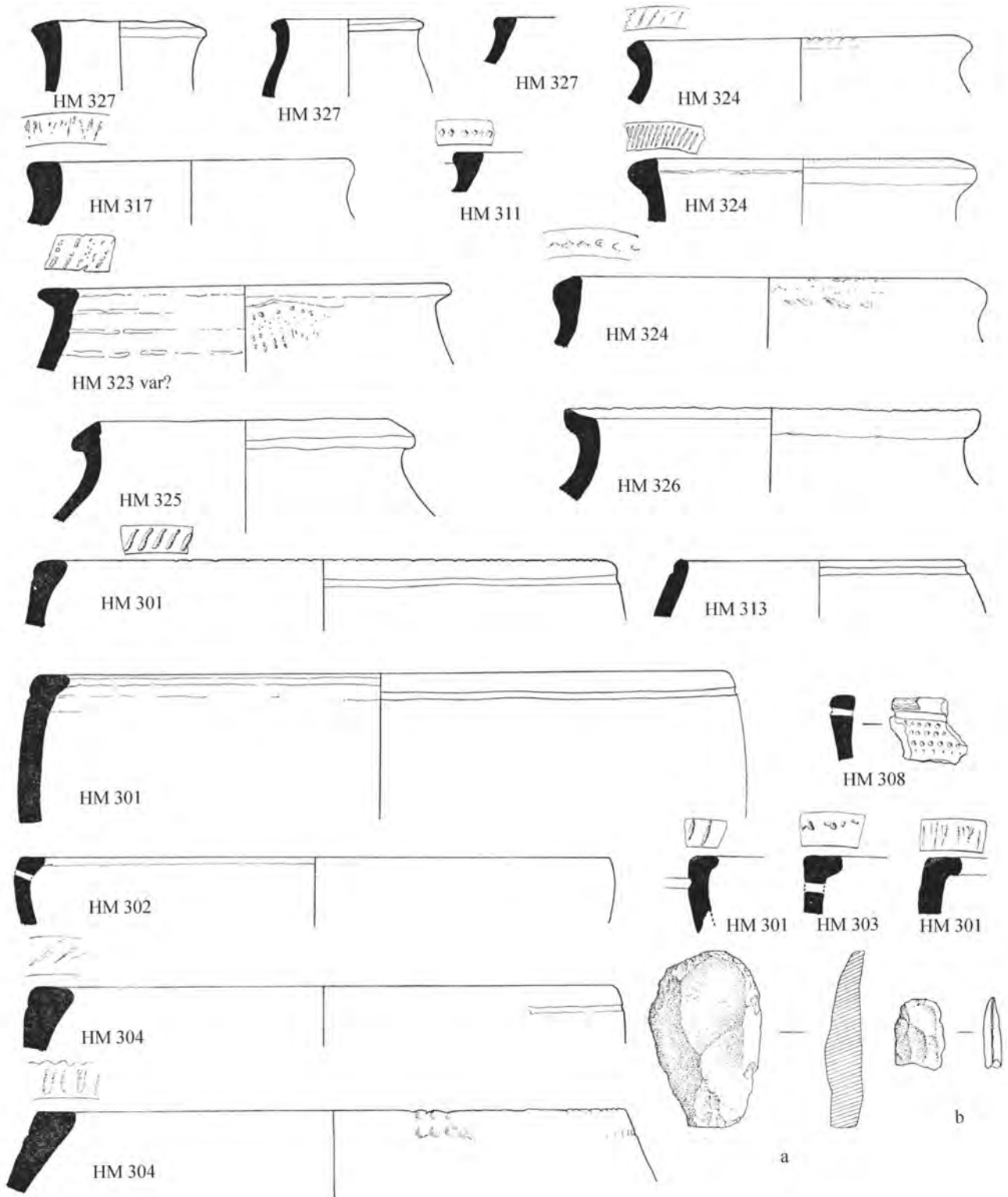


Figure 1.48. Pottery and lithics from late levels south of terrace wall, ZIN002.013. 1:3.

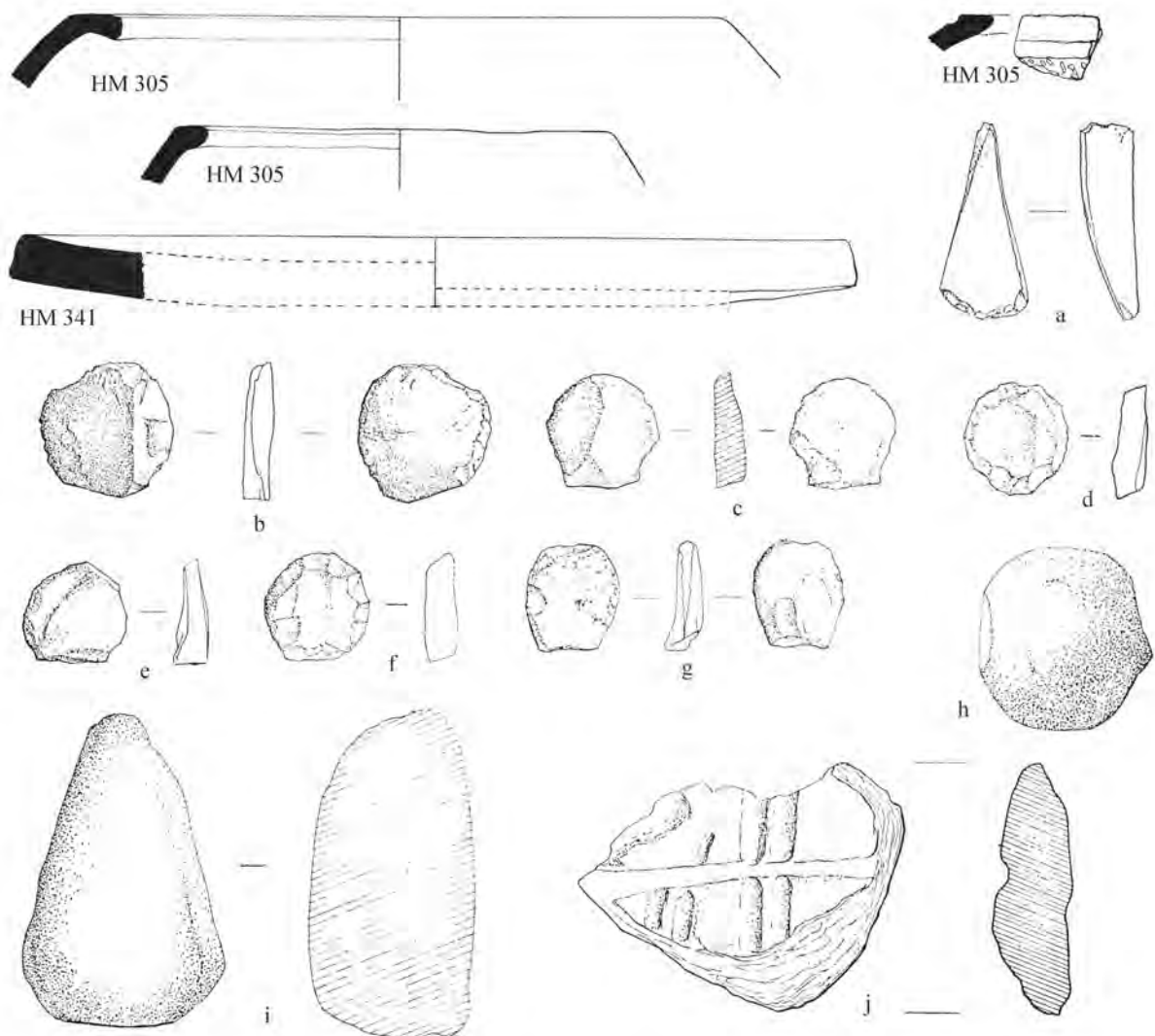


Figure 1.49. Pottery, stone rubbers, bead grinder and lithics from late levels south of terrace wall, ZIN002.013. 1:3.

Table 1.2. Summary of phasing at ZIN002.013.

Phase	Dates	Activity	13E contexts	13W contexts
3/4	300 BC–50 BC	Occupation /abandonment/ cemetery	30, 32, 34, 38, 35	101, 102, 103
3	c.300 BC	Terrace wall built		
	610–300 BC	Abandonment	42	107
2	920–390 cal BC; Sample C (on Fig. 1.45)	Occupation debris	39	109
2	920–410 cal BC; Sample A	Building 52–61	56, 51, 50, 53	108
1	1060–590 cal BC; Sample B	Hearths	155	111, 112, 113

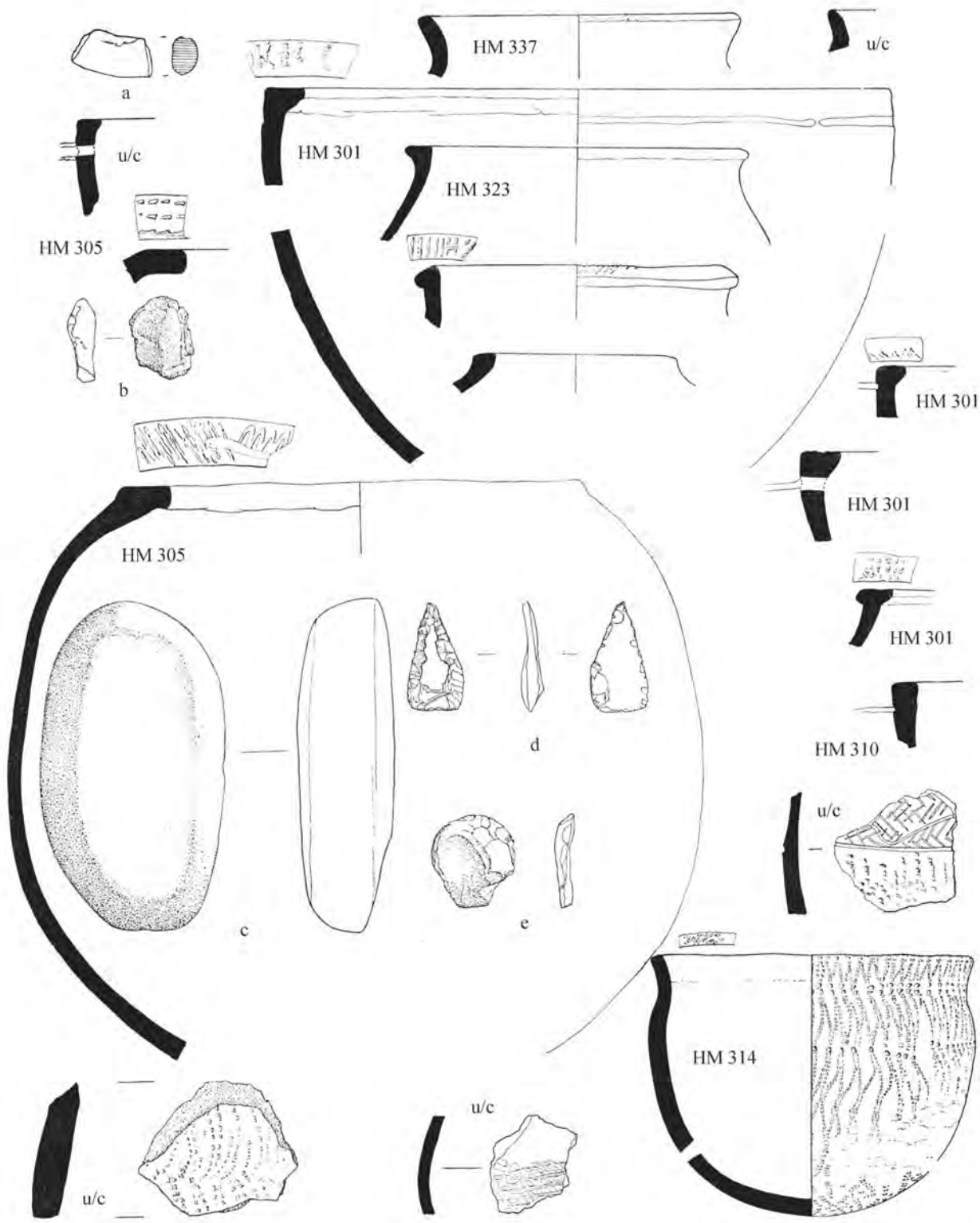


Figure 1.50. Pottery and lithics from levels 38-41, ZIN002.013. 1:3.

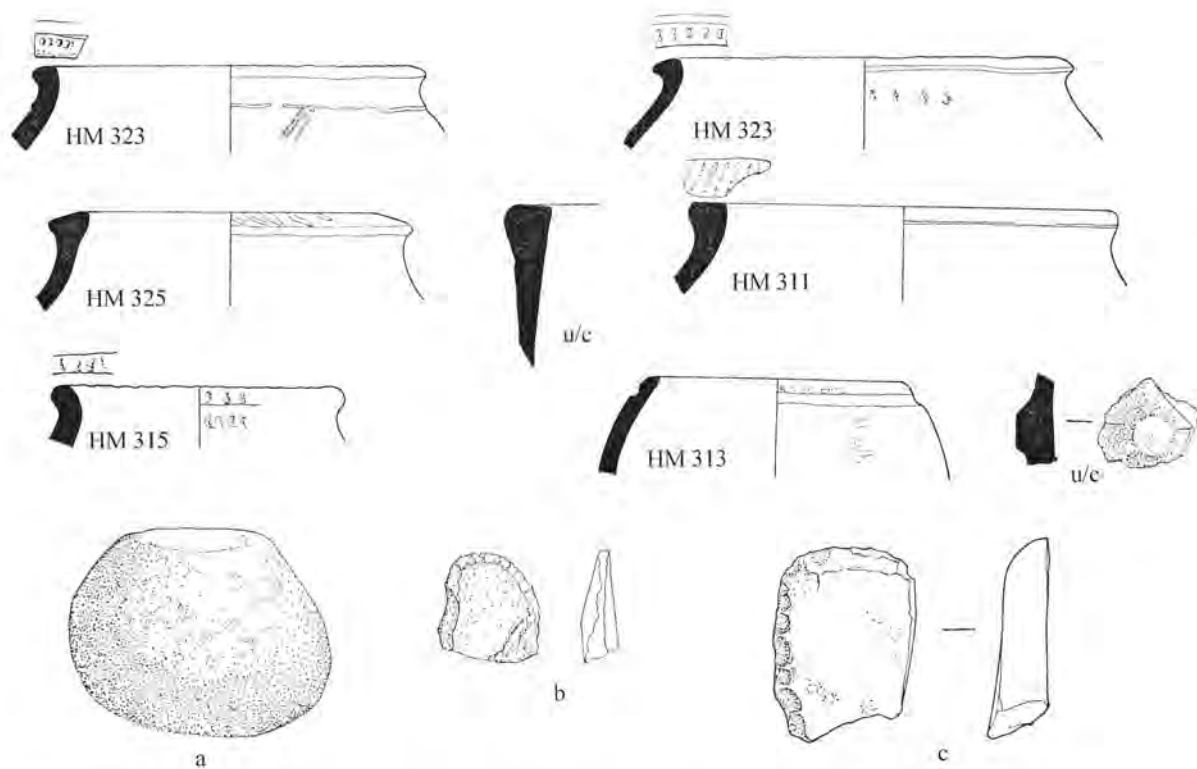


Figure 1.51. Pottery, stone rubber and lithics from earliest levels south of terrace wall, ZIN002.013E. 1:3.

A complete example of a globular wide-mouth bowl or jar (HM 314) was covered externally with zig-zag rocker decoration. Several unclassified decorated sherds (for example on Figs 1.50, 1.52, 1.54, 1.55) resemble Pastoral pottery illustrated in *AF 2* (Mattingly 2007, catalogue nos 1, 2 5, 19). There are clear affinities between these pottery vessels and the lithics with the Late Pastoral tradition. Vessels with high collar rims (HM 335) are absent, while globular jars with wide-played everted rims (HM 337) and the flat dishes (HM 341, *dokas*) appear to be feature of the latest levels of

occupation/activity. As we shall see, these are more commonly represented at Classic Garamantian sites, such as Sāniat Jibrīl.

#### ZIN002.014 and ZIN002.016

Occupation material a few metres upslope and to the west of ZIN002.011.

#### ZIN002.015

A cist grave a few metres upslope to the north of ZIN002.011.

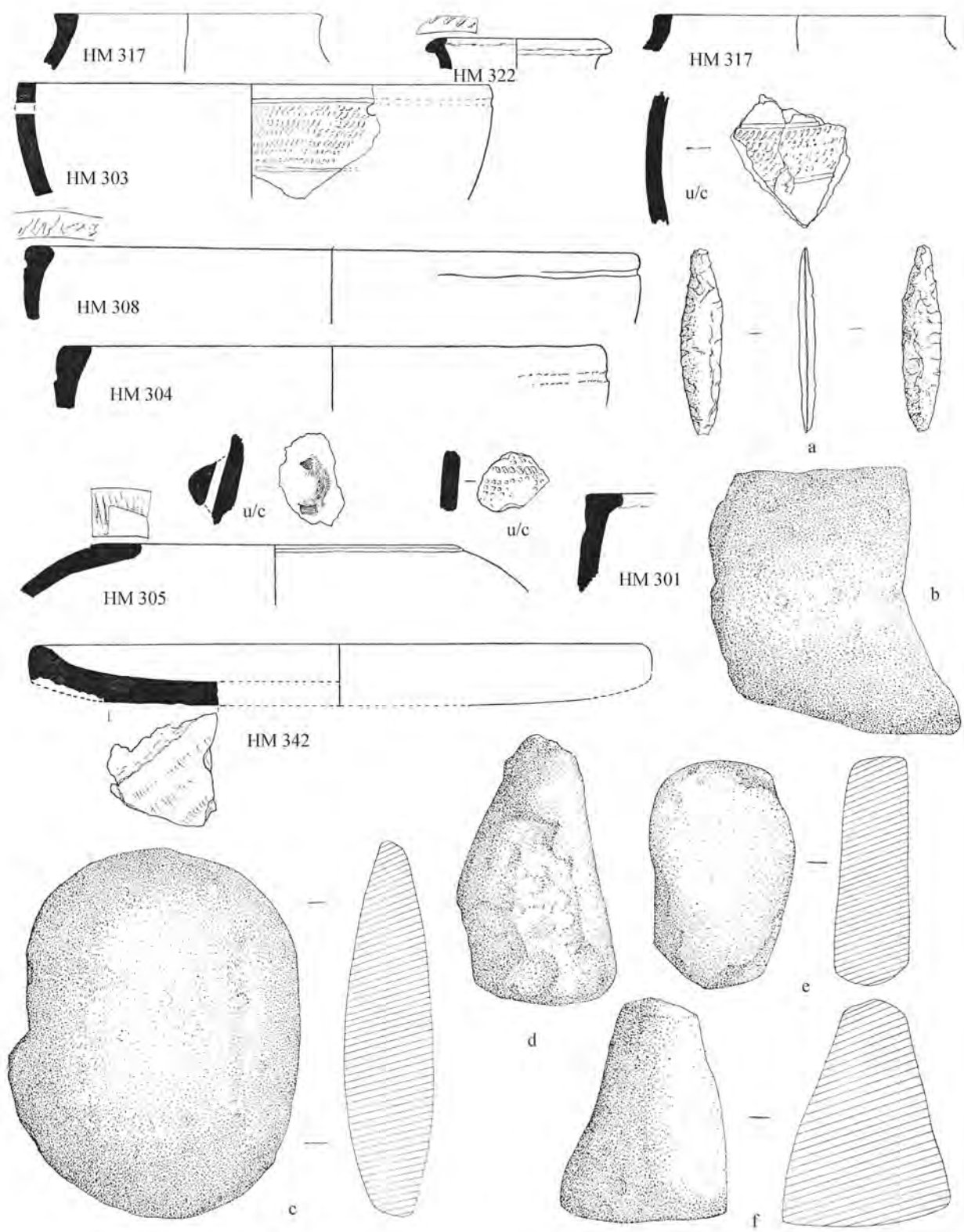


Figure 1.52. Pottery, stone rubbers and lithics from building in East Gully, ZIN002.013. 1:3.

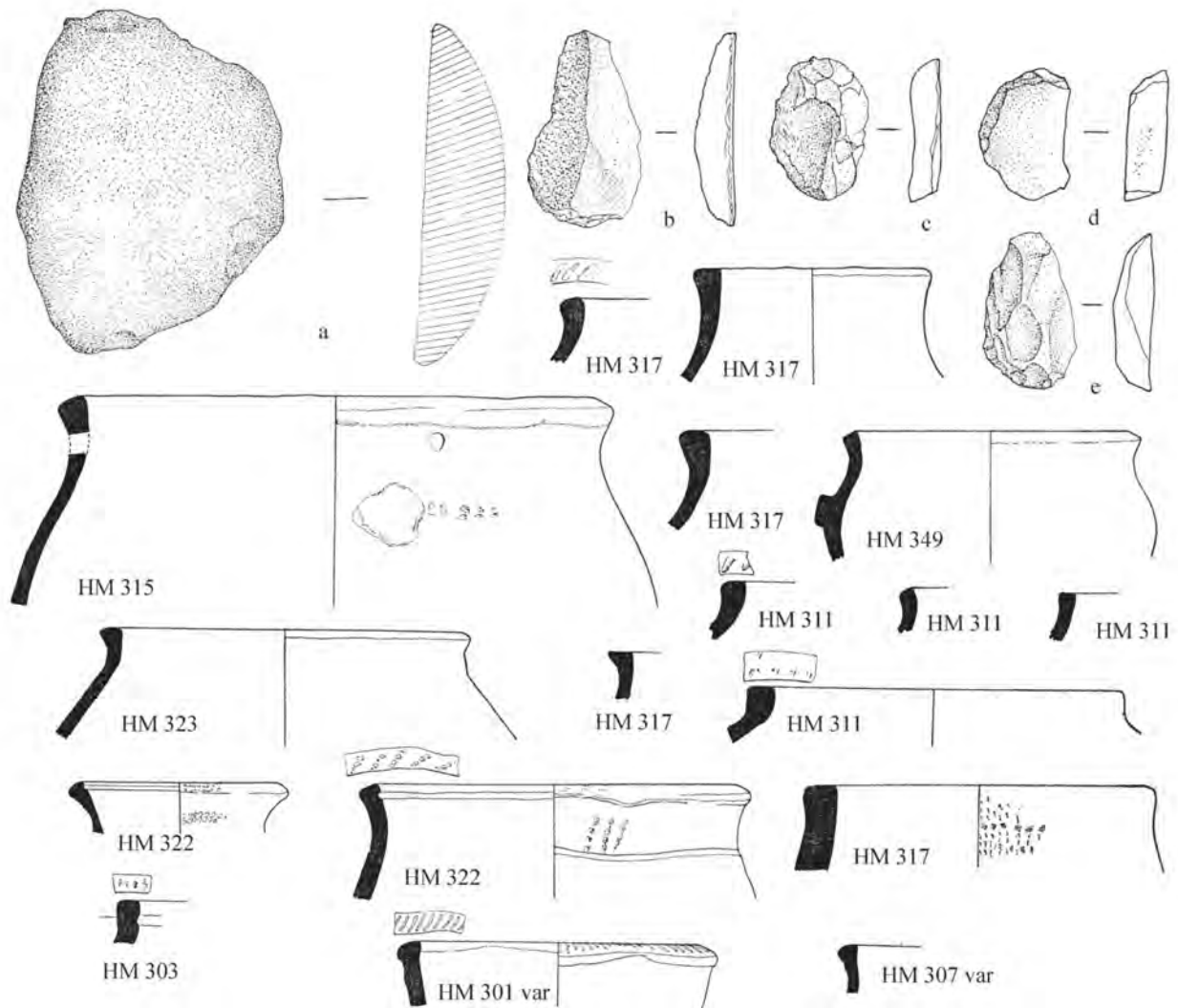


Figure 1.53. Pottery, stone rubbers and lithics from building in East Gully and sealing layer in west trench, ZIN002.013. 1:3.

Table 1.3. Diagnostic pottery in AF type series from ZIN002.13.

Ware	Form code	CMD no.	Context
HM	301	58	ZIN 013 (1)
HM	301	1231	ZIN 013 (110)
HM	301	1251	ZIN 013 (110)
HM	301	1133	ZIN 013 (32)
HM	302	1228	ZIN 013 (108)
HM	302	1101	ZIN 013 (107)
HM	302	1242	ZIN 013 (36)
HM	303	116	ZIN 013 (u/s)
HM	304	4	ZIN 013
HM	304	1243	ZIN 013 (109)
HM	305	1089	ZIN 013 (105)

Ware	Form code	CMD no.	Context
HM	305	1211	ZIN 013 (108)
HM	305	1185	ZIN 013 (35)
HM	305	26	ZIN 013 (4)
HM	305	1356	ZIN 013 (42)
HM	310	1355	ZIN 013 (1)
HM	311	1194	ZIN 013 (1)
HM	311	1191	ZIN 013 (107)
HM	311	1246	ZIN 013 (109)
HM	311	1178	ZIN 013 (110)
HM	311	1245	ZIN 013 (111)
HM	311	1422	ZIN 013 (111)



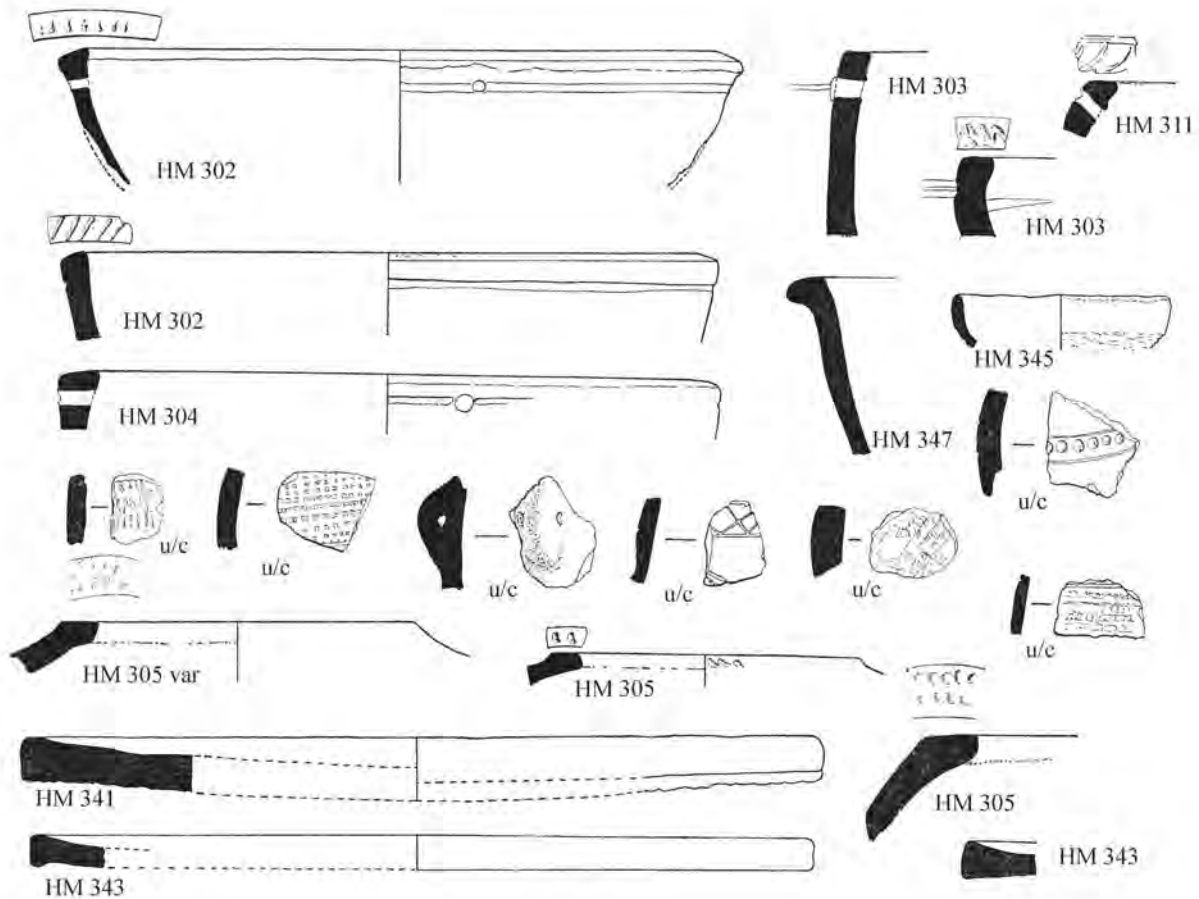


Figure 1.54. Pottery from building in west trench, ZIN002.013. 1:3.

Table 1.3. Diagnostic pottery in AF type series from ZIN002.13. (cont.)

Ware	Form code	CMD no.	Context	Ware	Form code	CMD no.	Context
HM	311	1144	ZIN 013 (32)	HM	323	1066	ZIN 013 (48)
HM	311	1081	ZIN 013 (111)	HM	323	1429	ZIN 013 (50)
HM	313	1351	ZIN 013 (56)	HM	323	1030	ZIN 013, (39)
HM	314	1411	ZIN 013 (39)	HM	324	106	ZIN 013 (1)
HM	315	1418	ZIN 013 (115)	HM	324	1238	ZIN 013 (108)
HM	315	2	ZIN 013 (14)	HM	324	1098	ZIN 013 (32)
HM	315	1319	ZIN 013 (29)	HM	324	1442	ZIN 013 (39)
HM	315	1224	ZIN 013 (50)	HM	325	1026	ZIN 013 (53)
HM	317	108	ZIN 013 (1)	HM	325	1104	ZIN 013 (7)
HM	317	1097	ZIN 013 (107)	HM	326	1092	ZIN 013 (103)
HM	322	1105	ZIN 013 (103)	HM	327	1118	ZIN 013 (106)
HM	322	1186	ZIN 013 (108)	HM	327	1146	ZIN 013 (109)
HM	322	1195	ZIN 013 (109)	HM	330	1088	ZIN 013 (107)
HM	322	1210	ZIN 013 (11)	HM	332	1443	ZIN 013 (5)
HM	322	1197	ZIN 013 (111)	HM	337	1432	ZIN 013 (39)
HM	323	1093	ZIN 013 (107)	HM	341	1099	ZIN 013

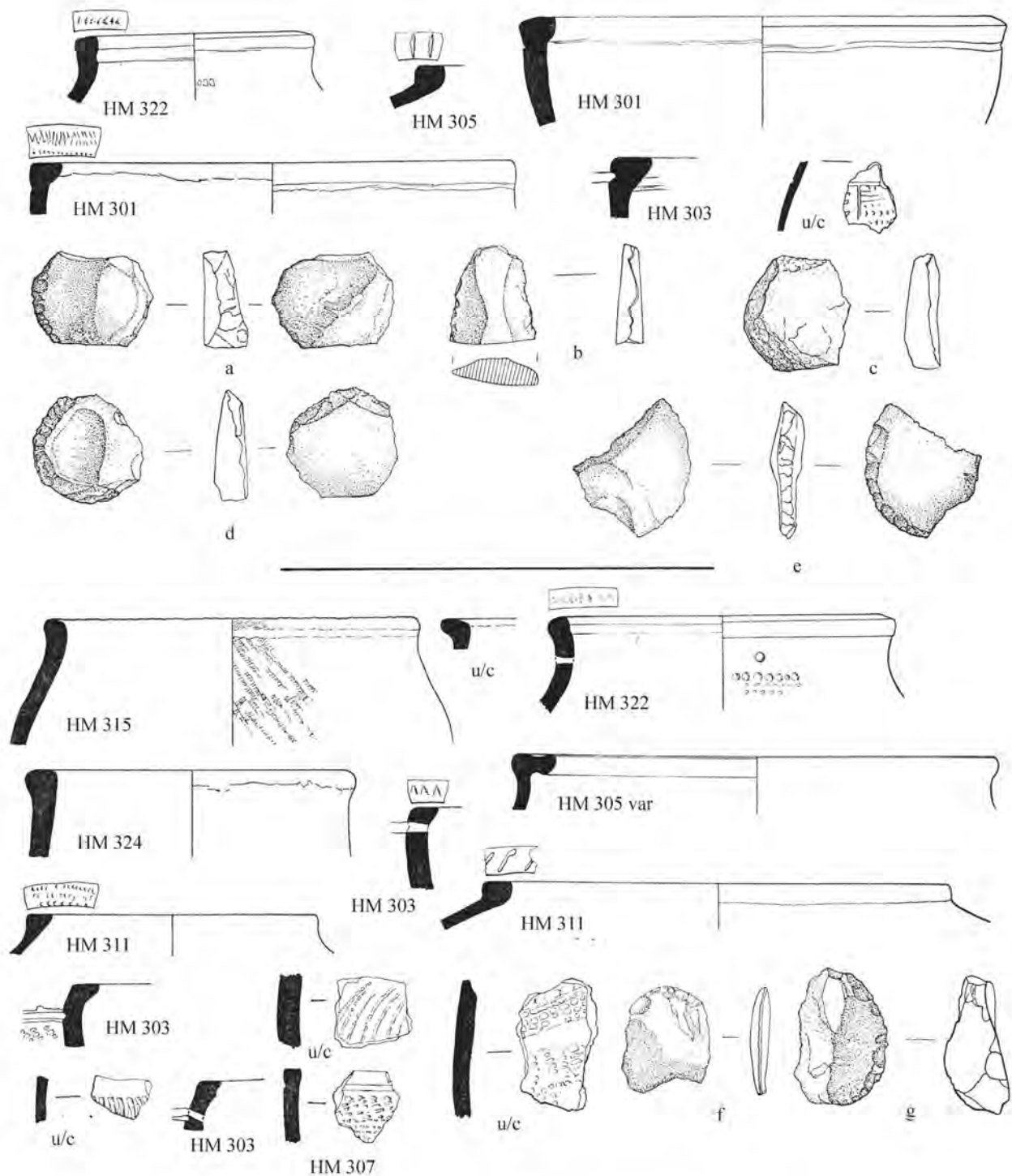


Figure 1.55. Pottery and lithics from building in west trench (132–42) and earlier hearths, ZIN002.013. 1:3.

#### ZIN002.017

This comprised traces of a very rough stone building, partly carried away by a gully and probably originally c. 3.05 x 1.52 m in size, with thick occupation material all round. Finds included a **HM 313** jar.

#### ZIN002.018

This was a corner of dry-stone walling (1.2 x 1.2 m) near and perhaps related to ZIN002.017, visible in the opposite side of a gully, with some occupation material to the east.

**ZIN002.113**

A small habitation site probably on two terraces and covering an area approximately 6.10 x 7.93 m. A good length of dry-stone wall survives. Surface find of one scraper.

**ZIN002.116–117**

Two cemeteries of Roman date totalling several hundred graves, now mostly robbed (Fig. 1.56). Dated by fineware sherds to the 1<sup>st</sup> to 3<sup>rd</sup> centuries AD. Other fragments include inturned bowls and impressed ware pieces with date-stone decoration (Fig. 1.83).

**ZIN002.118**

A very thick layer of occupation material spread over a considerable area but now generally covered by scree debris. Finds included fragments of several vessels (HM 306, 317) and scrapers.



Figure 1.56. View over cemetery ZIN002.117, looking north (CMD 1965).

**ZIN002.119, building**

A rectangular building 4.26 x 3 m in size consisting of a single room (Figs 1.57–1.58). The front and side walls have survived in plan but the rear wall has been almost completely removed. The construction of the walls varied from a single block 1.5 m in length to minor infill. The south-west corner consisted of hard yellow mudbrick, and so apparently had the rear wall of the building, now removed. The floor was described as being made up of laid soft yellow mudbrick, missing against the north wall. Below it lay the general dung, debris and scree material common to most of the sites on Zinkekrā. The pottery from the building is amongst the latest found on any habitation site on Zinkekrā and includes an imported fragment of ARS (FW 524) datable to the late 1<sup>st</sup> or possibly early 2<sup>nd</sup> century AD. This sherd was found against the exterior wall of the building and was not sealed; it could be a stray from the nearby cemetery ZIN002.173. The other finds from the building and directly to the north of it include

handmade forms HM 301, 303, 308, 317, 323, 327, 331 (Fig. 1.59).

**ZIN002.119, wall**

A length of some 45.6 m of the terrace wall was cleared to the north of building ZIN002.119 in order to inspect its construction. The outer face was found to vary considerably, rough blocks 1.21 x 0.52 m, 0.65 x 0.25 m and 0.45 x 0.17 m were combined with lesser infill as small as 0.31 x 0.15 m in size. Rough coursing occurred, but not consistently, while some lengths were built on slightly different alignments from others. At its highest the wall survived to approximately 1 m, but in other places it had vanished completely. The average width was 2.1 m and the inner face was built of smaller stones than the outer. As noted on ZIN002.013 the inner face survived to a greater height than the outer. The whole appeared to have been haphazardly built, often in independent lengths, and possibly subsequently repaired in places. Much of the pottery recovered was Roman-date material (including a wheelmade flanged bowl CW 108, amphora sherds and a possible flagon sherd) deriving from the nearby cemetery ZIN002.173.

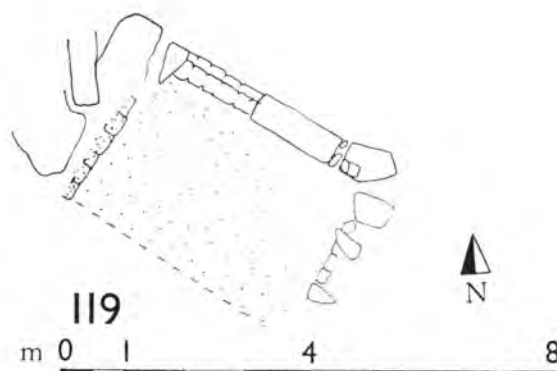


Figure 1.57. Plan of structure ZIN002.119.



Figure 1.58. Foundations of structure ZIN002.119, looking east (CMD 1967).

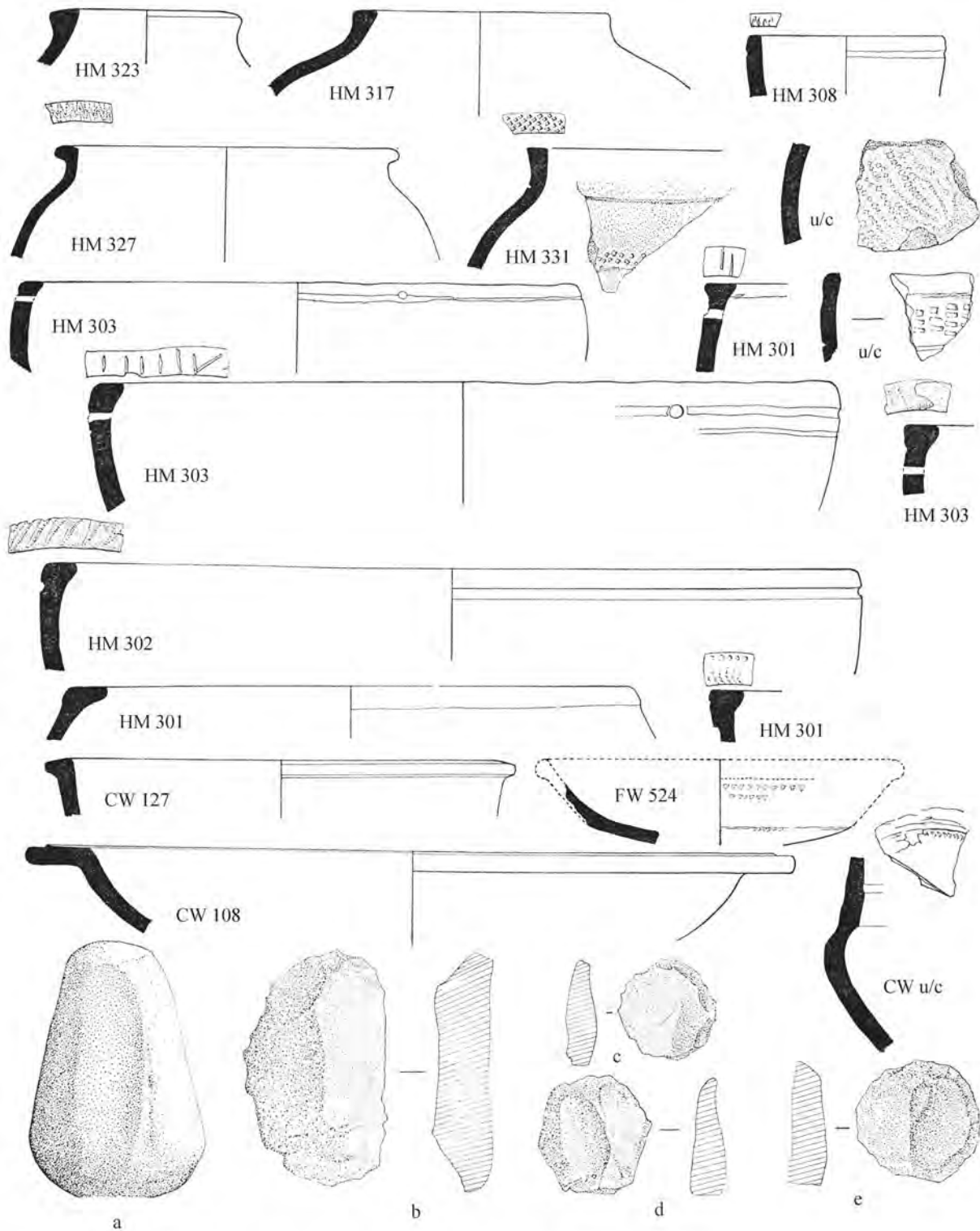


Figure 1.59. Pottery, rubber and lithics from terrace wall and building ZIN002.119. 1:3.

**ZIN002.120**

This building was of more complex plan than most others, consisting of three or possibly four rooms (Fig. 1.60). It lay on a considerable slope of the hillside, which was responsible for the destruction, by slip, of the north of the two east rooms (Fig. 1.61).

The west room was rectangular, 4.26 x 3.87 m in size internally, with only slight traces of a yellow mudbrick floor. The north wall survived only partly, but was based at its west end on two large rough stones. The north 1.85 m of the west wall was of stone, the rest of mudbrick, as was the south wall. For much of its length only the outer face of the east wall survived.

The rear (southernmost) of the east rooms was badly eroded by a small gully which had cut back across the floor, most of which it had removed. As with the west room the north wall and north halves of the east and west walls were of stone. The south wall and south portions of the side walls were of mudbrick, four courses of which survived at the south-west corner. The floor of the room was badly eroded but it must originally either have been constructed upon a considerable slope, or (less likely) have been stepped.

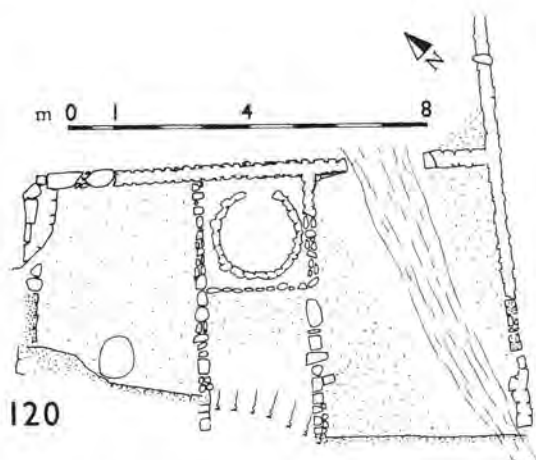


Figure 1.60. Plan of building ZIN002.120.



Figure 1.61. General view of ZIN002.120 looking north (CMD 1967).

The north of the east rooms had been almost completely destroyed by the small gully that had damaged the south room. Only 3.35 m of the east wall remained, with traces of its mudbrick floor. The slope of the floor must have been even greater than that of the south room. Between the east and west rooms a small connecting room or corridor had existed. Over the north part of this lay a circular stone foundation, approximately 1.67 m internally in diameter. It was most probably later than the building and by its circular shape very reminiscent of the floor plan of a tent or *zariba* hut. Below this platform lay 0.31 m of accumulation and below that the mudbrick floor of the room. Although the floor had extended further south than the tent foundation no satisfactory south wall was discovered. The site may well have originally consisted of two quite separate buildings later joined by the central room. As there was no stratification the finds from the site are not distinguished by location. Handmade forms recovered included late forms **HM 342–343** (*dokas*), with **HM 337–338** also represented, along with a few lithic tools (Fig. 1.62).

**ZIN002.125**

This site lay almost halfway up the hillside to the south of ZIN002.020 and consisted of two rooms probably originally joined but now separated by a gully (Fig. 1.63). The east measured 2 x 2.75 m in size, although only its east wall and fragments of its north and south now survive. The walls were of stone and bedded on the natural rock; the floor of the room was terraced into the hillside (Fig. 1.64). The west room, 2.13 x 2.74 m in size, survived a little better. The north wall had gone but its stone foundation remained. The east and south walls survived, both of dry-stone, also enough of the west wall to show where its line had been. The floor must have been on a slight slope. Surface pottery (Fig. 1.62,) included **HM 337** (everted rim jar) and **HM 301** (inturned rim deep bowl).

**ZIN002.131**

This was a substantial piece of dry-stone wall approximately 21.4 m in length with occupation material spread over a wide surrounding area. A rim of a bowl of type **HM 301/302** was recorded here.

**ZIN002.133**

This dry-stone-wall building was situated on the edge of a small gully, the rear wall still standing 0.76 m at highest. Two external hearth areas and thick occupation material were located.

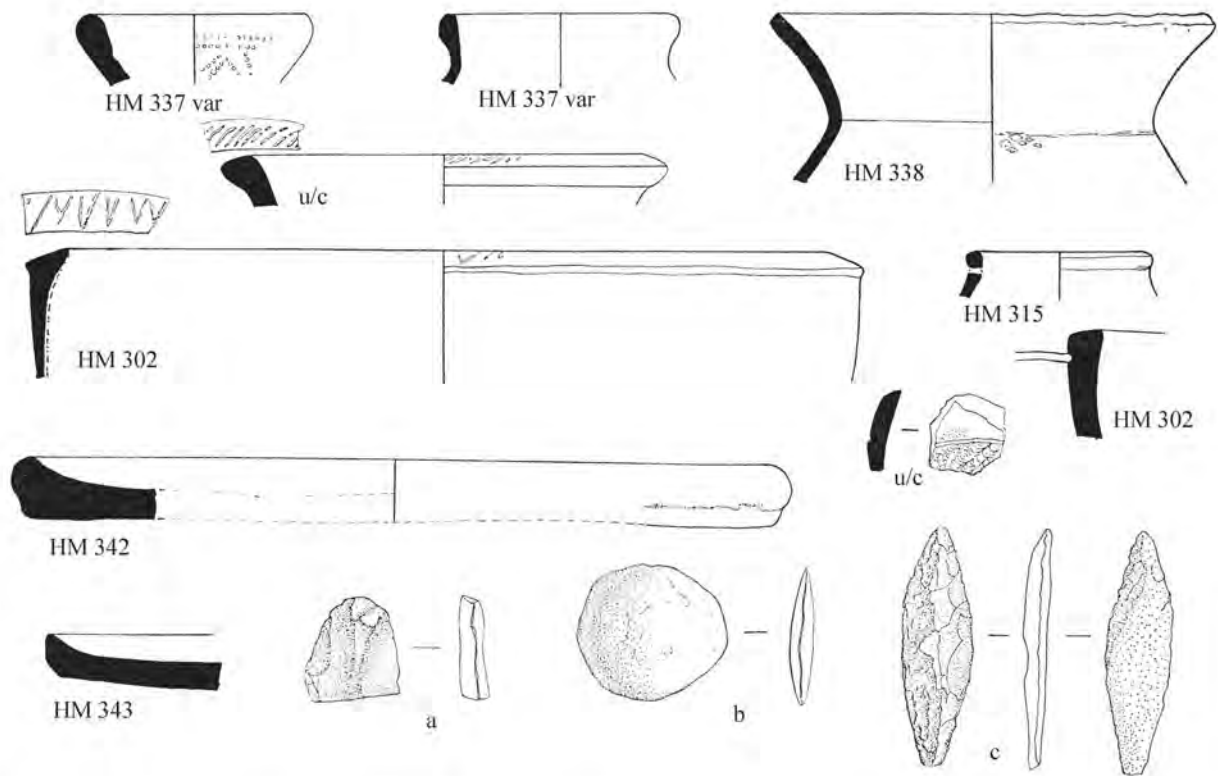


Figure 1.62. Pottery and lithics from ZIN002.120 and 125. 1:3.

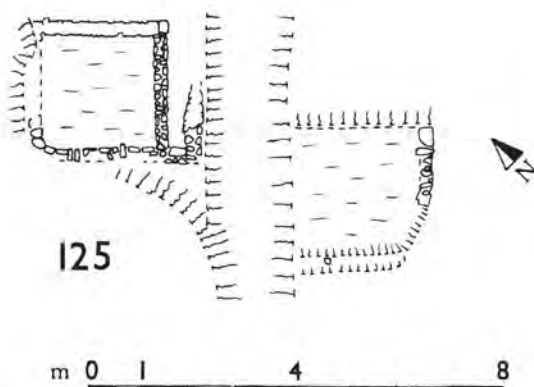


Figure 1.63. Plan of ZIN002.125.



Figure 1.64. General view of ZIN002.125 looking west (CMD 1967).

**ZIN002.136**

A large spread of occupation material, but no structures.

**ZIN002.140**

Occupation debris. A rim of a bowl of type HM 301/302 was recorded here.

**ZIN002.169**

This small platform was defined by low dry-stone walls delimiting the south, east and north sides (approximately 3.0 x 6.1 m in size). It was partly destroyed by a gully on its west side, but much occupation material was evident.

**ZIN002.170**

The corner of a platform and a possible hearth were noted downslope and to north of ZIN002.011.

**ZIN002.171**

This is reported only as an isolated grave. It lies between two gullies and is to the south of ZIN002.011.

**ZIN002.172**

Deposits of occupation material at various points downslope of ZIN002.011.

**ZIN002.173**

A small cemetery just to the south (upslope) of the path running past ZIN002.011. Early ARS found here dates this cemetery to the late 1<sup>st</sup> and early 2<sup>nd</sup>-century AD.

**ZIN002.174–ZIN002.181**

Deposits of occupation material at various points downslope of ZIN002.011.

**ZIN002.182–185, ZIN002.187–188**

These were isolated deposits of occupation material either side of the zig-zag path which led to the top of the hill. ZIN002.185 and ZIN002.186 had probable wall fragments associated with them.

**ZIN002.186**

This dry-stone wall building consisted of two rooms. The front wall has been eroded away.

**ZIN002.189–193**

These were further wall fragments either side of the zig-zag path leading up to the top of the hill.

**ZIN002.194–195**

Fragments of walling and occupation material.

**ZIN002.196–7**

A large complex of dry-stone walls and occupation material spread over both sides of a gully.

**ZIN002.198**

This was a cave site, associated with some lengths of dry-stone walling and Berber Red handmade pottery. A small scraper was found inside the cave and a possible robbed grave outside.

**ZIN002.199**

Thick occupation material on slope. Possible hearth on the west side.

**ZIN002.200**

Occupation material, with a possible dry-stone wall.

**ZIN002.201**

A small dry-stone wall building, 3.96 x 2.28 m in size.

**ZIN002.202**

Occupation material. Several rim fragments of turned bowls of type HM 301/302 were recorded here.

**ZIN002.203**

Corner of a platform with a thick layer of ash.

**ZIN002.204–206**

Occupation debris.

**ZIN002.207**

A slight wall, possibly with a hearth.

**ZIN002.208**

Occupation debris.

**ZIN002.209**

This was a small terrace behind and a little above ZIN002.013, which, on clearing proved to be a two-roomed building 8.54 x 3.65 m overall (Fig. 1.65). Scree material mixed with occupation debris was removed from the interior down to the level of the footing of the walls, below which it was clear that an accumulation of at least 0.15 m of dung preceded the construction of the building. The walls were on the whole of rough, mostly uncoursed dry-stone construction with some mud bonding, still standing 0.36 m at highest (Fig. 1.66). The floor of both rooms had gone, if it was ever more than trodden sand and scree material. A considerable amount of dung and debris lay beneath the south wall of the building from an earlier phase of activity. Finds

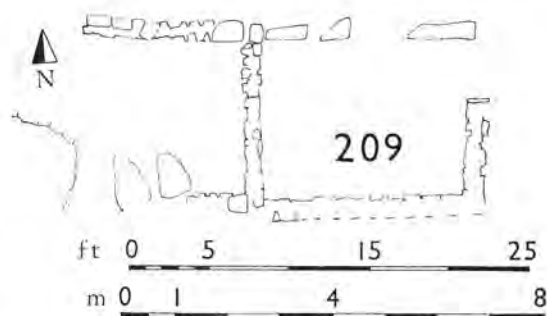


Figure 1.65. Plan of ZIN002.209.



Figure 1.66. General view of ZIN002.209 looking west (CMD 1967).

included **HM 302, 305, 311, 341** in typical Zinkekrā fabric, though some other sherds in more reddish fabrics (including Berber Red) were also noted. There were also a selection of scrapers and a stone rubber (Fig. 1.68)

#### ZIN002.210

Occupation debris.

#### ZIN002.211

Corner of a possible building, measuring 0.5 x 1.6 m. Occupation debris on the south-eastern side. A rim of a bowl of type **HM 301/302** was recorded here, along with a *doka*-type platter **HM 341/342**.

#### ZIN002.214

Occupation debris on a slight terrace. Dimensions: 4 x 6 m. A fragment of a saddle quern was found nearby.

#### ZIN002.215

Wall, 1.5 m in length, with occupation material.

#### ZIN002.216

A curved piece of wall, with occupation material.

#### ZIN002.217/219

This was a series of dry-stone walls associated with occupation debris along the west side of a gully. The walls now form a revetment protecting the eastern edge of cemetery ZIN002.220 from erosion, but they clearly predated it and constituted a complex sequence of buildings and occupation events (Fig. 1.67). Some clearing and cleaning was carried out by CMD to collect material and obtain a series of section faces. These showed that a typical build-up had accumulated behind a series of retaining walls or buildings, consisting of geological debris covered by layers of dung and vegetable rubbish interspersed with further episodes of hill-wash and sterile material. As at site ZIN002.013, the construction of the major terrace wall ZIN900.6 marked the end of a sequence of early structures, there were signs of subsequent further occupation build up behind the terrace. This section was re-recorded in 2007 by the DMP (Mattingly *et al.* 2007, 137–38).

Pottery collected from the section at various points (Fig. 1.68) included a decorated vessel with high upright rim (**HM 320**), a rim from a type **HM 322** jar with slightly everted rim, numerous *dokas* (**HM 341–343**) and inturned globular bowls and jars (**HM 302** and **305**). Several vessels had pierced holes below the rim and a horizontally-pierced lug was also recorded on a body sherd of globular form.

There were some visible traces of burials in this section, overlying a sequence of buildings and



Figure 1.67. General view of ZIN002.217–219 looking west (DJM 2007).

occupation deposits (see above for comments on the structures). The burials related to cemetery ZIN002.220 and one of these burials, probably dating to the 1<sup>st</sup> century AD, was excavated by the DMP in 2007 (Mattingly *et al.* 2007, 138).

#### ZIN002.220

Cemetery. Fragments of Berber Red Ware and some amphora fragments. The sketch suggests that the amphora rim is likely to be a Class 1, so possibly late 1<sup>st</sup> century AD. It may be earlier. There was also one piece of African Red Slip Ware, although this was too pitted for closer identification, and fragments of a pedestal vase **CW 216** (see Fig. 1.83). This cemetery has recently been excavated by the Desert Migrations Project (see Mattingly *et al.* 2007, 137).

#### ZIN002.221

Occupation material.

#### ZIN002.222

A dry-stone wall complex running along one side of a small gully which appears to be part of a building. A door 0.98 m wide is visible. ZIN002.227 and ZIN002.228 to the west continue this complex of walls, which must have comprised several dwellings. Pottery recovered included fragments of one large inturned-rim bowl (**HM 301**).

#### ZIN002.223

A slight wall, roughly 2.2 m in length, orientated north-west to south-east. A right-angled return at the east end is 1.2 m long.

#### ZIN002.224

Possible hearths.



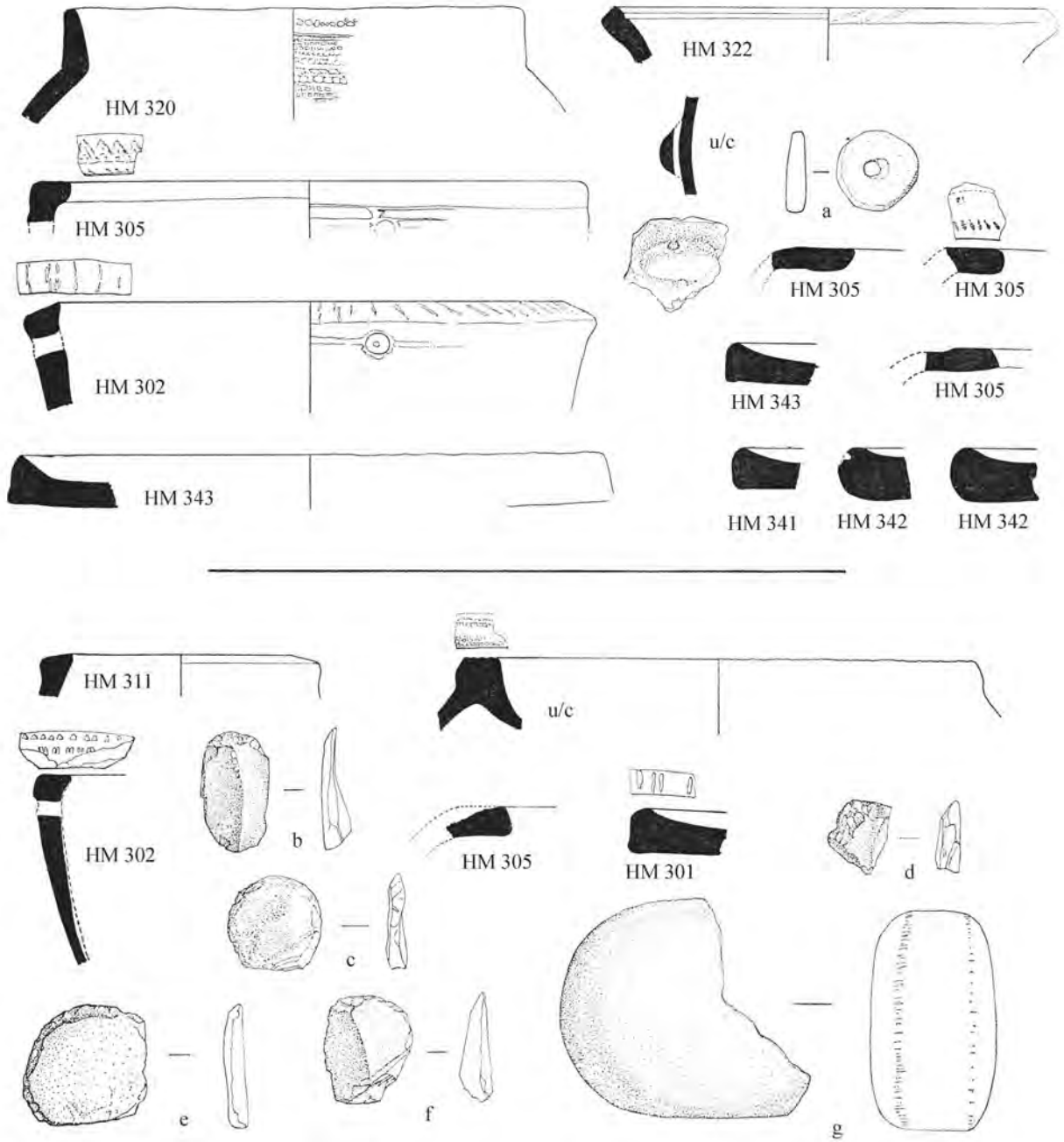


Figure 1.68. Pottery, rubber (g) and lithics (b, c, d, e, f) from sequence of structures behind terrace wall at ZIN002.217–219 (above) and ZIN002.209 (below). 1:3.

**ZIN002.225**

Two fragments of dry-stone walling at 55° to one another.

**ZIN002.226**

Occupation material.

**ZIN002.227**

Occupation material associated with a wall fragment.

**ZIN002.228**

The remains of a probable building, comprising one long wall, 8.2 m in length, met at its mid point by a smaller (2.7 m) wall at a right-angle. It seems there may have been a third wall parallel to the longer wall, also joined by the shorter wall.

**ZIN002.229**

A possible hearth with occupation material.

**ZIN002.230**

A very small wall.

**ZIN002.231**

A wall some 4 m in length.

**ZIN002.232**

A wall with occupation debris, including typical inturned rim bowl (HM 301).

**ZIN002.233**

This site appears to have been a semi-circular enclosure, built into the hill. Its open side faced north, and the gap between the two arms of the walls was c.5 m.

**ZIN002.234**

A wall associated with occupation debris, partly destroyed by a gully.

**ZIN002.238**

A wall associated with occupation material.

**ZIN002.239**

A wall running north to south, with occupation debris about it.

**ZIN002.240**

Possible wall.

**ZIN002.242**

Small wall, c.1.2 m in length.

**ZIN002.243**

Fragmentary walls.

**ZIN002.244**

Slightly curved wall, with occupation debris.

**ZIN002.245**

A curved wall, apparently c.4 m in length. Possibly also a hearth, but not much occupation material.

**ZIN002.246**

Apparent wall.

**ZIN002.247**

A small wall, with a possible hearth and some occupation material.

**ZIN002.248**

A curved wall cut by a gully.

**ZIN002.249**

Occupation debris, with a possible wall.

**ZIN002.250**

A small wall, with occupation debris.

**ZIN002.251**

A small fragment of wall.

**ZIN002.252**

A corner of a building, with walls surviving to 7-8 courses high. The open side faces to the south. Dimensions: 1 x 3.5 m.

**ZIN002.253**

Occupation debris, including palm fronds.

**ZIN002.254**

Thick occupation debris in a gully.

**ZIN002.255**

Two walls, almost forming a right-angled corner, but at a slightly obtuse angle. Standing 6-7 courses at maximum.

**ZIN002.256**

Slight trace of walling, some 3 m long.

**ZIN002.257**

Rough walling forming a broken line, in three sections. Total length c.6 m, with occupation debris to the north and west.

**ZIN002.258**

Rough fragment of walling. Mostly washed out.

**ZIN002.259**

Small hearth.

**ZIN002.260**

The remnants of a dry-stone wall forming the front edge of a small terrace. Occupation debris.

**ZIN002.261**

Hearth.

**ZIN002.262**

Occupation material.

**ZIN002.263**

Badly washed-out fragments of wall in a gully. Presumably post-dates the first creation of the gully, but suffered afterwards.

**ZIN002.264**

A very delicate fragment of walling, on edge of a gully.

**ZIN002.265**

Rough single-coursed wall, 1.5 m long, with thick occupation material.

**ZIN002.266**

Thick occupation level, no structures. A quern was found nearby.

**ZIN002.268**

Wall fragment, 2.5 m long. No occupation material.

**ZIN002.269**

Walling, 4–5 courses high, parallel with slope. 3.2 m long, no obvious occupation material.

**ZIN002.070**

A fairly sizeable set of walls, seemingly forming a building. It is 7 m north to south and *c.*4 m east to west. It is bounded on the north and south sides by walls standing 4–5 courses high. Two small walls just from the south wall, one forming a right-angled corner at its east end, another seemingly acting as a partition wall in the centre. The site has been partly destroyed by a gully to the east. Occupation material.

**ZIN002.271**

Small hearth with occupation material, with a possible wall nearby.

**ZIN002.272**

A small wall only 0.6 m long, but with thick occupation deposits associated with it.

**ZIN002.273**

A seemingly well-built three-sided structure, open on the north side. The whole building is *c.*4 m long, east to west, and *c.*2 m long north to south. There seems to be a smaller room, mostly destroyed, to the west. The modern path passes close by on the north side.

**ZIN002.274**

Slight fragment of walling, *c.*0.6 m long.

**ZIN002.275**

Hearth site, possibly with a sheltering wall. There may have been a robbed grave to one side, associated with a pot.

**ZIN002.276**

Occupation material.

**ZIN002.277**

A slight wall, mostly washed away.

**ZIN002.330A**

This was a cemetery with about 50 graves. Along with the neighbouring Site 330, this site is unusual in being situated on the south side and upslope of the terrace wall ZIN900.006. Altogether some 27 fragments of amphorae were recovered, along with some imported (?) wheelmade wares and fragments of Berber Red Ware (HM 333).

**ZIN002.330B**

This cemetery with about 70 graves was situated next to ZIN002.330A. One piece of African Red Slip (ARS) was recovered, indicating a late 1<sup>st</sup> – early 2<sup>nd</sup> century AD date. Thirteen fragments of amphorae were recovered, along with 11 unspecified other sherds.

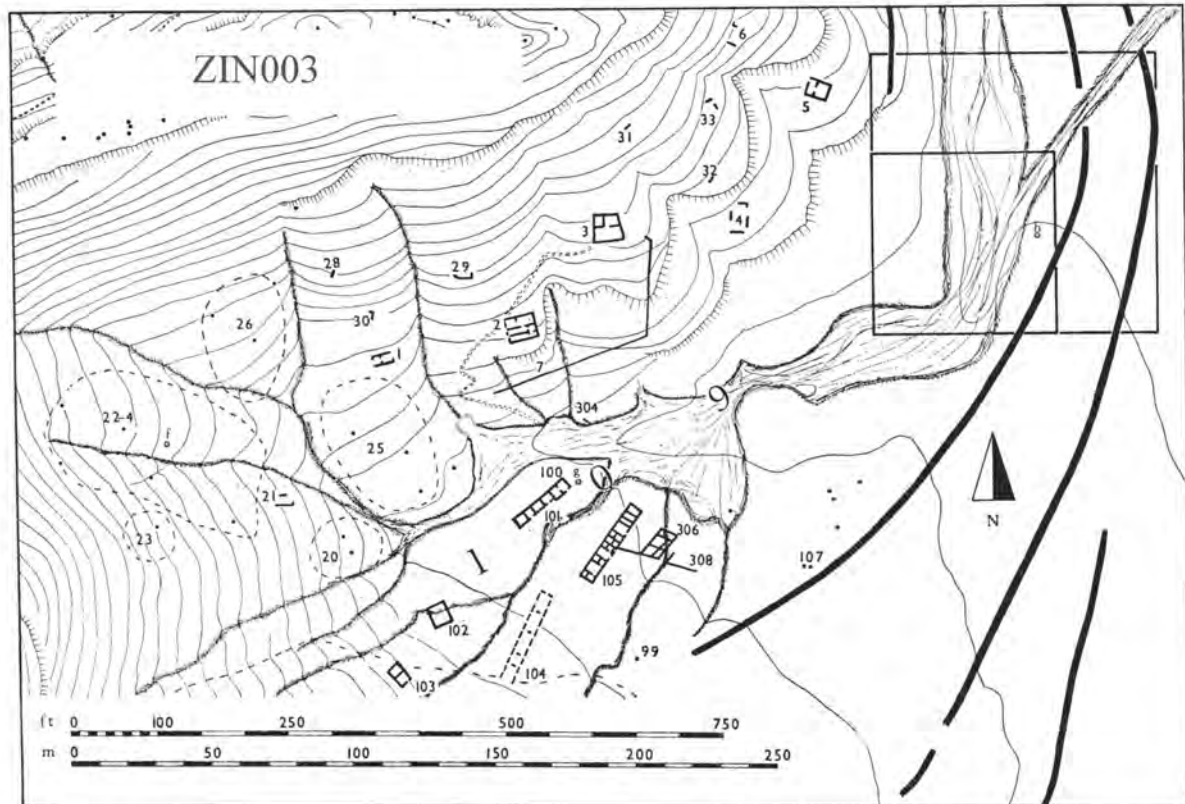


Figure 1.69. Survey of sites on southern slopes of Zinkekrā.

### Sites on the South Side of Zinkekrā

In general there is less evidence for intensive Garamantian occupation on the south side of the hill (Fig. 1.69). Since this scarp remains in full sun for most of the day, this should not occasion any great surprise. Nonetheless there was some evidence of Early Garamantian occupation here, as well as traces of an unusual level of later Garamantian activity at Zinkekrā. The Italian mission of the 1930s recorded a series of six rectangular buildings of superior construction, using a mixture of mudbrick and stone or ashlar footings. These are sometimes known as Caputo's 'villas' (Daniels 1971a, 263–64) though the term is a misnomer in this context (and Caputo in Pace *et al.* 1951, 229–39 actually used the term 'casa'). Caputo favoured a 'Roman' date for the mudbrick houses in the 1<sup>st</sup> century AD or later, though he had precious little hard evidence to go on from the limited excavation carried out (Pace *et al.* 1951, 234–35). The main argument seems to have been that the more sophisticated architecture was a product of increased contact with the Roman empire at that date. The possibility that they could have been up to several centuries earlier does not seem to have been considered. The six structures

were all built on prominent minor spurs on the escarpment. The two largest and best preserved of these (ZIN003.002–003 below) were linked to some extent by a substantial stone and mudbrick wall slightly below (ZIN003.007). At a lower level there were further mudbrick buildings of rectilinear form (ZIN003.100–105). The precise chronological and functional relationship between these structures and a series of major Classic Garamantian cemeteries (ZIN003.020–026, 109) is also a point to be discussed.



Figure 1.70. Caputo 'House' 1, structure ZIN003.001, looking south-east (CMD 1965).

**ZIN003.001**

This was identified with Caputo's House 1 on the grounds that it is the most westerly, has the correct dimensions (6.6 x 4.5 m) and consists of two interconnected rooms (Fig. 1.70). The building was situated on a small platform and its walls were built of rough, unworked stonework, with no trace of mudbrick.

**ZIN003.002**

Caputo's House 2 was clearly identifiable from his description (Fig. 1.71). This was one of the largest of the Zinkekrā houses (10 x 9 m) and the most complex in plan (Fig. 1.72). It consisted of three ranges of rooms terraced down the hillside to combat the slope, with a total drop of about 3.5 m. The surviving wall of the lowest terrace and the side walls of the building were of well-cut, dressed stone. Whether the upper portions of the walls had also been of stone or of mudbrick is not now discernable. The rear wall, however, was clearly of good hard yellow mudbrick similar to that encountered in what are believed to have been the latest buildings on the north slopes. Most of the internal walls, likewise, were of mudbrick and of the same high quality. The style of the dressed masonry is reminiscent of that on the outer face of wall 900.001 although more neatly done and better coursed.



Figure 1.71. Caputo 'House' 2, structure ZIN003.002 and (below) cemetery ZIN003.109, looking south (CMD 1965).

**ZIN003.003**

Caputo's House 3 was identifiable from his published plan (Fig. 1.73). The building was simpler than House 2 although scarcely smaller in size (10 x 9 m); it was also on a single terrace (Fig. 1.74). The foundations of four outside walls are of dressed stone as far as the rear corners (Fig. 1.75), and constructed in a manner similar to House 2, although with less persistent coursing. The rear wall above the foundations was of mudbrick and well constructed. All the internal walls were built in mudbrick throughout, though with a mix of blue-grey mudbrick for some parts of lower walls and yellow

mudbrick for surviving upper walls. Any occupation levels had been removed, though there were traces of a rough mudbrick floor.

**ZIN003.004**

This was tentatively identified as Caputo's House 4. Caputo gave no description and did not excavate the building. Little remains but the platform, approximately 6.9 x 7.5 m in size with some slight trace of stone facing. Much mudbrick debris, dung and occupation material remains but a series of small gullies have carried away more and stone-fall covers part of the remainder.

**ZIN003.005**

This probably equates with Caputo's House 5. It was a rectangular building 8.23m x 6 m in size with at least one internal partition wall surviving, two thirds of the way towards its north end (reminiscent of Caputo's House 3). Again, the principal surviving portion was the platform, faced with ashlar or an alternating combination of ashlar and mudbrick. The standard of construction was as good as House 3, if not House 2, but few details could be seen in the absence of excavation. The north-western wall of the building, as in Houses 2 and 3 was of mudbrick and standing to some height. As was the case with Houses 2 and 3, the amount of collapsed mudbrick covering the platform of House 5 suggests that the upper portion of all its walls had been executed in mudbrick.

**ZIN003.006**

Caputo's House 6 can only be rather tentatively identified with this site, whereas the locations of his House 1-5 are almost certain. This site on the slope above House 5 consisted of two unrelated dry-stone walls of rough construction, the north-east of which was a corner. No mudbrick was visible.

**ZIN003.007**

The long wall described rather imaginatively as a *sbarramento idrico* by Caputo (Pace *et al.* 1951, 220-4), was in reality 106.7 m of wall, traceable from just below the south-east corner of House 3 running south across the slope of the promontory to a point below the ledge on which Houses 2 and 3 lay, then turning south-west and crossing two small gullies below House 2. At this point the wall is lost and in spite of diligent search it could not be traced either continuing on its alignment or turning up slope to encircle House 2.

The lower courses of the wall consisted on the outer face of dressed stone, midway in quality between that of House 3 and that of the outer face of wall 900.001 on

# ZIN003.002

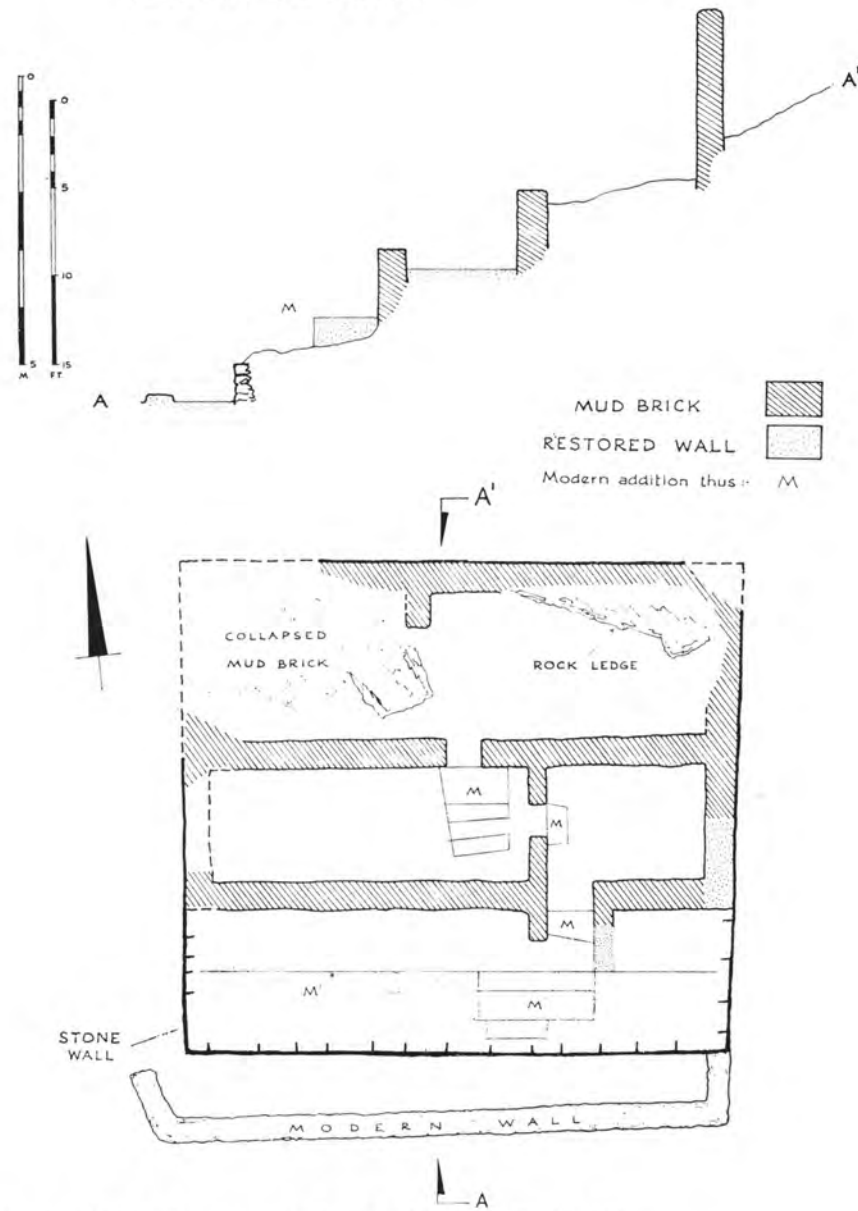


Figure 1.72. Plan and profile showing terracing of mudbrick building ZIN003.002.

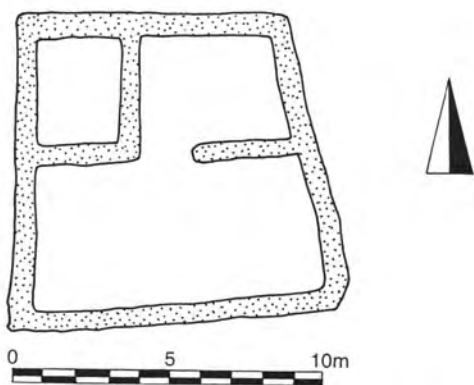


Figure 1.73. Plan of mudbrick building ZIN003.003.



Figure 1.74. View from below of buildings ZIN003.002 and 003, showing terraced position on escarpment (CMD 1965).



Figure 1.75. Detail of ashlar footings of western wall of building ZIN003.003, looking north-east (CMD 1965).

the summit (Fig. 1.76). The inner face of the wall varied from dressed stone similar to that of the inner face of wall 900.001. In places yellow mudbrick was also used, regularly laid in the manner of Houses 2–5. As Caputo noted, at one place a fallen portion of coursed mudbrick suggests most strongly that the upper parts of the wall had been of that material. At another point a rougher and inferior section of construction was noticeable on top of the lower ashlar. The average thickness of the wall was 1.5 m.

From a consideration of the wall, and especially of the mudbrick culvert clearly constructed to carry off water (water would have built up behind it in the event of rain), it is clear that the feature was not a barrage. It seems to have been an enclosure wall relating to the two well-built buildings immediately above (ZIN003.002–003), though whether these were houses or had some more specialised function is open to debate. In *AF 1* (Mattingly 2003, 178–79), it was suggested that ZIN003.003 could have been a temple, from the similarity of its plan to the temple at Jarma (GER001.003). The idea that this was a religious complex is attractive, given the unique quality of these buildings and associated enclosure wall among the ZIN sites.

#### ZIN003.019

This site marked the location where a human cranium and finger bones were found among rocks on the slopes, with much of the rest of the grave probably eroded away.

#### ZIN003.020, ZIN003.022–026

These were all cemeteries between the gullies at the head of the dry wadi channel that defines the southern escarpment of Zinkekrā. It is likely that the main phase of use of the cemetery followed on from the abandonment of most of the mudbrick buildings on this side of the hill, though some overlap in use of the



Figure 1.76. Detail of ashlar footings of wall ZIN003.007, looking north (CMD 1965).

higher buildings (ZIN003.2–3) is possible. From fine red wares recovered the cemeteries can be dated to the late 1<sup>st</sup> and early 2<sup>nd</sup> centuries AD, with a continuation in one case to the later 2<sup>nd</sup> century (Table 1.4).

#### ZIN003.021

A dry-stone wall building approximately 6.9 x 4.57 m in size and divided into two rooms. Occupation debris.

#### ZIN003.028

A spread of dung and occupation material on a steep slope.

#### ZIN003.029

A rough dry-stone-wall building with a small platform extending in front of it. The south wall survives, together with traces of the east and west side walls and an internal hearth.

#### ZIN003.030

The corner of a dwelling constructed of rough dry-stone walling. Much dung and occupation material.

#### ZIN003.031

A fragment of dry-stone walling with traces of occupation material.

#### ZIN003.032

A rough stone platform containing occupation material, ash and traces of burning.

#### ZIN003.033

An area rather than a single site, containing two small pieces of walling and an area of occupation debris exposed in the side of a gully.

#### ZIN003.098

Two stones, with occupation material between them.

Table 1.4. Diagnostic pottery in AF type series from the Classic Garamantian cemeteries ZIN003.22–26, 109, 280, 281, 291, 296, 330.

Ware	Form no.	CMD no.	Dates	Site and context
CW	146	133	1st–2nd century AD?	ZIN 022 (South)
HM	333	559	1st–4th centuries AD	ZIN 023 (S)
HM	333	560	1st–4th centuries AD	ZIN 023 (S)
HM	333	563	1st–4th centuries AD	ZIN 024
CW	240	572	2nd–4th century AD	ZIN 026 (N)
CW	109	504	1st century BC–1st century AD?	ZIN 109
HM	333	505	1st–4th centuries AD	ZIN 109
CW	199	578	?	ZIN 109
CW	112	1546	2nd–4th century AD	ZIN 109
CW	170	597	1st century BC–1st century AD	ZIN 109 (10)
CW	198	604	?	ZIN 109 (11)
CW	218.1	619	1st–3rd century AD	ZIN 109 (11)
HM	355	427	Modern?	ZIN 109 (12)
AM	44	614	GAR	ZIN 109 (12)
FW	502	273	2nd–1st century BC	ZIN 109 (13)
CW	206	608	?	ZIN 109 (4)
HM	320	500	Late 1st millennium BC–3rd century AD	ZIN 109 (5)
CW	200	1551	?	ZIN 109 (G)
HM	333	655	1st–4th centuries AD	ZIN 280
HM	333	666	1st–4th centuries AD	ZIN 280
HM	333	668	1st–4th centuries AD	ZIN 280
HM	355	671	Modern?	ZIN 280 (1)
HM	333	656	1st–4th centuries AD	ZIN 280 (G)
CW	240	279	2nd–4th century AD	ZIN 280 (S)
HM	333	674	1st–4th centuries AD	ZIN 281
FW	501	286	2nd–1st century BC	ZIN 291
CW	217	288	1st century AD	ZIN 296
FW	505	705	2nd–1st century BC	ZIN 296
HM	333	1102	1st–4th centuries AD	ZIN 330 (A)

#### ZIN003.099

Traces of two walls of the building in rough, coursed stone, 4.9 x 2.5 m in length and 0.46 m in width; rather crude work.

#### ZIN003.100–101

A row of three conjoined houses of which the most easterly example was the earliest in order of construction (Figs 1.77–1.78). All were badly destroyed and very little of their walls was preserved.

#### ZIN003.100

A two-roomed dwelling 4.7 x 8.0 m in size. The walls are of rough stone bonded with brown mud-mortar, but lacking any real coursing. The east room was entered by an outside door in its south side and still contained traces of a light-coloured mudbrick floor. No other details survived.

#### ZIN003.101 East

Built against the west side of site 003.100, measuring



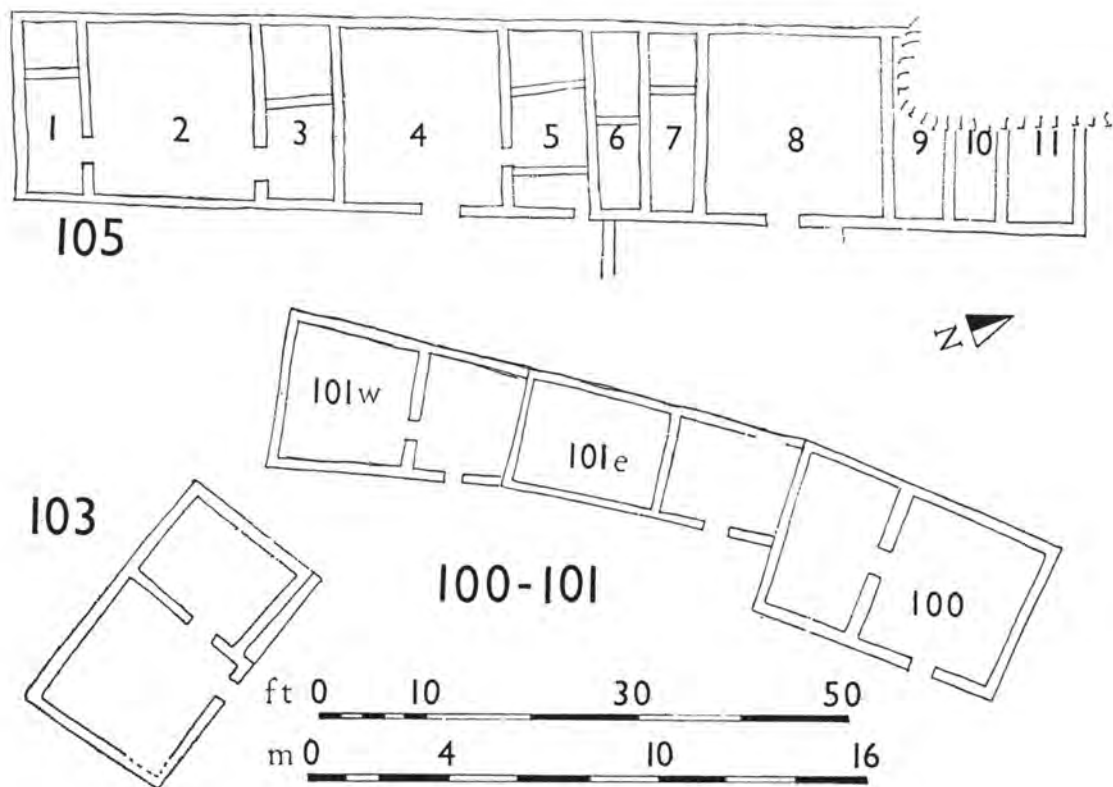


Figure 1.77. Plans of structures ZIN003.100-101, 103 and 105.



Figure 1.78. General view of buildings ZIN003.100-101 and 105, looking south-east (CMD 1965).

9.5 m in length and widening from 3.65 to 4 m between the east and west walls. This building was almost completely destroyed, but was apparently constructed of stone and mud-mortar in the manner of ZIN003.100, the west wall in particular still retaining some foundation blocks. The outside door was in the south wall of the east room, which also contained portions of a brown mudbrick floor with traces of fire on it. The west room had no apparent door but was presumably entered through the party wall. Inside the room were traces of two laid mudbrick floors with a thin spread of occupation material between them. Areas of calcining were apparent on the upper surface.

#### ZIN003.101 West

The latest of the three buildings, this was constructed against 101 East. It was 7 m in length and widened from 4 m to 4.4 m east to west. Again the internal arrangements consisted of a pair of rooms, the east of which was most likely entered through the south wall and the west by a doorway through the party wall. The walls of the building were of bluish grey mudbricks 0.45 x 0.30 x 0.80 m in size. The east room retained much of its yellow mudbrick floor on which fragments of a large, broken everted-rim storage jar lay, sealed by fallen wall debris. The west room also retained traces of a yellow mudbrick floor showing heavy burning on its south side. Pottery from ZIN003.101 included **HM 305** and **321**.

#### ZIN003.102

A single large-roomed building 5.6 x 7.16 m in size, this was constructed entirely of yellow and bluish mudbricks with the exception of the stone door jambs. A mudbrick floor survived on the west side of the building, and there were remains of a central hearth. At some time, and presumably as the result of a gully flooding after rain, the south-west corner of the building had collapsed and been rebuilt by a short diagonal stretch of mudbrick wall of double thickness. Later the north wall of the building had fallen outwards

and was discovered during excavation. It measured 2.8 m at maximum, showing that the building had had considerable headroom.

#### ZIN003.103

This was a two-roomed building 7.9 x 4.8 m in size and constructed of good quality, bluish mudbrick. The doorway of neither room was certainly recovered, but it appeared that the south room had been entered through its east wall and the north through the party wall. Both rooms retained their brown mudbrick floors, but apart from a few fragments of charcoal in the south-west corner of the north room no traces of occupation remained. The east wall of the north room had been reinforced at its base, no doubt to combat slip.

#### ZIN003.104

This long rectangular building was at least 34 m in length and approximately 6 m in width. Five central divisions were visible but as the site was not excavated no further details were recovered.

#### ZIN003.105

A rectangular mudbrick building complex with an east wing, this measured 31 x 5.8 m and was internally divided into a series of small rooms or multi-roomed units. Damage had removed details in the north end but the central and south portions had survived better. Eleven internal divisions were recorded some of which contained secondary or subsidiary subdivisions. Rooms 1 and 3 had been entered from Room 2, although Room 2 itself possessed no obvious entrance. Both Rooms 1 and 3 had been subdivided subsequently and, again, no apparent doorway existed through the added walls. Room 4 preserved an outside doorway in its east face which had apparently been blocked at a later date. Room 5 was entered from Room 4, but also possessed an outside doorway of its own, apparently from an early date. Later, Room 5 was divided into three sections, the east of which was only 1.4 m in width. Neither Room 6 nor Room 7 possessed a door and each was later divided into two portions (perhaps for storage bins). At some stage the dividing wall in Room 6 seems to have been taken down to floor level. Room 8 was a single large one entered by a door in its east wall. Rooms 9, 10 and 11 appear to have been single long rooms but only the foundations of their walls survived, and on the west side even these had been destroyed by a gully.

Only a few of the rooms contained stratification (Fig. 1.79) and fewer still contained finds. In Rooms 1–3 the stratification took the form of a layered build-up: fallen wall material and blown sand covering dung and occupation material which lay on a hard trodden



Figure 1.79. Excavation of ZIN003.105, looking east (CMD 1965).

dung and mud floor. Below this lay a lower dung level covering geological debris. The floor was unmistakably that of the building, the only uncertainty concerned whether the lower occupation material pre-dated the building or represented its earliest occupation. It appears that the AMS dating sample came from this lower material and the early date obtained (Table 1.5 below) would suggest that there was indeed an earlier structure below the visible mudbrick complex, as the two AMS determinations (810–390 cal BC and, to a lesser extent, 810–200 BC) pre-date by some margin the expected construction of the mudbrick range in the later centuries BC or early centuries AD. In Room 4, the north portion of Room 7 and Rooms 8–10 the stratification consisted merely of a layer of wind-blown sand and occasional fragments of mudbrick sealing a single layer of dung and occupation material.

Finds from the ZIN003.100–105 group of sites included **HM 305, 310, 321, 337, 348, 352** (Fig. 1.80).

#### ZIN003.106

Thick occupation deposit.

#### ZIN003.107

Traces of a building approximately 6 m in length constructed against the inner face of the innermost enclosure wall encircling this side of Zinkekrā.

#### ZIN003.109

A large cemetery originally comprising many hundreds of graves but now extensively robbed and destroyed (Fig. 1.81). Handmade forms include a number of the forms that seem to reflect the later end of activity at Zinkekrā – **HM 320, 333, 345, 355**. From fine red ware fragments and wheelmade coarseware forms **CW 130, 137–138, 143–144, 167 var. and 216**, the life of the cemetery can be seen to have stretched from the late 1<sup>st</sup> to the 4<sup>th</sup> centuries AD (see also Table 1.4). Earlier and later pottery covered the area indiscriminately.

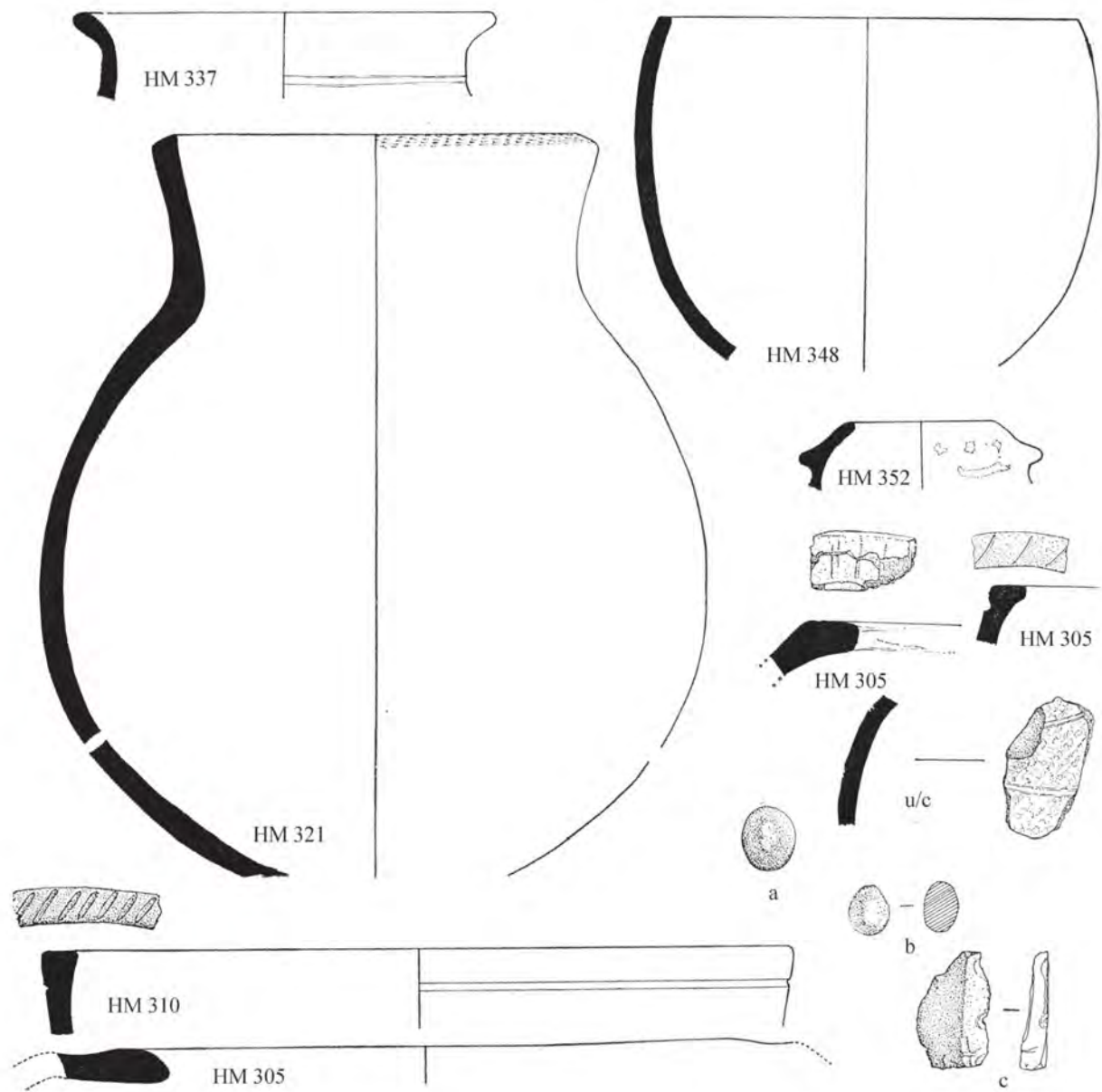


Figure 1.80. Pottery and lithics from sites ZIN003.100–105. 1:3.



Figure 1.81. Cemeteries ZIN003.109 (foreground) and 280–290 (background), looking south (CMD 1965).

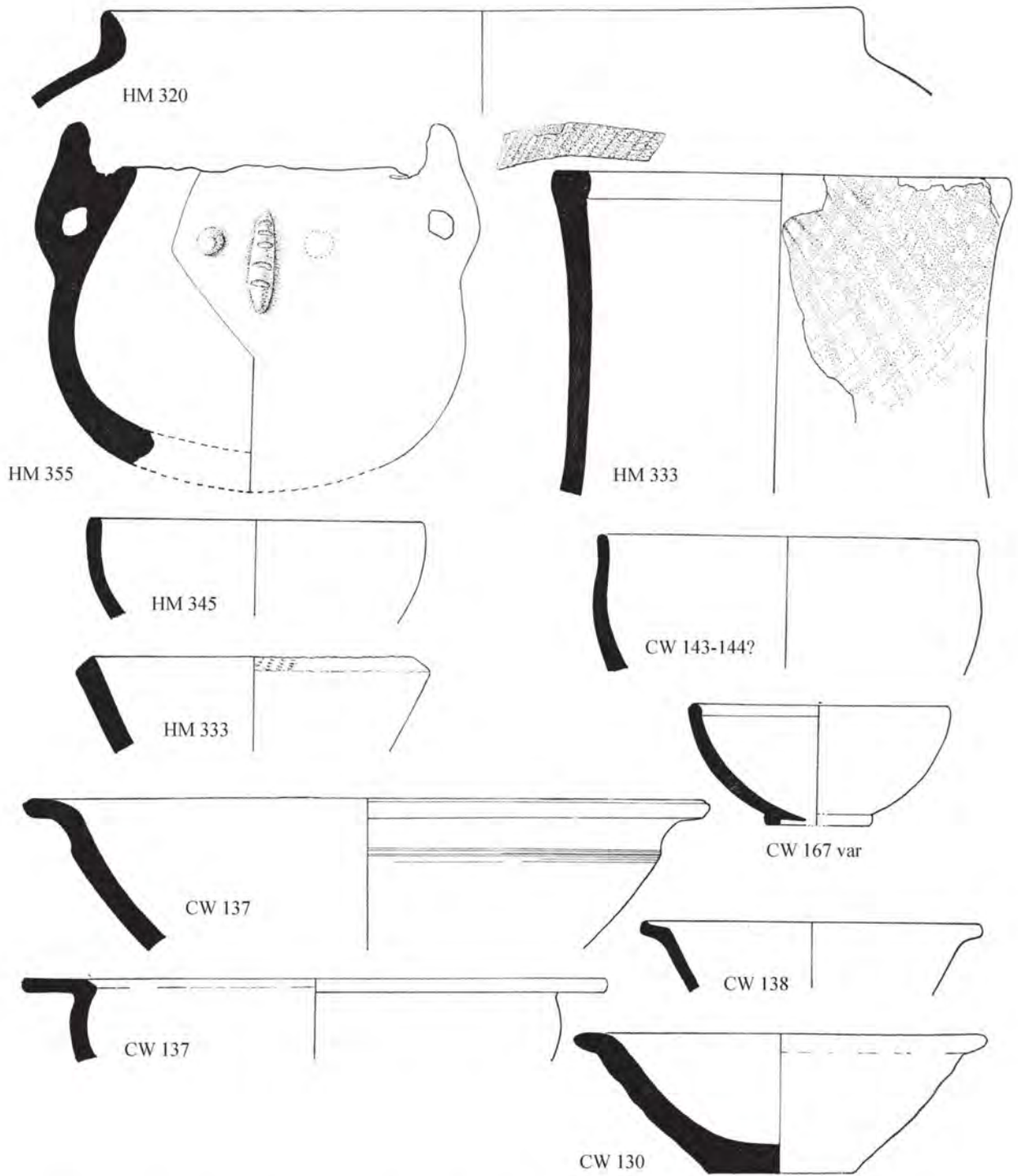


Figure 1.82. Pottery from Classic Garamantian cemetery ZIN003.109. 1:3.

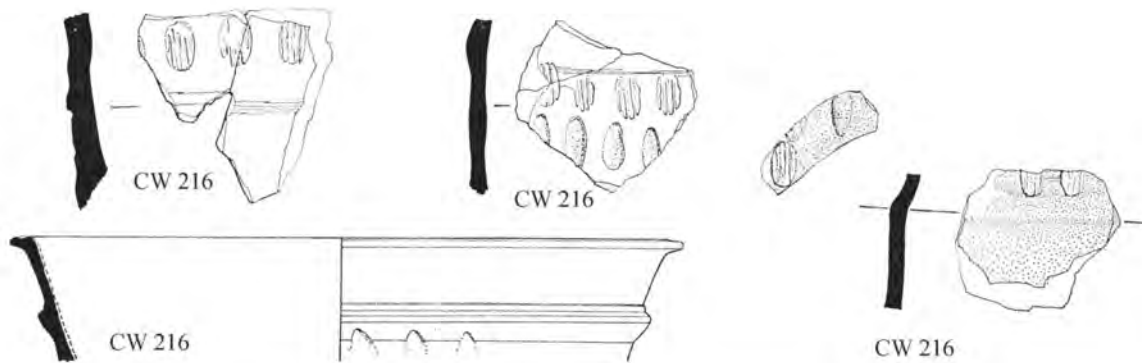


Figure 1.83. Fragments of Classic Garamantian wheelmade impressed pedestal vases (CW 216), from various locations on the scarps and probably to be associated with the cemeteries.

Overall, it seems likely that from the late 1<sup>st</sup> century AD the whole area had ceased to be inhabited (Figs 1.82–1.83). This provides a convenient *terminus ante quem* for the lower buildings on this side of Zinkekrā.

#### ZIN003.297

Fragmentary walls seemingly forming a right-angled building. Very much destroyed. The east wall survived to a length of 2.3 m.

#### ZIN003.298

Three stones of a wall.

#### ZIN003.299

Traces of a hearth with an animal vertebra.

#### ZIN003.300

Slight traces of a wall.

#### ZIN003.301

Corner of a crude platform.

#### ZIN003.302

Two sides of a platform, some 3.3 x 1.1 m.

#### ZIN003.303

A wall 1.3 m long, with a hearth to the east of it. Possible traces of a further wall to the west.

#### ZIN003.304

A small fragment of mudbrick wall was apparent in a robbed area of cemetery ZIN109 to the south of enclosure wall ZIN003.007.

#### ZIN003.306

This comprised a three-roomed building 8.2 m to the east of ZIN003.105 with which it was connected by a single wall, now completely robbed to the wall footings. At some date the two south rooms had been sub-divided by a diagonal wall.

#### ZIN003.308

The corner of a building or enclosure lying to the east of site 003.306 and measuring 5.7 x 10.85 m. This building was only partly uncovered, as it is almost completely hidden by graves of cemetery ZIN003.109, now itself partly demolished as a result of some recent stone robbers.

### The Rock Art Repertoire at Zinkekrā

A good deal of rock art has been recorded at Zinkekrā, ranging in date from the Pastoral period, to Garamantian era and later images. Most of these images were cut on the vertical rock face just below the summit of the Zinkekrā spur (Figs 1.84–1.85), though some occur on blocks in the main defensive wall barring the west end of the spur and others are cut on the flat surface of the spur near its east end. The number ZIN902 was assigned as a general reference number for the rock art on Zinkekrā. Sketches of images nos 1–61 were originally recorded by Ziegert (1969, Taf. VI–XI). These numbers have been assimilated into our record as ZIN902.1, ZIN902.2, etc. (where applicable, additional observations have been added following the FP review of these images in 2000). Images ZIN 902.063–68 were recorded for the first time in 2000. In addition, CMD's numbering system for his Zinkekrā survey included several rock engravings, including a pair of 'Garamantian' warriors (ZIN279). In the listing below, the direction in which animals face is indicated as follows: f. L = the animal's head is to the left from the viewer's perspective; f. R = the animal's head is to the right from the viewer's perspective.

A full discussion of the rock art will be made by Tertia Barnett in her forthcoming report on intensive rock art survey in the Wādī al-Ajāl. It is clear, however, that the Zinkekrā promontory has been a significant locus in the landscape and has been repeatedly marked with images and symbols that represent in part at least a narrative of communication between the human community and the spirits of place and 'gods' who looked over them (Barnett 2002; 2005; Mattingly 2003, 302–17; 2007, 101–03).

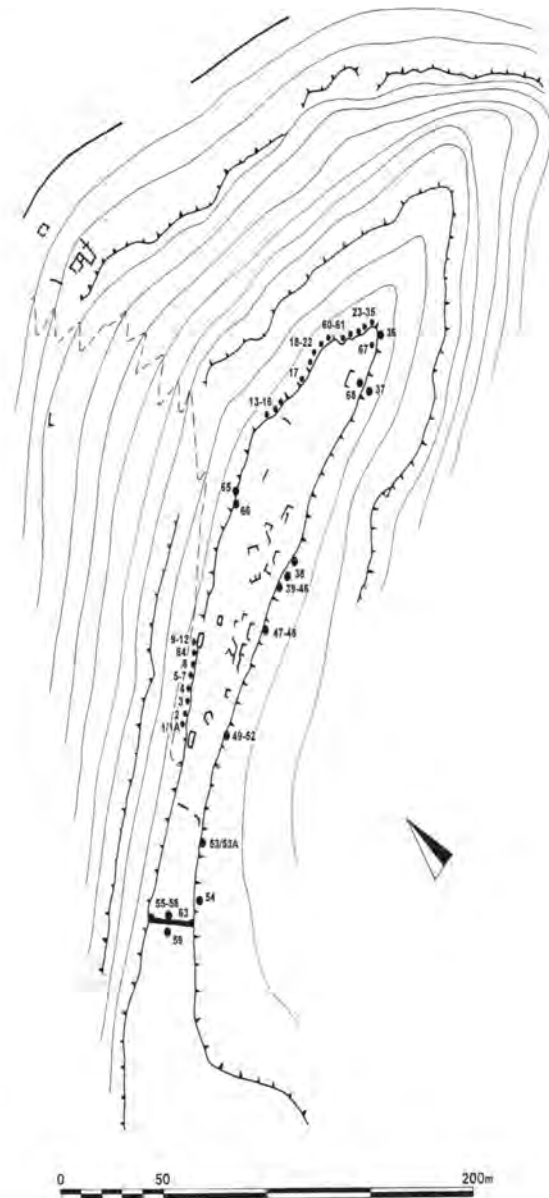


Figure 1.84. Distribution of rock art sites around top of Zinkekrā spur.

**ZIN902**

- ZIN902.001 – 3 pecked bovines (all f. L)  
 ZIN902.001A – lightly pecked giraffe? (f. R)  
 ZIN902.002 – uncertain quadrupeds (1 f. L, 1 R)  
 ZIN902.003 – engraved bovine (f. R)  
 ZIN902.004 – deeply engraved bovine (f. R)  
 ZIN902.005–007 – 3 Libyan inscriptions noted by Ziegert. Additional examples noted here in 2000  
 ZIN902.008 – pecked giraffe (f. R)  
 ZIN902.009–011 – a ‘herd’ of at least 8 pecked bovines (of which 3 examples only recorded by Ziegert) (all f. R)  
 ZIN902.012 – pecked goat (f. L)  
 ZIN902.013 – biconical human figure  
 ZIN902.014 – human figure with spear and small squarish shield?  
 ZIN902.015 – biconical human figure  
 ZIN902.016 – 2 or more incised bovines (f. R); Ziegert only recorded one  
 ZIN902.017 – engraved bovine (f. L)  
 ZIN902.018 – profile human portrait (the ‘Garamantian’) (f. L)  
 ZIN902.019 – human figure  
 ZIN902.020 – pecked human figure with spear and shield and 4–5 ostriches(?) (f. L)  
 ZIN902.021 – engraved giraffe and tree (f. R)  
 ZIN902.022 – engraved biconical horseman with shield (f. L). There is a large pecked bovine (f. R) between no. 21 and 22, as well as a series of vertical lines  
 ZIN902.023–035 – large panel featuring numerous bovines (some pecked, some engraved, some pecked and engraved) and other animals. Ziegert recorded 11 bovines, another quadruped and 2 ostriches, but the real total appears to be higher. (at least 10 f. L, at least 5 f. R)  
 ZIN902.036 – engraved and pecked giraffe superimposed on engraved bovine (both f. R), with series of ‘sharpening’ grooves below  
 ZIN902.037 – pecked giraffe? (f. R)  
 ZIN902.038 – engraved bovine (f. R)  
 ZIN902.039 – pecked giraffe (f. R)  
 ZIN902.040 – engraved ostrich (f. R)  
 ZIN902.041 – pecked and engraved giraffe superimposed on earlier giraffe or bovid? (f. R)  
 ZIN902.042 – engraved feet, oval shape and quadruped (f. R)  
 ZIN902.043 – 2 engraved quadrupeds with horns? (1 f. R, 1 f. L)  
 ZIN902.044 – 2 engraved ithyphallic male figures, one brandishing spear?  
 ZIN902.045 – engraved quadruped (f. R)  
 ZIN902.046 – engraved human figure (running?) behind two engraved quadrupeds, one dog-sized, the other larger (f. R)  
 ZIN902.047 – engraved ostrich (f. L) and pecked biconical figure with elaborate headdress and possibly brandishing weapons  
 ZIN902.048 – 2 pecked bovines and a possible ostrich (all f. L)  
 ZIN902.049 – pecked ostrich (f. R)  
 ZIN902.050 – pecked quadruped with horns (f. L)  
 ZIN902.051 – pecked outline of a square  
 ZIN902.052–052A – 2 pecked ostriches (f. R) and pecked human figure with stick or spear and quadruped (f. L)  
 ZIN902.053/053A – pecked bovine (f. R) and pecked quadruped  
 ZIN902.054 – pecked bovine (f. R)  
 ZIN902.055 – Libyan text in rough rectangular borders  
 ZIN902.056 – Libyan text  
 ZIN902.057 = 902.064 (wrongly mapped by Ziegert)  
 ZIN902.058/58A – 2 Libyan texts  
 ZIN902.059 – Libyan texts  
 ZIN902.060 – engraved bovine (f. L)  
 ZIN902.061 – pecked bovine (f. R)  
 ZIN902.062 – number not used  
 ZIN902.063 – Libyan text  
 ZIN902.064 – pecked giraffe (f. L), evidently with trapping stone (= Ziegert 1969, no. 57)  
 ZIN902.065 – incised goat (f. R: cf 902.012) and several poorly visible bovines  
 ZIN902.066 – Libyan and Arabic inscriptions, engraved feet  
 ZIN902.067 – incised symbols (star sign, triangles), human figures(?)  
 ZIN902.068 – incised feet and inscriptions (Libyan, Greek (Aurelius) and Arabic)



ZIN902.13



ZIN902.14



ZIN902.18



ZIN902.18-19



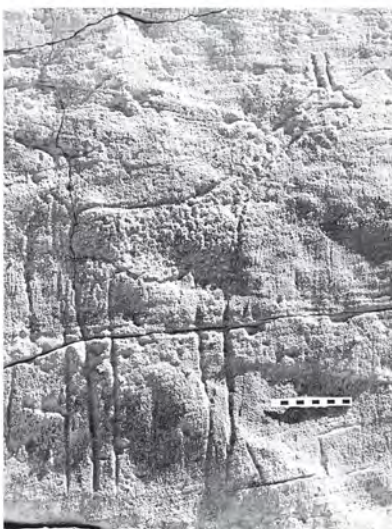
ZIN902.21



ZIN902.22



ZIN902.23-35



ZIN902.41



ZIN902.68

Figure 1.85. Montage of rock art images.



## DISCUSSION

### Dating Sequence and Ceramic Typology

CMD identified three main phases of settlement, followed by a fourth phase of funerary activity: The indications of the stratigraphy are supplemented by a series of AMS and radiometric dates (summarised in Table 1.5; see also Mattingly *et al.* 2002; Mattingly 2007, 294–95; Van der Veen 1992b for previous discussions of the dates). The limitations on precision imposed by the squiggles of the calibration curve are well appreciated by archaeologists of this period. It is evident that the origins of agriculture in the region were early in the period and there was no gradual build up and experimentation with crops (see further Chapter 9 below).

### Phase 1

Simple hearths dug into the hillside. The associated material culture appears to correlate with the Late Pastoral (Neolithic) tradition. The activity may date to a century or so either side of 1000 BC.

### Phase 2

Rough stone-built oval huts with palm-thatched roofs. It is possible that the upper walls of these structures were built in organic materials and mud. There are two C14 dates for one of these buildings at ZIN002.013 (2595±90 bp and 2560±110 bp = 920–390 cal BC). On parts of Zinkekrā this occupation runs right down until the appearance of mudbrick in Phase 3. The associated material culture seems to represent a continuation of the

*Table 1.5. Radiocarbon results from Zinkekrā. Five samples are radiometric dates measured at Teledyne Isotopes Ltd (indicated by laboratory codes beginning I- in column 2). Samples with laboratory codes beginning OxA- were processed and measured by Accelerator Mass Spectrometry (AMS) at the Oxford Radiocarbon Accelerator Unit. Samples with laboratory codes beginning Beta- were measured by AMS at Beta Analytic. Uncalibrated (BP) dates are conventional radiocarbon ages (Stuiver and Polach 1977). Calibrated date ranges were obtained by the maximum intercept method (Stuiver and Reimer 1986), using the program OxCal v3.10 (Bronk Ramsey 1995; 1998; 2001) and the INTCAL04 data set (Reimer *et al.* 2004).*

Site code	Lab code	Material dated (carbonised unless stated)	[Context]; Phase; description	<sup>14</sup> C age BP	Calibrated date range (95% confidence)
ZIN002.013	I-6323 (1972)	charcoal	Context [155], hearth	2695±100	1060–590 cal BC
ZIN001.071	OxA-3071 (1991)	des. wheat grain, chaff.	[2/4], accumulation within domestic building	2670±70	980–670 cal BC
ZIN002.013	OxA-3072 (1991)	date stone	[10]	2620±70	910–540 cal BC
ZIN002.337	OxA-3074 (1991)	barley grain	Hearth in domestic structure	2620±70	910–540 cal BC
ZIN002.013	I-6321 (1972)	charcoal	[51], hearth	2595±90	920–410 cal BC
ZIN001.062	OxA- 3070 (1991)	des. wheat grain, chaff.	[1], within domestic building	2560±70	840–410 cal BC
ZIN002.013	I-6322 (1972)	charcoal	E 'apse' in structure	2560±110	920–390 cal BC
ZIN001.071	I-6341 (1972)	charcoal, wood, seeds	Mixed debris	2560±110	920–390 cal BC
ZIN002.013	OxA-3073 (1991)	des. date stones	[33]	2530±70	820–400 cal BC
ZIN003.105	OxA-3075 (1991)	barley grain	Area W in mudbrick building	2490±70	810–390 cal BC
ZIN003.105	I-6324	charcoal	[3/5], predates earliest phase of mudbrick building	2410±120	810–200 cal BC

Pastoral tradition of lithics and pottery. This Phase appears to correspond to the Early Garamantian period (c.1000–500 BC).

### Phase 3

At ZIN002.013, an early building was abandoned and a major terrace wall built over it at some date unknown (but probably c.300 BC). Later still, mudbrick appears in construction and buildings became progressively more rectilinear in plan. At around this time the top of the spur was progressively abandoned. The latest buildings were almost certainly the mudbrick walls on ashlar footings (ZIN003.2 and ZIN003.3), with their latest occupation c.AD 100. Phase 3 thus is equivalent to the Proto-Urban Garamantian period and the very start of the Classic Garamantian.

The handmade pottery forms from the site were similar across Phases 1–3, in the distinctive Zinkekrā ware fabric. Until the arrival of Roman pottery in the 1<sup>st</sup> century AD, the culture seems to have remained similar to that of earlier phases, with the exception of the odd intrusive metal object or imported glass bead. The lithic tools, typically round scrapers and end scrapers in the (Neolithic) Late Pastoral tradition (Reynolds in Mattingly 2007, 444–47), are presumed to have been in use in most phases of the 1<sup>st</sup> millennium BC occupation, even after the advent of metal working at some point in this broad period (see the typical examples of stone tools on Figs 1.16, 1.33, 1.48–1.53, 1.55, 1.59, 1.62, 1.68, 1.80). For the whole of this period, animals appear to have been kept with the families living on Zinkekrā and a great deal of dung and general rubbish, vegetable material, food and cooking waste including bones, pottery, flints and general filth accumulated.

### Phase 4

After the abandonment of the settlement, extensive nucleated cemeteries were developed on parts of the old settlement area and along the lower escarpment. These date to the 1<sup>st</sup>–5<sup>th</sup> centuries AD, though the cemetery on top of ZIN002.013 may slightly antedate this (see Chapter 6). These Classic Garamantian cemeteries yielded abundant Roman imports – notably sherds of Roman finewares, amphorae and glass. Occasional finds of Roman period pottery and glass from the surface of settlement sites at Zinkekrā are thus likely to be the

result of the spread of material during subsequent episodes of robbing of these later cemeteries.

There is some morphological and chronological variation between the three zones of the site.

### Zinkekrā Spur Top (ZIN001)

Generally, these were contemporary with Periods 2 and 3. Some radiocarbon dates are available and tie in with those from ZIN002.013. The morphology of the excavated structures looks more typical of Phase 2 (oval huts, with lots of organic material). However, a fragment of black glazed ware and at least three Phoenician eye beads demonstrate some continuation of activity on the spur top into the Proto-Urban Garamantian phase. There were other glass beads and semi-precious stones, plus some metal (or glass) slag associated with the occupation of these buildings. The pottery assemblages from the ZIN001 sites were similar to those associated with the terrace wall and related Period 3 structures on the north slope (ZIN002). However, there is no stratified pottery as late as the 1<sup>st</sup> century AD from the top of the spur. Almost all the sites were dwellings of some form or another.

There were in addition many features on the top of the spur that appear to have related to food processing, including numerous rock-cut mortars in which food could be pounded and ground. This correlates with botanical evidence that indicates that the spur top had a different archaeobotanical character (more food processing) compared to the slope occupation deposits (more consumption of fruits) (see Chapter 9 below).

#### ZIN001.034

Site/area	Context/layer	Phasing
034	1	Period 3
034	3	Period 3
034	4	Period 3

#### ZIN001.037

Undated building.

Site/area	Context/layer	Phasing
037	1	Later phase of occupation
037	2	Earlier phase of occupation

**ZIN001.039**

Undated building.

Site/area	Context/layer	Phasing
039	1	Late occupation
039	2	Late occupation
039	5	Earliest occupation
039	6	Associated with 1/2? unstratified
039	7	Associated with 1/2? unstratified

**ZIN001.051**

Undated building, but probably early in the Zinkekrā sequence.

Site/area	Context/layer	Phasing
051	1	Unstratified occupation debris

**ZIN001.060**

Undated building.

Site/area	Context/layer	Phasing
060	1	Later occupation
060	3	Later occupation
060	4	Earlier occupation
060	5	Later occupation
060	6	Earlier occupation

**ZIN001.070**

One of a group of buildings (see also ZIN001.071–075) with a long occupation, providing both an early radiocarbon date (2560 bp) and the black glaze fragment. The form of the buildings suggests they are primarily Period 2, overlying Period 1 hearths in some cases. There are hints that occupation of some structures may continue into Period 3, but in the absence of clear diagnostics, certainty is impossible in most cases.

Site/area	Context/layer	Phasing
070	1	No stratification
070	2	No stratification

**ZIN001.071**

See ZIN001.070.

Site/area	Context/layer	Phasing
071	2	2 <sup>nd</sup> highest layer in building
071	3	General occupation
071	4	3 <sup>rd</sup> highest layer in building
071	5	4 <sup>th</sup> highest layer in building
071	6	Fill of Period 1 hearth outside building
071	7	General occupation
071	8	Fill of Period 1 hearth outside building

**ZIN001.072**

See ZIN001.070.

Site/area	Context/layer	Phasing
072	1	Unstratified, associated with building
072	2	Period 1 hearth sealed by building

**ZIN001.075**

Site/area	Context/layer	Phasing
075	1	Occupation inside building. Black glaze sherd suggests Period 3, though structure is similar to other presumed Period 2 huts

**ZIN001.087**

Site/area	Context/layer	Phasing
087	G	General undated occupation
	1	Late occupation

*North Slopes of Zinkekrā Hill (ZIN002)*

The phasing of sites on the north slopes is primarily based on the two sites most intensively excavated, ZIN002.11 and ZIN002.13. Both these sites explored the sequence of deposits behind and beneath the major terrace wall enclosing the hill (ZIN0119/ZIN900.6). As on the top of the spur, there was a sequence of Phase 1 underlying hearths, Phase 2 oval buildings, Phase 3 buildings contemporary with and post-dating the terrace wall, Phase 4 cemeteries after the abandonment of settlement. There is some indication of a possible hiatus in occupation between Phase 2 and Phase 3.

Although there is a certain amount of material that can be clearly dated to the latter centuries BC from these sites (including Phoenician eye beads, other glass beads and some imported pottery), there is a marked contrast between Zinkekrā and Tinda (TIN001 – see Chapter 2 below). Tinda has much more abundant imported ceramics of the latter centuries BC, which points up a contrast in terms of access to imports. In the case of Zinkekrā, the contemporary occupation of Proto-Urban *Garama* (Old Jarma) in the centre of the valley may be part of the explanation why these were less abundant at the escarpment settlement. On the other hand, the appearance of mudbrick buildings of increasing complexity and sophistication on the lower slopes at Zinkekrā is a clear indication that some significant occupation continued well beyond 500 BC in the Proto-Urban phase.

**ZIN002.011**

This site revealed a simpler sequence than site ZIN002.013, but also with the three broad phases corresponding to the overall schema for the site: Period 1, pit hearths; Period 2, stone building; Period 3, the later stages of the same building, extensively employing mudbrick, probably contemporary with the enclosure wall period of site ZIN001.013.

Site/area	Context/layer	Phasing
011	1	Unstratified
011	2	Period 3
011	3	Period 3
011	8	Period 3
011	10	Period 2
011	11	Period 2
011	13	Period 3

011	17	Period 3
011	20	Period 2
011	22	Rubbish in Period 2 hearth
011	23	Rubbish in Period 2 hearth
011	24	Period 2
011	25	Period 2
011	26	Period 3?
011	30	Period 2
011	31	Period 2
011	34	Uncertain, Period 3?

**ZIN002.013**

Three main phases of occupation: Period 1, pit hearths; Period 2, stone-footed buildings; Period 3, early buildings replaced by stone enclosure wall. There was also a cemetery phase here, Period 4, relating to a series of burials to north of the enclosure wall.

Site/area	Context/layer	Phasing
013	1	Unstratified
013	5	Period 2
013	6	Period 1
013	13	Period 3
013	14	Period 2
013	15	Period 3
013	17	Period 3
013	21	Period 1
013	23	Period 2
013	24	Period 2
013	31	Period 3
013	32	Period 3
013	34	Period 3
013	35	Period 3?
013	36	Period 3
013	38	Period 3?, possibly a little earlier
013	39	Period 2 (C14 date of 2560 bp)
013	40	Uncertain, possibly Period 3
013	42	Just post-dates Period 2
013	48	Period 2
013	49	Period 2?
013	50	Period 2

013	53	Period 2
013	103	Period 3
013	104	Period 3
013	105	Period 3?
013	106	Period 3
013	107	Period 3?
013	108	Period 2?
013	109	Period 2?
013	110	Period 2
013	111	Period 2? Could be earlier
013	112	Period 1
013	114	Period 2
013	115	Period 1

**ZIN002.119**

A building probably of the 1<sup>st</sup> century AD

**ZIN002.120**

Probably of the 1<sup>st</sup> century AD

**ZIN002.125E/W**

The east and west rooms of a two-roomed building. No surviving stratigraphy. Date probably similar to 119 and 120.

**ZIN002.213**

Structure built against (and contemporary with) the terrace wall (Period 3)

**ZIN002.217**

Another site built against the terrace wall.

Site/area	Context/layer	Phasing
217	1	Period 3
217	2	Period 3
217	3	Period 3
217	6	Probably pre-Period 3 occupation

**ZIN002.218**

Another site abutting terrace wall.

Site/area	Context/layer	Phasing
218	1	Period 3
218	2	Period 3
218	3	Probably pre-Period 3 occupation

**Southern Slopes of Zinkekrā (ZIN003)**

The main suite of buildings on this side of the spur are of Phase 3 date. These consist of well-built mudbrick buildings, which CMD initially believed to be 1<sup>st</sup> century AD ( $\pm 50$  years). The incorporation of ashlar footings in some of these structures (ZIN003.2–3) could correlate with that date, but other structures appear more similar to the Proto-Urban Garamantian structures on the north slopes. The earliest dated mudbrick at Jarma is no earlier than the 3<sup>rd</sup> or 4<sup>th</sup> century BC and the size and sophistication of the mudbrick buildings of ZIN003 look later than that. The absence of imported pottery from these buildings suggests that they were not occupied long into the 1<sup>st</sup> century AD.

On the other hand, there is little evidence for Phase 1 and 2 activity, though a radiocarbon date from occupation levels within ZIN003.105 indicates an early date there (2400 $\pm$ 120 bp). Architecturally, this rectangular mudbrick complex ought to be of Phase 3 date, so it is probable that the early radiocarbon indication here in fact related to an earlier underlying structure. As the south scarp buildings will have been in full sun for much of the day, while the north scarp offered more shade, it is perhaps no surprise to find more intensive occupation to the north than to the south of the spur. This does raise questions about the function of the complex of late buildings at ZIN003. One possibility is that part of this was a religious complex after the main period of occupation at Zinkekrā had ended (Mattingly 2003, 178–79).

**ZIN003.105**

Site/area	Context/layer	Phasing
105	3/5	Period 2/3? Lowest floor of building or of underlying structure?
105	5/2	Period 2/3? Lowest floor of building or of underlying structure?

**ZIN 109**

This site is a large Roman-period, Classic Garamantian cemetery, superimposed over early occupation sites on the southern lower slopes of Zinkekrā. The date of material here is Period 4, 1<sup>st</sup>–5<sup>th</sup> centuries AD.

## Water Supply

The question of the source of water supply for the settlement at Zinkekrā is important. There is no conclusive evidence to explain where water came from, but we can be sure that the site was not served by rainfall and rainwater catchment. In the absence of any significant level of rainfall after *c.*3000 BC, and with fierce summer temperatures, water needs will have had to be met from groundwater sources. It is possible that wells were dug at the foot of the scarp by Zinkekrā, though the depth of groundwater at the southern edge of the Wādī al-Ajāl might be over 20 m down. An alternative possibility is that the escarpment had a number of still active springs around 1000 BC, when occupation at the site appears to have commenced. Survey at a number of locations along the escarpment in the Wādī al-Ajāl has identified gypsum deposits that appear to have formed when springlines dried up (Drake *et al.* 2004). Although no certain location for a spring has been identified at Zinkekrā itself, needle-like gypsum crystals are often to be seen on the northern slopes and it seems likely that there was at some point an active spring there. There is evidence of substantial hill-wash deposits along some parts of this scarp, which could have buried the actual location of the spring. At some point in the 1<sup>st</sup> millennium BC, it is likely that the springline failed, but by the latter centuries BC the construction of foggaras will have created a network of wells close to the base of the hill. This could explain not only how some activity continued at the site in the latter centuries BC, but also why this was more intensive at the base of the hill than on top of the spur.

## The Nature of Activity at Zinkekrā

Zinkekrā is the type site for Early and Proto-Urban Garamantian settlements. It combines the character of a fortified hillfort and proto-urban centre. Its earliest Phases resemble a village of rough oval or sub-rectangular one- or two-roomed huts, while its later Phases comprise an extensive settlement of more complex mudbrick buildings extending around the slopes and base of the spur, with additional walls being constructed for defence, corralling animals or for prestige. The steeply terraced nature of the site and the construction of oval buildings from mud and wood on stone footings calls to mind the Dogon villages of the Niger in more recent times, a comparison CMD was aware of (Lefevre 1972, 14–54).

The small size of most of the early buildings and their one- or two-roomed nature, suggest that they housed small social groups (nuclear families?). The enclosures and the accumulation of dung within many of the buildings raises the possibility that people and animals lived there together (though the use of abandoned dwellings as stock pens could also account for the dung within the houses). Most of the dwelling spaces had a hearth in at least one of the rooms.

In its earliest manifestation, the site marked a significant transition point between the Late Pastoral and the Early Garamantian periods. The Late Pastoral peoples of the region will have been increasingly bound to locations where water was available in the form of relict lakes or springs to water both humans and animals. The emergence of escarpment settlements represents a stage in the localisation of habitation close to the vital resources. The choice of defensible locations on the escarpment also suggests that there was emerging competition between human communities for the control of these resources. The transhumant pastoralists of the late Neolithic Sahara were progressively sedentarised and their lifestyle transformed.

Zinkekrā is also the key site to illustrate this economic transformation. The site has produced vital evidence for the introduction of agriculture in the early 1<sup>st</sup> millennium BC – comprising dates, wheat, barley, the grape vine and a range of other water-intensive crops alongside a suite of weeds that attest to hyper-arid background conditions (see Chapter 9 for a full discussion of this material). Although the early agriculturalists at Zinkekrā clearly had plenty of animals living with them in the huts and enclosures on the spur and scarps, it was the intensive oasis cultivation that was to be the long-term focus for Garamantian civilisation.

Zinkekrā also provides the clearest evidence for the further transformation of the settlement from hillfort to proto-urban centre, presaging the rise of Garamantian towns and villages in the valley centre. The long-term future for settlement was close to the oasis belt, rather than on the remote escarpment with its more difficult water supply issues. However, the earliest experiments with new building materials (mudbrick and dressed stone) and new building forms (multi-roomed, complex rectangular houses) arguably were again carried out at sites like Zinkekrā. The appearance of these new techniques (almost certainly brought to the region along with the foggara from the oases of the Egyptian Western Desert) in the

latter centuries BC was a defining characteristic of the Proto-Urban Garamantian phase. The CMD records note variations in the colour of mudbrick (yellow, bluish, brown), though whether this was due to the source of natural materials or to the inclusion of additional ingredients (such as clay, ash, etc.) in specific recipes is not clear. Some of the latest buildings at Zinkekrā used a combination of dressed stone footings and mudbrick – both techniques brought to the region from outside. Mudbrick was used not only for walls, but in some instances seems also to have been laid as flooring.

The architectural sequence at Zinkekrā is particularly full and wide-ranging. There is evidence of construction in timber (post-holes), in timber, stone and mud, in stone and mud, in stone and mudbrick, in mudbrick on its own. Over time, building plans evolved from simple one- or two-roomed oval huts, into more complex nuclei of oval rooms and yards, into multi-roomed, rectilinear buildings. While the quality of the dating evidence does not permit us to state unequivocally that all simple forms were early and the more complex later, this seems in broad terms the trend over time. The site is architecturally a microcosm

of Garamantian society as a whole and reflect the emergence of broader social complexity.

Finally, the detailed finds record from the site, presented above and in Section 8 below, provides us with the clearest picture to date of the early material culture of the Garamantes. The earliest finds of lithics and ceramics represent close continuities with the Late Pastoral tradition, but the emergence of new ceramic styles, the first indications of metallurgy and a diversification in the nature of beadwork are key indicators of the emergence of what we can recognise as a distinctive Garamantian cultural identity during the 1<sup>st</sup> millennium BC. By the Proto-Urban phase the main pottery forms (if not the precise fabrics) were certainly being imitated on other Garamantian sites and some of these forms continued into the Classic Garamantian phase (for instance, the flat dishes or *dokas*). The importation and local production of a wide array of beadwork (ostrich eggshell, faience, coloured glass, stone) presaged further developments in the use of beads, both internally in Garamantian society to denote wealth and status, and in support of trading relations.

For all of the above reasons, CMD's pioneering work at the site will be of enduring value.

## 2. EXCAVATIONS AND SURVEY AT TINDA, AL-KHARA‘IQ AND IKHLIF ESCARPMENT SETTLEMENTS (TIN001, CHA004–008 AND CLF008–010)

By **D. N. Edwards, D. J. Mattingly and C. M. Daniels<sup>†</sup>**  
(with contributions from **J. N. Dore<sup>†</sup>, A. Leone**)

### INTRODUCTION

CMD followed up his intensive work on Zinkekrā by survey and excavation at a number of other escarpment edge sites he had identified elsewhere in the Wādī al-Ajāl. The small-scale nature of these interventions in comparison with what had been achieved at Zinkekrā has to be acknowledged at the outset. However, cumulatively the sites included in this chapter offer important support for the broad conclusions CMD had reached in relation to the development sequence and character of the activity at Zinkekrā. Subsequently, the FP and the DMP have recorded further examples of this important class of sites, but the excavations by CMD

provide the solid foundations on which current interpretation must rest. The three sites reported on here are dealt with in geographical sequence, starting with Tinda, c.30 km west of Zinkekrā, then continuing with al-Khara‘iq 15 km east of Zinkekrā and ending with Ikhlif, almost 100 km east of Zinkekrā in the Eastern Wādī (Fig. 2.1).

### TINDA EXCAVATIONS (TIN001), 1973

The prominent headland of Tinda, just south of Ubārī, marked the western limit of CMD’s fieldwork and, in the late 1950s, the western end of permanent settlement in the Wādī al-Ajāl. A first

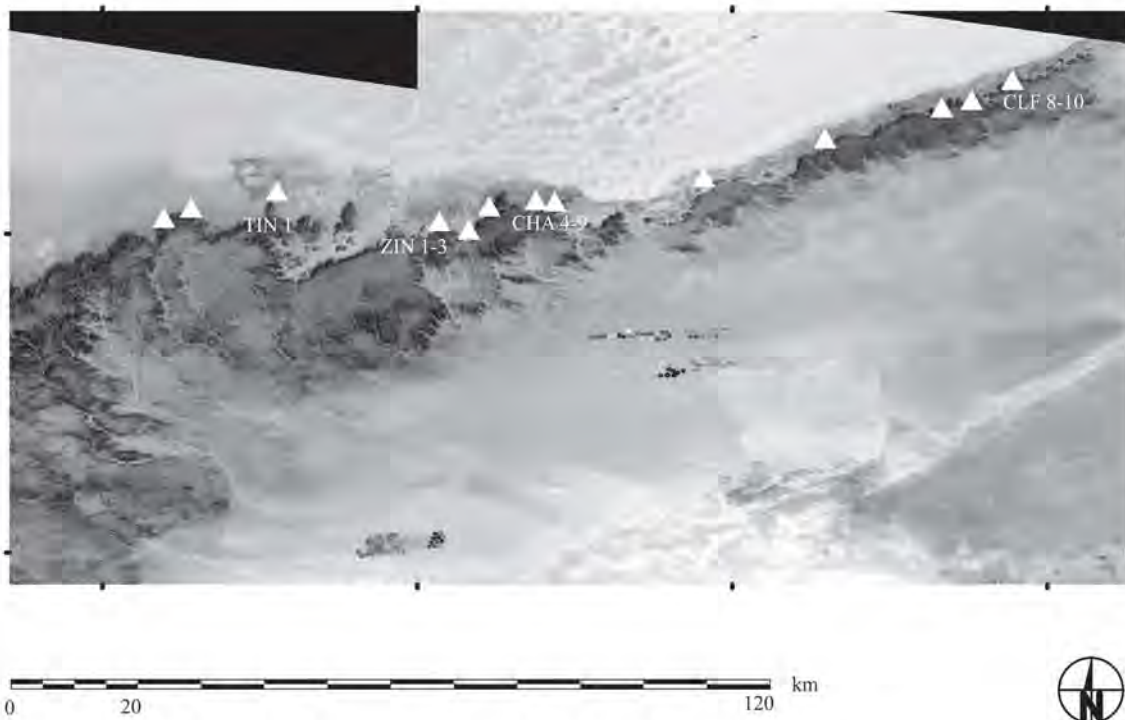


Figure 2.1. Distribution of hillforts and escarpment settlements in the Wādī al-Ajāl, showing location of the excavated sites.



reconnaissance of this part of the wadi was made in 1962, but survey of the escarpment around the Tinda headland only began in 1965, when this site (TIN001, 26°34.05/12°46.62) was discovered. It was originally planned to carry out further work at this location during 1970. The urgent need for such work was made apparent on the occasion of a return visit to the site in 1969, which revealed considerable damage to parts of the site by stone quarrying for building purposes in Ubārī. Further damage had been caused over a large area of its north side by graders and bulldozers collecting material for road construction. However, local conditions made it impossible to work on the site at that time, and its full survey and test-excavation only took place in April 1973. The excavation team comprised CMD, Peter Carmody, Fran West, Bill Hanson, with a number of Libyan workmen.

A measured survey of about 60 percent of the total site was undertaken and test excavations carried out on a number of areas (Fig. 2.2). The results suggested to CMD the possibility of two phases of activity, but the very limited survival of occupation debris within the site meant that this could not be demonstrated stratigraphically with any degree of confidence. The first occupation is dated to the later 1<sup>st</sup> millennium BC, with significant quantities of imported pottery of types broadly dated to the 'late Punic' period. It was marked by several areas of small platforms constructed on the hillside each associated with building foundations and hearths. The whole had been surrounded by a large enclosure bank/wall, not dissimilar to those encountered around the base of the Zinkekrā and Ikhliif promontories. A second period was suggested on the basis of what was interpreted as imported Roman pottery, consisting mainly of amphorae and bowls, but lacking finewares. However, in the absence of closely datable pottery much of this material is also probably of 'late Punic' date. The occasional pieces of clearly imported 'Roman' material found on the site almost certainly derive from robbed graves from a later cemetery that intruded into the Lower Enclosure.

CMD also suggested some structural differences between the different phases of occupation, based mainly on the lack of correspondence between surface walls and features and sub-surface deposits. It also appeared that a considerable amount of stone and scree had, on occasions, accumulated, or been dumped, between the different occupation levels, while earlier occupation deposits had also been extensively

eroded in places. As such, some significant hiatus between occupation phases in different areas of the site cannot be ruled out. CMD thought it likely that the Lower Enclosure was a later addition to the original settlement. Whether this related to a more general second phase of occupation, perhaps after a hiatus, remains unclear. The function of the enclosure walls is not entirely clear, though the location of the site on a steep scarp was inconvenient if not exploiting the defensive potential of the site. However, for much of the time, the enclosures could have functioned equally for keeping livestock inside as for holding back enemies outside of the settlement.

### TIN001 Settlement

The main settlement TIN001 was an approximately triangular area running up the hillside, with two substantial enclosure walls forming its base and lower sides (Figs 2.2–2.3). The upper enclosure wall was quite well defined but appears more as a terrace wall than a faced free-standing structure. The lower enclosure wall is a large 5 m-wide stone bank (Fig. 2.3 and *AF* 2, fig. 4.4).

There was also a marked change of level behind the upper enclosure wall, not seen behind the lower wall, while the lower wall also had side walls running south from its ends, the sides of the upper part of the site were largely unenclosed, being defined by precipitous natural slopes. By 1969, the east side of the lower enclosure had been stripped of its stone for much of its length. It is apparent from early aerial photographs that at least two entrances in the centre at the north-west corner of the north (lower) enclosure wall had had short closing walls across their approaches. These no longer survived by the time the structure was surveyed in 1973. It is also noteworthy that a foggara channel appears to pass below the centre of the lower enclosure wall (TIN007).

#### *Area A, The Upper Enclosure*

The Upper Enclosure (A) was covered by a series of terrace platforms and related structures over an area of 1–1.5 ha. Individual 'structures' ranged from single platforms or enclosures to large multi-unit complexes. The main concentration of structures was planned (Fig. 2.4). Exploratory excavations were undertaken in four locations: A1 and A2 on either side of the entrance opening into the lower enclosure, and A12, A18 and A21 above.

## TINDA

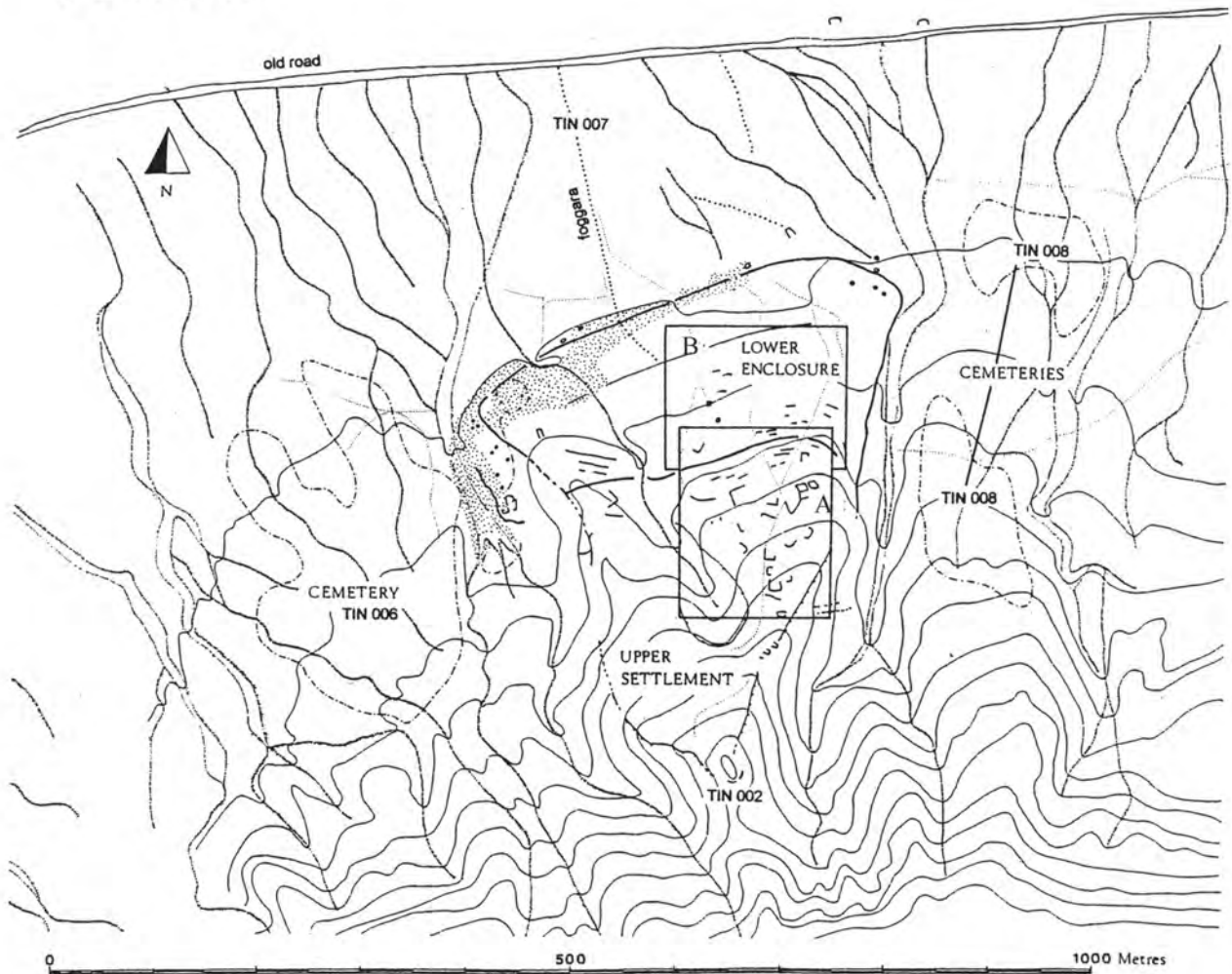


Figure 2.2. General plan of Tinda headland site TIN001.



Figure 2.3. Aerial view of the 'flatiron' formation on which the TIN001 settlement is located on the north escarpment of Massak, with the defensive embankments plainly visible running at right angles across the slope (DJM 2008).

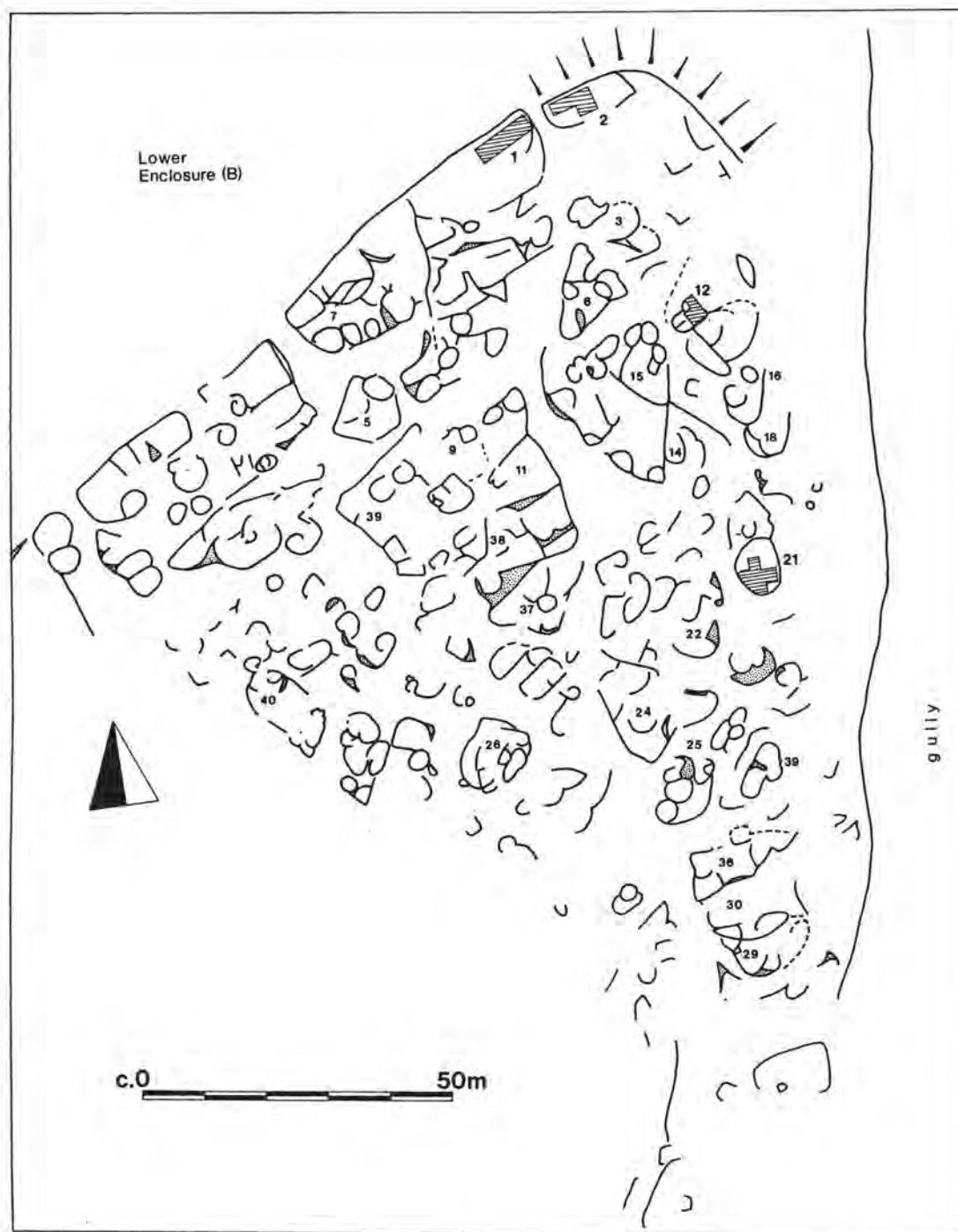


Figure 2.4. TIN001, plan of upper enclosure (A).

The structures and enclosures were marked by low stone banks with little indication of laid drystone walling or that more substantial stone walls had ever existed. In the absence of indications for any significant use of wooden posts or other supporting building frames, it is possible that these stone foundations were no more than the footings for clay superstructures. While such architectural styles are not common

in North Africa, they are of course well known in Sub-Saharan Africa and CMD drew attention to such parallels in his field notes.

The finds from the test excavations were limited to a small number of sherds, occasional lithics and stone pounders. No saddle querns were recovered and few beads, metal objects or other finds were found.

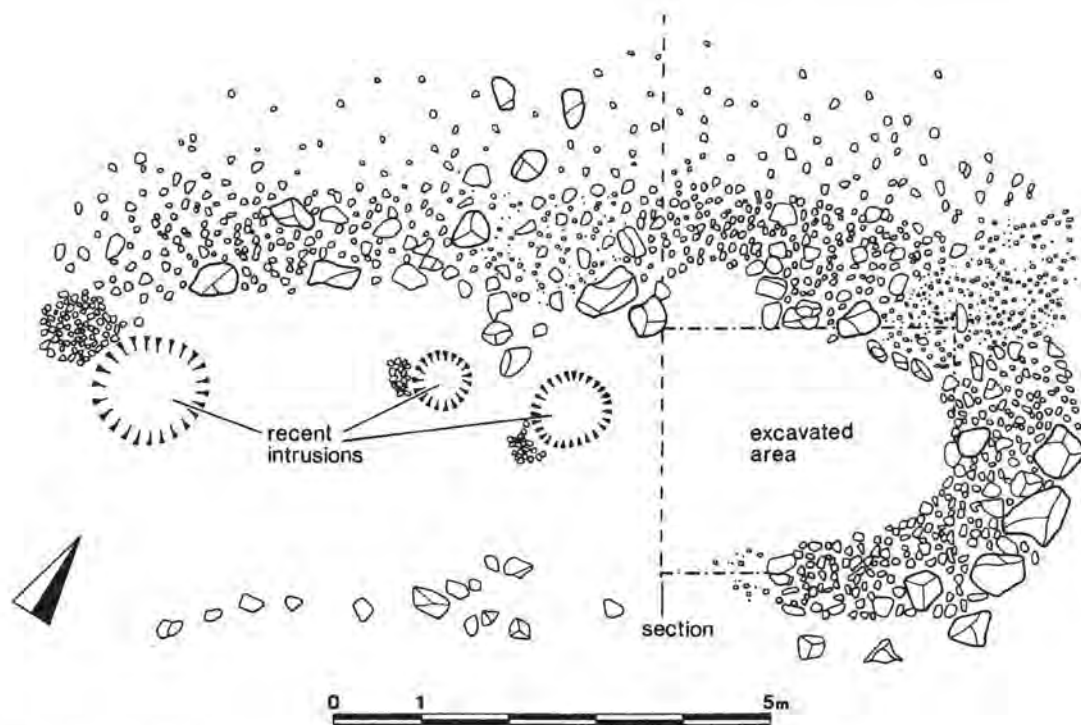


Figure 2.5. TIN001, plan of excavated Area A1.

#### Area A1

This Area formed the west side of the 'entrance' to the upper enclosure, just inside the wall. An area measuring c.2.75 x 3.4 m was opened up, providing a section across the enclosure wall and exposure of c.1 m-deep deposits behind the wall. The surface as found comprised a level terrace with an even surface covered by small stone, bounded by rubble of the collapsed enclosure wall and a better-preserved curving wall of large and medium blocks on its east end (Fig.2.5). Further east there was evidence for a number of shallow pits being dug into the area, probably in the quite recent past.

The main north-south section (Fig. 2.6) showed that the main terrace wall had been c.2.3 m thick, and

survived to a height of c.1 m. In places it was founded on large natural boulders while the inner side was faced with similar large blocks. No significant facing survived on the lower northern side and the spread of material appears to represent a substantial amount of rubble collapse. The inner face appears to have been terraced into natural sandy deposits (6) to a depth of c.0.25 m. Traces of an additional inner wall (7) c.30 cm thick were recorded, although only appearing in the section as a band of stone rubble.

Small areas of organic-rich occupation debris were found beneath this in the centre of the Area, but whether associated with any structures remains unknown. Up to 40 cm of horizontally-laminated orange-red sand

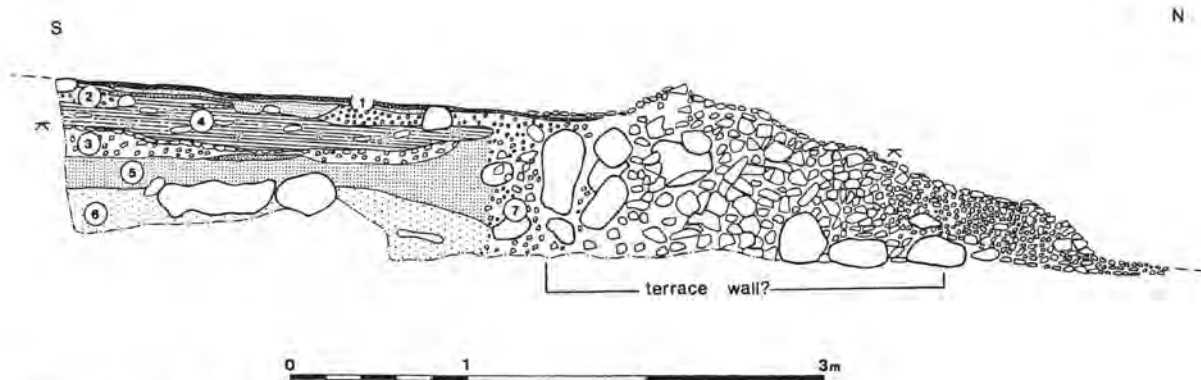


Figure 2.6. TIN001, north-south section through Area A1.

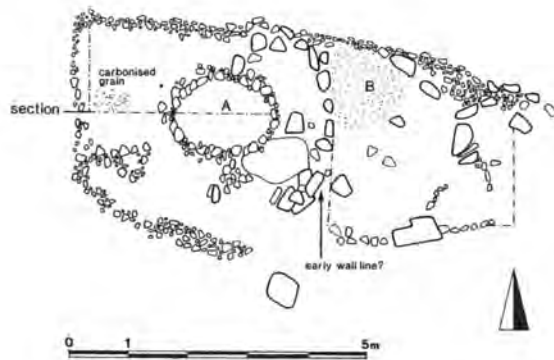


Figure 2.7. TIN001, composite plan of excavated Area A2.



Figure 2.8. Area A2, structure A and excavations below it (CMD 1973).

(5) lay behind the line of this wall but it is unclear whether it had built up against it, or whether the wall had been set into it. Above this a layer of small- and medium-sized stones and chippings 5–15 cm thick appeared to represent a floor surface (3). On top of this, the main occupation level (4) comprised a widespread layer, 20–25 cm thick, of a brown organic-rich deposit containing fragments of palm leaf, wood, charcoal, date stones and dates, figs, basketry and dung, and small quantities of sherds and bone fragments. Both the floor and occupation debris respected the line of the robbed inner wall and were presumed to be associated. The upper levels comprised further discontinuous patches of stone chippings (2), ash and bones and more sandy deposits (1), probably derived from some later, but largely eroded, occupation.

Surface finds included undiagnostic amphora and flagon sherds, flange-rimmed bowls CW 102 (Figs 2.18–2.19), <3636>, <3633>, small everted rim jars (CW 193/197) and Berber Red bowls HM 324 <3630>. Only three body sherds of Berber Red were recovered.

#### Area A2

The east side of the entrance was also tested. The enclosure wall was quite roughly constructed with no real facing, the stonework bonded with a mud mortar.

An area tested revealed some stratified remains, the deepest deposits comprising concentrated build up against the south side of the enclosure wall. Away from the wall, whatever occupation debris had existed was generally very eroded and patchy. At the upper levels, two possible structures may be identified (Fig. 2.7), a circular stone foundation on the west side (A) and a more poorly defined sub-circular area of burning c.2.2 m across (B), with a possible post-hole.

Structure A was initially excavated except for an east-west baulk across its centre (Figs 2.7–2.9). This proved to be a surface feature and overlay earlier occupation levels. Just to the west a deposit of organic-rich debris (8) was found sealed beneath surface rubble. Field identification of carbonised remains noted the presence of grain, dates and figs. At the western edge of the site, samples were also taken from what appeared to be a small cut feature filled with layers of ash, charcoal and dung-rich deposits with a layer of palm leaves.

A more widespread layer (2) of a red-brown silt mixed with occupation debris underlay the stone structure, extending east to a dense spread of rubble, probably the remains of a north-south wall running up against the enclosure. To the east of the wall a similar deposit (12) was noted. Layer 2 overlay a similar level (3) with patches of animal dung on what was taken to be the 'natural' ground surface. During 2000, the site was revisited and further samples of carbonised grain were taken from (8). AMS dates on these samples (OxA-9573: 2117±37, OxA9574: 2074±40) indicate a date in the 2<sup>nd</sup>–mid 1<sup>st</sup> century BC).

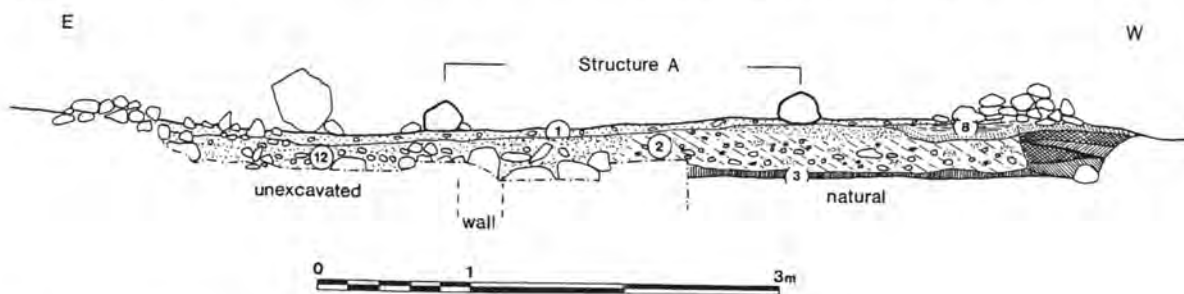


Figure 2.9. East-west section across Area A2.

On the east side of the area, a slightly different sequence was observed with the Area 'B' being marked by quite deep deposits of ash, consolidated animal dung and further ash and charcoal deposits, filling a scoop or depression. The surface deposits contained small quantities of imported Roman material, while the dung-rich and other possibly *in situ* occupation levels only contained coarser local wares.

Finds were again limited. A few body sherds of local handmade wares and an imported flagon were found on the surface. Rim sherds of **AM 14** <3634> and **HM 311** <3635> came from cleaning the south-west corner of the area and three rim sherds, probably all from the same **HM 304** bowl <3636>, were found along the north wall. Other pottery was restricted to a few wall sherds of amphorae, imported flagons and undiagnostic handmade wares.

### Trench A12

This comprised a sub-circular structure, probably forming one unit of a larger complex. An L-shaped trench (c.2.75 x 4.25 m) was excavated covering much of the interior of the structure, also exposing a section across its north wall (Figs 2.10–2.11).

This revealed little depth to stratigraphy with a thin sandy surface layer (1) sealing patchily preserved 'occupation' levels. These were represented by a darker and softer deposit (4) containing charcoal, animal dung, date stones, sherds and small quantities of animal bones, which became darker at lower levels (2). The upper levels of this layer were very stony, particularly towards the north 'wall' where stones from the wall structure appeared to have collapsed into the structure. There were suggestions that an earlier wall line (5) may have underlain the visible feature but this seems more likely to have been natural boulders embedded in the underlying surface.

The only significant feature within the structure were the remains of a hearth/oven set into the ground. Measuring c.0.90 x 0.60 m and c.0.60 m deep, the pit had a stone and clay lining with a hard-packed base. Its fill contained stones, burnt clay fragments, burnt date stones, palm leaves and wood, charcoal and ash and occasional burnt sherds.

Some 20 sherds were recovered from the test excavation. Most were undiagnostic handmade sherds, with some fragments of a **HM 341** 'frying pan' <3638> and a **HM 347** flaring bowl <3637> and parts of three **HM 320** jars <3639-41>.

### Area A18 (Complex 17–19)

A cluster of several possible structures and platforms. Test excavations were carried-out on A18, an oval

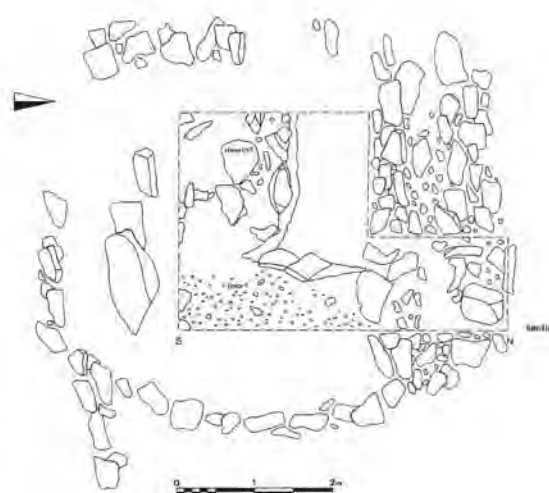


Figure 2.10. TIN001, plan of Area A12.

'structure' at the south end of the complex. After clearing the surface, narrow test trenches were cut across the site, revealing patchy areas of occupation debris, best preserved on the downslope side. The extent of occupation debris did not respect the stone surround which appeared more as an accumulation of stones rather than as a wall defining the area. Two possible post-holes were recorded and a small pit, possibly a small hearth, infilled with dung and stones. As in other structures, the occupation debris comprised burnt debris, ash, charcoal, small animal dung, date stones and occasional lithics.

The pottery contained both local coarsewares and imports. The latter included parts of two shallow flange-rimmed bowls **CW 102** (as <3645>) and one deeper example <3834> and an **AM 2** amphora rim <3647> and several fragments of thin black flagon, all dating to the latter centuries BC. Local wares included two fragments of a large bowl/jar (**HM 304**) <3649>.

### Area A21

This Area comprised a small oval terrace platform. The rear of the terrace was formed by a steep stone bank c.1.5 m high, with a gentler slope on its north side, forming a flattish ground surface with occasional sherds. Test excavation suggested two possible phases of occupation (Figs 2.12–2.13). A spread of material across the north side of the Area pre-dated the terrace bank on this side. As elsewhere on the site, this occupation layer (9) included much animal dung, date stones, charcoal, palm leaf fragments and bone. A layer of ash 1–3 cm thick (8) divided this from an upper grey-brown sandy layer (3) containing much charcoal, dung and bone fragments with patches of ash and dirty orange sand, which extended across most of the north side of the platform.

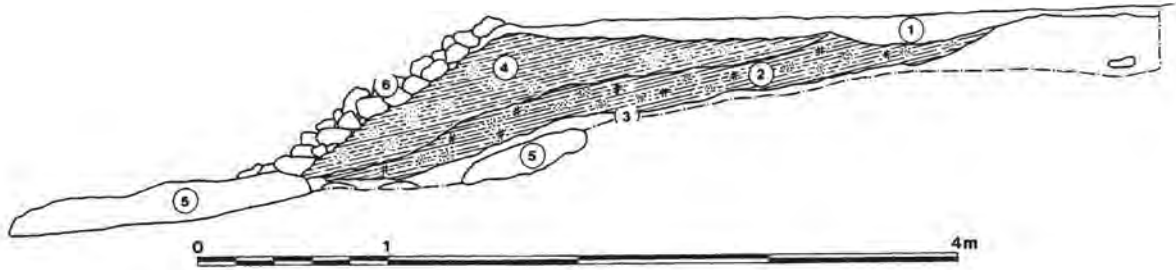


Figure 2.11. Section across excavation Area A12.

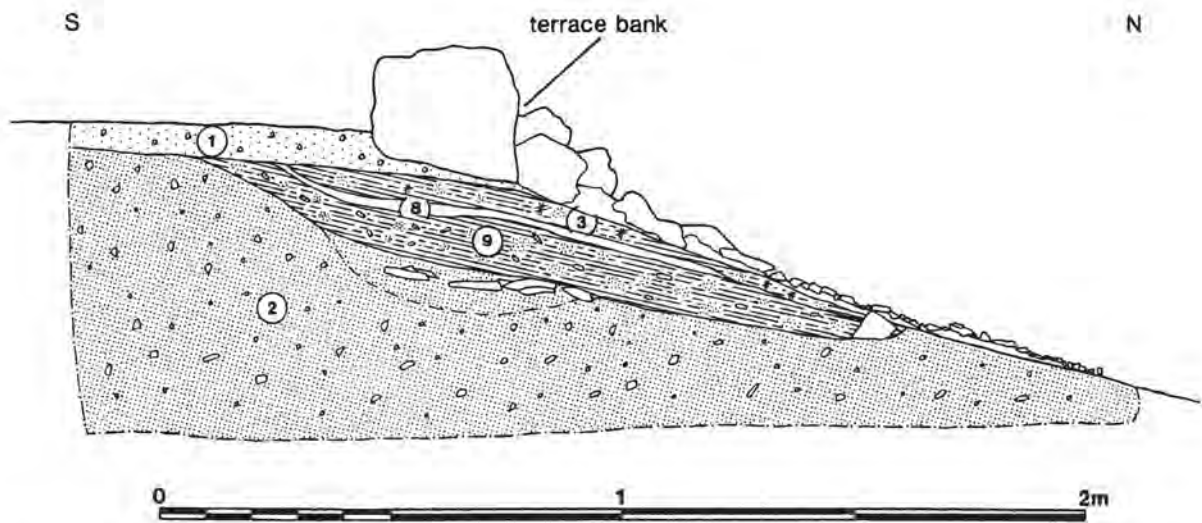


Figure 2.12. Section across excavation Area A21.

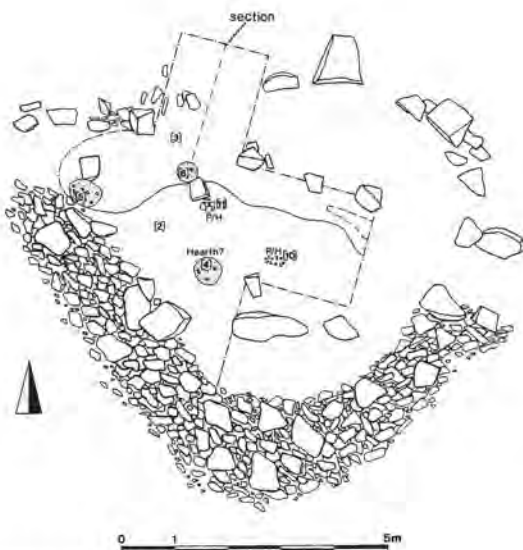


Figure 2.13. Area A21 test excavation.

This material had been eroded further up the slope and on the top of the platform, and any occupation levels directly associated with the extant terrace walls had similarly been heavily eroded/deflated, the upper levels (2) being a dirty orange sand with many stones. At least three small patches of ash and charcoal were found at this level, of which (4) and (5) may well represent small hearths. Two small features (10 and 11) encountered on the platform probably represented post-holes (Fig. 2.13).

Finds from this Area were very limited, with a few coarse handmade sherds, two large fragments of a HM 349 bowl/jar <3651> (possibly post-Garamantian) and parts of two stone pounders.

*Area B Lower Enclosure*

Within the Lower Enclosure (B), structural remains were most evident in its upper central area. Vestigial small terraces, low stone foundations and enclosures were noted, if lacking the complex cellular structure of structures within the Upper

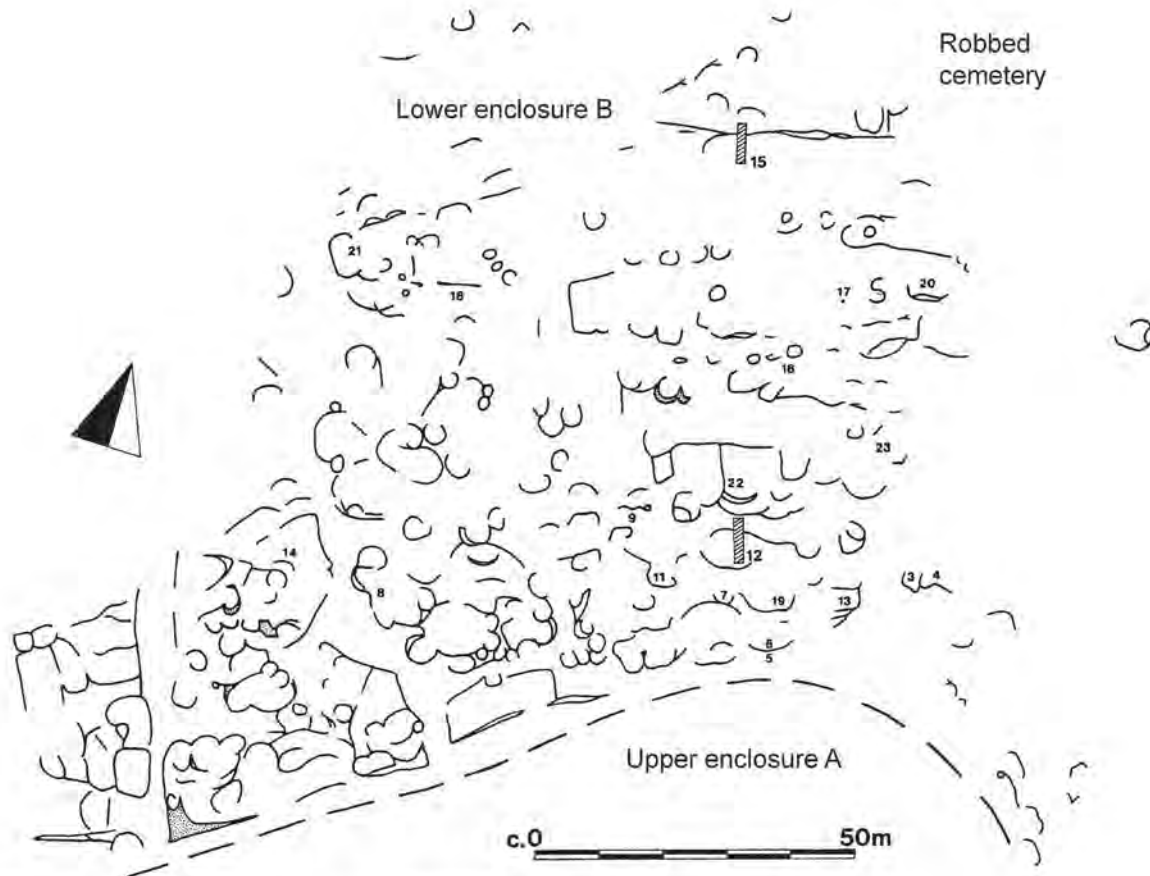


Figure 2.14. Tinda (TIN001), plan of lower enclosure (B), 1973.

Enclosure. The slope in this Area was gentler, with a more even cover of surface stones, with fewer upstanding walls preserved than in Area A. Sherd collections were made and two areas test-excavated (B12, B15), with a further section (BA) cut through the Lower Enclosure wall (Fig. 2.14).

#### Area B12

A terraced Area was tested with a sondage *c.* 7.6 x 1.5 m, which was cleaned down to the top of occupation layers, with a small 1 m square trench on the west side then excavated down to the natural subsoil. This revealed the very shallow depth of deposits (*c.* 20–25 cm), with two levels across the terrace separated by a low dividing wall. The 'occupation' levels were limited to spreads of sandy grey deposits with patches of ash and charcoal, and dark brown occupation deposits, similar to those encountered elsewhere, containing date stones, dung, palm leaves and wood.

Finds were limited to a few amphora body sherds and handle fragments, several fragments of CW 108 <3680>, <3681> and CW 101 bowls <3682>, and a few small coarse handmade sherds. Again, the diagnostic pottery here is late Punic.

#### Area B15

Area B15 comprised a large straight terrace *c.* 30 m long and 5–6 m wide, running along the slope, bounded by gullies at both ends. Surface stones suggested two to three possible dividing walls running across the terrace. A small trench *c.* 7.3 x 1.5 m was excavated across the west end of the terrace (Fig. 2.15).

This revealed at least three possible phases of 'occupation', but again lacking any significant build-up of well-stratified deposits. The earliest was marked by a spread of burnt occupation debris (12), with pottery, lying on a natural ground surface, beneath the lower terrace wall/bank (Fig. 2.16). This was followed by the construction of a broad terrace bank (8) of rubble.

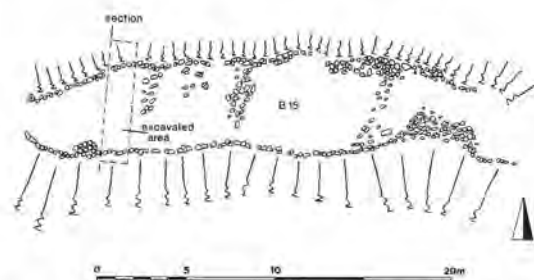


Figure 2.15. Plan of terrace and excavation Area B15.



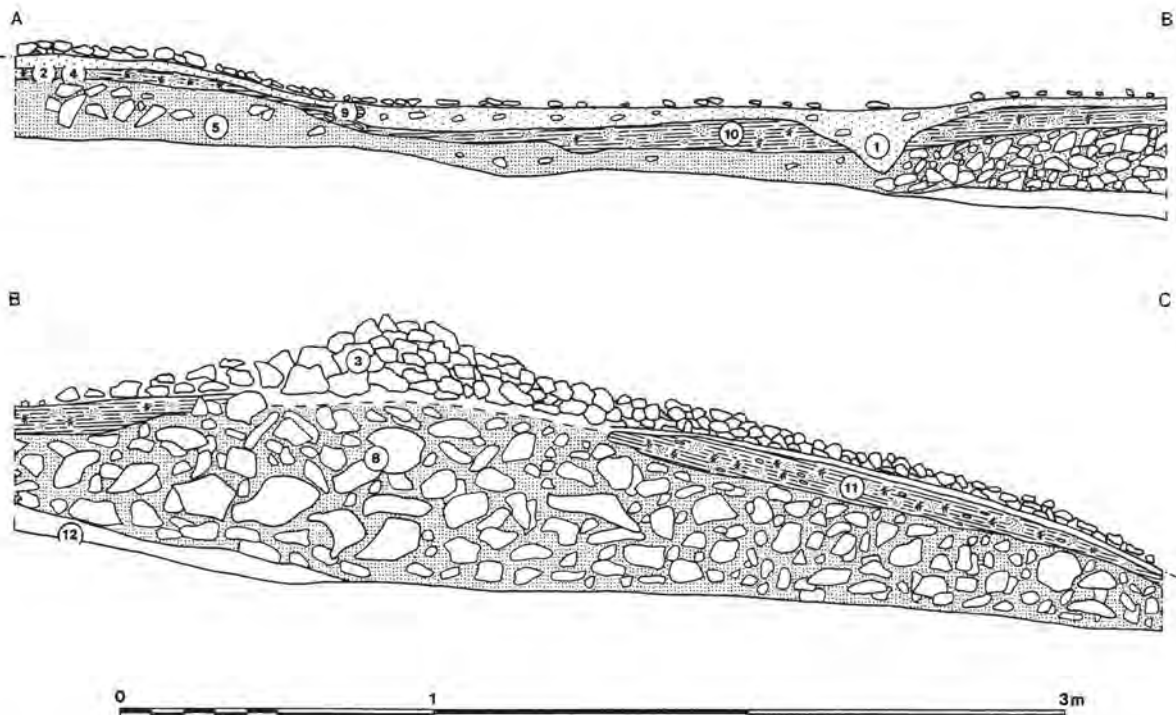


Figure 2.16. Area B15, section across terrace.

While no occupation material appeared to be closely associated with the bank, a dirty sandy level with many small stones (5) was thought to be naturally formed. Over this variable sandy-silt layers (9 and 10) including sherds, dung, bone fragments and some charcoal overlay the south side of the bank, with similar material (11) evident on the north side of the bank. In the east section (not illustrated), a thin spread of blue-grey ash (7) ran over the bank, linking these deposits, but the excavators suspected that all these deposits had washed down onto the terrace from higher up the hillside. They underlay a secondary phase of the terrace wall (3). Further thin, but well-defined, dark occupation deposits, with ash, charcoal, burnt date stones and animal dung (2 and 4), were preserved at the south end of the trench. These were also thought to have slipped downslope from a higher terrace as were the spread of stones overlying them. Surface deposits (1) consisted of a crust of dirty yellow sandy silt mixed with small-medium stones.

Finds comprised some 30 feature sherds, several amphora/flagon body sherds and undiagnostic coarse handmade body sherds. Recorded coarseware vessels included CW 108 bowls <3689>, <3691>, <3690>, including one classed as a 'waster', CW 165 small inturned bowls <3686>, <3687>, CW 212 lid <3685> and parts of two handmade HM 304 bowls <3693>, <3683>. The diagnostic material is late Punic or early Roman in date.

### The BA Section

Limited clearing of the north enclosure wall confirmed that the wall was originally faced with stones set in mud mortar. The south face was preserved for c.0.60 m high; the north face to a similar height and then sloping inwards (Fig. 2.17). The wall was c.4.5 m wide at ground level. On the south (internal) side of the wall organic-rich deposits were noted at foundation level, containing ash, charcoal, palm leaves, charcoal, date stones and other (unidentified) fruit pips.

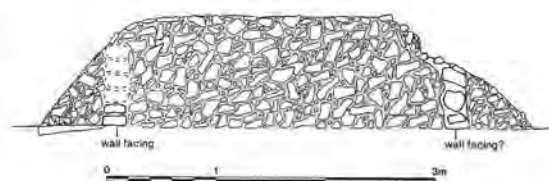


Figure 2.17. Schematic section through enclosure wall BA.

### Burials

Some disturbed graves were noted in the north-west and north-east corners of the Lower Enclosure (respectively Cemetery 'D'/BW and BE area). The former had largely been destroyed by 1973 by bulldozing of this area. Surface collections of pottery were also made.

## The Pottery

The pottery from the site forms a distinctive group and represents a range of material which is not exactly paralleled by finds from other settlement sites in the wadi (Table 2.1 and Figs 2.18–2.24). Preliminary analysis of the pottery shows the presence of a range of material which from

parallels on the coast (e.g. Carthage, Sabratha, Sidi Khrebish) may be broadly dated to the Hellenistic/‘late Punic’ period (c.3<sup>rd</sup> – 1<sup>st</sup> century BC). In addition to these distinctive imports, there was a range of Early and Proto-Urban Garamantian forms (including **HM 301, 304, 305, 310, 311, 331**) and a smaller representation of Classic Garamantian everted rim forms (**HM 337, 338**). The

Table 2.1. List of pottery from TIN001 organised by form code.

Ware	Form code	CMD no.	Date range	TIN001 Area/Context
AM	1	3587	3rd–1st c. BC	(BE, G)
AM	2	3647; 3608	3rd–1st c. BC	(A, 18, S); (BE, B)
AM	4	3595; 3607	3rd–1st c. BC	(BE, A); (BE, B)
AM	5	3696; 3697	3rd–1st c. BC	(B, 17, S)
AM	11	3701; 3704; 3710; 6035	2nd–1st c. BC	(B, 17, S); (B, 21, S); (B, 21, S); (BE, B)
AM	12	3597	2nd–1st c. BC	(BE, A)
AM	14	3634	L 1st c. BC–E 2nd c. AD	(A2, 4)
AM	16	3602	L 1st c. BC–1st c. AD?	(BE)
AM	21	3612	2nd–4th c. AD	(BE, B)
AM	25	3698	2nd–4th c. AD	Gen
AM	44	3588; 3594; 3596; 3610; 3679; 3695; 4043; 6034	?	(BE); (BE, A); (BE, A); (BE, B); (B); (B, 17, S); (B, 12, S); (BE, B)
CW	101	3582; 3617; 3663; 3682; 3702; 3708; 3708 bis	3rd–1st c. BC	(BE); (BE); (A); (B, 12, a); (B, 17, s); (B, 23, s); (BE)
CW	102	3621; 3636; 3645; 3690; 3834;	3rd–1st c. BC	(BE); (A); (A); (B, 15, G); (A)
CW	103	3675; 3677; 3678	3rd–1st c. BC	Gen; (B, 1, SF); (B, 12, s)
CW	108	3583; 3585; 3599; 3618; 3624; 3626; 3658; 3679; 3680; 3691; 3692; 3705; 3792	1st c. BC–1st c. AD?	(BE); (BE); (B); (BE); (BE); (BE); (B); (B, 12, s); (B, 12, s); (B, 15, s); (B, 15, s); (B); (B)
CW	111	673	1st c. BC–1st c. AD?	Gen
CW	131	2711	2nd–5th c. AD?	Gen
CW	132	3623	2nd–5th c. AD?	(BE)
CW	149	3579	2nd–4th c. AD?	(B)
CW	165	3686	?	(B)
CW	166	3687	?	(B)
CW	196	3611; 3709	?	(B); (B)
CW	197	3684	?	(B)
CW	210	3611	?	(BE)
CW	212	3685	2nd–4th c. AD	(B)
CW	218	6033	1st–3rd c. AD	(B, 17, s)
CW	221	3711; 3712; 6031	3rd c. AD +	(B, Y); (B, 5); (B, Y)

Table 2.1. List of pottery from TIN001 organised by form code. (cont.)

Ware	Form code	CMD no.	Date range	TIN001 Area/Context
CW	226	3666	2nd–4th c. AD	(A, 103, s)
CW	228	3653	2nd–4th c. AD?	(A); (A, 23, s)
CW	229	3694	?	(B)
CW	236	3611	?	(BE)
HM	301	3650	1st mill. BC	(A)
HM	304	3649	1st mill. BC	Gen
HM	305	472; 3659; 3661	1st mill. BC	(G); (A); (A)
HM	310.1	3669	1st mill. BC	(A)
HM	311	3635; 3707	1st mill. BC	(A); Gen
HM	320	3641	L 1st mill. BC–3rd c. AD	(A, 12, 4)
HM	324	3630	1st mill. BC	Gen
HM	331	3668	1st mill. BC	Gen
HM	337	3654	1st–4th c. AD	Gen
HM	341	3638; 3655; 3673	1st mill. BC	Gen (x 3)
HM	342	3700	1st–4th c. AD	Gen
HM	349	3651	Medieval or Modern?	Gen

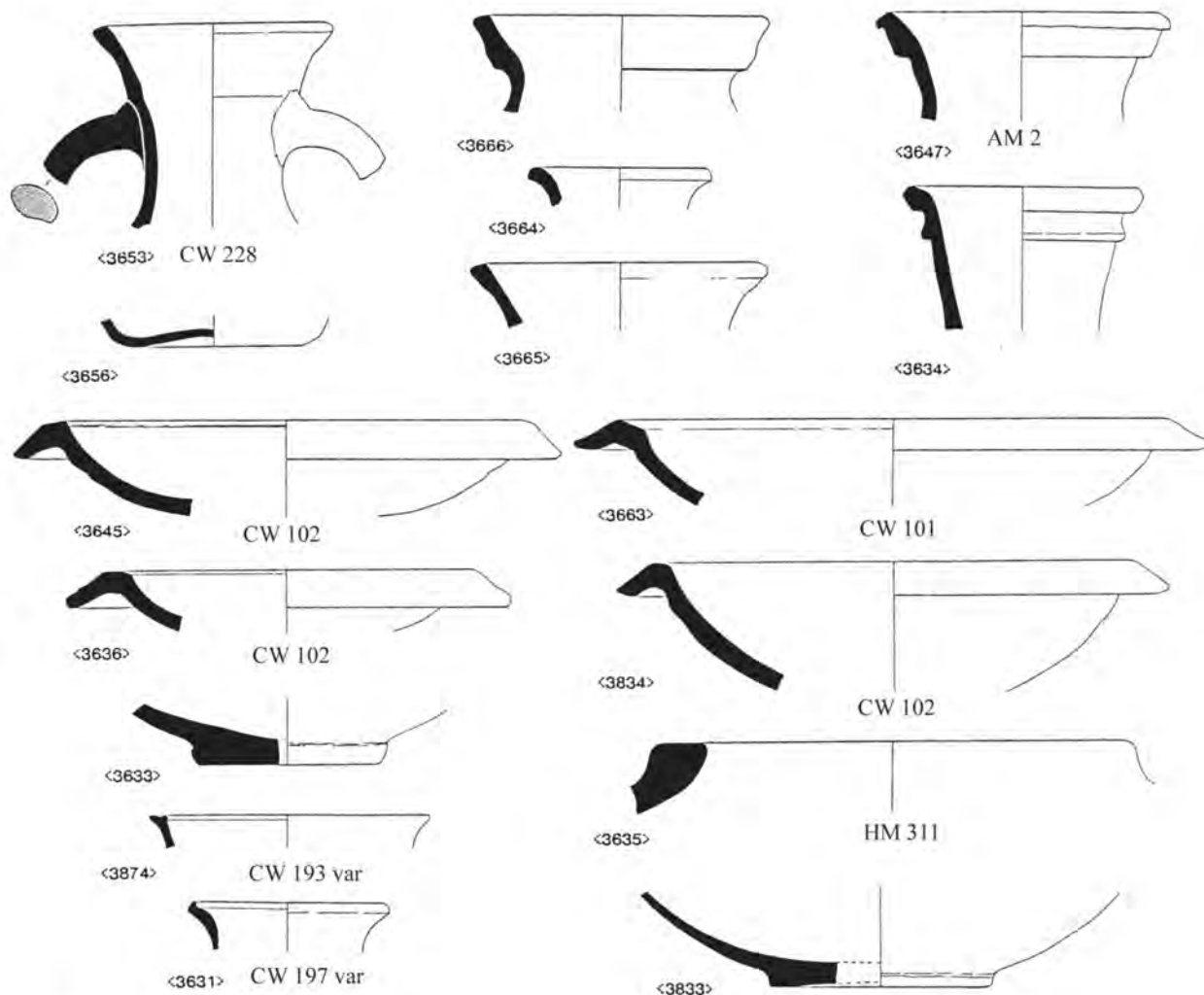


Figure 2.18. Tinda, amphorae and jars from Area A. 1:4.

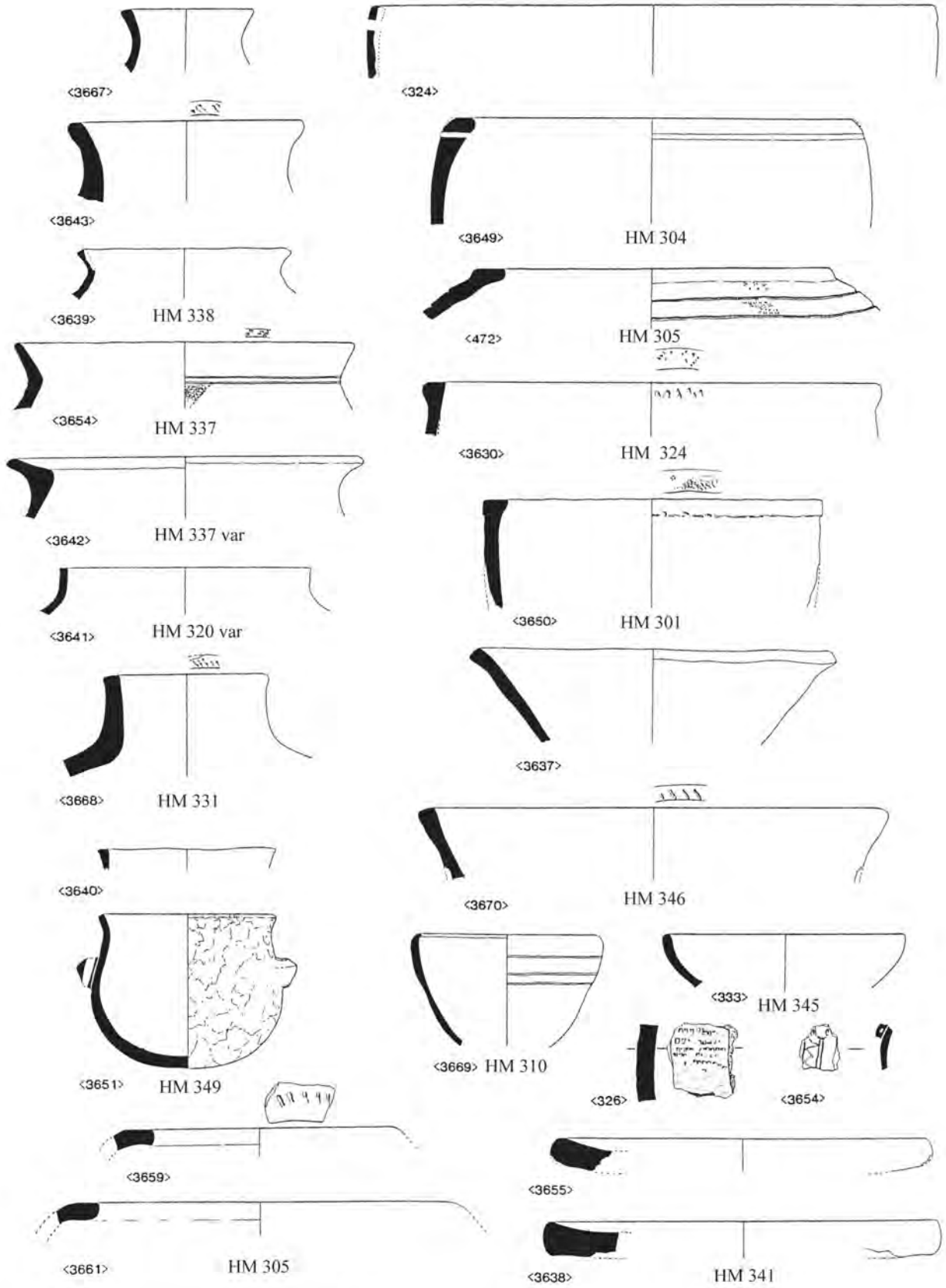


Figure 2.19. Tinda, jars and bowls from Area A. 1:4.

assemblage appears to span the Early Garamantian to Classic Garamantian periods, with the proto-Urban Garamantian elements strongest. **HM 349** (Fig. 2.19) is post-Garamantian and possible of recent origin. There is some overlap and some discrepancy with the pottery groups from the first millennium BC levels at Zinkekrā, or the more abundant Classic Garamantian groups, best represented at Sāniat Jibrīl, Jarma and Sāniat bin Huwaydī. No 'Zinkekrā ware' fabric was identified at the site nor were well-known Classic Garamantian types such as **HM 333/335** globular jars, with 'tartan' painted decoration. Some of the imports, notably the **CW 102** and **CW 108** bowls do occur regularly, if in small quantities, in 'early' dispersed escarpment-edge cemeteries. A few types (such as the amphorae) may continue into the Classic Garamantian groups (mid-1<sup>st</sup> to mid 2<sup>nd</sup> century AD). In view of the reliance on surface collections for the bulk of the pottery, how representative the sample is cannot be determined.

#### Area A

Little pottery was found in the upper enclosure Area A, either from surface collections or from test excavations (Figs 2.18–2.19). These included a range of amphora forms, amongst which is **AM 2** <3647>, flagons **CW 226** <3666> and **CW 228** <3653>, all of which may fall within a 4<sup>th</sup>–1<sup>st</sup> century BC date range. A few wheelmade bowls (**CW 102**) are most closely paralleled by Punic material from Carthage and Sabratha dating to the mid-3<sup>rd</sup>–mid 2<sup>nd</sup> century BC (cf. Dore 1989: 201; Sabratha classes 236–400).

Handmade wares included some **HM 301** bowls <3650> with inturned rims, as well as more closed jar forms **HM 304** <472> <3649>. These appear quite similar to forms recorded at Zinkekrā, some vessels having grooves running below their rims in a style quite common in excavated groups from there. However there is no indication that CMD considered their fabrics closely similar to 'Zinkekrā ware'. Sherds include a small number of **HM 341** 'frying pans' (*dokas*) <3655>, <3638>.

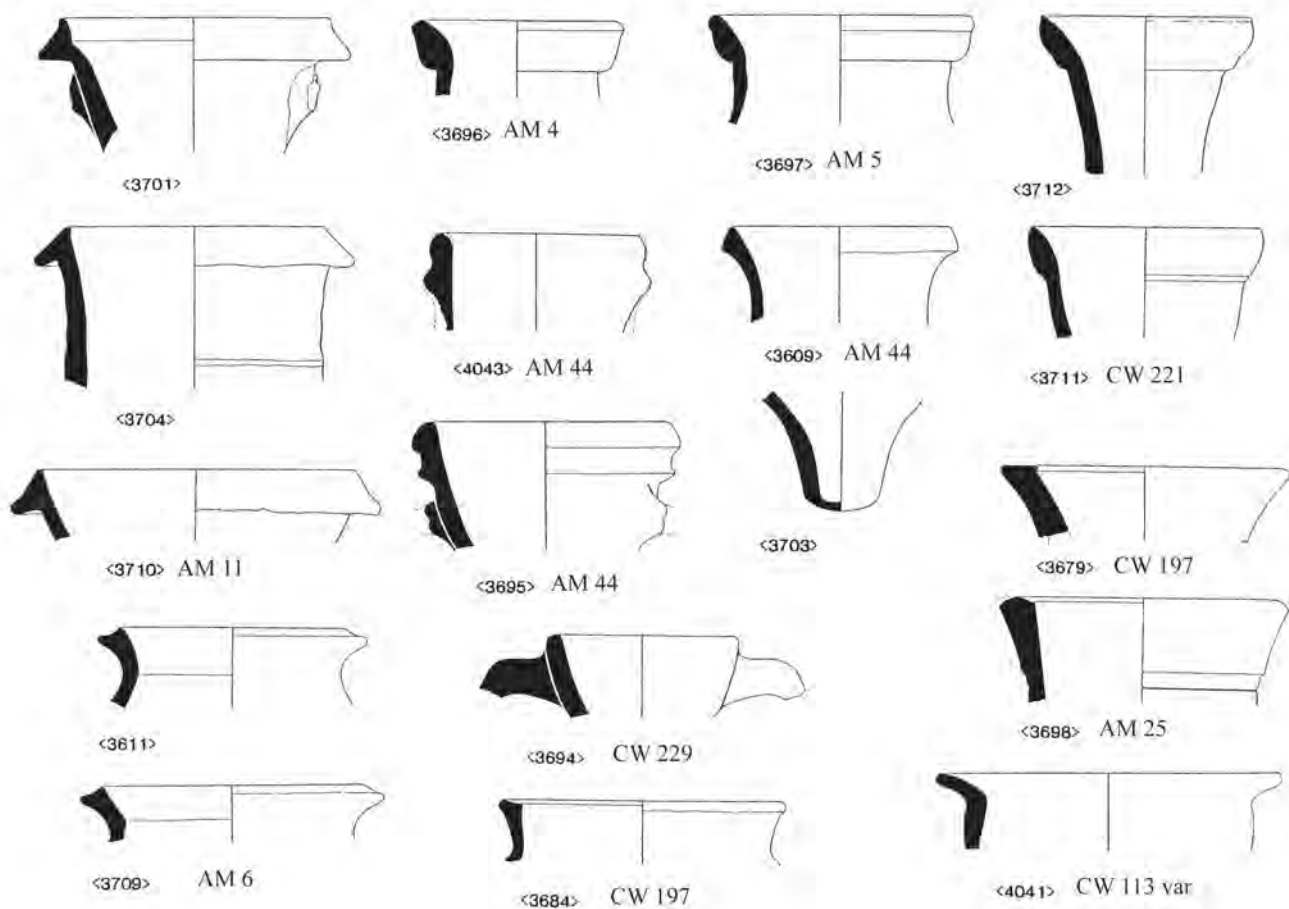


Figure 2.20. Amphorae and jar forms from Tinda Area B. 1:4.

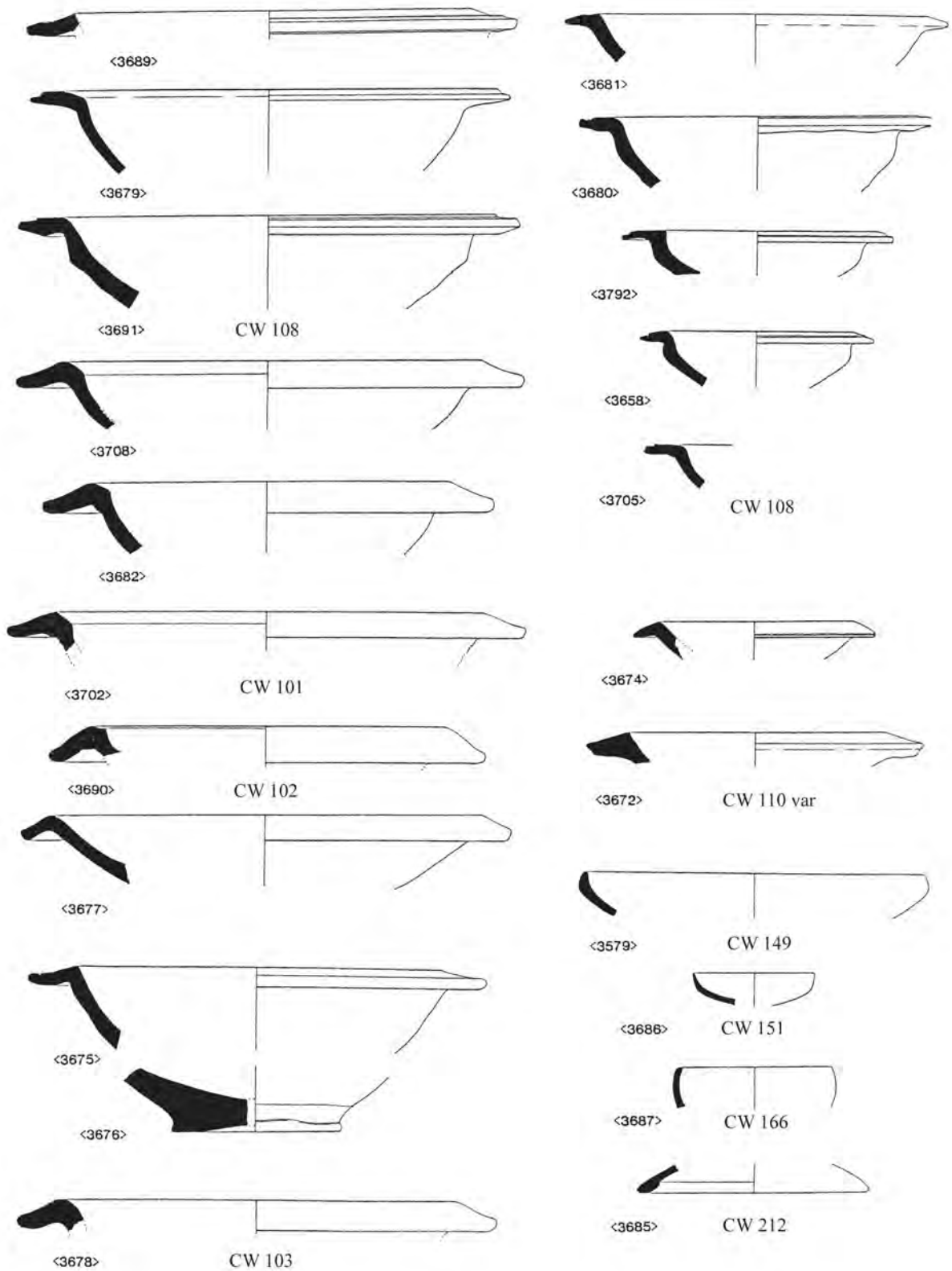


Figure 2.21. Bowls and other vessels from Tinda Area B. 1:4.

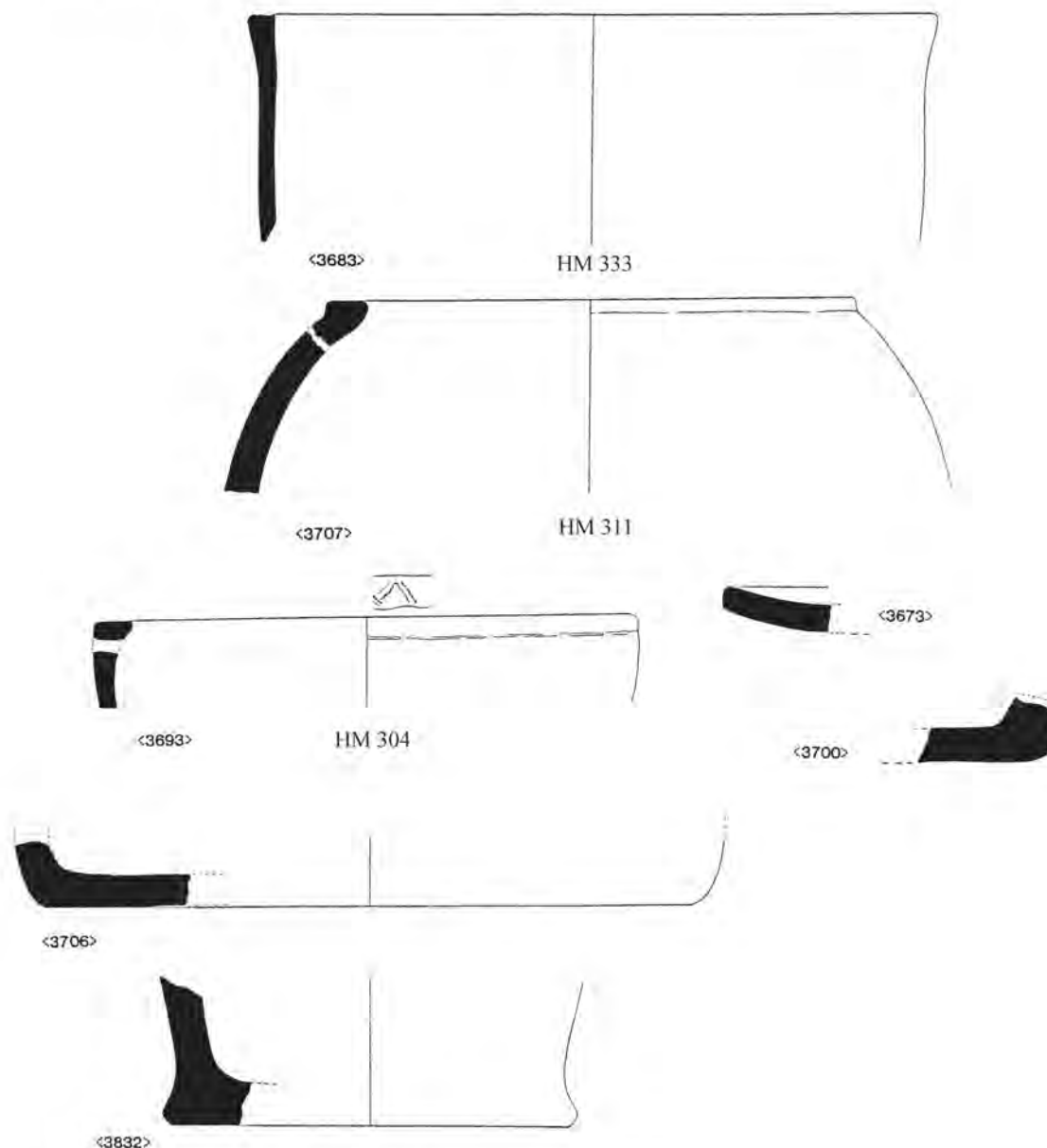


Figure 2.22. Handmade pottery from Tinda, Area B. 1-4.

### Area B

A wide range of amphora and flagon forms were identified in the Area (Fig. 2.20), including **AM 11** <3704> from B21, **AM 5** <3697> from B17 and **CW 221** flagon forms <3711>, <3712>. These may all date to a similar date range in the later 1<sup>st</sup> millennium BC. The other pottery in Area B was dominated by a limited range of flange-rimmed bowls with down-turned (**CW 101–103**) and horizontal rims (**CW 108**). These vessels are quite distinctive in form and were made in dense, heavy fabrics. While the **CW 102** bowls were found in Area A, the **CW 108** bowls were not (Fig. 2.21). The date range for this material is once again late Punic to early Roman.

Little handmade pottery was recovered (Fig. 2.22) but this again included **HM 304** bowls <3693> with inturned rims as well as closed jars (**HM 311**) <3707>. This was found on a large platform (B17) in a hearth, with amphora base <3703> and various other forms (**AM 5, 11, 25, 44, CW 229, HM 342**) <3694–3702>.

### Area BE

Material from Area BE, the north-east part of the Lower Enclosure was thought likely to represent a more heterogeneous group, mainly derived from robbed burials which post-dated the main settlement phase on the site (as illustrated by some scraps of red slip ware found in this area)

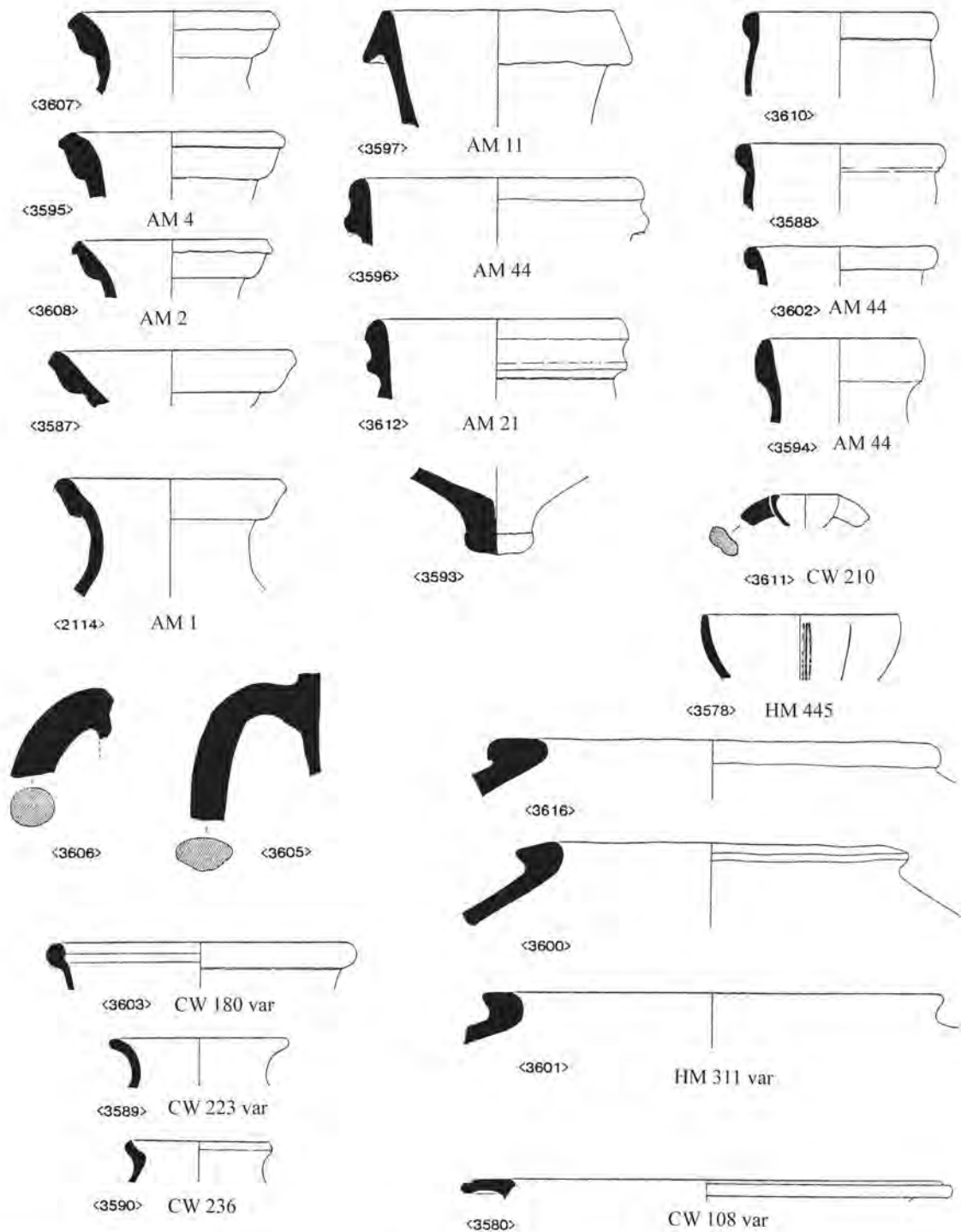


Figure 2.23. Tinda, amphorae and jars from Area BE. 1:4.

(Figs 2.23–2.24). There were some that accorded with the settlement date, for example <3587> a type AM 1 amphora, dating to the 3<sup>rd</sup> – 1<sup>st</sup> c. BC. Other amphora forms included AM 2, AM 4, AM 11, AM 21 and various forms classified under the miscellaneous category AM 44. Many of the bowl forms are similar to those encountered elsewhere on the site (CW 101–102, 106, 108).

It appears that the main occupation phase at Tinda was later than that at Zinkekrā, with a main focus in the late 1<sup>st</sup> millennium BC, corresponding to the Proto-Urban Garamantian phase, though some Early Garamantian handmade forms are certainly represented in the various pottery assemblages. There is little evidence that the site remained in occupation as a Classic Garamantian settlement, and a major site of this phase more



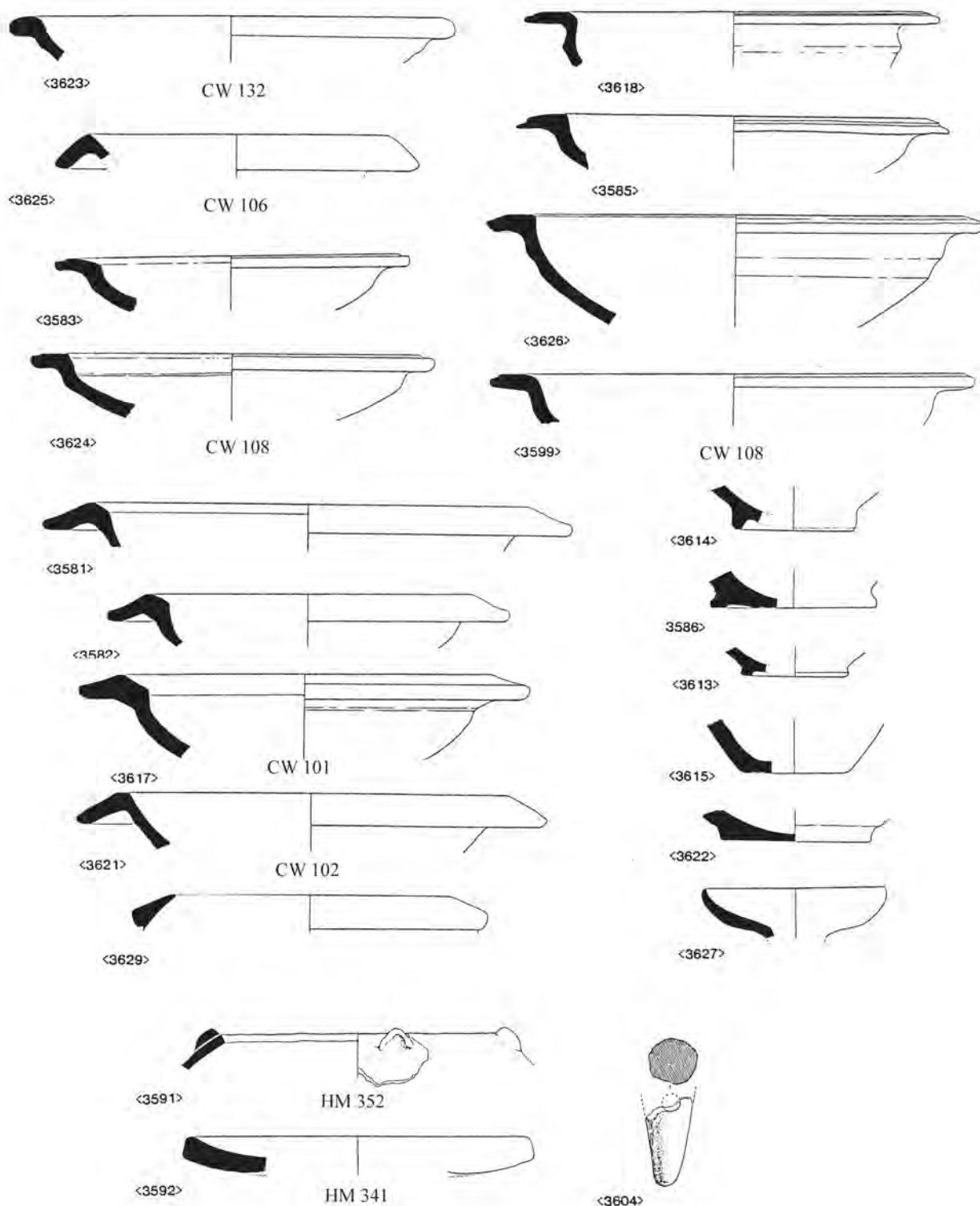


Figure 2.24. Tinda, bowls and miscellaneous forms, Area BE. 1-4.

likely underlies the medieval and modern town of Ubārī in the valley centre 1–2 km to the north. The few Classic Garamantian Berber Red forms (HM 337) at Tinda could relate to later funerary activity.

The relative lack of sophistication of the buildings at the Tinda site (and the absence of mudbrick construction) stands in marked contrast with the Proto-Urban architectural revolution that was seen at Zinkekrā in Chapter 1.

## EXCAVATIONS AT AL-KHARA'IQ (CHA004–008), 1973.

### Introduction

A series of occupation sites on the prominent isolated hilltop at al-Khara'iq (Charaig) were first identified by CMD in 1971, and the hill was surveyed in detail in 1973 (Fig. 2.25), accompanied by some small-scale trial trenching (Fig. 2.26). This isolated hill seems to have been occupied in several periods with evidence for prehistoric occupation as well as phases of at least limited occupation during the 1<sup>st</sup> millennium BC and perhaps in the medieval and late post-medieval period. The location is more celebrated today for the large Classic Garamantian cemetery of pyramid and circular tombs on its north side (CHA001) and a large early modern and modern Islamic cemetery (with central marabout tombs) on the west side of the hill.

Further survey by the FP and DMP in the general area has identified a series of Garamantian wadi-centre settlements that probably succeeded the escarpment site as the main population focus. It was from those valley-centre settlements that the people buried in CHA001 were no doubt drawn.

Work in 1973 involved CMD, Peter Carmody, Bill Hanson, Fran West, Tim Tatton Brown and John Gillam.

### The Site

#### CHA 004

A few signs of occupation were found on the southwest spur of the hilltop and designated CHA004. At the narrow part of the spur, a small structure was noted. No finds were associated with it except a fragment of a small pot lid <3759> (Fig. 2.27) and some worked stone.

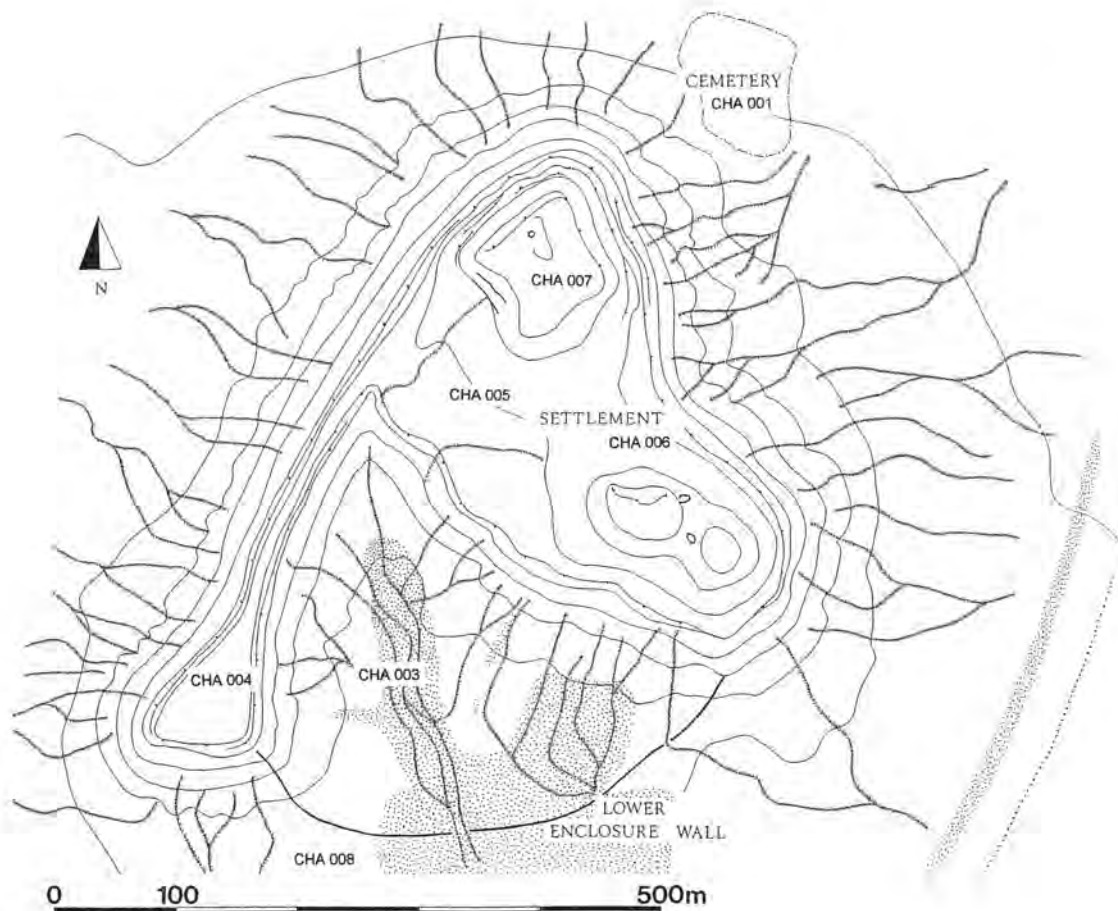


Figure 2.25. Map of al-Khara'iq hilltop and sites (1973).

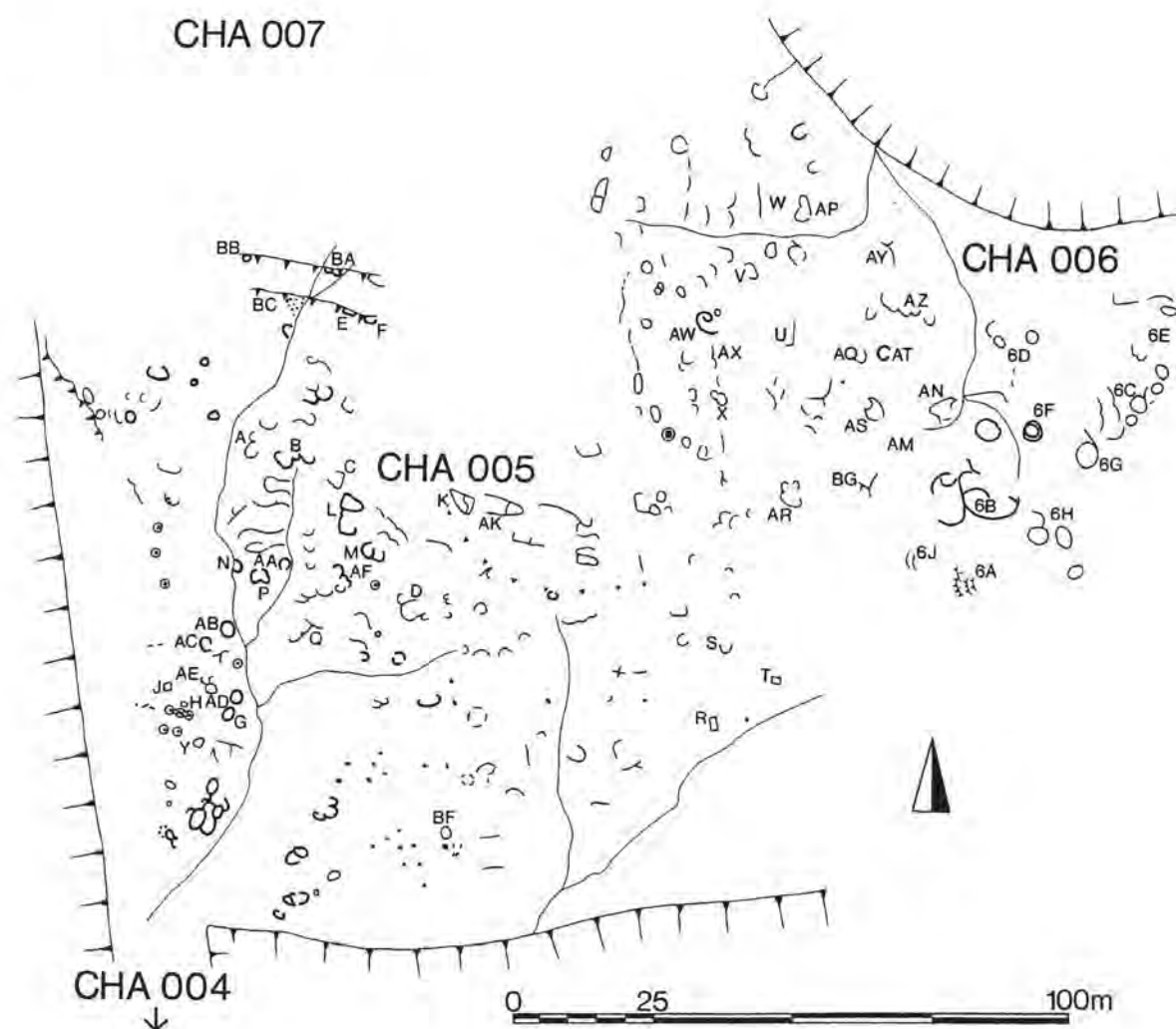


Figure 2.26. Surveyed areas of CHA004–007 on al-Khara'iq hilltop (1973).

#### CHA 005 Settlement *c.*26°33.35/13°11.60

This settlement area on the southern slopes of the western peak of the hilltop (Fig. 2.28) was marked by a series of small platforms/terraces, features created by surface clearance and, less commonly, upstanding low stone structures (Fig. 2.29). A preliminary survey of the hilltop identified many of these potential house or hut platforms and test excavations were carried out here during April 1973. The results indicate the presence of occupation during many periods from prehistoric to post-medieval times, some upstanding structures were thought likely to be of quite recent date. Diagnostic pottery from CHA005 is illustrated in Fig. 2.38 below, but included characteristically Early Garamantian forms **HM 310** <3789>, **HM 303** <3776>, <3781>, **HM 304** <3787>, **HM 307** <3775>, <3779>, **HM 311** <4037>, as well as a scatter of potentially later

handmade forms of Classic Garamantian (**HM 338**) or later date (**HM 352**, **HM 353**).

**Structure 5A** was a rough oval platform *c.*2.45 x 3 m. Amphora rim sherd <3762> (possibly an early/mid-Roman **AM 20** variant) came from surface collection in this area. Significant scatters of lithic debris were noted to south of Areas 5A and 5B.

**Structure 5B** was a small terrace with 3 units ('Rooms I–III'). The largest terrace, Room I, was roughly triangular in shape *c.*4.9 x 3 m at its apex (Fig. 2.30). The wall on the west side was quite well-defined though with much fallen stone. The south wall was less clear, largely collapsed. There was an apparent straight edge along the rear of the platform. Room II immediately to the east was a roughly semicircular enclosure *c.*1.5 m in diameter with clear walls, but with its floor washed away by a gully running through it. Room III to the east shared a common wall and was semicircular with an

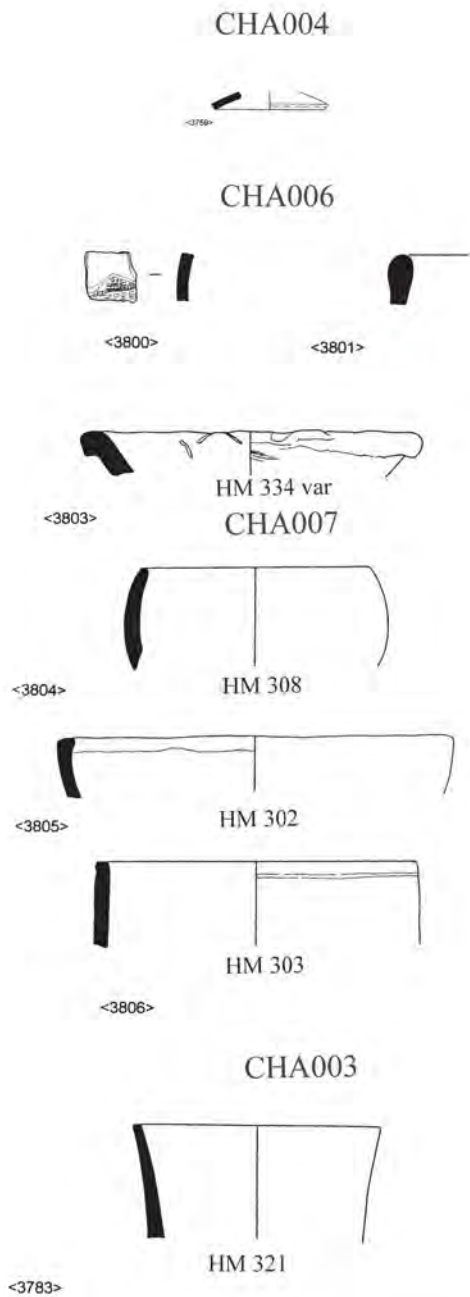


Figure 2.27. Pottery from CHA004, CHA006, CHA007 and CHA003. 1:4.

internal diameter of c. 1.8m with drystone walls standing c. 0.45 m high. The slope to the south of the terrace was quite gentle, whilst that to the north somewhat steeper, especially to the rear of Rooms II and III.

Test excavations revealed three main occupation phases in this area. The Phase 3 upstanding structure had only thin occupation deposits associated with it, comprising a spread of grey-brown sand across Room I with much ash, charcoal and burnt stone. A possible hearth was identified on the east side of the room, and another in the north-west corner of Room III.



Figure 2.28. View over CHA005 settlement area, facing south-west (CMD 1977).



Figure 2.29. View of CHA005 structures, looking south (CMD 1977).

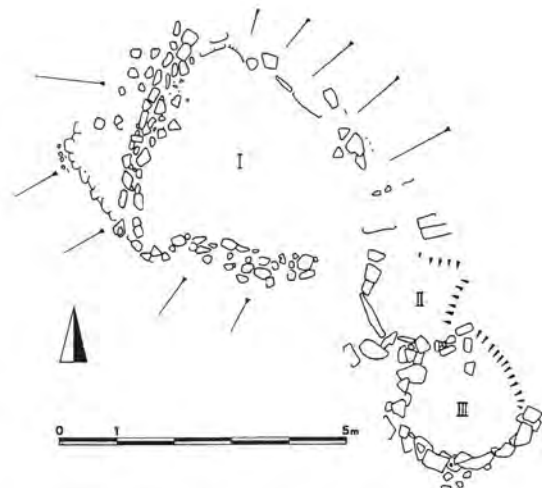


Figure 2.30. CHA005, Structure 5B, sketch plan, of Phase 3 standing structure (1973).

Phase 2 was represented below Rooms II–III and was marked by a sub-circular spread of material below the standing walls. This was primarily animal dung mixed with ash including some bone fragments, with further clean blue-grey and white ash below.

An earlier Phase 1 was identified below Room III, where a spread of stone on the south-east side probably represented the remains of a early cairn which had stood here. Fragments of bone from this burial were incorporated into the early occupation levels below Room III.

Few finds were found in this area. Several parts of a large handmade **HM 353** bowl in a light sandy buff 'Berber' fabric with handles <3831> were found on the surface, thought likely by CMD to be of relatively recent date. A few sherds were found in earlier occupation levels below Room II, but only one feature sherd <3784>, from a black handmade bowl with impressed decoration (**HM 346**).

**Structure 5C** was a poorly defined terrace located between the better-defined circular structures 5B and 5L (Fig. 2.31). A small sondage was excavated in the centre of the terrace *c.*2.1 x 2.45 m. Immediately below the gravel surface was a general layer of mixed sand and pebbles *c.*6–8 cm deep. This overlay brown occupation deposits including animal dung, small fragments of palm wood and palm leaves, and date stones, no more than 8 cm deep. On the west side of the trench there were traces of what was possibly a small hearth with thin deposits of grey ash and rare flecks of charcoal. No finds were recovered.

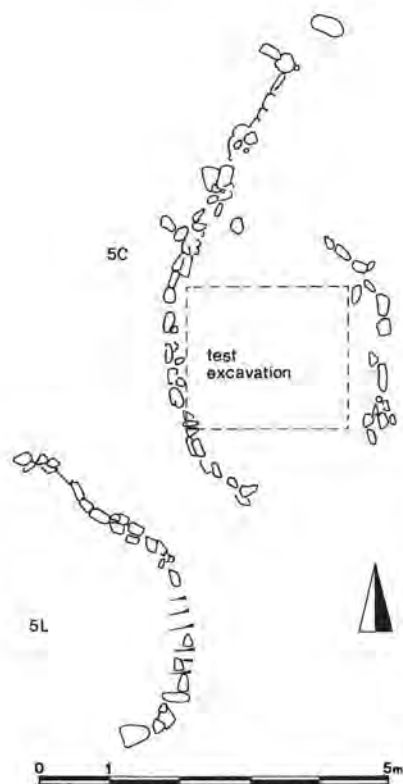


Figure 2.31. CHA005, Structure 5C and 5L, sketch plan (1973).

**Structure 5D** related to a stone structure with 3 units ('Rooms' 1–3 – Fig. 2.32). The south half of each room was tested to a depth of *c.*0.25 m. In Room 1, no occupation deposits and a single fragment of wood was found. In Room 2, a hearth *c.*0.45 m across and 0.15 m deep was found near the centre of the room with quantities of charcoal and a few burnt sherds including a rim and conjoining body sherds of a black handmade bowl with impressed decoration <3789> (**HM 302?**).

In Room 3, subsurface deposits contained crushed animal dung and a few bone fragments and the walls were found to be lying on the existing ground surface. A small hearth was also found on the east side of the excavated area, filled with compacted ashy material, some charcoal, two burnt sherds, some bone fragments and carbonised date stones.

Further clearance in Room 2 revealed that the visible structure was built against a low cairn constructed over a cist grave (Fig. 2.33). On excavation this was found to be a tightly contracted burial, lying on its right side, head to east and facing north (Fig. 2.34 – see further Chapter 6 below for the burial). In turn, some carbonised date stones and other traces of occupation were found beneath the cairn, contemporary with, or predating the burial. No finds were definitely associated with the burial.

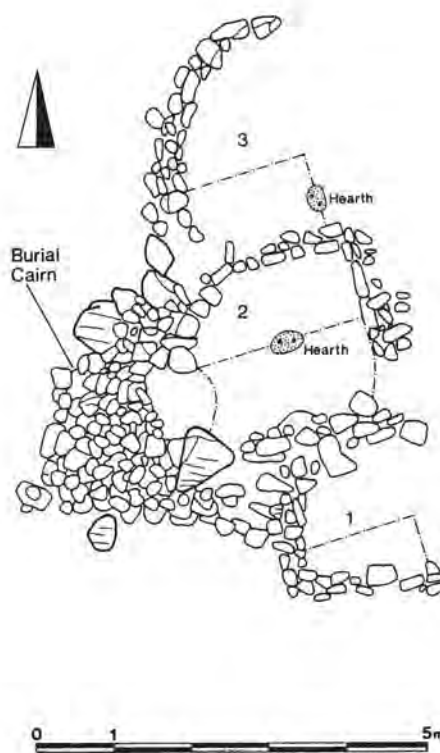


Figure 2.32. CHA005 Structure 5D, sketch plan (1973).



Figure 2.33. CHA005, Structure 5D before excavation (CMD 1973).



Figure 2.34. CHA005D, burial under excavation, showing skull and upper torso as first exposed beneath edge of cairn, looking west (CMD 1973).

**Structure 5E** was a shelter *c.*2.75 x 1.5 m built against natural terrace and rock outcrop. Pottery sherds were collected, possibly of quite recent date.

**Structure 5F** comprised a small shelter *c.*2 m to east of 5E, *c.*1.8 x 1.2 m, built into the hillside and cut through by path.

**Structure 5G** was a platform with two sub-circular stone structures (A-B), thought likely to be relatively modern (Figs 2.35–2.36). The interiors of both structures were tested but no occupation levels were found except a small area with darker organic material in the south-east corner of structure A. A few lithics were noted in the vicinity and a substantial part of a **HM 353** handled jar/bowl <3790> ('genie pot') was found on the surface (Fig. 2.37).

Notes on other excavated Structures are briefer (for locations, see Fig. 2.26).

**Structures 5H–5J** comprised two small stone mounds *c.*1.2 m diameter x 0.30 m high. Excavation revealed nothing of particular note. Three upright stone slabs were noted midway between Structures 5H and 5J. Testing on the north side revealed carbonised date

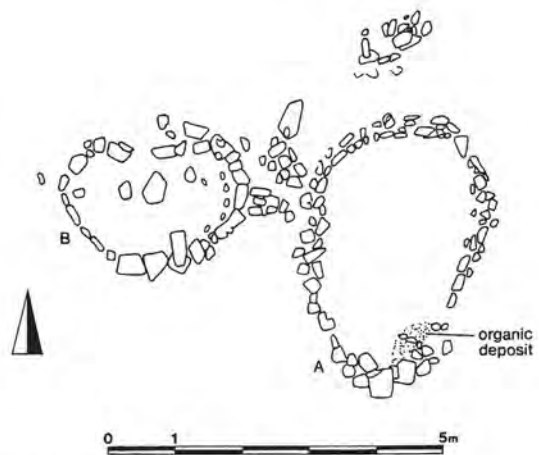


Figure 2.35. CHA005, Structure 5G, sketch plan (1973).



Figure 2.36. CHA005 Structure 5G before excavation, facing south-east (CMD 1973).

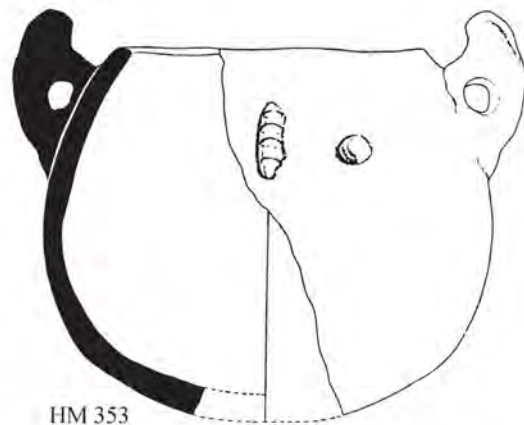


Figure 2.37. CHA005, Structure 5G, 'genie pot' <3790>. 1:4.

stones and small quantities of charcoal 5–10 cm below the surface.

**Structure 5K** was another possible hut platform with some lithics possibly associated. Other finds included three small fragments of 'Berber' handmade pottery.

**Structure 5L** was a stone structure with two adjoining sub-rectangular units, *c.*3.6 x 2.4 m and *c.*4.3 x 2.4 m. This was thought to be relatively modern date.

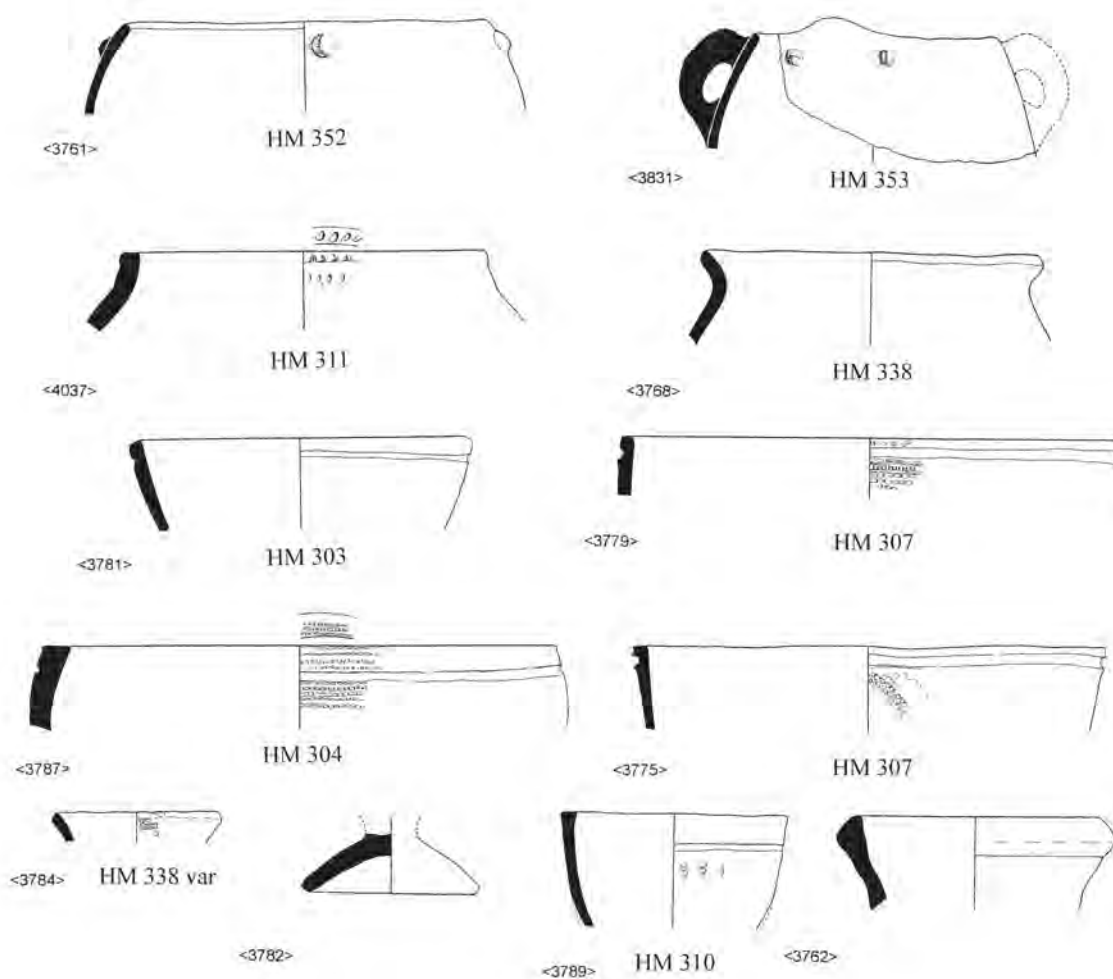


Figure 2.38. Pottery from CHA005. 1:4.

**Structure 5M** was a small stone structure with some upstanding walls and with a small stone feature and mound of stones on south side. It was probably quite modern.

**Structure 5N** comprised a sub-circular stone structure *c.* 1.5 m diameter on the edge of a gully, being gradually eroded on the west side. Interior deposits had been washed out.

**Structure 5P** was an oval drystone structure *c.* 2.4 x 3.4 m with walls *c.* 0.30–0.35 m wide standing several courses high in places. Entrance was from the north side and there was a possible stone feature (hearth?) in the south-east corner.

**Structure 5Q** denoted a series of possible building terraces with rare sherds of handmade 'Berber' fabric, some with impressed decoration and a concentration of lithic material.

**Structure 5R** was a possible small house platform in the south-east part of the site. Test excavation found two possible hearths but no other significant occupation deposits.

**Structure 5S** related to another possible small hut platform. Several sherds of brown/black handmade sherds, some with impressed decoration, and occasional lithics were noted on surface. Test excavation revealed traces of occupation layers with bone fragments, animal dung and a central hearth with a few burnt sherds.

**Structure 5T** was a small mound of stones. Test excavation found no burial, but palm leaf fragments, possibly quite modern. Traces of charcoal (from a possible hearth?) were noted below the stones, but no associated pottery or other finds.

**Structure 5V** comprised a small house terrace to north of Structure 5X and was completely excavated.

A spread of charcoal was found at the west end of the terrace, mixed with animal dung and small fragments of animal bone. This spread continued upslope beyond the platform. Two lithic scrapers and two sherds of handmade pottery came from here. There were two further small hearths in the south-east quarter of the platform.

**Structure 5W** was a large eroded house terrace north of Structure 5V. Testing revealed patches of animal dung, a small hearth with ash and charcoal and numerous very fragmentary animal bones. Two sherds of a **HM 311** handmade jar <4037> were found on the surface before excavation.

**Structure 5X** was a large house platform. Four small hearths were revealed by clearing 5–10 cm of surface deposits. There were also some traces of animal dung, mixed with charcoal, and a few sherds of animal bone and two small fragments of undiagnostic handmade pottery.

**Structure 5Y** was another large flat platform to west of Structure 5G. A test pit revealed thin occupation deposits with wood fragments and animal dung and rare charcoal flecks. Lithics were quite abundant in this area.

**Structure 5AA** denoted a small shelter, c.2 m internal diameter. Thought to represent 'late' occupation phase, similar to Structure 5P.

**Structure 5AB** was an oval structure with some upstanding drystone walls, c.3.5 x 2.5 m. This was thought to represent a 'late' occupation phase.

**Structure 5AC** lay downslope from Structure 5AB and was similar in construction.

**Site 5AD** comprised a concentration of lithic material noted between Structures 5AD and 5AE.

**Structure 5AE** was a slight depression c.3.5 x 2.25 m. Several lithics were noted in this area.

**Structure 5AF** was a low enclosure with three internal units c.6.4 x 2 m. Quite abundant lithic material lay around the structure.

**Structure 5AG** denoted an area to the west of Structure AF with several platforms and traces of small structures and two possible small burial cairns.

**Structure 5AK** comprised the outline of a hut platform to south-east of Structure 5K, c.4 x 2.4 m. A rim sherd of everted rim handmade jar <3768> (**HM 338**) and a shallow lid were found on surface.

**Site 5AM** denoted some lithics noted on the surface, also a fragment of a sandstone spindle whorl, some undiagnostic handmade sherds and rim sherds of a handmade bowl <3775> (**HM 307**).

**Structure 5AR** was an upstanding sub-circular stone structure, probably of quite recent date.

**Structure 5AS** consisted of a cluster of small stone structures. Lithics were noted in this area, along with a body and rim sherd of an impressed handmade **HM 307** bowl <3779>.

**Structure 5AW** was a low stone structure, more substantial than Structure 5AX.

**Structure 5AX** comprised a house platform or terrace to south of Structure 5AW, which possibly continued into Structure 5X.

#### *CHA 006*

A settlement area on the west slopes of the east peak of the hilltop, divided from CHA005 by the gully/wash across the coll (Figs 2.39–2.40). This site was also surveyed in 1973 (for locations of Structures described below, see Fig. 2.26). Some pottery from CHA006 is illustrated in Figure 2.27, but the forms and wares are not certain in all cases.

**Site 6A** denotes an area where a few sherds of 'Berber Black' ware, some with impressed decoration, were found on a (possibly natural) terrace.



Figure 2.39. View over CHA006, looking north-west towards north peak (CHA007) (CMD, 1973).





Figure 2.40. View over CHA006, looking south-east (CMD 1973).

**Structure 6B** was a large hut complex, or possibly an enclosure, thought likely to be quite modern. There were two other hut circles close to it and a small stone mound which might have been a grave. The complex ran a short way up the slopes of the knoll and also extended westwards to close to CHA005 AN. A sherd of 'Berber' handmade vessel with red surface and an impressed sherd of uncertain form (<3800>) were found in this area.

**Structure 6C** consisted of a sub-circular building complex on hillside. A body sherd of a handmade vessel with impressed decoration was found upslope of here.

**Structure 6D** comprised two sub-circular upstanding huts, thought likely to be relatively modern. Some sherds were found in this area, including impressed wares and a grey rim sherd <3801>.

**Structure 6E** was a house platform with a possible robbed grave adjacent. There were two other platforms to west.

**Structure 6F** was a sub-circular structure above Structure CHA005 AN.

**Structure 6G** was another sub-circular structure, of uncertain date (no finds).

**Structure 6H** comprised two sub-circular structures and a 'double' structure, perhaps associated with some 'Tuareg huts' below the hill here (also considered by CMD as part of CHA006). Finds included body sherds of grey-brown handmade wares, some with a polished/burnished interior.

**Site 6J** denoted an area where pottery sherds were collected - with no clear associated structural remains. Finds included impressed handmade wares.

**Site 6P** related to an area to south of Site 6A, where the surface was covered with purple stone fragments (significance unclear), along with occasional lithics and surface sherds, including <3803> (similar to **HM 348** variant <3714> in *AF 2*).

#### CHA 007

On the top of the north peak of the al-Khara'iq hill (Figs 2.26, 2.40) further traces of settlement were noted, including a possible sub-circular structure and lengths of wall. Occasional surface sherds were collected, including examples of Early Garamantian forms **HM 302** <3805>, **HM 303** <3806> **HM 308** var <3804> (included in *AF 2* as a miscellaneous bowl **HM 358**) (Fig. 2.27). The site was not further investigated.

#### CHA003 26°33.10/13°11.40

This site comprises a large enclosure below the escarpments on the south side of al-Khara'iq hill, invisible from the Wādī centre to the north, the enclosure consisted of a mound or bank c.5 m wide and 3 m high, built mostly of clay, possibly including decayed mudbrick with some repairs in stone (Fig. 2.41). It is thus similar in construction and location to the lower embankments at Zinkekrā, Tinda (see above) and Ikhlif (see below). No substantial settlement traces were found within the area encircled, neither remains of occupation, nor traces of rock carvings on the steep sides of the rock. It is suggested that the enclosure functioned as an animal pen of considerable size and sheltered location.

#### Test-pits A and B

Four small test-pits were excavated within the enclosure. Two small pits A and B were excavated within some



Figure 2.41. The west end of the lower embankment wall CHA003, looking east (CMD 1973).

shallow depressions of smaller, less weathered stone on the hillside. Pit A revealed no archaeological material while Pit B revealed traces of ash and occupation debris (e.g. date stones), but no dating evidence. Pit C was cut in an area just north of the enclosure wall where several surface sherds had been found. This revealed no subsurface material. Pit D was taken across the remains of the destroyed enclosure wall to examine the foundations. During excavation, a burial was found just south of the wall, apparently cut by it (see further, Chapter 6 below). The only diagnostic sherd identified was a possible variant on **HM 321**.

*CHA008 26°33.10/13°11.40*

Outside the enclosure wall CHA 003 a small trial excavation in 1973 [Site (8)1] produced unstratified finds from the vicinity of the western break in the enclosure wall, along with a skeleton from an unrecognised burial.

#### **Summary of Dating from al-Khara'iq**

The overall dating evidence from al-Khara'iq certainly includes Early Garamantian material, with little material that is firmly Proto-Urban or Classic Garamantian, with a small amount of later material (that may be fairly recent).

## **EXCAVATIONS AT IKHLIF (CLF008–010)**

### **Introduction**

The promontory site at Ikhliif (sometimes known as Cleff) was first noted by CMD in 1969 (Fig. 2.42). This spur, almost detached from the main mass of the escarpment, showed considerable evidence for settlement on its west (CHA010) and east (CHA008) sides and on the summit (CHA009), while Garamantian cemeteries of the early 1<sup>st</sup> millennium AD (CLF012, CLF025) were clustered around the north end of the promontory. The promontory was returned to in 1973 when it was surveyed, with some small-scale test excavations, which were generally inconclusive, beyond demonstrating heavy erosion of the hillsides. Despite some formal similarities with other escarpment edge settlements such as Tinda or Zinkekrā, the limited finds from CHA008–010 are generally not comparable and they remain difficult to date. The dating issue is complicated by the fact that CMD initially named this site CL II, with some inevitable confusion with CLF002 in the recording of pottery. CMD does not appear to have made up his mind on the precise phasing, though he evidently believed the complex to be broadly Garamantian (Daniels 1989, 48–50). It is noteworthy, perhaps, that Proto-Urban Garamantian phase 'late Punic' imports, so prominent at Tinda, are entirely absent. Similarly, Early Garamantian distinctive handmade pottery types, as known from Zinkekrā, were not identified here in any quantity. However, we may note that a few sherds fit in the broadly defined 1<sup>st</sup> millennium BC date frame. Most of the sherds found here were of handmade vessels in undistinctive, probably local fabrics, which could not be securely dated. Part of the mismatch between this site and those closer to Jarma may be a simple factor of distance from the emerging centre of power in the western Wādī al-Ajāl – with fewer early imports reaching sites in the Eastern Wādī. It is also possible that pottery manufacture and use was less intensive in the Ikhliif area in the Early Garamantian and Proto-Urban Garamantian phases. However, it is equally possible that the differences relate to the limited scale of CMD's excavations at Ikhliif, which did not yield a satisfactory sample of the local ceramics. Absence of evidence in this case cannot at present be seen as evidence of absence. The cemeteries of Classic Garamantian date at

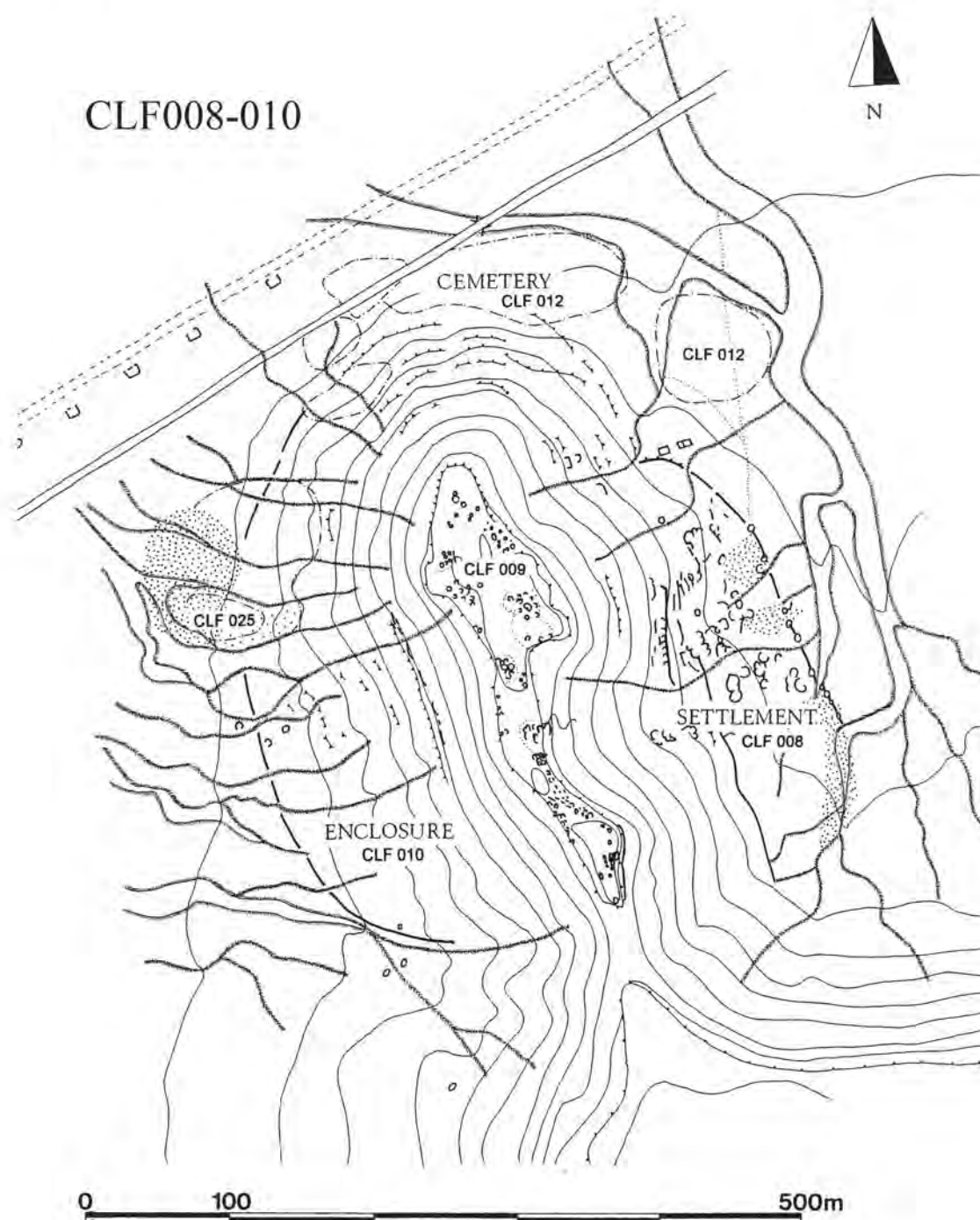


Figure 2.42. Ikhlif (Cleff) headland sites, CLF008–010 and later cemeteries CLF012, CLF025.

the north-western extremity and northern tip of the promontory appear to overlie the lower embankments of the CLF008–010 complex and thus should provide a *terminus ante quem* for the main occupation phase here and thus to confirm some degree of overlap with other 1<sup>st</sup> millennium BC escarpment settlements.

### The Site

#### CLF008

This was a dispersed settlement area on the east slopes of the promontory, marked by a series of terraces and/or foundations of stone structures, bounded to the east by a low stone embankment at the base of the hillside (Figs 2.43–2.45 and AF 2, fig. 27.9). By 1973, parts of the enclosure had been damaged during road construction.

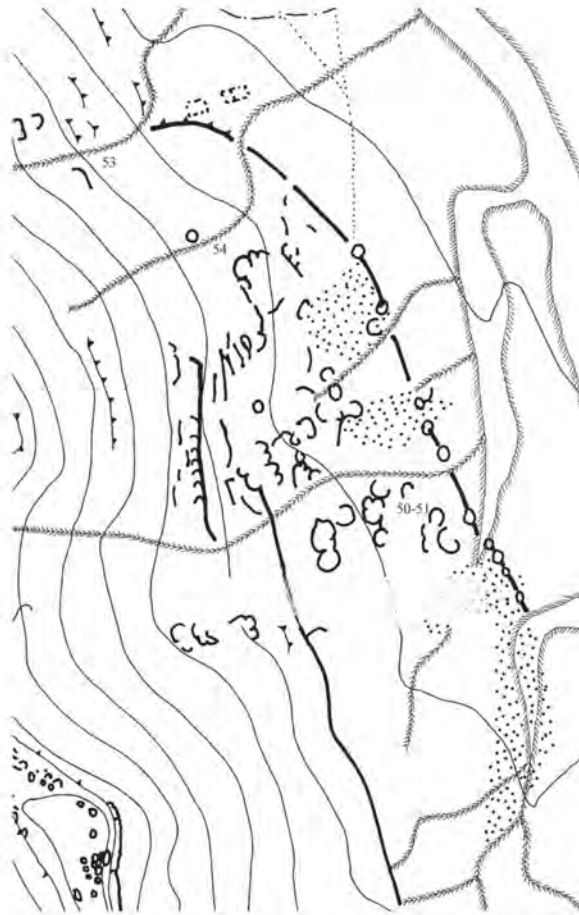


Figure 2.43. CLF008, dispersed settlement and terraces on east side of promontory, 1973 (for scale and orientation cf. Figure 2.42).



Figure 2.44. CLF008, view over terraced settlement area looking south (CMD 1973).

Limited test excavations of five areas (CLF008, areas 50–55) in April and May 1973 revealed some intact occupation deposits, generally only surviving against lower terrace walls. Limited sherd material was found with few diagnostic Garamantian/Roman imports and the date of occupation remains uncertain (Fig. 2.46). Forms identified with the *AF 2* typeseries include Early Garamantian **HM 305** <3416> (from CLF008, 53, 3), Classic Garamantian **HM 334** <3448>, **HM**

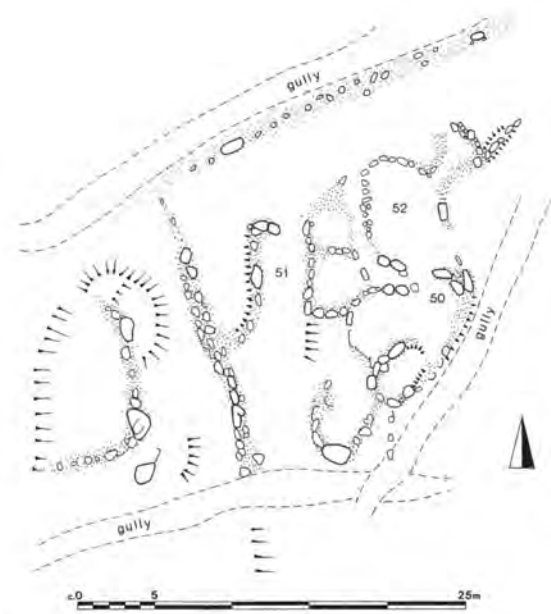


Figure 2.45. CLF008, sketch plan of Areas 50–52, 1973.

### CLF008

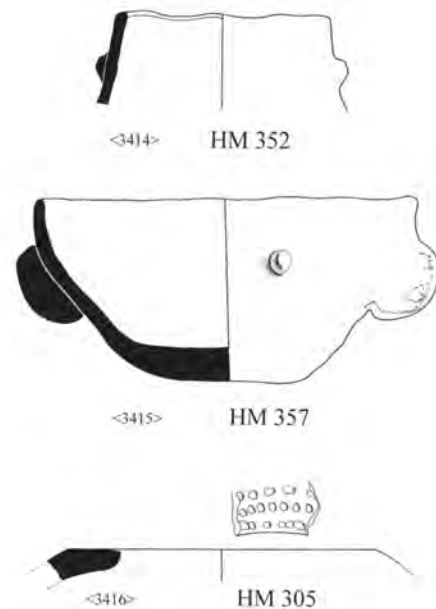


Figure 2.46. Pottery from CLF008. 1:4.

**347** <3433> and more recent periods **HM 352** <3414>, **HM 357** <3415> (CLF008, 52).

Two small trenches (Areas 50–51) were cut across a cluster of platforms towards the south end of the settlement (Fig. 2.45).

**Area 50** was a small terrace near the base of the east slope, c.10 m below Area 51. The terrace was lightly curved, c.3–4 m wide and c.10 m long, with gullies to south and east. It had a level surface of

small stones and sandy-silt with some loose boulders. A sondage *c.* 1 x 3 m long was cut across the platform. This revealed an occupation level up to 13 cm deep of dirty orange-brown sand with small stones, small fragments of fragile pottery, animal dung, palm fragments and charcoal. A patch of blue-grey ash flecked with charcoal lay in the north-east corner of the trench. These overlay the orange sandy subsoil. A section cut through the eastern stone terrace bank showed that the occupation deposits were bounded by a row of large stones set into the natural subsoil. Four sherds probably all derive from a single coarse handmade jar **HM 352** <3414> with lugs on the neck (Fig. 2.46).

**Area 51** was a terrace above Area 50 *c.* 6 m long and 2-2.5 m wide. A small sondage cut into the platform revealed deposits comprising occupation debris and up to 10 cm deep built up against the eastern terrace wall, thinning out to west. These occupation layers were brown sandy deposits with many small stones, animal dung, flecks of 'lime', fragments of bone, charcoal and probably decayed palm wood.

**Area 52** designated a terrace to the north of Area 50, damaged by bulldozer tracks. Seven fragments of a post-Garamantian coarse handmade lugged bowl **HM 357** <3415> were found on the surface, possibly disturbed by the bulldozer.

**Area 53** was a sub-rectangular terrace *c.* 5 m long and 3 m wide. Under thin surface deposits (1) of loose stones and hillwash, with a few bone fragments, most of the terrace was covered with a level rich in animal dung (3), up to 5 cm deep, generally eroded away on the east side. In the north-west part of the site this was covered with a further layer of similar material (2), rich in charcoal which appeared to underlie the rough terrace wall forming the west side of the platform. A sondage *c.* 30 cm deep was cut below these layers but no further occupation deposits were encountered.

Eleven sherds of undiagnostic dark 'Berber' handmade pottery were recovered, all but one in layer (3), along with a rim fragment of a closed jar with impressed decoration on the rim **HM 305** <3416> (Fig. 2.46).

**Area 54** comprised a long narrow terrace to the north and slightly downslope of Area 53, cut by a small gully. A narrow north-south trench was cut along the terrace. This revealed two layers rich in desiccated organic material (palm leaves, wood fragments, animal dung) with a layer of brown silt *c.* 4-6 cm thick between them. No pottery was recovered except an undiagnostic 'Berber-type' body sherd.

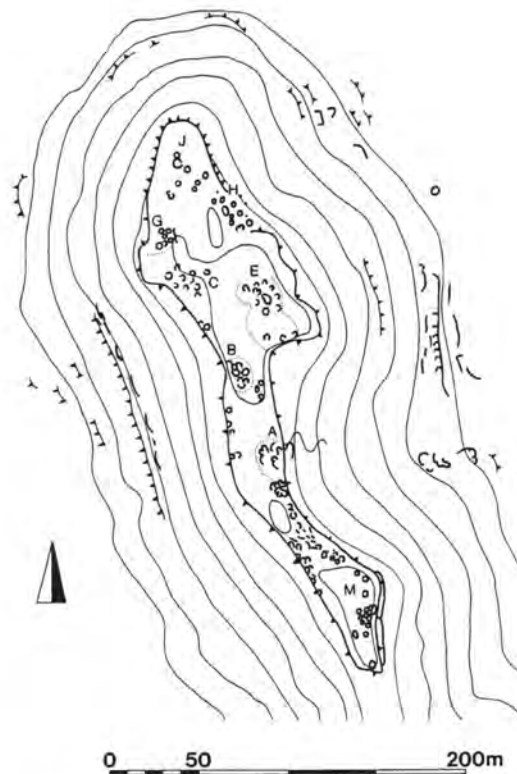


Figure 2.47. CLF009, hilltop structures (1973).



Figure 2.48. CLF009, Area 1A, looking north. (CMD 1973).



Figure 2.49. CLF009, hilltop structures and features Area E, looking north (CMD 1973).

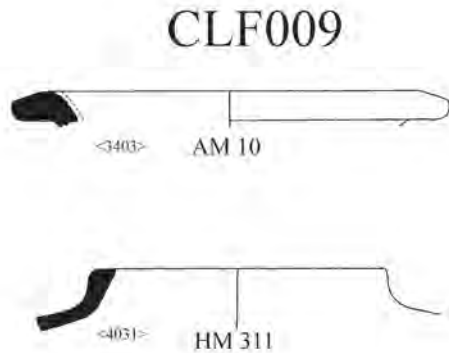


Figure 2.50. Pottery from CLF009. 1:4.

### CLF 009

This refers to the settlement area on the top of the narrow promontory, with various standing structures, cleared areas and other stone features, probably representing occupation in several periods (Figs 2.47–2.49 and *AF* 2, figs 27.12–13). The hilltop was first visited in March 1971 and examined in more detail in May 1973 when 12 main occupation units (Areas 1A–1M) were identified. (In the original notes the site was first identified as Cleff II/CL2 Top). Little pottery was recovered, but did include some Early Garamantian forms (**HM 311**).

**Area 1A** was a settlement area at the top of prominent pathway down the east slopes of the hill (Figs 2.47–8). The structures comprise visible platforms with rough stone walls, some standing 0.50–0.60 m high. Some of these structures are possibly relatively modern. Surface sherds include amphorae <3403> and a bowl (Fig. 2.50), as well as Holocene lithics. Area 1AT was a terrace platform just below Area 1A on the pathway down hill. Surface sherds there include amphora fragments (**AM 10**).

**Area 1B** was a cluster of structures on the west side of the hilltop. Upstanding walls survive to c.1 m high in places; again, these are possibly of more recent date.

**Area 1C** was a complex of sub-circular structures, terraced into the slopes of the hilltop. There was little upstanding stonework. Dating is uncertain, though there are some similarities to structures at al-Khara'iq (CHA005–007).

**Area 1D** consisted of a scooped enclosure set into the hilltop. There were no upstanding remains and the date is uncertain.

**Area 1E** constituted another occupation area marked by a small depression bounded by large stones. The surface of this house platform was cleared and a narrow test pit c.0.30 m wide was cut across the feature. Surface deposits (1) comprised small loose stones and a thin layer of rainwashed silt. These covered an organic-rich layer (2/4) with substantial quantities of animal dung, date stones, wood fragments and ash, with some sherds of grey handmade jar **HM 311** <4031> (Fig. 2.50) and lithic scrapers. This overlay the natural subsoil of and orange sandy-‘gravel’. Surface finds included lithics <3405>.

**Area 1F** was a stone structure on sub-circular terrace, c.8.5 m x 5 m. Some lithics were found in the area.

**Area 1G** comprised a series of low sub-circular structures, one showing evidence for recent ‘excavation’. The date is uncertain, but possibly recent.

**Area 1H** was an occupation area marked on the surface by several sub-rectangular rubble wall lines exploiting natural ledges. A small area c.2 x 2.5 m with a c.2 m drop on the east side was test excavated. The excavation was not completed but sufficient material was excavated to demonstrate the presence of occupation deposits c.8 cm thick, comprising much burnt material, (charcoal, ash, date stones, bone) across most of the area, with further organic-rich deposits (dung, botanical remains) below that.

**Area 1J** was located near the north end of the promontory, where at least two substantial spreads of lithics were noted among several sub-circular structures and scoops. The surface finds of lithics were recorded as <3404>.

**Area 1K** was a small stone compound, possibly modern.

**Area 1L** was a terrace high on the east slopes below Area 1M, partly under an overhang, forming a shelter. Surface testing revealed thick black occupation deposits in places, but these were not further investigated.

**Area 1M** was a further settlement area with several sub-circular structures on or near the eastern edge of the hilltop. The date is uncertain and it was thought they could be relatively recent. A few lithics were noted in the area.

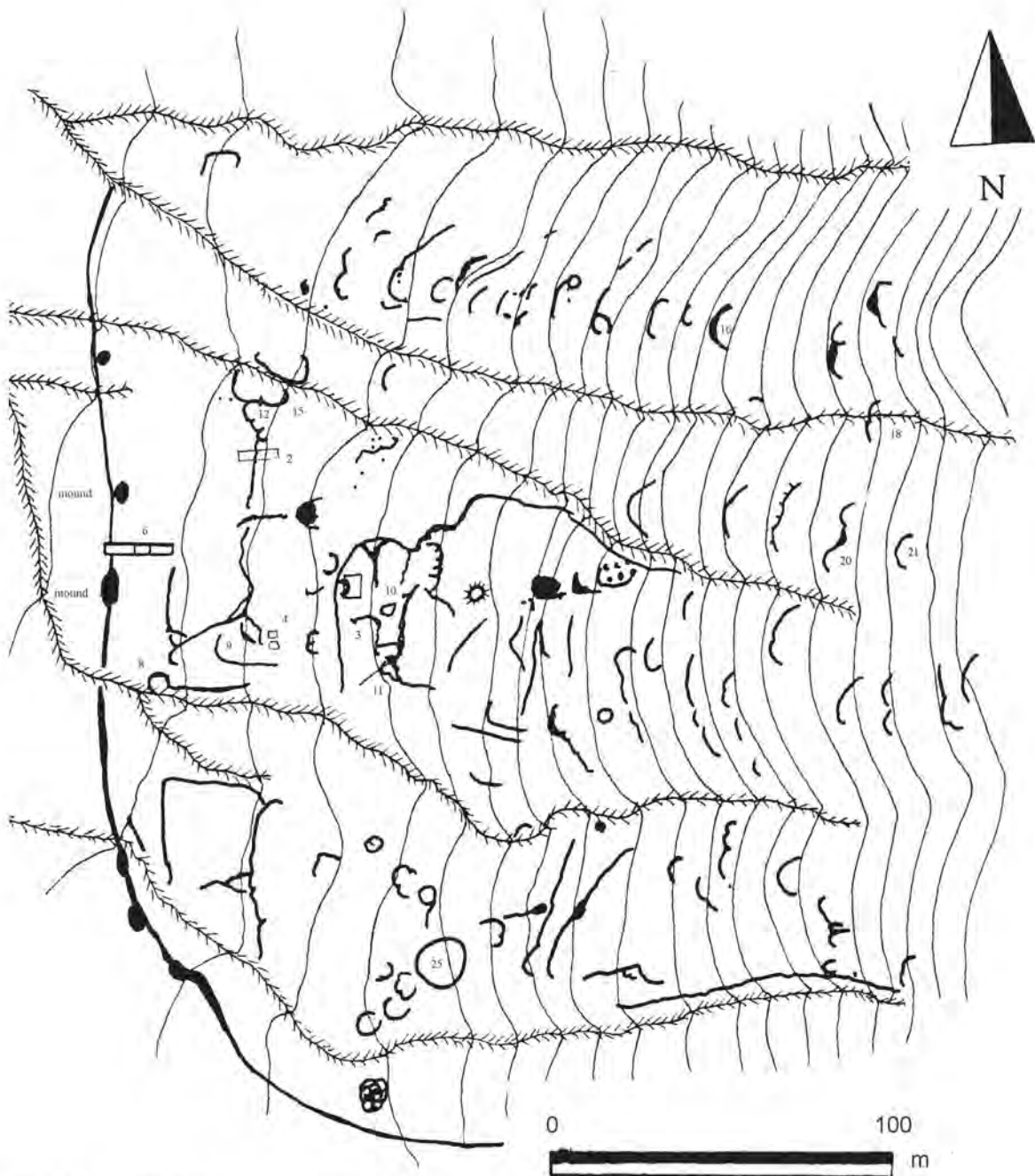


Figure 2.51. CLF010, settlement area on west side of promontory.

#### CLF 010

An extensive settlement area also existed along the lower western slopes of the promontory bounded by a very low stone bank running along the base of the hill (Fig. 2.51). The settlement comprised several poorly defined platforms and possible 'hut circles', with occasional cairns scattered amongst them (Fig. 2.51).

The presence of lithics was noted at several locations along the escarpment slope, although no relationship could be established with particular structures. Few pottery sherds were found in this

area and no diagnostic material, with most of the body sherds being of local handmade 'Berber' Red and Brown fabrics. The neck of an imported flagon **CW 227** <3413> (Fig. 2.52) found in the north part of the enclosure in Area 22 was thought likely to derive from a robbed Classic Garamantian tomb in the cemetery area below (CLF025). Limited testing was carried out on several terraces but these sondages indicated little if any *in situ* occupation deposits surviving.

**Area 2** was briefly examined by test excavations against inside face of wall line. However, these produced no occupation material.

**Area 3** was a terrace *c.*7 m long and 3 m wide with a well-defined wall on the (lower) west side. Test excavation revealed limited occupation layers of a soft brown deposit with animal dung and flecks of lime, best preserved against the west wall and where stones from the wall had collapsed over the surface. This was sealed by sandy stony deposits of hillwash *c.*12 cm deep. Finds were limited to four body sherds of undiagnostic Berber Red-type pottery.

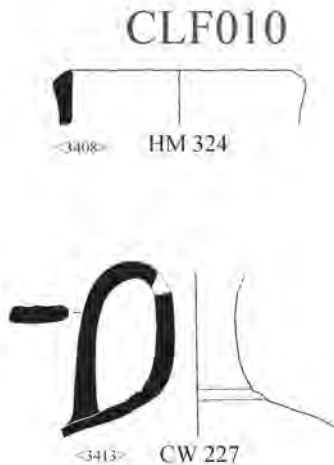


Figure 2.52. Pottery from CLF010. 1:4.

**Area 4** was a sub-rectangular terrace forming an open area surrounded by stony hillside. An area *c.*2 x 2.5 m was tested to a depth of *c.*30 cm revealing no significant occupation deposits. The only find was a body sherd of Berber Red type found on the surface close to the trench.

**Area 5** comprised a robbed mound cairn. Excavation revealed a stone-lined cist infilled with rubble and blown sand (see below Chapter 6). Beneath this was a relatively undisturbed burial, tightly contracted, arms in front of face, head to north, facing east. Decayed organic material, probably including textiles, was noted on the bones. The only find was a rim sherd of a jar/bowl HM 324 in hard dark fabric <3408> in the debris (Fig. 2.52).

**Area 6** was an open terrace area *c.*12 m north-south and 17 m east-west, near the base of the slope inside the enclosure wall, which here incorporated one and possibly two robbed cairns. A narrow trench cut across the lower terrace bank/wall revealed no *in situ* occupation deposits and *c.*0.50 m of sand and stone

hillwash built up against the inside of the outer bank. This had a core of small boulders with smaller stones over them and survived no more than 0.60 m high.

**Area 9** was another possible habitation terrace. A heavily abraded lithic blade was noted and two undiagnostic Berber Red body sherds.

**Area 10** was a terrace above Area 3, comprising a sub-circular platform *c.*2.5 x 3 m, with its south end disturbed. Testing revealed *c.*30 cm of hillwash over a layer of larger stones. Beneath these survived traces of darker occupation levels, where protected by collapsed stone. The only find was a small sherd of coarse handmade ware.

**Areas 15, 16, 17, 19** also produced sherds of undiagnostic coarse handmade wares.

**Area 18** was a small terrace north of Area 20. Test excavation revealed *c.*7 cm surface deposits over occupation levels including bone fragments, animal dung, carbonised material and a few undiagnostic sherds. There were possible hearth features in the middle of terrace with some burnt stones and charcoal.

**Area 20** was a small terrace *c.*8 m (north-south) x 5 m wide, with a steep drop of 2–3 m on the west side and vertical rock face on the east side, and with Area 21 above it. Test excavations revealed some occupation, with some thin deposits surviving where sheltered by the rock face. A stone-lined hearth *c.*1 m across was recorded, with deposits of ash, charcoal and some burnt bone fragments surviving to a depth of *c.*0.25 m.

**Area 21** was small terrace on a rock outcrop above Area 20. Test excavation revealed limited occupation deposits, but they were not further examined. Some lithics were noted in this area.

Published pottery from the Classic Garamantian cemetery CLF025 stands in clear contrast with the handmade wares of earlier Garamantian date from CLF010 (AF 2, fig. 27.14). The material from the cemetery features a number of examples of HM 335, ovoid jugs with a short upright rim, vertical lug handles and painted decoration. There are also examples of everted rim jars HM 337, tall rimmed jars HM 320, incense burner HM 336, small bowls HM 345. There thus appears to be somewhat closer parallels between pottery forms at Ikhlif and the Jarma region in the Classic Garamantian period than was the case in the Early and Proto-Urban Garamantian periods.



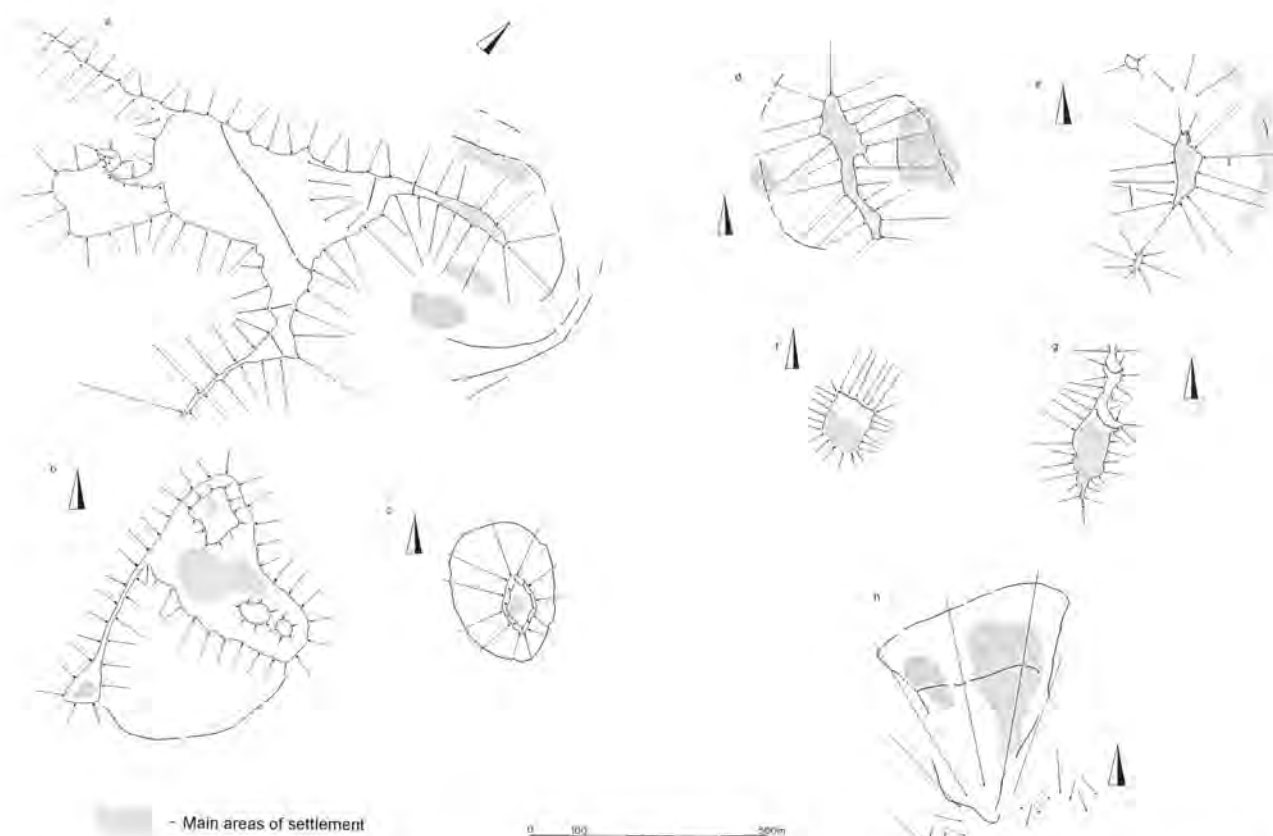


Figure 2.53. Comparative plans of Garamantian escarpment settlements: a = ZIN001-3; b = CHA003-7; c = CLF001-2; d = CLF008-10; e = LEK001; f = ITF001; g = TWE021; h = TIN001

## CONCLUSIONS AND DISCUSSION

The excavations at these three sites complement and reinforce the conclusions derived from the Zinkekrā excavations. Tinda, al-Khara'iq and Ikhlif provide further illustrations for the preferential siting of Early and Proto-Urban Garamantian settlements on the escarpment edge along the southern flank of the Wādī al-Ajāl (Figs 2.1 and 2.53). Ikhlif is the closest parallel to Zinkekrā in that the Garamantian occupation utilised the top and scarps of a classic promontory site, with the natural defences being augmented at the base of the scarps by a series of embankment walls to protect the lower settlement areas. The al-Khara'iq hillfort was somewhat similar, though it utilised a detached and isolated outlier of the escarpment and only had a lower embankment on one side, with no evidence recorded of dense occupation inside the low-lying area demarcated by it. Tinda is representative of the physical location of another type of Garamantian escarpment settlements, making use of a large flat-iron scarp that projected from the main escarpment. There are clear affinities

between all these sites in terms of building types and constructional methods, pottery forms and styles of pottery decoration. There are also some intriguing differences between Zinkekrā and the sites presented in this Chapter.

These sites are less securely dated than Zinkekrā but have some interesting points in common and points of difference with that site. Ikhlif seems to have had a long and fairly intensive occupation – a point reinforced by the presence of lithic tools in the late Pastoral tradition (as at Zinkekrā). Some of the ceramics here could belong in the Early Garamantian phase, though in general pottery was sparser than at Zinkekrā and the forms and fabrics (unsurprisingly) do not exactly correspond with those at Zinkekrā (located 100 km to the west). Al-Khara'iq appears to have had an early phase as well, followed by a poorly dated second phase. Tinda also yielded pottery that can be dated early in the 1<sup>st</sup> millennium BC, though the bulk of the diagnostic finds are imported wares of the latter centuries BC (the Proto-Urban phase), which seems to have marked the apogée of this site. Indeed, the assemblage of late Hellenistic imports at Tinda is

more impressive than the material recovered from contemporary levels at Zinkekrā, though part of the reason for that may be connected with the fact that the urban centre at Jarma had certainly come into existence in this phase and may have been already eclipsing Zinkekrā as the key ‘consumption site’ in its locality. Both at Ikhlif and at al-Khara‘iq there is some evidence of post-Garamantian continued use of the site, though it is impossible at present to demonstrate whether the supposed ‘Tuareg’ features date to 100 or 1000 years ago.

A major contrast between all the sites reported on in this Chapter and Zinkekrā is the lack of evidence for a mudbrick constructional phase, or for the emergence of more complex plans and greater rectilinearity of layout. Even the latest phases of these sites retain relatively simple structural forms of one- or two-roomed oval huts, sometimes with attached yards or enclosures. In this respect, Zinkekrā does stand out as atypical among the early sites. More work is required to understand the developmental sequence at this class of sites and indeed whether occupation was always continuous and year round (the oval hut forms suggest relatively insubstantial and impermanent structures involving a lot of mud and organic materials in the walls raised on stone foundations).

As at Zinkekrā, there are questions still to be resolved about the source of water supply for all these escarpment edge sites. These sites were generally located on promontories or outliers of the Messak escarpment from where the inhabitants could have accessed the centre of the valley (and the presumed cultivation zone) with a walk of no more than 1–2 km. There must have been a close-by source of water for everyday provision of the inhabitants and while wells represent one possibility, it is also possible that natural springs were still active here in the 1<sup>st</sup> millennium BC, an interpretation suggested by the observation of gypsum formation at various points along the escarpment cliff (Drake *et al.* 2004). The drying up of these springs – possibly in the 1<sup>st</sup> millennium BC on the indications of some UTh dates – could have been one of the determining factors in the eventual abandonment of these sites for permanent occupation and the transference of the main settlements to mudbrick settlements in the valley centre, with the possibility that the old hillfort sites were still periodically used as temporary refuges in later times. This was the established settlement pattern of the Classic Garamantian period, as we shall see in the next section.



## Part II.

### Excavations at Classic Garamantian Oasis Settlements



### 3. EXCAVATIONS AT THE CLASSIC GARAMANTIAN SETTLEMENT OF SĀNIAT JIBRĪL (GER002)

By D. J. Mattingly, J. Hawthorne, and C. M. Daniels<sup>†</sup>

(with contributions from J. N. Dore<sup>†</sup>, A. Leone and F. Cole)

#### INTRODUCTION

The oasis-centre site of Sāniat Jibrīl (known as Sāniat Gibril or SGB in the CMD archive and GER 002 in the *AF*) lies *c.* 300 m east of ancient Jarma (Fig 3.1). The modern name relates to the small gardens (*saniat*), which overlay part of the ancient site when CMD commenced work in the 1960s (Fig. 3.2). The site is also overlain by a series of spring mounds, attesting to the high water table

below this part of the valley floor. Excavation of one of these by the FP revealed that there were Roman pottery sherds lying on a buried ground surface beneath, suggesting that the spring mounds here were post-Garamantian in origin (Mattingly 2003, 45). Immediately to the north-west of the site are the salt flats of the Jarma playa – perhaps still a seasonal lake in Garamantian times. There are numerous traces at ground level of mudbrick wall lines and spreads of mudbrick debris indicating



Figure 3.1. The location of Sāniat Jibrīl in relation to Old Jarma and showing pottery scatters (stippled grey areas) noted by CMD in the vicinity.



Figure 3.2. The eponymous Mr Jibril at his *sāniat* or gardens with irrigation well-frame (CMD 1965).

the location of ancient buildings, accompanied by a dense surface artefactual assemblage. The site was sometimes referred to by CMD as though it were a mere suburb of Old Jarma (Daniels 1971b, 6), but is more accurately considered as a satellite village, one of a large number now known in the Jarma area. It was probably active between *c.* 150 BC and *c.* AD 500 (though CMD noted a hiatus in imported material from the Roman empire in the 3<sup>rd</sup> century AD, Daniels 1971b, 6) and for at least part of that time appears to have been a centre for various crafts, particularly jewellery making. Although there are no above-ground structures visible, the level of modern disturbance of the ancient site has remained low and a large part of the site has now been protected with a fence by the Department of Antiquities.

### The Work of Daniels at Sāniat Jibrīl, 1965, 1971, 1973

A combination of excavation and survey, by both CMD and the FP, has revealed that at its height Sāniat Jibrīl was a sizeable quasi-urban area, seemingly with a degree of planning and buildings constructed on common alignments (Mattingly 2007, 119–21, for the gazetteer entry on GER002). CMD's main trenches covered an area roughly

40 x 30 m and exposed a sequence of buildings and courtyards. It is clear from both CMD's trial trenches in the vicinity and the recent FP survey that the area excavated by CMD is only a small part of a much larger complex of buildings and streets (Fig. 3.3). This area seems to have been distinct from Jarma and separated from it by an empty patch of land. Although there was clearly activity at Sāniat Jibrīl from the 2<sup>nd</sup> century BC, the buildings found by CMD seem to date mainly to between the later 1<sup>st</sup> century AD and the 4<sup>th</sup> century AD. Three main building phases were identified from the excavated trenches, here designated Periods I–III. An earlier and a later Period (0 and IV) were also identified – though the traces within the excavated area were rather tenuous, the finds from surface collection point to this more extended chronology for the site overall. The excavated buildings appear to have grown outward from an original nucleus of four principal rooms, being gradually augmented with courtyards, additional buildings and subdivisions.

CMD was never entirely certain what the site represented. Although the ceramic record suggested that it had domestic functions, unexplained U-shaped structures within certain rooms, metal-working hearths and enigmatic grooved stones suggested to him that it might perhaps also have had some industrial function, although the full extent of this was unclear at the time of the excavations (in part because sieving does not appear to have been practised). Recent work by the FP has been able to confirm that a range of crafts was practised here, including the manufacture of jewellery and beadwork. Survey work beyond the excavated area indicates that this craft production was spread across a wide area at Sāniat Jibrīl and not just within the excavated buildings. The site was also clearly a consumer of goods manufactured elsewhere, as attested to by quantities of Mediterranean finewares, amphorae and glass. A degree of planning and organisation is also apparent, not just from the rectilinearity of the buildings, but from the layout of the whole area. The fact that many of the excavated buildings were maintained on the same basic layout over a period of some three or four hundred years also suggests a certain durability of occupancy or tenancy. Altogether, all these factors point to Sāniat Jibrīl as being an important site for our understanding of Garamantian settlement. In fact, we can define it as a type site for this period; it is not only one of the few Garamantian wadi-centre sites to have

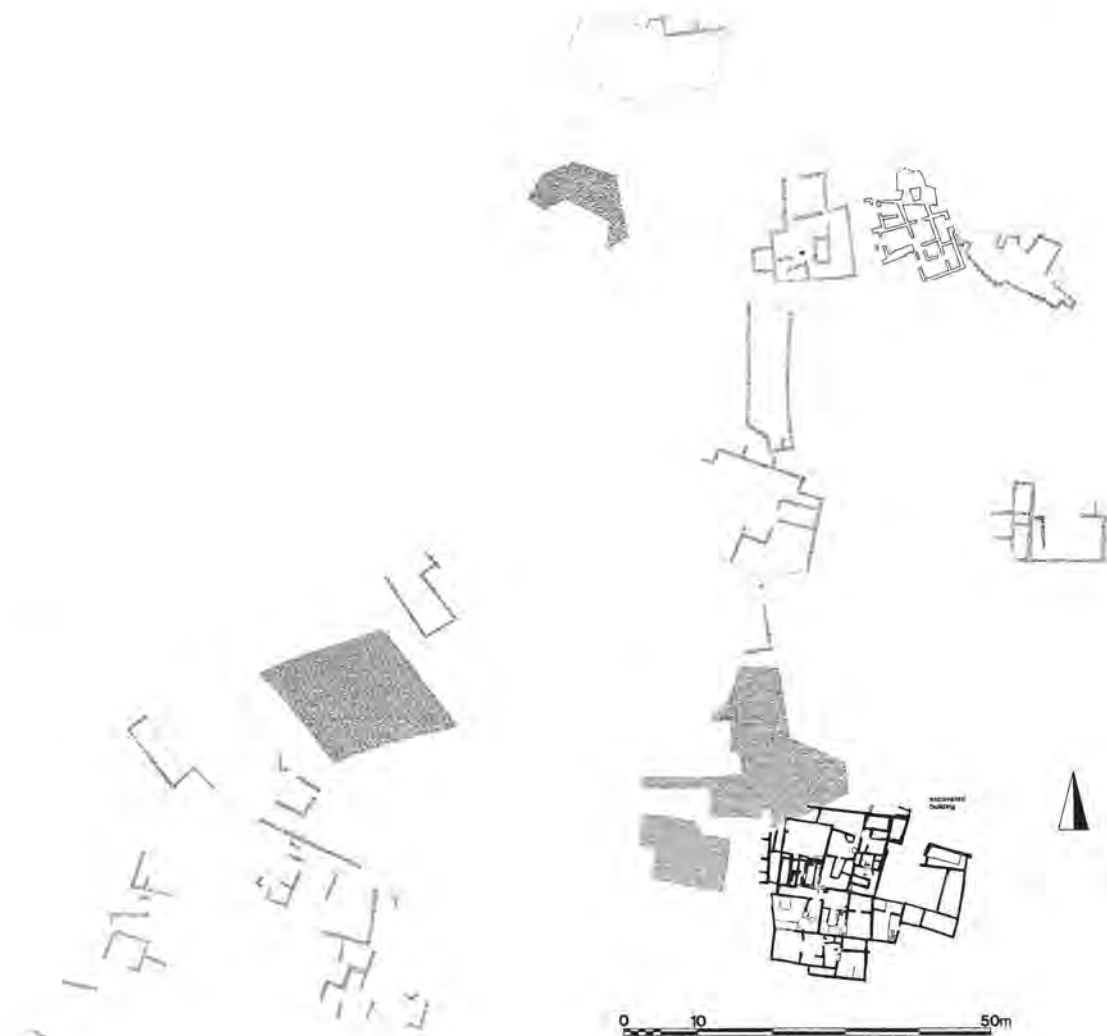


Figure 3.3. Traces of mudbrick buildings at Sāniat Jibrīl and the CMD excavated complex (FP 1997).

seen any proper excavation, but recent results from survey are starting to indicate that there might be other similar sites buried along the length of the Wādī. The full publication of Sāniat Jibrīl is therefore of paramount importance.

Although CMD excavated at Sāniat Jibrīl for three seasons (1965, 1971 and 1973) the only publication on the site was a brief article in *Libyan Studies* (Daniels 1971b, 6–7, essentially a summary of the interim, Daniels 1971c). The labour force on the site seems to have typically comprised five or six British archaeologists and about the same number of Libyan workmen (Fig. 3.15). The main personnel responsible for the excavation and recording were David Bird (1971), Tim Tatton-Brown (1971, 1973), Patrick Carmody (1971), John Gillam (1971, 1973), Bill Hanson (1973), Peter Scott (1971), Fran West (1973).

CMD outlined the salient features of the 1971 excavation season, and included two plans, one of the site in the late 1<sup>st</sup> century AD and the other

showing it in the 4<sup>th</sup> and 5<sup>th</sup> centuries AD (Daniels 1971b, 6–7). He suggested that the site may have been essentially a domestic residence, but with some sort of industrial function, possibly weaving. At the time of CMD's death in 1996, no fuller draft report of the excavations existed, though the archive remained largely intact. The archive contains details of all three seasons, as well as a large number of plans. It is the aim of the present work not only to publish this archive but to integrate CMD's work with that of the Fazzān Project. The present report is thus based on several sources of data:

- a) the CMD site excavation archive;
- b) the results of the FP survey;
- c) some minor interventions by John Hawthorne checking details with the extant remains in 2000;
- d) some additional work conducted in 2009, sampling the CMD spoilheaps systematically for evidence of bead production.



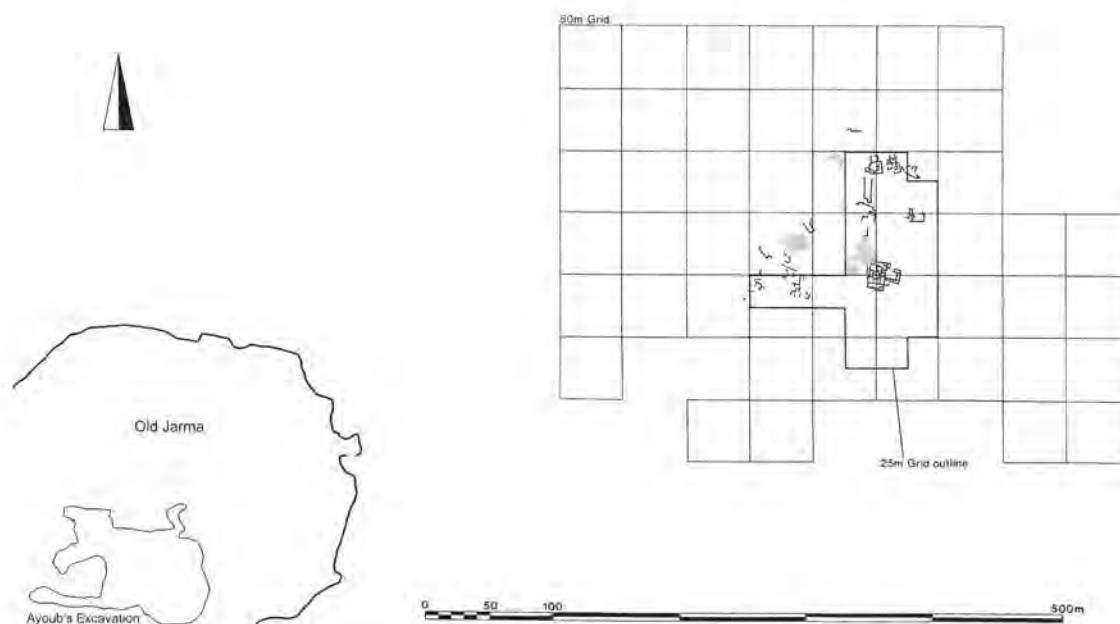


Figure 3.4. Location map of Sāniat Jibrīl in relation to Old Jarma and showing the FP 50 x 50 m and 25 x 25 m collection grids in relation to the mudbrick buildings.

This report begins by examining the general area of Sāniat Jibrīl by way of the survey undertaken by the FP. It then moves to the detail of the excavations and concludes with a discussion of the site in its wider context.

### The Fazzan Project (FP) Survey

It was clear from unsystematic survey undertaken by CMD in 1973 that there was a considerable carpet of ancient material spread across the area of Sāniat Jibrīl, although this was never analysed in detail and the records have largely disappeared from the CMD archive (Fig. 3.1). In order to understand better the excavated evidence, it was therefore important that the surrounding area be fully surveyed to modern standards. The Fazzān Project undertook detailed topographic and gridded survey here in 1997–8 and 2000. Total station survey of the surface mudbrick walls and debris spreads defined at least 20 multi-roomed mudbrick buildings (with others probably concealed within areas of modern cultivation, or buried beneath modern rubbish dumping, trackways and springmounds). The visible buildings are spread across an area of at least 150 x 150 m (Fig. 3.3) and CMD's trial excavations (Trenches 3 and 5 – see below) established the presence of additional mudbrick complexes c.50 m south and 100 m south-west of the larger excavated buildings (indicating a total site size of 250 x 150 m or 3.75 ha). Moreover, the

scatter of dense surface finds extends to closer to 5 ha. The 1997–98 survey was based on a grid of 50 x 50 m squares, that in 2000 on 25 x 25 m squares (The correlation of the two grids with the excavated structures and Old Jarma is shown on Fig. 3.4; see *AF 1*, chapters 1 and 4 for a full discussion). It was hoped that, in addition to augmenting the excavated evidence, surface collection might provide a set of 'signatures' for similar settlements elsewhere in the Wādī. The results of the grid walking can be superimposed on the overall plan of the site (Figs 3.5–3.10).

The number of potsherds recorded per 50 x 50 m grid square varied markedly across the site, with some of the highest figures corresponding to concentrations of finds eroding out of CMD's spoil heaps (Fig. 3.5). An outer envelope of grid squares with low-density or zero finds was recognised around the high-density core of the site. This provided supporting evidence that Sāniat Jibrīl was a separate satellite settlement, not simply an extension of the urban site of Jarma.

The higher resolution (25 x 25 m) grid survey used at Sāniat Jibrīl in 2000 covered a smaller area at the heart of the settlement more intensively and was designed to assess evidence for manufacturing activity in particular (Fig. 3.6). The number of small finds collected during the 2000 survey was outstanding: c.350 small finds numbers were allocated, accounting for c.550 individual pieces (many bead finds were recorded in groups).

Table 3.1. Small finds collected during the FP survey work at Sāniat Jibrīl (GER002).

Artefact Class	Number
Glass fragment	184
Glass bead	51
Glass bracelet	3
Faience fragment	4
Faience bead	10
Ostrich eggshell	237
Ostrich eggshell bead	106
Carnelian fragment	399
Carnelian bead	7
Amazonite fragment	25
Amazonite bead	7
Other stone fragment	40
Other stone bead	4
Bead polisher	18
Slag	8
Iron artefact	10
Copper alloy fragment	169
Copper alloy ring	3
Copper alloy bead	2
Coin	7
Other small find (e.g. quern)	2

The collected finds (Table 3.1) included: potsherds, lithic materials, three silver coins, one copper alloy coin, fibulae fragments, very large numbers of copper alloy fragments, glass vessel fragments, carnelian and other semi-precious stone fragments, and beads made from spun glass, faience, ostrich eggshell, carnelian and other decorative stone (such as the green amazonite). No other Garamantian site has yielded this sort of quantity of surface finds.

It was noted that the absolute density of finds is highest in those grid squares that overlie excavation spoil heaps (G02, G16 and G19) (see Figs 3.5–3.9), so the survey usefully supplements the excavation record of finds, by highlighting certain categories of material that appear to have been missed in the initial excavations (where sieving was apparently not employed). Aeolian deflation of the spoilheaps has probably caused a degree of concentration of these finds at the surface (see further discussion of this below). However, significant numbers of finds were also discovered in squares some distance away from the previous excavation trenches, suggesting that manufacturing was widespread and intensive at the site.

The ceramic finewares collected from the two surveys date to between the 2<sup>nd</sup> or 1<sup>st</sup> century BC and 5<sup>th</sup> century AD, somewhat broader than the chronology revealed by the excavated area (late 1<sup>st</sup> century AD – 4<sup>th</sup> century AD). The wheel-made coarsewares and amphorae are less distinctive and lack so precise a chronology, but in general

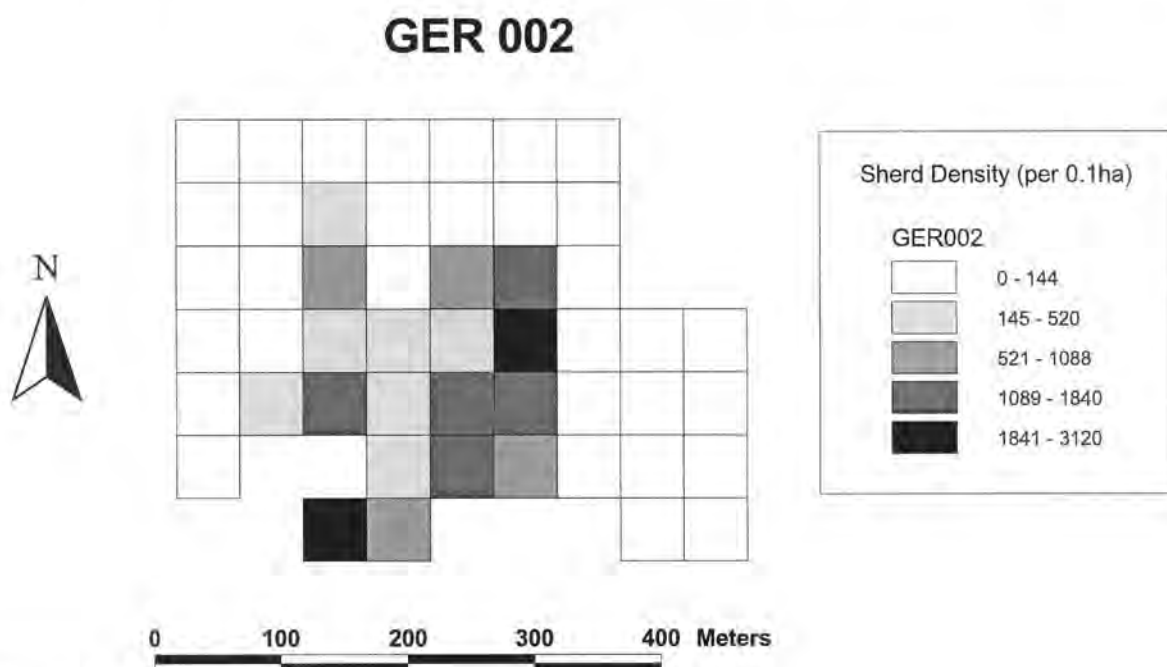


Figure 3.5. Pottery density in 50 x 50 m grids.

GER 002 (2000)

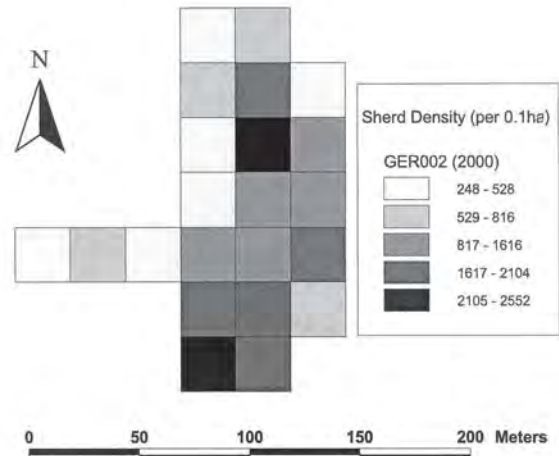


Figure 3.6. Pottery density in 25 x 25 m grids.

GER002

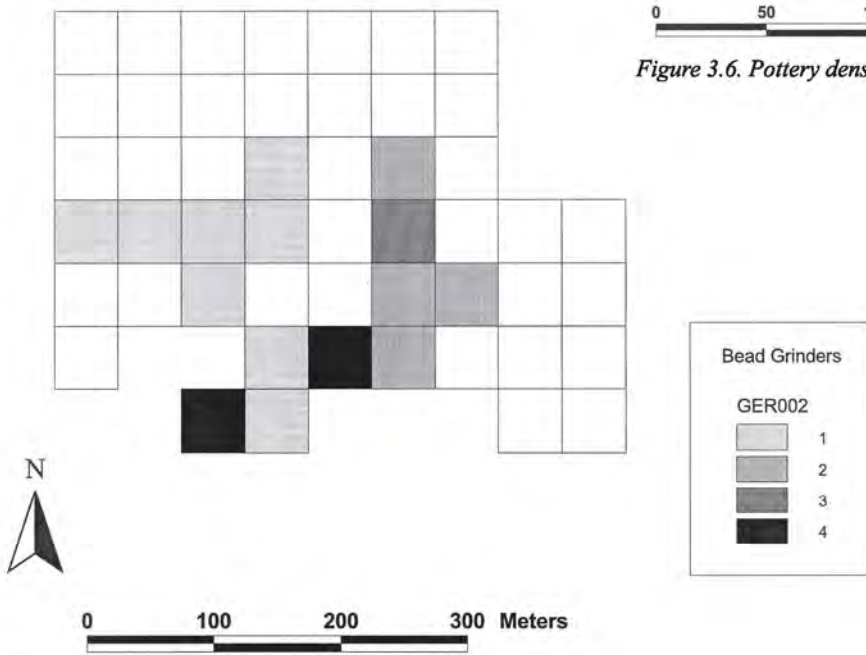


Figure 3.7. Distribution of bead grinders.

GER002 (2000)

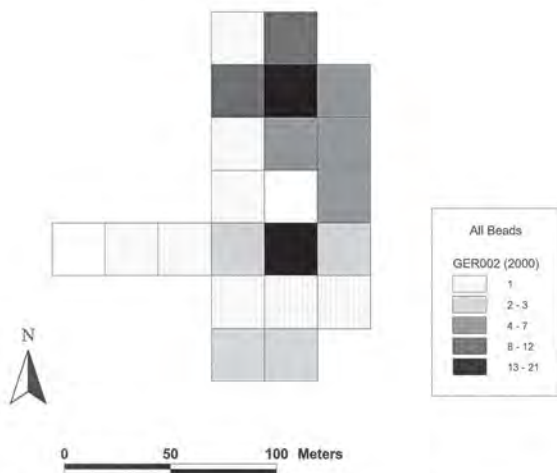


Figure 3.8. Distribution of beads (faience, glass, stone and ostrich eggshell).

GER002 (2000)

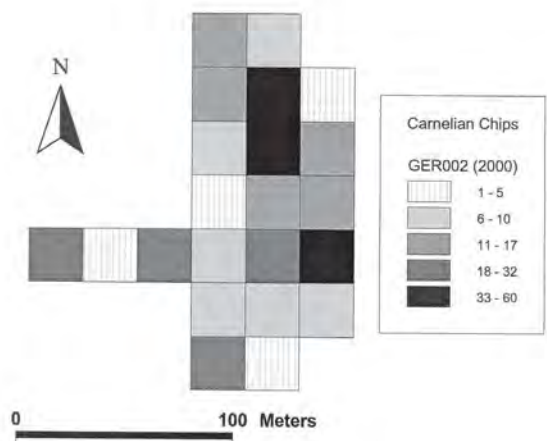


Figure 3.9. Distribution of carnelian chips.

support this dating. Some parts at least of the Sāniat Jibrīl settlement would appear to date to the latter centuries BC and others to have survived further into late antiquity. Since imports were in general rarer before the late 1<sup>st</sup> century AD and after AD 300, it is conceivable that the earlier and later occupation phases were more important than they at present appear.

Although potsherds were predominant, a range of other artefacts was collected. These included grooved stones used in bead manufacture (bead polishers, see Mattingly 2007, 478–80) – in addition to the 18 recorded by survey (Fig. 3.7), 105 were recovered from CMD's trenches. Unusually large numbers of beads have been collected from the surface of the site (Fig. 3.8). For instance, the FP survey found over 100 ostrich eggshell beads, in varying stages of the production process, averaging *c.* 3 mm in diameter. Seven red carnelian and seven turquoise amazonite beads were also found (some evidently broken in course of perforation or finishing), along with abundant rough chips of both stones (almost 400 carnelian chips and 25 amazonite) (Fig. 3.9). There were four other stone beads and 40 fragments of other unusual stone or semi-precious stones. About 50 glass or paste beads and 13 faience beads were also recovered, along with several fragments of glass bangles. It is possible, but not yet proven, that there was local manufacture of glass beads, but in any case the numbers of glass beads, including certain trade beads, suggest that the craft workers at Sāniat Jibrīl were importing beads for stringing up with the other categories of beads that were produced there. The large number of fragments of vessel glass from the site is highly unusual and has been suggested as possible cullet collection for re-melting (Mattingly 2003, 121).

Another major category of finds comprises almost 170 fragments of copper alloy and a range of copper alloy artefacts (coins, rings, beads and bracelets) (Fig. 3.10). Many of the small copper alloy fragments appeared to have been parts of broken artefacts, perhaps collected for reworking (Cole in Mattingly 2007, 464–68). Metallurgy seems to have been another specialist activity here, with iron slag (smithing) collected in survey and the large number of copper alloy fragments and some crucible fragments suggesting copper working in addition. Detailed surface recording of 79 patches of ash and slag across the site has revealed a particularly dense cluster

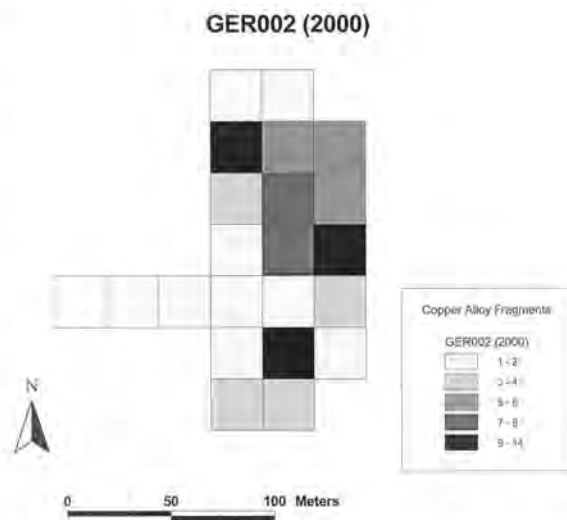


Figure 3.10. Distribution of copper alloy jewellery and fragments.

of metalworking debris in the area to the north of the CMD excavations (Fig. 3.11) and analysis of this material attests a focus on iron smithing and copper alloy working (see Schrüfer-Kolb in Mattingly 2007, 448–51 for a general discussion and description of numbered industrial features). Excavation of one of these 'patches' revealed a small bowl-shaped metalworking hearth/furnace that had been used for both iron smithing and copper alloy working (Mattingly 2007, 450–51). Presumably the other patches represent similar features and the numbers suggest that there was a considerable productive capacity at the site overall. CMD certainly encountered similar hearths and metallurgical features, though little detail survives in the extant records.

Given the overall high density of glass, ostrich eggshell, carnelian and other materials that can be worked in the production of jewellery, it is suggested that Sāniat Jibrīl comprised a range of specialist handicraft workshops making jewellery.

Additional sampling conducted in 2009 on the CMD spoil heaps was carried out to produce quantified information about the volume of finds that could be related to bead making and to ascertain whether there were differences in the density distribution from the spoil heaps on different sides of the CMD excavation (and probably relating to the different areas defined by CMD). These results will be described later, after the evidence from the excavation trenches has been presented.

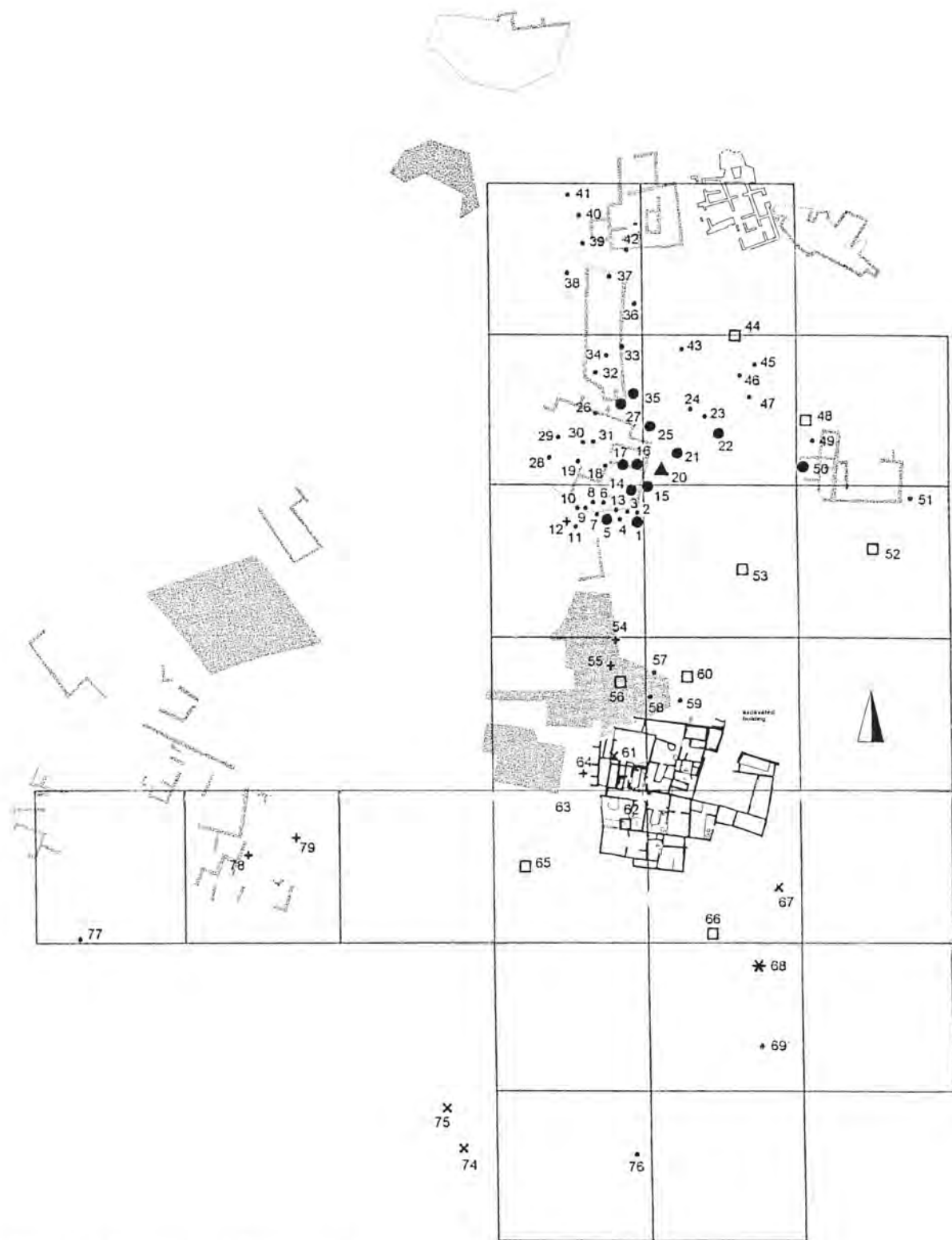


Figure 3.11. Evidence of metallurgical features.

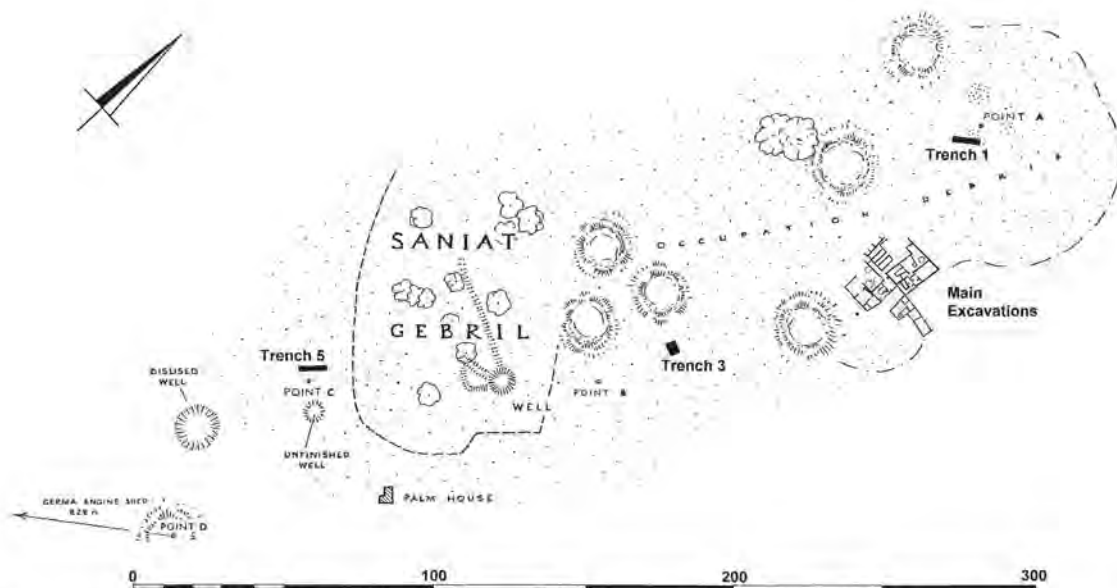


Figure 3.12. CMD's 1965 plan of the area of Sāniat Jibrīl, showing the locations of each of the trial trenches. Trenches 2 and 4 are not marked but lie within the area of the main excavations of 1971 and 1973.

### THE CMD EXCAVATIONS

The FP survey thus indicated that a large area was occupied between the 2<sup>nd</sup> century BC and the 5<sup>th</sup> century AD. Industrial activities were clearly taking place here, including metalworking and jewellery manufacture. This survey gives us a new framework within which we can place the excavations of CMD, both in terms of the locational context of the actual buildings and the activities within them. We can now move on to consider the structures excavated during the 1965, 1971 and 1973 seasons in the light of this recent work. The trial excavations in 1965 took the form of five small trenches (Fig. 3.12). Trenches 1, 3 and 5 revealed sequences of walls, occupation levels and artefacts, but were not pursued; these are summarised below. Trenches 2 and 4 were selected for further excavation, and the area between and around them was widened in 1971 to expose the sequence of structures shown in Figure 3.13.

The site as dug in 1971 was divided into four principal Areas (Areas 2, 4, 6 and 7 – 2 and 4 correspond to the expanded Trenches 2 and 4) and the present report maintains these divisions for clarity (Fig. 3.14). To the west of the main excavated structures (and probably relating to the edge of a separate building complex to the west), Area 8 was cleaned and partially excavated in 1973. Although the final plans for this area have not survived in the archive, an attempt has been made to reconstruct them from the site notebooks.

The description of the site begins with an examination of the original trial trenches, before moving on to look at the main 1971 excavations. The site is described by Period with each Area looked at individually within this framework, beginning with Area 2 in the north and moving round through Area 6 in the east, through Area 4 in the south and finishing with Area 7 in the west.

#### The 1965 Trial Trenching

The 1965 trial trenching had two main aims. The first was to see whether Ayoub was correct in his assertion that ancient pottery kilns were buried at Sāniat Jibrīl (Ayoub 1962, 11). Ayoub had claimed to have found five kilns, heaps of clay and pieces of unfinished pottery along with fragments of pottery and Roman amphorae and coloured beads (1962, 20). The second was to sample a wide area to see whether there were structures beneath the sand. It was quickly realised that Ayoub had in fact mistaken metallurgical hearths for kilns (though it cannot be excluded that there was pottery production somewhere within the settlement – see below). However, the trial trenches did reveal that mudbrick walls were to be found across a very wide area, and that these were associated with Garamantian artefacts. This section describes Trenches 1, 3 and 5. Trenches 2 and 4 were later incorporated into the 1971 area excavation, and the results of the work there is described at the appropriate point of the main text.

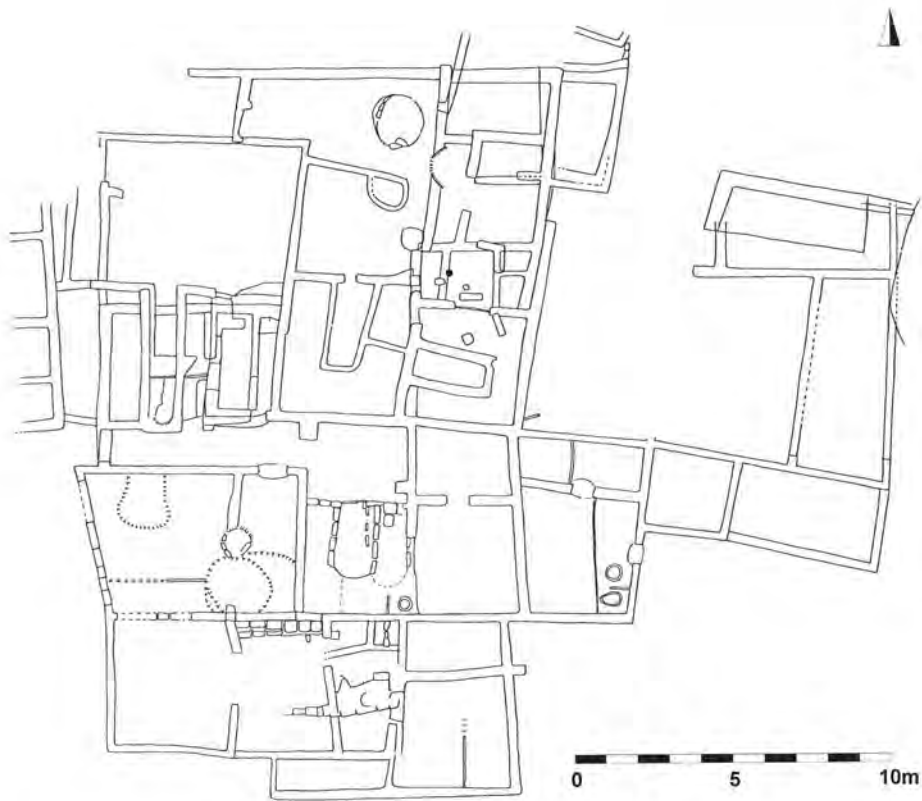


Figure 3.13. Overall plan of Sāniat Jibrīl excavations, showing all main walls.

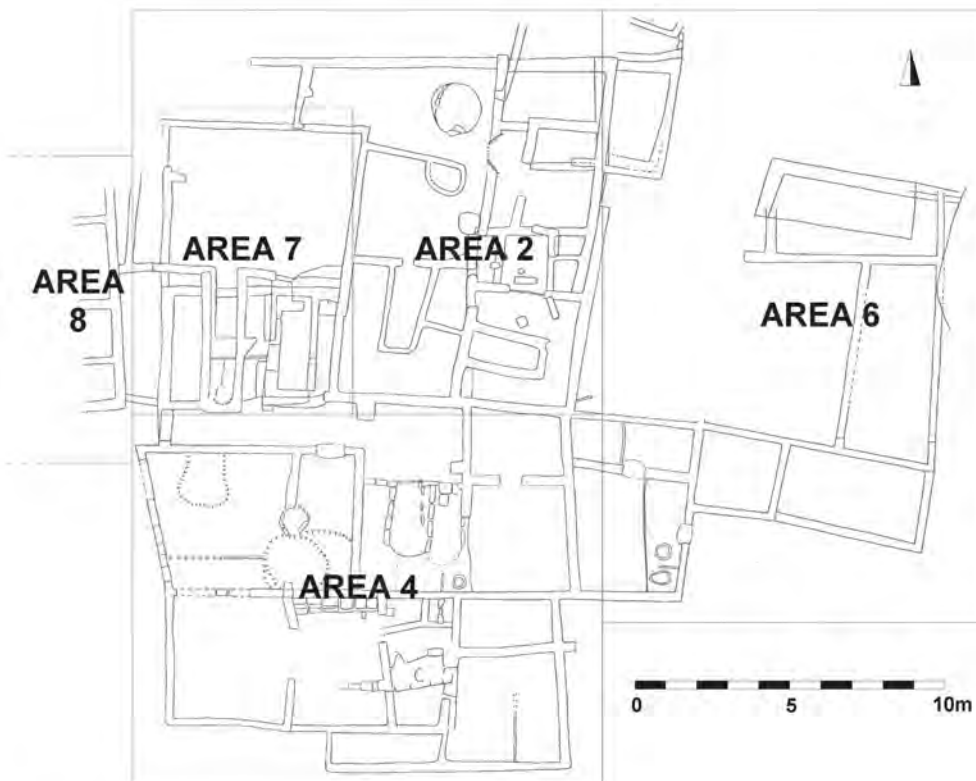


Figure 3.14. Allocation of Area numbers in main excavations at Sāniat Jibrīl.

### Trench 1

Trench 1 lies to the north of the main 1971 excavation area. The excavation in Trench 1 immediately revealed three mudbrick walls at right angles to each other; two of these were exposed as sizeable lengths while the third was uncovered only as a corner joining onto one of the others. The wind-blown sand at the top of the trench was underlain by what was interpreted as an occupation layer (contexts 2 and 3). This was described as 'slightly banded, brown', and contained a large quantity of damaged bones and several local handmade coarseware sherds. A number of handmade globular jars with everted rims were recovered (HM 337 or 338). The same material was found on either side of each of the walls. At a level equal to the bottom of the walls this occupation layer gradually turned into clean sand (5). This sand was found to overly a further wall (not plotted on the sketch plan), which was associated with another occupation horizon (6). This layer was recorded as producing amphorae sherds, local handmade coarseware sherds as well as a HM 337 rim.

### Trench 3

Trench 3 was located c.50 m to the south and west of the main 1971 excavation area. The sketch section suggests that the wall tops were not encountered immediately below the surface, but rather a short way below. The notes accompanying the sketch plan and section suggest that a floor was found, but it is not clear whether this was a hard floor or simply an occupation layer. In any case, the occupation material (fragments of local handmade coarsewares) was found only in layers level with the walls; below this was clean sand.

### Trench 5

Trench 5 was located some 100 m to the south-west of the main excavation area, in a part of the site where even today buried walls can be discerned in the sand. Two walls were found, seemingly immediately below the surface. The uppermost level was wind-blown sand. This was removed to reveal a sandy occupation level, immediately above a hard floor. All levels, including the floor, contained a mixture of imported wheelmade and local handmade ceramics. It seems that sherds of amphorae were more common than sherds of handmade wares. Excavation does not seem to have progressed below the floor.

## Description of the Site: Area by Area and Phase by Phase

The excavations recognised three main structural phases in the various main Areas examined, defined as Periods I–III, with traces of more vestigial antecedent and subsequent activity defined as Periods 0 and IV. In the account below, Period 0 features will be discussed along with the Period I evidence, and Period IV with Period III. The full dating evidence of the phases and overall interpretation will be fully laid out in the interpretative section following the descriptions of the stratigraphy and exposed features (Fig. 3.15).



Figure 3.15. General view of the excavations in 1971, looking south (CMD 1971).

### Period I

This was the earliest phase to be substantially represented in the various excavation areas. The account here follows the following clockwise sequence from the north side of the excavations: Areas 2, 6, 4, 7.

#### Area 2 Period I

For the location of all rooms and walls numbers within Area 2, see Fig. 3.16; Period I features in Area 2 are shown on Fig. 3.17. The general character of Area 2 is conveyed in Figs 3.18–3.19. The earliest coherent building phase recognised here was Period I, though there were traces of some Period 0 walls beneath the northern edge of the site (Fig. 3.20).

#### Room 2.1

This room lay in the centre of the excavated area, in the south-east corner of Area 2. To the north were Rooms 2.2, 2.3, 2.4, 2.6 and 2.7), and to the west were Rooms 2.5, 2.8 and 2.9. Rooms 2.8 and 2.9 appeared to have been un-roofed open areas. Another, larger, open area lay to the east, in the form of the courtyard of Area



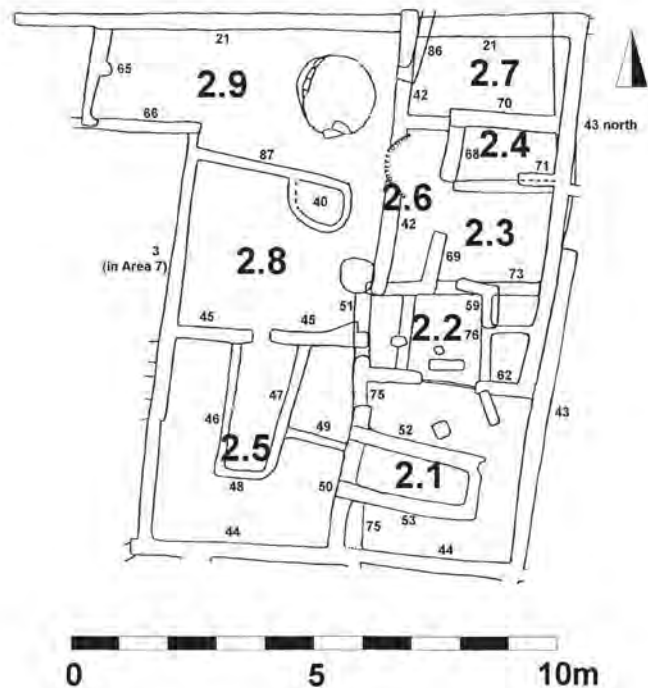


Figure 3.16. Walls and room numbering in Area 2.

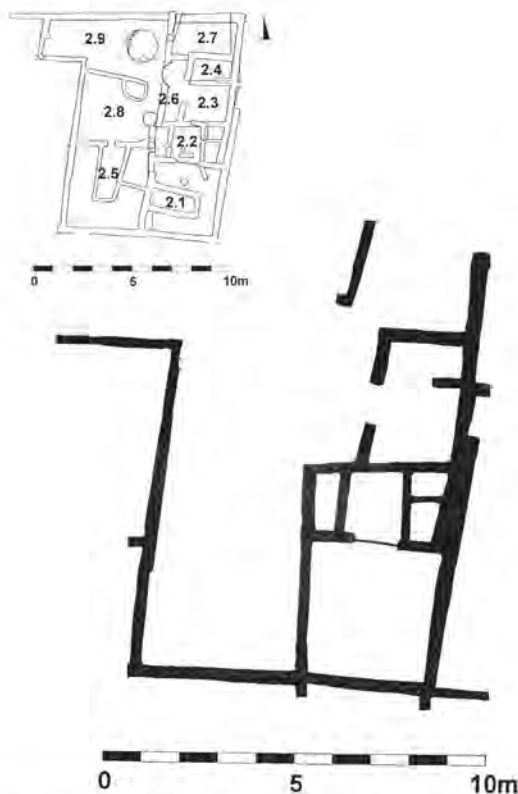


Figure 3.17. a) Plan showing all Area 2 rooms; b) Period I features in Area 2.

6, Room 6.1. To the south lay the rooms of Area 4. The walls which make up the immediate boundaries of Room 2.1 were: on the north, wall 62 (3.7 m), wall 43 on the east (3.6 m), wall 44 on the south (3.3 m) and wall 75 on the west (3.6 m). These walls formed a neat square and were built from the standard mudbricks. An entrance lay in the middle of the north wall. This north wall, 62, was perhaps constructed at a late stage in the room's Period I use. There is a suggestion that it has a stronger stratigraphic relationship with the Period II contexts 55 and 33. If this was the case then it may be that Room 2.1 was originally some 30 percent larger, with its north boundary formed by wall 73 (3.3 m).

The interior of the room in Period I comprised context 76 which is described only as 'occupation layer underlying 55'. There is no record of how it was distinct from 55. It produced one fairly complete example of ARS Hayes form 3, datable to the early 2<sup>nd</sup> century AD. In addition, there were eight other diagnostic pot sherds, four of which were of the Berber Red Ware HM 337 globular vessels. Two of these were sunk into the floor towards the west wall. Layer 76 also produced two stone scrapers (Small Finds 174 and 175).

#### Room 2.2

This small room lay to the north of Room 2.1. If the preceding discussion of Room 2.1 is correct, it is possible that it was created late in Period I by the subdivision of Room 2.1. Its walls were: to the north, 73 (3.3 m); to the east, 43 (2.1 m); to the south, 62 (3.7 m); and to the west, 51 (1.6 m). None of these walls (with the exception of the south face of 62) showed



Figure 3.18. Western half of Area 2, looking south. The 'round concretion' is in the left foreground (see also Figs 3.49, 3.58) (CMD 1971).



Figure 3.19. Eastern half of Area 2 with Area 6 in the background, looking south-east (CMD 1971).

signs of plastering. There was an entrance in the middle of wall 62 into Room 2.1.

The floor of this room was the same as that in Room 2.1, 76, described only as an 'occupation layer'. This room contained a sunken Berber Red Ware globular vessel (HM 337), context 83. The remains of two walls were found inside this room, seemingly beneath the occupation layer 76. They appear to be the foundations for storage bins, as they form discrete sub-rectangular alcoves against the east wall. They appear to have been found at the very end of the excavation and were not fully excavated.



Figure 3.20. An earlier (Period 0) wall at the northern edge of Area 2, looking west. The line of the wall is just visible as a paler strip to the left of the ranging rod (CMD 1971).

#### Rooms 2.3 and 2.4

These two small rooms appear to have initially been one before being subdivided, perhaps at about the same time as Rooms 2.1 and 2.2 were separated. The original room was 3 m long by 2.3 m, at its widest point. The walls of this first room were: to the north, 70 (2.1 m); to the east, 43 (3.3 m); to the south, 73 (2.3 m); to the west, 68 (1 m) and 69 (1.3 m) with a doorway between. The floor level of this original room (67) was recorded only as 'underlies 37'. Finds from this room include a number of pieces of pottery, including four rims of Tripolitanian amphorae and one rim of an African (Tunisian, *africana piccolo*) amphora. This perhaps indicates that this room was in use in the early 2<sup>nd</sup> century AD at the latest, and that its occupation may have actually continued into Period II at this level (cf. Peacock and Williams 1986, 154). One copper alloy coin was also recovered from this layer, although it was too corroded to be dated (Small Find 243).

#### Room 2.3

This room lies to the north of Room 2.2. It has a doorway in the west wall. Its walls were: to the north, 71 (2.1 m); to the east 43 (2 m); to the south 73 (2.3 m); and to the east, 69 (1 m; there was also an entrance 1.1 m wide in this wall).

*Room 2.4*

This room lies to the north of Room 2.3. Its walls were: to the north, **70** (2.1 m); to the east, **43** (1.1 m); to the south, **71** (2.1 m); and to the west, **68** (1 m).

*Room 2.5*

In Period I this area appears to have been an open space, bounded on the south by wall **44** (3.8 m), on the west by wall **3** (in the Area 7 numbering scheme; 9 m) and on the west by wall **75** (5.6 m). There does not seem to have been a north boundary at this stage, although wall **87** may have been in existence (see below). There was an area of burning in the south-east corner and finds were restricted to a few undistinguished fragments of local handmade pottery. CMD believed this area to have been roofless in Period I, and there is no evidence to suggest otherwise.

**Area 6 Period I**

Area 6 was the largest area at Sāniat Jibrīl, covering the entire east side, an area equivalent to areas 2, 4 and 7 together (Figs 3.21–3.22). It measured some 20 m (north-south) by 12 m (east-west). Despite this it produced far fewer finds and ceramics than any of the other areas. In part this must be due to the lesser depth of stratification. None of the rooms here seem to have witnessed the constant re-flooring seen in the more westerly areas (Figs 3.23–3.25).

*Room 6.1*

The large space in the middle of Area 6 appears to have been open for most of the life of the site. Its earliest features were the walls **44** and **40** on the west and south sides respectively. The west face of wall **44** and at least part of the north face of **40** were plastered. The courtyard itself was also subject to excavation, or rather sectioning. An east-west section appears to have been put in close to wall **44**. It seems to have been only 1.5 m long. The lowest level (**53**) was found to be clean sand

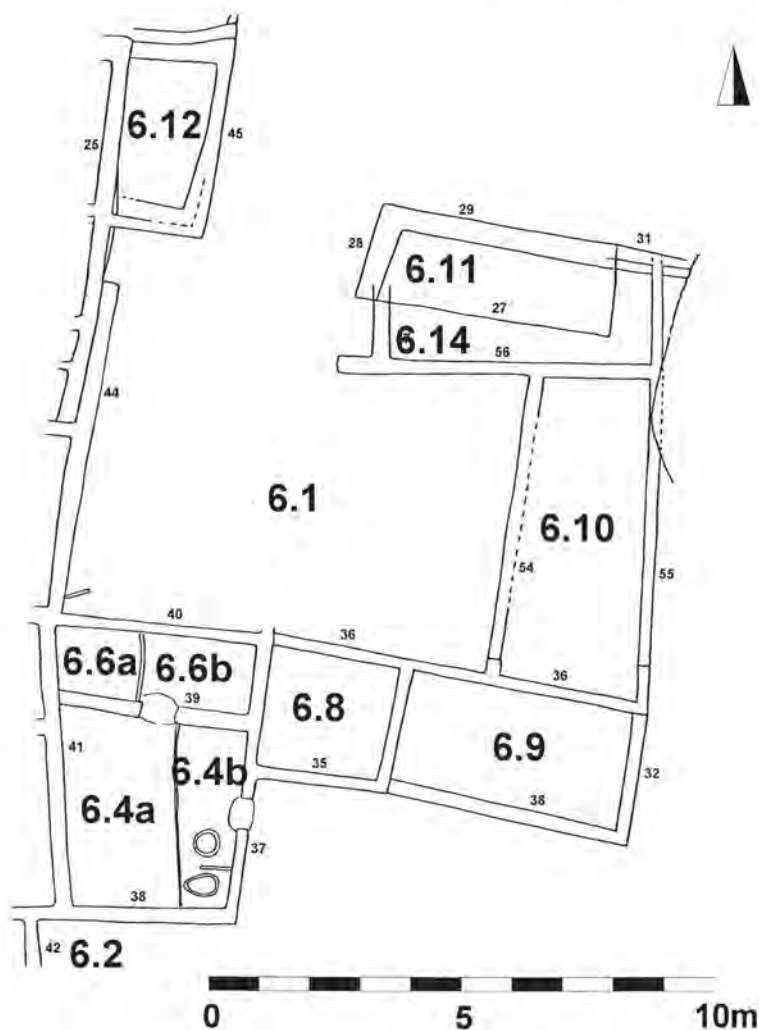


Figure 3.21. Walls and room numbering in Area 6.

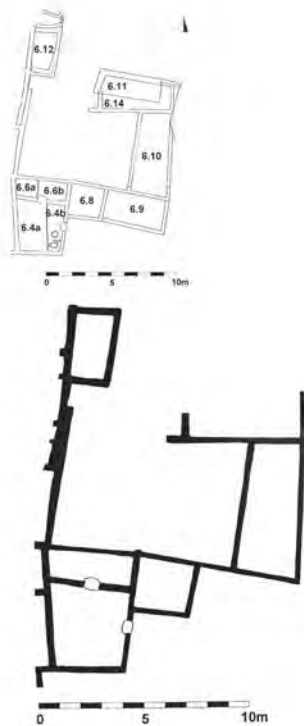


Figure 3.22. a) Plan showing all Area 6 rooms; b) Period I features in Area 6.



Figure 3.23. View across Area 6, looking west. Room 6.11 and Structure 6.14 are in the foreground (CMD 1971).

that contained a pot *in situ* under wall 44. This appears to have been at a depth of almost 1 m. Above this there was a layer (12) of sand with charcoal flecks through it. Above this there was a rubble layer (2) containing a lot of broken mudbrick and pottery.

#### Room 6.2

It is difficult to be certain whether this is a room at all, in the sense of an enclosed space. It was originally uncovered in the 1965 Trench 4. It has north and west walls, but no east wall; its south wall is merely a stub. However, the stratification within these limits does correspond well with that recovered in rooms elsewhere in this area, so it may simply be that the east and south walls were destroyed by later activity.



Figure 3.24. View across Area 6, looking north-east (CMD 1971).



Figure 3.25. View across Area 6, looking north-west (CMD 1971).

Since the walls of Rooms 4.4 and 4.3 in Area 4 had already collapsed in Period II, this suggests that Room 6.2 had also ceased to be used by this date, as it shared one wall with them (wall 42). It is also apparent that as that same wall was built after Rooms 4.1, 4.2, 6.4 and 6.6, Room 6.2 must also post-date their construction.

Within Period I, there are two occupation horizons separated by a layer of clean sand. The upper occupation level is recorded as coming down on to a 'floor of a sort'. Finds from the room seem to have been mainly Berber Red ceramics, with one amphora sherd recorded just below the upper occupation surface.

#### Rooms 6.4 and 6.6

These rooms lie to the east of Rooms 4.2 and 4.1, with which they share their east wall. It is difficult to be sure whether this room or the Area 4 rooms were earlier, although we can be certain that the wall to the north, wall 40, predates both sets of rooms. Rooms 6.4 and 6.6 are virtually mirror-images of Rooms 4.1 and 4.2 (Fig. 3.26). The fact that both sets of rooms are constructed in the same style of grey mudbrick perhaps suggests a close temporal association.



Figure 3.26. Area 6, Rooms 6.6 (with horizontal ranging rod) and 6.4 (small rectangular room directly to its right) from the south (CMD 1971).

#### Room 6.6

The walls and dimensions of Room 6.6 were: to the north, wall 40 (4.2 m); to the east, wall 37 (1.6 m); to the south, wall 39 (4.1 m); to the west, wall 41 (1.5 m). Room 6.6 is effectively a sub-chamber off Room 6.4, as it is only accessible through Room 6.4, via the doorway in wall 39. In this it recalls Room 4.1 in Area 4 and Room 2.1 in Area 2. The walls here are of grey mudbrick. The west half of this room was originally excavated in 1965, when it was recorded as having only one level, an 'indeterminate floor'. In the 1971 season the east half of the room was cleared, revealing the same floor beneath a loamy level. The loamy level contained charcoal and some pottery. A hearth was also found associated with this floor level. Beneath the floor there was a clean sandy level. Judging by the site plan's annotations, there was also a hearth in this sandy level, directly below the upper one. The walls in this room all appear to have been plastered and painted in red and white.

#### Room 6.4

This is the main room connected to Room 6.6. Its walls and dimensions were: to the north, wall 39 (4.1 m); to the east, wall 37 (3.9 m); to the south, wall 38 (4.2 m); and to the west, wall 31 (4.3 m). The walls here are of grey mudbrick. This room appears to share much in common with Room 6.6 in that it was filled with a sandy loam that was cleared down to a floor. This floor overlay a clean sandy level. The walls were all plastered, with that surviving on the west wall being particularly fine. The plaster in this room was also painted red and white.

#### Room 6.8

Little is recorded of this room, except that it was butt-jointed onto Room 6.4/6.6 and wall 36. It must therefore post-date the construction of both Room 4.4/4.6 and wall 36. It is roughly square, each side being *c.*2.5 m.

#### Room 6.9

As with neighbouring Room 6.8, little is recorded about this room. It was butt-jointed onto Room 6.8 and wall 36, and so therefore must post-date Room 6.8. It is sub-rectangular, 4.8 m long (east-west) by 2.8 m wide (north-south). A section was cut through wall 33 to examine its relationship to the surrounding levels. It was found that it lay on cleanish sand, on top of which had been built both the wall, and, in the external, south area, a mudbrick floor of sorts. This floor seems to have been repaired at some stage. Inside the room it was found that the cleanish sand was again the lowest level. In the west end of the room this sand was covered by a hard floor, although this was absent in the east end.

#### Room 6.10

This long room seemed to form the east boundary to the central courtyard in Area 6. Its walls were: to the north, wall 56 (2.3 m); to the east, wall 55 (6.9 m); to the south, wall 36 (2.8 m); to the west, wall 54 (6.4 m). It seems to have had a floor surface in Period I, which was subsequently largely destroyed when the room was demolished in Period II. This room was built from the same grey mudbrick as Rooms 6.4 and 6.6. The south wall, wall 36, appeared to be one with the construction of Room 6.10. Presumably there was a doorway in the west wall, although the fragmentary state of preservation of that wall made it difficult to be sure where it may have lain.

#### Room 6.12

This room lay in the north-west corner of Area 6, abutting Area 2. In contrast to the Period I buildings in the south and east of Area 6, Room 6.12 was built in brown mudbrick – the rest were built in grey mudbrick. The walls and dimensions of this room were – to the north, wall 47 and 48 (both lying together; internal length: 1.9 m); to the east, wall 45 (3 m); to the south, walls 48 and 49 (internal length: 1.7 m); and to the west, wall 52 (length here: 2.9 m). The fact that there are two sets of walls built against each other suggests that there were two phases of building to this room. This room appears to have been demolished in Period II and was subsequently partly built over in Period III.

The room was found to contain a brown loamy fill (24), which produced a great deal of ceramics and a few bones. It also contained some lime flecks. Overlying this level was a destruction layer (21), which extended across the walls, sealing them, and into the surrounding area.

#### Room 6.14

This room lay to the north of Room 6.10, with which it shared its south wall. Much of the north section of

the room had been obliterated by the later Room 6.11. The walls of Room 6.14 were: to the east, wall 55 (1.9 m); to the south, wall 56 (5.6 m); and to the west, wall 57 (surviving length: 1.3 m). The north wall (58) actually ran underneath the east wall (55) at their junction and continued off to the east for 1 m. At this point it was destroyed by a pit. It was of the same early grey-mudbrick as Rooms 6.4, 6.6 and 6.10. It is possible that it was part of an essentially contemporary structure to the east, against which the excavated structures at Sāniat Jibrīl were built. CMD believed that it might even date to Period 0. No information regarding floor levels or finds survives for Room 14.

#### Area 4 Period I

Rooms in Area 4 were originally numbered in an alphabetic sequence (Aa, Ab, B, C, D, E, F, G, H, I), but have been renumbered in this report in a numeric sequence conforming to the other Areas (Fig. 3.27). Period I features are highlighted in Figure 3.28, with the general character of the excavated area being conveyed in Figs 3.29–3.31.

#### Rooms 4.1, 4.2, 4.3, 4.4

Rooms 4.1, 4.2, 4.3 and 4.4 (and possibly Rooms 6.6 and 6.4) appear to have been laid out at the same time, to judge from the materials used and the wall-junctions. The mudbricks in these rooms were a uniform grey/green and distinct from those in other areas. Room 4.4 had internal wall plaster, a feature shared with Rooms 6.6 and 6.4.

#### Room 4.1

This room backs on to the median wall 15 that ran east-west through the site. It was one of those originally excavated in 1965 as part of trial Trench 4. The 1965 cutting exposed the east half of the room and the 1971 work exposed the rest. Figure 3.32 shows the section that was drawn from this and neighbouring rooms in 1965. It appears to show that the wall shared with Area 2 goes about twice as deep as the other walls on Area 4. It is possible that this indicates that Area 4 was constructed subsequent to Area 2. This room has a doorway through to Room 4.2 to the south.

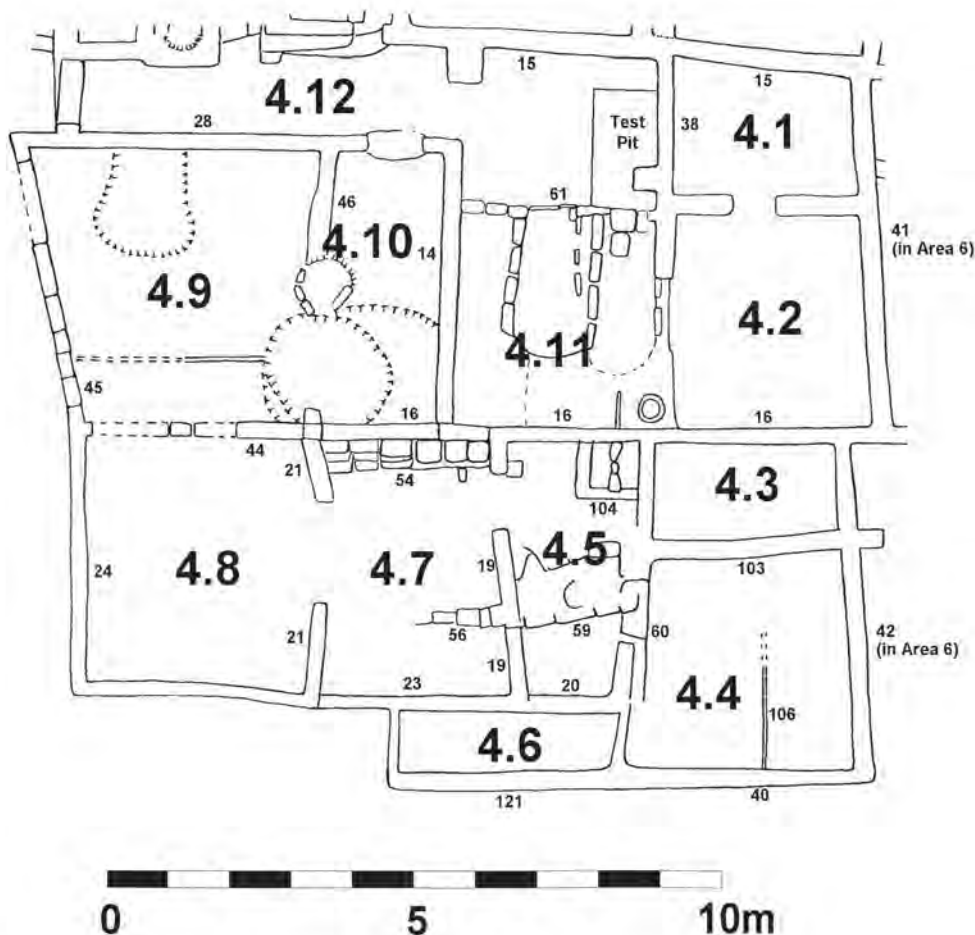


Figure 3.27. Walls and room numbering in Area 4.

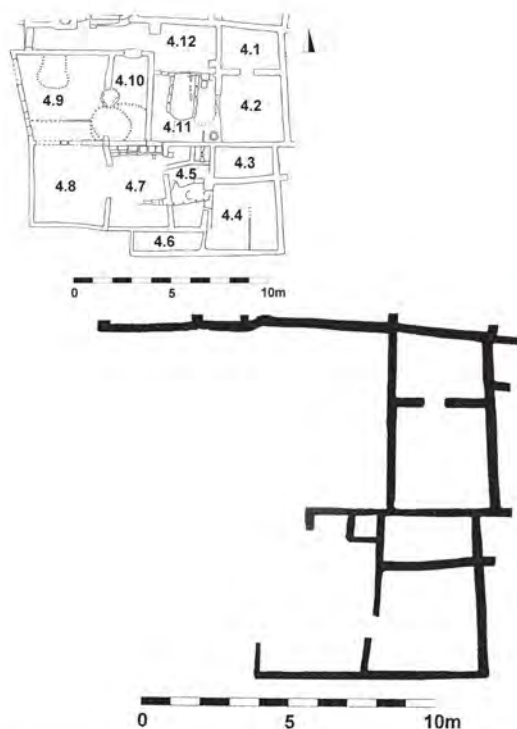


Figure 3.28. a) Plan showing all Area 4 rooms; b) Period I features in Area 4.

A test pit put into the neighbouring Room 4.11 in January 2000 revealed that the stratigraphy in this area of the site was slightly more complicated than the original excavators realised (Figs 3.33–3.34). CMD believed that the walls of the room were built onto virgin sand; in other words, that the walls were the first things built in the area. The walls were then supposedly followed by a) a period of occupation which resulted in a layer of dirty sand being deposited (90), which in turn was followed by a hard white mortar floor, some 12.5 cm thick (88). However, the work in 2000 has shown that the thick mortar floor runs through at least the west wall and through into Room 4.11. It is not known whether it also cuts through other walls. It is therefore clear that the floor pre-dates the upper part of the west wall. The remains of another wall were found under the west wall, beneath the mortar floor but on the same alignment as the upper west wall. This lower wall was on the same alignment as the upper wall, but also had the remains of a thin mudbrick wall running east-west through it at right angles. This new wall ran through into Room 4.11 as well, and appeared to form the south limit of the mortar floor. It appears that this new wall may originally have been much higher, and may have been incorporated into the upper west wall when it was finally built, as traces of it were found in the upper parts of the west wall.

We can then give a revised sequence of construction for this area. The first item to be laid down was the relic



Figure 3.29. Area 4. View across the southern range of rooms in Area 4, looking west. Room 6.4 of Area 6 is in the right foreground (CMD 1971).



Figure 3.30. Area 4. View across Area 4, looking north with Area 2 in the background. Room 4.11 is middle left (CMD 1971).



Figure 3.31. Area 4. View from the centre of Area 4, looking south-west across Rooms 4.10 and 4.9 (CMD 1971).

wall lying under the west wall, below the mortar floor. The lowest layer (90), was recorded as 'fine dirty yellow sand packed hard.' No finds were recorded from this level. This layer seemed to post-date the construction of

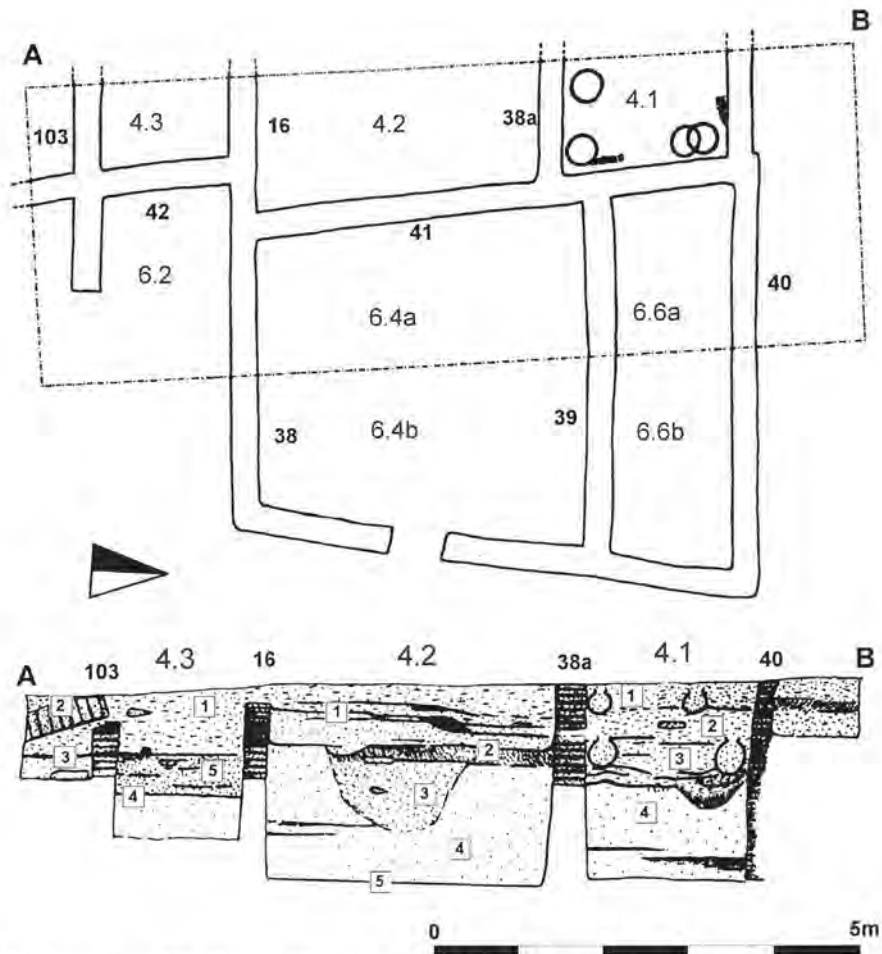


Figure 3.32. Plan and section of Trench 4 (1965) in relation to larger scale Area 4 excavation (1971).

the lower wall. The next level up, **88**, is the hard, packed white mud floor. In the 1965 work one pot (5/3A) was found sunk into this level and through into level **90** below. The 1971 digging revealed another pot at the same level on the other side of the room (**89**), again sunk into layer **90** below. Also from this level is a fragment of Itallian Sigillata stamped 'SMF' which is datable to AD 50–80 and a fragment of Tripolitanian (?) amphora. This floor lies on top of the lower west wall and seems to be contemporary with the east-west wall.

The overlying level up was designated context **72**. This was described as 'cleanish sand with some lime and harder patches of orange white sand and grey-white mud.' It appears that this level also occurred in neighbouring Room 4.2 (as context **95**). The 1965 work revealed three almost complete everted rim jars in this level (designated 5/2A, 5/2C and 5/2D). Figure 3.35 shows the room under excavation in 1965. Although the significance was not recognised at the time of excavation, some bones from level 5/2 of the 1965 section turned out to be the remains of at least three human children (one of a 3–6 month old, the other a pair of possible twins either neonate or foetal). It appears that these were separate burials of very young or neonate babies in the floor level of this room.

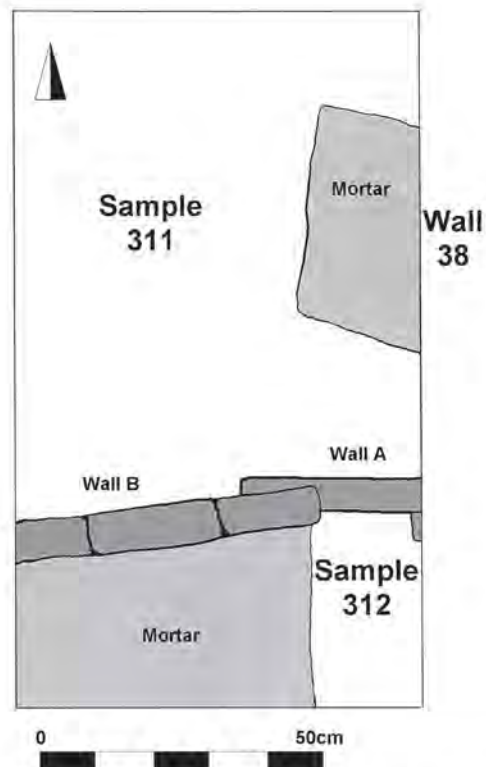


Figure 3.33. Plan of trial trench excavated in 4.11 (2000). For location, cf. Fig. 3.27 above.



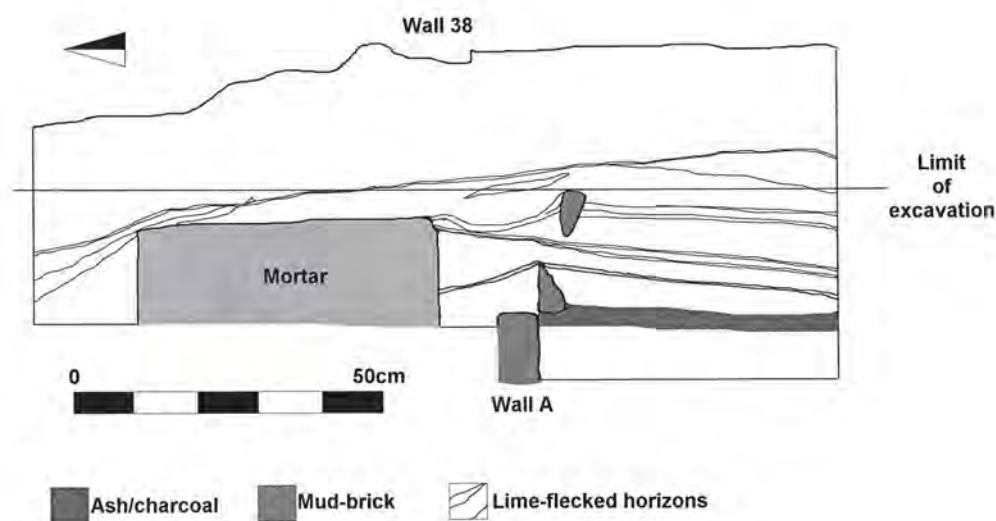


Figure 3.34. Section of trial trench in 4.11 (2000).

It is therefore clear that what CMD regarded as one single sequence of use (Period I) was actually three separate phases. First, the lower west wall was built. It seems likely that the new east-west wall may have been built at the same time. This phase was then partly sealed over by floor 88. Finally, at some point the upper part of the west wall was built over the mortar floor. It seems to have partly incorporated the east-west wall.



Figure 3.35. Pottery vessel under excavation in Area 4 (CMD 1965).

#### Room 4.2

Room 4.2 was immediately to the south of Room 4.1 and appeared to have been laid out at the same time. It had a door in its west wall. The room was *c.*3.5 m long (north-south) by *c.*3.2 m wide (east-west). It was first dug in 1965 when the east half of it was exposed. At that time the rapid trial trenching brought to light five floor levels (see Fig 3.32). In 1971 the excavation of the west half of the room revealed traces of fourteen floor levels, many of which were fragmentary and only survived in the corners.

The entire sequence of floors in Room 4.2, from top to bottom, is summarised in Table 3.2.

If it is accepted that the lowest two contexts did match those in Room 4.1, then that accounts for Period I occupation and use. Unlike Room 4.1, however, Room 4.2 did not contain any sunken pots, although it did produce sherds of Berber Red ware. On the other hand, it did produce evidence that its walls were plastered at some stage. Unfortunately there is no record of where the plastering began in the stratigraphic record, and so it cannot be precisely dated.

#### Room 4.3

This room lay immediately to the south of Room 4.2. Although it was clearly part of the Period I construction, the fact that its east wall was bonded onto the south wall of Room 4.2 indicated that it was built after Room 4.2. It was 3.4 m long (east-west) by 1.6 m wide (north-south). This room was partially excavated in the 1965 and only planned in the 1971 season. A 'deep sounding' was made in 1973 that clarified the stratification. The stratification in Room 4.3 was actually very simple compared to that in the more northerly rooms. The Period I material was limited to two contexts, 110 and 111. These were sealed by the Period II dump (65) which also covered Room 4.4. Context 111, the lower of the two, was a floor level, comprising hard-packed grey sand with white flecks. A thin spread of ash and dirty sand covered this, but this also recorded as context 111. Above 111 was 110, recorded as 'grey/white sand with nodules'. The 1965 records reveal that in these two contexts was found a fair quantity of ceramics, including one Italian Sigillata base. The 1973 sounding showed that 111 was the lowest occupation level above the natural sand.

Table 3.2. Stratigraphic sequence in Room 4.2.

Context number	Description	State of preservation	Comment
11	Topsoil	-	Overlies all features
76	Orange/yellow mud	NW corner only	4 cm thick
77	White mortar	NW corner only	
78	Fine clean orange sand	All over room	Very thin
80	Dirty brown sand	All over room	Thin; lime flecks; hard nodules
81	Orange sand, hard skin	NW corner only	1–2 cm thick
82	Dirty brown sand	All over room	6 cm thick
83	Mudbrick feature	S end of room	A bench on 84?
84	Hard mud, grey, white flecks	Only around 83	
85	Dirty brown sand, hard	All over room	
86	White mortar	Only in patches	
87	Yellow/brown sand; hard	All over room	
91	Hard grey/white mud	All over room	6 cm thick; ashy content
95	Trodden mud floor	All over room	Same as 72 in Room 4.1
96	Fine, hard-packed sand	All over room	Same as 90 in Room 4.1

#### Room 4.4

This room lies immediately to the south of Room 4.3. Room 4.4 lies outside of the 1965 trench area and was first examined in 1971 and subsequently in 1973. It was c.3.7 m long (north-south) by c.3.2 m wide (east-west). The lowest archaeological context here was 109, a trodden whitish-grey mud floor. The door to the west was located at this level. The 1973 work suggested that there was a small hearth on this floor against the west wall, just south of the door. An interesting feature of this floor was that embedded in it and slightly raised from it was a low mudbrick wall, running from the north wall to the south. This wall, 106, was of the 'brick on end' variety, in which a line of mudbricks was embedded in the floor to half their length, with the exposed ends subsequently plastered over. No finds or ceramics were recorded from this level. Above floor 109 was a layer of Period I occupation debris (114). This layer was c.15 cm thick and contained a lot of material, including pottery, bones and charcoal. Room 4.4 showed traces of plaster on its walls which can be firmly dated to Period I.

#### Room 4.5

This room lay immediately to the west of Room 4.4; it was bounded on the south by Room 4.6 and bounded on the west by Room 4.7. The butt-joints of the walls against Rooms 4.3 and 4.4 indicated that it was built

after Room 4.4, but seemingly still within Period I. It was unusual on the site in that rebuilding in subsequent periods was on slightly different lines; this meant that the earlier features were less clear than they might have been. It seemed that the first walls were: to the south, 59 (1.7 m); to the west, 19 (3 m); to the north, 16 (2.4 m); and to the east the wall of Room 4.4, wall 60 (2.8 m). It appeared that there were two doors, one leading into Room 4.6 to the south and the other leading to Room 4.7 to the west. However, Room 4.7 was probably merely an open space at this stage.

The 1973 work took this room down to the natural sand. It was found that immediately above this there was a layer of greyish-white sand (97) containing ash and lime flecks. Within this layer had been built a right-angled wall (104) which formed a small niche in the north-east corner of the room. The wall was of orange mudbrick construction and enclosed a grey layer (112); each arm was c.0.45 m long. Context 112 was described as occupation debris. This feature bears comparison with a similar feature partially excavated in Room 2.2, there tentatively interpreted as a set of storage bins. Above all of these remains was a thin layer of soft black soil (93), containing some lime flecks. All of these Period I remains were sealed in by the collapse of the west wall of Room 4.6, wall 60. This formed context 64.

*Room 4.6*

This room lay to the west of Room 4.4 and to the south of Room 4.5. It was clearly built after Room 4.4, but whether it was built before, after or at the same time as Room 4.5 it is impossible to say for sure. It was certainly built within Period I however, as it was sealed by Period II walls (walls 20 and the extension to wall 19). Its walls are: to the north, wall 59 (1.7 m) and 56 (1.4 m; either side of the junction of wall 19); to the east, wall 60 (2.6 m); to the south, wall 121 (3.5 m); and to the west, a return of wall 121 (1.5 m). There was a doorway leading north into Room 4.5 and apparently an opening into the open space of Room 4.7.

This area was only sectioned, rather than fully excavated. Two layers were found. The first, 116, was described as a 'grey-black sandy occupation loam, below blown sand.' The implication is that the later features in this area must have been in/on this level. The lower level, 117, was likewise described as a grey occupation loam. The foundations of wall 121 at this point were some 45 cm below the top of layer 116. It was also noted that the east half of the trench fill appeared to contain more evidence of burning.

*Area 7 Period I*

Area 7 lay to the west of Area 2 and north of Area 4 (Figs 3.36–37). It comprised a large open court to the north and a complex succession of structures on the southern part of the plot (Figs 3.38–3.39).

*Room 7.1*

This area appeared to have been an open space at the beginning of Period I. It was bounded on the north by wall 66 from Area 2 (6.5 m); on the east by wall 3 (9.1 m); on the south by wall 16 (5.5 m); and on the west by wall 13 (8 m). This interpretation as an open area was suggested by two factors. Firstly it appeared to have been built on to the side of the west wall of Area 2 in a slightly haphazard fashion. The awkward join of wall 16 with wall 3 looks more like the junction of a hastily-built yard wall rather than a roof-bearing house wall. Secondly, at some stage in Period I the north half of the west wall, wall 13, was demolished. It seems unlikely that a roof-supporting wall would be so removed.

At a slightly later stage, but still within Period I, an east-west wall (wall 24) was built across the area,

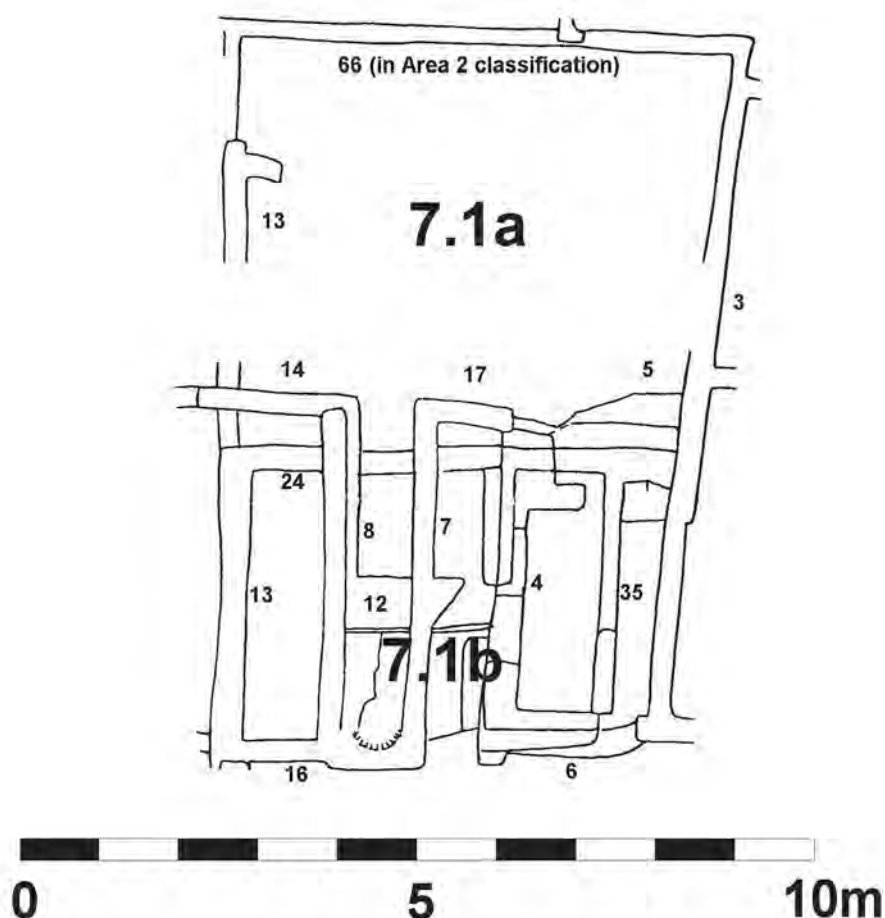


Figure 3.36. Walls and room numbering in Area 7.

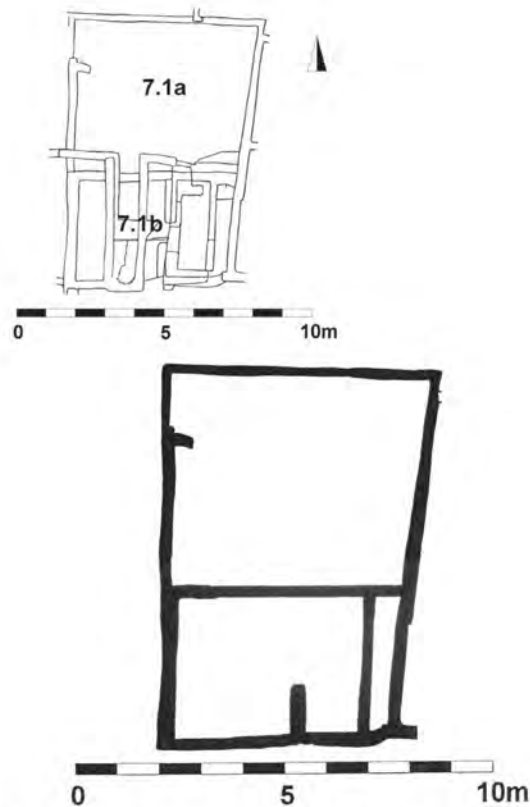


Figure 3.37. a) Plan showing all Area 7 rooms; b) Period I features in Area 7.

dividing it in two. The north area is hereafter called Area 7.1a, and the south Area 7.1b. Room 7.1b, thus created, had a new north-south width of 4.5 m. A door was located in the east section of this new wall. Since the demolition of the north section of wall 13 commenced at the junction with wall 24, it is possible that construction of the new east-west wall and the destruction of the old north-south wall were part of the same operation.

In addition, a north-south wall, wall 35, was constructed within Area 7.1b, between the door in wall 24/5 and wall 3. This wall was described as ‘one or two

courses of yellow mudbrick’. The area between this wall and wall 3, some 0.45 m in width, was floored. A sunken pot (context 38; no drawing survives in the archive) was also discovered in these levels, to the west of the bench area.

The finds from this area were not particularly noteworthy. One sherd of the HM 342 (*doka*) was recorded, along with a rim from a Tripolitanian amphora. The sunken vessel was of the everted rim globular jar type (HM 337), the same as those recovered in Areas 2 and 4. One unidentifiable fragment of iron was classed as a small find.



Figure 3.38. Area 7, general view, looking south (CMD 1971).



Figure 3.39. Area 7, general view looking north (CMD 1971).

## Period II

The evidence for Period II activity was picked up in most of the excavated areas. The account here again follows the order Areas 2, 6, 4, 7.

### Area 2 Period II

#### Room 2.1

This room saw extensive modifications in Period II (Fig. 3.40). The original west wall (wall 75) seems to have been demolished and replaced with another (wall 50) on a slightly different alignment. In addition, the previously empty centre of the room was occupied with a U-shaped structure attached to the new west wall. This structure was 2.8 m long by 1.8 m wide and was constructed of the same mudbrick as the extant walls. The floor levels around this new structure were quite productive in terms of artefacts. There were two occupation layers which seem to have dated to Period II. The lowest (55) produced five pottery sherds and a piece of iron. This level was sealed by context 33 which produced 15 sherds of coarseware and an iron blade. More importantly, it also produced three sherds of ARS datable to the early 3<sup>rd</sup> century AD, including a rim of Hayes 8 and a rim of Hayes 31. Context 33 also contained a number of loomweights and worked stones.

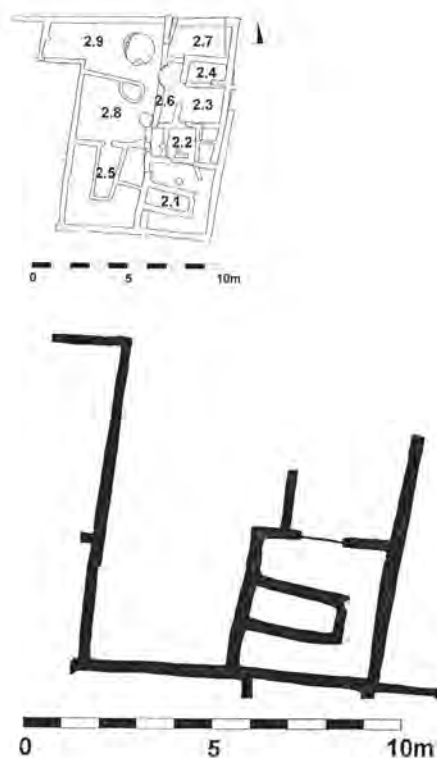


Figure 3.40. a) Plan showing all Area 2 rooms; b) Period II features in Area 2.

### Rooms 2.2, 2.3 and 2.4

CMD believed that these rooms *may* have gone out of use in Period II. However, the evidence from the 1965 trench in the north section of the area suggested continuous occupation. The section there contains a mudbrick deposit roughly level with the tops of the Period I walls. This presumably represented the destruction of these walls. It lay directly on top of occupation debris. If it was the case that this was exposed during Period II as an open, unused area of the site we might expect it to have been covered by a gradual accumulation of sand and then show evidence of Period III use. Instead, it was overlain immediately by an occupation level associated with the Period III walls. The most likely sequence, therefore, is that the Period I walls remained standing and in use until they were demolished at the *end* of Period II, whereupon they were built over in Period III.

### Area 6 Period II

#### Room 6.1

The main change here was the destruction of Rooms 6.10, 6.12 and 6.14 (Fig. 3.41). In the case of Room 6.12, the foundations were covered with a brown loam, flecked with lime and charcoal. This layer extended into the general area of the courtyard. In the south-east

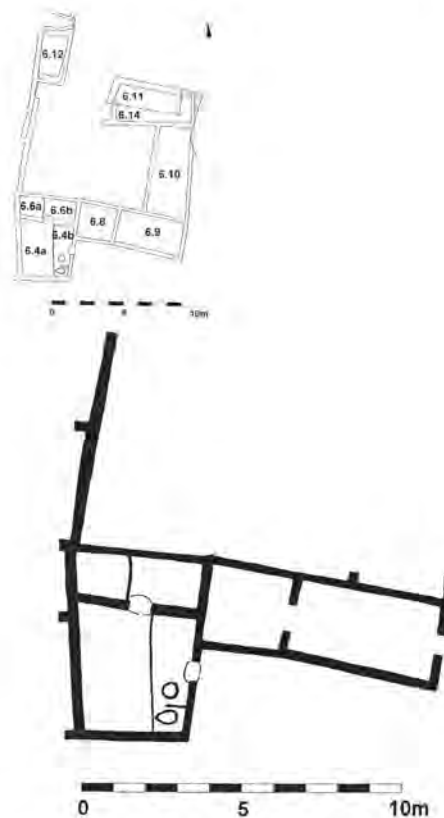


Figure 3.41. a) Plan showing all Area 6 rooms; b) Period II features in Area 6.

corner of Room 6.1 Room 6.10 was completely buried beneath a layer of hard compacted mud.

#### Room 6.8

This small room lay to the east of Rooms 6.6 and 6.4, with which it shared its west wall. It also abutted wall 40 to the north. Its walls were: to the north, wall 40 (2.5 m); to the east, wall 34 (2.4 m); to the south, wall 35 (2.3 m); and to the west, wall 37 (2.2 m). Both of the new walls were of grey mudbrick, similar to the existing walls. The room had a doorway through to Room 6.9 to the east, although it seems likely that as Room 6.9 was slightly later in construction this door would originally have led outside. Room 6.8 was found to contain a grey sandy loam (18) above a thin floor which was broken up in places.

#### Room 6.9

This room abutted Room 6.8 on its west side and wall 40 on the north. Its walls were: to the north, wall 40 (4.4 m); to the east, wall 32 (2.2 m); to the south, wall 38 (4.5 m); and to the west, wall 34 (2.0 m). It had a doorway through to Room 6.8 (which it appears to have post-dated). It was built in the same grey mudbrick as Room 8.

A section was cut through wall 33 to examine its relationship to the surrounding levels. It was found that it lay on cleanish sand, on top of which had been built both the wall, and, in the external south area, a mudbrick floor of sorts. This floor seems to have been repaired at some stage. Inside the room cleanish sand was again the lowest level. In the west end of the room this sand was covered by a hard floor, although this was absent towards the east end.



Figure 3.42. Subdivision of Room 6.4, showing sill walls and hearths, looking east (CMD 1971).

#### Rooms 6.4 and 6.6

The principal modifications in these two rooms comprised subdivisions. Room 6.6 was divided by a

north-south cross wall, with a smaller partition towards its south end. These walls were very flimsy however, recalling the brick-on-end technique seen in Room 4.4 in Period II. As such, they probably only served as low kerbs rather than actual walls. Hearths were installed in these subdivided spaces (Fig. 3.42).

#### Area 4 Period II

##### Rooms 4.1 and 4.2

It is certain that Rooms 4.1 and 4.2 continued in use during Period II, although identifying which contexts relate to this period is more difficult (Fig. 3.43). Apart from the 'SMF'-stamped fragment of Itallian Sigillata from the Period I stratification in Room 4.2, there was a lack of datable finewares.

##### Rooms 4.3 and 4.4

By the beginning of Period II, it is likely that Rooms 4.3 and 4.4 were no longer in use. Some of the mudbrick walls of these rooms had collapsed inwards, forming a rubble layer (74) above the earlier occupation level. It seems that the south wall of Room 4.3 collapsed, along with all of the walls of Room 4.4, including wall 60, which it shared with Rooms 4.5 and 4.6 to the west. It is possible that this collapse happened within

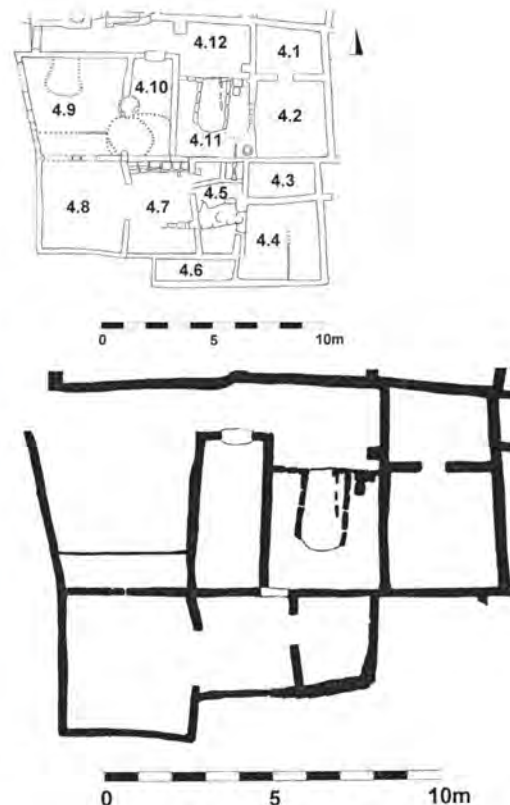


Figure 3.43. a) Plan showing all Area 4 rooms; b) Period II features in Area 4.

Period I as context 74 was associated with a fragment of Italian Sigillata from the later 1<sup>st</sup> century AD as well as two pieces of early ARS A ware. The layer above the collapse appears to be a dump (65) containing a lead-glazed fragment datable to the late 1<sup>st</sup> to early 2<sup>nd</sup> centuries AD. It is clear that by the beginning of Period II the south-east corner of Area 4 was no longer occupied by a building, as this dump context (65) was never built over. It contained many artefacts, including 56 grooved-stone bead polishers (see below), 169 fragments of animal bones and considerable quantities of ceramics.

#### *Room 4.5*

This room also suffered partial collapse during this period, but unlike Rooms 4.3 and 4.4, it was rebuilt. The principal collapse in this area seems to have been the wall shared with Room 4.4, wall 60. This collapsed to both east and west. In its east collapse it fell into Room 4.4, signalling the abandonment of that room. Its west collapse fell into Rooms 4.5 and 4.6 forming the collapse layer 64. If the dating given for this event in the discussion of Rooms 4.3 and 4.4 above is correct, this may have happened during Period I. However the collapse also seems to have involved wall 59 in Room 4.5, as this was subsequently rebuilt about 70 cm further south. Its successor was wall 20. This wall seems to have been built with the aim not only of repairing Room 4.5, but also extending the whole building the west with the addition of Room 4.7. The old wall between Rooms 4.5 and 4.4 was also rebuilt above the collapse, now forming an exterior wall (wall 60 *late*).

#### *Rooms 4.7, 4.8, 4.9, 4.10 and 4.11*

These five rooms were newly built in Period II and seem to have been laid out more-or-less at the same time. Unlike the rest of the site, these rooms followed a very similar pattern of evolution which can be briefly summarised. The lowest levels found in all cases were of clean sand. This was followed by a hard clay floor level. Above this there was then a layer of cleanish sand, presumably the occupation debris for this floor. Both the floors and their occupation debris were of Period II. These were then followed by another hard floor level, which in turn was followed by sandy occupation debris. There were of course variations within each room (Room 4.11 is particularly complex) but in general this pattern holds good.

#### *Room 4.7*

This room was newly built in Period II. It lay to the west of the rebuilt Room 4.5 and its walls were: to the north, wall 16 (2.5 m); to the east, wall 19 (4.2 m); to

the south, wall 23 (3 m); and to the west, wall 21 (4 m). It appears to have had doorways through to Room 4.5 to the east and Room 4.11 to the north. A larger doorway led through to Room 4.8 to the west.

The earliest feature in this room was actually the remains of a Period I wall from neighbouring Room 4.5. This wall (56) formed a short extension of the south wall of Room 4.5. It was badly burnt and buried beneath the Period II features. The lowest Period II level in this room was a clean sandy level around the remains of wall 56. This level was followed by a hard floor level comprised of a number of patches of grey and orange mud. This was the Period II floor level common to each of Rooms 4.7, 4.8, 4.9, 4.10 and 4.11. Above the floor was found a layer of cleanish sand, flecked with lime.

#### *Room 4.8*

This room, newly built in Period II, lay immediately to the west of Room 4.7. Its walls were: to the north, wall 44 (3.5 m); to the east, wall 21 (4 m); to the south, wall 23 (3.4 m); and to the west, wall 24 (4 m). The junction of wall 20 from Room 4.7 and walls 21/3 indicated that this room was built after Room 4.7. It had doors through to Room 4.7 to the east and to Room 4.9 to the north.

The lowest level found in this room was clean, natural sand. Above this was a hard white mud floor level (105). This was the Period II floor level, which was followed by two Period II occupation layers. The earliest is a whitish-yellow sandy level (51), which contained a few ash deposits. This was followed by an ash layer (50), which in some places was quite hard. The excavator suggested that the ash had been sealed by the Period III floor and subsequently baked hard by fires on that level.

The question remains as to whether Room 4.8 was roofed or open to the air. In fact, it seems possible that it was first open, then roofed and then finally open again. The evidence for this came from both the walls themselves and the excavated layers. The first point is that the east, south and west walls were all of one build, light grey mudbricks. The north wall, by contrast, was made from darker mudbricks flecked with lime. It might be that during the period between the construction of the greater part of the walls and the north wall the room was open to the air, since for a time it would only have had three sides. At some stage, however, the north wall was constructed and enclosed the room. This north wall (44) actually seems to have been of one build with the west wall of Room 4.9 to the north. Perhaps at this stage in Period II Room 4.8 was enclosed and roofed, with a new open yard created by Room 4.9. Finally it is interesting to note that the north

wall, 44, was subsequently sealed below the Period III floor (49). However, the east, south and west walls of Room 4.8 continued in use. It is possible that at this stage the room was open to the sky again, forming an enlarged yard with Room 4.9. It is tempting to see the ash deposit (50) as representing the destruction of the roof of Room 4.8.

#### Rooms 4.9

This room lay to the north of Room 4.8. In Period II it had no north wall, as this was only added in Period III. In Period II therefore its walls were: to the east, wall 46 (4.4 m); to the south, 44 (3.5 m – although this wall seems only to have been present for part of Period II – see discussion under Room 4.8 above); and to the west, wall 45 (4.5 m). The lowest level found was clean natural sand. Above this there was a hard white mud floor and above this there was an occupation horizon of cleanish yellow sand flecked with lime. Like Room 4.8, it seems likely that this room began as an open yard. There is no reason to suppose that it was ever roofed.

#### Room 4.10

This small room lay to the east of Room 4.9. Its walls were: to the east, wall 14 (4.4 m); to the south, wall 16 (1.9 m); and to the west, wall 46 (4.4 m). The stratigraphic sequence here was the same as that for Room 4.9. The room was eventually partly destroyed by large pits in its south end and a furnace that cut through wall 46. These appear to be Period III features.

#### Room 4.11

Room 4.11 was to the east of Room 4.10 and shares with it wall 16. Its walls were: to the north, wall 15 (3 m); to the east, wall 38 (6 m); to the south, wall 16 (3.2 m); and to the west, wall 14 (4.5 m). It had a door to the east through to Room 4.2 and a door south to Room 4.7.



Figure 3.44. Area 4, Room 11, the U-shaped platform, looking south (CMD 1971).

The same stratigraphic sequence recorded in Rooms 4.7–4.10 was also found here, up to a point. The lowest level was clean sand, followed by a floor and occupation debris, which in turn was sealed by a further floor. At this point, however, the floor in Room 4.11 was broken up in the centre of the room, creating a sub-rectangular depression exposing the sand beneath. This hole was c.0.20 m deep. The base of the hole was then replastered with mud, in effect creating a new sunken floor. The surrounding remains of the original higher floor were re-floored and the side of the hole were re-faced with green mudbricks. A new low threshold wall (61) was built across the north side of the structure. The final effect was to create a U-shaped structure like those found in Areas 2 and 7 (Fig. 3.44). All of these features, including wall 61, were eventually covered by a sandy layer (35) the make-up for the Period III floor. This sandy layer contained ARS pottery of 3<sup>rd</sup>-century date.

#### Area 7 Period II

Area 7 saw a moderate amount of restructuring during Period II (Fig. 3.45). The most obvious change was the demolition of the north-west corner of the enclosure. Most of wall 66 from Area 2 was removed, as was wall 13 north of its junction with wall 24. The effect of this

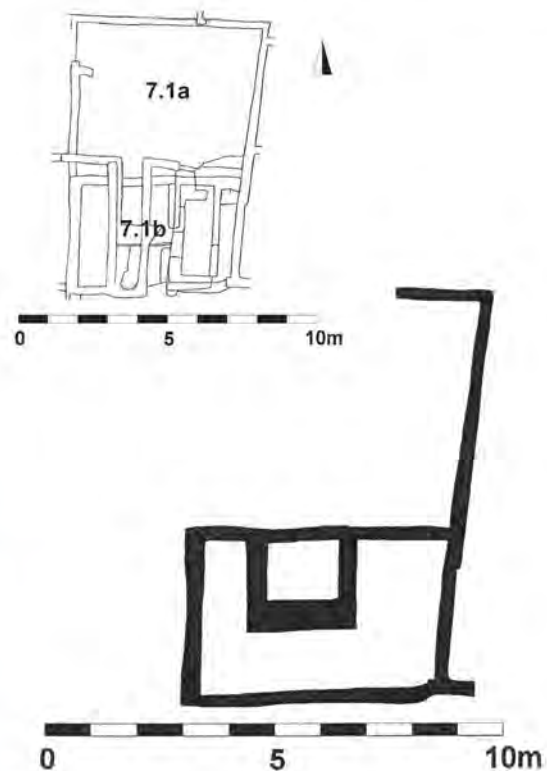


Figure 3.45. a) Plan showing all Area 7 rooms; b) Period II features in Area 7.



was to make this enclosure more of an open yard. The contexts overlying these walls (1 and 2), each contained one fragment of late 2<sup>nd</sup>- or 3<sup>rd</sup>-century ARS: layer 1 had a sherd of a Hayes form 14 while layer 2 had a sherd of Hayes cookware form 182.

In another modification, a feature was installed in room 7.1b, which appears to have been a variant on the U-shaped features recognised elsewhere on the site. It had similarities with that installed in Room 2.1 of Area 2 next door. The U-shaped feature comprised walls 8, 11 and 57, forming a rectangular insert within the room, 2.40 m long along its axis (east-west) and 1.95 m wide (north-south). It abutted wall 24. Within the rectangle formed by these walls was found a fragment of Hayes ARS cookware form 23B, suggesting that this was a Period II feature.

### Period III

This was the final coherent structural phase, with later Period IV activity represented by a few isolated features. The same order is followed in describing the Areas of the site in a clockwise sequence (Area 2, 6, 4, 7, 8).

#### Area 2, Period III

There was considerable building activity on this part of the site in Period III (Fig. 3.46).

##### Room 2.1

The U-shaped structure formed by walls 52 and 53 seems to have continued in use in Period III. The Period II floor (33) was now overlain by a grey-green sandy level (12), which was mixed in with considerable quantities of ash. This layer extended over the whole east range of Area 2 and contained two rims of African amphorae, as well as other undiagnostic ceramic sherds. As this layer was underlain by fragments of 3<sup>rd</sup>-century ARS (in context 33) and overlain only by the topsoil, it must represent the latest use of the site in this area, or even an abandonment phase. Since it contains many patches of burning, the latter is perhaps more likely. It is possible that the east and north walls of Room 2.1 collapsed during this period.

##### Room 2.6

This room was newly built in Period III. It covered the area once occupied by Rooms 2.2, 2.3 and 2.4 (Fig. 3.47). Its walls were: to the north, wall 21 (3.3 m); to the east, wall 43 (7.7 m; rebuilt on a slightly different line to its earlier incarnation); to the south, wall 73 (3.3 m; although this may have collapsed before long); and to the west, wall 42 (7.2 m).

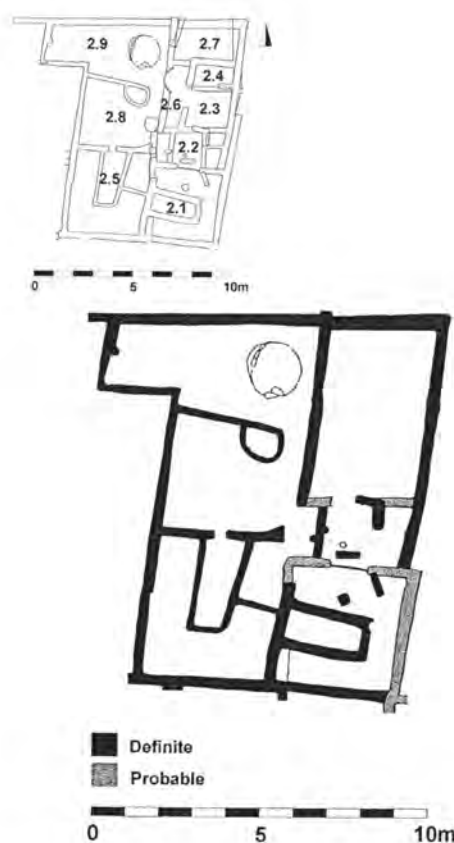


Figure 3.46. a) Plan showing all Area 2 rooms; b) Period III features in Area 2.

It was suggested under the discussion of Period II that Rooms 2.2, 2.3 and 2.4 survived through Period II up until Period III. It seems that they were demolished at this point and replaced by Room 2.6. In fact, the sequence excavated in the north of Area 2 in 1965 suggests that the new building had only a short life after it was built. It can be seen quite clearly that one of the new walls (43) was built directly on top of a Period I wall which, it has been argued, continued in use until the end of Period III. The construction and rebuilding of the walls in Period III was associated with a mudbrick level, presumably the debris



Figure 3.47. Room 2.6, overlying Rooms 2.2, 2.3 and 2.4, looking south-east (CMD 1971).

from the demolition and rebuilding operation. This was then followed by a thin occupation layer, presumably the Period III occupation surface. However, this layer was overlain by a layer that seems to indicate abandonment, and this in turn was followed by layer 12, the destruction and burning level.

#### Room 2.5

This area was originally an open space between Area 7 to the west and the rooms of Area 2 to the east. In Period III it became occupied by a U-shaped structure very similar to those in Room 2.1 and Room 4.11 (Period II). The walls of this room were: to the north, 45 (3.9 m; in two halves, separated by a rotary quern); east wall of structure, 47 (3 m); south wall, 48 (1.1 m); west wall, 46 (2.8 m). It appears to have been built on an occupation layer. Three pieces of nondescript Berber Red Ware were recorded as coming from this layer. A second rotary quern was located in the centre of the depression formed by the U-shaped walls (Fig. 3.48).

It is not certain whether this room was roofed. CMD believed that it was open to the air in Period I but that with the construction of the U-shaped structure it was roofed over. The Period III arrangement is very similar in appearance to the U-shaped features in Rooms 2.1 and 4.11. Burning on the centrally-placed rotary quern perhaps suggests that its final use was as a hearth stone. Hearths have been noted in the central lower zone of other U-shaped features (Mattingly 2003, 166–68).

Wall 87 ran east-west across the north end of the open area of Room 2.5. It was 3.5 m long with a sub-circular loop (1 m east-west) attached to its east end. It was joined to wall 3 (in the Area 7 numbering scheme) at its west end. The dating evidence for this wall is slim. It appeared to cut Period I material found in a neighbouring test pit (context 86). CMD believed it to date to Period III, although since all trace of it had disappeared by 2000 certainty is now not possible.



Figure 3.48. Room 2.5, the Period III U-shaped feature, looking south. Note the quern set against the wall in the foreground (CMD 1971).

#### Room 2.8

Room 2.8 was formed in Period III by the construction of the U-shaped structure to the south in Room 2.5 and the construction of wall 87 to the north. It was in effect the partitioned-off north end of the open space previously designated Room 2.5. It was a sub-square shape, roughly 4 m on each side. There appear to have been entrances to the south (through wall 45) and to the north (at the east end of wall 87).

#### Northern walls

At the same time that Room 2.6 was constructed in the east part of Area 2, a new east-west perimeter wall was built across the north end of the area (wall 21). This ran west to be linked to Area 7 by a short north-south wall (65).



Figure 3.49. The circular concretisation in the northern part of Area 2, showing one of dwarf columns as found, looking south (CMD 1965).

In the northern end of Area 2 a large pit filled with concretised mud and dumped stone was identified (Fig. 3.49). The interpretation of this feature is uncertain, though this is of considerable importance because fragments of a stone *aedicula* type shrine were recovered from it in 1965 and 2000. One possibility (not recognised by CMD or us in 2000) that merits further investigation on the ground, is that this could be a Garamantian well within the courtyard area that was deliberately infilled at some point after the end of Period III.

#### Area 6 Period III

It is difficult to be certain exactly what the area of Sāniat Jibrīl covered by Area 6 would have looked like in Period III (Fig. 3.50). There are no destruction deposits which shed much light on the problem. CMD thought that it was possible that almost the whole of the area had gone out of use (Daniels 1971b, 7). It is certainly true that none of the finewares from this area of the site date to later than the 2<sup>nd</sup> century AD.

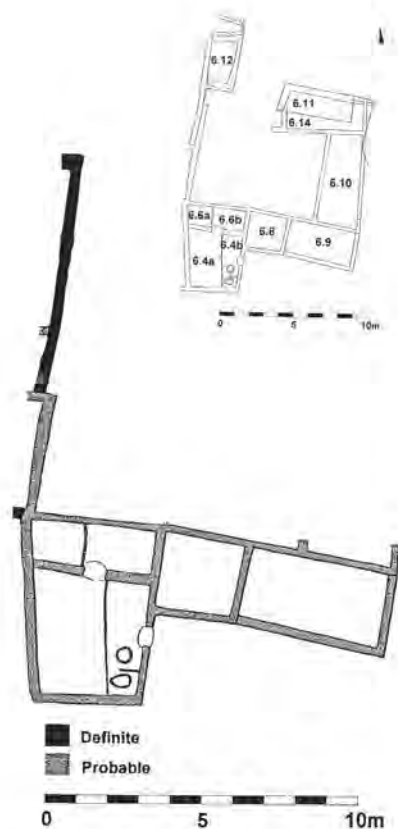


Figure 3.50. a) Plan showing all Area 6 rooms; b) Period III features in Area 6.

Whether this need indicate abandonment, however, is a different matter.

One area of Area 6 which did appear to have been in use is the north-east corner. In this area a rectangular lime-mortar platform was built, in the space where Room 6.14 had previously stood. The dating and function of this is open to question, and it may even belong to Period II, when the area to the south (above Room 6.10) was being mortared over. On the other hand, a similar use of lime mortar is attested in the north part of Area 2 in Period III, so it may have been a parallel development.

#### Area 4 Period III

Area 4 underwent further modifications in Period III (Fig. 3.51).

#### Rooms 4.1 and 4.2

It is difficult to be certain whether these rooms were in use in Period III. The massive build-up of floors in Room 4.2 would certainly suggest that long occupation is probable. In the absence of datable finewares, however, we cannot be sure when they went out of use. CMD was of the opinion that by this stage they had been abandoned.

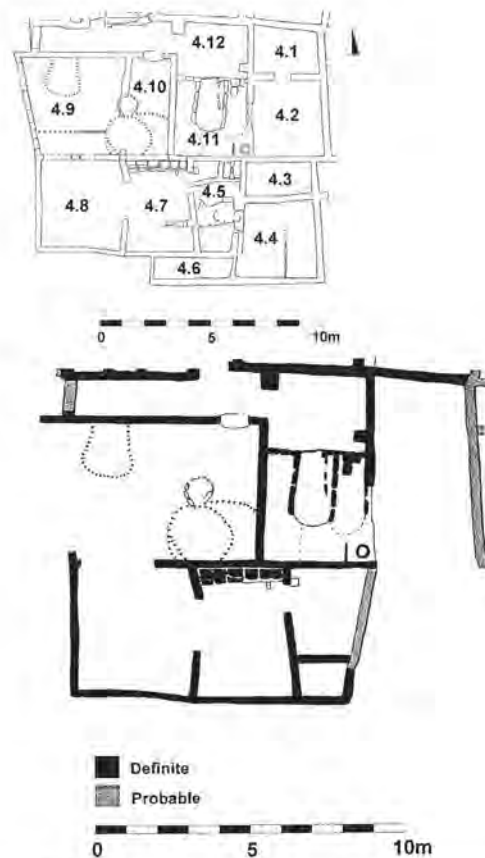


Figure 3.51. a) Plan showing all Area 4 rooms; b) Period III features in Area 4.

#### Room 4.5

This room seems to have finally gone out of use in Period III, as its east wall (wall 60), collapsed into it (for the second time). However, it seems that this collapse probably post-dated the extension of the room to the south, with the creation of wall 20. Wall 59 formed a division between the old room and its extension, Room 4.6. After the collapse of wall 60 the doorway from Room 4.5 to Room 4.6 was blocked up and faced. A connecting passage from Room 4.6 to Room 4.8 also appears to have been blocked.

#### Rooms 4.7, 4.8, 4.9 and 4.10

As was noted under the Period II discussion, each of these rooms had the same stratigraphic sequence, with the original Period II floor and occupation debris succeeded by a Period III floor and occupation debris. Room 4.7 was extended slightly to the south in Period III, with wall 20/23. A connection with Room 4.6 seems to have been blocked after the collapse of the east wall of Room 4.5. At the north end of the room, a low, grey mudbrick structure was constructed (54) against wall 16. It is possible that this may have been a bench, but it is also possible that it was intended as a support for wall 16, which had been undercut on its north side by a large pit (30). The Period III floor (55) in Room 4.7

was followed by an occupation layer (18). Five pottery sherds are recorded as coming from the occupation layer, including one sherd of a Tripolitanian amphora.

The changes in Room 4.8 have already been noted under the Period II discussion. It is clear that the north wall, wall 44, was buried under the Period III floor (49) and subsequently the Period III occupation layer (22). Three pottery sherds were recorded as coming from these levels. It is possible that the disuse of the north wall while the others remained in use might indicate a functional change from an enclosed room to an open yard.

The most dramatic changes in this area of the site occurred in Rooms 4.9 and 4.10. In Period II this room had been divided between a small but long room (4.10) and an open yard (4.9). In Period III the wall between these two rooms (46) was largely destroyed by both a pit (30) and a furnace (43). Pit 30 is actually very large and serves as an umbrella label for a number of separate pits or cuts within it, including 31, 32, 33, 34 and 108. Altogether these pits yielded 25 featured sherds. The Period II occupation surface was also disturbed a little further to the north-west by pit 47. However, this was subsequently filled in, and wall 28 was built across the top of it.

The combination of disturbed ground, demolished walls and, for at least part of the period, the absence of north and west walls suggests that this must have been a yard for a workshop at this point. The furnace strongly supports this. However, only one piece of copper alloy is recorded from this area, an unidentified piece of copper alloy from pit 30 (SF 310).

#### Room 4.11

In Period II Room 4.11 had housed one of the more finely constructed U-shaped structures. At the end of Period II, however, this was buried under a layer of sand (35). This layer covered the entire area of Room 4.11, both the area directly over the Period II structure and the 'corridor' to the north of dwarf wall 61. Thus Room 4.11 and the corridor to the north, Area 4.12 were effectively a single unit by this stage. This layer contained one amazonite bead. A fragment of ARS C ware in layer 35 suggests that this must have been laid down in the later 3<sup>rd</sup> century at the earliest. Above this sand layer two new floors were constructed (both designated context 41), although these only survive in the north-east corner of the room.

### Area 7 Period III

#### Room 7.1b

While yard 7.1 remained an open-air space, the area of Room 7.1b underwent major modifications with the creation of another U-shaped structure similar to those

in other parts of the complex (Figs 3.52–3.53). It has been argued above that a rudimentary form of one of these was already present in Period II. In Period III, however, it was elongated to the south and extended north. It seems that the original north wall of room 7.1b was demolished at this time to make way for the new structure. The walls of the U-shaped structure are: to the north, wall 14 (west – 2.6 m) and 17 (east – 1.3 m); the principal east wall, 7 (4.5 m); the principal west wall, 8 (4.5 m). As with the U-shaped structure in Room 2.5, this structure had a rotary quern laid at the open end or 'entrance' to the central depression.

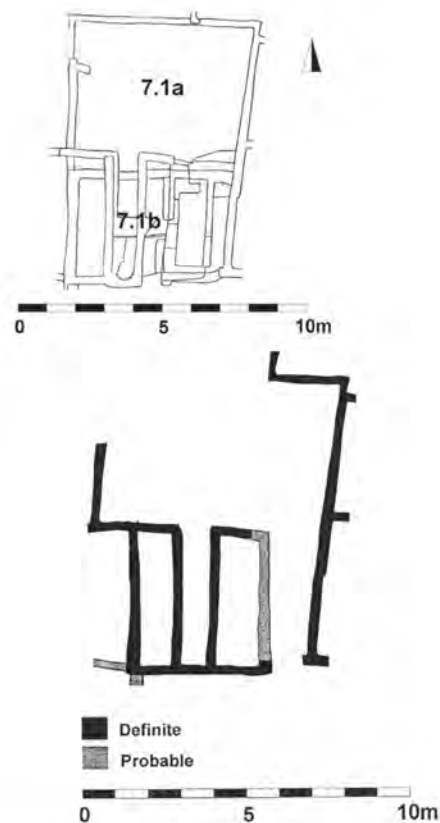


Figure 3.52. a) Plan showing all Area 7 rooms; b) Period III features in Area 7.



Figure 3.53. View of Area 7 and complexity of walls, looking south (CMD 1971).

### Area 8

Area 8 has not been considered hitherto as part of the main sequence of Period-by-Period descriptions, as there is no clear information on its date. It lies to the west of Area 7 and was originally discovered during the 1971 season as a range of rooms close to Area 7, but was not fully excavated. It was returned to in 1973 when the upper covering of sand was removed to reveal the tops of the walls. The area was never fully excavated, and walls appear to have run out of the cleaned area, but were not followed. The 1973 cleaning did reveal that the deposits immediately below the upper sand appeared to be of the same sort as those classed as 'occupation debris' in the main excavations to the east. That is to say, they were of dirty sand, flecked with fragments of mudbrick, lime and charcoal and ash. Only a sketch plan survives in the archive, together with the plan of the east walls which was noted on the overall 1971 plan. The two can be combined to reconstruct the area (Fig. 3.54).

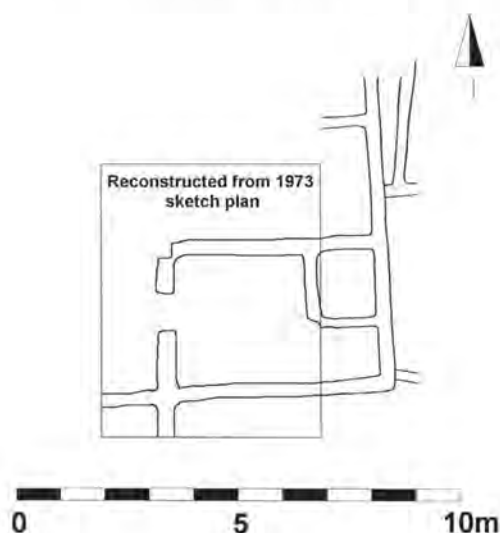


Figure 3.54. Reconstructed plan showing all Area 8 rooms.

The dating of the walls is not clear. No diagnostic artefacts were recovered, although the fact that the final phase building in Area 8 was on essentially the same alignment as the buildings found in the main excavations to the east suggest it was contemporary with them. The range of rooms exposed appears to belong to a separate building complex to the west of the building exposed by CMD and was probably divided from it in Periods I and II by a narrow alleyway.

## INTERPRETATIVE DISCUSSION OF DATING AND STRUCTURES

Sāniat Jibrīl is the only site, with the exception of Jarma, to provide us with more than cursory information on the nature of later Garamantian settlement. Not only do we have detailed stratigraphic sequences, but recent work allows us to begin to appreciate the size and complexity of the settlement. Moreover, artefactual analyses allow previously unexpected insights into the nature of industrial activity here. This section aims to summarise the main points relating to the architecture of the site, the activities that took place here and its relationship to other Garamantian sites.

A large proportion of the pottery recovered from the CMD excavations was not susceptible to close dating and the phases reported below rely heavily on scraps of imported finewares from certain contexts. Tables 3.3 and 3.4 below present simply the material from Sāniat Jibrīl that was included in the *AF* type series. These lists include a representative sample of the more diagnostic material. The date brackets assigned for particular contexts correspond reasonably closely to the periodisation proposed below (with a few exceptions no doubt due to residuality or intrusiveness of earlier/later material). The most obvious exceptions to note are Area 2 **67**, Area 3 **5** and Area 6 **10** where there is later intrusive material in supposedly Period I contexts.

### Building Evolution and Dating

#### *Period 0*

The Period 0 remains at Sāniat Jibrīl are few and poorly understood. CMD believed them to consist of a wall near the northern edge of the excavated area in Area 2, which appeared to disappear into the northern section, and a wall which ran into the eastern section of Area 6. In addition to these walls, work during the FP 2000 season has shown that a mortar floor and related walls under Area 4 also date to Period 0. Whereas the walls found by CMD seemed to be unrelated to the later structures, the new discoveries seem to have been on essentially the same alignment as the Period I remains.

Period 0 is essentially defined as before *c.*AD 50–80. It has no definite beginning as such, as it is really only defined as activity before the main buildings in the Areas excavated by CMD were constructed in the second half of the 1<sup>st</sup> century

AD. However, it should be noted that among the surface collection from Sāniat Jibrīl there is a clear presence of material dating to the last centuries BC (or slightly earlier), and additional ceramics in a fabric which matches that from Tinda have been found in the immediate area. It would appear from this that there was certainly activity here from about the 2<sup>nd</sup> or 1<sup>st</sup> century BC (or possibly earlier still), with associated structural evidence probably existing more coherently in unexcavated areas of the settlement.

### *Period I*

This phase (Fig. 3.55) initially involved the construction of three similarly-sized buildings attached to an east-west spine wall that bisected the site (Fig. 3.56). These consisted of Rooms 2.1 and 2.2, 6.4 and 6.6 and 4.1 and 4.2. Each of these comprised a two-room unit of *c.* 7 x 4 m, with a smaller room to the north of a long rectangular

room and each was constructed in the same style of grey mudbrick. Although they appear to have been laid out at essentially the same time, it seems that the southern pair, 4.1/4.2 and 6.4/6.6, were the earliest. Their shared north-south wall (wall 41) lay under the east-west spine wall (wall 40). Following this the northern building (Rooms 2.1/2.2) was built, butting against wall 40. At some point, either at the same time as this construction or soon after, the first buildings in Area 7 were erected. At this stage these appear to have been a simple courtyard with a small roofed building at one end.

Subsequent to the construction of this nucleus a number of additions were made at the northern, eastern and southern ends of the site. In the north Rooms 2.3, 2.5 and 6.12 were added; in the east Rooms 6.8, 6.9, 6.10 and 6.14 were built; and in the south two further two-roomed units, Rooms 4.3/4.4 and 4.5/4.6 were built, though at this stage Room 4.5/4.6 was perhaps only three sides of an open courtyard.

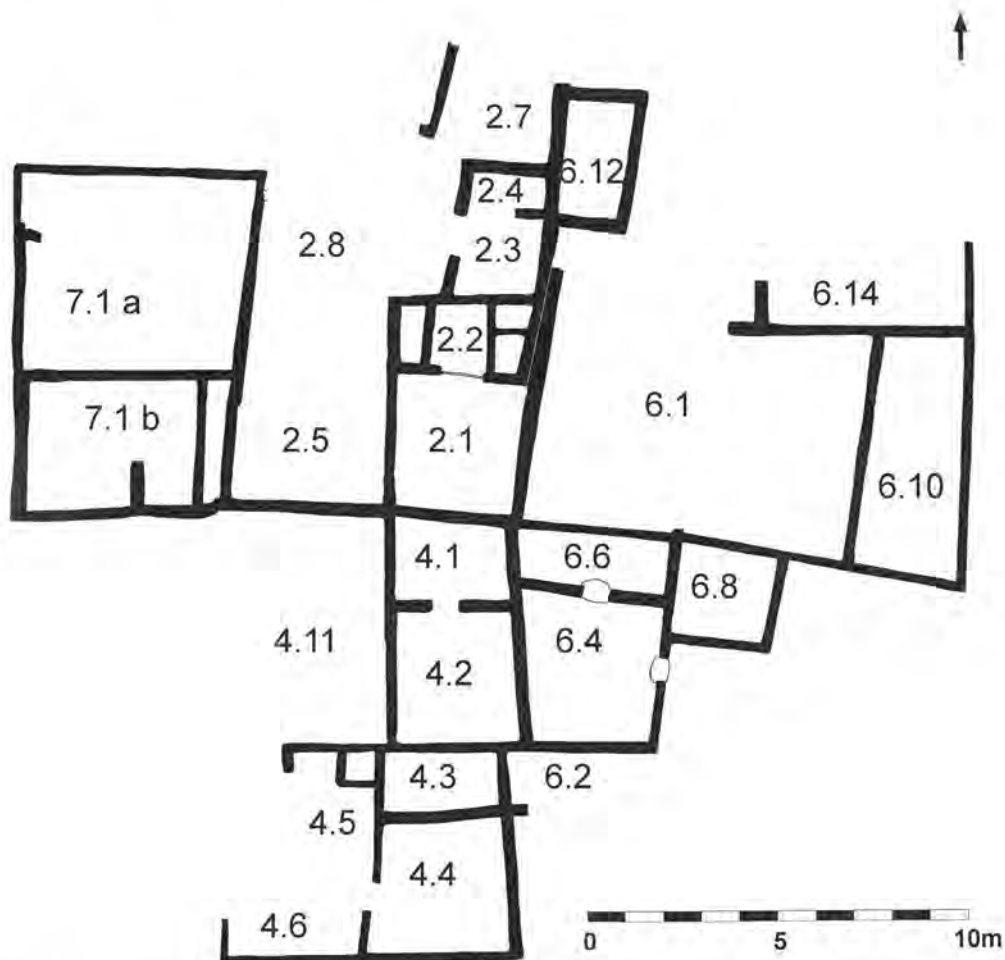


Figure 3.55. Overall plan of Period I at Sāniat Jibrīl.



Figure 3.56. General view of Sāniat Jibrīl excavations looking east, showing along right edge the main east-west spine wall across the site (CMD 1971).

Period I began *c.* AD 50–80 and continued until the mid 2<sup>nd</sup> century AD. Its start date is given by a fragment of Italian Sigillata, which was made between AD 50 and 80. This was found in Room 4.4. At this time the main buildings on site were constructed, comprising Rooms 2.1–2, 4.1–2, 6.4–6 and 7.1.

### Period II

Sāniat Jibrīl seems to have reached its greatest extent during Period II, with the construction of several new buildings and modification of existing ones (Fig. 3.57). Some areas also appear to have gone out of use. In Area 6 the easternmost rooms, 6.10 and 6.14, were demolished and buried beneath a hard, sandy concretion. Room 6.12 also seems to have gone out of use at this date. This will have left the whole northern half of Area 6 as an open yard. It seems that the more northerly room in Area 2, Room 2.4 also went out of use.

In contrast to the north-east quarter of the site, the south-western quarter, Area 4, saw a flurry of new building activity. Although Room 4.4 seems to have fallen into disuse now, a new wing was added to the side of Rooms 4.5 and 4.6. This was the suite of Rooms 4.7–4.11. It is not certain that Room 4.8 was roofed, but it is assumed that the rest were. This new construction included a U-shaped structure in Room 4.11. A similar U-shaped structure was now also built in Area 2, in Room 2.1.



Figure 3.57. Overall plan of Period II at Sāniat Jibrīl.

Period II began in the mid 2<sup>nd</sup> century AD and is characterised by the expansion of the south area of the site and various modifications in the north and east areas. The ceramics associated with these changes are Northern Tunisian ARS bowls, mainly of the Hayes form 3 (cf. Hayes 1972). Hayes form 8 is also found, taking the period up until the end of the 3<sup>rd</sup> century.

### Period III

Period III was characterised by relatively little new building, though there were extensive modifications to existing structures (Fig. 3.58). New walls were constructed in a few places and additional U-shaped features created in two rooms. In the north of Area 2 walls were added which appear to have created a definite northern boundary to the site. In Area 4 some walls were demolished in Rooms 4.8–4.10, creating an open yard. This yard showed evidence of pitting and burning, perhaps suggesting an industrial function. A small furnace was found in the area where wall

46 had once stood. Area 6 appears to have gone completely out of use by this stage.

Period III was really the final proper occupation phase at the site and spanned the 4<sup>th</sup> century. It was characterised by the transformation of parts of the site into an industrial yard and the further development of U-shaped structures, first seen in Period II. The dating evidence for this phase is provided by Tripolitanian Red Slip Ware dishes of the 4<sup>th</sup> century. It is possible that use of the site continued beyond the 4<sup>th</sup> century, but the absence of any diagnostic material prevents certainty. Again, the surface collection of material offers some slight support for the longer lifespan of parts of the settlement.

### Period IV

Period III appears to mark the end of building and construction at the site. Some time after the site had been abandoned, however, a number of additional features were constructed. These included the round concretion in Area 2 and a wall or linear

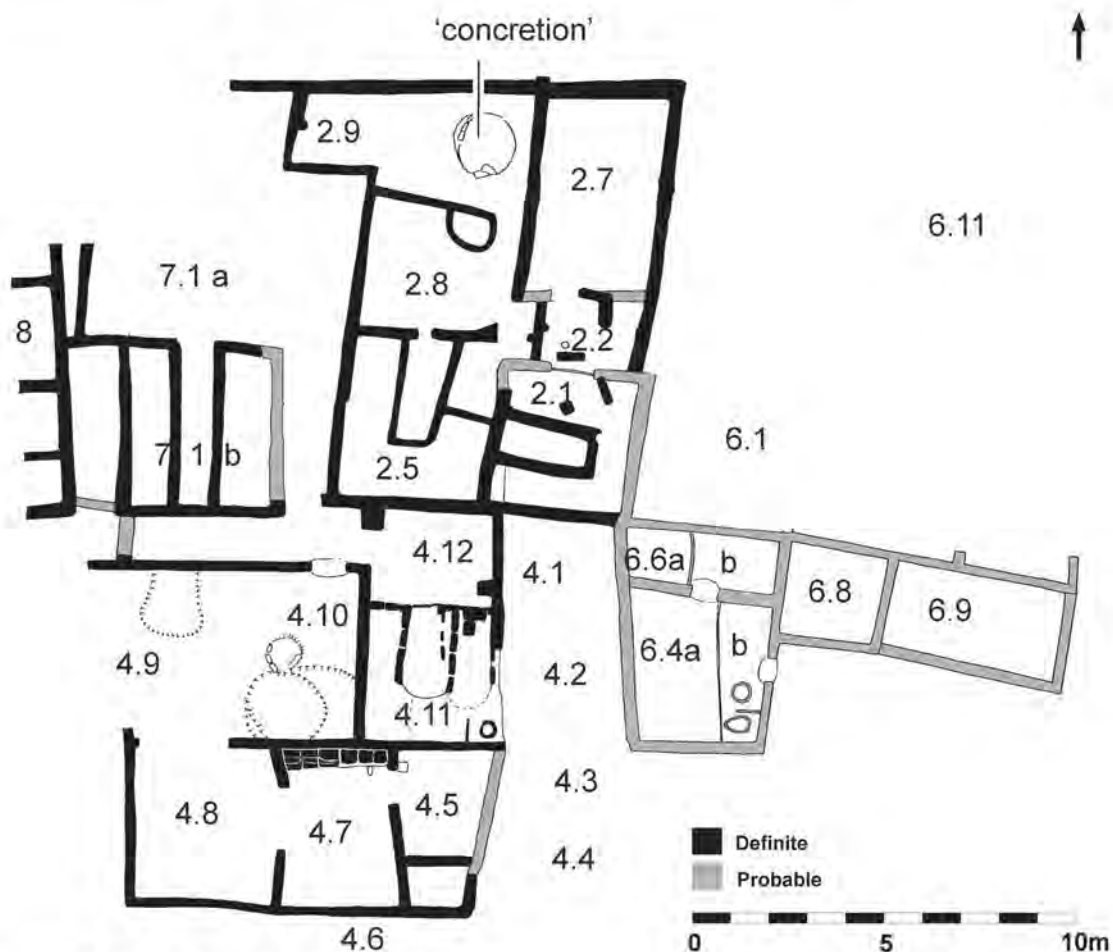


Figure 3.58. Overall plan of Period III at Sāniat Jibrīl.



feature in Area 7. The round concretion appears to have been a pit dug into the wind-blown sand long after the site was abandoned (or alternatively it could mark the deliberate backfilling of a



Figure 3.59. The column dumped in two pieces in the concretised pit/well in Area 2 (FP 2000).



Figure 3.60. The architectural elements from a small shrine at Sāniat Jibrīl.

Garamantian well?). The pit seems to have been filled with stones (including a number of quern fragments around the edge) and a sandy mortar which hardened, leaving the round concretion defined by CMD. The CMD excavation had retrieved the top of a Classical style column with engaged capital. Work in 2000 recovered the bottom half of this same column (Fig. 3.59).

The other demonstrably late feature also incorporated re-used stone, including another small stone column. This was a poorly constructed wall running south-west to north-east across Area 7. It is off-alignment with the Garamantian mudbrick walls and may well be substantially later in date. The several elements of architectural stone retrieved by CMD at the site seem to belong to a small *aedicula*-type shrine (Fig. 3.60). This find hints at the possibility that there were some stone structures at Sāniat Jibrīl – unless the material had been brought from Jarma or further afield.

Period IV, like Period 0, was defined in relation to the better understood main structural phases. The phase thus relates to any features and activity after Period III. It is clear that at some time long after the site had been abandoned and covered over with wind-blown sand, that structures were built on it or dug into it. A rough wall was built diagonally across Area 7, completely at variance with the underlying wall alignments, and a pit was dug down into what was previously Area 2. Both these events seem to have involved the reuse of Garamantian-period masonry, but cannot be more tightly pinned down chronologically.

### Discussion of the Buildings

It seems clear that the buildings at Sāniat Jibrīl were not laid down randomly. Some degree of organisation and planning is evident from the fact that the rooms seem initially to have frequently been of a similar size and built on common alignments. These alignments seem to have been sustained to a greater or lesser degree across the whole area of Sāniat Jibrīl, not just in the area excavated (see Fig. 3.3). It is also clear that where additions or modifications were made, these new buildings generally maintained the alignments established in Period I.

Buildings in mudbrick frequently require renovation and repair. Excavations at Old Jarma (site GER001) have revealed complex sequences of occupation, abandonment, demolition and rebuilding that enhance our understanding of the

Sāniat Jibrīl evidence. Sometimes, only part of a building complex will be abandoned for human habitation and the shell of the disused rooms may stand substantially intact for many years, gradually filling up with rubbish from other parts of the site. This seems to be the sort of process evident in Rooms 4.3 and 4.4, where a dense rubbish redeposit 65 built up over the partially collapsed walls. Floors were generally of compacted sand, sometimes with a thin mud-plaster wash, and tended to wear out regularly. In only one instance (Room 6.9) is there a suggestion that a floor was laid mudbrick. Where the CMD excavations were most carefully conducted, numerous micro-levels were detected (as in Room 4.2), while elsewhere the use of local labour militated against full recording of these ephemeral horizons. It is inherently likely, however, that the picture of multiple floor levels recorded in Room 4.2 was fairly typical of other areas of the site that were less sensitively excavated and recorded. A few rooms had traces of mud-plaster on the walls and one even paint (Room 6.6).

It seems to be the case that the excavated area was not a single property, but rather contained a number of discrete building units on either side of an east-west spine wall, that grew and changed over time. In their more evolved format, each of these main subdivisions can be identified as a set of rooms and a courtyard. The nuclei of these units seem to be: for Area 2, Rooms 2.1–2.2; for Area 6, Rooms 6.4–6.6; for Area 4; Rooms 4.1–4.2; and for Area 7 room 7.1. Both Areas 2 and 4 later had their courtyards built over with new rooms.

These units seem to represent a new development in the architecture of this part of the Wādī, completely unlike the much more randomly positioned and irregularly constructed structures on top of Zinkekrā (Mattingly 2003, 160–68 and Chapter 1 above). They share some features with the rectangular or square buildings on the southern slopes of Zinkekrā insofar as they maintained roughly right-angled corners throughout their lifetime and were architecturally extensive and multi-roomed. The rectangular buildings at Zinkekrā appear to have begun in the latter centuries BC or the 1<sup>st</sup> century AD, as did the buildings at Sāniat Jibrīl.

The complex mudbrick architecture of last phase Zinkekrā and Sāniat Jibrīl differs to some degree from contemporary architecture at Aghram Nadarif in the Wādī Tanzūft (Liverani 2006a, 29–39, 51–184; Mori 2006), where one-,

two-, or three-room rectangular units were the norm. Liverani's analysis of the Aghram Nadarif buildings stressed the relative homogeneity of these 'household' units (average area c. 18 sq m) and that the two-room units very often comprised a living room and a storage (and cooking) room (Liverani 2006a, 395–97). Liverani also identified similar two-room units within the overall building plan at Sāniat Jibrīl (2006, 396, pointing out that these had similar floor areas to the Aghram Nadarif buildings). This is certainly true of some of the pairs of rooms at Sāniat Jibrīl (Rooms 4.1/4.2, 4.3/4.4, 6.4/6.6), but what is notably different about this site in comparison with Aghram Nadarif is that these rooms were often combined into larger units and associated with courts. So, while we can see a common thread of Garamantian social organisation running through the domestic buildings in both the Wādī Tanzūft and the Wādī al-Ajāl, there also appear to have been differences present that became clearer over time. Taken together with the much richer material culture of the Jarma area, with abundant imported goods, it is reasonable to suggest that part of the difference may have lain in the emergence of a less egalitarian and more heterogeneous society in the Garamantian heartlands. Such a development could explain the visible changes in material culture and domestic architecture there, while more peripheral territories of the Garamantian kingdom appear to have remained more true to local traditions of architecture and culture (cf. Liverani 2006a, 411–22).

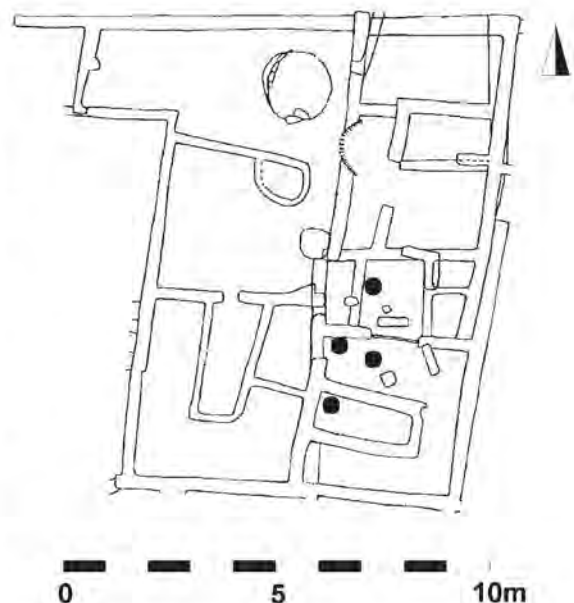


Figure 3.61. Distribution of pots set into floors in Area 2.

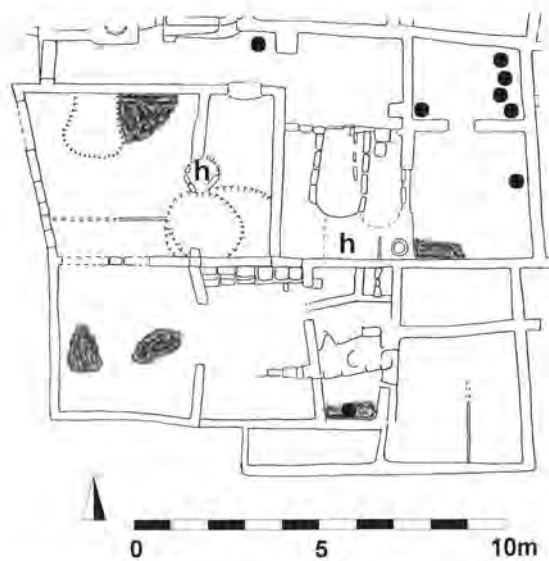


Figure 3.62. Distribution of pots set into floors and hearths/burning deposits in Area 4.

A number of further points may be made about the domestic units at Sāniat Jibrīl. There appear to have been relatively few points of external access, and in each of Areas 2, 6 and 4 the original building contained a sub-room that could only be accessed through the primary chamber (thus Room 6.6 can only be accessed from 6.4, for example). Some of these inner rooms contained pots sunk into the floor (Rooms 2.1 and 4.1) suggesting a possible storage function (Figs 3.61 and 3.62). Some of the sunken pots may have been intended as cool containers for water as well as for foodstuffs. There were numerous hearths within the buildings, some at least utilised for metallurgical activity and not simply cooking.

The five U-shaped features recorded in at least four rooms and relating to Phases II and III appear to have been a standard feature of Classic Garamantian domestic architecture, with a further example recorded in the FP Jarma excavation (Mattingly 2003, 167–68). Although constructed in a number of different ways, the overall architectural effect was similar in the various cases. A low U-shaped platform was created around a depressed or sunken central area, which in several examples featured a central hearth. The U-shape was normally delineated by dwarf walls or low kerbs, inscribed within a room plan so as to create a vestibule beyond the open end of the structure. Thus Room 4.11/4.12 was essentially a single room, with the U-shaped installation in its southern end (4.11) being accessed from the vestibule (4.12) on its north side. The orientation of the U-shaped feature within the house appears

to have varied: though four of the five Sāniat Jibrīl examples were oriented with the open access end to north, the fifth had access from the west, while the Jarma example was open at the east end. In all cases, the open end seems to have faced an un-roofed area or court, providing a source of light for the interior.

Despite a superficial similarity with the U-T layout of Roman dining rooms (*triclinia*), most of these rooms are actually far smaller in scale than *triclinia*. The Sāniat Jibrīl U-shaped rooms are all in the range 3 x 3 m to 4 x 4 m. The presence of hearths in the central area rules out the use of that space for the serving of guests reclining on couches round the U-shaped area. There was simply not the space for these to have been used as Roman-style dining areas. The low platforms suggest instead people seated on the floor around the edge of the room, probably on mats or carpets and supported by cushions – much as one may see in a Saharan house of more recent times. Nor is there any indication that these rooms were the most prestigious in the buildings – indeed the finest mud-plaster and painted walls was noted in rooms that were not U-shaped. However, it is clear that these rooms were focal points within the domestic units. The excavated evidence suggests that these were multi-purpose activity areas within the buildings, where food processing and cooking took place (to judge by quernstones and hearths in the central lower areas), where some manufacturing activities were carried out (bead-making debris and loom-weights hint at this) or where social interaction focused, with reception of guests and eating within the house. In the absence of sieving at Sāniat Jibrīl it is impossible to answer the question of room function conclusively.

CMD seems to have assumed from the architecture and finds of quernstones, grinders and pounders used in processing foodstuffs that his buildings were primarily used as domestic dwellings by people whose primary occupation was oasis farmers. Food processing, preparation, cooking and consumption were undoubtedly important activities at the site (on which see below), but there are also a number of hearths and furnaces recorded all too briefly in the site notebooks that hint at a more significant level of manufacturing activity. As already alluded to, this aspect of Sāniat Jibrīl had been brought into sharper focus by the FP survey. There is nothing like this in Liverani's work at Fewet or Aghram Nadarif (Liverani 2006a; Castelli *et al.* 2005).

### The Pottery Assemblage

[Editor's note: this section of the report is less full than had been hoped owing to the death of John Dore, which left the responsibility for finalising text and figures with me. John Hawthorne had tabulated quite a lot of the drawn pottery from the site according to an early version of the FP type series and this material has been reworked here using the somewhat different published type series in AF 2 and a card index of pottery in the CMD archive (see Dore et al. 2007). Because of issues of residuality and the broad date brackets assigned to most of the coarseware and handmade wares, it is not possible to refine significantly the dating of every individual context. The main aim therefore is to illustrate as fully as possible the range of material present at the site according to the main ware types and by period. I am grateful for Anna Leone's input in checking the correlations with the FP type series]

The overall pottery assemblage from Sāniat Jibrīl is very different from that observed at the escarpment settlements reviewed in Chapters 1–2 (Tables 3.3–3.8). The distinctive Zinkekrā fabrics and many of the characteristic early Garamantian forms from Zinkekrā are absent here (see below). There is some slight overlap with the assemblage from Tinda, supporting the view that occupation at Sāniat Jibrīl was underway in the latter centuries BC, notwithstanding the stratigraphic evidence from the complex excavated by CMD. However, the overwhelming majority of the pottery at Sāniat Jibrīl reflects fundamentally different patterns of supply and production to the Early Garamantian and Proto-Urban assemblages presented earlier in this book (and with far greater access to imported Mediterranean goods than the contemporary settlement on the south-western periphery of Garamantian territory at Aghram Nadarif, see Liverani 2006a, 241–48). For the moment, this is the best example of what a Classic Garamantian ceramic assemblage in the heartlands of the Wādī al-Ajāl looks like. There are numerous imported amphorae, plus a thin, but persistent, presence of imported Roman finewares. More notable, in many ways, is the abundance of imported wheelmade coarseware vessels, notably bowls and casseroles, with comparatively few flagons and flasks. It is clear that this material was not simply imported for funerary display (as at Sāniat bin Huwaydī), but that there was a significant use consumption of Roman pottery and comestibles at Garamantian settlement sites.

There are significant differences of emphasis, however, at this settlement site from the sort of wares incorporated in burials at the contemporary and close-by cemetery of Sāniat bin Huwaydī (GER011 – see Chapter 5 below). At the latter site, there was considerably greater emphasis on prestige vessels (fine pottery, faience, glass) used in drinking and feasting and in the table wares used in the serving of wine or exotic drink (amphorae, flagons, jugs), or decorated lamps. Many of the imported coarseware utilitarian vessels at Sāniat Jibrīl are not paralleled at Sāniat bin Huwaydī. There was also a large amount of handmade wares in use at the site, in particular large globular jars with high straight or everted rims and flat pans (*dokas*).

Tables 3.5–3.8 and Figures 3.63–3.81 present the main elements of the ceramic assemblage at Sāniat Jibrīl, identified where possible with the AF pottery type series form codes and with indication of approximate phasing of the recorded contexts. It is apparent from a glance at the Tables that there was comparatively little imported fineware from stratified contexts (just over 100 sherds) and the material from the excavations was bulked out by careful surface collections across the site and its immediate environs (generally abbreviated as g = 'general' or s = 'surface').

Table 3.3. Excavated pottery from Sāniat Jibrīl, arranged by trench and context number [(6, 9) indicates Area 6, context 9]. The material is correlated with AF form type, with general indications of date range and phasing.

Category	FP formcode	CMD no.	Dating	Context	Period
HM	338	933	1st–4th c. AD	(1, 1)	?
HM	340	2269	1st–4th c. AD	(1, 1)	?
CW	182	938	1st–2nd c. AD?	(1, 2)	?
CW	191	928	?	(1, 2)	?
CW	136	932	1st–4th c. AD	(1, 3)	?
HM	337	931	1st–4th c. AD	(1, 3)	?
HM	337	927	1st–4th c. AD	(1, 3)	?
HM	338	930	1st–4th c. AD	(1, 3)	?
CW	179	299	4th–5th c. AD (+?)	(1, 4)	?
HM	337	935	1st–4th c. AD	(1, 4)	?

Table 3.3. Excavated pottery from Sāniat Jibrīl, arranged by trench and context number (cont.)

Category	FP formcode	CMD no.	Dating	Context	Period
HM	337	937	1st–4th c. AD	(1, 4)	?
HM	338	922	1st–4th c. AD	(1, 4)	?
HM	338	921	1st–4th c. AD	(1, 4)	?
HM	346	2248	1st–4th c. AD	(2, 11)	II
AM	44	2336	CGAR?	(2, 12)	III
HM	339	2244	1st–4th c. AD	(2, 13)	I
CW	204		2nd–3rd c. AD	(2, 2)	?
HM	337	2835	1st–4th c. AD	(2, 27)	?
HM	343	2531	1st–4th c. AD	(2, 28)	II
CW	181	2491	1s–2nd c. AD?	(2, 29)	III
HM	343	2313	1st–4th c. AD	(2, 3)	?
AM	44	2436	CGAR?	(2, 30)	III
CW	161	2465	2nd–3rd c. AD	(2, 33)	II
HM	343	2438	1st–4th c. AD	(2, 33)	II
HM	346	2468	1st–4th c. AD	(2, 33)	II
HM	345	2505	1st–4th c. AD	(2, 38)	II
AM	20	3376	1st–2nd c. AD	(2, 4)	?
CW	175	947	3rd–5th c. AD	(2, 5)	?
CW	123	2521	2nd–3rd c. AD?	(2, 55)	II
CW	118	2551	2nd–3rd c. AD	(2, 56)	II
HM	343	2562	1st–4th c. AD	(2, 56)	II
HM	339	2522	1st–4th c. AD	(2, 57)	I
HM	339	2493	1st–4th c. AD	(2, 57)	I
HM	339	2520	1st–4th c. AD	(2, 57)	I
HM	340	2541	1st–4th c. AD	(2, 57)	I
AM	24	2499	2nd–4th c. AD	(2, 67)	I
AM	24	2639	2nd–4th c. AD	(2, 67)	I
HM	338	2608	1st–4th c. AD	(2, 67)	I
HM	338	2853	1st–4th c. AD	(2, 67)	I
HM	339	2570	1st–4th c. AD	(2, 67)	I
CW	138	2808	1st–2nd c. AD	(2, 73)	?
CW	140	2900	1st–2nd c. AD	(2, 76)	I
HM	337	2910	1st–4th c. AD	(2, 76)	I
HM	337	2706	1st–4th c. AD	(2, 76)	I
HM	337	2676	1st–4th c. AD	(2, 76)	I
HM	339	2690	1st–4th c. AD	(2, 77)	I
CW	142	2815	1st–2nd c. AD	(2, 86)	I
HM	307	1281	1st mill. BC	(3, 2)	?
CW	137	169	1st–2nd c. AD	(3, 3/1)	I
CW	115		2nd–5th c. AD	(3, 5)	I
CW	141	949	1st–2nd c. AD	(3, 5)	I
HM	347	979	1st–4th c. AD	(4, 1, 4-5)	II
CW	181	2209	1st–2nd c. AD?	(4, 10)	?
CW	181	2208	1st–2nd c. AD?	(4, 10)	?
CW	188	2200	?	(4, 10)	?
HM	345	2809	1st–4th c. AD	(4, 100)	II
HM	338	2911	1st–4th c. AD	(4, 101)	I
CW	182	2264	1st–2nd c. AD?	(4, 11)	?
HM	320	2886	Late 1st mill. BC–3rd c. AD	(4, 110)	?
AM	21	3371	2nd–4th c. AD	(4, 119)	?
CW	219	3374	1st–3rd c. AD	(4, 120)	?
CW	226	2526	2nd–4th c. AD	(4, 120)	?
HM	343	2311	1st–4th c. AD	(4, 13)	III
HM	343	2266	1st–4th c. AD	(4, 13)	III
CW	180	2419	1st–2nd c. AD?	(4, 18)	II/III
HM	343	2386	1st–4th c. AD	(4, 19)	II
CW	125	314	Late 3rd–4th c. AD?	(4, 2/1)	III
CW	193	297	2nd–3rd c. AD?	(4, 2/2)	II
HM	337	966	1st–4th c. AD	(4, 2/6)	I
HM	346	2848	1st–4th c. AD	(4, 24)	?
HM	347	2851	1st–4th c. AD	(4, 24)	?
HM	335	2416	3rd–4th c. AD +	(4, 26)	III
HM	335	2278	3rd–4th c. AD +	(4, 26)	III
HM	339	2312	1st–4th c. AD	(4, 26)	III
HM	342	2399	1st–4th c. AD	(4, 26)	III
HM	343	2235	1st–4th c. AD	(4, 26)	III
HM	343	2348	1st–4th c. AD	(4, 26)	III
HM	343	2400	1st–4th c. AD	(4, 26)	III
HM	345	2411	1st–4th c. AD	(4, 26)	III
HM	346	2240	1st–4th c. AD	(4, 26)	III
HM	347	2358	1st–4th c. AD	(4, 26)	III
AM	44	2638	CGAR?	(4, 30)	I/III
HM	346	2637	1st–4th c. AD	(4, 30)	I/III
CW	180	971	1st–2nd c. AD?	(4, 4/1)	?

Table 3.3. Excavated pottery from Sāniat Jibrīl, arranged by trench and context number (cont.)

Category	FP formcode	CMD no.	Dating	Context	Period
CW	191	965	?	(4, 4/1)	?
CW	194	953	2nd–3rd c. AD?	(4, 4/1)	?
CW	129	2897	2nd–5th c. AD?	(4, 48)	II
CW	176	2426	2nd–4th c. AD	(4, 49)	III
CW	202	242	?	(4, 5/4)	?
HM	329	2646	?	(4, 64)	III
CW	139	2947	1st–4th c. AD	(4, 65)	II
HM	346	2557	1st–4th c. AD	(4, 65)	II
CW	192	2823	2nd–3rd c.?	(4, 74)	II
HM	318	2865	1st–3rd c. AD	(4, 74)	II
HM	337	2553	1st–4th c. AD	(4, 88)	I
CW	142	2614	1st–2nd c. AD	(4, 92)	?
HM	337	2895	1st–4th c. AD	(4, 92)	?
AM	24	2771	2nd–4th c. AD	(4, 92)	?
HM	318	2675	1st–3rd c. AD	(6, 21)	I
CW	180	2204	1st–2nd c. AD?	(6, 1)	?
CW	119	2350	2nd–3rd c. AD	(6, 10)	I
CW	125	2353	Late 3rd–4th c. AD?	(6, 10)	I
FW	531	2353	Late 3rd–4th c. AD	(6, 10)	I
HM	338	2394	1st–4th c. AD	(6, 10)	I
CW	182	2633	1st–2nd c. AD?	(6, 12)	I
CW	203	2475	1st–2nd c. AD	(6, 14)	I
HM	337	2461	1st–4th c. AD	(6, 14)	I
HM	337	2488	1st–4th c. AD	(6, 14)	I
CW	217	2560	1st c. AD	(6, 18)	II
HM	337	2598	1st–4th c. AD	(6, 19)	II
HM	338	2704	1st–4th c. AD	(6, 19)	II
CW	113	2300	2nd–4th c. AD	(6, 2)	II
CW	157	2319	2nd–3rd c. AD	(6, 2)	II
HM	318	2304	1st–3rd c. AD	(6, 2)	II
HM	345	2317	1st–4th c. AD	(6, 2)	II
CW	138	2803	1st–2nd c. AD	(6, 21)	I
HM	319	2689	1st–3rd c. AD	(6, 21)	I
HM	319	2710	1st–3rd c. AD	(6, 21)	I
HM	337	2887	1st–4th c. AD	(6, 21)	I
HM	338	2674	1st–4th c. AD	(6, 21)	I
HM	338	2695	1st–4th c. AD	(6, 21)	I
CW	184	2802	1st–2nd c. AD?	(6, 23)	I
HM	318	2781	1st–3rd c. AD	(6, 23)	I
CW	177	2824	1st–2nd c. AD	(6, 24)	I
CW	182	2770	1st–2nd c. AD?	(6, 24)	I
CW	183	2882	1st–2nd c. AD?	(6, 24)	I
HM	337	2831	1st–4th c. AD	(6, 24)	I
HM	337	2784	1st–4th c. AD	(6, 24)	I
HM	337	2806	1st–4th c. AD	(6, 24)	I
HM	338	2840	1st–4th c. AD	(6, 24)	I
HM	338	2822	1st–4th c. AD	(6, 24)	I
HM	340	2845	1st–4th c. AD	(6, 24)	I
CW	190	2280	?	(6, 4)	?
CW	113	2855	2nd–4th c. AD	(6, 9)	II
CW	179	2852	2nd–4th c. AD?	(6, 9)	II
CW	181	2658	1st–2nd c. AD?	(6, 9)	II
CW	182	2657	1st–2nd c. AD?	(6, 9)	II
FW	505	2630	2nd–1st c. BC	(6, 9)	II
HM	338	2623	1st–4th c. AD	(6, 9)	II
HM	340	2572	1st–4th c. AD	(6, 9)	II
HM	346	2670	1st–4th c. AD	(6, 9)	II
HM	347	2662	1st–4th c. AD	(6, 9)	II
HM	337	2355	1st–4th c. AD	(7, 1)	II
HM	346	2377	1st–4th c. AD	(7, 1)	II
CW	114	2625	Late 2nd–4th c. AD	(7, 2)	II
CW	143	2211	3rd–4th c. AD	(7, 2)	II
CW	176	2227	2nd–4th c. AD	(7, 2)	II
HM	342	2347	1st–4th c. AD	(7, 2)	II
HM	342	2286	1st–4th c. AD	(7, 2)	II
HM	346	2388	1st–4th c. AD	(7, 2)	II
HM	337	2772	1st–4th c. AD	(7, 24)	?
CW	183	2980	1st–2nd c. AD?	(7, 29)	III
AM	21	2782	2nd–4th c. AD	(7, 64)	?
HM	335	2859	3rd–4th c. AD +	(7, 70)	II
CW	151		2nd–4th c. AD?	(7, 77)	?
AM	21	3343	2nd–4th c. AD	(8, 1)	?
CW	137	3350	1st–2nd c. AD	(8, 1)	?
CW	225	3354	2nd–4th c. AD	(8, 10)	?

Table 3.4. Surface and unstratified collections of pottery at Sāniat Jibrīl by AF form type, with general indications of date range.

Category	FP formcode	CMD no.	Dating	Context
FW	505	3332	2nd–1st c. BC	(132, s)
AM	10	3381	3rd–2nd c. BC	(2 G)
AM	21	3377	2nd–4th c. AD	Gen
AM	44	1334	CGAR?	Gen
AM	44		CGAR?	Gen
AM	44	2526	CGAR?	Gen
AM	44	3102	CGAR?	Gen
AM	44	3374	CGAR?	Gen
AM	44	2780	CGAR?	Gen
AM	44	2705	CGAR?	Gen
AM	44	2636	CGAR?	Gen
CW	104		3rd–1st c. BC	(60, s)
CW	104	1420	3rd–1st c. BC	(D, g)
CW	110		1st c. BC–1st c. AD?	(5)
CW	114	3379	Late 2nd–4th c. AD	(2, g)
CW	118	3278	2nd–3rd c. AD	(107, s)
CW	118	3324	2nd–3rd c. AD	(121, s)
CW	118	3185	2nd–3rd c. AD	(46, s)
CW	121	919	2nd–3rd c. AD?	Gen
CW	122	3155	2nd–3rd c. AD?	(30, s)
CW	124	2010	2nd–3rd c. AD?	Gen
CW	125	3331	Late 3rd–4th c. AD?	(130, s)
CW	125	3104	Late 3rd–4th c. AD?	(3, s)
CW	126	3198	2nd–5th c. AD?	(52, s)
CW	127	917	2nd–5th c. AD?	Gen
CW	137	3156	1st–2nd c. AD	(30, s)
CW	137	3172	1st–2nd c. AD	(42)
CW	137	3197	1st–2nd c. AD	(52, s)
CW	137	3271	1st–2nd c. AD	(63, s)
CW	137	2995	1st–2nd c. AD	Gen
CW	138	3202	1st–2nd c. AD	(53, s)
CW	143	3176	3rd–4th c. AD	(44, s)
CW	144	3241	3rd–4th c. AD?	(61, s)
CW	144	2730	3rd–4th c. AD?	Gen
CW	145	3343	2nd–4th c. AD	Gen
CW	145	3199	2nd–4th c. AD	(52, s)
CW	149	3164	2nd–4th c. AD?	(33, s)
CW	162	3070	3rd–4th c. AD	Gen
CW	164	3256	?	(69, s)
CW	171	3150	3rd–1st c. BC	(29, s)
CW	171	3207	3rd–1st c. BC	(54, s)
CW	173	3292	2nd–4th c. AD	(112, s)
CW	173	3103	2nd–4th c. AD	(3, s)
CW	173	3194	2nd–4th c. AD	(51, s)
CW	173	3252	2nd–4th c. AD	(63, s)
CW	178		2nd–5th c. AD	(D, g)
CW	179	3151	2nd–4th c. AD?	(29, s)
CW	179	3190	2nd–4th c. AD?	(48, s)
CW	179	3229	2nd–4th c. AD?	(59, s)
CW	179	3233	2nd–4th c. AD?	(60 s)
CW	179	2996	2nd–4th c. AD?	Gen
CW	179	912	2nd–4th c. AD?	Gen
CW	180	3188	1st–2nd c. AD?	(118, s)
CW	180	249	1st–2nd c. AD?	(4, s)
CW	180	2732	1st–2nd c. AD?	Gen
CW	185	3158	1st–2nd c. AD?	(30, s)
CW	186	3203	1st–2nd c. AD?	(54, s)
CW	187	3162	?	(32, s)
CW	189	3127	5th–6th c. AD?	(24, s)
CW	193	3235	2nd–3rd c. AD?	(60, s)
CW	193	2011	2nd–3rd c. AD?	Gen
CW	194	3139	2nd–3rd c. AD?	(28, s)
CW	220	2232	1st–3rd c. AD	Gen
HM	302	1453	1st mill. BC	Gen
HM	302	1235	1st mill. BC	(4)
HM	302	104	1st mill. BC	Gen
HM	303	57	1st mill. BC	(2)
HM	305	1469	1st mill. BC (and earlier?)	(5)
HM	307	31	1st mill. BC	Gen
HM	321		Late 1st mill. BC–3rd c. AD	Gen
HM	338		1st–4th c. AD	Gen
HM	355		Modern?	Gen

## Fineware

Only two sherds of Hellenistic black gloss ware of Italian production have been recognised among the mass of sherds from the site. There is also relatively little material that is certainly attributable to the early 1<sup>st</sup> century AD (Table 3.5). The Italian Sigillata and Green Glazed Wares are paralleled at Sāniat bin Huwaydī, as is the slight occurrence of Gaulish Sigillata. The major part of the fineware at GER002 is ARS, with the following Hayes forms represented (Hayes 3, 3C, 4, 5, 6, 8, 9, 14, 17, 31, 32/58, 50, 59, 121, and cookwares 23b, 181, 182, 192/96). Of these, there is a distinct chronological preponderance of the early ARS forms (Hayes forms 3–9 especially), a pattern noted on other sites in Fazzān (Dore *et al.* 2007, 332–34) and also in the Libyan Valleys survey (Dore 1996, 331–26). Nonetheless, there is a consistent, if less numerically impressive, presence of later ARS and TRS forms to show that contact with the Mediterranean coast was long maintained. The quantities are relatively small – though ARS was recognised in about 50 separate contexts. TRS was present in at least 11 separate contexts, with diagnostic examples of Hayes forms 2, 3 and 5 (the first two also the most commonly noted at other Garamantian sites). Finewares are present in roughly equal numbers of contexts dateable to Periods I, II and III, suggesting a relatively steady supply of such goods to the oasis community across time. TRS became more important than ARS in the Late Garamantian phase.

Table 3.5. Fineware from Sāniat Jibrīl.

Form	FP formcode	Area	Context	Period
<b>Italian Black Gloss</b>				
Morel 2787	FW 505	6	9	II
Morel 2787	FW 505	132	surface	-
<b>S Gaulish Sigillata</b>				
Dr 27	FW 512	1	surface	-
Dr 18	FW 515	6	12	I
b/s		7	20	?
b/s		9	surface	-
<b>Italian Sigillata</b>				
b/s		1	surface	-
b/s		1	3	I
b/s		3	2/2	?
Dr 27?	FW 512	4	1/9	?

Table 3.5. Fineware from Sāniat Jibrīl. (cont.)

Form	FP formcode	Area	Context	Period
Dr 18?	FW 515	4	15	?
Goud. 38		4	74	II
Dr 18	FW 515	4	74	II
SMF stamp		4	88	I
b/s		4	92	?
Dr 18	FW 515	5	surface	-
Dr 18?	FW 515	6	12	I
Dr 29?	FW 513	6	21	I
Dr 29	FW 513	6	24	I
Dr 29	FW 513	8	1	-
<b>Italian Green Glaze</b>				
lamp		65	surface	-
b/s		2	67	I
b/s		2	76	I
b/s		4	17	III
<b>ARS</b>				
ARS 8	FW 524	1	2	-
ARS 147		1	surface	-
ARS 8	FW 524	1	surface	-
b/s		1	surface	-
Hayes 9		2	11	II
4 x b/s		2	12	III
Hayes 6	FW 523	2	12	III
b/s		2	13	I
Hayes 5	FW 522	2	13	I
Hayes 6	FW 523	2	13	I
Hayes 50		2	25	III
Hayes 31		2	33	II
Hayes 8	FW 524	2	33	II
3 x b/s		2	37	III
Hayes 3	FW 520	2	37	III
b/s		2	56	II
Hayes 3 (x2)	FW 520	2	57	I
Hayes 3	FW520	2	67	I
Hayes 3C	FW 520	2	76	I
Hayes 59		2	86	I
2 x b/s		2	surface	-
Hayes 3	FW520	2	surface	-
b/s		3	surface	-
Hayes 9		3	surface	-



Table 3.5. Fineware from Sāniat Jibrīl. (cont.)

Form	FP formcode	Area	Context	Period
b/s		4	10	?
Hayes 5	FW 522	4	108	III
Hayes 8	FW524	4	108	III
Hayes 9		4	108	III
Hayes 17		4	11	?
Hayes 6	FW 523	4	11	?
Hayes 9		4	113	?
Hayes 3?		4	118	?
Hayes 5	FW 522	4	119	?
b/s		4	17	III
b/s		4	26	III
Hayes 14		4	26	III
b/s		4	27	?
b/s		4	3/1	-
Hayes 31		4	33	III
Hayes 4	FW 521	4	33	III
b/s		4	35	?
b/s		4	37	?
Hayes 3C	FW 520	4	55	?
Hayes 6	FW 523	4	62	?
Hayes 3	FW 520	4	74	II
b/s		4	surface	-
Hayes 3	FW 520	4	surface	-
Hayes 5	FW 522	4	surface	-
Hayes 8	FW524	4	surface	-
Hayes 3 (x2)	FW 520	5	5	?
Hayes 6 (x2)	FW 523	5	L 1-2	I
Hayes 9		5	L 1-2/L 2/3	I
Hayes 181		5	L 2/3	I
Hayes 3 (x4)	FW 520	5	L 2/3	I
b/s		5	L 3/4	I
Hayes 182		5	L 3/4	I
Hayes 3	FW 520	5	L 3/4	I
Hayes 6	FW 523	5	L 3/4	I
b/s		5	L5 R4-5	I
Hayes 192/196		5	L5 R4-5	I
b/s		5	L-R 0-1	III
Hayes 182		5	L-R 0-1	III
Hayes 6	FW 523	5	L-R 0-1	III

Form	FP formcode	Area	Context	Period
3 x b/s		5	surface	-
Hayes 181		5	surface	
Hayes 182 x 2		5	surface	-
Hayes 192/196 (x2)		5	surface	-
Hayes 9		5	surface	-
Hayes 9		6	9	II
b/s		6	14	
Hayes 121	FW 528	6	general	-
b/s		7	1	II
Hayes 14		7	1	II
Hayes 182 (x2)		7	2	II
b/s (x2)		7	2	II
b/s		7	20	?
Hayes 23b		7	23	?
Hayes 32/58		7	29	?
Hayes 17		7	50	III
Hayes 32/58		7	55	?
b/s		7	59	?
b/s		7	75	?
Hayes 3 (x2)	FW520	8	1	-
Hayes 6		8	1	-
Hayes 23?		8	1	-
b/s		8	1	-
<b>TRS</b>				
3 x b/s		2	12	III
Hayes 3	FW 532	2	12	III
b/s?		2	25	III
b/s		2	33	II
Hayes 3	FW 532	4	13	III
2 b/s		4	26	III
Hayes 3	FW 532	4	35/37	?
Hayes 2	FW 531	7	29	?
Hayes 5		7	50	III
b/s		7	58	?
Hayes 3	FW 532	7	66	III
b/s		7	66	III
Hayes 2	FW 531	7	70	II

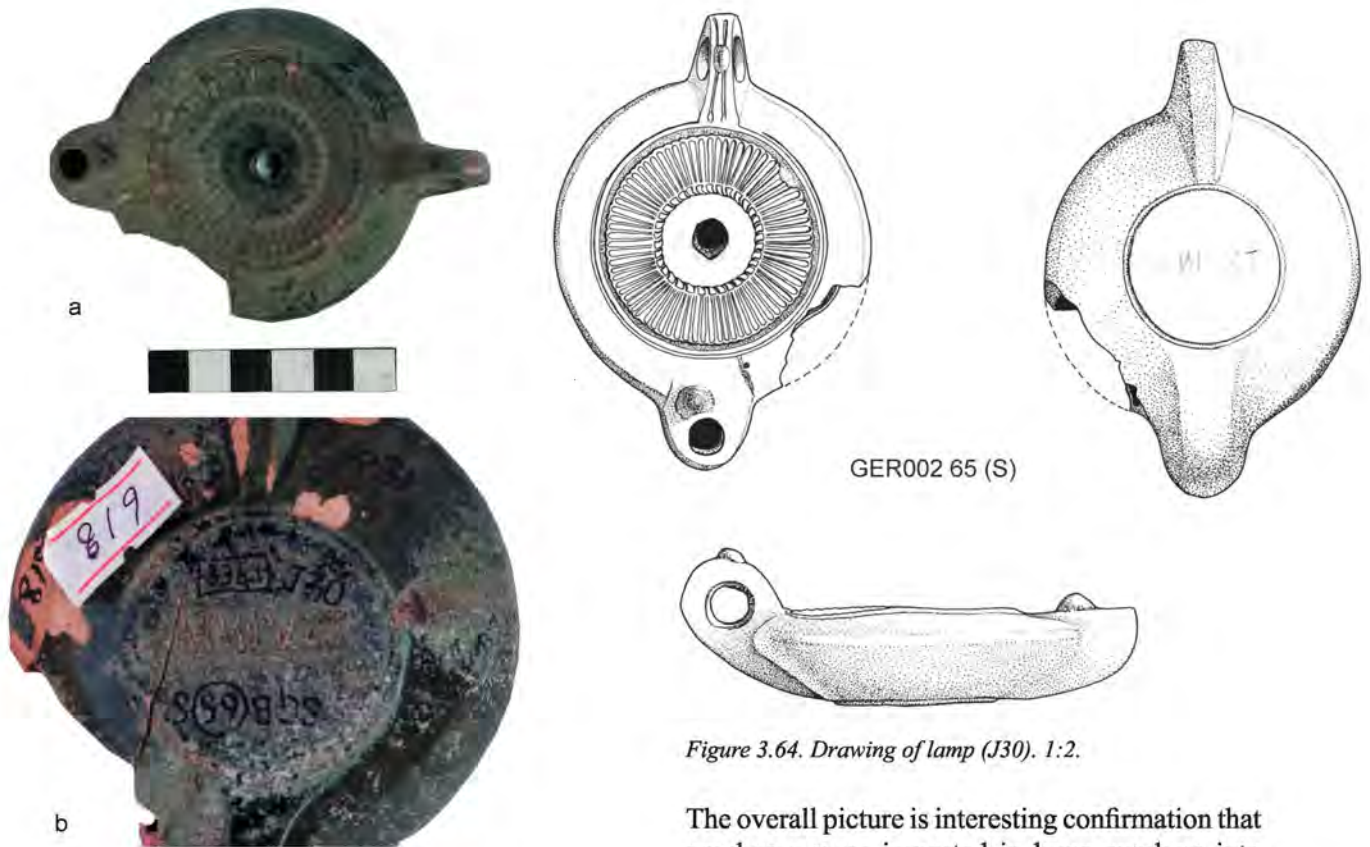


Figure 3.63. a) Green-glazed lamp (J30) found close by Sāniat Jibrīl; b) Detail of stamp on base (FP 2002).

There appear to have been few lamp fragments from the site, though an intact imported lamp in a green glazed fabric was recovered by CMD's survey of the environs (Figs 3.63–3.64). The exact location from which this came is uncertain, but it may be suggestive of the existence of a cemetery in relatively close proximity to the settlement.

### Amphorae

Fragments of more than 10 (and perhaps close to 20) different varieties of amphora have been recovered from the site (Table 3.6 – NB AM 44 is a miscellaneous catch-all grouping). Many of the rim fragments were quite small and exact attribution to type was not certain. There are a few potentially early sherds (relating to the putative Period 0) – a possible Greco-Italic AM 10 and a couple of fragments of a Dressel 1a variant AM 11. The vast bulk of the material relates to the Early-Mid-Roman Tripolitanian production, with many examples linked to the Tripolitana I–III series AM 19, 21. There are also at least seven examples of the Tunisian Africana I AM 24 and a small amount of other mid- and late-Roman types.

Figure 3.64. Drawing of lamp (J30). 1:2.

The overall picture is interesting confirmation that amphorae were imported in large numbers into the region during the Classic Garamantian period. It is significant to see them being consumed and discarded on a settlement site as well as deposited in the cemeteries.

Table 3.6. Amphorae from Sāniat Jibrīl.

CMD no.	FP formcode	Description	Area	Context	Period
3381	AM 10	Greco-Italic	2	g	-
2749	AM 11	Dr 1a variant?	general		-
3354	AM 11	Dr 1a variant?	8	10	?
2703	AM 17	ER Tripolitanian	6	12	I
215	AM 19 var	Tripolitana I variant	3	2/3	?
941	AM 19 var	Tripolitana I variant	2	5	?
2733	AM 19 var	Tripolitana I variant	general		-
3376	AM 20	ER Tripolitanian	2	4	?
195	AM 21	Tripolitana II-III	3	2/3	?
346	AM 21	Tripolitana II-III	5	R2/3	?
350	AM 21	Tripolitana II-III	5	L1/2	?
352	AM 21	Tripolitana II-III	5	L1/2	?

Table 3.6. Amphorae from Sāniat Jibrīl. (cont.)

CMD no.	FP formcode	Description	Area	Context	Period
365	AM 21	Tripolitana II-III	5	L&R0-1	III
2201	AM 21	Tripolitana II-III	4	10	?
2223	AM 21	Tripolitana II-III	7	1	II
2231	AM 21	Tripolitana II-III	4	13	III
2296	AM 21	Tripolitana II-III	4	13	III
2364	AM 21	Tripolitana II-III	4	26	III
2433	AM 21	Tripolitana II-III	4	18	III
2473	AM 21	Tripolitana II-III	2	37	III
2490	AM 21	Tripolitana II-III	2	38	II
2503	AM 21	Tripolitana II-III	2	13	I
2537	AM 21	Tripolitana II-III	4	88	I
2605	AM 21	Tripolitana II-III	2	67	I
2624	AM 21	Tripolitana II-III	2	67	I
2628	AM 21	Tripolitana II-III	4	30	III
2647	AM 21	Tripolitana II-III	2	55	?
2736	AM 21	Tripolitana II-III	4	99	?
2779	AM 21	Tripolitana II-III	7	68	?
2780	AM 21	Tripolitana II-III	7	66	III
2826	AM 21	Tripolitana II-III	2	67	I
2888	AM 21	Tripolitana II-III	7	78	I
2745	AM 21	Tripolitana II-III	general		-
2738	AM 21	Tripolitana II-III	general		-
2748	AM 21	Tripolitana II-III	general		-
2988	AM 21	Tripolitana II-III	general		-
2737	AM 21	Tripolitana II-III	general		-
3343	AM 21	Tripolitana II-III	8	1	?
3371	AM 21	Tripolitana II-III	4	119	?
2782	AM 21	Tripolitana II-III	7	64	?
3377	AM 21	Tripolitana II-III	general		-
2282	AM 24	Africana I	4	11	?
2372	AM 24	Africana I	2	12	III
2423	AM 24	Africana I	2	33	II
2499	AM 24	Africana I	2	67	I
2639	AM 24	Africana I	2	67	I
2771	AM 24	Africana I	4	92	?
2819	AM 24	Africana I	7	75	?
2352	AM 27	MR type	2	12	III

CMD no.	FP formcode	Description	Area	Context	Period
2539	AM 27	MR type	4	62	?
2734	AM 27	MR type	general		-
2728	AM 39	LR type	general		-
341	AM 44	Misc. amphora	5	0/a	III
1334	AM 44	Misc. amphora	general		-
2705	AM 44	Misc. amphora	general		-
2780	AM 44	Misc. amphora	general		-
2636	AM 44	Misc. amphora	general		-
2373	AM 44	Misc. amphora	4	33	III
2464	AM 44	Misc. amphora	2	37	III
2526	AM 44	Misc. amphora	general		-
3102	AM 44	Misc. amphora	general		-
3374	AM 44	Misc. amphora	general		-
2336	AM 44	Misc. amphora	2	12	III
2436	AM 44	Misc. amphora	2	30	III
2638	AM 44	Misc. amphora	4	30	III
2843	AM 44	Misc. amphora	7	70	II
2337	AM 44	Misc. amphora	7	1	II
2276	AM 44	Misc. amphora	2	13	I
2713	AM 44	Misc. amphora	7	55	?
2921	AM 44	Misc. amphora	2	12	III
2398	AM 44	Misc. amphora	6	2	II
2229	AM 44	Misc. amphora	4	11	?
3344	AM 44	Misc. amphora	8	1	?

*Wheelmade coarseware*

More than 50 different coarseware forms are attested from Sāniat Jibrīl, though over half of these are not represented in securely dated contexts (Table 3.7 and Figs 3.65–3.71). The following forms appear in Period I contexts and thus may be taken as typical of imported forms at that date: medium sized bowls CW 119, 125, flanged bowls CW 136–139, 140–142, casseroles CW 177, 179, 181, casseroles/jar CW 191, small jar CW 203. In Period II contexts the following forms are attested: large bowl CW 113, medium bowls CW 114, 118, 123, large/medium bowls CW 129, flanged bowl CW 139 (probably residual from Period I),

carinated bowl CW 145 (Fig. 3.65), small bowl CW 161, casseroles CW 182, casserole/jar CW 192–193. The only forms certainly stratified in Period III contexts were casseroles CW 181, 183, though it is likely that some of the forms found only in unstratified or poorly dated contexts were of late date.

An important point arising from the study of the wheelmade coarsewares is that some of the material appears to have been made with local clays. The extent of Garamantian wheelmade pottery production is difficult to assess and handmade pots continued to be produced into the Late Garamantian period and beyond. But some unusual forms can be identified as likely Garamantian products, such as CW 179 (Fig. 3.71). It is a useful reminder that we should not over-simplistically define all wheelmade pottery as imported and all handmade as local.



Figure 3.65. Carinated bowl CW 145.

Table 3.7. Wheelmade coarsewares from Sāniat Jibrīl.

CMD no.	FP formcode	Description	Area	Context	Period
1420	CW 104	Large bowl	D	g	-
3238	CW 104	Large bowl	60	s	-
3159	CW 110?	Small bowl	31	s	-
2300	CW 113	Large bowl	6	2	II
2855	CW 113	Large bowl	6	9	II
2625	CW 114	Medium bowl	7	2	II
3379	CW 114	Medium bowl	2	g	-
2551	CW 118	Medium bowl	2	56	II
3185	CW 118	Medium bowl	46	s	-
3278	CW 118	Medium bowl	107	s	-
3324	CW 118	Medium bowl	121	s	-
2350	CW 119	Medium bowl	6	10	I
919	CW 121	Medium bowl	g	-	-
3155	CW 122	Medium bowl	30	s	-
2521	CW 123	Medium bowl	2	55	II
2010	CW 124	Medium bowl	g	-	-
2353	CW 125	Medium bowl	6	10	I
314	CW 125	Medium bowl	4	2/1	III
3104	CW 125	Medium bowl	3	s	-
3331	CW 125	Medium bowl	130	s	-
3198	CW 126	Large/medium bowl	52	s	-

CMD no.	FP formcode	Description	Area	Context	Period
917	CW 127	Large/medium bowl	g		-
2897	CW 129	Large/medium bowl	4	48	II
932	CW 136	Large bowl	1	3	I
2995	CW 137	Flanged bowl	g	-	-
3350	CW 137	Flanged bowl	8	1	?
169	CW 137	Flanged bowl	3	3/1	I
3172	CW 137	Flanged bowl	42	s	-
3156	CW 137	Flanged bowl	30	s	-
3197	CW 137	Flanged bowl	52	s	-
3271	CW 137	Flanged bowl	63	s	-
2803	CW 138	Flanged bowl	6	21	I
2808	CW 138	Flanged bowl	2	73	?
3202	CW 138	Flanged bowl	53	s	-
2319	CW 139	Flanged bowl	6	2	II
2947	CW 139	Flanged bowl	4	65	II
2900	CW 140	Flanged bowl	2	76	I
949	CW 141	Flanged bowl	3	5	I
2815	CW 142	Flanged bowl	2	86	I
2614	CW 142	Flanged bowl	4	92	?
2211	CW 143	Carinated bowl	7	2	II

Table 3.7. Wheelmade coarsewares from Sāniat Jibrīl. (cont.)

CMD no.	FP formcode	Description	Area	Context	Period
3176	CW 143	Carinated bowl	44	s	-
2730	CW 144	Carinated bowl	g	-	-
3241	CW 144	Carinated bowl	61	s	-
3343	CW 145	Carinated bowl	s		-
3199	CW 145	Carinated bowl	52	s	-
3164	CW 149	Medium bowl	33	s	-
2904	CW 151	Medium bowl	7	77	?
2465	CW 161	Small bowl	2	33	II
3070	CW 162	Small bowl	5	L&R 0-1	III
3256	CW 164	Small bowl	69	s	-
3150	CW 171	Casserole	29	s	-
3207	CW 171	Casserole	54	s	-
3194	CW 173	Casserole	51	s	-
3292	CW 173	Casserole	112	s	-
3103	CW 173	Casserole	3	s	-
947	CW 175	Casserole	2	5	?
2824	CW 177	Casserole	6	24	I
912	CW 179	Casserole	g	-	-
2996	CW 179	Casserole	g	-	-
299	CW 179	Casserole	1	4	I
2852	CW 179	Casserole	6	9	II
3190	CW 179	Casserole	48	s	-
3229	CW 179	Casserole	59	s	-
3252	CW 179	Casserole	63	s	-
2732	CW 180	Casserole	g	-	
2204	CW 180	Casserole	6	1	?
971	CW 180	Casserole	4	4/1	?
3188	CW 180	Casserole	118	s	-
249	CW 180	Casserole	4	s	-
2209	CW 181	Casserole	4	10	?
2208	CW 181	Casserole	4	10	?
2491	CW 181	Casserole	2	29	III
2264	CW 182	Casserole	4	11	?

CMD no.	FP formcode	Description	Area	Context	Period
2633	CW 182	Casserole	6	12	I
938	CW 182	Casserole	1	2	I
2802	CW 182	Casserole	6	23	I
2770	CW 182	Casserole	6	24	I
2658	CW 182	Casserole	6	9	II
2657	CW 182	Casserole	6	9	II
2882	CW 183	Casserole	6	24	I
2980	CW 183	Casserole	7	29	III
3158	CW 185	Casserole	30	s	-
3203	CW 186	Casserole	54	s	-
3203	CW 186	Casserole	54	s	-
3162	CW 187	Casserole	32	s	-
2200	CW 188	Casserole	4	10	?
3127	CW 189	Casserole	24	s	-
2280	CW 190	Casserole/jar	6	4	?
928	CW 191	Casserole/jar	1	2	I
965	CW 191	Casserole/jar	4	4/1	?
2823	CW 192	Casserole/jar	4	74	II
2011	CW 193	Casserole/jar	g	-	-
297	CW 193	Casserole/jar	4	2/2	II
3235	CW 193	Casserole/jar	60	s	-
240	CW 193?	Casserole/jar	4	3/3b	?
953	CW 194	Casserole/jar	4	4/1	?
3139	CW 194	Casserole/jar	28	s	-
242	CW 202	Small jar	4	5/4	?
2475	CW 203	Small jar	6	14	I
3374	CW 219	Amphoroid flagon	4	120	?
2232	CW 220	Amphoroid flagon	g		-
3354	CW 225	Flagon	8	10	?
2526	CW 226	Flagon	4	120	?
2432	CW 226	Flagon	4	18	III
2912	CW 226	Flagon	2	48	?

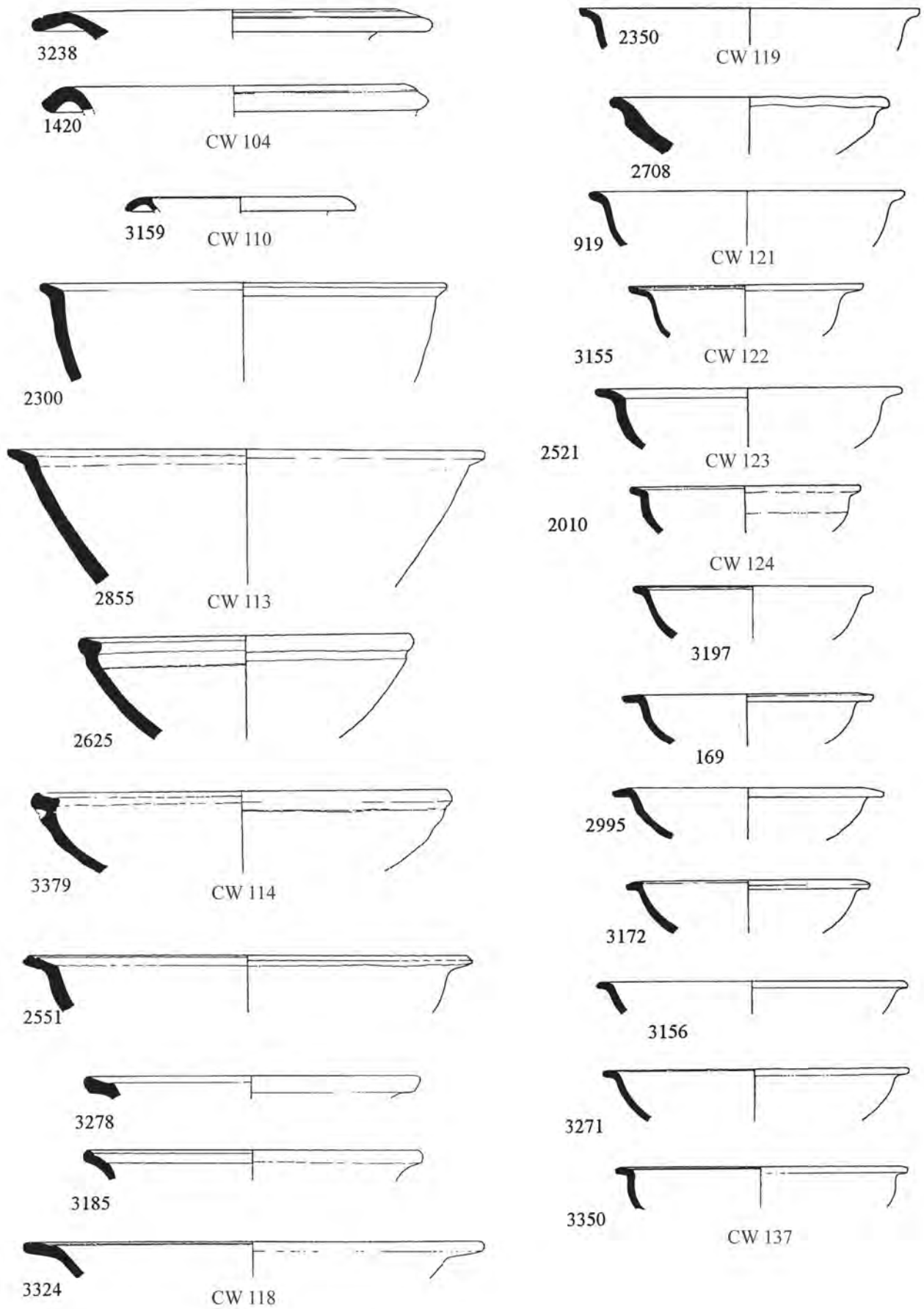


Figure 3.66. Wheelmade coarseware from Sāniat Jibrīl (i). 1:4.

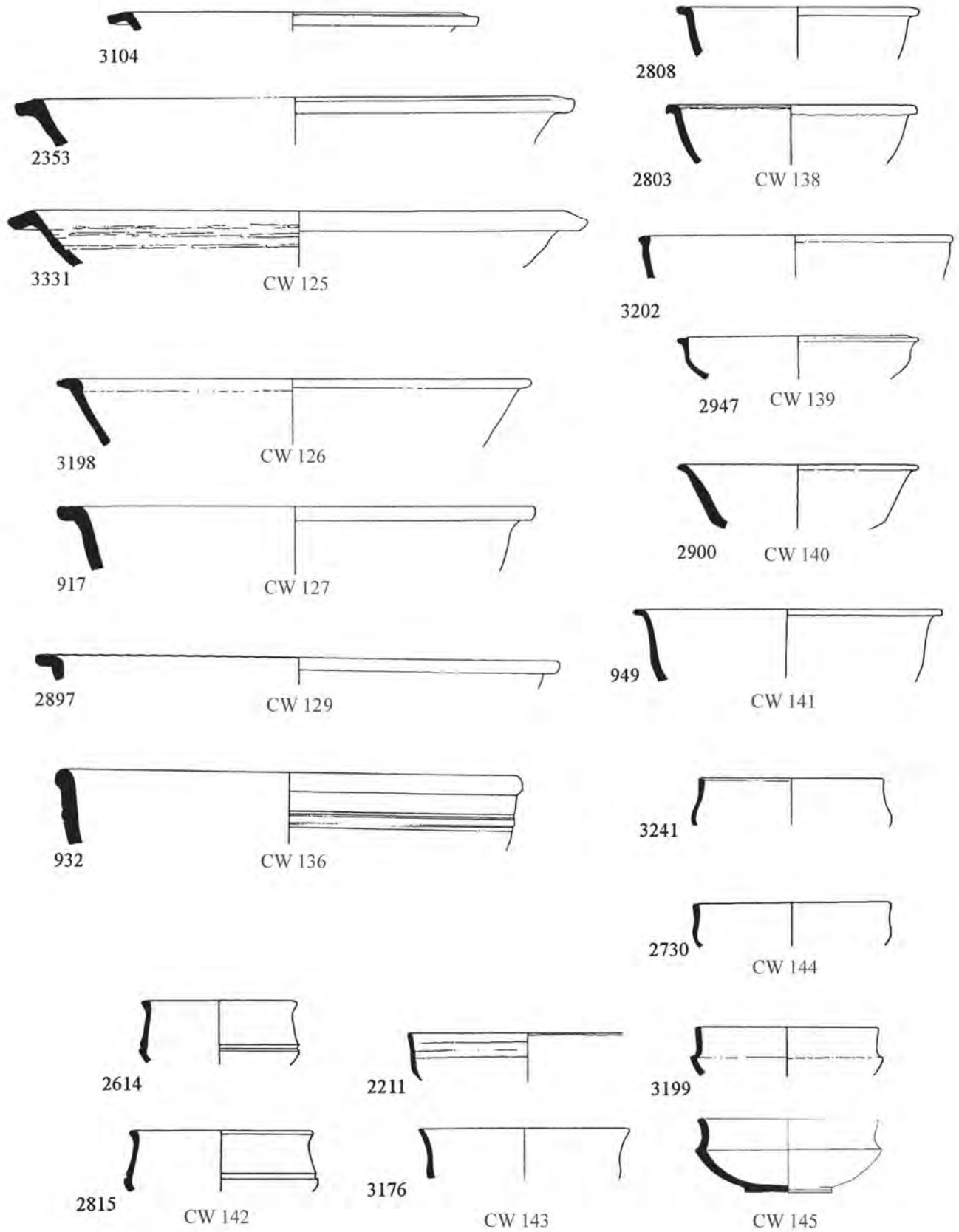


Figure 3.67. Wheelmade coarseware from Saniat Jibril (ii). 1:4.

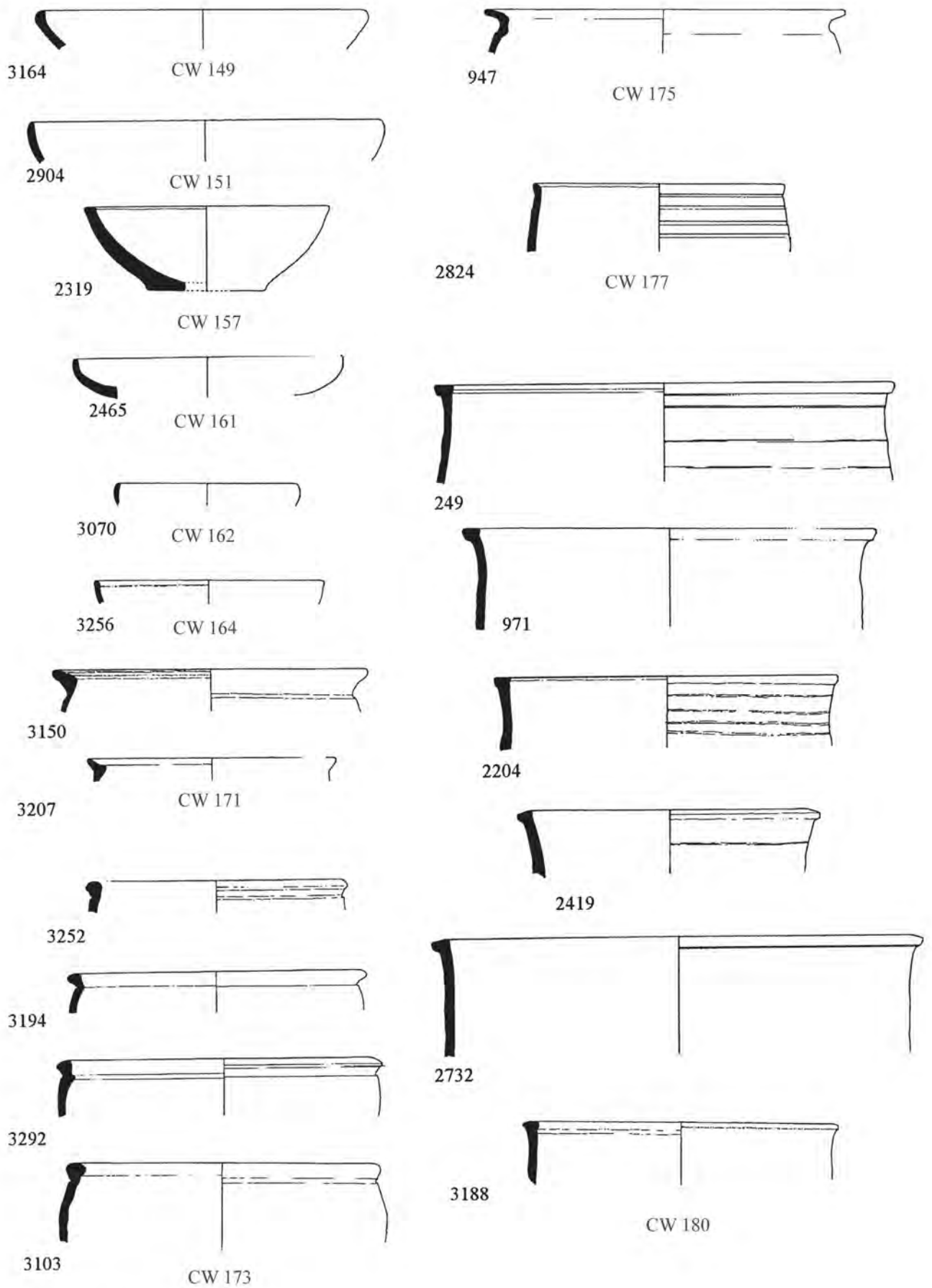


Figure 3.68. Wheelmade coarseware from Sāniat Jibrīl (iii) 1:4.



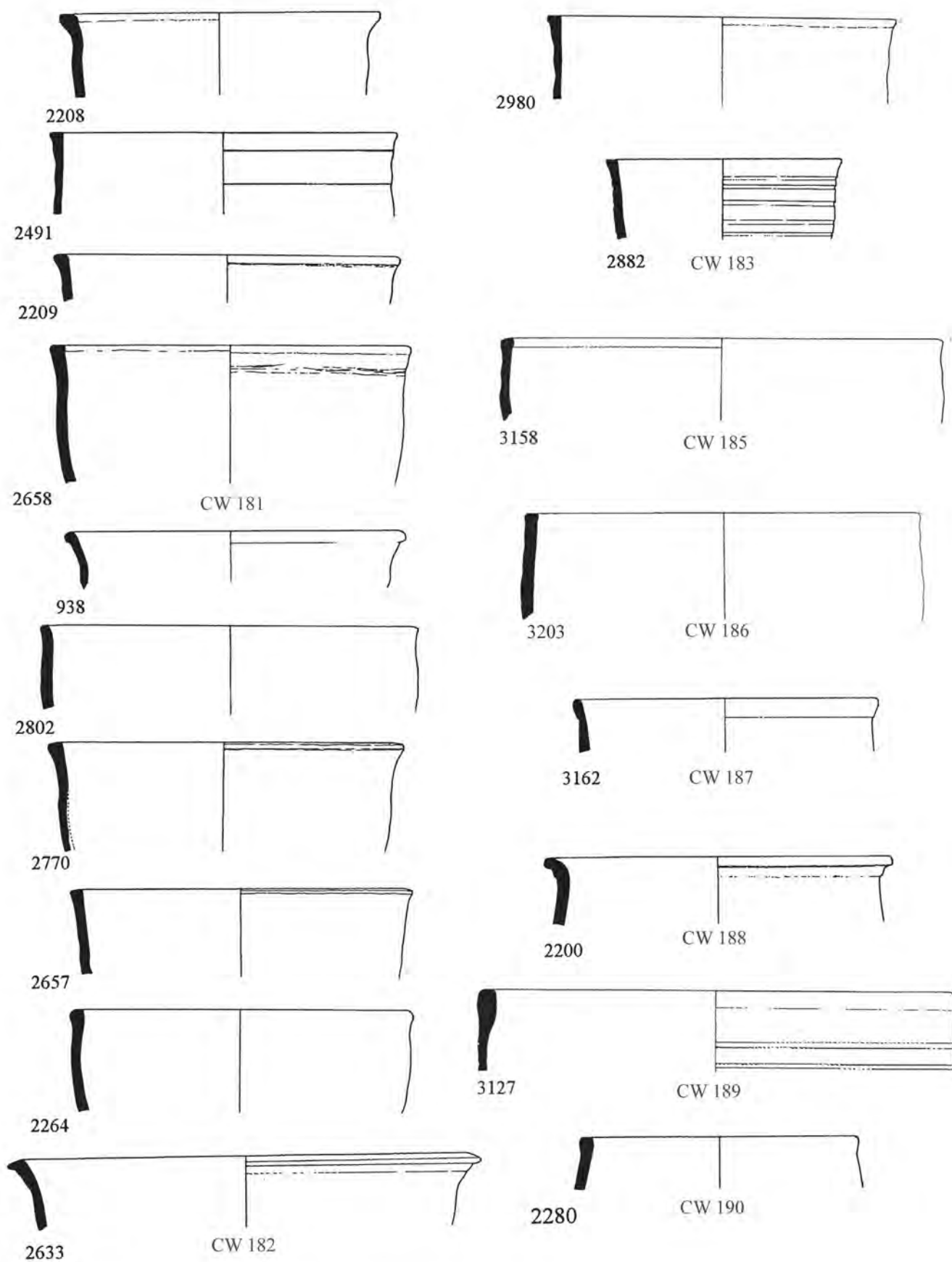


Figure 3.69. Wheelmade coarseware from Sāniat Jibrīl (iv) 1:4.

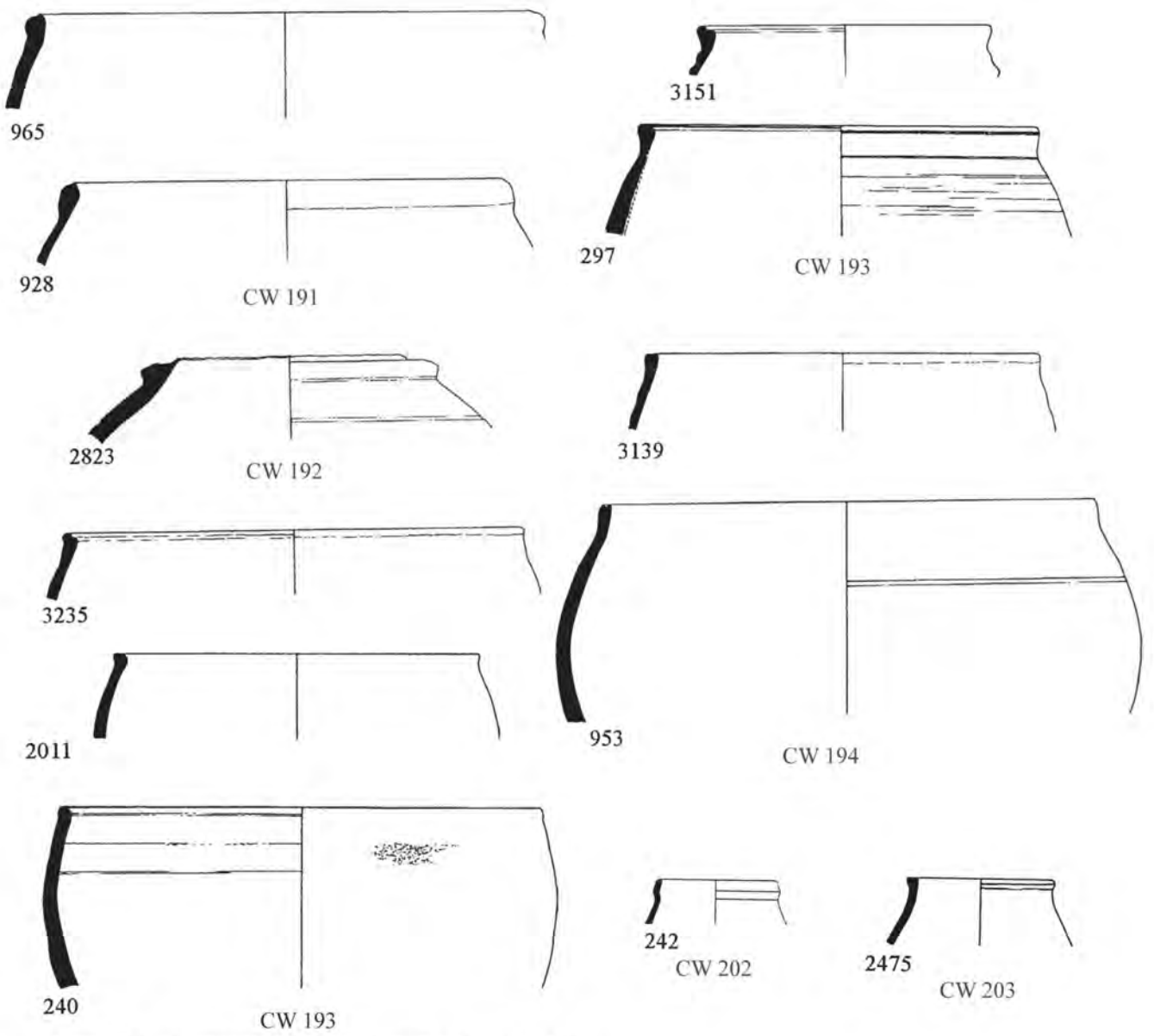


Figure 3.70. Wheelmade coarseware from Sāniat Jibrīl (v) 1:4.

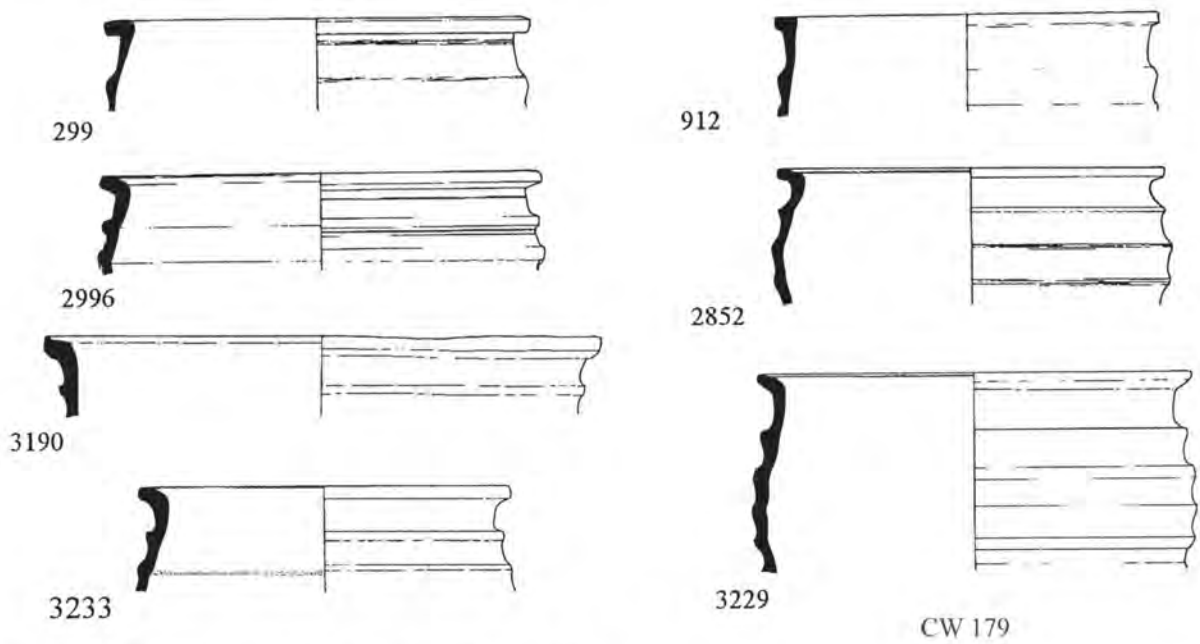


Figure 3.71. Wheelmade coarseware from Sāniat Jibrīl (vi) 1:4.

*Handmade wares*

The most abundant pottery in all the stratified contexts comprised locally-made handmade wares (Figs 3.72–3.76). There is proportionally less of this material included in the surface collections, which tended to focus on imported diagnostic sherds (Table 3.8). Because the stratified sample of handmade wares is larger than for fineware, amphorae and coarseware, it is illustrated by Period in the figures accompanying this section. Overall there is considerable overlap with the material known from Aghram Nadarif (Gatto 2006, 201–40), though the latter site produced smaller quantities of the more decorative painted wares). The most typical early Garamantian and Proto-Urban Garamantian forms are entirely absent here (for example **HM 301–308, 310–311, 315–317**, etc.) The handmade assemblage at Sāniat Jibrīl is dominated by large globular pots with raised and everted rims **HM 337–340** (NB in Table 3.8 the group identifier is used where the archive description does not allow more specific assignment to *AF* type). These seem to be the later development of similar globular or necked jars common at Zinkekrā (**HM 318–325**). There is a solitary example of **HM 320**, for example, at Sāniat Jibrīl (<2886> on Fig. 3.72). The broad type is well paralleled at other Classic Garamantian sites, even at the outpost of Aghram Nadarif, some 400 km to south-west of Jarma (Gatto 2006, 228–35).

Most of the drawn examples belong to **HM 337** and **338**, with smaller numbers of the variant forms **HM 339–340** (Figs 3.72–3.76). A number

of intact examples of the form were recovered from the site (Figs 3.77–3.79), having been set in the floors of rooms – especially in Areas 2 and 4 (see Figs. 3.61–3.62). These are of considerable importance for our understanding of the overall profile, decoration and morphology of these vessels, which are most commonly represented by excavation or surface finds of rims alone. There are also examples of similar high rimmed globular vessels with lugs and painted and incised decoration **HM 335** (Fig. 3.74), though these are less abundant and appear to be a later development than the **HM 337–340** series.

There are a number of fragments of tripod incense burners (**HM 336** variant) from the site (Fig. 3.80–3.81). The diagnostic elements of these tend to be the handles (5 **L3–4**) and legs/tripod bases (3 **2/3**, 4 **65**, 4 **74**, 4 **105**, 6 **9**, 6, **17**). Two examples of the solid version of **HM 336** were also recognised (2 **33**, 2 **56**). These are somewhat unusual in domestic contexts, being more common in tombs or religious usage. It is possible that these were being made at Sāniat Jibrīl or that they derived from a shrine either within the building complex or close by.

Another characteristic type of domestic vessel was the flat platter or *doka* (Figs 3.72, 3.74–3.76). This is represented by the evolved forms **HM 342–343** – whereas at Zinkekrā there are more examples of the earlier simple form **HM 341**. There is also a strong representation of small- to medium-sized bowls (**HM 345–47**) spanning all phases of the site (Figs. 3.75–3.76).

Table 3.8. Handmade wares from Sāniat Jibrīl.

CMD no.	FP formcode	Description	Area	Context	Period
2304	HM 318	Globular jar	6	2	II
2675	HM 318	Globular jar	6	21	I
2781	HM 318	Globular jar	6	23	I
2689	HM 319	Globular jar	6	21	I
2710	HM 319	Globular jar	6	21	I
2886	HM 320	Globular jar	4	101	I
2646	HM 329	Globular jar	4	64	III
2865	HM 331?	Globular jar	4	74	II
2278	HM 335	Globular jar	4	26	III
2416	HM 335	Globular jar	4	26	III
2859	HM 335	Globular jar	7	70	II
	HM 336 var	Tripod incense b	6	9	II
	HM 336 var	Tripod incense b	6	12	I
933	HM 337	Globular jar	1	1	I
927	HM 337	Globular jar	1	3	I
931	HM 337	Globular jar	1	3	I
935	HM 337	Globular jar	1	4	I
937	HM 337	Globular jar	1	4	I
2835	HM 337	Globular jar	2	67	I
2676	HM 337	Globular jar	2	76	I
2694	HM 337	Globular jar	2	76	I
2887	HM 337	Globular jar	2	86	I
966	HM 337	Globular jar	4	2/6	I
2553	HM 337	Globular jar	4	88	I
2461	HM 337	Globular jar	6	14	I
2488	HM 337	Globular jar	6	14	I
2598	HM 337	Globular jar	6	19	II
2772	HM 337	Globular jar	6	24	I
2784	HM 337	Globular jar	6	24	I
2806	HM 337	Globular jar	6	24	I
2831	HM 337	Globular jar	6	24	I
2355	HM 337	Globular jar	7	1	II
936	HM 337-340	Globular jar	1	2	I
180	HM 337-340	Globular jar	1	6	I
2205	HM 337-340	Globular jar	2	11	II
2254	HM 337-340	Globular jar	2	11	II

CMD no.	FP formcode	Description	Area	Context	Period
2265	HM 337-340	Globular jar	2	11	II
2283	HM 337-340	Globular jar	2	11	II
2284	HM 337-340	Globular jar	2	11	II
2285	HM 337-340	Globular jar	2	11	II
2309	HM 337-340	Globular jar	2	12	III
2315	HM 337-340	Globular jar	2	12	III
2335	HM 337-340	Globular jar	2	12	III
2367	HM 337-340	Globular jar	2	12	III
2609	HM 337-340	Globular jar	2	12	III
2620	HM 337-340	Globular jar	2	12	III
2409	HM 337-340	Globular jar	2	25	III
2425	HM 337-340	Globular jar	2	30	III
2413	HM 337-340	Globular jar	2	33	II
2418	HM 337-340	Globular jar	2	33	II
2435	HM 337-340	Globular jar	2	33	II
2437	HM 337-340	Globular jar	2	33	II
2439	HM 337-340	Globular jar	2	33	II
2441	HM 337-340	Globular jar	2	33	II
2456	HM 337-340	Globular jar	2	33	II
2474	HM 337-340	Globular jar	2	33	II
2478	HM 337-340	Globular jar	2	33	II
2498	HM 337-340	Globular jar	2	56	II
2570	HM 337-340	Globular jar	2	67	I
2601	HM 337-340	Globular jar	2	72	II
2634	HM 337-340	Globular jar	2	72	II
2706	HM 337-340	Globular jar	2	76	I
2910	HM 337-340	Globular jar	2	76	I
2881	HM 337-340	Globular jar	2	77	I
188	HM 337-340	Globular jar	3	2/3	I
190	HM 337-340	Globular jar	3	2/3	I
193	HM 337-340	Globular jar	3	2/3	I
206	HM 337-340	Globular jar	3	2/3	I
207	HM 337-340	Globular jar	3	2/3	I
208	HM 337-340	Globular jar	3	2/3	I
209	HM 337-340	Globular jar	3	2/3	I
210	HM 337-340	Globular jar	3	2/3	I
211	HM 337-340	Globular jar	3	2/3	I

Table 3.8. Handmade wares from Sāniat Jibrīl. (cont.)

CMD no.	FP formcode	Description	Area	Context	Period
213	HM 337-340	Globular jar	3	2/3	I
152	HM 337-340	Globular jar	3	2/1	I
415	HM 337-340	Globular jar	3	2/1	I
139	HM 337-340	Globular jar	3	3/1	I
167	HM 337-340	Globular jar	3	3/1	I
168	HM 337-340	Globular jar	3	3/1	I
253	HM 337-340	Globular jar	4	1/8	I
952	HM 337-340	Globular jar	4	2/5	I
955	HM 337-340	Globular jar	4	1/1	II
957	HM 337-340	Globular jar	4	2/1	III
960	HM 337-340	Globular jar	4	2/1	III
262	HM 337-340	Globular jar	4	13	III
2294	HM 337-340	Globular jar	4	13	III
2306	HM 337-340	Globular jar	4	13	III
2467	HM 337-340	Globular jar	4	17	III
2489	HM 337-340	Globular jar	4	17	III
2494	HM 337-340	Globular jar	4	17	III
2495	HM 337-340	Globular jar	4	17	III
2632	HM 337-340	Globular jar	4	17	III
2226	HM 337-340	Globular jar	4	26	III
2356	HM 337-340	Globular jar	4	26	III
2369	HM 337-340	Globular jar	4	26	III
814	HM 337-340	Globular jar	4	30	I
2421	HM 337-340	Globular jar	4	30	III
2442	HM 337-340	Globular jar	4	30	III
2496	HM 337-340	Globular jar	4	30	III
2574	HM 337-340	Globular jar	4	30	III
2600	HM 337-340	Globular jar	4	30	III
2604	HM 337-340	Globular jar	4	30	III
2635	HM 337-340	Globular jar	4	30	III
2672	HM 337-340	Globular jar	4	30	III
2242	HM 337-340	Globular jar	4	33	III
2889	HM 337-340	Globular jar	4	48	II
2417	HM 337-340	Globular jar	4	49	III
2458	HM 337-340	Globular jar	4	65	II
2460	HM 337-340	Globular jar	4	65	II
2523	HM 337-340	Globular jar	4	65	II
2525	HM 337-340	Globular jar	4	65	II
2789	HM 337-340	Globular jar	4	65	II
2790	HM 337-340	Globular jar	4	65	II
2838	HM 337-340	Globular jar	4	74	II
2842	HM 337-340	Globular jar	4	74	II
2849	HM 337-340	Globular jar	4	74	II
2872	HM 337-340	Globular jar	4	74	II
2952	HM 337-340	Globular jar	4	74	II
2615	HM 337-340	Globular jar	4	94	II
2631	HM 337-340	Globular jar	4	94	II
2839	HM 337-340	Globular jar	4	97	I
2893	HM 337-340	Globular jar	4	101	I
2876	HM 337-340	Globular jar	4	108	III
2877	HM 337-340	Globular jar	4	108	III
2891	HM 337-340	Globular jar	4	108	III
349	HM 337-340	Globular jar	5	L1/2	II
375	HM 337-340	Globular jar	5	L3/4	I
376	HM 337-340	Globular jar	5	L3/4	I
378	HM 337-340	Globular jar	5	L3/4	I
380	HM 337-340	Globular jar	5	L3/4	I
322	HM 337-340	Globular jar	5	R4-5	I
364	HM 337-340	Globular jar	5	L&R0-1	III
319	HM 337-340	Globular jar	5	4/5	I
2301	HM 337-340	Globular jar	6	2	II
2384	HM 337-340	Globular jar	6	9	II
2385	HM 337-340	Globular jar	6	9	II
2387	HM 337-340	Globular jar	6	9	II
2603	HM 337-340	Globular jar	6	9	II
2651	HM 337-340	Globular jar	6	9	II
2659	HM 337-340	Globular jar	6	9	II
2459	HM 337-340	Globular jar	6	14	I
2462	HM 337-340	Globular jar	6	14	I
2783	HM 337-340	Globular jar	6	24	I
2814	HM 337-340	Globular jar	6	24	I
2357	HM 337-340	Globular jar	7	1	II
2374	HM 337-340	Globular jar	7	1	II

Table 3.8. Handmade wares from Sāniat Jibrīl. (cont.)

CMD no.	FP formcode	Description	Area	Context	Period
2548	HM 337-340	Globular jar	7	1	II
2255	HM 337-340	Globular jar	7	2	II
2333	HM 337-340	Globular jar	7	2	II
2366	HM 337-340	Globular jar	7	2	II
2392	HM 337-340	Globular jar	7	2	II
2606	HM 337-340	Globular jar	7	2	II
2618	HM 337-340	Globular jar	7	2	II
2698	HM 337-340	Globular jar	7	50	III
2786	HM 337-340	Globular jar	7	66	III
930	HM 338	Globular jar	1	3	I
921	HM 338	Globular jar	1	4	I
922	HM 338	Globular jar	1	4	I
2608	HM 338	Globular jar	2	67	I
2853	HM 338	Globular jar	2	67	I
2911	HM 338	Globular jar	4	101	I
2623	HM 338	Globular jar	6	9	II
2394	HM 338	Globular jar	6	10	I
2704	HM 338	Globular jar	6	19	II
2674	HM 338	Globular jar	6	21	I
2695	HM 338	Globular jar	6	21	I
2822	HM 338	Globular jar	6	24	I
2840	HM 338	Globular jar	6	24	I
2244	HM 339	Globular jar	2	13	I
2493	HM 339	Globular jar	2	57	I
2520	HM 339	Globular jar	2	57	I
2522	HM 339	Globular jar	2	57	I
2690	HM 339	Globular jar	2	77	I
2312	HM 339	Globular jar	4	26	III
2541	HM 340	Globular jar	2	57	I
2572	HM 340	Globular jar	6	9	II
2845	HM 340	Globular jar	6	24	I
2269	HM 340	Globular jar	7	1	II
2531	HM 342	Doka	2	28	II
2399	HM 342	Doka	4	26	III
2286	HM 342	Doka	7	2	II
2347	HM 342	Doka	7	2	II
2915	HM 342-343	Doka	2	48	?
2297	HM 342-343	Doka	4	26	III
2875	HM 342-343	Doka	4	101	I
2530	HM 342-343	Doka	7	34	?
2682	HM 342-343	Doka	7	50	III
2714	HM 342-343	Doka	7	61	?
2313	HM 343	Doka	2	13	I
2438	HM 343	Doka	2	33	II
2562	HM 343	Doka	2	56	II
2237	HM 343	Doka	4	13	III
2266	HM 343	Doka	4	13	III
2311	HM 343	Doka	4	13	III
2235	HM 343	Doka	4	26	III
2348	HM 343	Doka	4	26	III
2400	HM 343	Doka	4	26	III
2386	HM 343	Doka	4	49	III
2505	HM 345	s-m bowl	2	38	II
2411	HM 345	s-m bowl	4	26	III
2809	HM 345	s-m bowl	4	100	II
2317	HM 345	s-m bowl	6	2	II
934	HM 345-347	s-m bowl	1	3	I
2268	HM 345-347	s-m bowl	2	11	II
2329	HM 345-347	s-m bowl	2	12	III
2471	HM 345-347	s-m bowl	2	37	III
2504	HM 345-347	s-m bowl	2	37	III
2858	HM 345-347	s-m bowl	2	50	?
2708	HM 345-347	s-m bowl	2	56	II
2552	HM 345-347	s-m bowl	2	57	I
2857	HM 345-347	s-m bowl	2	67	I
2884	HM 345-347	s-m bowl	2	86	I
214	HM 345-347	s-m bowl	3	2/3	I
298	HM 345-347	s-m bowl	4	3/3a	?
976	HM 345-347	s-m bowl	4	2/1	III
967	HM 345-347	s-m bowl	4	5/2	?
255	HM 345-347	s-m bowl	4	4/1	?
256	HM 345-347	s-m bowl	4	4/1	?
2305	HM 345-347	s-m bowl	4	13	III
2308	HM 345-347	s-m bowl	4	13	III

Table 3.8. Handmade wares from Sāniat Jibrīl. (cont.)

CMD no.	FP formcode	Description	Area	Context	Period
2470	HM 345-347	s-m bowl	4	17	III
2434	HM 345-347	s-m bowl	4	18	III
2323	HM 345-347	s-m bowl	4	26	III
2395	HM 345-347	s-m bowl	4	26	III
2422	HM 345-347	s-m bowl	4	30	III
2429	HM 345-347	s-m bowl	4	30	III
2599	HM 345-347	s-m bowl	4	30	III
2655	HM 345-347	s-m bowl	4	64	III
2544	HM 345-347	s-m bowl	4	65	II
2796	HM 345-347	s-m bowl	4	72	I
2903	HM 345-347	s-m bowl	4	73	III
2833	HM 345-347	s-m bowl	4	74	II
2863	HM 345-347	s-m bowl	4	74	II
2569	HM 345-347	s-m bowl	4	92	
2868	HM 345-347	s-m bowl	4	102	?
2873	HM 345-347	s-m bowl	4	110	?
339	HM 345-347	s-m bowl	5	L2/3	I
377	HM 345-347	s-m bowl	5	L3/4	I
2331	HM 345-347	s-m bowl	6	2	II
2546	HM 345-347	s-m bowl	6	17	I
2787	HM 345-347	s-m bowl	6	24	I
2847	HM 345-347	s-m bowl	6	24	I
2263	HM 345-347	s-m bowl	7	1	II
2351	HM 345-347	s-m bowl	7	9	?
2334	HM 345-347	s-m bowl	7	10	?
2697	HM 345-347	s-m bowl	7	52	
2828	HM 345-347	s-m bowl	7	64	?
2830	HM 345-347	s-m bowl	7	72	?
2880	HM 345-347	s-m bowl	7	78	I
3224	HM 345-347	s-m bowl	58	s	-
2248	HM 346	s-m bowl	2	11	II
2468	HM 346	s-m bowl	2	33	II
2240	HM 346	s-m bowl	4	26	III
2637	HM 346	s-m bowl	4	30	III
2557	HM 346	s-m bowl	4	65	II
2848	HM 346	s-m bowl	4	74	II
2670	HM 346	s-m bowl	6	9	II
2377	HM 346	s-m bowl	7	1	II
2388	HM 346	s-m bowl	7	2	II
979	HM 347	s-m bowl	4	1/4-5	II
2358	HM 347	s-m bowl	4	26	III
2851	HM 347	s-m bowl	4	74	II
2662	HM 347	s-m bowl	6	9	II

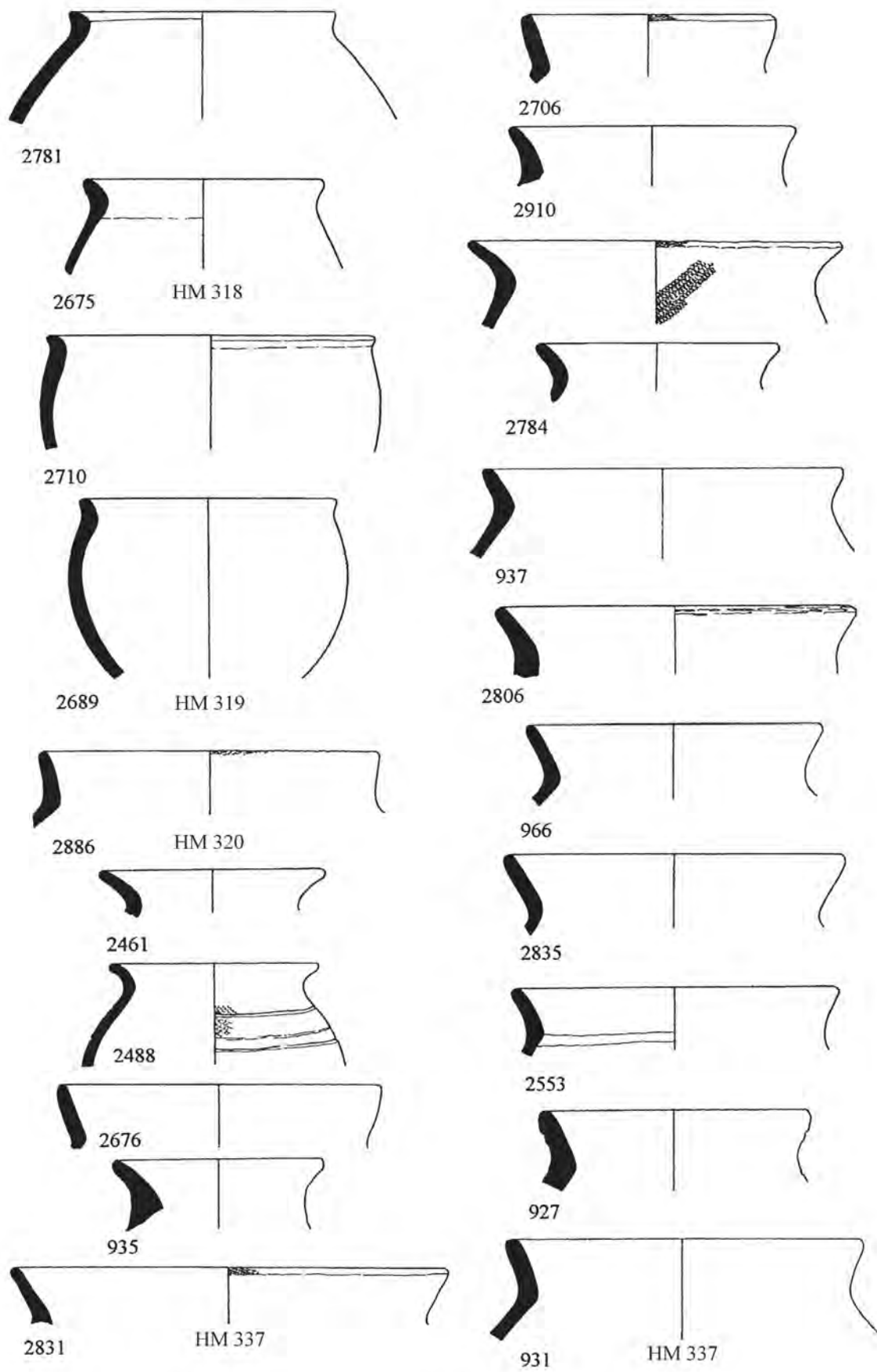


Figure 3.72. Period I handmade wares from Sāniat Jibrīl (i). 1:4.



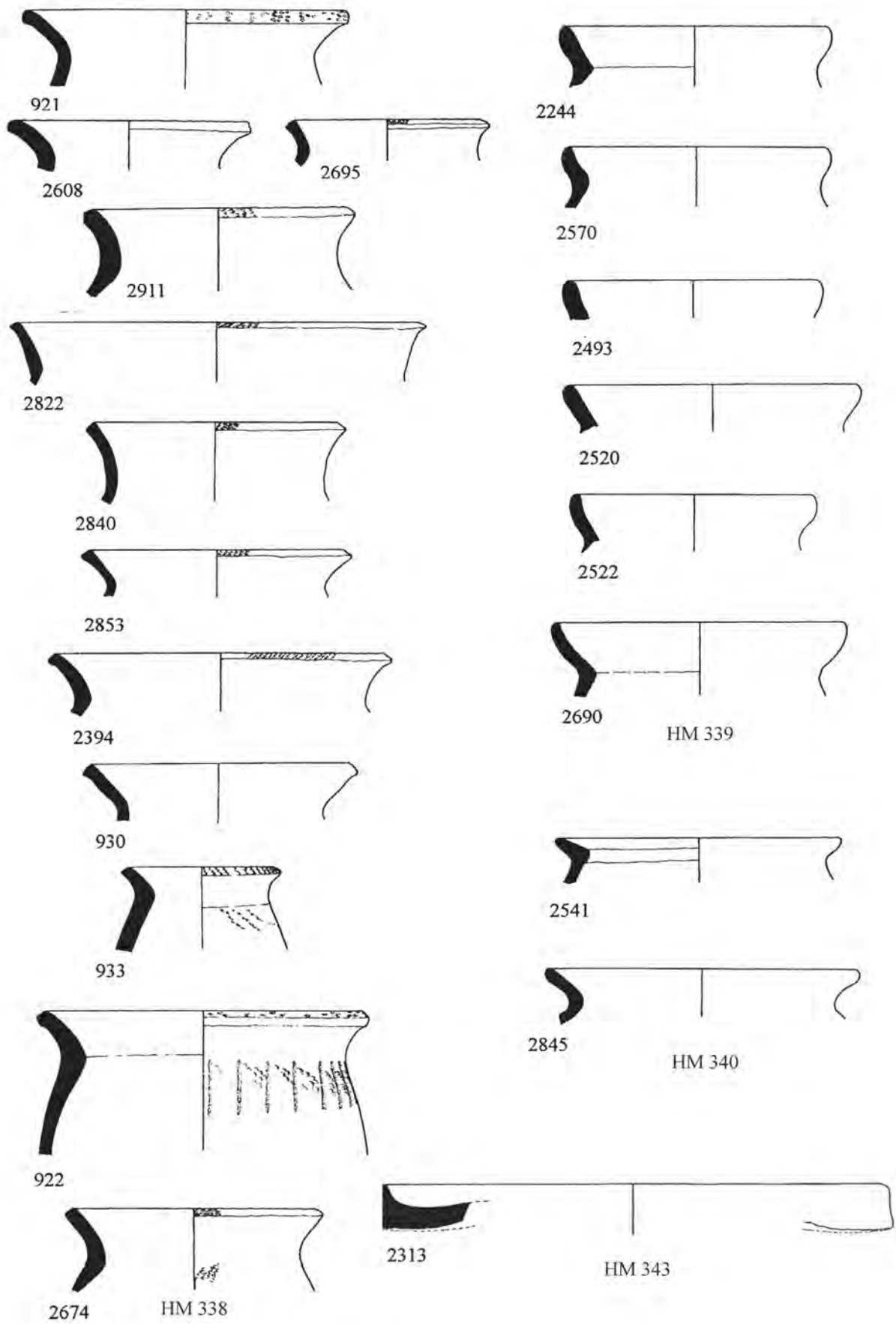


Figure 3.73. Period I handmade wares from Sāniat Jibrīl (ii), 1:4.

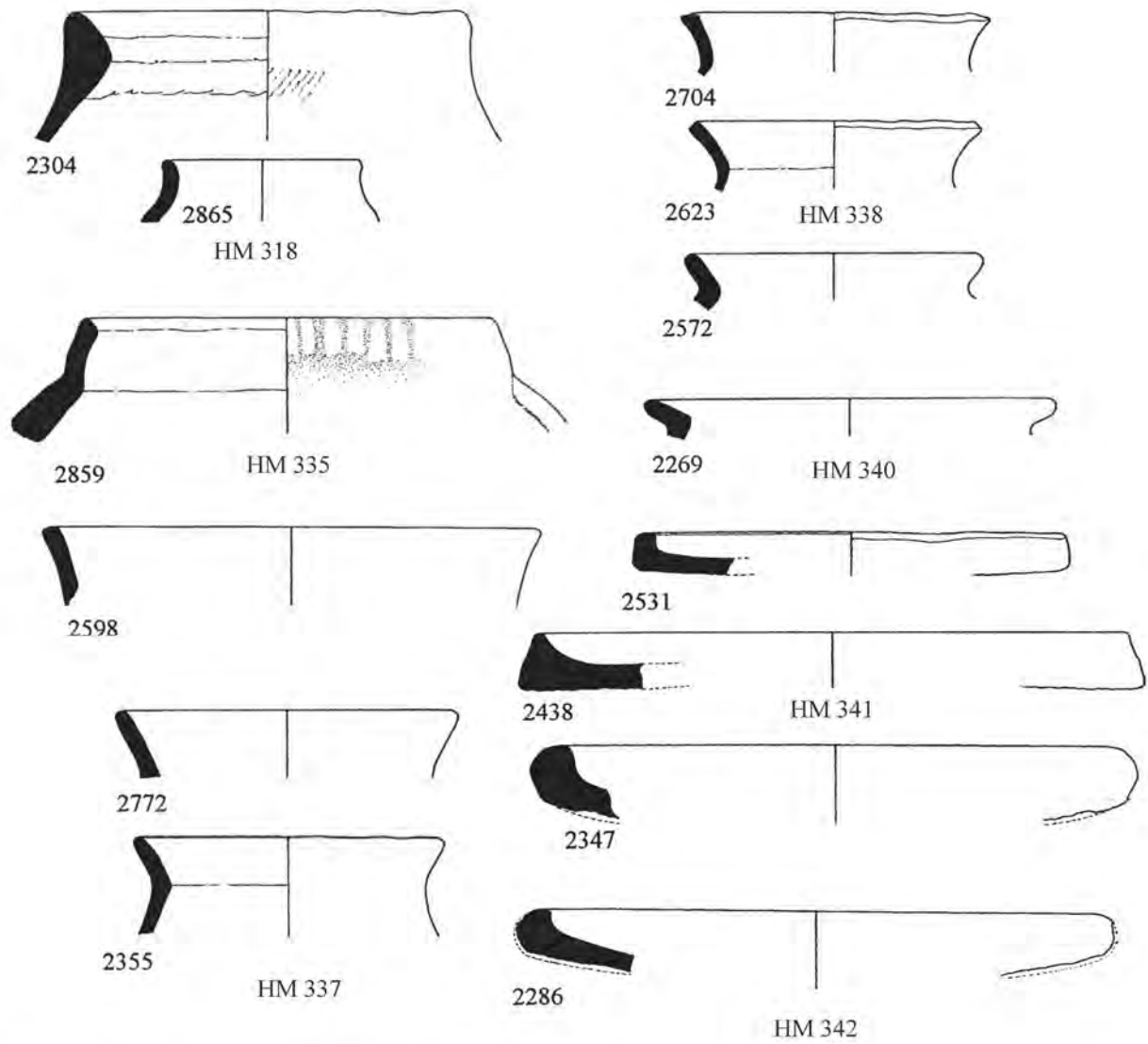


Figure 3.74. Period II handmade wares from Sāniat Jibrīl. 1:4.

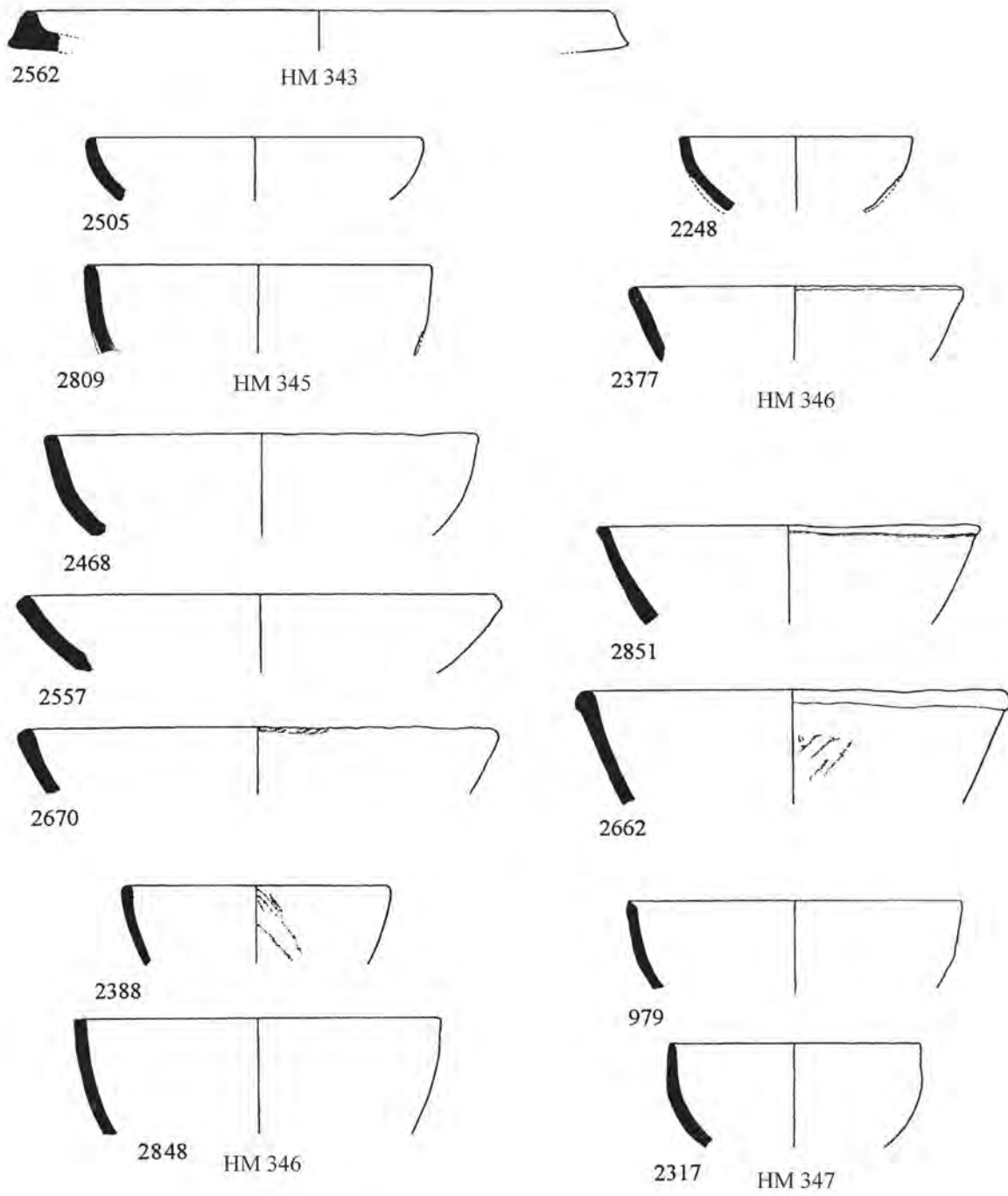


Figure 3.75. Period II handmade wares from Sāniat Jibrīl. 1:4.

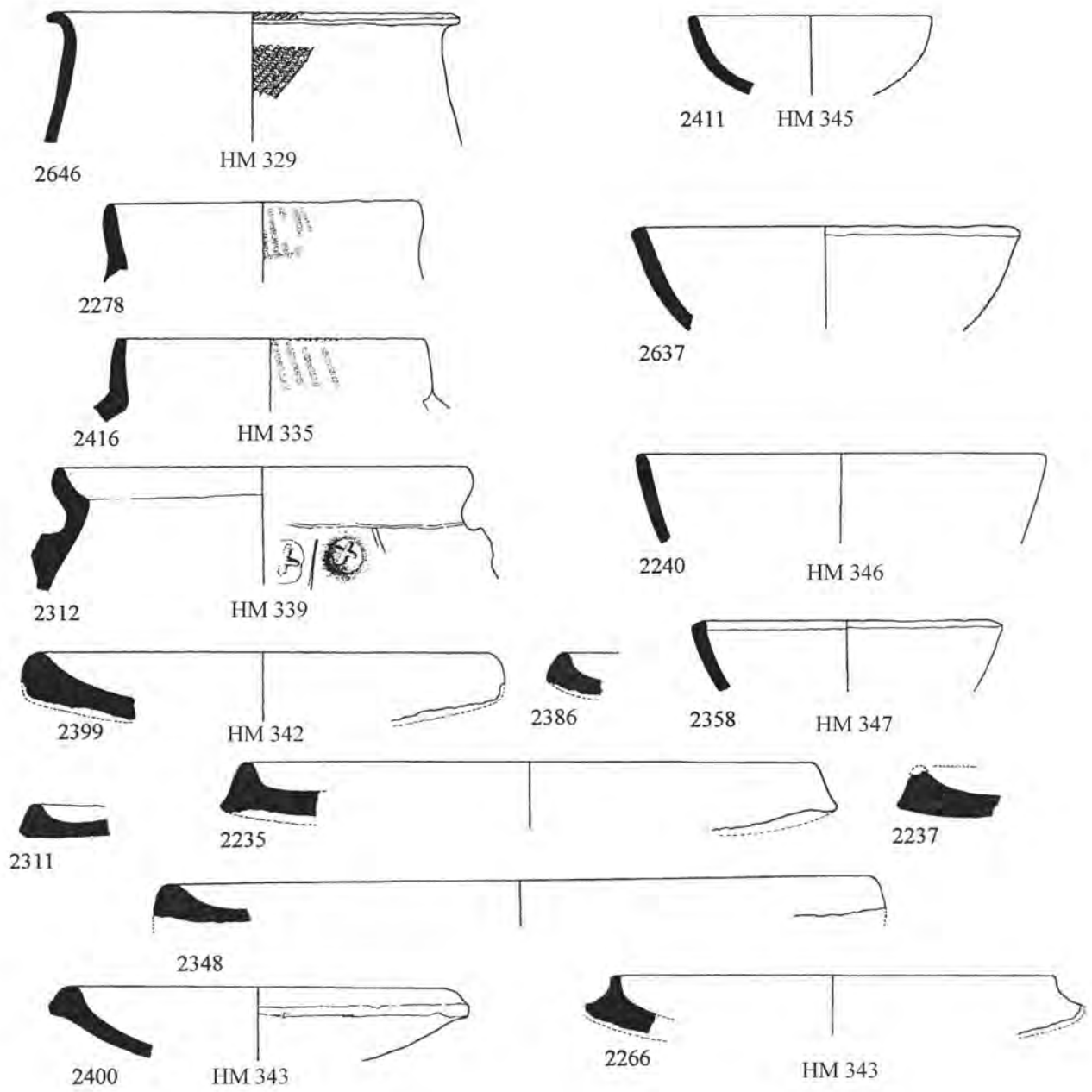


Figure 3.76. Period III handmade wares from Sāniat Jibrīl. 1:4.



Figure 3.77. Globular pots from Sāniat Jibrīl, a) – c) HM 337; d) HM 339. Scale of all pots is the same (CMD 1971).

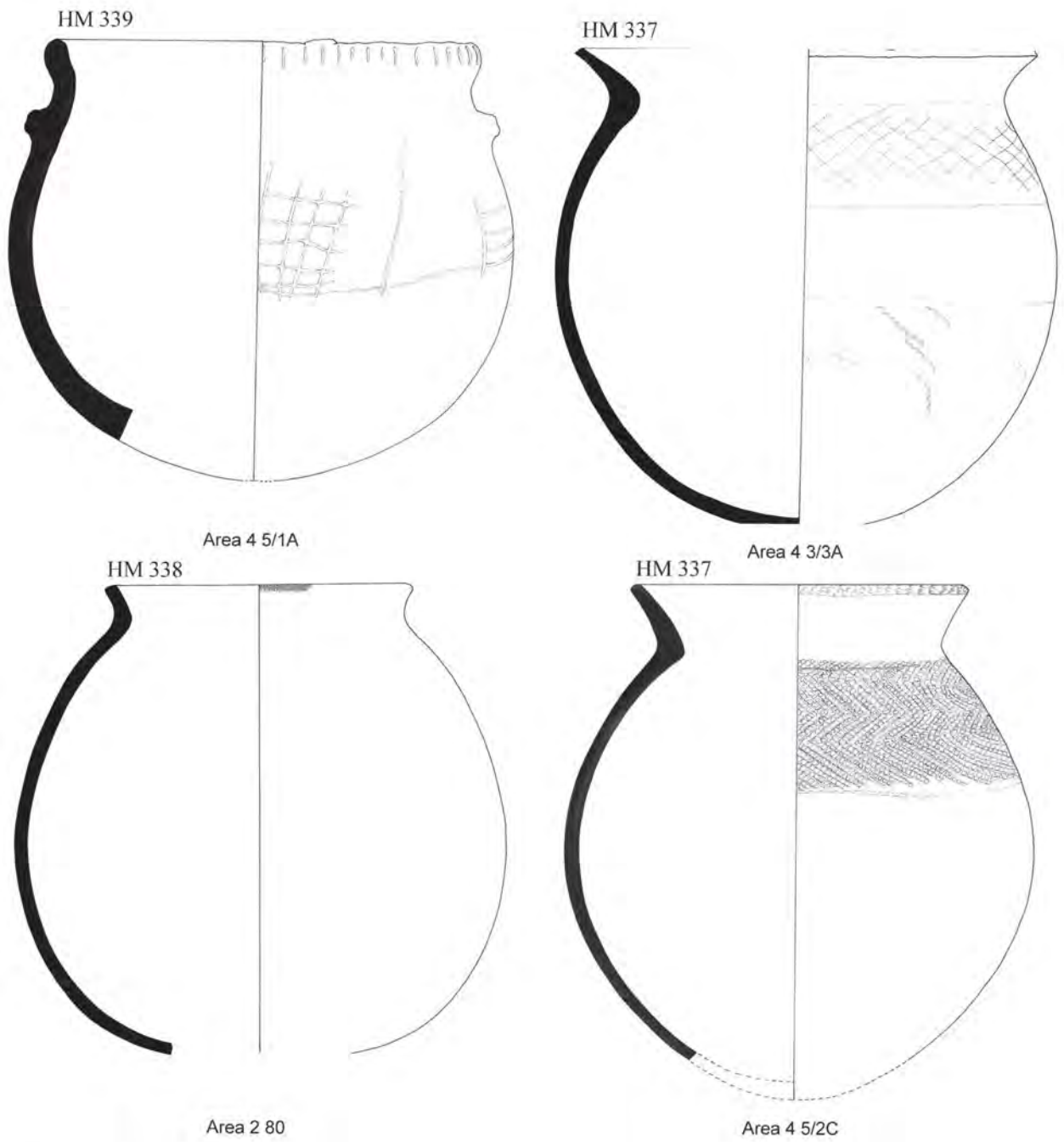


Figure 3.78. Profile drawings of globular pots. 1:4.

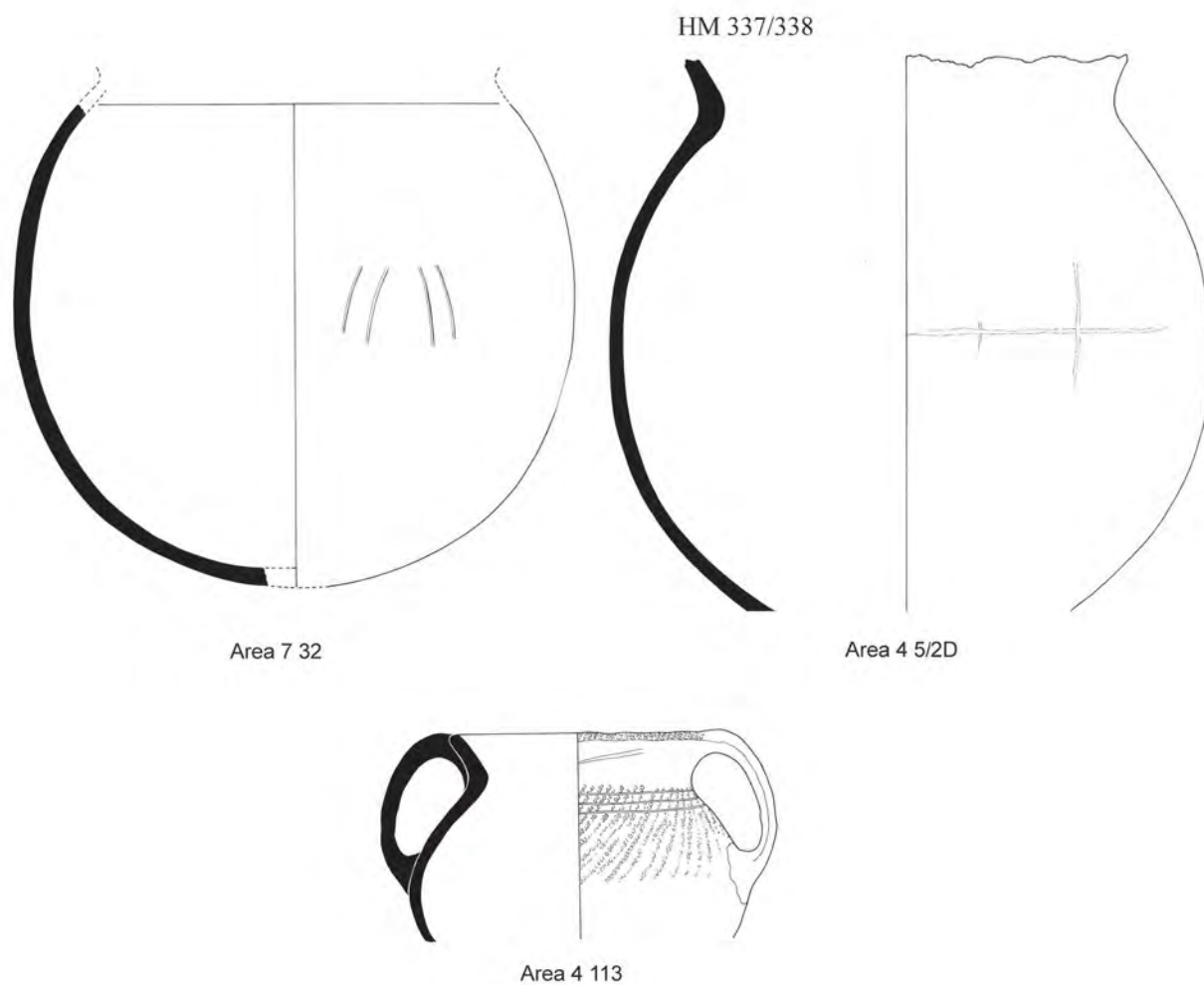


Figure 3.79. Profile drawings of globular pots. 1:4.



Figure 3.80. Bases of tripod incense burners from GER002. (CMD 1971).

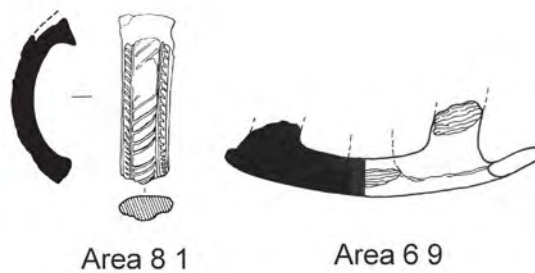


Figure 3.81. Handle and base of a tripod incense burner from GER002. 1:3.

## Manufacturing and Economic Activity

### *Bead Making*

One of the most important industrial activities at Sāniat Jibrīl was the manufacture of beads. This is shown by the abundance of both raw material debris and the tools used in the manufacturing process (Fig. 3.82). Although CMD's original excavations did yield some beads, it was not clear that they were being manufactured at the site. It was only with the recognition of the bead-polishers for what they were in 2000 (coupled with the results of the FP 1998–2000 grid survey) that it became obvious that manufacture of beads had taken place here on a considerable scale. Whereas the beads recovered from the excavations tended to be whole, finished articles, the survey found large numbers of both unfinished beads and raw materials.

The range of materials used in bead manufacture was considerable. Table 3.9 shows the number of beads and raw material fragments found in both CMD's original trenches and the FP 2000 survey. In terms of the actual beads found, it is clear that glass and ostrich eggshell were the most popular materials. Faience, carnelian and amazonite are far less common finds as beads. An interesting contrast is found between the number of carnelian beads found and the number of fragments of carnelian. Whereas carnelian beads account for only 3–7 percent of the assemblage, the raw material accounts for 44 percent of the raw material finds, a ratio of worked: unworked finds of 1:57. This contrasts strongly with amazonite which has a worked: unworked ratio of only 1:3.5. This perhaps suggests that the manufacture of carnelian beads might have been on a larger scale than the bead

finds would indicate, but that very few finished beads remained on the production site.

The other main source of evidence for bead manufacture is the bead-polisher. These small, grooved sandstone blocks had been excavated in considerable numbers by CMD but had remained something of a mystery (Table 3.10). CMD believed that they might have been involved in the weaving process and sometimes called them 'string-grooved stones', thinking that the grooves had been caused by friction from the strings of a loom. Careful examination of the stones shows that such a use is highly unlikely, since the cross-cutting patterns of wear on the stones would have disrupted the flow of any string. Far more plausible is their use as fine-grained sanders for polishing beads during manufacture. Similar grooved stones are now well-attested in the archaeological and ethnographic literature on the Saharan and Sub-Saharan zones (Bleek 1928; Dunn 1931; Friedman 2001; Lhote 1943; 1982). The technique of using fine-grained sandstone to gently rub away rough edges on ostrich eggshell beads is still current in many parts of the world today. A comparison of ostrich eggshell beads from Tinda and polishers from Sāniat Jibrīl resulted in a perfect match between the size of the grooves on the stones and the diameter of the beads, perhaps suggesting that ostrich eggshell was the material most commonly used with the polishers. However, the use of the grinders in also shaping and polishing stone beads cannot be excluded.

The bead-polishers are important from another point of view, as they are the only bead-related artefacts that come from stratigraphic contexts in any numbers. The vast majority of the polishers come from a single dump context (65) in Room 4.4, which appears to date to Period II and later.

*Table 3.9. Numbers and percentages of beads and raw material fragments found in both CMD's original excavations and the FP 2000 survey.*

Material	CMD excavated beads	FP 2000 survey beads	FP 2000 survey Raw material fragments
Glass	12 (40%)	51 (27.5%)	184 (20.5%)
Faience	1 (3.3%)	10 (5.4%)	4 (0.4%)
Ostrich eggshell	7 (23%)	106 (57%)	237 (26.6%)
Carnelian	2 (6.6%)	7 (3.7%)	399 (44.8%)
Amazonite	4 (13%)	7 (3.7%)	25 (2.8%)
Other stone	4 (13%)	4 (2%)	40 (4.5%)
Totals	30	185	889





Figure 3.82. Bead production debris (DMP 2009).

This indicates that the manufacture of beads was current during the 2<sup>nd</sup> century AD. Finds from other contexts across the site suggest that it was also being practised both before and after this time, as Table 3.6 shows.

Ostrich eggshell and carnelian flakes were found in natural and partially-worked states, alongside beads in all stages of completion. Carnelian chippings were found in both their raw (pale orange) and fire-modified (bright red) states, indicating that the raw material was being both flaked to shape and ash-fired on site. While much of the carnelian was perforated for beads, a number of unfinished cabochons and intaglios have also been recovered, suggesting that the workings may be part of a broader jewellery-production industry. A single engraved carnelian intaglio was recovered from the site in 2009, though this is thought by Martin Henig to be of standard Mediterranean workmanship and thus a re-importation of an intaglio, rather than evidence of Garamantian gem-cutting.

Ostrich eggshell fragments were first perforated before being chipped into a roughly circular shape.

Amazonite bead fragments, roughly shaped and broken across the perforation are also common, but the absence of large quantities of raw amazonite suggests the stone was brought to the site at the rough-out stage for final shaping, perforation and polishing only.

The final shaping and polishing of all three materials is likely to have been achieved using the sandstone and limestone bead grinders also found at the site. Bead grinders are usually fist-sized or smaller, exhibiting rows of grooves with a hemispherical cross-section (see catalogue in Chapter 8, below). Groups of perforated but otherwise rough beads would have been shaped and polished by rubbing along these grooves. It is not certain whether the beads were strung together or mounted on a short section of wire while being shaped, but it is clear that simple ring and disc beads must have been shaped in groups. Broken and unfinished stone and ostrich eggshell beads greatly outnumber the complete beads of these materials at GER002. The presence of small quantities of copper alloy on site and evidence

Table 3.10. *Bead grinders/polishers from CMD's excavations at Sāniat Jibrīl.*

Area	Room	Context	Quantity	Period
2	2.1	13	2	I
2	2.8	37	3	III
2	2.8	41	1	II
4	4.2	11	4	?
4	4.1	39	5	?
4	4.8	49	1	?
4	4.4	65	56	II
4	4.5	73	3	III
4	4.4	74	6	II
4	4.1	76	1	?
4	4.1	88	1	I
4	4.5	94	5	II
4	4.9	108	1	III
4	4.10	116	1	?
4	4.10	117	5	?
4	4.10	140	1	?
6	6.11	10	1	I
6	S Room 6.6	14	2	I
6	6.12	21	2	I
6	6.11	19	1	II
	Unstrat		3	
		Total	105	

for small-scale metalworking identified indicate copper remelting was taking place: an activity which may have included jewellery making.

The range of finds collected by the FP and DMP at Sāniat Jibrīl suggest strongly that industrial activities at GER002 included all stages in the process of stone and ostrich eggshell bead production, additionally using glass and faience beads, probably in association with metalworking. The extent of the finds and differences in the stages of manufacture evidenced argue strongly for a reinterpretation of the site as a locus for beadmaking and jewellery production on a very large scale, rather than simply a domestic activity.

The absence of discussion of many of these materials from CMD's published interim reports may potentially be explained by their size – as many of these finds are extremely small, it is possible that they were missed by CMD as the spoil from the 1960's excavations was not sieved.

Although identified by Petrie as early as the 1890s (Friedman 2001), bead grinders are only rarely recognised as such even today (see Chapter 8 below, for a fuller discussion).

In addition to the 105 bead polishers from CMD's excavations, a further 44 were found by the FP 2000 survey (see Cole in Mattingly 2007, 478–80). At least two are known from Jarma (from context 4.19) and a few are known from elsewhere (ZIN001–003; GER016; GER027). It was clear from the distribution of bead polishers and bead-related surface finds at Sāniat Jibrīl that a large amount of material collected in the FP survey originated from the CMD spoilheaps and that more of this was being recovered from the spoilheaps on the south of the site (that is relating primarily to Area 4).

In order to test this observation and to provide some quantified data on the density of bead-making debris within the CMD spoilheaps, we carried out systematic sampling on 25 January 2009. The work was supervised by Hafed Abdulī, with Abdul Rahman and Ishmael al-Khair carrying out the careful sieving using 1 mm mesh. A west-east line was set up on the south side of the excavated building complex, starting 12.5 m south of the south-west corner of the excavated building and running along the mound of the CMD spoil heap parallel to the building. Sampling locations were marked out every 5 m and numbered 1–9 from west to east. At each location, five buckets of spoil were sieved through the 1 mm mesh sieve (the capacity of one bucket being 5 l, the total sample at each location was 25 l). Any beads, stone chips, ostrich eggshell (OES), and other cultural material was collected. The total volume of sieved earth along the south spoil heap was thus 225 litres. In addition Hafed Abdulī walked a 2 m-wide transect along the tape between sampling locations collecting additional surface material. This was separately labelled and bagged for each interval.

The exercise was then repeated on the north side of the CMD excavation, along his spoil heap on that side of the building, starting 10 m north of the north-west corner of the complex and sampling every 5 m on a line aligned west to east. A further nine collection points were made here, but the volume of soil sieved at each location was reduced to 3 x 5 l buckets (that is a total of 15 l at each location). The total volume of sieved earth was thus 135 litres spoil.

Finally the exercise was repeated on a north-south line down the east side of the CMD

Table 3.11. Distribution of beads collected in systematic sampling of CMD spoilheaps (numbers in parentheses are unfinished beads).

	OES	Carnelian	Amazonite	Stone other	Faience	Glass
<b>Total S s/h sample</b>	12 (11)	0 (1)	0 (2)	2	0	3
<b>Total S surface coll</b>	4 (6)	1	0	1 (6)	1	2 (1)
<b>Total N s/h sample</b>	2	2	0	2 (1)	0	1
<b>Total N surface coll</b>	0 (3)	2 (2)	0 (1)	1 (2)	0	6 (1)
<b>Total E s/h sample</b>	1 (3)	0	0 (1)	0	1	5
<b>Total E surface coll</b>	5 (6)	1 (1)	0	0 (1)	1	10 (2)
<b>Total s/h sample</b>	15 (14)	2 (1)	0 (3)	4 (1)	1	9
<b>Total surface coll</b>	9 (15)	4 (3)	0 (1)	2 (9)	2	18 (4)
<b>TOTALS</b>	<b>24 (29)</b>	<b>6 (4)</b>	<b>0 (4)</b>	<b>6 (10)</b>	<b>3</b>	<b>27 (4)</b>

Table 3.12 Distribution of sandstone bead grinders and raw materials collected in systematic sampling of CMD spoilheaps. 'Glass' mainly comprises small pieces of vessel glass, probably collected as cullet; 'Other' mainly consists of fragments of copper alloy, again probably being collected here as cullet for metallurgy.

	SS Bead grinders	OES	Red Carnelian	Orange Carnelian	Amazonite	Other stone	Glass	Other
<b>Total S s/h sample</b>	1	52	42	9	0	12	10	5
<b>Total S surface coll</b>	4	29	37	10	0	3	11	10
<b>Total N s/h sample</b>	0	11	17	9	1	2	10	4
<b>Total N surface coll</b>	1	19	22	6	0	3	18	8
<b>Total E s/h sample</b>	1	2	23	8	2	1	5	7
<b>Total E surface coll</b>	0	23	102	30	1	2	27	5
<b>Total s/h sample</b>	2	65	82	26	3	15	25	16
<b>Total surface coll</b>	5	71	161	46	1	8	56	23
<b>TOTALS</b>	<b>7</b>	<b>136</b>	<b>243</b>	<b>72</b>	<b>4</b>	<b>23</b>	<b>81</b>	<b>39</b>

excavation trench, commencing due east of the north-east corner of the building complex and again sampling every 5 m along the visible spoil heap, with six sample locations in total and a total of 15 l per location (90 l spoil total).

A total of 722 items was collected, of which no less than 117 were beads (the material is presented in detail as Table 3.17 below). The material collected can be tabulated in terms of beads (Table 3.11, including a large number of

demonstrably unfinished beads in a range of materials) or bead grinders and raw materials (Table 3.12). It is readily apparent that the southern spoil heap produced larger quantities of most categories of find, both from the dug sample and the surface collection. For instance almost half the finished and unfinished beads came from the south spoilheap (53), with only 26 from the north side and 38 from the east side. However, taking account of the smaller quantity of spoil sieved

Table 3.13. Volumetric modelling of potential bead distribution per cubic m of earth from GER002 excavation spoilheaps, based on relative size of samples taken from south (S), north (N) and east (E) spoilheaps.

	OES	Carnelian	Amazonite	Stone other	Faience	Glass	Total beads
<b>Totals S</b>	12 (11)	0 (1)	0 (2)	2	0	3	31
<b>Total S per 1 cubic m</b>	53.33 (48.89)	0 (4.44)	0 (8.89)	8.89	0	13.33	137.78
<b>Totals N</b>	2	2	0	2 (1)	0	1	8
<b>Total N per 1 cubic m</b>	14.81	14.81	0	14.81 (7.41)	0	7.41	59.26
<b>Totals E</b>	1 (3)	0	0 (1)	0	1	5	11
<b>Total E per 1 cubic m</b>	11.11 (33.33)	0	0 (11.11)	0	11.11	55.56	122.22
<b>Total Spoilheap</b>	15 (14)	2 (1)	0 (3)	4 (1)	1	9	50
<b>Total per 1 cubic m</b>	33.33 (31.11)	4.44 (2.22)	0 (6.67)	8.89 (2.22)	2.22	20.00	111.11
<b>If total spoil from GER002 = 60 cubic metres</b>	2000 (1867)	267 (133)	0 (400)	533 (133)	133	1200	6667
<b>If total spoil from GER002 = 120 cubic metres</b>	4000 (3733)	533 (267)	0 (800)	1067 (267)	267	2400	13333

Table 3.14. Volumetric modelling of potential raw materials distribution per cubic m of earth from GER002 excavation spoilheaps, based on relative size of samples taken from south (S), north (N) and east (E) spoilheaps.

	Stone	OES	Red Carnelian	Orange Carnelian	Amazonite	Other stone	Glass	Other	Total
<b>Totals S</b>	1	52	42	9	0	12	10	5	131
<b>Total S per 1 cubic m</b>	4.44	231.11	186.67	40.00	0.00	53.33	44.44	22.22	582.21
<b>Totals N</b>	0	11	17	9	1	2	10	4	54
<b>Total N per 1 cubic m</b>	0.00	81.48	125.93	66.67	7.41	14.81	74.07	29.63	400
<b>Totals E</b>	1	2	23	8	2	1	5	7	49
<b>Total E per 1 cubic m</b>	11.11	22.22	255.56	88.89	22.22	11.11	55.56	77.78	544.45
<b>Total Spoilheap</b>	2	65	82	26	3	15	25	16	234
<b>Total per 1 cubic m</b>	4.44	144.44	182.22	57.78	6.67	33.33	55.56	35.56	520
<b>If total spoil = 60 cubic metres</b>	267	8667	10933	3467	400	2000	3333	2133	31200
<b>If total spoil = 120 cubic metres</b>	533	17333	21867	6933	800	4000	6667	4267	62400

on the north and east side of the CMD trench, it is clear that *all* parts of the excavation produced abundant evidence of bead-making paraphernalia and other manufacturing detritus.

Some other distinctions are hinted at by the data. For instance, it appears that the vast majority of sandstone bead grinders together with ostrich eggshell beads and fragments of undrilled ostrich eggshell were retrieved from the south side, hinting

at some concentration on ostrich eggshell bead production in Area 4 perhaps. On the other hand, there are much larger quantities of chippings of red and orange (unheated) carnelian from the east spoilheap, perhaps indicating that Area 6 was an area with some specialism in the processing of that material. Overall, though, the sampling exercise has demonstrated that all parts of the CMD excavation were heavily implicated in

bead-making activity. The uppermost levels on the spoilheaps that have been sampled ought in general to relate to the earlier phases of the site, but there seems no reason to doubt that bead-making was a major occupation at the site in all phases.

There are major implications for excavation methodology to be considered from all this. The CMD excavations at GER002 can be (conservatively) estimated to have moved something in the order of 60–200 m<sup>3</sup> of earth and the sieving and surface collection provides some order of magnitude data on how many beads (and chips of the raw materials) that sandy matrix may have contained in total (Tables 3.13–3.14). The total retrieved beads from the CMD excavations (30) needs to be set against the huge numbers that were missed – running into many thousands – with serious implications for the interpretation of the site, were it not for the subsequent survey work. Overall, we estimate that the total bead and raw material fragments within just the small area excavated by CMD to have numbered between 38,000–76,000.

Given the importance of beads in Saharan society in general, and in Trans-Saharan trade networks in particular, a key recommendation arising from this is that Saharan and Sub-Saharan archaeologists need to employ rigorous sieving regimes if this vital evidence for trade and contact is not to be missed or under-emphasised in future excavations.

### Weaving

Some 54 loomweights were recovered from Sāniat Jibrīl, although only 14 of them came from datable contexts (Figs 3.83–3.84 and Table 3.15). Some were found in Room 2.1, context 33, associated with a U-shaped feature. The presence of loomweights indicates the use of the loom familiar from the Mediterranean and northern Europe, in which the warp is strung vertically and held taught by weights. The fact that so few of the weights could be dated is unfortunate, but we can at least begin to make some progress. Three of the weights came from Period I contexts, four from Period II contexts and seven from Period III contexts. It seems clear that weaving was practised at the site during the entire time that it was occupied, apparently in all parts of the site.

Although no details of the dimensions and other attributes of the loomweights have survived in the CMD archive, the numerous drawings allow

their character to be assessed (Fig. 3.83). The loomweights were generally pyramidal in form and made of clay, with a pierced hole near the upper point. Some were more regularly square in section and others more rounded. Many of the examples recovered had been discarded when the loomweight split across this perforation (Fig. 3.84). Some show signs of having more than one perforation made, before being discarded. Typical dimensions are *c.* 10–15 cm tall, with base dimensions of *c.* 6 x 6 cm square or 5–6 cm diameter (for other published Garamantian loomweights see L. Mori in Liverani 2006a, 319–21, though those examples from Aghram Nadarif were slightly smaller than the examples illustrated in this report). These are closely similar to standard Mediterranean/Nilotic loomweights of the latter centuries BC and early centuries AD and they relate to the use of warp-weighted looms. In Fāzzan their use seems to have persisted into the Late Garamantian period, whereas in the Mediterranean the warp-weighted loom gave way to the Z-bar loom *c.* AD 100 (A. Wilson, pers. com.).

Table 3.15. Loom weights from Sāniat Jibrīl.

Area	Room	Context	Quantity	Period
2	All Area 2 rooms	12	2	III
2	All Area 2 rooms	13	2	I
2	2.4?	37	1	III
2	2.8	33	3	II
4	-	5/1	2	?
4	-	3/1	2	?
4	4.4	20	2	?
4	4.8	25	3	?
4	4.11	35	4	III
4	4.1	91	1	II
4	4.5	97	1	I
4	4.9	99	1	II
4	4.8	105	1	?
4	4.8	119	1	?
6	?	?	6	?
7	?	?	12	?
9	?	?	1	?

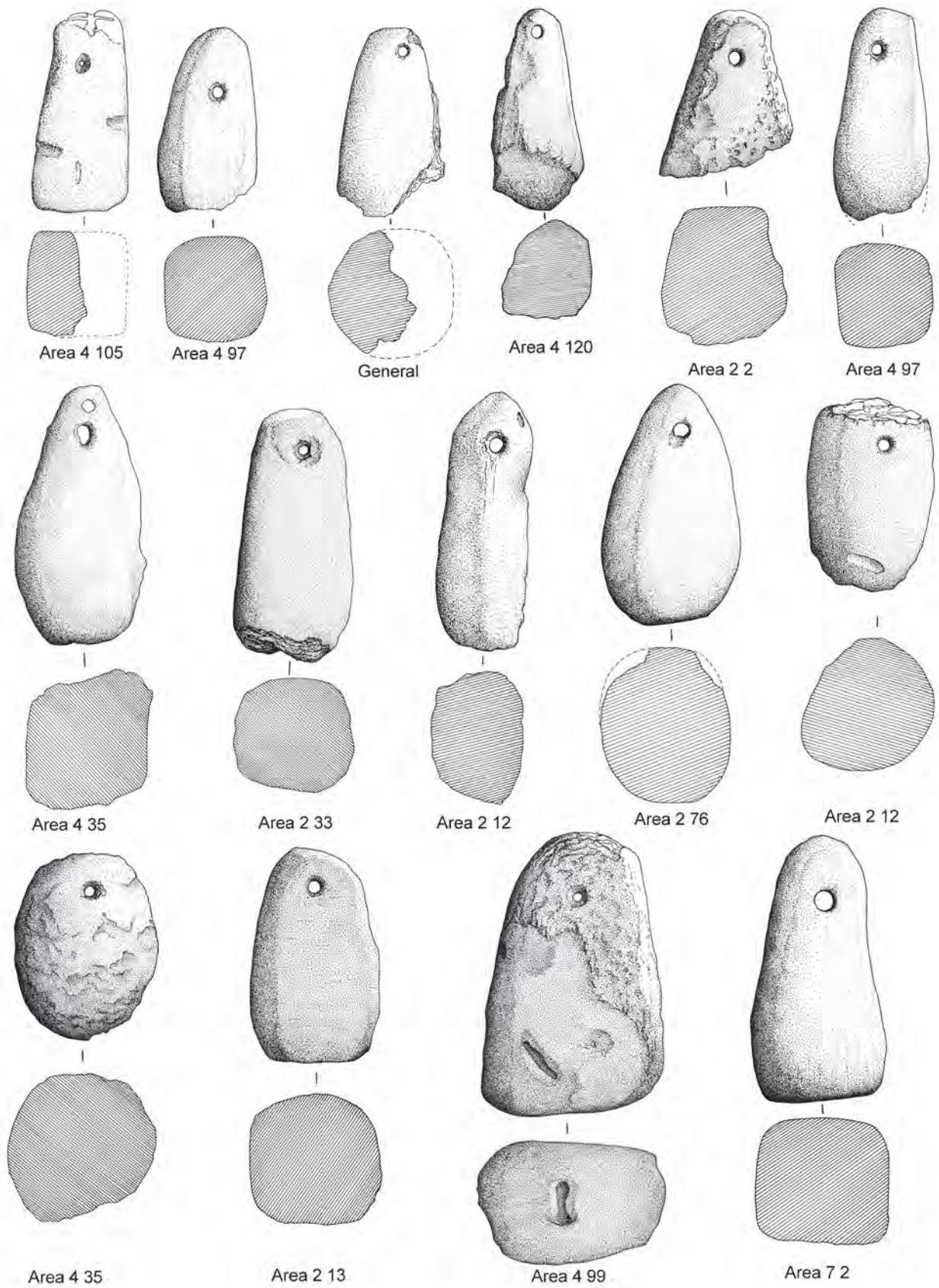


Figure 3.83. Loom weight drawings. 1:3

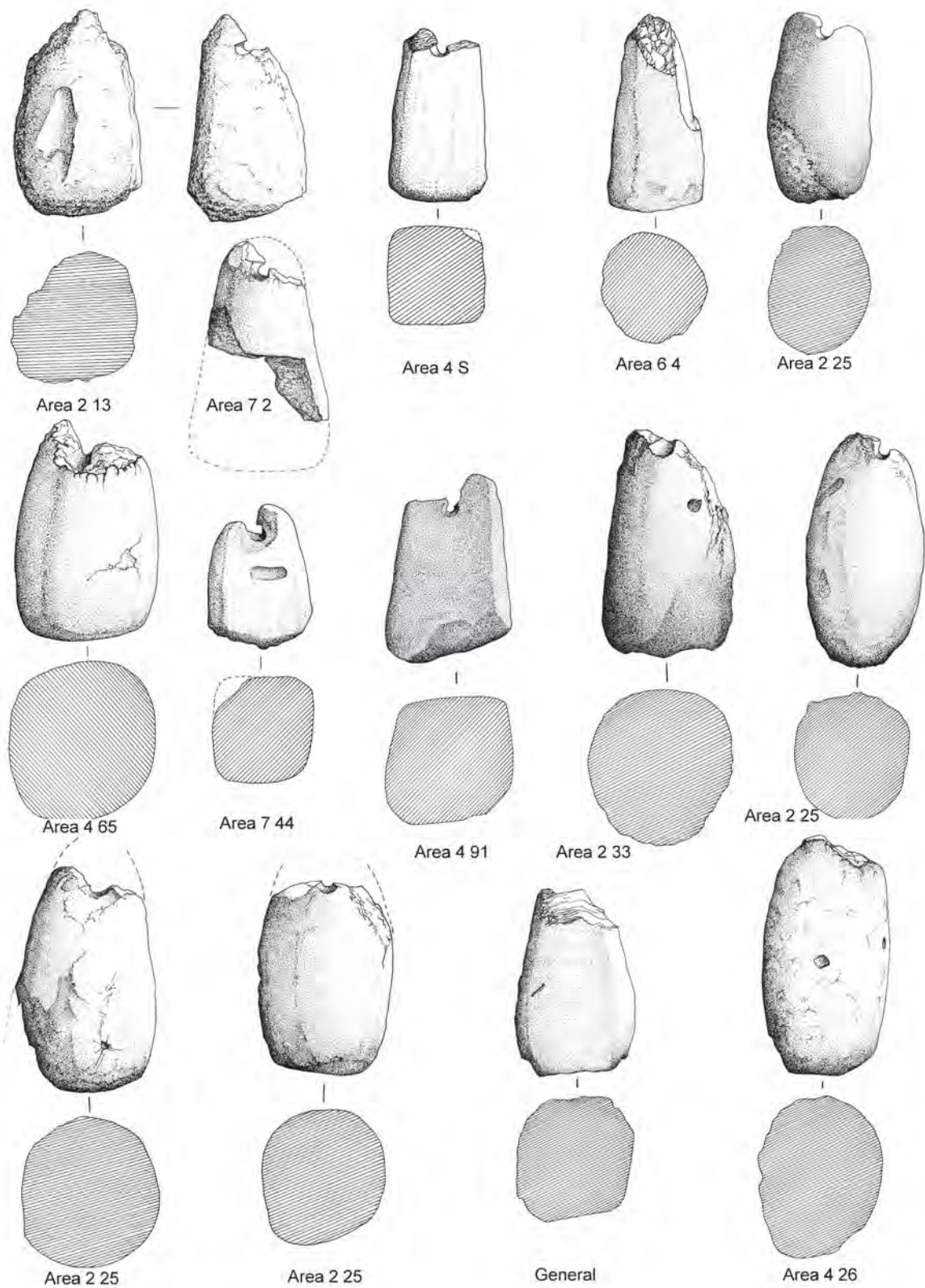


Figure 3.84. Loom weight drawings. 1:3.

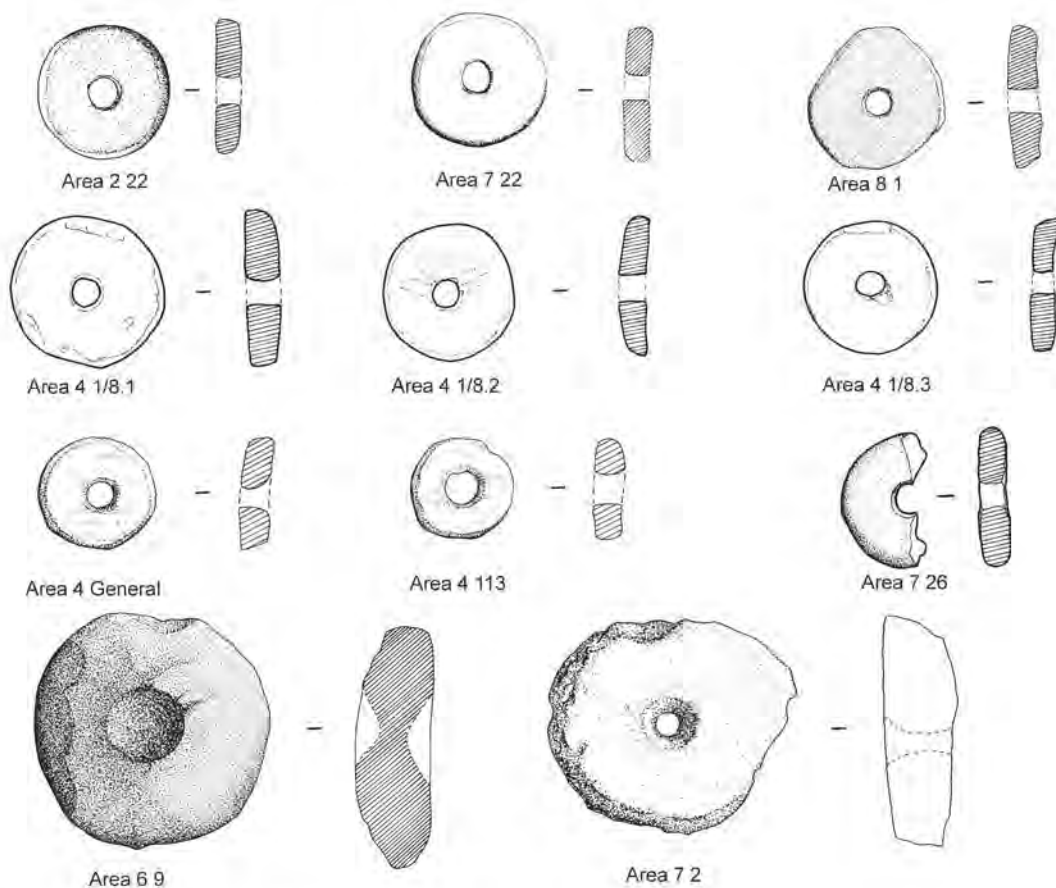


Figure 3.85. Spindle whorls from Sāniat Jibrīl 1:1.

The introduction of this imported technology to the central Sahara is of interest in itself, but the longevity of a distinct weaving tradition once established is also significant.

In addition, there were quite a number of spindle whorls recorded, generally fashioned from pierced and rounded potsherds, with average diameters of 5–7 cm (nine ceramic and two possible stone examples – one unfinished – are shown on Fig. 3.85). Both the loomweights and spindle whorls are paralleled by finds from the FP survey at GER002 (Mattingly 2007, 480) and the FP Jarma excavations.

Given the evidence that is now emerging about the quality of Garamantian textiles (Mattingly *et al.* 2007; 2008), it is quite likely that the manufacture of textiles was another facet of the economic portfolio at Sāniat Jibrīl. Although only visible at Sāniat Jibrīl because of the presence of loomweights, it is possible that this was a significant and large scale aspect of the productive activity.

### *Metalworking*

There are indications from the CMD excavations to suggest that metalworking may also have been practised in the building complex. This ties in with the survey evidence for extensive metalworking at the site (Fig. 3.11) and a photograph in the CMD archive appears to show a small metalworking hearth excavated intact from one of the 1965 trial trenches, though no written description of this has survived. The most direct evidence otherwise is a fragment of slag (SF 315 in the CMD archive) found in a charcoal-rich deposit in Room 4.7. This deposit appears to date to Period III and is contemporary with a furnace between Rooms 4.9 and 4.10. Some 65 copper alloy artefacts and fragments were also found in the excavation (see Chapter 8 below). Taken together with the 170 copper alloy fragments and artefacts recovered by the FP 2000 survey these might indicate that the site was engaged in collecting broken copper-alloy artefacts for reworking. Only seven pieces of iron were recovered from the excavations, including one knife blade and a number of irregular lumps.



*Coin use*

Sixteen coins have been recovered from the excavations and surveys around Sāniat Jibrīl. Seven of these come from the original excavations and CMD's survey of the area, and nine come from the FP surveys. Only two of the coins from the excavations came from datable contexts: the first (CMD SF 243) was found in a Period I context in Area 2. The second is from a Period III context from Area 4 (CMD SF 304). The whereabouts of these coins and any details of their date and type are unknown. However, comparison with the coins collected during the FP survey would suggest that these were Roman coins and some at last were silver *denarii*. One interesting possibility is that they were in use not as money, but as a bullion supply of silver for metalworking at the site (Sauer, in Mattingly 2007, 463–64). There are some Late Roman coins among the survey assemblage also and these were of much lower precious metal content. There is no evidence from any Garamantian site to suggest that coins were in regular use as currency. Other commodities, such as beads or salt, have a long history of serving as money in Saharan trade.

*Glass and Pottery Making*

There are a number of hints that glass-making was also carried out alongside other pyrotechnical processes at Sāniat Jibrīl. The amount of glass found at the site (see *AF 2* and below, Chapter 8) is unusually high for a settlement and it has been suggested that some of this may represent the collection of broken glass cullet for reprocessing (Mattingly 2007, 481) – perhaps primarily used for bead production. There are some glass pellets among the surface collection material that could be blanks for bead production – reminiscent of similar finds from Zinkekrā. Some of the slag at the site has been visually identified as perhaps from glass-working, though this has not yet been confirmed by scientific analysis.

Pottery production at Sāniat Jibrīl was originally suggested by Ayoub and dismissed by CMD, when his early investigations identified not kilns but metalworking hearths. However, it remains plausible that pottery production was among the pyrotechnical processes carried out at Sāniat Jibrīl. The presence of fragments of handmade incense burners (generally used in funerary contexts) is one suggestive indicator. Pottery may well have been

fired in bonfire clamps rather than kiln structures and have left little physical trace, beyond deposits of ash and charcoal, which are widespread in and around the site (Fig. 3.11). These are both possibilities that future work at the site might seek to evaluate more fully. A key conclusion of the study of Garamantian handmade pottery at Aghram Nadarif was that pottery production was domestic activity and primarily woman's work, with strong resemblances with Sahelian pottery traditions – suggesting a southern origin of some of these female potters and of what became a long-standing ceramic tradition in Garamantian society (Gatto 2006, 239–40). This very much echoes our conclusions from the assemblage at Sāniat Jibrīl. There are certainly profound similarities between the early historic pottery of Fazzān and of the Sub-Sahara zones (see for example, Bernus and Cressier 1991, 43–93).

**Food Processing***Processing Activity in Periods I and II*

It seems likely that in Period I (and possibly II) cereal grinding (and much other basic food processing) was carried out at Sāniat Jibrīl using saddle querns and rubbers. The CMD records relating to the saddle querns and rubbers and rotary querns are not detailed, though some material was drawn or photographed (Figs 3.86–3.88). Only two rotary querns come from contexts which might date to these periods (Area 6, contexts 21 and Area 7, context 2). On the other hand, no complete saddle querns are recorded in the archive as coming from Sāniat Jibrīl. It is possible that it simply reflects a fault of artefact collection and recording. Saddle querns can be very thin and break easily. The potentially small fragments produced might not have been recognised during the course of a primarily shovel-based excavation. Alternatively, these items may have been carefully curated within society and disposed of in a particular way that reduces their visibility (for instance, by inclusion in burials during a certain phase of Garamantian society). The food-processing artefact that survives more readily and is thus more easily recognised during excavation is the rubber (or pounder). Of the 32 rubbers recorded from Sāniat Jibrīl (Fig. 3.88), 21 came from datable contexts (Table 3.16). Of these, three came from Period I contexts, 17 from Period II contexts, and only one from a Period III context. A total of 15 were retrieved from



Figure 3.86. Photograph of quernstones from GER002 excavations (CMD 1971).

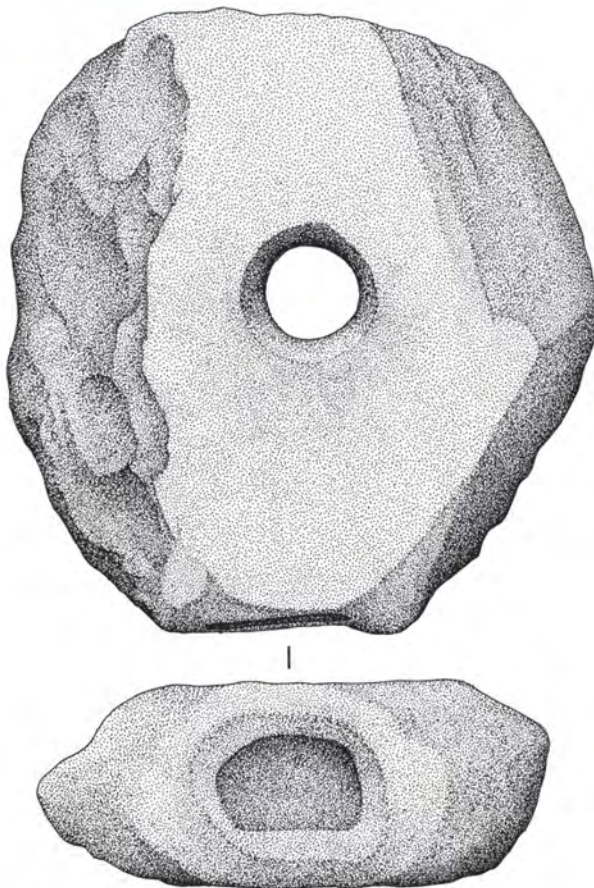


Figure 3.87. Drawing of rotary quernstone from GER002. 1:3.

Table 3.16. Rubbers from Sāniat Jibrīl.

Area	Room	Context	Quantity	Period
2	2.1	13	1	I
2	All rooms	11	3	II
2	2.3	28	1	II
2	2.8	33	5	II
2	2.4?	37	1	II
2	2.8	55	1	II
2	2.2	27	1	?
4	4.1	91	2	II
4	4.9	99	2	II
4	4.5	73	1	III
4	-	1/8	3	?
4	4.5	115	1	?
6	6.12	21	1	I
6	6.12	9	1	II
6	S of 6.8	15	1	?
7	7.1a	57	1	I
8	All rooms	1	4	?

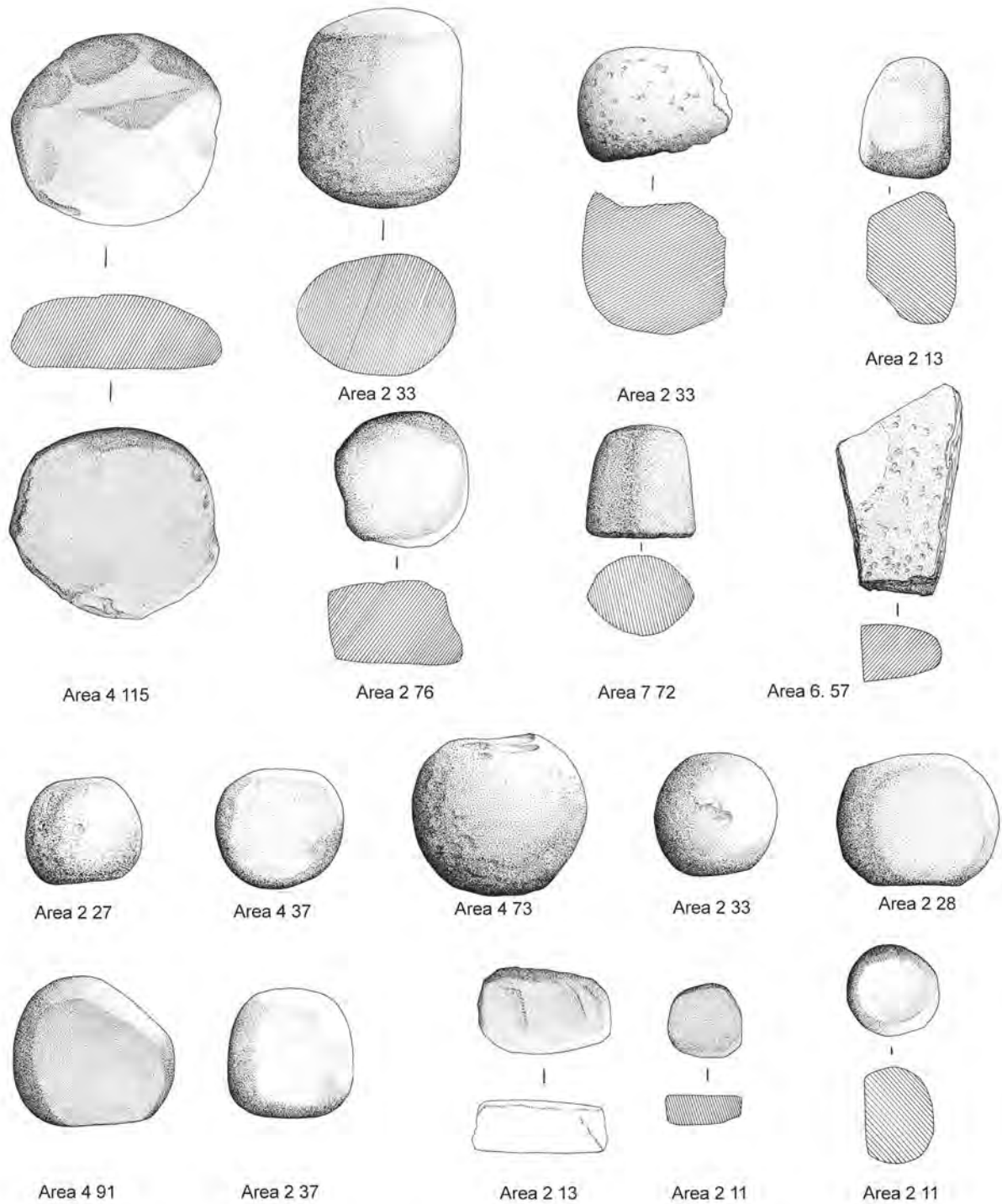


Figure 3.88. Grinding and pounding stones and rubbers from GER002. 1:3.

Area 2, 10 from Area 4, three from Area 6 and four from Area 8. The distribution may suggest that in Period II the majority of corn processing work was carried out in the western part of the site. The Period I finds are too scanty to allow any proper spatial analysis, but two of the three from Period I do come from Area 2. The vast majority of the Period II finds come from Area 2, and it is

possible that this area of the site was specialising in grain processing at this time. However, it could also relate to patterns of rubbish disposal as parts of the building complex were abandoned.

During the lifetime of the Sāniat Jibrīl settlement there was a change in quern technology from the use of the saddle-quern-and-rubber technique in favour of rotary quernstones – another import

of technology from the Mediterranean world (Fig. 3.86–3.87). The transition seems to have occurred during Period II (and this may account for the large numbers of discarded rubbers at this time). Data from the cemetery site of Sāniat bin Huwaydī can help refine this technological switch in that the inclusion of saddle querns in burials seems to have ended during the 2<sup>nd</sup> century. A more detailed account of Garamantian stone tools for food processing will be provided in *AF 4*, relating to the material from Old Jarma.

Botanical sampling by the FP at Sāniat Jibrīl proved inconclusive with regard to the processing of the crops. A test pit put into Room D in Area 4 (Room 12B on the overall plan) in January 2000 produced little beyond a few grains of barley. The contexts sampled were Period 0/I, but the quantity and nature of the material was not sufficient to prove that barley was being processed there, as the grains might simply have been background noise from elsewhere (R. Pelling, pers. comm.). However, the area sampled was a ‘mortared’ surface, and we should perhaps not expect such an area to be rich in plant remains.

#### *Processing Activity in Period III*

It appears that cereal grinding in Period III was undertaken using rotary querns, rather than saddle querns and rubbers. Of the seventeen fragmentary rotary querns recorded in the archive, only seven come from datable contexts. Of these, however, five come from Period III contexts. One comes from a Period II context (7 2) and one from a Period I context (6 21). However, we know from the excavation archive itself that there was also a number of rotary quern bases found *in situ*, located in Period III architectural features. These were in Room 2 and Room 3 (on the overall plan). Six rotary querns came from Area 2, compared to only one from Area 4.

#### *Mortars*

An interesting subclass of grinding tool is the mortar and pestle. It may be the case that some of the rubbers identified at Sāniat Jibrīl were in fact designed to be used as pestles or pounders with mortars. Once again, while potential grinder/pounder stones are plentiful, only one possible mortar was recovered from Sāniat Jibrīl, from Area 8 1 (SMC 262). It is described as follows: ‘Rectangular block, with indents on both ends

and two on each of three sides’. This block, with its eight hemi-spherical indentations, could conceivably have been used as a mortar. Blocks of stone with similar indentations, also interpreted as mortars, have been noted at other sites in the Wādī, including Old Jarma.

#### **Sāniat Jibrīl as a Consumption Site**

In addition to its role as a production centre, Sāniat Jibrīl was also a consumption centre. A wide range of goods manufactured elsewhere eventually found their way to the site, including fine ceramics, glass and amphorae. This seems to have begun sometime in the 2<sup>nd</sup> or 1<sup>st</sup> century BC. Ceramic fabrics matching those found at Tinda (part of the Class 20 range of flanged bowls) have been found in the immediate area by both CMD’s survey and the FP survey. Before long finer ceramic fabrics were being imported, including *terra sigillata* from Italy (ITS). The presence of significant quantities of ITS on the site shows that, from the later 1<sup>st</sup> century AD, Sāniat Jibrīl was part of the wider ceramic consumption network. The evidence here complements the picture of funerary assemblages at sites like Sāniat bin Huwaydī (Chapter 5). From the late 1<sup>st</sup>/early 2<sup>nd</sup> century AD the site became more obviously part of the mainstream consuming network with the arrival of larger quantities of ARS from northern Tunisia. The supply of ARS continued, though on a reduced scale throughout the 3<sup>rd</sup> century, at which time it began to be replaced or supported by Tripolitanian Red Slip Ware. Although later ARS and TRS is found elsewhere in the Wādī, after the 4<sup>th</sup> century the supply of finewares to Sāniat Jibrīl seems to have dwindled and failed.

In addition to finewares, Sāniat Jibrīl also received considerable quantities of amphorae. Amphorae are by far the dominant ceramic class in all phases and in all areas. The majority of amphorae on site appear to be in versions of different Tripolitanian fabrics and forms. Variants of Tripolitania I and III presumably often contained olive oil, though some at least of the Tripolitanian containers were used for wine and fish sauces. The emphasis on drinking assemblages in the Sāniat bin Huwaydī burials strongly suggests that many of the amphora forms there were in fact for wine. It seems reasonable to assume that it was on the back of this trade that the finewares came to travel so far south. Although the amphora fabrics present on site

are not yet fully understood, there seems to be no reason to think they have date ranges much different to the other imported ceramics. They probably first began to arrive at the site at some time during the latter centuries BC and seem to have continued until at least the 3<sup>rd</sup> century AD.

Glass has also been found in significant quantities at Sāniat Jibrīl. In addition to the material preserved in the CMD excavation archive, small glass fragments were abundant on his spoilheaps (81 fragments collected in 2009). Regardless of the fact that additional material was undoubtedly missed by the excavators, the excavated finds from the CMD excavations are of considerable interest (see Hoffmann in Chapter 8, below). Combined with the analysis of the earlier FP survey glass from the site, this is an extraordinary assemblage of imported Roman glass, including pillar-moulded bowls, colourless bowls, a facet-cut vessel, a blobbed glass vessel, a multi-coloured trailed vessel, a fish beaker, various drinking vessels, jugs or bottles, large plates, glass lamps, etc. The date range of the diagnostic material spans the mid-1<sup>st</sup>/mid 2<sup>nd</sup> to 4<sup>th</sup>/6<sup>th</sup> centuries AD (see Hoffmann's discussion in Chapter 8 below). The assemblage at Sāniat Jibrīl is highly significant, indicating consumption of what must have been fairly expensive items from the Mediterranean.

### Sāniat Jibrīl as a Type Site?

Although Sāniat Jibrīl is the only Garamantian wadi-centre site apart from Jarma excavated on a substantial scale, it does share characteristics with a number of other sites found by survey. We might therefore define it as a type site for a particular class of settlement. The principal characteristics of Sāniat Jibrīl then are:

- a) It was a wadi-centre site, with some engagement with oasis cultivation;
- b) It also seems to have had an 'industrial' purpose – perhaps even more important than the agricultural one;

- c) It specialised in jewellery manufacture and bead making, as well as textile production;
- d) It was also a consumption centre;
- e) It seems to have been planned and well organised;
- f) Buildings were constructed in mudbrick, were multi-roomed and sometimes architecturally complex;
- g) It seems more like a 'village' than a 'town'.

These characteristics are starting to be found at other sites in the Wādī. Assemblages of metal slag and of carnelian chips, bead-polishers and beads have also been found at sites in the al-Ḥaṭīya area, though far less impressive in numbers of surface finds. Closer to Jarma, GER016 and GER027 (see Chapter 4 below) may prove to be similar sites. GER016 has produced a lot of glass finds and may possibly have been engaged in bead production. It may be then that there were a number of sites similar in function to Sāniat Jibrīl spread up and down the Wādī. There were definitely other sites that shared their general appearance with Sāniat Jibrīl. At GBD001, ELH003 and ELH006 there is a similar sense of an organised, planned built environment, something also matched by Qaṣr ash-Sharrāba further south in the Wādī Barjūj area. Unlike some of these other sites, Sāniat Jibrīl seems to have lacked defences in any phase of its life – though its proximity to the town of Jarma (certainly with a central defensive structure or *qasr* and perhaps external walls in its later phases) perhaps obviated this need.

On the other hand, the sheer quantity of surface finds and the wealth of manufacturing debris recorded at Sāniat Jibrīl set it apart from all other known Garamantian sites, with the possible exception of Old Jarma. Further excavations of oasis-centre settlements are needed to assess whether the productive craft orientation of Sāniat Jibrīl are anomalous (perhaps linked to supplying the consumer needs of the Garamantian capital) or whether other oasis villages also contained intensive manufacturing foci alongside their prime agricultural activities.

## Appendix 1

Table 3.17. Detail of 2009 systematic collection of material from surface and within CMD spoilheaps at Saniat Jibril. Amaz = amazonite; Carn = carnelian (R = red; O = orange); numbers in parentheses under bead types indicate unfinished items, broken in manufacture. Total material collected = 722 items; total beads = 117.

	Beads					Bead Grinders					Raw Materials					Notes
	OES	Carn	Amaz	Other Stone	Falence	Glass	Stone	Ceramic	OES	R Carn	O Carn	Amaz	Other stone	Glass	Other	
Sieved sample from CMD spoilheaps																
S1	2								3	4			1	3		gypsum crystal
S2	1 (8)					1			31	5			2	1		1 quartz crystal
S3	1								4	2	1			1		Cu alloy hook
S4									4	4						
S5	1 (1)								3	4			4			quartz chips x 4
S6		(1)				1			2	4				1		cam with cortex; Cu alloy frag x 1
S7	1 (2)			1					1	4			2	4	1	1 Cu alloy frag; quartz
S8	3								2	6	1		3	1		Cu alloy frags x 2; quartz crystal x 2
S9	3			1					2	9	7			2	1	banded agate; Cu alloy frag x 1
Totals	12 (11)	0 (1)	0	2	0	3	1	0	52	42	9	0	12	10	5	
N1										1			1			red st (non cam)
N2																
N3				(1)							1			5		white opaque st bead (1)
N4									2	2				1	1	glass working residue?
N5									6		1					cam with cortex
N6	1			2						3	1	1		2	1	Cu alloy frag x 1; grey/white st
N7	1	1							1	3	2			1	1	1 x slag
N8									2	3	1			1	1	Cu alloy frag x 1
N9		1								5	3		1	1		cam intaglio (carved)
Totals	2	2	0	2 (1)	0	1	0	0	11	17	9	1	2	10	4	
E1										3		1		1	1	Cu alloy frag x 1
E2	1 (1)								1	4		1				
E3			(1)				1			5	1		1	3		pink & yellow banded st
E4					1					4	2				2	Cu alloy frag x 2
E5	(1)								1	3	4				1	Cu alloy frag x 1
E6	(1)									4	1			1	3	Cu alloy frag x 3
Totals	1 (3)	0	0 (1)	0	1	5	1	0	2	23	8	2	1	5	7	
Total sample	15 (14)	2 (1)	0 (3)	4 (1)	1	9	2	0	65	82	26	3	15	25	16	

Table 3.17. Detail of 2009 systematic collection of material from surface and within CMD spoilheaps at Sāniat Jibrīl. Amaz = amazonite; Carn = carnelian (R = red; O = orange); numbers in parentheses under bead types indicate unfinished items, broken in manufacture. Total material collected = 722 items; total beads – 117. (cont.)

	Beads					Bead Grinders					Raw Materials					Notes
	OES	Carn	Amaz	Other Stone	Falence	Glass	Stone	Ceramic	OES	R Carn	O Carn	Amaz	Other stone	Glass	Other	
Surface Collection from CMD spoilheaps																
S1-S2	1 (5)			(1)		1	3		20	4				1	5	Cu alloy frags x 5; pink st
S2-S3				(1)					2	1	1			2		pink st
S3-S4									3	3						
S4-S5				1					1	2						Pink st, opaque whitish st
S5-S6	1 (1)				1				2	2	1			1	2	Slag x 1; Cu alloy frag x 1
S6-S7							1			9	4			5		
S7-S8				(1)					1	6	3		3	2	2	slag x 1; Cu alloy frag x 1; sandstone ring
S8-S9	2	1		(3)		1 (1)				10	1			1	1	white bead (1), marbled grey pendant (1); Cu alloy frag x 1;
<b>Totals</b>	<b>4 (6)</b>	<b>1</b>	<b>0</b>	<b>1 (6)</b>	<b>1</b>	<b>2 (1)</b>	<b>4</b>	<b>0</b>	<b>29</b>	<b>37</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>11</b>	<b>10</b>	
N1-N2																
N2-N3																
N3-N4		(1)				(1)				3			1			banded carn ovoid (1); slag
N4-N5	(3)			1		1			8	5	2				3	garnet chip?
N5-N6				(1)					3	1	1				3	Cu alloy frags x 3; marbled grey st
N6-N7		1		(1)		2			5		1			11		polished grey green st
N7-N8		(1)				2			2	5	1			2	1	crystalline turquoise; Cu alloy rivet and plate
N8-N9		1	(1)			1	1		1	8	1			5	1	Cu alloy item x 1
<b>Totals</b>	<b>0 (3)</b>	<b>2 (2)</b>	<b>0 (1)</b>	<b>1 (2)</b>	<b>0</b>	<b>6 (1)</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>22</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>8</b>	
E1-E2	2 (1)					2			3	13	4			10		other st = 1 red, 1 chipped black
E2-E3		1		(1)		2			4	23	6			5		1 carn pendant; red st pendant rough out
E3-E4	(2)				1	4 (1)			4	24	12	1		7	1	glass bangle frag x 1
E4-E5	1 (1)					1 (1)			6	23	7			2	2	Cu alloy frag x 2
E5-E6	2 (2)	(1)				1			6	19	1			3	2	glass bangle frag x 1; Cu alloy frag x1
<b>Totals</b>	<b>5 (6)</b>	<b>1 (1)</b>	<b>0</b>	<b>0 (1)</b>	<b>1</b>	<b>10 (2)</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>102</b>	<b>30</b>	<b>1</b>	<b>2</b>	<b>27</b>	<b>5</b>	
<b>Total surface</b>	<b>9 (15)</b>	<b>4 (3)</b>	<b>0 (1)</b>	<b>2 (9)</b>	<b>2</b>	<b>18 (4)</b>	<b>5</b>	<b>0</b>	<b>71</b>	<b>161</b>	<b>46</b>	<b>1</b>	<b>8</b>	<b>56</b>	<b>23</b>	
<b>TOTALS</b>	<b>24 (29)</b>	<b>6 (4)</b>	<b>0 (4)</b>	<b>6 (10)</b>	<b>3</b>	<b>27 (4)</b>	<b>7</b>	<b>0</b>	<b>136</b>	<b>243</b>	<b>72</b>	<b>4</b>	<b>23</b>	<b>81</b>	<b>39</b>	

## 4. TRIAL EXCAVATIONS AT SĀNIAT SULAYMĀN KRAYDA (GER027)

By D. N. Edwards, C. M. Daniels<sup>†</sup> and D. J. Mattingly

### INTRODUCTION

In April 1977, attention was drawn to a possible ancient settlement site at Sāniat Sulaymān Krayda (generally called 'Saniat Suleiman Craida' in CMD's notebooks), some 200 m north-west of the cemetery at Sāniat bin Huwaydī (GER011). The site was relocated and recorded as GER027 by the FP (Mattingly 2007, 128–29). Ancient pottery was found over much of the area between the two Sāniats but in this area there was a low mound with many sherds and traces of mudbrick walls on the surface. There was also a small 'modern' mudbrick structure on the mound, already falling into decay. A trial excavation was carried out to the east of this structure to determine the nature of the occupation on the site and, if possible, to obtain a more precise indication of the date of the mound. A draft report was prepared by CMD and forms the bulk of the text included here.

Follow-up survey by the FP in 1999 made a systematic surface collection in 50 x 50 m grid squares in an east-west transect across the low mound (Fig. 4.1). The CMD trench was still discernible at the south-east edge of the fieldwalked grid squares. It thus appears that the building excavated was on the eastern periphery of the settlement. Pottery densities were highest in the centre of the mound, but it is not certain that the full extent of the site was covered (Table 4.1). Some additional traces of mudbrick walls were noted during the fieldwalking, especially towards the east

side of the mound. The central and western parts of the mound are overlain by gardens and visibility of underlying structures is correspondingly reduced. A minimal estimation of the area of the site would be c.200 x 100 m (2 ha), though the gridded collections and visible traces of buildings in combination suggest something closer to 350 x 150 m (5.25 ha). The character of the excavated structure indicates that this was a settlement and not a cemetery, a point supported by the nature of surface finds which include some evidence of beadmaking (Table 4.2). Pottery recovered from surface sherding included Roman amphora sherds and other wheelmade imports of the early centuries AD along with characteristic Classic Garamantian handmade forms such as HM 337, as well as possibly more recent cookwares such as HM 355. The presence of querns and pounders indicate domestic processing of foodstuffs and the copper alloy fragments hint at metallurgy. The site thus appears to be another example of a Garamantian nucleated settlement or village, similar to Sāniat Jibrīl in size, though lacking the intensity of manufacturing debris recorded at GER002.

Table 4.1. Gridded pottery collection at Sāniat Sulaymān Krayda, FP 1999.

No. grid sq.	Total counts	Sherds/grid sq.	Sherds/ 0.1 ha
12	768	64.00	256

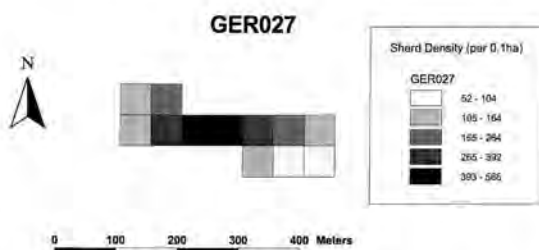


Figure 4.1. Sāniat Sulaymān Krayda (GER027), pottery distribution by 50 x 50 m grid squares (FP 1999).

Table 4.2. Small finds from surface collection, FP 1999.

Artefact type	No.
Glass bead	1
Ostrich egg bead	1
Other stone fragment	2
Bead polisher	1
Copper alloy fragment	2
Querns, rubbers, pounders	3



## THE 1977 EXCAVATION

Excavation proceeded from some of the visible mudbrick walls and the extent of the trench was determined by tracing the walls to define rooms (Figs 4.2–4.3). Each room (or area) delimited by walls was assigned a letter (A–F). Of these, only two Rooms, B and C, and part of Room D were defined and could be adequately excavated in the time available. An attempt was made to clear most of the walls of these rooms on each of their sides and in the process, further walls leading off them were encountered. Only limited excavation was possible in Room A.



Figure 4.2. *Sāniat Sulaymān Krayda (GER027), excavated area, looking south-east (CMD 1977).*

### Structural Evidence

On the basis of their interconnecting doors and the absence of such doors in the other rooms, the three Rooms B, C and D may be regarded as a single building.

#### Room B

This measured *c.* 2.13 m north-south x 0.9–1 m wide. The room had mudbrick walls *c.* 0.33 m thick, all of one build, but two phases were evident as the doorway into Room C had been blocked. The blocking (26) was of mudbrick *c.* 0.22 m thick.

Phase 1 in this room was represented by a poorly-preserved mud or possibly mudbrick floor (9) with a light orange-brown matrix, with a grey-white surface. In the north-east corner of the room, there was a sub-circular break in the floor (25) which may have been a pot setting. The floor level was covered with a thin layer of occupation debris and blue-grey ash (8), with no finds except occasional date stones. This was covered by a more mixed, and probably disturbed, upper fill (2) 0.20–0.30 m deep of grey sandy silt with mudbrick rubble, animal droppings and straw.



Figure 4.3. *Sāniat Sulaymān Krayda (GER027), excavated area, looking west (CMD 1977).*

In Phase 2, the door to Room C was blocked, with the inserted bricks (26) resting on the Phase 1 floor. The door-blocking and original walls were plastered with a 'bluish' mud. No further occupation levels were found in this room to correspond to later phases noted in Room C.

No stratified finds were found in Room B. Pottery from the upper fill (2) included three light-coloured amphora sherds, two Berber Red Ware sherds and two sherds of a HM 342–343 Classic Garamantian 'frying pan' or *doka* (see Fig. 3.76).

#### Room C

This was the best-preserved part of the excavated structure and while the stratigraphy was still relatively thin, four phases of occupation were identified here. This room was not quite rectangular but was *c.* 2.05 m (north-south) x 4.34 m (east-west). Its door to the west was blocked after Phase I while a second door to the north was blocked after Phase 3. In Phase 4 the room was subdivided by a drain. To the east of the drain, excavation only proceeded to the Phase 4 floor, but, to the west, was continued down to the Phase 1 floor levels. As that floor was not removed, it was not absolutely certain that it represented the primary occupation here, but this seems likely due to the apparent association of floors and walls and the presence of orange sand in cut features (pot placements?) in corners of the room. Elsewhere, in Areas A and D, such orange sand seemed to predate the building.

#### Phase 1

Only a small part of the mud floor (20) of this phase was exposed (Fig. 4.4). On the west side of the room a possible hearth (21) was marked by *in situ* burning on the floor (directly beneath the Phase 2 hearth). Two disturbed areas in the north-west (24) and north-east (23) corners of the room may mark the location of pot settings in the floor (though these could have

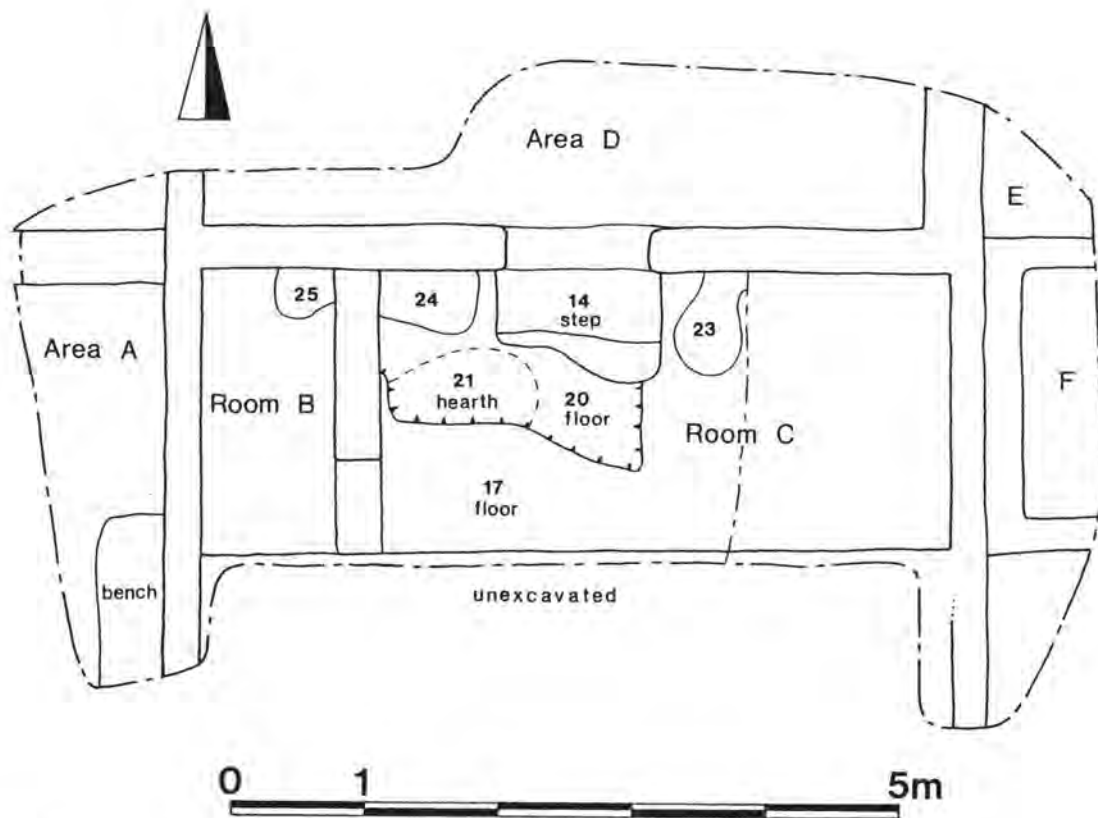


Figure 4.4. Phase 1 elements of test excavations, 1977.

been cut from a Phase 2 level). This floor was covered by a thin layer of grey sand (19). There were no finds associated with these early levels.

#### Phase 2

Certainly at this phase and perhaps earlier also, entrance from the north was by way of an internal mudbrick step (14), the base of which was continuous with the floor (17), apparently also made of mudbrick. The step seemed to be built onto the Phase 1 floor. A further hearth (15) was located on the west side of the floor, marked by a 1 m-wide patch of thick and compacted ash. The disturbed areas in the north-east and north-west corners of the room (23/24) were also evident at this level and may relate to pot settings of this phase. The whole floor was covered by a 1–1.25-cm-thick layer of grey ashy silt (16). The only finds were a single sherd of Berber Red Ware and three other burnt sherds from the area of the hearth.

#### Phase 3

This phase was restricted to this room and was marked by a deposit of dirty grey sand (11) with frequent pieces of straw, probably derived from animal dung, perhaps indicating that the room had been used for stabling animals. This was preserved beneath the blocking

(22) of the doorway leading to the north (see below), although it did not survive in that area. Many pieces of a large Berber Red Ware bowl <4268> came from this layer and the overlying makeup layer (10).

#### Phase 4

In this phase the doorway was blocked with mudbrick 22 (Fig. 4.5). A drain (7) was inserted across the room, its channel passing through a round hole in the north wall. It did not continue into Area D and no indication of its purpose was found, nor of its direction of flow. Its top was covered by mudbrick, and the whole was c.15 cm deep. On either side, the floor level was built up with a dump c.15 cm thick of grey-brown sand (10/13) containing mudbrick rubble and much white grit. A mud (possibly mudbrick) floor was laid over this. Very little of this survived to the west of the drain but slightly more (12) was found on its east side. With the make-up layer four sherds of an amphora or flagon were found, some Berber Red Ware and further pieces of the bowl <4268>.

After Phase 4, Room C was infilled with rubbish and the walls collapsed. Some of the tumbled walls were found *in situ* with mudbrick collapse from the north and south sides, the south wall had fallen later than the north wall as it overlay it. No mudbrick collapse attributable to

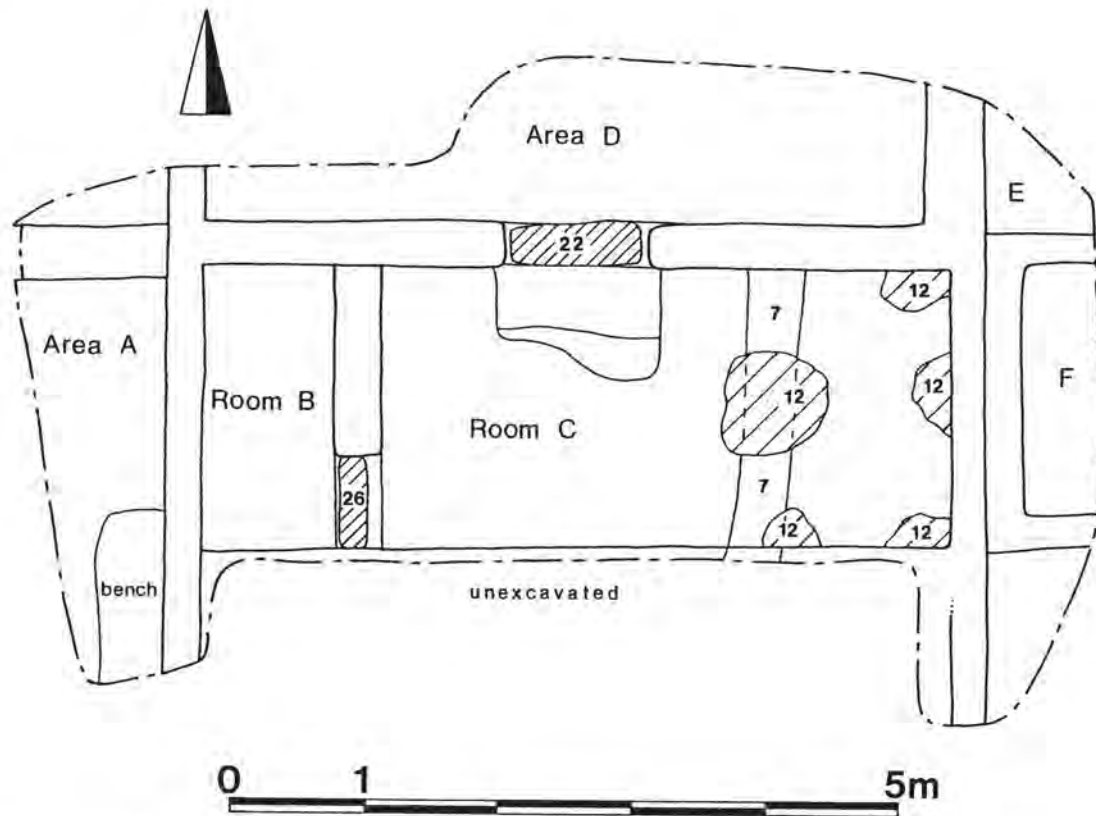


Figure 4.5. Phase 4 elements of test excavations, 1977.

the other walls was found so they presumably collapsed later and were subsequently eroded or removed. The top fill and mixed rubbish deposits (3/6) contained amphora fragments as well as local handmade wares including a HM 342/343 'frying pan' or *doka* <4225>, a bowl <4269> and two jars <4270-71>.

#### Room D

This was an incompletely excavated area, but appeared to form a room c.5.3 m long (east-west), probably a single build with Room C to the south, and linked through the doorway, although the east wall was thicker (0.48 m) than the others on the site. Under the top fill of blown sand and rubbish (4) there was a mud floor (27) which corresponded to the Phase 2 floor (17) in Room C.

As already noted, the distinctive debris of Phase 3 may perhaps have been cleared way from Area D. Below the mud floor of Phase 2 was a thin level of ash and charcoal (28) and below this c.15 cm of brown and grey sandy material (29), perhaps a make-up level or a longer-term accumulation. This would correspond to Phase 1 in Room C and overlay layers of orange sand (30/31). It is possible this area represented an open yard.

Finds occurred only in the top fill and included a small fragment of a 'Red Slip' rim, three amphora sherds and two Berber Red Ware sherds.

#### Room A

This comprised an area some 3 m across. The thick north wall, two bricks wide, butted on to the west wall of Rooms B/D. Further south, another stretch of wall butted onto that wall lengthwise, forming a bench. No occupation deposits were found in this area. This may be the result of erosion, or this area may have been outside the building. Pottery from the top fill (1) included amphora sherds, Berber Red Wares including some soot-encrusted vessels, and jar <4264> and the HM 342/343 'frying pan' or *doka* <4264>.

#### Room/Area E

The character of this area remains unclear and it may have lain outside the building. A few amphora sherds were found in the top fill (5) along with fragments of two jars <4266> and <4267>.

#### Room F

This appears to have been another separate structure. It was partially exposed on the east side of the building, with its walls butting on to it. The Room was 2 m wide (north-south) but its east-west extent remained unclear. Sherds from the upper fills (18) also included amphora fragments and Berber Red Wares. In the south-east corner of the excavation area, possible traces of a hearth or oven were noted but were not further investigated.

## DISCUSSION

Although the limited excavations at Sāniat Sulaymān Krayda did not produce much diagnostic pottery in stratified contexts, they do indicate the existence of another multi-phase settlement of sophisticated mudbrick architecture. The site is unequivocally associated with Garamantian and Roman pottery of the Classic Garamantian phase.

The interpretation of the structure excavated at Sāniat Sulaymān Krayda is not clearcut, given the small area excavated. Room C appears to have been a domestic area, perhaps with cooking facilities marked by the hearth and pot settings in the floor. Room B also had a trace of a possible pot setting in its solid Phase 1 mud floor. The sherd material largely comprising amphorae and coarse handmade wares might be consistent with this. An interesting problem about the functioning of Rooms B and C is raised by the presence of blocking walls in the doorways, which if they rose the whole height of the doorways, effectively closed off access to the rooms. The complex of mudbrick rooms evidently grew and changed over time, but it is apparent that this was part of a multi-roomed building. The most fully excavated rooms exhibited several structural phases. Without more extensive excavation, it is not possible to correlate fully or to date accurately the phases noted in different rooms, but the key point is that this was a multi-phase structure and the pottery recovered is consistent with occupation in the Classic Garamantian period. There are no stratified finds to suggest occupation before the 1<sup>st</sup> century AD or after the 4<sup>th</sup> century. The upper levels and surface finds include some medieval/early modern pottery – presumably related to the standing mudbrick buildings of the modern Sāniat.

In broad terms, the structures revealed in the excavated trench appear similar to what was encountered at Sāniat Jibrīl, although the finds appear much more modest and limited in range, albeit from a very small area explored. In some respects the work at Sāniat Sulaymān Krayda was one of the most significant discoveries made by CMD, because it confirmed the first Classic Garamantian mudbrick away from Jarma and Sāniat Jibrīl. CMD had been collecting evidence of other potential oasis settlements in the Wādī al-Ajāl for some time, but had been cautious about going into print. Ironically, Sāniat Sulaymān Krayda was only explored in 1977 – the last season of work

by CMD – so he had no opportunity to capitalise on his discovery in further fieldwork. It was the FP in the 1990s that was to revisit the question of the location and numbers of Garamantian oasis settlements. The important discoveries that followed owe much to CMD's pioneering intuition (Mattingly 2003, 107–27, 155–59).

Following up CMD's extensive survey, the FP gridded collections identified a number of similar sites in the oasis zone close to Old Jarma, generally only a few 100 m apart from one another. It has been suggested that these sites were nucleated settlements associated with very intensive oasis farming in the Garamantian period (Mattingly 2003, 117–127). Sāniat Sulaymān Krayda was also interpreted by CMD and the FP as the settlement that was most likely served by the cemetery at Sāniat bin Huwaydī (*c.*200 m away), though there was another apparent Garamantian extensive settlement less than 500 m to the east (GER015). Subsequently, further survey in relation to oil exploration in the Jarma area (summer 2008) has revealed the presence of additional Garamantian settlement sites within the oasis belt close to Jarma. One of these (GER053) was of considerably larger extent than Sāniat Sulaymān Krayda and was situated *c.*400 m south-west of Sāniat bin Huwaydī. It is now apparent that the cemetery could have served a number of Garamantian villages in this densely settled oasis zone (Fig 4.6).

What the excavations at Jarma, Sāniat Jibrīl and Sāniat Sulaymān Krayda demonstrate most clearly is the emergence of a sophisticated society, constructing complex nucleated settlements of multi-roomed rectilinear building complexes. Access to Mediterranean goods was considerable in scale and range, but the local pottery traditions and much else of the material culture had a distinctly Saharan (and at times Sub-Saharan) character. Liverani's work in the Wādī Tanzzūft at the Garamantian period settlements of Aghram Nadharif and Fewet near Ghat has shown that these developments were not limited to the Wādī al-Ajāl (Liverani 2006a). In comparing the sites in the heartland territory of the Wādī al-Ajāl with the more peripheral areas of the Garamantian kingdom one is struck by the greater complexity of architecture and material culture in the former area over the latter. Roman imports were proportionally far rarer at Aghram Nadharif and the style of dwellings far simpler – generally one- or two-room units. This is by no means surprising in relation to a strong core and unequal peripheral territories,

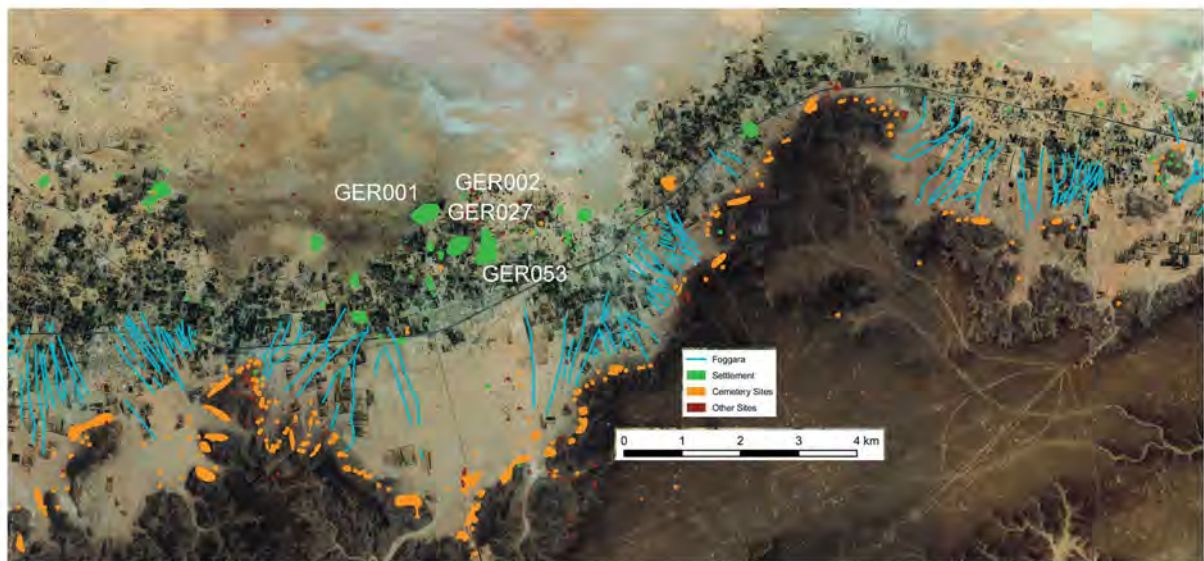


Figure 4.6. Distribution of Garamantian settlement sites in the vicinity of Jarma (DMP/RPS 2009).

but would be more unusual if the Garamantian ‘polity’ was nothing more than a loose association of quasi-independent oasis farming communities. It is a strong argument in favour of recognising the Garamantes as a genuine and rather centralised territorial state, whose far-reaching political and social influence can be traced across a wide area of the central Sahara.

Chapters 3–4 have demonstrated that Garamantian Wādī-centre settlements were fundamentally different in layout and character from the earlier escarpment sites, with far more varied and richer material assemblages. What is more, the

evidence suggests that access to these imported goods was not restricted to a narrow elite or to specific funerary contexts, but that Mediterranean pottery, glass and liquid commodities such as wine and olive oil were widely and extensively consumed on settlement sites in the Garamantian heartlands. There were also some step changes in the scale and nature of Garamantian productive and trading activities during the Classic period. Further discussion of the nature of Garamantian oasis settlement will be included in *AF 4*, where the important sequence at Old Jarma is going to be presented in detail.

## Part III.

### Excavations at Garamantian Cemeteries



## 5. THE GARAMANTIAN CEMETERY OF SĀNIAT BIN HUWAYDĪ (GER011)

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(with contributions from J. N. Dore<sup>†</sup>, A. Leone, P. Kenrick, C. Tagart)

### INTRODUCTION

The cemetery of Sāniat bin Huwaydī (Saniat Ben Howedi or 'SBH' in the CMD archive and earlier publications and GER011 in the FP work) lies some 2 km to the north-east of modern Jarma. In appearance it is a low sandy mound,

roughly circular, standing a few metres above the surrounding oasis and being c. 100 m in diameter (Fig. 5.1). The mound consists of several layers of mudbrick tombs built on top of each other, all eventually covered by wind-blown sand. CMD had observed Ayoub's excavations here in 1963 and made a further reconnaissance visit in 1972,

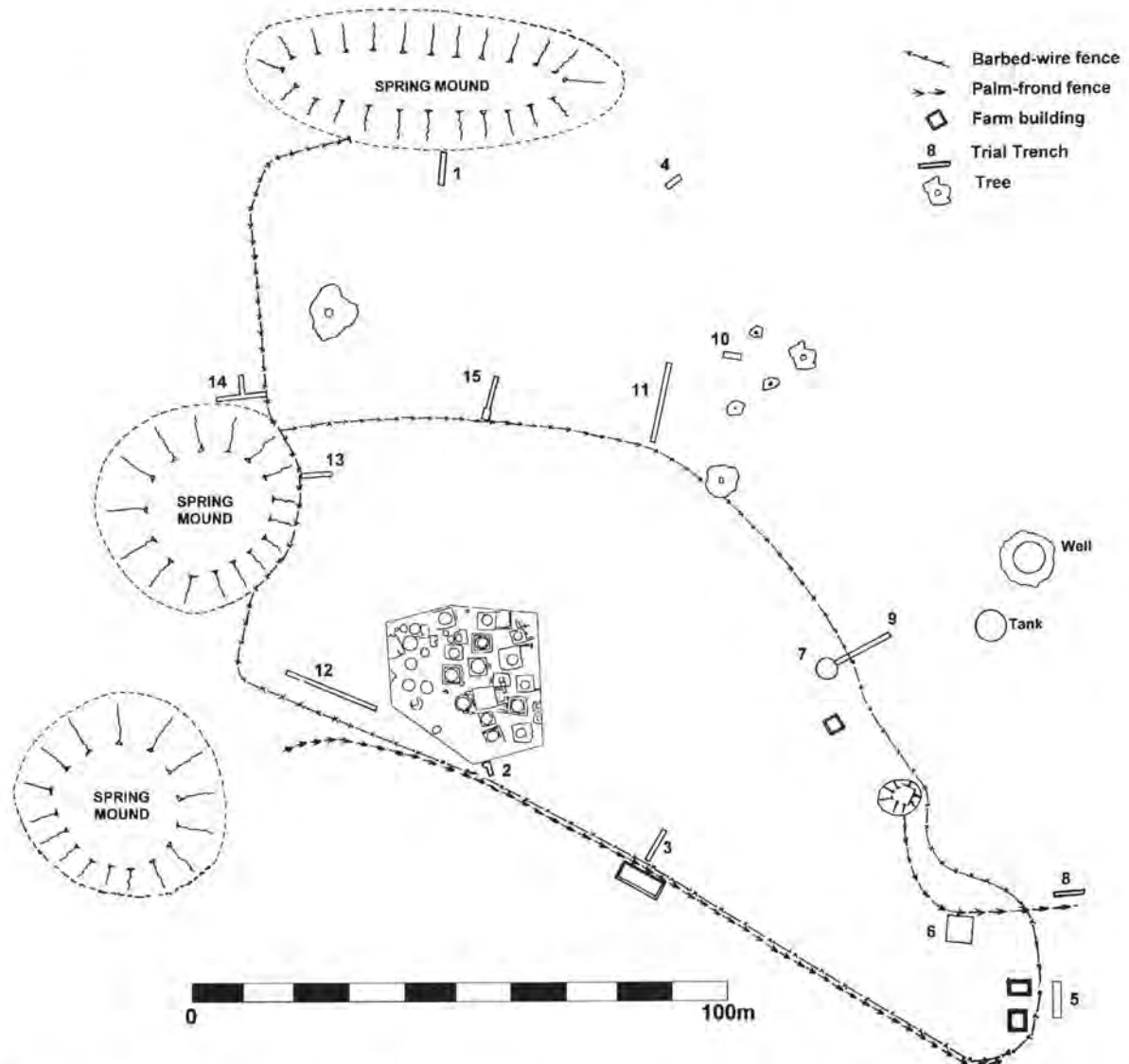


Figure 5.1 The location of Sāniat bin Huwaydī (GER011), showing placement of CMD's trial trenches around the core excavated area.



but it was not until 1973 that he began excavation. The aim was to recover Roman-date skeletons and graves to compare to earlier cemeteries being excavated at Zinkekrā at the same time (see Chapter 6 below). In the end the preservation of the skeletons at Sāniat bin Huwaydī was generally disappointing (due to robbing and poor bone preservation in the deeper unrobbed graves, see Chapter 7), but the work did produce a large body of data on Roman-date Garamantian tombs and grave goods. Most of this work has remained entirely unpublished. CMD wrote brief interim reports in *Libyan Studies* (Daniels 1973a/b, 1977a/b, 1989), but the present report represents the first full publication of the tombs, the skeletons and the grave goods. Indeed, it is the first full report on any Garamantian cemetery excavation, despite a history of work by various foreign nationals in the Wādī al-Ajāl since Caputo's visit in 1933 (Mattingly 2003, 220–222).

The site lies at the heart of the traditional zone of oasis cultivation, with a number of gardens (*sāniat*) in the immediate vicinity, as well as numerous 'springmounds' (phreatophytic mounds) that indicate a shallow water table (Mattingly 2003, 45). Ancient occupation in close proximity is attested by the remains of a Garamantian settlement at Sāniat Sulaymān Krayda, some 300 m away to the north-west and at least two further settlement sites within c. 0.5 km (GER015, GER053). The site of Sāniat Sulaymān Krayda was subjected to trial trenching in 1977 and seems to have been similar in appearance to Sāniat Jibrīl (see Fig. 4.6 and Chapter 4 above). A modern settlement dating to the Italian colonial period (Tuska) lies c. 200 m to the south of Sāniat bin Huwaydī. This mudbrick village has now been largely abandoned, with the concentration of modern settlement along the road frontage in New Jarma (in the archive CMD calls this the 'Tuscan village'). Parts of the village are still in use today as pens for livestock. The mound of the cemetery is ringed by a barbed-wire fence, the position of which CMD helped to decide.

#### Earlier and Later Work at the Site

CMD was neither the first nor the last to work at the site, although his excavations have been the most systematic to date. The first excavations at the site were undertaken by Mohammed Ayoub in 1962. Ayoub commenced excavation on the north-west side of the mound, before moving his attention to the south-west edge of the mound (evidently to the

west and south-west of where CMD excavated), constructing a Decauville railway to carry away the spoil. A number of tombs were found, complete with many well-preserved grave goods. Ayoub's work at the cemetery is, at first sight at least, extremely important for piecing together Garamantian burial customs. Whereas many of the tombs CMD dug had been extensively robbed in antiquity, Ayoub was apparently more fortunate, and retrieved a very rich collection of material. However, we only have very brief and somewhat schematic accounts of Ayoub's excavations and it has been quite a work of detection to piece together what he did, not least because of inconsistencies between his various accounts (Ayoub 1962, 20; 1968a/c; no date, 27–48). In collaboration with other members of the Department of Antiquities, he also published in pamphlet form some preliminary notes on certain categories of finds, though contextual data and assigned numbers for the finds did not always match up with the previously mentioned accounts of the excavations (Ayoub and Abdel Salam 1968; Ayoub and el-Kilani 1968a/b; el-Kilani 1968).

A summary of Ayoub's tomb descriptions and reconstructed lists of grave goods are included below (Tombs A1.1–1.6, A2.1–2.4, A3.1–3.3, A4.1 below). A note of caution is necessary here. We have had to take Ayoub's descriptions of associated assemblages of artefacts on trust, but we know that the nature of his excavations tended to be rather poor quality. There are thus questions about the supervision of his untrained workforce and the stratigraphic control of the excavations he carried out, and this is compounded by numerous discrepancies in the published accounts of what artefacts were found together. However, crucially, his material was subsequently re-catalogued in some detail by John Hayes and CMD in the 1960s. These listings by CMD in a series of notebooks are referred to in this volume as the Sabhā Museum Catalogues (or SMC), after the museum in which the material was originally stored (most of it is now in Jarma Museum). CMD copied entries giving provenance information from the original catalogue cards in Sabhā Museum and identified finds by the best typological standards of the late 1960s. Many of the inconsistencies in Ayoub's own published lists of what was found were noted and corrected, but there is remaining uncertainty for some artefacts. The museum's original catalogue has disappeared in the intervening years and the careful record made by Hayes and Daniels

(included in the CMD archive) is now invaluable for identifying objects in the museum collection at Jarma.

Most structural traces of the tombs excavated by Ayoub were eventually removed as the excavation progressed and he has left behind no photographs or plans of these structures. His main account states that he excavated 13 circular and one rectangular mudbrick tombs in four superimposed levels, but it is likely that he in fact dug through rather more tombs – taking little notice of tombs that had been emptied by earlier robbing activity and only recording more carefully when intact burials were located. It is particularly striking that his account describes primarily drum tombs, whereas all other excavators at the site have located a mixture of circular and rectangular forms. Given that the assemblages of some of his intact tombs bear comparison with those within rectangular tombs excavated by CMD it is likely that the superstructure and chambers of some of these tombs did so as well. Some of the tombs visible when CMD commenced work in 1973 had been emptied, defined or exposed by Ayoub earlier, but we have no way of matching the numbers.

Shortly after Ayoub finished work at the site, a team of ‘French doctors’ (names and exact dates unknown) continued excavations on the eastern edge of Ayoub’s trench. The only account of their work is an extremely vague summary, of which a copy was deposited in Jarma Museum. There is a rough plan of their findings attached to their report (from which Fig. 5.2 is derived) that allows us to identify their trench with part of the area excavated by CMD. The archive note mentions that ‘The excavated objects are many and very beautiful’, but provides no further detail, apart from a comment that as well as intact pottery vessels, they also encountered ‘pieces too, or simply a handle, as a token of subtle ritual nuances.’ We shall return to the inclusion of deliberately damaged artefacts in the discussion at the end. CMD does not seem to have been aware of the exact nature of the French doctors’ work while he was excavating, as he routinely referred to the area as ‘Ayoub’s trench’. It is not possible to ascertain which of the tombs in this area were first uncovered by Ayoub or by the French group. Nor did the doctors label their finds, and it is not clear whether any of the artefacts now in Jarma Museum result from this episode. CMD Tombs 1 and 6 seem to correspond with the main burials exposed by the French group (their numbers A and G).

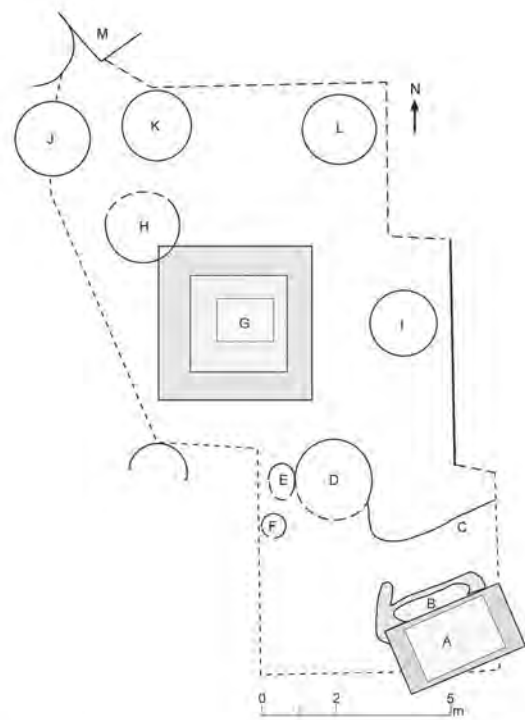
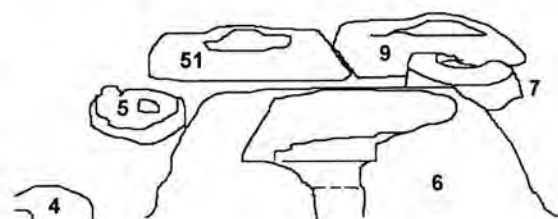


Figure 5.2. Rough plan of French excavations at Sāniat bin Huwaydī in 1960s.



a

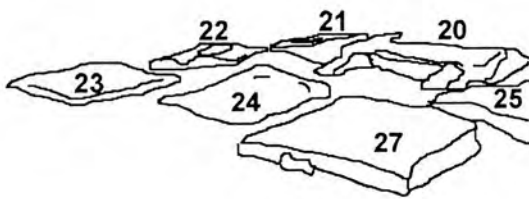


b

Figure 5.3. a)–b) General view of centre of site, looking west.



a

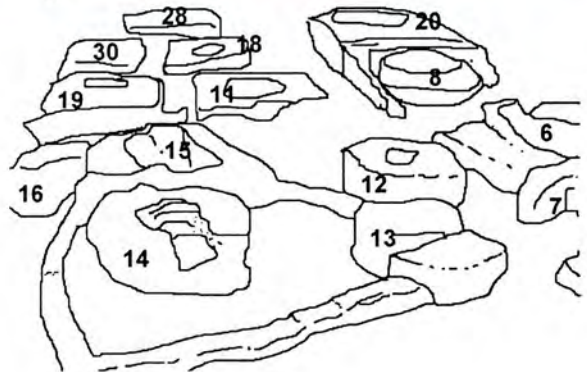


b

Figure 5.4. a)–b) General view of eastern edge of site, looking west.



a

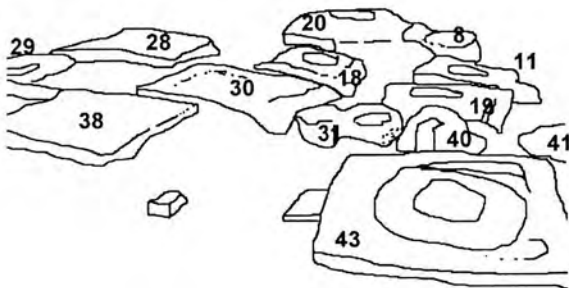


b

Figure 5.6. a)–b) General view of west edge of site, looking east.



a

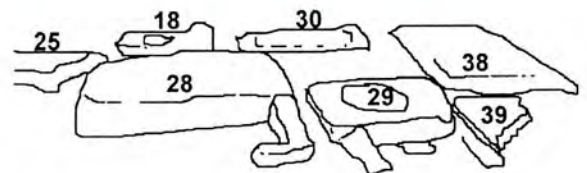


b

Figure 5.5. a)–b) General view of north edge of site, looking south.



a



b

Figure 5.7. a)–b) General view of north-east edge of site, looking west.

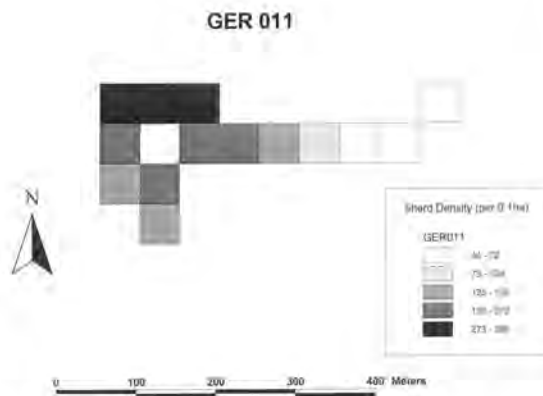


Figure 5.8. The FP grid collection of pottery on the mound and extending eastwards.

CMD excavated at the site in 1973 and 1977. It is largely from this that the present open area of *c.*30 x 30 m (0.09 ha) results (Figs 5.3–5.7 where numbers represent tombs). A further chapter in the history of excavation at the site was commenced in 1995, when Professor Ziegert opened a small trench and exposed two further unrobbed tombs. The finds, reconstructed tomb and photographs of this work in Jarma museum suggest that these burials were of considerable importance. In the absence of any publication by Ziegert, no comments on his burials are included here.

The FP carried out a small amount of additional survey work at Sāniat bin Huwaydī in 1999 (Fig. 5.8) and further survey was carried out in the vicinity in 2008 as part of emergency work connected with an oil company 3-D seismic survey. The 1999 surface collection was concentrated on the unexcavated eastern portion of the mound (with a narrow transect extending off the mound to the east). It is apparent that the mound formed

a dense focus of surface pottery and visible traces of mudbrick structures.

In 1977 CMD excavated a series of trial trenches (Trenches 1–15) around the base of the mound (numbers 1–15 on Figs 5.1, 5.9–5.10). Some of these did not encounter significant archaeological traces, but others contained mudbrick tombs or other funerary features, allowing the limits of the cemetery to be set considerably beyond the main excavated area. Trench 1 contained some mudbrick in its middle section and there was quite a bit of surface pottery hereabout, but CMD was not convinced that the cemetery extended so far in this direction, as Trenches 11 and 15 only had tomb structures at the extreme southern ends, while Trenches 4, 10, 14 were completely empty of archaeological features. In Trench 13 a skeleton was noted, but no tomb structure and tomb structures were revealed in the eastern half of Trench 12.

On the east side of the mound, tombs were recorded in the south-western end of Trench 9 and the adjacent area of Trench 7, and in Trench 6. Trenches 5 and 8, to the east of Trench 6, were empty. The southern limits of the cemetery lay south of the excavated area beneath cultivated gardens; Trenches 2 and 3 both revealed tomb structures running up to their south ends. Therefore, it seems likely that the overall limits of the cemetery extended to the visible edges of the mound, for a total oval area of *c.*120 x 80 m (*c.*0.75–1 ha). The excavated area thus represents only *c.*10 percent of the total cemetery (though Ayoub's first clearance may have accounted for another 10–20 percent).

The depth of the stratigraphy in CMD's excavations on the main mound is illustrated by

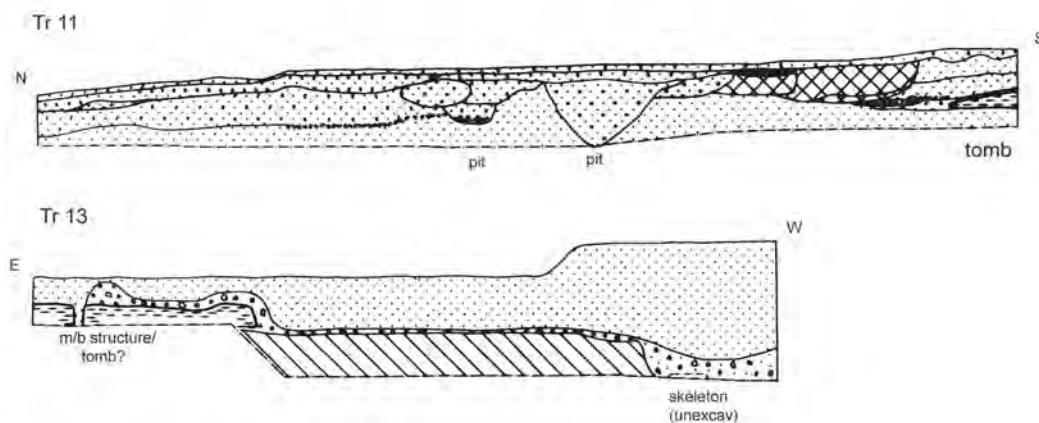


Figure 5.9. Sections of CMD's trial trenches 11 and 13.

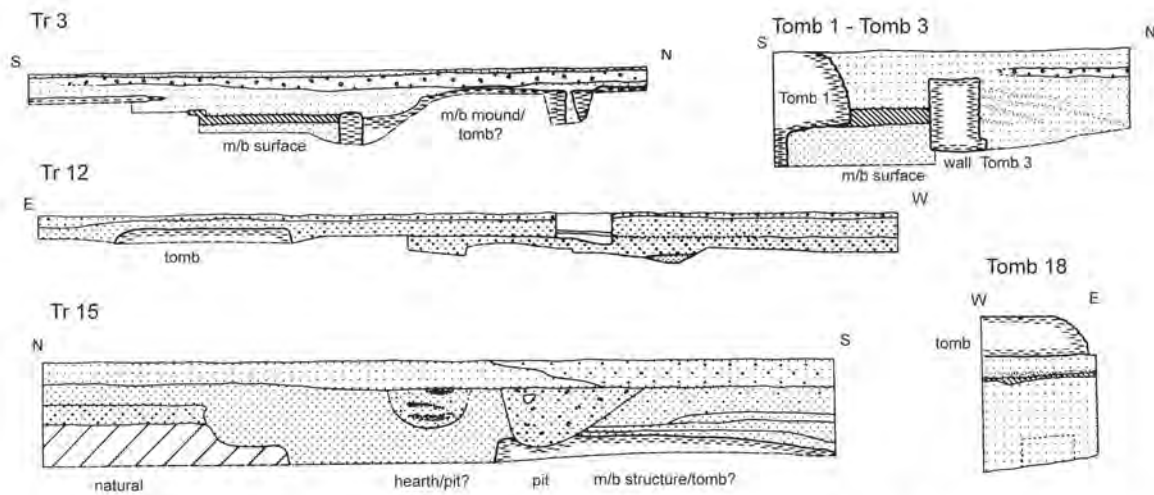


Figure 5.10. Section of CMD's trial trenches 3, 12 and 15 and small sections recorded against Tombs 1/3 and 18.

the section drawing (Fig. 5.11, clearly showing the superposition of tombs of different periods). Although CMD recognised three broad phases of tombs at the site, these can be represented on two phase plans, the first showing the deeper and earlier burials (Fig. 5.12), the other the secondary and tertiary burials built over the top of the early tombs (Fig. 5.13).

The tombs were uniformly constructed in mudbrick, with circular or square or rectangular superstructures, and circular or rectangular shafts and chambers below. The circular tombs correspond to type 3b and the rectangular ones to type 4b in the *AF* typology (Mattingly 2003, 197–200). It is likely that some tombs were stepped and thus belonged to types 5a (circular) and 5b (rectangular). Quite a few tombs were furnished with four-point stelae and offering tables against either the east- or west-facing wall. The early

stelae were commonly of type 8 (the 'picket fence' variety), though later stelae seem more commonly to have been variants of type 5c, with a central 'horn-like' element and two separate side points (Mattingly 2003, 206–10). The offering tables were variants of the type 4, with combinations of small compartments and a long slot (Mattingly 2003, 210–13).

In the Burial Catalogue that follows, each grave (Tomb) is recorded as fully as the surviving records allow, starting with those excavated by Ayoub and then presenting the CMD material. The tomb descriptions and characterisation of offering tables and stelae have been updated to reflect the typologies developed by the FP (Mattingly 2003, 187–234, for full discussion; 2007, 6–8 for summary presentation). Numbers from the *AF* type series are given in bold in the text, prefixed by AM, FW, CW or HM – so **FW 519** is type

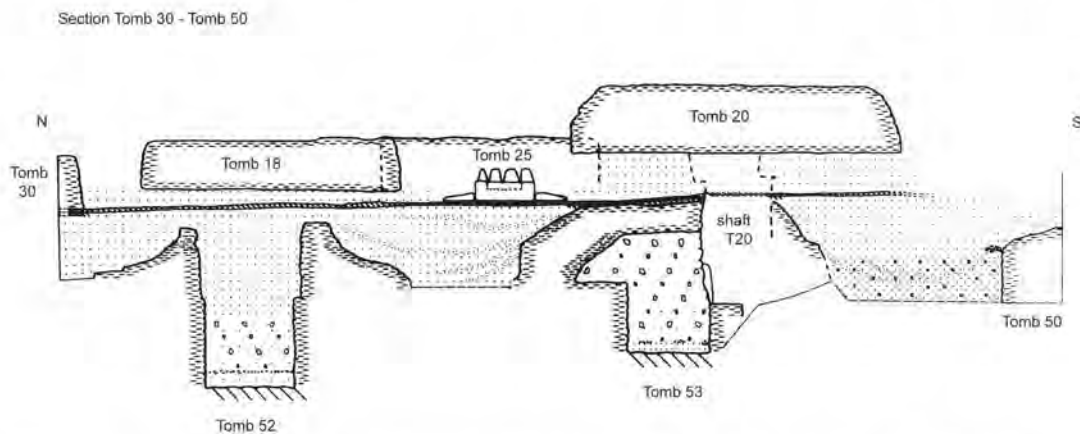


Figure 5.11. Cross-section of CMD's main excavations on mound between Tombs 30 and 50 looking east.

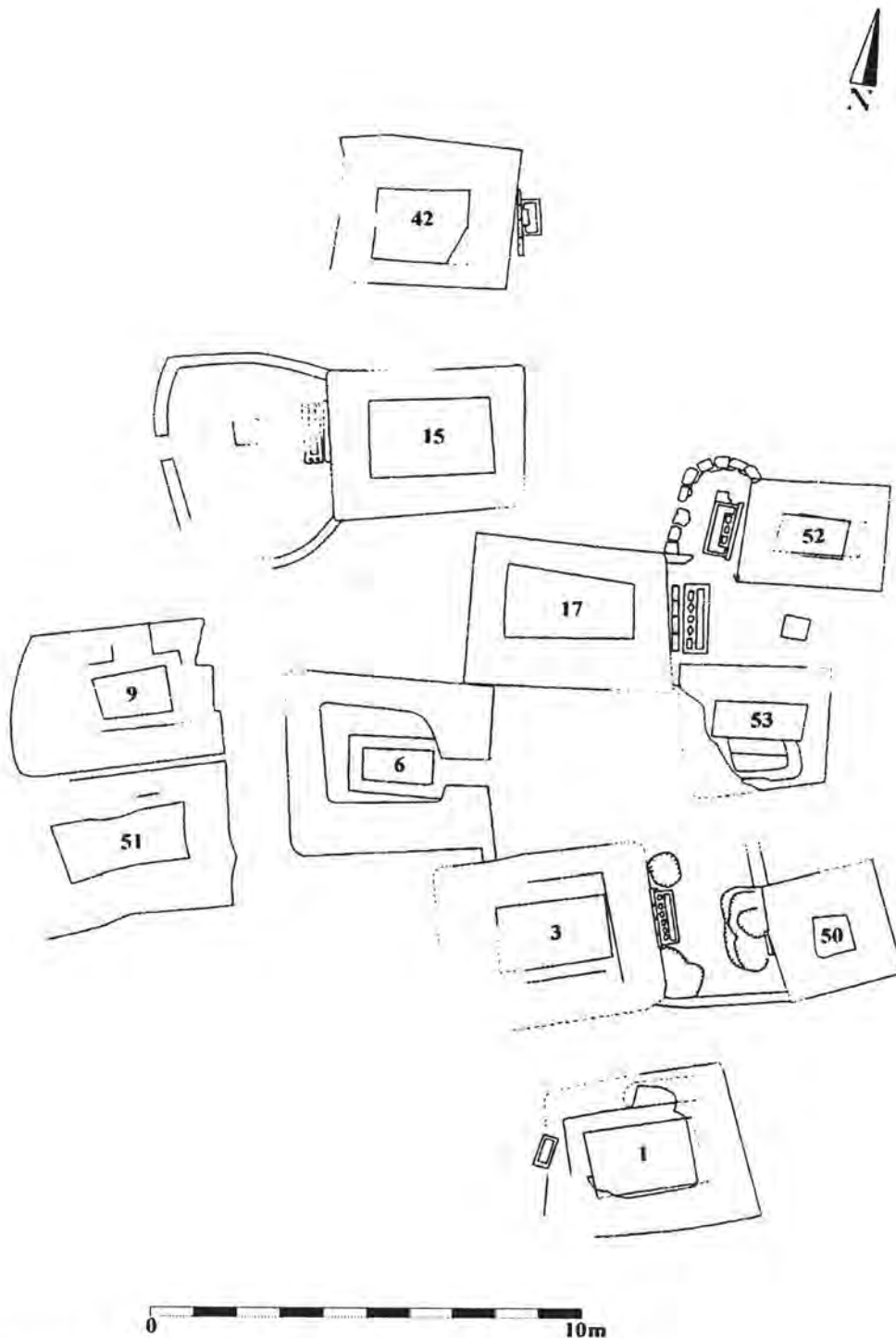


Figure 5.12. Early tombs at Sāniat bin Huwaydī.

519 (fineware) equivalent to the ARS Hayes type 3b. For material not incorporated in the *AF* type series (most commonly because we could no longer identify the finds in Jarra museum), we have relied on the excellent notes made by CMD and Hayes in the 1960s and 1970s. Numbers from the SMC are generally prefixed by A (amphora), H (pottery, mainly imported wheelmade, though some local handmade and some faience included),

F (General, but includes some handmade pottery), J (lamps), C (glass), E (jewellery). For the Ayoub burials it is this alphanumeric SMC number that forms the primary part of the listing of each artefact (many stone artefacts had no alphabetic prefix in the SMC and these are denoted by the letters SMC followed by a number). CMD assigned his own system of numbers, relating in many cases to drawings of profiles. These CMD numbers are

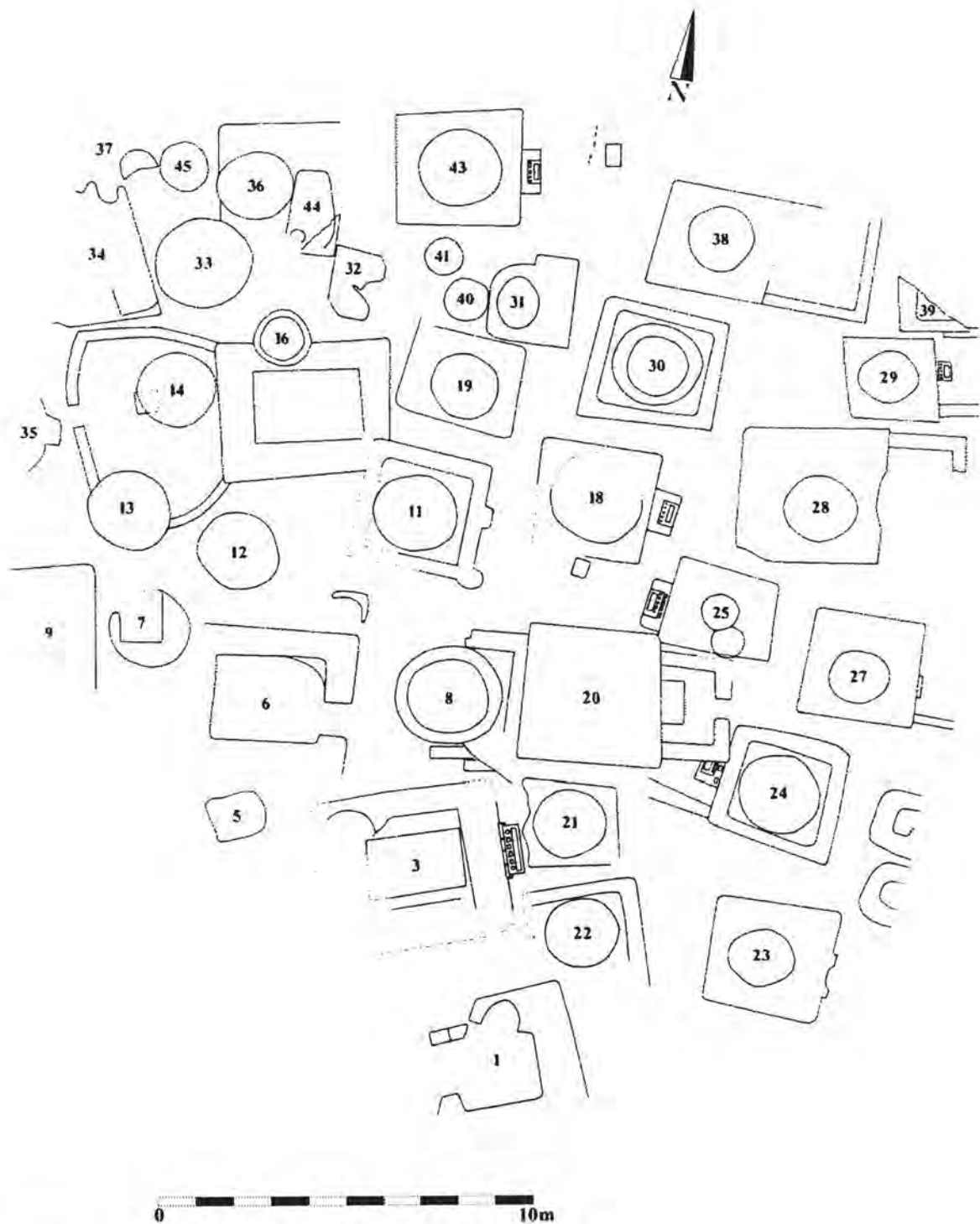


Figure 5.13. Later tombs at Sāniat bin Hurwaydī.

expressed in the text between <> and the *AF* has continued this sequence of numbers in developing the ceramic type series. However, CMD also recorded artefact assemblages in intact tombs by assigning alphabetical letters to finds and these constitute the primary part of the entries for finds from CMD tombs. Some items will be listed with a SMC number, a CMD number and a *AF* type series

number, but it has seemed sensible to correlate the different numerical systems as fully as possible, especially because of the loss of local records. Inevitably, a few corrections to the information published in the *AF 2* type series attributions have been noted as a result of the re-examination of early records. Provenances given in *AF 3* should thus be accorded primacy.

### TOMBS EXCAVATED BY AYOUB AT GER011

When Ayoub first began work at Sāniat bin Huwaydī in 1962 he evidently referred to the site as the ‘pottery shop’ and early finds from the site were catalogued thus on the Sabhā Museum cards seen by John Hayes in 1963. In his first published report in July 1962, Ayoub did refer to the site as a cemetery, but commented on the fact that the walls of tombs ‘had collapsed, and as they were very close together it was difficult to determine the boundary of the individual graves’ (Ayoub 1962, 20). The first excavations were apparently on the north side of the mound (described in a handwritten CMD note as Ayoub’s ‘first devastation’). This area was later backfilled, but appears quite simply to have been quarried for artefacts, with no concern for structures and provenance. CMD visited the site with Sir Ian Richmond in winter 1962/1963 while excavations were progressing and thereafter Ayoub seems to have recognised more clearly the importance of isolating grave groups from one another within the cemetery. He commenced excavation on a new area to the south of the first one, ‘after Ian [Richmond] had a word with him. It is here he got his idea of what the tombs are like’ according to another CMD note. From that point on, Ayoub started to assign finds to tomb groups wherever possible, but the quality of the excavation was probably still not very high. In his published interim report Ayoub divided his burials between four superimposed layers of tombs, with Layer 1 being the closest to the modern surface and Layer 4 the lowest.

There are no published plans of Ayoub’s excavations, and the imaginative and schematic drawings that accompanied his report are clearly not to be relied on (See Fig. 5.14). When CMD commenced work in 1973, he expanded on the area that Ayoub had been excavating (clearly indicated by the Decauville railway track running into its heart) and where a number of tombs were still exposed, having been excavated either by Ayoub or the French doctors. The following CMD tombs can be associated with these earlier excavations: previously opened – Tombs 1, 2, 3,

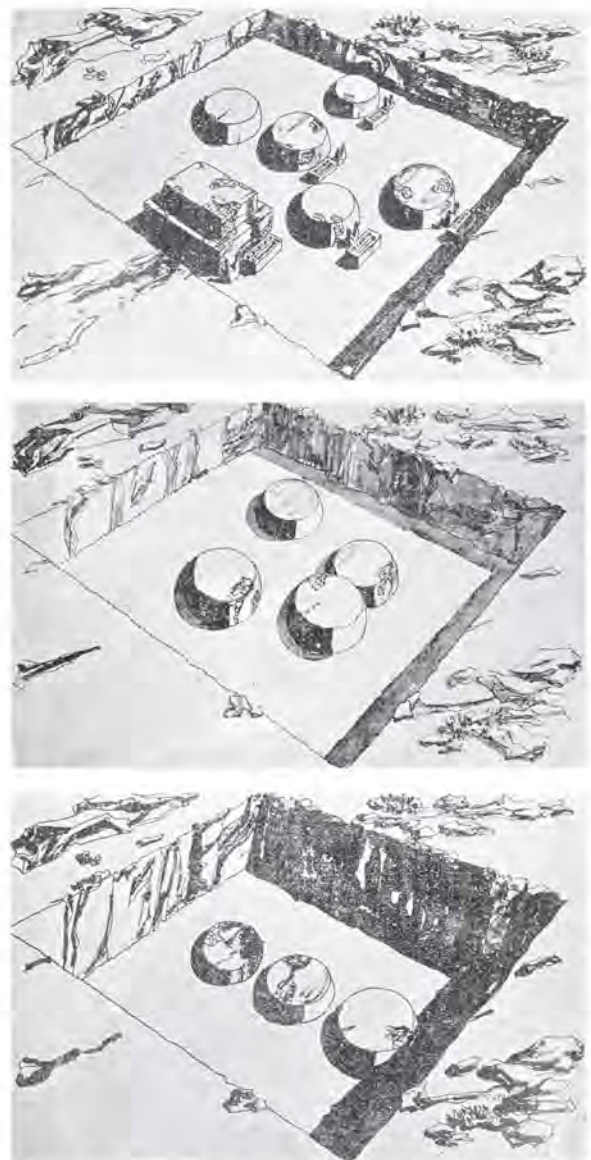


Figure 5.14. Ayoub’s schematic ‘plans’ of his three levels of burials.

4, 6, 7, 8, 11; partially exposed – Tombs 5, 10, 12, 12, 14, 15, 20, 21, 22. It is important to note that a number of tombs in this area were of rectangular form, adding weight to the suggestion that Ayoub misrepresented the architecture of the tombs in his report. It is likely that additional burials excavated by Ayoub lay to the west of the area where CMD concentrated his efforts and that all traces of these tombs had eventually been removed in the course of Ayoub’s excavation.



## Burial Catalogue

### Layer 1

The following tombs were assigned by Ayoub to his Layer 1 (latest in the sequence).

#### Tomb number: A1.1 (GER011.TA1.1)

**Date:** 4<sup>th</sup> century AD.

**Tomb type:** 3b, drum-type.

**Stele:** Type 6, two points (misnumbered by Ayoub as SMC 50).

**Offering table:** Type 4d. Rectangular slot with 3 square and 2 interspersed circular compartments along back. L. 62.5 cm (SMC 17).

**Skeleton:** The skeleton was found 'buried in a flat position ... wrapped in a leather coffin.' Leather shrouds have been recognised in other burials in the region (Mattingly *et al.* 2007, 144). It is unclear whether the 'flat position' mentioned refers to a body in a supine posture, rather than the normal crouched position, lying on one side. In another record Ayoub implied that the skeleton and skull were somewhat disturbed and separated in the grave.

#### Contents

##### Amphorae

A50: Amphora with an incised 'A' on body. (Ayoub 1968a, also attributed this amphora to A1.4).

A69: A large amphora. This had a mark in red pigment on the exterior.

##### Other Ceramics

F50: Lower fragment of an imported wheelmade flagon.

Groove in middle and circular base (Fig. 5.15).

F51: Black local handmade ware pot with geometric decorations on body. Fabric rather like Berber Red, red and blacked surfaces from kiln (Fig. 5.15).

#### Lamps

J16: Tripolitanian oil lamp, with S-scrolls on rim (Fig. 5.16). The filling hole is surrounded with a cog-wheel pattern relief. The discus is circular. 4<sup>th</sup> century AD?

J20: Relief lamp (Ayoub 1968a, mistakenly gives number as J10), with a heart-shaped nozzle and decorated rim (Fig. 5.16). On the discus a relief shows two snakes flanking a brazier. There are three faint incisions or stamps on the base. Mid 3<sup>rd</sup> – early 4<sup>th</sup> century AD.

J23: Tripolitanian oil lamp (Ayoub 1968a, mistakenly states 'J13'), with hook-scrolls on rim (Fig. 5.16). The discus is circular with the filling hole surrounded by a cog-wheel pattern relief. 4<sup>th</sup> century AD.

#### Comments/discussion

There are few recorded details about the burial and it is possible that the tomb had been robbed or at least partially disturbed. The lamps indicate a 4<sup>th</sup>-century date. The overall assemblage could be accommodated in a shaft burial below a drum tomb.

#### Tomb number: A1.2 (GER011.TA1.2)

**Date:** 3<sup>rd</sup> – 4<sup>th</sup> century?

**Tomb type:** 3b, drum-type.

**Stele:** Type 6, two points (SMC 59).

**Offering table:** Type 4d (SMC 100B)? (Ayoub recorded this same offering table also with Tomb A3.3 – in fact the latter seems more probable in light of close



A1.1 F50



A1.1 F51

Figure 5.15. Flagon bases from Tomb A1.1 (FP 2002).



Figure 5.16. Lamps from tombs in Ayoub's top level (A1.1-A1.6). 1:2 (FP 2002).

similarity of this table with those attached to tombs A3.1 and A3.2).

**Skeleton:** Young female. Crouched inhumation with head to east, wrapped in a leather coffin or shroud, covered with red pigment (ochre). Necklace E20 evidently worn at neck presumably accounts for identification as 'female'.

#### Contents

##### *Amphorae*

A64: An amphora with full body, the base reducing to a point. There were three engraved and one painted marks on the body. The neck and the handles were missing.

A63: Amphora (A63). On the body there was an incised sign and a red paint mark.

A68: Amphora (A68). The rim and handles were missing.

##### *Other Ceramics*

F4: Fragment of incense burner, decorated with geometric style and grooves and coloured red and green.

F52: Fragment of incense burner? Rough red pottery, with green decoration.

F53: Fragment of flagon with a wide rim, handle on upper part of body to neck (Ayoub 1968a, 2 and 4 refers to two similar vessels from separate tombs by this same number!).

F55: Probably base and lower portion of a second flagon.

##### *Lamps*

J10: An over-fired Tripolitanian lamp (NB there is confusion in Ayoub's publications about this lamp and it most likely related to Tomb A1.4). 4<sup>th</sup> century (if belongs with this assemblage).

J15: Relief lamp, heart-shaped nozzle, with row of relief dots within incised dots and loop surround, discus broken, but preserved part shows the legs of a donkey (Fig. 5.16). North African. Mid 3<sup>rd</sup> century AD.

J21: Relief lamp with heart-shaped nozzle, rim decorated with relief dots surrounded by incised loops

and dots (not illustrated). Discus with hunter/shepherd and dog. Mid 3<sup>rd</sup> – early 4<sup>th</sup> century AD.

*Other*

E20: Necklace of (unspecified number of) beads of ostrich eggshell, small pink stone (carnelian?), also occasional white and blue beads. Ayoub says ostrich eggshell, carnelian, amazonite and glass beads.

**Comments/discussion**

The only diagnostic material comprises the lamps which suggest a 3<sup>rd</sup>- or 4<sup>th</sup>-century date overall. The preservation of the skeleton and the presence of a necklace, evidently worn on the corpse, suggest that this burial was unrobbed. The overall assemblage could probably be accommodated in a shaft burial below a drum tomb.

**Tomb number: A1.3 (GER011.TA1.3)**

**Date:** Later 3<sup>rd</sup> century AD?

**Tomb type:** 3b, drum-type.

**Stele:** Type 6c? Broken 2-pointed stele (SMC 58)

**Offering table:** Type 4 (SMC 36). Irregular variant of rectangular table, combining trough with different shaped small compartments (rectangular, oval and circular) around three sides in asymmetrical arrangement.

**Construction details:** The tomb was 2.1 m in diameter and 0.55 m high.

**Skeleton:** The skeleton was evidently in a crouched position, wrapped in a straw mat.

Contents

*Amphorae*

A62, A67, A66: Three amphorae with incised graffiti and red painted *tituli* – possibly in Neo-Punic characters.

*Other ceramics*

F56 and F57: Two fragmentary pots, one a reddish coarseware bowl, the other a blackish fabric, probable handmade form.

*Lamps*

J11: Relief lamp, plain nozzle, with incised grooves and hooks decorating the rim (Fig. 5.16). On the discus there is a representation of Diana holding a bow and being followed by a dog. The handle is semi-pierced. On the base there is a moulded stamp: SANIO/N LUCER/NI. North African. Late 3<sup>rd</sup> century.

*Other*

E24: Necklace of many (number unspecified) ostrich eggshell beads. Ayoub used the same number in relation to finds from two tombs A1.3 and A2.4 (1968a, 3 and 10) but it is unclear which necklace came from A1.3. 1) ostrich eggshell beads with small stone beads including 1 ovoid carnelian; 2) ostrich eggshell beads with plain stone prisms and a very small amazonite Bes pendant.

**Comments/discussion**

The lamp suggests a date in the second half of the 3<sup>rd</sup> century or later. If there are really Neo-Punic painted characters on the amphorae, these would appear to be very late examples of the survival of the Neo-Punic script, which is otherwise believed to have been abandoned in the early 2<sup>nd</sup> century AD. The overall assemblage could probably be accommodated in a shaft burial below a drum tomb.

**Tomb Number: A1.4 (GER011.TA1.4)**

**Date:** 4<sup>th</sup> century AD?

**Tomb type:** 5, step-Type?

**Stele:** Type 6a (SMC 61).

**Offering table:** Type 4a (SMC 35). Rectangular slot and 4 square compartments.

**Construction details:** Ayoub (1968a, 3) described this tomb as a rectangular stepped structure, plastered and whitewashed on exterior. Dimensions at ground level were 3 m square, with upper step 2.60 m square. Offering table at the east side.

**Skeleton:** A skeleton was recovered by Ayoub in crouched position.

**Contents**

*Amphorae*

A50, A51, A55: Three amphorae. A50 had a graffito, A55 both a graffito and red *dipinti*. (Ayoub attributes amphora A55 to Tomb A1.5 as well as to this one).

*Other Ceramics*

H35/H350: A short necked flagon (NB error in Ayoub's report here – H35 in SMC is a fineware dish from another tomb, probably a confusion with H350 a 'jug' said to be from this tomb). Decorated with wavy lines. Traces of handles are seen on the body.

F58: Small bowl, fragment of overfired pot (CMD says used for cooking). Black/red fabric inner, outer has a slight slip in a browner tone.

*Lamp*

J10: Tripolitanian lamp with one filling hole, circular plain discus. On the rim there are crude leaf bands (not illustrated). The lamp is overfired black and vitrified in places. 4<sup>th</sup> century AD. (NB this lamp appears to be attributed by Ayoub to both Tomb A1.2 and A1.4. The latter is more likely correct).

**Comments/discussion**

Ayoub's records were particularly scanty for this tomb and there are questions over the association of the key dating evidence (the lamp) with the tomb. As it was in Ayoub's upper level of burials, it was probably wholly erased by his subsequent excavations.

**Tomb Number: A1.5 (GER011.TA1.5)****Date:** Mid 3<sup>rd</sup> century AD or later?**Tomb type:** 3b, drum-type.**Stele:** Type 8. 2-points of a 'picket fence' type stele (SMC 62).**Offering table:** Type 4d (SMC 33). Rectangular main slot and 3 circular small compartments along back The offering table was found to the east of the tomb.**Skeleton:** Skeleton was evidently in crouched position, though skull and skeleton 'much decayed'. Offering table at east suggests head may have been laid in that direction also, though the orientation was not recorded by Ayoub.**Contents***Amphorae*

A55: Amphora, neck missing but handles intact. Two marks: a) an incision into the clay (no indication of whether it was made before or after firing) and b) a chalk mark. (Ayoub also attributed this to A1.4).

A53: Amphora. Indistinct chalk lines were noted.

*Other Ceramics*H301: A wide flat dish of refined clay, probably late ARS or TRS (Fig. 5.17). Round the inside there were three circles with egg-shaped grooves. 4<sup>th</sup> century AD.

F53: Small pot handle, probably of a Tunisian flagon. Fragmentary. Well polished with three incised lines.

*Lamp*J7: Relief lamp, heart-shaped nozzle, rim decorated with incised loops and relief dots (Fig. 5.16). On the discus is bust of Tanit and crescent moon. The handle of the lamp is barely pierced. North African. Mid 3<sup>rd</sup> century?*Other*

F50: A red 'chalk' – presumably a lump of red ochre (NB F50 was a doublet number in Ayoub's Sabhā Museum list).

**Comments/discussion**

In view of the uncertainty about the form of the fineware dish H301, the best indication of date is the lamp, which gives a probable mid 3<sup>rd</sup>-century TPQ. The fragmentary nature of some of finds suggests there may have been some disturbance of this burial. The overall assemblage could be accommodated in a shaft burial below a drum tomb.

**Tomb number: A1.6 (GER011.TA1.6)****Date:** 4<sup>th</sup> century AD?**Tomb type:** 3b, drum-type.**Stele:** Type 6, two point (SMC 63).**Offering table:** Type 4a (SMC 34). Rectangular slot and 4 square compartments along back.**Skeleton:** A skeleton was found, although no detail is recorded other than fact that this was a crouched inhumation.

A1.5 H301



A1.6 H35

Figure 5.17. Late Roman ARS or TRS vessels from Tombs A1.5 and A1.6 (FP 2002).

**Contents***Amphorae*

A51: Amphora with a missing handle.

A54: Amphora with an illegible red painted sign on the body.

*Other Ceramics*H35: ARS dish, with stamped motif in centre of floor (Fig. 5.17). Ayoub says that similar to H300 and H301 from other tombs in this layer, Hayes does not give an ARS form number but suggests it was a southern Tunisian product and of the 4<sup>th</sup> century AD.J5: Lamp. The nozzle is heart-shaped and has incised lines at the inner end (Fig. 5.16). The rim is decorated with dots in relief surrounded by incised dots and loops. The discus shows an arena huntsman (*venator*) with a spear and a leopard. The handle is semi-pierced. Mid – late 3<sup>rd</sup> century.*Glass*

C5: Decorated glass beaker (Fig. 8.7). The glass is opaque dark green and it contains bubbles. It is decorated with friezes, the upper of acorns and berries flanking a central stem, the lower scrolls with leaves and berries.

*Other*

E2: Beads - 8 ostrich egg-shell beads and 2 red glass beads.

**Comments/discussion**

The date is certainly the later 3<sup>rd</sup> century to judge by the lamp and if the 'ARS' dish can be more closely assigned maybe 4<sup>th</sup> century. The overall assemblage could be accommodated in a shaft burial below a drum tomb.

A2.1



H42 (top)



H42 (side)



H66



H70



H71



H300



H36



C7



Figure 5.18. Finewares, coarsewares and glass from Tomb A2.1 (FP 2002).

*Layer 2*

The following tombs were assigned by Ayoub to his second layer.

**Tomb number: A2.1 (GER011.TA2.1)**

**Date:** 2<sup>nd</sup> century AD.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 3 (SMC 37). Large rectangular table, with single rectangular slot. The SMC record reassigned this stone to this tomb from the Royal Cemetery, so provenance not certain.

**Skeleton:** A skeleton was found in a crouched position and evidently a skull was recovered. The skeleton was wrapped in a mat.

**Contents***Amphorae*

A21: Amphora. Part of the neck and rim were missing. On the upper part of the body was an incised mark. Near this there was a paint mark.

A22, A52 and A59: Three fragmentary amphorae, A22 with a graffito, A52 with traces of red paint.

*Other Ceramics*

H42: A *lagynos* flask with a small nozzle which is partially broken (FW 507). The handle was missing (Figs 5.18, 5.136). On the upper part of the body there are drawings in black ink representing a dolphin, a lyre, sea-anemones and other subjects. 2<sup>nd</sup> – 1<sup>st</sup> century BC (AF 2, p. 328–29).

H66: ARS bowl, Hayes form 2 (FW 518). A relief on the rim represents five barbotine leaves. Late 1<sup>st</sup> century AD (Fig. 5.18).

H70: ARS bowl, Hayes form 3 (FW 519). Four barbotine leaves on the rim. Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD (Fig. 5.18).

H71: ARS dish, Hayes form 5 (FW 522). There is a rouletted band on the bottom. Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD (Fig. 5.18). (This vessel is wrongly attributed to Tomb A2.4 in AF 2).

H300: ARS dish (H300). There are a number of grooved decorations on the inner centre. The identification and provenance of this vessel is uncertain (Fig. 5.18). Ayoub and el-Kilani (1968a, 5) indicate that it came from the Royal Cemetery, GSC030–031, but Ayoub elsewhere associated it with this tomb. From the description, it seems likely that the ARS form is a late one, while this tomb appears 2<sup>nd</sup> century in date, which would favour the attribution to the Royal Cemetery.

H36: Two-handled globular jug or flask (Fig. 5.18). Grey fabric, with brown slip.

H63: Wheelmade short-necked jug or flagon with plum-coloured surface finish. The rim and one of the handles broken.

*Lamps*

J8: Relief lamp with a plain rim and nozzle (Fig. 5.19). On the discus there is a relief of two birds. Unsigned. North African production. 2<sup>nd</sup> century AD.

J22: Relief lamp with a metallic slip on plain nozzle (Fig. 5.19). The rim is plain, but though broken the discus retained trace of part of a bird. On the base there is a stamp: M NOVIS TI. 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

*Glass*

C7: Glass drinking horn. Made of a thickish glass resembling brown-veined marble (Figs 5.18, 8.9).

*Other*

E7: White stone pendant? Well polished, with two holes.

SMC81/A81: Crescent-shaped granite saddle quern (Fig. 5.21).

**Comments/discussion**

With the exception of the Hellenistic *lagynos*, clearly a long curated artefact, and the uncertain form H300 (which if late Roman is probably from GSC030–031), this assemblage appears to focus on the early 2<sup>nd</sup> century AD. From the description of the skeleton, and the profusion of finds, this was evidently an undisturbed burial. The 4 amphorae, 5 fineware vessels, 2 flagons, glass horn, 2 lamps and a saddle quern represents a lot of material to fit into a type 3b drum tomb with circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

**Tomb number: A2.2 (GER011.TA2.2)**

**Date:** 1<sup>st</sup> century or early 2<sup>nd</sup> century AD.

**Tomb type:** 3b, drum type?

**Stele:** No.

**Offering table:** Type 4a (SMC 6). Rectangular, with very thin long slot and 5 small compartments. The face of the stone nearest the long slot and furthest from the compartments has been painted red.

**Skeleton:** A skeleton was found 'in lamentable state', but no further details recorded.

**Contents***Amphorae*

A8: Amphora. An incised mark (pre-firing) was recorded below handle.

A10: Amphora. A pre-firing incised graffito was noted.

A14: Amphora. Thick rim.

A15: Amphora. Two small handles, three graffiti and one painted mark.

A47: Amphora. Bulging body, incised graffito and traces of red paint.

A48: Amphora. Rim and neck missing.



Figure 5.19. Lamps from tombs in Ayoub's second level (A2.1–A2.4). 1:2 (FP 2002).

A58: Amphora. Marked, but no record of whether it was an incised mark or a chalk mark.

*Other Ceramics*

H7: ARS feeding bottle with strainer, Hayes form 121 (FW 527). Late 1<sup>st</sup> century AD (Fig. 5.20) (wrongly noted as unknown provenance in AF 2).

H30: ARS dish, Hayes form 4 (FW 521). There is a rouletted band at the bottom (Fig. 5.20). Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

H74: ARS bowl, Hayes form 6 (FW 523) (H74 is also assigned to A2.4 by Ayoub). There is a rouletted band in the interior. Late 1<sup>st</sup> – 2<sup>nd</sup> century AD.

H96: ARS bowl, Hayes form 6 (FW 523). There is a rouletted band in the interior. Late 1<sup>st</sup> – 2<sup>nd</sup> century AD (Fig. 5.20).

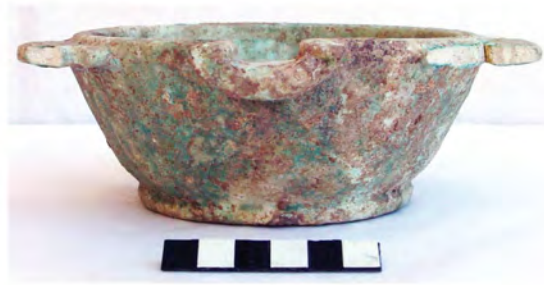
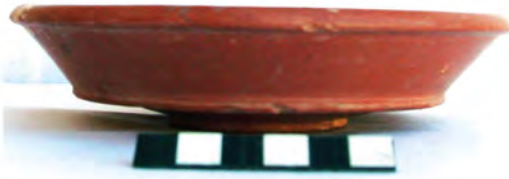
H5: Single-handled flagon (CW 242). 2<sup>nd</sup> – 4<sup>th</sup> century AD. (NB wrongly attributed to TA2.1 by Ayoub and in AF 2).

H15: Small flagon (CW 240), handle missing; base of a ring-type (Fig. 5.20). 3<sup>rd</sup> or 4<sup>th</sup> century? (There is an entry to a second 'ghost' example from this tomb in AF 2, not corroborated elsewhere).

H44: Glazed jug (CW 222). Short neck and a low bulging body (Fig. 5.20). The handles are twisted to resemble rope. There is one deep groove on the lip and two parallel lines around the body. 1<sup>st</sup> – 2<sup>nd</sup> century AD. (Illustrated AF 2, fig. 41.32)

H101: globular flagon with a short neck (CW 243). There are two rings at the middle of the neck from which two handles descend to meet the upper part of the body

A2.2



H65 (faience)



H30



H96



H7



H101



H15



H44

Figure 5.20. Pottery and faience vessel from A2.2 (FP 2002).





Figure 5.21. Saddle querns from Ayoub's second level of tombs (A2.1–A2.3) (FP 2002).

(Fig. 5.20). The base is ring-type. 2<sup>nd</sup>–4<sup>th</sup> century AD. (Illustrated *AF* 2, fig. 41.35).

#### Lamp

J1: Volute lamp with moulded nozzle, rim is narrow with moulded tongues (Fig. 5.19). There is a relief of a man restraining a horse. Signed on base in cursive script: LASCIVI. Mid 1<sup>st</sup> century AD.

#### Faience

H65: Large faience bowl (Tagart 1983, 152–53, no. 9), with a short spout at the rim (Figs 5.20, 8.3, no. 10). It is flanked by two horizontal handles, each moulded with a hole through the centre. There is a low footring. Import from Roman Egypt.

#### Other

SMC 82 (Ayoub referred to this as A82): Crescent-shaped granite saddle quern with a circular rubber (Fig. 5.21).

#### Comments/discussion

The overall assemblage is focused on the late 1<sup>st</sup> century or early 2<sup>nd</sup> century, a date range also favoured by the presence of a saddle quern, rather than a rotary quern. The later dates advanced for some of the coarseware flagons can probably be discounted. The 7 amphorae, 4 ARS vessels, 4 jugs/flagons, 1 faience vessel and 1 lamp and saddle quern looks an improbably high total for a type 3b drum tomb with limited stacking space in a circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

**Tomb number:** A2.3 (GER011.TA2.3)

**Date:** Early 2<sup>nd</sup> century.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 3 (SMC 5). Table with single broad rectangular slot.

**Skeleton:** Ayoub gave two versions of this. In an unpublished typescript he said that skull and skeleton were in a crouched position, in the published report (1968a, 9) he claimed that no skeleton had been found; instead fragments of a cremated body were present in a glass cinerary urn. The veracity of this latter claim is impossible to assess, though the alternative statement, must cast some doubt.

#### Contents

##### Amphora

H48: Amphoroid jar (AM 9?). Small, in a refined, red fabric. The body tapers to the small ring type base; the handles extend from the lip to the upper part of the body.

A10: Amphora.

A12: Amphora.

A13: Amphora. Bears incised mark ↑ on the body.

##### Other Ceramics

H64: ARS bowl, Hayes form 3b (FW 519). There are five barbotine leaves on the rim (Fig. 5.22). Late 1<sup>st</sup>–early 2<sup>nd</sup> century AD.

H77: ARS bowl, Hayes form 3c (FW 520), with plain rim (Fig. 5.22). Early–mid 2<sup>nd</sup> century AD.

H23: ARS bowl, Hayes form 6 (FW 523). Late 1<sup>st</sup>–2<sup>nd</sup> century AD.

H33: ARS bowl, Hayes form 6 (FW 523). Late 1<sup>st</sup>–2<sup>nd</sup> century AD (Fig. 5.22).

H72: ARS bowl, Hayes form 6 (FW 523). Late 1<sup>st</sup>–2<sup>nd</sup> century AD.

H73: ARS bowl, Hayes form 6 (FW 523). Rouletting on interior floor. Late 1<sup>st</sup>–2<sup>nd</sup> century AD (Fig. 5.22).

H75: ARS bowl, Hayes form 6 (FW 523). Rouletting on interior floor. Late 1<sup>st</sup>–2<sup>nd</sup> century AD (Fig. 5.22).

H41: ARS bowl, Hayes form 8 (FW 524). Late 1<sup>st</sup>–2<sup>nd</sup> century AD (Fig. 5.22).

H100: ARS bowl, Hayes form 8 (FW 524). Late 1<sup>st</sup>–2<sup>nd</sup> century AD (Fig. 5.22).

H13: Small jug (CW 240?), with polished red finish,

A2.3



H64



H77



H23



H33



H100



H41



H64 (top)



H73



H75



H41 (base)

Figure 5.22. Fineware from Tomb A2.3 (FP 2002).

## A2.3



Figure 5.23. Coarseware jugs and flagons from Tomb A2.3 (FP 2002).

part of rim missing, thin long handle from rim to flaring body (Fig. 5.23).

H19: Base of a small jug or bottle – looks to be a pair with H13, but missing neck and rim.

H45: Sharply carinated bulbous flagon (CW 242), with tall, narrow neck (Fig. 5.23). Light grooves at the end of the neck and around the upper body. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

H46: Sharply carinated bulbous flagon (CW 242). Burnished black colour with circular grooves around the upper part of the body (Fig. 5.23). 2<sup>nd</sup> – 4<sup>th</sup> century AD.

H99: Tall, narrow-necked single-handled flagon (CW 241). (Fig. 5.23).

H102: Single-handled bottle or flagon, missing rim, most of handle and base (possibly CW 241). Rough red clay (Fig. 5.23).

H202: Single handled flagon, with ring type rim and short cylindrical neck, pink sandy fabric and creamy

slip. May well belong to this tomb (unless Ayoub has confused with 102).

#### Lamps

J12: Relief lamp, with plain rim. Discus decorated with relief representing a running antelope. On one of the sides there is a relief 'X'. 2<sup>nd</sup> century AD?

J14: Lamp, almost ovoid shape, with a narrow channel between the discus and the nozzle. The rim is decorated with three lines of dots in relief, discus is plain. There is a stamp on the base possibly reading: INIRIFXI. Late 1<sup>st</sup> – 2<sup>nd</sup> century AD.

#### Glass

C6: A large glass *modiolus*, described by Ayoub as a 'cinerary urn'. 1<sup>st</sup> century AD (Fig. 8.9).

C8: Glass bowl, with bulging body and a ring-type base (Fig. 8.5).

#### Other

A crescent-shaped stone saddle quern (Fig. 5.21).

E6: Some beads of ostrich eggshell and one bead of

amazonite. (However, in SMC E6 is a mass of dark blue glass beads of unknown provenance).

E17: Another group of beads found together of carnelian and coloured glass. (However, SMC indicates a necklace of assorted glass beads, primarily green glass and big blue ones.)

#### Comments/discussion

The assemblage is consistent with an early 2<sup>nd</sup>-century date. The exceptional treatment of the body here (cremation rather than crouched inhumation) would be a notable point of interest if Ayoub's report were to be trusted. The fact that the tomb contained a *modiolus*/cinerary urn is not conclusively in favour of the body having been cremated – it could have been used for some other purpose, but have prompted Ayoub's idea that this burial should have contained a cremation. It is unfortunate that not all the ceramics from this tomb can be identified in the Museum stores, as there seems a possibility that the tomb contained three pairs of flagons. If the tomb dates to the early 2<sup>nd</sup> century, this is towards the lower end of the suggested date ranges for these flagons. The 4 amphorae, 9 ARS bowls and dishes, 6 flagons, 2 lamps, 2 large glass vessels seems a large total for a type 3b drum tomb with circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

#### Tomb number: A2.4 (GER011.TA2.4)

**Date:** Early 2<sup>nd</sup> century AD.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 3 (SMC 7). One of the short ends painted red.

**Skeleton:** A skeleton was noted, but no details survive. The skeleton was recorded as 'wrapped in leather'.

#### Contents

##### Amphorae

A9, A17, A37, A38, A46, A75: Six amphorae of different sizes and shapes (NB A37 also listed by Ayoub as from Tomb A3.2): A37, A38 and A75 had painted marks on the vessel; A38 also had an incised graffito; A9, A17 and A46 have no marks.

##### Other Ceramics

H78: Dish of Cypriot Lustre ware (not in *AF* 2 series). Undecorated but has a double dipping streak (Fig. 5.24). Athenian Agora type No. 5, group G174. Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

H27, H68, H69 and H95: Four ARS dishes of Hayes type 3b with four barbotine leaves decorating the rim (FW 519). (Fig. 5.24). (There was another identical vessel H67 of unknown tomb provenance from GER011

in Sabhā Museum in the 1960s. It is possible it was also from this tomb).

H32: ARS bowl Hayes type 5 (FW 522) (Fig. 5.24). There is a single band of rouletting on the floor. (Context incorrectly listed as A2.1 in *AF* 2).

H74 and H76: two ARS bowls, Hayes form 6 (FW 523) (Fig. 5.24). (H74 is also assigned to A2.2 by Ayoub). Late 1<sup>st</sup> – 2<sup>nd</sup> century AD.

H10: Single-handled jug of flagon (CW 239). Small, of grey clay with a ring-type base (Fig. 5.25). (*AF* 2, fig. 41.34).

H11: Small short-necked flagon in relatively fine red ware. Fragmentary (Fig. 5.25).

H20: Flagon, short neck, two handles (CW 243). 2<sup>nd</sup> – 4<sup>th</sup> century AD? (Fig. 5.25).

H97: Flagon, short neck, two handles (CW 243). 2<sup>nd</sup> – 4<sup>th</sup> century AD? (Fig. 5.25).

H21: Small flask/flagon missing one handle and chip out of rim (CW 222). 1<sup>st</sup> – 2<sup>nd</sup> century AD.

#### Lamps

J17: Volute lamp of Italian origin (Broneer type XXII or XXIII). It is of yellow clay with a dark brown wash (Fig. 5.19). The nozzle has a rounded lip and moulded volutes. The rim is plain and narrow. The discus shows Pegasus. On the base there are two small stamps *in p.*, lower one reading: LVIL. Mid 1<sup>st</sup> century AD.

J18: Relief lamp. Plain nozzle, rim with stamped egg-band (Fig. 5.19). The discus was broken but a picture of three seated women is still visible. On the base is stamped: C CLO SVC. North African production. Late 1<sup>st</sup> – early 2<sup>nd</sup> century.

#### Faience

H1: Large bowl with heavy footring (Tagart 1983, 151–52, no 6). Import from Roman Egypt (Figs 5.24, 8.2, no. 6).

#### Glass

C9: Glass bowl. Thick glass, ring-type base (Fig. 8.5).

#### Other

E24: Ostrich eggshell beads and some coloured glass beads, now arranged in a necklace (SMC records two necklaces with this number, from TA1.3 and A2.4).

#### Comments/discussion

The assemblage is consistent with an early 2<sup>nd</sup> century date overall. Once again, the 6 amphorae, 8 fineware vessels, 5 flagons, 1 faience, 1 glass bowl, 2 lamps seems an improbably high number of vessels for a type 3b drum tomb with circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

A2.4



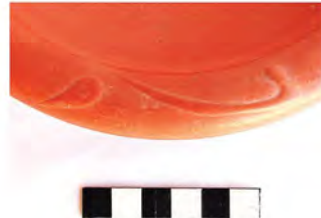
H78



H27



H69



H69 (detail)



H95



H32



H74



H76



H1 (faience)



H1 (base)

Figure 5.24, Fineware and faience from Tomb A2.4 (FP 2002).



Figure 5.25. Coarseware jugs and flacons from Tomb A2.4 (FP 2002).

### Layer 3

The following tombs were assigned by Ayoub to his third layer of burials.

#### **Tomb number: A3.1 (GER011.TA3.1)**

**Date:** Late 1<sup>st</sup> century AD.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 4d/4c (SMC 102B). Unusual table with rectangular slot and unusual asymmetrical arrangement of 1 circular, 1 square and 2 rectangular compartments along back.

**Skeleton:** A skeleton was recorded, but no details survive other than that this was a crouched inhumation.

#### **Contents**

##### *Amphorae*

A1, A3, A4, A5, A6, A7, and A48: Seven cylindrical amphorae of different size and shapes, two (unspecified) with incised graffiti. (A48 is referred to as A8 in error by Ayoub 1968a).

##### *Other Ceramics*

H4: South Gaulish Sigillata bowl, Dr 37 (FW 516). There is a metope decoration comprising: i) erotic scenes (ithyphallic Eros playing pipes behind

bending female); ii) St-Andrews cross motif; iii) a pair of confronting stags (with floral motif between), alternating and repeated three times (Fig. 5.26). There are running hares in the panel below the stag frieze. AD 65–80. (H3 and H4 were allegedly found with C6 cinerary urn, but the latter is assigned to Tomb A2.3). H3: Italian Sigillata bowl, Dr 29 (FW 513). Most of the rim is missing. The upper and lower friezes are decorated with rows of winged cupids facing left, alternately with arms bent or bearing a tray (Fig. 5.26). Two stamps: on the inner floor *in p. p.* SEX.M.P; on lower frieze, retrograde in raised panel *in p. p.* SEX MV PI. AD 60–80.

H22: South Gaulish Sigillata dish, Dr 36 (not in AF 2 series). Five barbotine leaves on the rim (Fig. 5.26). Later 1<sup>st</sup> century AD.

H25: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves. Stamped *in p. p.* L R PIS. AD 50–80.

H31: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves. Stamped *in p. p.* L·R·PIS. AD 50–80.

H88: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves. Stamped *in p. p.* LRASNIN·PIS. AD 50–80.

A3.1



H3 (underside)



H4



H22



H22 (detail of barbotine)



H3 (side view)



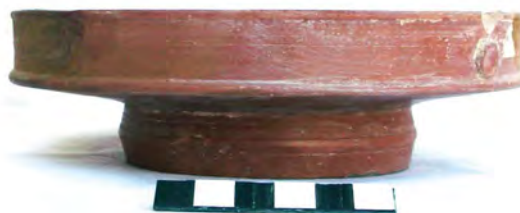
H3 (stamp)



H40 (side detail)



H40 (stamp)



H40 (side)



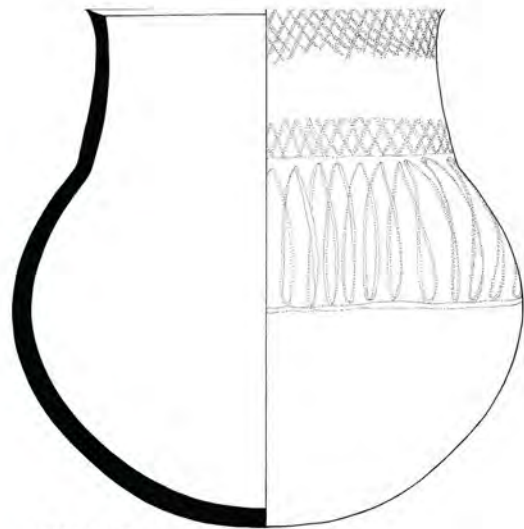
H40 (underside)

Figure 5.26. Fineware from Tomb A3.1 (FP 2002).

## A3.1



A35



A35? (1:8)



H49



H51



H51 (detail)

Figure 5.27. Handmade vessel and pedestal vases from Tomb A3.1 (FP 2002).

H40: Italian Sigillata dish (not in *AF 2* series). Form is Corinth type 12. Stamped: C·P·P retrograde (Fig. 5.26). There are four appliqué decorations on the wall. On the bottom there are graffiti: one looks like CVPA, another Neo-Punic.

H43: A small Red-slip jug with a bulging body and a thick handle (not in *AF 2* series).

H49: Pedestal vase (CW 216). Red clay (Fig. 5.27). 1<sup>st</sup> century AD.

H51: Pedestal vase (CW 216). Circular rim (Fig. 5.27). Two rings circle the outer walls of the vessel with two rows of decoration in between. The upper rows show the series repeated and the lower row shows a pattern of date-stone impressions. 1<sup>st</sup> century AD (Illustrated *AF 2*, fig. 41.31).

H210: Incense burner (wrongly reported as H201 by Ayoub), apparently of type HM 336. Part of the rim and handle were missing. This was locally made and decorated with stripes and different colours.

A35: Handmade globular vessel with elongated straight neck and painted decoration (HM 333). Part of the rim is missing (Fig. 5.27). It is painted white and decorated with red vertical lines. 1<sup>st</sup> – 4<sup>th</sup> century AD.

#### Lamps

J9: Relief lamp, with metallic slip, elongated nozzle and a pair of volutes at the inner end, faint rippling on the rim (Fig. 5.28). The discus shows a bird behind a trident. There are traces of a stamp on the underside. Mid – late 1<sup>st</sup> century AD.

J2: Relief lamp. Plain rim and nozzle. The discus is





Figure 5.28. Lamps from tombs in Ayoub's third level (A3.1–A3.3). 1:2 (FP 2002).

broken but traces of a relief can be seen. On the base is stamped: MNOVIVS TI. Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD.

#### Glass

C3: Pillar moulded glass bowl (Fig. 8.4). Thick opaque blue-green glass, with bubbles in it. Prominent ribs decorate it. There are three incised lines near the base in the interior.

C4: Pillar moulded glass bowl (Fig. 8.4). Thick opaque blue-green glass, with bubbles in it. Prominent ribs decorate it. There are three incised lines near the base in the interior.

#### Other

E8: Some beads of white sea-shells, ostrich eggshell beads and one amazonite bead now arranged in a necklace (numbers unclear and does not match exactly with Museum exhibit with this number).

#### Comments/discussion

The date of the assemblage appears to be late 1<sup>st</sup> century and is distinguished from the early 2<sup>nd</sup> century tomb groups by the absence of ARS. The assemblage is large (7 amphorae, 7 fineware bowls or dishes, 2 pedestal vases, a flagon and a large handmade storage pot, plus 2 glass bowls and 2 lamps) and seems improbably high for a Type 3b drum tomb with circular shafts rarely exceed 1.5 m in internal diameter. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

#### Tomb number: A3.2 (GER011.TA3.2)

**Date:** Late 1<sup>st</sup> century AD.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 4d/4c (SMC 101B). Unusual table with rectangular slot and unusual asymmetrical arrangement of 1 circular, 1 square and 3 rectangular compartments along back.

**Skeleton:** A skeleton was recorded, but no details survive other than that it was a crouched inhumation.

#### Contents

##### Amphorae

H50: Amphoroid jar (AM 7) .

A2, A37, A39, A44: Four other amphorae of different sizes and shapes. (A37 also assigned by Ayoub to A2.4.)

##### Other Ceramics

H34: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves. Stamped *in p. p.* SEX·M·P. Graffiti on underside: √. AD 50–80.

H83: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves (Fig. 5.29). Stamped *in p. p.* SEX·M·P. Graffiti on underside: i) CA, ii) N (retro). AD 50–80.

H85: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves (Fig. 5.29). Stamped *in p. p.* SEX·M[. Graffiti on underside: i) CA, ii) √, iii) NIMIRE. AD 50–80.

H89: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves

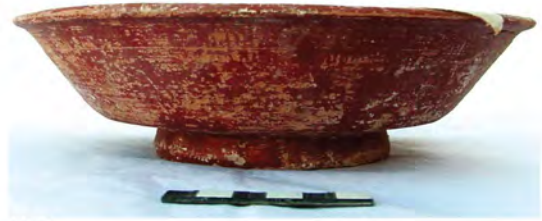
A3.2



H83



H83 (graffiti)



H85



H85 (stamp)



H83 (stamp)



H89



A3 (detail of handles)



A3



H204

Figure 5.29. Fineware and other pottery from Tomb A3.2 (FP 2002).

(Fig. 5.29). Stamped *in p. p.* C-PPO. AD 60–80.

H204: Small cup, ring-type base (Fig. 5.29). No further details, but possibly pair with H98.

H98: Small cup, ring-type base, refined red clay (not in *AF 2* series?). 1<sup>st</sup> century AD.

H17: Single handled flagon, imitation of a Punic type? Bulging body and a short neck (not in *AF 2* series).

#### Lamps

J4: Relief lamp, with plain nozzle and wreath on discus (Fig. 5.28). Stamped (incised?) CIVN (retro) DRAC. Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD.

J19: Relief lamp, with plain nozzle and wreath on discus. Stamped (incised?) CIVN (retro) DRAC. Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD. Lamp appears to be identical twin of J3 (Tomb A3.3) and has same signature as J4.

#### Glass

C1: Glass pillar moulded bowl. Thick opaque glass (Fig. 8.4).

#### Other

SMC 97. Stone slab with small circular depressions in upper surface (No. 97). In one of the holes there was a granite handle. This sounds like a stone mortar with multiple grinding holes.

Beads: Some ostrich eggshell beads.

#### Comments/discussion

There is an interesting overlap between the contents of this tomb and the next one (see below for further comment). The 5 amphorae, 6 fine vessels and flagon, plus glass bowl, 2 lamps and a mortar again seem incompatible with the internal dimensions of a type 3b drum tomb with circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub's description of tomb type here is probably not to be trusted.

#### Tomb number: A3.3 (GER011.TA3.3)

**Date:** Late 1<sup>st</sup> century AD.

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** Type 4d/4c (SMC 100B). Unusual table with rectangular slot and unusual asymmetrical arrangement of 3 circular, 1 square and 1 rectangular compartments along back. (Ayoub recorded this same offering table also with Tomb A1.2 – but the association with A3.3 seems more probable in light of close similarity of this table with those attached to tombs A3.1 and A3.2.)

**Skeleton:** A skeleton was recorded, but no details survive beyond fact that crouched inhumation.

#### Contents

##### Amphorae

A20, A16, A36, A40, A41, A78: Six amphorae of

different shapes and kinds, A41 with incised graffito. H57: fragmentary amphora, with bulging body, missing handles and rim.

#### Other Ceramics

H38: Italian Sigillata dish, Dr 18 (FW 515). Chipped, with bands of rouletting on the floor arranged between two grooves (Fig. 5.30). Stamped *in p. p.* S·M·F (or possibly S.M.P.). Graffito on underside: √. AD 50–80.

H39: Italian Sigillata dish, Dr 18 (FW 515). Complete, with bands of rouletting on the floor arranged between two grooves Stamped *in p. p.* L R PIS. AD 50–80.

H81: Italian Sigillata dish, Dr 18 (FW 515), with two group of two grooves in floor. Stamped (lunate) S(retro)EX M P (Fig. 5.30). No graffiti. AD 60–80.

H82: Italian Sigillata dish, Dr 18 (FW 515), with two group of two grooves in floor (Fig. 5.30). Stamped *in p. p.* SEX M P. AD 50–80.

H84: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves (Fig. 5.30). Stamped *in p. p.* SEX M P. Graffiti on exterior: i) CA, ii) NIMIRA, iii) NIM[...] AD 50–80.

H86: Italian Sigillata dish, Dr 18 (FW 515), with bands of rouletting on the floor arranged between two grooves. Stamped *in p. p.* SEX[...] Graffito on underside: √. AD 50–80.

Ayoub specifically mentions eight Dragendorff form 18's from this tomb and supplies the following additional numbers (Ayoub 1968a, 12–13), H22 H64, but these numbers were doublets in the SMC for other vessels. It is thus possible that the following two vessels were also found:

H22: Italian Sigillata dish, Dr 18 (FW 515).

H64: Italian Sigillata dish, Dr 18 (FW 515).

H80: Eastern Sigillata A dish, Syrian copy of Dragendorff form 18 (FW 509), has two ridges round the centre of the floor. Late 1<sup>st</sup> century AD.

H16: Cup or small bowl in grey-green coarse fabric (Fig. 5.31). (Incorrectly described by Ayoub 1968a, as H6 and also assigned by him to A4.1).

H60: Flagon, with neck and rim missing (Fig. 5.31).

H62: Flagon, with neck and rim missing. Sandy fabric and lighter slip.

H6: Single-handled jug with ring-type rim and cylindrical body (Fig. 5.31). Red clay.

H14: Small jug, with overhanging rim (CW 204). 2<sup>nd</sup> – 3<sup>rd</sup> centuries AD?

H188: Small jug, with overhanging rim (CW 204). 2<sup>nd</sup> – 3<sup>rd</sup> centuries AD?

H18: Single-handled jug with ring-type rim and globular body, reddish fabric.

#### Lamps

J3: Stamped lamp with plain nozzle and rim. The discus of the lamp was broken, but appeared plain.

A3.3



H38



H38 (stamp)



H81



H81 (stamp)



H82



H82 (stamp)



H84



H84 (stamp)



H84 (graffito)



H84 (underside & graffiti)

Figure 5.30. Fineware from Tomb A3.3 (FP 2002).

Stamped (incised?) CIVN (retro) DRAC. Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD. Two lamps with same signature were found in TA3.2 (J19 is probably a twin of this example), and Ayoub implied (1968a, 12) that there were two examples from this tomb also, but only one lamp with this stamp was recorded in SMC as relating to this tomb.

J6: Stamped lamp with plain nozzle and rim, discus decorated with raised circles and ‘spokes’ round a central boss. The stamp reads: ANCHIA. Late 1<sup>st</sup> or early 2<sup>nd</sup> century AD.

#### Glass

C2: Glass bowl. Pillar moulded decoration (Fig. 8.4).

#### Other

SMC 99: An oval stone slab with two small circular depressions in upper depression – presumably another mortar.

E19: Ostrich eggshell beads and coloured glass beads, now collected in a necklace (no further information available).

#### Comments/discussion

There are very close similarities between this tomb assemblage and that recorded for Tomb A3.2. Not only were the fineware assemblages in both tombs largely from the same Italian producers (many examples of the same SEX M P stamp), but more extraordinarily there is clear overlap in the graffiti recorded on the undersides of vessels. There is overlap between both tombs relating to three separate notations i) CA, ii) √, iii) NIMIRE or NIMIRA (some vessels have more than one of these, one has all three). Graffiti on the underside or base of vessels are generally thought to denote personal ownership of vessels, and although Nimira is a Libyan name it seems somewhat surprising that at so early a date, the Garamantes might have adopted Latin letters for this sort of epigraphic practice (Fig. 5.30). A plausible alternative is that the graffiti were added by merchants to differentiate their stock from one another on the caravan journey across the desert. In either case it is likely that the two tombs were adjacent and related to members of the same family who had died soon after one another and who were buried close to one another with a very recently arrived stock of imports that had been acquired from a single merchant (and that had not been diluted by subsequent additions/purchases). A date for the tomb in the late 1<sup>st</sup> century AD (and perhaps not much later than AD 80) seems likely, despite the later date brackets suggested for some of the coarseware in AF 2.

The total of 7 amphorae, 7 (or 9) fineware vessels, 1 cup, a pair of flagons, 4 jugs (including a matching pair), 2 (or 3) lamps, a glass bowl and a stone mortar

again seems improbably high for a type 3b drum tomb with circular shaft. It seems more in line with the assemblages recorded by CMD in rectangular tomb chambers (see below Tombs 9, 15, 17, 51, 52, 53). Ayoub’s description of tomb type here is probably not to be trusted.

#### Layer 4

Only one tomb was excavated from Ayoub’s fourth Layer. It is not clear whether there were others which were left unexcavated.

#### Tomb number: A4.1(GER011.TA4.1)

**Date:** Uncertain, stratigraphic location would suggest it should be 1<sup>st</sup> century AD.

**Tomb type:** 3b, drum-type

**Stele:** No.

**Offering table:** Type 4d (SMC 38). Rectangular trough, with 2 square and 2 elongated rectangular compartments. (NB Ayoub initially seems to have assigned this to the Royal Cemetery).

**Skeleton:** A skeleton was recorded, but no details survive apart from fact that this was a crouched inhumation.

#### Contents

Contents are here divided into two categories: those found immediately outside and assumed by Ayoub to be associated with the tomb, and those recovered inside the tomb.

#### Outside:

A24, A25, A27, A29, A30, A31, A33, A28: Eight amphorae (no further information recorded and not now identifiable in store), allegedly found near the offering table. One wonders if this large group of amphorae was actually part of (that is, inside) a separate tomb that was not recognised as such by Ayoub and his workmen.

#### Inside:

H9: Single-handled small jug (CW 204 vel sim.). 2<sup>nd</sup> – 3<sup>rd</sup> century AD?

H47: Single-handled narrow neck flagon (Fig. 5.31).

H58: Fragments of two flagons, neck and rim missing.

H59: Large coarseware bowl on ring type base. Possibly two or even three vessels – confusion in Ayoub’s numbering (one of extra references to H59 probably H61 below).

H8: Globular handmade pot, with everted rim (HM 337/338 vel sim.?) Small. 1<sup>st</sup> – 4<sup>th</sup> century AD.

H55: Handmade bowl, imitating a Roman *terra sigillata* form.

H61: Handmade bowl in Berber Red fabric.



Figure 5.31. Other pottery from Tomb A3.3 and A4.1 and unprovenanced vessels from Ayoub's excavations at the site (FP 2002).

#### Comments/discussion

If we accept that the association of the amphora with the primary burial is unproven, the relative lack of imported material from this tomb is striking, especially in light of the abundance of late 1<sup>st</sup>- and early 2<sup>nd</sup>-century finds from Ayoub's Level 2 and Level 3 tombs. This could be related to the date of the burial – perhaps in a period of limited contact between the Garamantes and the Mediterranean world (though the evident imitation of

a *terra sigillata* form in local handmade pottery shows that there was some contact). However, the sample is too small to draw firm conclusions – it could just be that this was a poorer and less well-furnished tomb of 1<sup>st</sup> century date (though it appears to have had a largish offering table attached). The overall assemblage in this case could have been accommodated in a shaft burial below a drum tomb.

## TOMBS EXCAVATED BY CMD

The CMD excavations in 1973 dealt mainly with the upper levels of tombs and two of the early tombs (Tombs 15 and 17), while part exposing two further early structures (Tombs 9 and 42). The work in 1977 was primarily focused on a series of early burials, Tombs 9, 42, 50–53, while also cleaning and recording a series of early burials that had been previously opened by Ayoub or the French group (Tombs 1, 3, 6). For the overall location of tombs see Figs 5.12–5.13.

### Burial Catalogue

#### Tomb number: 1 (GER011.T1)

**Date:** Late 1<sup>st</sup> century – early 2<sup>nd</sup> century AD.

The dating evidence for this tomb is less precise than for many others, but it can be confidently placed within the earlier group on two grounds. Firstly, it is in association with an early Tripolitanian amphora <4164>. On the basis of the finds from other tombs, this class has been dated to the late 1<sup>st</sup> – early 2<sup>nd</sup> centuries. Secondly, it was partly overlain by the later Tomb 22.

**Tomb type:** 4b, rectangular superstructure and chamber (Fig. 5.32).

**Stele:** One point of a type 8, coarse-grained sandstone stele was found inside the tomb (Fig. 5.33). Some red paint was still adhering to it. The hole for this stele survives outside the tomb (west side), cut into a mudbrick platform.

**Offering table:** Type 3. Lying to the west of the tomb was a coarse-grained sandstone offering table. It measured 82 x 35 x 20 cm, with a single long trough 9 cm deep cut into its upper side. Some red paint still adhered to its eastern side. The eastern side also displayed evidence of stone working, in the form of slanting chisel marks, some 0.25–0.75 cm long.

**Construction details:** Both the exterior walls and the chamber of this tomb are (sub-)rectangular in plan. The internal dimensions of the rectangular chamber were 2.32 m (east-west) x 1.65 m (north-south). Surviving wall heights above the tomb floor were: north 1.22 m; east 1.46 m; south 1.17 m; west 1.20 m. The roof of the tomb was mostly missing, although a large section remained attached to the western wall, overhanging the shaft by 0.50 m. The shaft was c.1 m deep. The walls of the tomb were mudbrick, with large bricks 0.40–0.50 m long. The upper courses were in a pale, whitish mudbrick, bonded with a red mud ‘mortar’. The bricks in these layers were 0.20 m thick. The lower seven or eight courses were in a red mudbrick fabric, bonded with a whitish mud mortar, and here the bricks were c.7.5 cm thick.

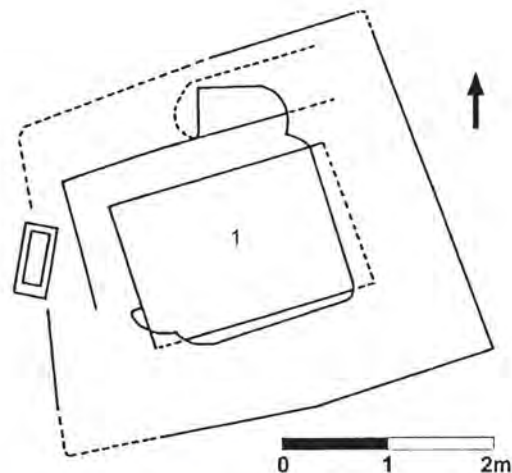


Figure 5.32. Plan of Tomb 1.



Figure 5.33. Interior of Tomb 1, looking west (CMD 1973).

**Excavation notes:** This tomb had already been excavated by the time CMD began work. It also seems to have been robbed through the roof and the front (east) wall, prior to excavation. The fill of the tomb appears to have been sand, occasionally flecked with small pebbles. The sand was present both in the tomb and spilling across the partially destroyed western wall. The amphora <4164> was found *in situ* propped in the north-east corner of the chamber (Fig. 5.34) and fragments of a handmade painted pot <4218> were recovered



Figure 5.34. Interior of Tomb 1, looking north-east, with fragments of amphora T1 A in corner (CMD 1973).

immediately outside the tomb, just to the south of the offering table. There were traces of circular impressions on the floor of the tomb, evidently indicating where pots had stood – one c.30 cm in from the centre of the north wall and two adjacent to the centre of the south wall in an area where some purple staining was noted (Fig. 5.35).

**Skeleton:** No trace survived.

**Contents**

*Ceramics*

A: <4164> Early – mid Roman Tripolitanian amphora/Tripolitana I, slightly everted rim with double stepped moulding (AM 19). D: 20 cm, H: 73.5 cm, capacity: 25.6 l. Fabric: reddish-purple coloured. 1<sup>st</sup> – 2<sup>nd</sup> century AD (Fig. 5.145).

B: <4218> Handmade local pot body sherds (form not preserved), but evidently with traces of white pigment on Berber Red fabric and suggestion that lattice pattern.

*Other finds*

One small fleck of blue faience was found at the bottom of the tomb, under the sand layers.

Small fragment of pumice stone.

There was a fragment of glass bangle recovered in layer 1 (initial cleaning above tomb).

**Comments/discussion**

At the start of work at Sāniat bin Huwaydī, Daniels recorded that this tomb had been previously excavated by Ayoub in the 1960s. However, no tomb matching this description is to be found in Ayoub's account of his work (1968a). In fact, this tomb seems to have been partially excavated by the group of French doctors. It is clear from their notes that they undertook some excavation and recovered finds, but it is not clear why they left the excavation of this tomb unfinished.

**Tomb number: 2**

This proved on investigation not to have been a tomb, but a section of wall connecting between T3 and T50.

**Tomb number: 3 (GER011.T3)**

**Date:** Late 1<sup>st</sup> – 2<sup>nd</sup> century AD?

**Tomb type:** 4b, sub-rectangular superstructure with rectangular shaft (Fig. 5.36–5.37).

**Stele:** Type 8. The stele associated with Tomb 3 seems to originally have had four points, two of which have been broken off (Fig. 5.38). The remaining two points are low triangles. The eastern side was covered in red paint, the lower section appearing to have received two coats. The stele was 1.65 m in length, with a maximum surviving height of 0.64 m.

**Offering table:** Type 4d. The offering table associated with Tomb 3 was 1.36 m long, 0.44 m tall and 0.42

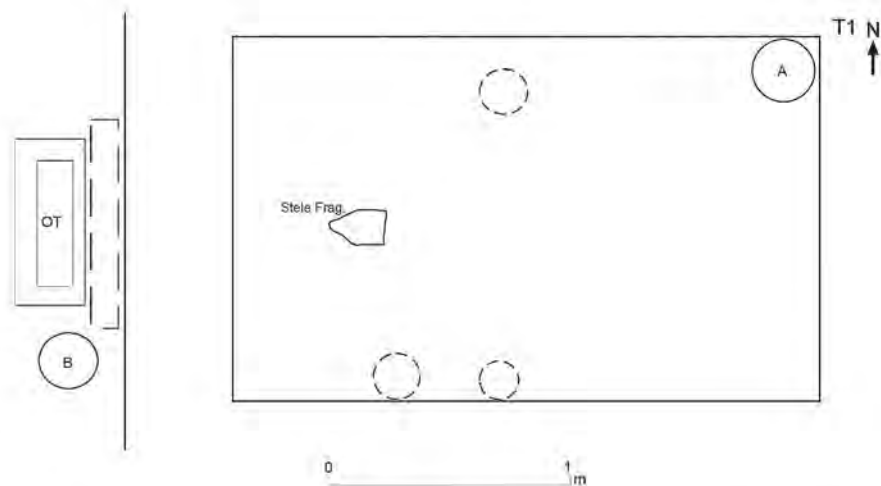


Figure 5.35. Schematic plan of finds within burial chamber of Tomb 1. The dashed circles indicate marks on floor of tomb where ceramic vessels had stood.



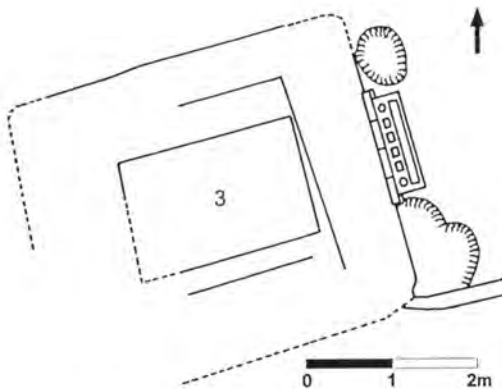


Figure 5.36. Plan of Tomb 3.



Figure 5.37. Interior of Tomb 3, looking north-east (CMD 1973).



Figure 5.38. Stele and offering table of Tomb 3, looking west (CMD 1973).

m wide. It had six small receptacles cut into the western half of its surface (two square, two round, two D-shaped), and a single long trough cut into the eastern half.

**Construction details:** This tomb originally had an overhanging roof, as Tomb 1. It was constructed primarily in light, grey-brown mudbrick, although the roof was of a greyer mudbrick. The southern and western walls were destroyed in antiquity. The dimensions of the tomb are: *c.* 3m long (east-west) by

2.4 m wide (north-south). The internal dimensions of the rectangular chamber were *c.* 2.4 x 1.50 m. The maximum surviving height of the tomb is 1.9 m in the north-eastern corner. A low mudbrick enclosure wall extends from the south-eastern corner of Tomb 3 east to Tomb 50. It is not clear whether it abuts Tomb 50 or goes underneath it.

**Excavation notes:** The fill of the tomb when it was excavated consisted of layers of sand. These layers were rich in fragments of mudbrick, and, towards the eastern side of the tomb, fragments of disarticulated bone. There is no indication as to whether these were human or animal remains. This sandy fill was interpreted as backfill after an ancient excavation; it spills out from the tomb across the course of the destroyed southern wall. The southern wall exists only as staining on the ground surface. The floor of the tomb had been comprehensively cleared, but one impressed circular mark where a pot had stood was noted near the centre of the chamber.

**Skeleton:** Some fragments of bone were mixed in with the sandy fill of the tomb, seemingly concentrated towards its eastern side.

#### Contents

*From the general area:*

Three wall sherds of amphorae.  
Fragments of Berber Red ware.  
Fragments of bone.

*From the area immediately to the east of the tomb:*

Handmade everted-rim jar fragments (CW 337).  
Two fragments of ARS, including Hayes 8A rim.

*From the sandy fill of the tomb:*

One fragment of ARS.  
One fragment of a blackish amphora.  
Berber Red Ware wall sherds.  
Fragments of bone.

#### Comments/discussion

It appears that Tomb 3 forms part of the early group of tombs, datable to between the late 1<sup>st</sup> century AD and the early 2<sup>nd</sup> century. On the basis of the fragment of ARS found in the backfill of the robbers' excavation it may be that it is early 2<sup>nd</sup> century in date, but this cannot be substantiated. In terms of its physical construction this tomb is very similar to Tomb 1. Both share the sub-rectangular plan and overhanging roof, as well as having stelae and offering tables. Tomb 3 seems to have had its own forecourt, and in this is paralleled by Tombs 6, 15, 17, 50 and 52.

#### Tomb number: 4 (GER011.T4)

Part of a drum tomb excavated by Ayoub, overlying north-west corner of Tomb 3.

Not further examined by CMD.

**Tomb number: 5 (GER011.T5)**

Part of a drum tomb probably excavated by Ayoub, to the south of Tomb 3. Little remained of the structure as the tomb had been heavily disturbed by earlier excavations. There was some disarticulated bone in the vicinity.

Not further examined by CMD.

**Tomb number: 6 (GER011.T6)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 5b, stepped rectangular type (Figs 5.39–40).

**Stele:** Type 6a (SMC 61)

**Offering table:** Type 4a (SMC 35). Rectangular slot and 4 square compartments.

**Construction details:** This tomb was of the rectangular stepped type more commonly seen at the Royal Cemetery. It was fairly square in plan, c.4 m on each side, with evidence of two sub-rectangular tiers. The length of the lower step was 3 m; that of the upper was 2.6 m. The tomb appears to have originally been plastered white. The lower part of the walls were constructed in brown mudbrick, the upper parts in grey mudbrick. The tomb had been broken into from the east side. Sunk into the interior mudbrick floor of this large superstructure was the burial chamber, c.2.2 m east-west x 1.50 north-south (interior: 1.65 x 0.90 m) x c.0.65 m deep (Fig. 5.40). It appears that there was a forecourt wall attached to the south-eastern corner of Tomb 6, which disappears under Tomb 3.

**Excavation notes:** Finds from the fill included modern paper and rubbish, indicating that it had been recently excavated and backfilled – almost certainly by the French doctors.

**Skeleton:** No trace of a skeleton survived.

**Contents***Amphorae*

Three amphora fragments.

*Other Ceramics*

<4185> Wide-mouthed handmade vessel, with near vertical high neck and impressed decorated flat-top rim (HM 333?). Berber Red fabric, with exterior red painted lattice over white slip (Fig. 5.151).

<4187> Wide-mouthed handmade vessel, with near vertical high neck and impressed decorated flat-top rim (HM 333?). Berber Red fabric, with exterior red and white paint (Fig. 5.151).

*Other*

SF 70: One ostrich eggshell bead.

**Comments/discussion**

This tomb was already excavated at the start of CMD's work, almost certainly by the French doctors rather than by Ayoub (it is close to Tomb 1 which also seems to have

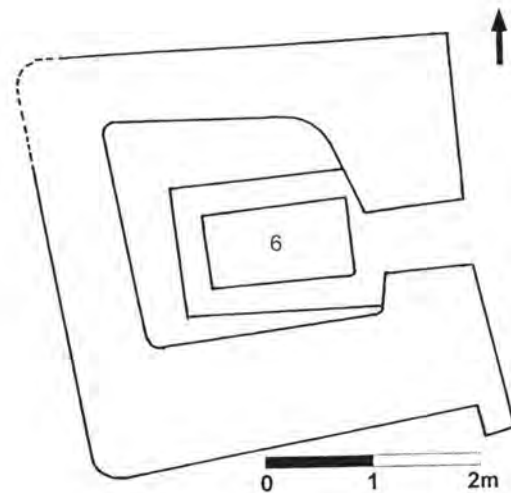


Figure 5.39. Plan of Tomb 6.



Figure 5.40. Interior of Tomb 6, showing walls of burial chamber, looking east (CMD 1973).

been dug by them). The forecourt wall attached to this tomb, which disappears beneath Tomb 3 indicates that this tomb was built before Tomb 3. In fact, it appears to be one of the earliest tombs excavated on the site. Although this tomb seems to have its closest parallels with some of those from the late Garamantian Royal Cemetery, it is clearly of much earlier date (though note that Tombs 15 and 17 may also have been stepped). It is also unusual in that it did not contain any *terra sigillata* – but given the uncertainty surrounding what was found inside when first excavated, not too much can be read into this.

**Tomb number: 7 (GER011.T7)**

Part of a drum tomb excavated by Ayoub, between Tombs 6 and 9.

Not further examined by CMD, though quite a lot of disarticulated bone was noted on its south side.

**Tomb number: 8 (GER011.T8)**

Part of a square tomb, with a circular shaft, evidently excavated by Ayoub, between Tombs 6 and 20. Not further examined by CMD.

**Tomb number: 9 (GER011.T9)**

**Date:** Early – mid 2<sup>nd</sup> century AD.

**Tomb type:** 4b, rectangular superstructure with rectangular shaft (Fig. 5.41).

**Stele:** No.

**Offering table:** No.

**Construction details:** This tomb was constructed of light brown mudbricks, 7 cm thick and 50 cm long. These survive to a maximum of 11 courses at both the east and west ends, with a preserved height of 1.1 m. A greenish mudbrick mortar bonds the bricks together. The (interior) dimensions of the walls defining the chamber are: north wall: 1.55 m; east wall: 1.2 m; south wall: 1.52 m; west wall: 1.1 m. It appears that the roofing material was originally vaulted mudbrick bonded with mortar; a buttress survives on the north side and appears to have served as a support for the roof. This roof had been destroyed at some point, presumably in antiquity, although it was replaced as a layer of rubble. A mud ‘mortar’ facing of Tombs 9 and 51 immediately to south was continuous, indicating broad contemporaneity of the two tombs.

**Excavation notes:** The tomb fill was in two main levels. The top-most layer was composed of the destroyed roof of the tomb, and formed a thick, heavy layer, difficult to excavate. It was sandy, orangey-yellow and brown in places and full of mudbrick. This layer, together with part of the western and northern walls had been damaged by the construction of Tomb 7. It appears that some attempt was made to repair the damage, though, as the west wall was rebuilt and resurfaced after its destruction. This layer was associated with the body of an amphora (<4281>) which when first found in 1973 was without its rim or handles; these were subsequently found in 1973 at the bottom of the tomb. Some fragments of human bones were also mixed in with this layer (4), and at its northern edge it contained the body of a child, associated with a necklace and perhaps a ring. The tops of two amphorae (<4282> and <4279>) were visible in it (Fig. 5.42). These amphorae were part of the contents of the lower layer. The main, lower layer 5 was essentially a sandy fill which lay on top of the ground surface and which contained the majority of finds.

**Skeletons:** Two:

*Skeleton 1.* Partial, disarticulated/poorly preserved. This skeleton seems to have been the original, primary occupant of the tomb, but survived only as a skull, some

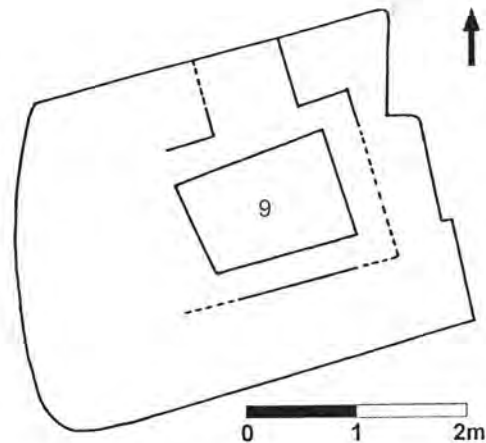


Figure 5.41. Plan of Tomb 9.

teeth and a few longbone fragments. Nonetheless, the orientation of the crouched burial can be reconstructed with some confidence (the representation in Fig. 5.44 is schematic, not an exact plan). The head was towards the west, facing north, with the feet close against the east wall of the chamber.

*Skeleton 2.* Child's skeleton, in association with a necklace. Buried c.1.35 below roof of tomb, in the



Figure 5.42. Tomb 9, under excavation, looking east and showing amphora T9 A/B in south-east corner.



Figure 5.43. Ceramic finds from Tombs 9, 12 and 14 (FP 2002).

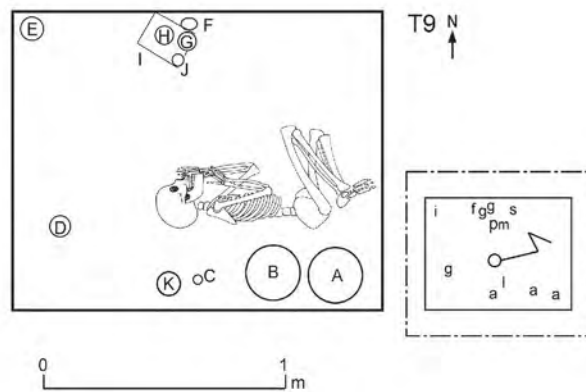


Figure 5.44. Schematic plan of finds within burial chamber of Tomb 9. The representation of the skeleton in this and subsequent figures in this section is indicative of position and orientation, rather than an exact record of what was observed. Capital letters in main plan are find identifiers in list of contents. The letters in the smaller inset plan denote: a = amphora; f = faience vessel; g = glass vessel; i = incense burner; l = lamp; pm = pumice; s = sigillata vessel.

compact mudbrick rubble layer, against the centre of the north wall of the tomb chamber. No details of head orientation recorded, but body likely on east-west axis.

#### Contents

##### *Amphorae:*

A: <4282> (A150) Mid Roman Tripolitanian (?) amphora with flanged rim (AM 26). D: 28 cm, H: 68.5 cm, capacity: 23.6 l (Fig. 5.145). Fabric: purplish-red. 2<sup>nd</sup> – 4<sup>th</sup> century AD?

B: <4279> (A148) Mid Roman Tripolitanian (?) amphora, as A (AM 26). D: 28.5 cm, H: 66.5 cm, capacity 22 l (Fig. 5.145). Fabric: dark purple colour. 2<sup>nd</sup> – 4<sup>th</sup> century AD?

K: <4281> (A132) Mid Roman Tunisian amphora, with rounded flanged rim (AM 24 – NB this amphora is wrongly assigned in AF 2 to Tomb 6). D: 30.5, H: 70.5, capacity: 29.6 l (Fig. 5.145). Body of amphora found in 1973 outside tomb and to south-west adjacent to the Decauville railway track – where perhaps used as an external offering vessel; the neck was located in 1977 on floor of tomb. Fabric: sandy, grey with white flecks. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

##### *Other Ceramics:*

F: <4289> Small ARS jug with single handle, Hayes form 137 (FW 530). Late 1<sup>st</sup> – mid 2<sup>nd</sup> century AD (Figs 5.43, 5.136).

E: <4286> Handmade tripod incense burner, not in AF 2 type series. Large handle and painted spots (Fig. 5.150).

##### *Lamp:*

C: <4284> (J38) Lamp, Deneauve VIIA (Figs 5.43, 5.143). Metallic surface finish, plain rim, incised grooves round broken discus, stamp on base CIVNALE. Late 1<sup>st</sup> or early 2<sup>nd</sup> century AD.

##### *Glass:*

D: <4274> Beaker, glass fragmentary; pale green-white, fully devitrified (Fig. 8.7).

G: <4290> Glass bowl, black, flaking and now mostly opaque (Fig. 8.7).

H: White glass beaker, too decayed to be salvaged.

##### *Faïence:*

I: Rectangular faïence dish (Tagart 1983, 149, no. 3), blue-green (Fig. 8.1, no. 3).

##### *Metal:*

Copper alloy ring (from 4) diam. 10 mm x 3 x 3 mm.

##### *Stone:*

J: Small fragment of smooth pumice.

##### *Beads (from level 4)*

Turquoise circular amazonite bead (Fig. 8.21, no. 9, the excavation notes imply a necklace found, but only one bead recorded in the card index).

#### Comments/discussion

It seems likely that this tomb was originally built in the early or mid 2<sup>nd</sup> century, if the ARS jug identification can be relied upon. There is a possibility that the original burial was disturbed at some point: the roof was certainly demolished, and a secondary child burial inserted high in the fill of the tomb chamber. It is possible that an amphora from the lower layer may have been dragged to the surface, without its rim. A more likely explanation is that the amphora was placed on the west side of the tomb as an offering vessel, with its detached rim being included with the other grave goods inside the tomb. The solid fill of the chamber appeared intact – the poor skeletal preservation here is connected with the depth of the burial and the high water table. It is certain that this tomb was disturbed by the construction of Tomb 7; but it is unlikely that this had reached the lower layers inside Tomb 9. It is possible therefore that between the sealing of Tomb 9 and the construction of Tomb 7, Tomb 9 was breached in association with the placement of the child's burial in the upper layer. It is likely that the fragments of human bone in the top-most rubble layer date relate to the child burial. The sketch plan of the disposition of finds in the base of the tomb shows that these were organised in several distinct groups. Two complete amphorae (A, B) and the rim of the third (K) were placed along the south wall, from the south-east corner, behind the body. A lamp (C) was also placed behind the head by the south wall. Against the centre of the north wall and in the eyeline of the deceased was a cache of an ARS jug (F) and a glass bowl and a beaker (G, H) sitting on a faïence rectangular dish (I), along with a small piece of pumice stone. In the north-west corner was a tripod incense burner (E) and close to the west wall in line with the head was a further glass beaker (D).

The fact that both this tomb and the neighbouring Tomb 51 are plastered in very similar styles, in fact possibly even having been plastered together, and that both share similar rubble roofs suggest that the two should be considered as a pair. This is supported on ceramic grounds too, as Tomb 51 was the only tomb to contain a mid 2<sup>nd</sup>-century Tripolitanian amphora rim whereas Tomb 9 had a mid 2<sup>nd</sup>-century ARS jug.

#### Tomb number: 10 (GER011.T10)

This appears to have designated a fragmentary tomb north of Tomb 6 and between Tombs 12, 15 and 17 (though at a higher level than some of these).

Not fully explored by CMD.

**Tomb number: 11 (GER011.T11)****Date:** 3<sup>rd</sup> – 4<sup>th</sup> century AD?**Tomb Type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.45).**Stele:** No.**Offering table:** No.

**Construction details:** This tomb appears to have originally been square in overall plan, but with a discrete circular-plan shaft. The external walls and the walls of the shaft were constructed from a pale grey mudbrick, and it appears that the space between the walls and shaft was filled with loose sand. Both the external walling and the shaft walls were *c.*45 cm thick. The external plan appears to have been *c.*7 x 7 m in size, orientated on the cardinal compass points (Fig. 5.46). The internal diameter of the shaft was *c.*3.75 m (Fig. 5.47). Small mudbrick wall stubs protruding from the middle of the eastern wall and from the southern end of the same wall suggest that there may have been a forecourt wall (Fig. 5.45–46).

**Excavation notes:** The tomb was originally covered with loose sand (layer 1). Upon excavation, it was found that the southern and western external walls were almost completely destroyed, presumably as a result of robbing action. It appears that there was a capping of mudbrick on top of the shaft (2), *c.*0.45 m thick and still intact. However, given the disturbed nature of the interior, it seems probable that robbers had broken into the chamber through the side of the tomb. Below this the shaft fill consisted of sand and broken mudbrick, to a depth of *c.*0.50 m (3). Within this fill were found fragments of disarticulated human bone. The base of the shaft consisted of a thin (*c.*2 cm thick) layer of mudbrick (4) laid directly on top of the northern wall of Tomb 17, over which Tomb 11 was built.

**Skeleton:** Fragmentary human remains were recovered from the fill of the shaft (layer 3), and appear to have been mixed in with the mudbrick fragments and sand. These are reported as, ‘some vertebrae fragments, arm bones, a few ribs and a foot. No skull.’

**Contents**

From layer 1, the sand covering the tomb: Fragments of Berber Red Ware.

From layer 3, the sandy shaft fill: TRS 2 (rim and body sherds).

**Comments/discussion**

This tomb was built on top of the northern side of Tomb 17; the northern wall of Tomb 17 was found in the bottom of the shaft. CMD removed much of Tomb 11 to reach Tomb 17 below. This style of tomb appears to mark a transitional phase between the earlier square or rectangular tombs, such as 17, and the later round tombs. Since it was built over Tomb 17 and appears to

have contained a TRS vessel (FW 531, Hayes form 2), the date of the tomb could be 3<sup>rd</sup> – 4<sup>th</sup> century, though the TRS could be intrusive after robbing. It seems that at some point the cap of the tomb was replaced, with a layer of mudbrick 45cm thick.

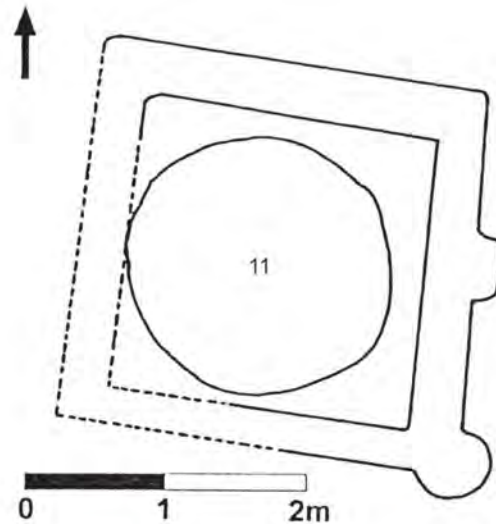


Figure 5.45. Plan of Tomb 11.



Figure 5.46. General view of Tomb 11, looking north-west (CMD 1973).



Figure 5.47. Cylindrical burial shaft below Tomb 11, looking north-west (CMD 1973).

**Tomb number: 12 (GER011.T12)**

**Date:** 2<sup>nd</sup> – 3<sup>rd</sup> century AD?

**Tomb type:** 3b, drum-type (Fig. 5.48–5.49).

**Stele:** No.

**Offering table:** No.

**Construction details:** The external diameter of the tomb was c.2.7 m; the external height c.1.2 m. The internal diameter of the circular chamber was c.1.05 m. When CMD found the tomb it was almost intact, with the mudbrick walls corbelled to form a domed roof, 0.75 above the skeleton, with the external roof of the monument 1.2 m above the base of the tomb chamber. There was a small hole in the top of the roof, which was recorded as being badly weathered.

**Excavation notes:** CMD enlarged the hole in the roof, to the extent that the roof was eventually removed altogether. The fill of the shaft inside the tomb was found to be clean sand, from the roof down to the skeleton, a depth of just over 1 m (Fig. 5.50). Only one small fragment of Berber Red Ware was found within the fill of the shaft. The skeleton was found at the bottom of the tomb, associated with a few grave goods (A–C).

**Skeleton:** A complete skeleton was recovered, although the bones were in a very fragile state. Crouched inhumation, lying on its right side. The orientation is not completely certain, but photos suggest that the head was laid to north, facing west.

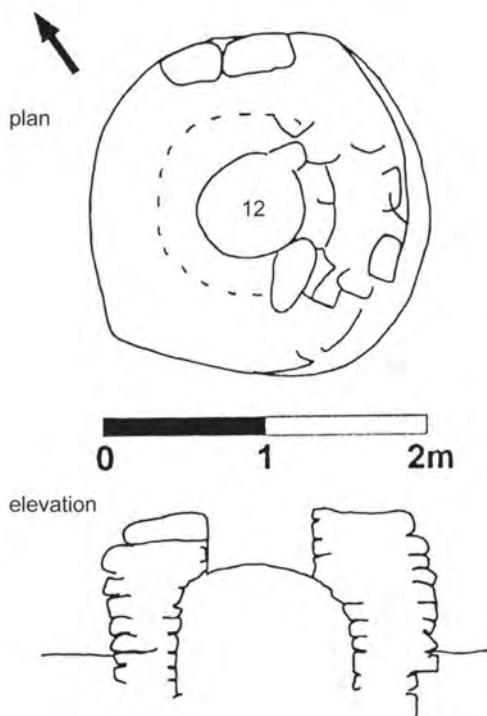


Figure 5.48. Plan and cross-section of drum type Tomb 12.



Figure 5.49. Exterior of drum tomb 12, looking west, with Tomb 15 to right and Tomb 13 to rear (CMD 1973).



Figure 5.50. Skeleton within Tomb 12, north to top (CMD 1973).

**Contents**

From the shaft fill:

*Other Ceramics*

B: <4049> Wheelmade handled tankard or jug, with slightly everted and thickened rim. Bottom broken, sand-filled. Plain sandy-brown fabric (Fig. 5.149).

C: <4048> Flagon/jug (?) in local handmade ware, hemispherical body, short neck and narrow mouth, no rim as such, rounded base and impressed exterior decoration. Circular handle from top of neck to top of body.

*Lamp*

A: <4054> (J29) Lamp with greenish/brown surface

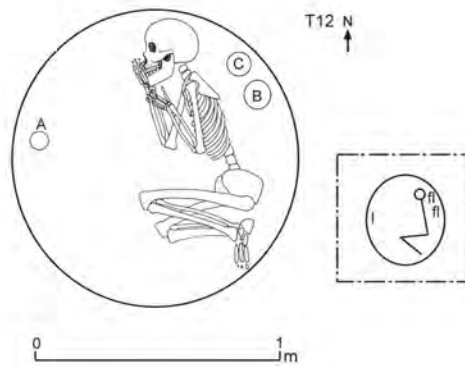


Figure 5.51. Schematic plan of finds within burial chamber of Tomb 12. Letters in smaller inset plan denote: fl = flagon; l = lamp.

(Deneauve type VIII), inscribed around the rim in relief lettering 'LUCERNI SANION' (Figs 5.43, 5.142). Heart-shaped nozzle. Mounted figure, raised battleaxe in right hand. Base plain. Mid 2<sup>nd</sup> – early 3<sup>rd</sup> century AD.

#### Comments/discussion

Although this tomb appears to have been within the area cleared by Ayoub, it survived intact. Ayoub recorded that he found a fourth layer of tombs in his area, but the date of the lamp makes it highly unlikely that this is one of those. It is more likely equivalent to Ayoub's first or second layer. The suggested date follows the lamp, but the tomb's stratigraphic position suggests it could be later. The position of finds in relation the body are worth noting: the lamp (A) was in front of the crouched body, more or less in its eyeline close to the wall of the tomb (Fig. 5.51). The jug and beaker were placed between the upper back of the deceased and the tomb wall.

#### Tomb number: 13 (GER011.T13)

**Date:** 3<sup>rd</sup> – 4<sup>th</sup> century AD?

**Tomb type:** 3b, drum-type (Figs 5.52–5.53).

**Stele:** No.

**Offering table:** No.

**Construction details:** The tomb seems to have been very similar to Tomb 12 in terms of construction, which is to say that it was a small drum-like tomb, probably c.2.0 m in diameter. It appears to have been slightly lower than Tomb 12, perhaps standing c.0.75 m high. It was built over the south-western corner of the forecourt wall of Tomb 15 (Fig. 5.52).

**Excavation notes:** Disarticulated adult bones were encountered from c.0.30–0.45 m above the floor of the tomb. It was initially suspected that an infant burial was also present, though this proved to be a misinterpretation of a very thin skull fragment. The bones were mixed with hard-packed mudbrick fragments (2). Beneath the skull were traces of a black powdery material (3), with



Figure 5.52. General view of Tomb 13, looking east, with Tomb 12 to rear right and Tomb 15 to rear left. The forecourt wall of T15 clearly underlies T13 in foreground (CMD 1973).



Figure 5.53. Tomb 13 and Tomb 14 (rear) overlying the forecourt and offering table of Tomb 15, looking north-east (CMD 1973).

some red spun fibres – probably indicating presence of very poorly preserved textile and possibly leather.

**Skeleton:** Elements of a disarticulated skeleton were recorded. The notebook mentions the following elements being present: skull, ulna, radius, pelvis, two femora, one tibia, one patella. There were few vertebrae, ribs and both clavicles were missing. It would appear that this tomb had been robbed and the bones partially removed from the shaft and otherwise spread through the robber backfill.

#### Contents

One fragment of a local handmade ware.

One sherd with handmade painted lattice design with skeleton.

Apart from the traces of textile/leather there are no other recorded small finds.

#### Comments/discussion

Given the apparent structural similarity with Tomb 12 and the obvious size restrictions, we can probably safely assume that the skeleton was originally a crouched inhumation, but the state of disarticulation does not allow any estimation to be made regarding its original orientation. The suggested date is largely based on the stratigraphic context.



**Tomb number: 14 (GER011.T14)****Date:** Late 3<sup>rd</sup> – early 4<sup>th</sup> century AD.**Tomb type:** 3b, drum-type.**Stele:** No.**Offering table:** No.

**Construction details:** This tomb was very similar in appearance and construction techniques to Tombs 12 and 13, although whether it had the domed/corbelled roof of Tomb 12 is open to question. It was essentially a low mudbrick drum-like structure. Judging by the photographs, it was probably c.0.70 m high, and c.2 m in diameter. It was situated directly to the west of Tomb 15, and was in fact built on top of the offering table and stele of that tomb. It was encircled by Tomb 15's forecourt wall. The western side of the tomb had been partially destroyed at some point.

**Skeleton:** Disarticulated remains of an adult skeleton were encountered in the fill from c.0.25 m above the floor of the tomb.

**Contents**

Amphora body sherds (2).

Local handmade body sherds.

A: <4055> Fine Red Ware dish (Figs 5.43, 5.136), probably of Tripolitanian Red Slip Type 2 (FW 531) rather than an ARS form (Hayes 32/58 *vel sim.*). This gives a date of the late 3<sup>rd</sup> – early 4<sup>th</sup> century AD.

**Glass**

There was a heavily encrusted glass vessel within the TRS dish, evidently a broken beaker – no further details survive about this.

**Comments/discussion**

The disarticulated condition of the bone in this tomb and the comparative lack of finds attest to its heavily robbed state. The fact that it was built directly onto the table of Tomb 15 suggests that it was broadly contemporary with its neighbour, Tomb 13, which also overlay the forecourt wall of Tomb 15. The one good piece of evidence from this tomb was the fine TRS dish; dated to the late 3<sup>rd</sup> to early 4<sup>th</sup> century AD, which may perhaps give a general date range for Tombs 13–14

**Tomb number: 15 (GER011.T15)****Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.**Tomb type:** 5b, rectangular superstructure, possibly stepped, and shaft (Fig. 5.56).**Stele:** Type 8.**Offering table:** Type 4.

**Construction details:** The shape of the tomb's superstructure was broadly rectangular, aligned east-west. There was a stele and offering table on the west side, although these appear to have remained partly buried beneath the later Tomb 14. The stele and offering table were within a sub-rectangular funerary



Figure 5.54. Tomb 14 within the forecourt of Tomb 15, looking south-east (CMD 1973).



Figure 5.55. Tomb 14 overlying offering table and stele of Tomb 15 (right) and mudbrick plinth (left) (CMD 1973).

enclosure delimited by a low wall (and overlain by the drum of Tomb 13). The original height of this wall was probably no more than 0.10–0.15 m – to judge from its preservation beneath the later Tomb 13 (Figs 5.52–5.53). There appears to have been a small square structure in the area enclosed by the wall, directly in front of the stele and offering table – again partly sealed by later Tomb 14. It seems that the tomb was constructed from mudbrick. The external dimensions of the tomb were as follows: south 4.4 m; north 4.50 m; east and west 3.75 m. The internal dimensions of the subterranean rectangular mudbrick chamber were c.2.75 east-west x 1.8 m north-south (though at the level of the chamber floor the width was only 1.50 m) by 1.5 m deep, of which 0.75 m was below the contemporary ground surface. The exterior wall on the south side rose vertically for c.0.30 m and then sloped inwards on an even gradient for 0.75 m, with a hint at a stepped upper tier beyond. It thus seems that this is another example of an early stepped tomb from Sāniat bin Huwaydī.

**Excavation notes:** This is one of the better-preserved tombs at Sāniat bin Huwaydī, and one of the richest in terms of grave goods (Figs 5.57–5.59). The tomb was opened through its weathered mudbrick roof. At a depth of 0.75 m human bones were encountered.

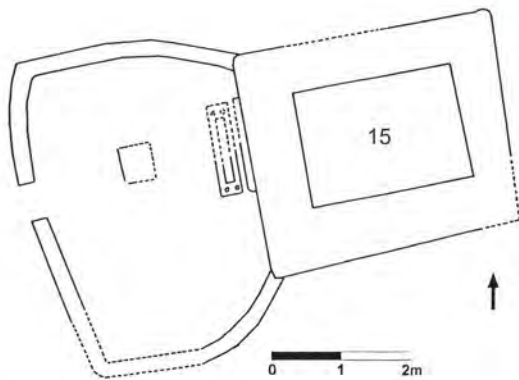


Figure 5.56. Plan of Tomb 15 and forecourt.



Figure 5.57. Main concentration of grave goods in situ in Tomb 15, looking east (CMD 1973).



Figure 5.58. Rows of fineware vessels and the saddle quern in Tomb 15, looking north-west (CMD 1973).

Although these were extremely fragile and tended to disintegrate, cleaning did establish that the skeleton was articulated. Two red and two green beads came from the fill (1) in front of the skeleton's sternum, along with some fragments of iron (beads). This was evidently not the primary burial as the chamber fill (2) continued below this first skeleton and the tops of two amphorae were soon exposed, indicating the depth to the original floor.

**Skeleton:** There were two intact skeletons in this tomb:

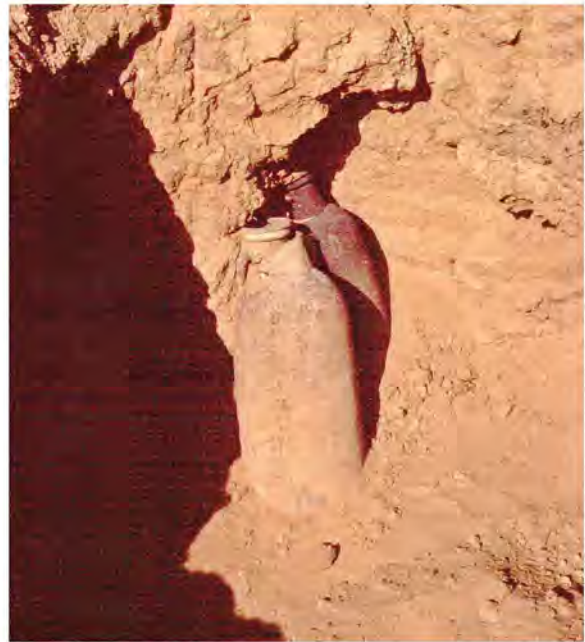


Figure 5.59. Amphorae A/B under excavation in Tomb 15, looking south-west (CMD 1973).

i) The position of the lower, primary burial, was identifiable at the east end of the rectangular burial chamber, in a crouched position on its left side, with head to west, facing north, though the bone does not seem to have survived very well in the wet conditions at the bottom of the tomb (the representation in Fig. 5.62 is purely representational – as only a few of the long bones survived to indicate the orientation). ii) the higher one was evidently a secondary insert into the primary fill of the burial chamber. The body was probably an 'adult', and evidently laid in a crouched position on its right side, with head to (north-)west, facing south-west.

#### Contents

##### Amphorae

A: <4142> (A130 Early to mid Roman Tripolitanian amphora/Tripolitana I (AM 19). D: 35, H: 96.5, capacity: c.65 l (Fig. 5.145) (NB error in calculated volume in AF 2). Fabric: purplish with white grits, heavy white slip. There are *dipinti* on shoulder in red paint. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

B: <4144> (A129) Early to mid Roman Tripolitanian amphora/Tripolitana I (AM 19). D: 34, H: 96.5, capacity: c.64 l (Fig. 5.145) (NB error in calculated volume in AF 2). Fabric: purplish with white flecks. *Dipinti* below shoulder. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

C: <4157> (A131) Early to mid Roman Tripolitanian amphora/Tripolitana I (AM 19). D: 30.5, H: 84, capacity: 36 l (Fig. 5.145). Fabric: sandy reddish buff with yellowish slip. Incised graffiti (pre-firing) on handle and shoulder. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

T15



T15 F (H135)



T15 G (H136)



T15 F (interior/top side)



T15 G (underside)



T15 F (stamp)



T15 G (stamp)



T15 N (H142)



T15 O (H141)



T15 N (stamp)



T15 O (barbotine)

Figure 5.60. Fineware from Tomb 15 (stamps at approximately 1:1) (FP 2002).



Figure 5.61. Coarseware and lamp from Tomb 15 (FP 2002).

#### Other Ceramics

F: <4108> Italian Sigillata, Dr 29 (FW 513). Chipped. Decorated: upper and lower friezes, hanging garlands suspended between thin upright posts, with crudely moulded alternating horse and rider (facing T) and birds (facing L) below the garlands (Figs 5.60, 5.137). Inside: stamped (lunate) LRASINPIS (OCK 1690), late 1<sup>st</sup> century AD.

G: <4100> Italian Sigillata (Figs 5.60, 5.138), Dr 29 (FW 513). Chipped. Decorated: upper frieze, groups of 6–7 fauns playing pan pipes (facing right) separated by individual winged cupids facing left; lower frieze, hunting scene (horsemen, dogs, stags etc.). Stamped inside (lunate) SEXMVPI; outside: SEXMVPI (OCK 1214.1), late 1<sup>st</sup> century AD.

H: <4102> Italian Sigillata, Dr 18 (FW 515). Chipped, no stamp, late 1<sup>st</sup> century AD.

K: <4105> Italian Sigillata, Dr 18 (FW 515). Some lime encrustation, chipped, stamped *in p. p.* SMCAL (OCK 1210). Late 1<sup>st</sup> century AD (Fig. 5.132).

L: <4106> Italian Sigillata, Dr 18 (FW 515). Chipped and broken, stamped *in p. p.* SMCAL (OCK 1210). Late 1<sup>st</sup> century AD (Fig. 5.132).

M: <4104> Italian Sigillata, Dr 18 (FW 515). Lime encrusted, chipped. No stamp. Late 1<sup>st</sup> century AD.

N: <4103> Italian Sigillata, Dr 18 (FW 515). Some lime, chipped, stamped MCAL (Figs 5.60, 5.132). Late

1<sup>st</sup> century AD.

O: <4101> ARS Hayes form 3 (FW 519). Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD (Figs 5.60, 5.132).

D: <4107> Side-spouted jug/flagon, sandy buff fabric (Figs 5.61, 5.149); chip on flared neck with strainer at base, ovoid body, chipped spout, hole in side (Not in AF 2 type series).

E: <4109> Incense burner, tripod form with large handle (not in AF 2 type series, but other examples known from GER001, GER002 and other tombs at GER011). Berber Red Ware fabric, fabric now in poor condition, plain (Fig. 5.150).

#### Lamp

J: <4052> (J26) Lamp, sandy brown buff fabric, now lime encrusted, broken in antiquity (Figs 5.61, 5.142). Rounded short nozzle, wide plain rim, two grooves round discus, with relief of radiate *sol*, illegible stamp on base. Central Italian type. AD 90–140.

#### Other

I: <4162> 275. Saddle quern; sandstone/limestone colour, chipped (Fig. 5.129).

P: Beads (probably relates to items under 1 and 2 below)

Q: Red ochre.

R: Rubber.

*General (presumably the area around the tomb)*

A few sherds of amphorae and Berber Red Ware.

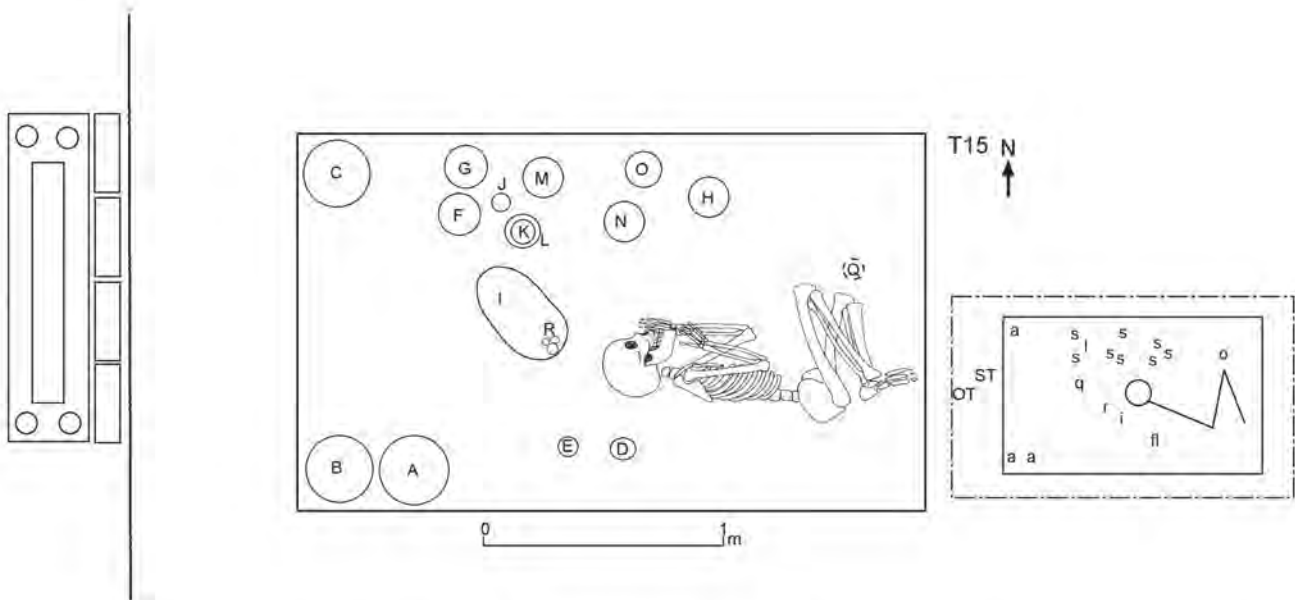


Figure 5.62. Schematic plan of finds (listed with capital letter identifiers) within burial chamber of Tomb 15. The letters in the smaller inset plan denote: OT = offering table; ST = stele; a = amphora; fl = flagon; i = incense burner; l = lamp; o = ochre; q = saddle quern; r = rubber; s = sigillata vessel.

#### Context 1

Amphora fragments and Berber Red Ware sherds.

<4260> A smooth lump of chalk or lime now broken into three pieces (cf. 4262 from Tomb 17).

Iron spatula-like implement (knife) in two conjoining fragments.

5 Beads (Fig. 8.21 nos 4–5, 10–11): 2 x amazonite (2 circular); 2 x carnelian (1 oval and 1 circular); 1 x OES circular.

#### Context 2

Amphora fragments and Berber Red Ware sherds.

15 Beads (Fig. 8.21, nos 12–19): 1 x black stone (steatite) barrel-shaped; 14 x amazonite, cylindrical some with flattened sides.

Several pieces of what appear to be red ochre; largest piece is 7.5 cm x 6 cm x 4 cm.

#### Comments/discussion

It appears that this tomb had not been robbed, though its roof had been broken in and a secondary burial had evidently been inserted into it about 0.75 m above the original interment (in a pattern similar to that observed in Tomb 9). Excavation revealed the disposition of the primary grave goods exactly as they had been originally laid out. Fineware vessels (F–H, K–O) were arranged in two rows along the northern side of the tomb, with an oil lamp (J) in between. These were above the head, though the terminal vessel (H) was more or less on the eyeline of the deceased. The amphorae were stood near-upright, one in the north-western (C) and two in the south-eastern (A–B)

corners of the tomb. A large oval saddle quern and rubber (I and R) were placed south of the fineware vessels in the centre of the tomb and just west of the head of the deceased. Close to the south wall of the tomb and behind the back of the deceased were placed a flagon (D) and a handmade incense burner (E). Finally a small cache of lumps of red ochre or haematite had been placed in front of the knees. The overall assemblage places this tomb securely in the late 1<sup>st</sup> or very early 2<sup>nd</sup> century AD.

CMD believed that this tomb might have formed a pair with its neighbour, Tomb 17. Both are of similar size and shape and both have more grave goods than most of the other tombs. They also both have enclosure walls with small square structures in the middle, a feature that appears to be exclusive to these two tombs.

#### Tomb number: 16 (GER011.T16)

**Date:** Early 4<sup>th</sup> century AD?

**Tomb type:** 3b, Drum-type shaft.

**Stele:** No.

**Offering table:** No.

**Construction details:** The drum tomb stood c.1.1 m above its base and was 1.43 m in diameter. It was built from hard, rough-coursed mudbricks of varying sizes. It was built half overlapping and cutting into the top of Tomb 15.

**Excavation notes:** The tomb had evidently been robbed and its internal fill was a mix of loose sand and disarticulated human bone.

**Skeleton:** No articulation was preserved and the retrieved elements were far from a full skeleton.

**Contents**

Various pottery sherds belonging to at least four vessels were retrieved from the disturbed fill of the tomb, including some rim and body sherds in TRS fabric (FW 532, Hayes 3), suggesting a late Roman date. There was at least one wheelmade flagon present.

Two ferrous objects (iron nails without heads?) 35 x 5 x 4 mm.

**Comments/discussion**

The notes on this tomb are relatively brief, but indicate that this was a late phase burial built up over the large rectangular Tomb 15. It appears to be slightly later than the similar Tombs 13 and 14 which also impinged on the funerary enclosure that stood to the west of Tomb 15.

**Tomb number: 17 (GER011.T17)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 4b, sub-rectangular superstructure and shaft, or possibly 5b stepped structure? (Fig. 5.63).

**Stele:** Type 8 (Figs 5.64–65).

**Offering table:** Type 4.

**Construction details:** This tomb bears comparison with the neighbouring Tomb 15, with which CMD believed it was originally paired. It is large and sub-rectangular in plan, with a sub-rectangular shaft plan. Like 15, it seems to have originally had an enclosed courtyard, delimited by a low mudbrick wall. The tomb's external dimensions were: c.4.20 m long (east-west) x 2.55 m wide (north-south). The internal chamber had a slight step built into its walls towards their tops. The dimensions of the narrower, bottom profile were: c.2.5 m long (east-west) x 1 m wide (north-south). The 'step' near the top seems to have added some 30 cm to each of these dimensions. The tomb was constructed in mudbrick throughout. It appears that the tomb was originally roofed, but that this had collapsed inside the shaft.

**Excavation notes:** Before excavation it was found that the tomb was covered by a mound of wind-blown sand. This mound also covered the later Tombs 11 and 18. Below both the clean wind-blown sand and Tomb 11, however, was a layer of dirty orange sand (layer 3). This layer is very likely related to that found over the neighbouring Tomb 53 and which extended south to cover Tomb 50.

Below this dirty sandy layer, in the shaft of the tomb itself, there was the collapse of the roof of the tomb (also labelled 3 in the notes). This was a mix of mudbrick rubble and clean sand, as found in other tombs of this period. It was estimated from the remains of the roof that it may have been c.45–50 cm thick. Within this

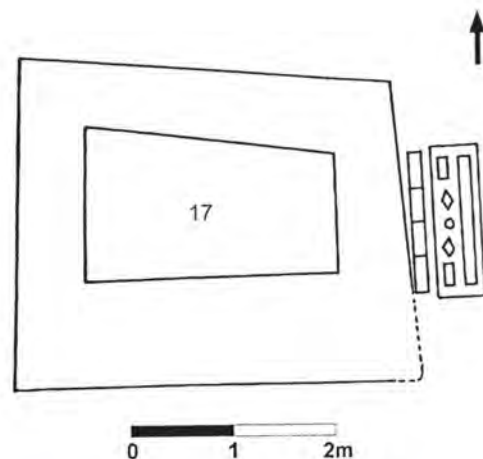


Figure 5.63. Plan of Tomb 17.



Figure 5.64. General view of Tomb 17, looking west (CMD 1973).



Figure 5.65. Detail of stele and offering table of Tomb 17, looking west. Note also the associated pottery vessels to left and right (CMD 1973).

collapse layer it was also found that there were a lot of potsherds; glass fragments were also found in the higher levels. The lower levels of fill were sandy. The mudbrick rubble seems to have fallen directly onto this layer of sand. The primary grave goods were well preserved as stacks of vessels on the floor of the tomb (Figs 5.66–5.67).



Figure 5.66. The main concentration of pottery and faience vessels in the centre of the tomb chamber of Tomb 17, looking north (CMD 1973).

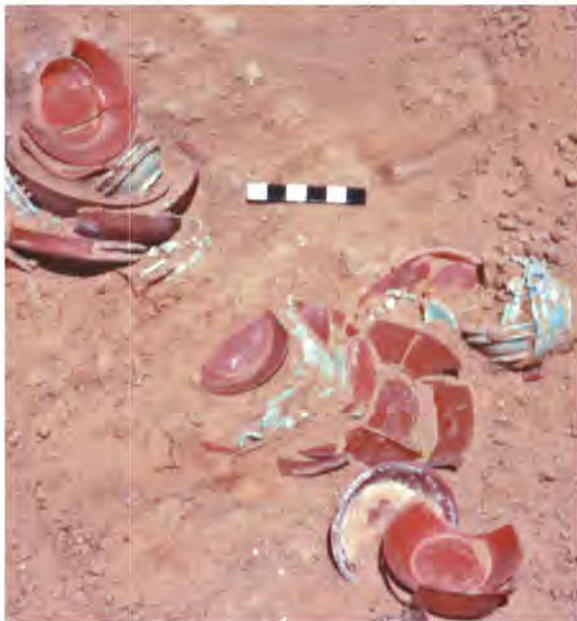


Figure 5.67. Detail of stacks of fineware and faience vessels in Tomb 17, looking east (CMD 1973).

**Skeleton:** Almost nothing could be retrieved of the skeleton. It was noted that it was 'beyond hope; little more than a stain in the ground.' Even its position in the tomb was not clear from its remains (the size and orientation as represented in Fig. 5.71 represents a best

guess). A fragment of a knee and a longbone were found together towards the south-west corner below vessel AV, and from it it was decided that its head was probably originally towards the east. This would suggest the body was lying on its left side, facing south.

#### Contents

From the base of the tomb and its lowest fill.

#### Amphorae

A: <4146> (A122) Early Roman Tripolitanian amphora (AM 15). D: 30 cm, H: 64 cm, capacity: 24.9 l (Fig. 5.146). Fabric: grey with white chips and whitish slip. In south-west corner. 4/5 graffiti and *dipinti* on vessel. Late 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

B: <4161> (A125) Early Roman Tripolitanian amphora, Tripolitana I (AM 19). D: 24 cm, H: 71 cm, capacity: 19.5 l (Fig. 5.146). In south-west corner. Fabric: buffish pink, with whitish slip. Graffiti on shoulder and side of vessel. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

C: <4145> (A121) Early Roman Tripolitanian amphora, Tripolitana I (AM 19). *Dipinti* in centre of west side. D: 31 cm, H: 83.5 cm, capacity: 42.5 l (Fig. 5.146). Fabric: purplish on rim and neck. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

D: <4147> (A124) Mid Roman Tripolitanian (?) type (AM 27 – NB this vessel was incorrectly assigned to Tomb 15C in AF 2). D: 32.5 cm, H: 89.5 cm, capacity: 46 l (Fig. 5.146). Fabric: brick red. Pre-firing graffiti on shoulder. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

E: <4148> (A123) Early Roman Tripolitanian amphora (AM 15). In north-east corner. D: 29 cm, H: 71 cm, capacity: 29.6 l (Fig. 5.146). Fabric: pinkish purple with white flecks. Late 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

F: <4160> (A127) Amphoroid jar (AM 9). In north-east corner. D: 36, H: 66 cm, capacity: 26 l (Fig. 5.146). Fabric: brick red, with deep plum surfaces. 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

G: <4158> (A126) Amphoroid jar (AM 9). In centre of east side. D: 37 cm, H: 61.5 cm, capacity: 25 l (Fig. 5.146). Fabric: brick red, with deep plum surfaces. 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

H: <4159> (A128) Amphoroid jar (AM 9). In south-east corner. D: 39 cm, H: 67 cm, capacity: 27 l (Fig. 5.146). Fabric: brick red, with deep plum surfaces. 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

#### Other Ceramics

I: <4123> Italian Sigillata, Dr 29 (FW 513). Resting on shoulders of amphorae G and H. Above vessel J. Unbroken, decorated with upper zone of laurel leaves and squiggles in chevron pattern, lower zone large and small dolphins (swimming left), stamp (Fig. 5.69) *in p. p.* SEXMF (OCK 1212). On outside (among dolphins) is what appears to be a retrograde stamp SEXMP (though SEXMF is possible). Late 1<sup>st</sup> century AD (Figs 5.68, 5.139).

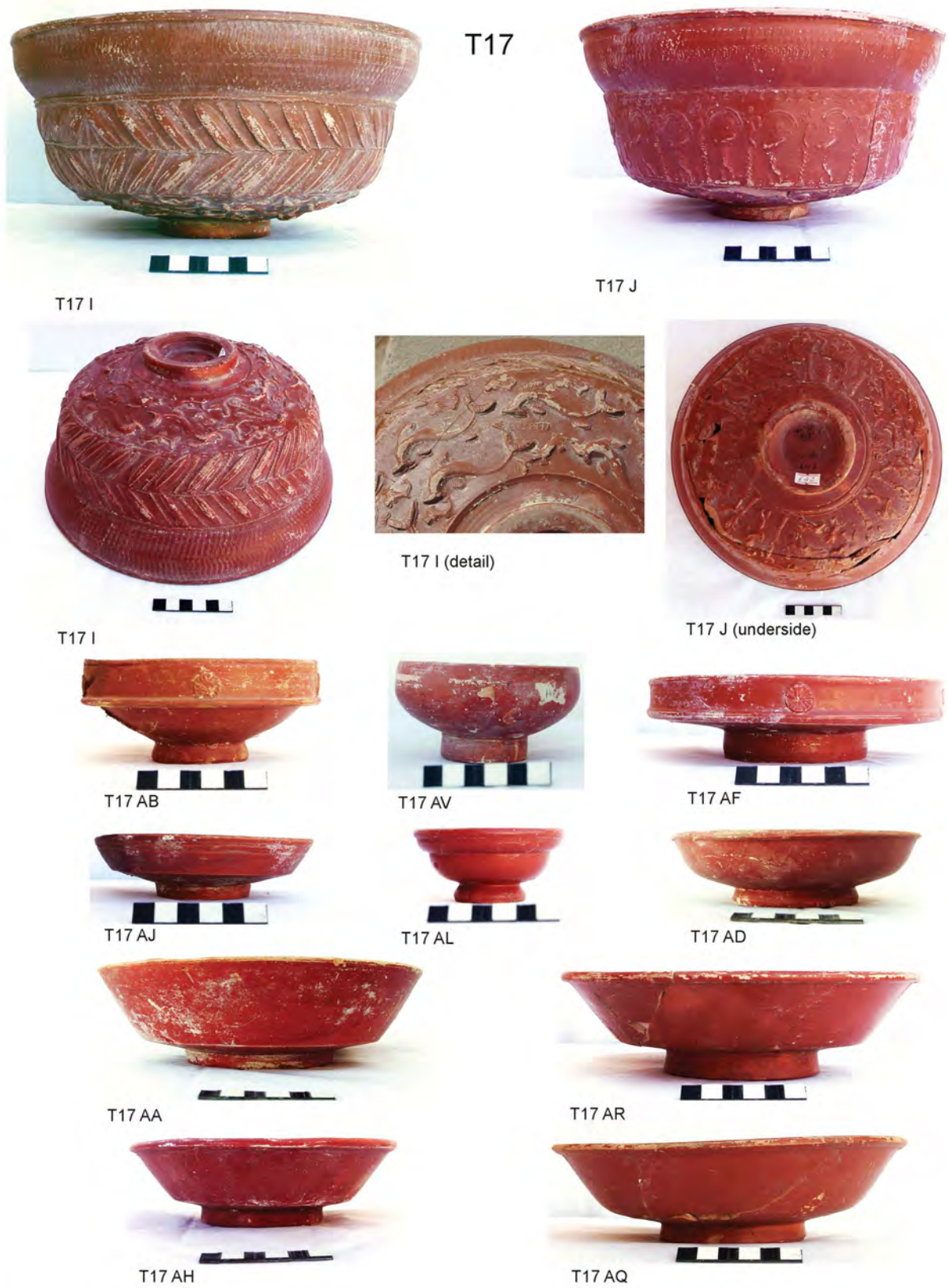


Figure 5.68. Fineware from Tomb 17 (FP 2002).



## T17 Fineware Stamps



Figure 5.69. Stamps on fineware vessels from Tomb 17. Approximately 1:1 (FP 2002).

J: <4139> Italian Sigillata, Dr 29 (FW 513). Resting on shoulders of amphorae G and H and below vessel I. Decorated: upper frieze row of winged cupids facing left, separated by figures atop spiral columns; lower frieze similar, but with intervening scenes of random birds, charioteers, amphitheatral bear-baiting and hunting with dogs (Figs 5.68, 5.140). Chipped, lunate stamp (Fig. 5.69) SEXMP (OCK 1213.35). Late 1<sup>st</sup> century AD.

K: <4114> Italian Sigillata, Dr 18 (FW 515). Probably fallen from the shoulders of amphorae B <4161> and C <4145>. Chipped, stamped (Fig. 5.69) *in p. p.* SMCAL (OCK 1210.5). Late 1<sup>st</sup> century AD.

S: <4135> Italian Sigillata, Dr 18 (FW 515). Chipped, stamped (Figs 5.69, 5.133) *in p. p.* ...PISAN (OCK 1690.11 or 12). Late 1<sup>st</sup> century AD.

X: <4136> Italian Sigillata, Dr 18 (FW 515). Chipped, stamped (Figs 5.69, 5.133) *in p. p.* CORN<sup>^</sup>ELI (OCK 612.12 or similar). Graffiti. Late 1<sup>st</sup> century AD.

Y: <4117> Italian Sigillata, Dr 18 (FW 515), under X

<4136>. Chipped, stamped (Figs 5.69, 5.133) *in p. p.* CORN<sup>^</sup>ELI (OCK 612.12 or similar). Graffiti. Late 1<sup>st</sup> century AD.

AA: <4122> Eastern sigillata A, *Atlante* form 40C (FW 509), under Z and Y. Chipped, roulette (Figs 5.68, 5.132). Rosette stamp in centre (Fig. 5.69). Graffiti. Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

AB: <4133> Italian Sigillata, Dr 24/25 (*Conspectus formarum* 34.2, FW 511). Hemispherical bowl with flange, rosettes in rim, chipped (Figs 5.68, 5.132). Stamped *in p. p.* but illegible (possibly LRSINPIS). Graffito. Mid – late 1<sup>st</sup> century AD.

AC: <4120> Italian Sigillata, Dr 18 (FW 515). Some lime encrustation, chipped. Stamp *in p. p.* (possibly illiterate). Graffiti. Late 1<sup>st</sup> century AD (Fig. 5.133).

AD: <4121> Italian (or possibly Gaulish) Sigillata, Dr 18 (FW 515). Some lime, chipped. Stamp (Fig. 5.69) *in p. p.* (possibly illiterate). No graffiti. Late 1<sup>st</sup> century AD (Figs 5.68, 5.133).

AF: <4149> Italian Sigillata, *Conspectus formarum*

20.4 (FW 514). Chipped. Red ware plate, two rosettes, two craters (Figs 5.68, 5.132). Stamped (Fig. 5.69) *in p. p.* SEX.M.P (OCK 1213.19). Rouletted, graffito. Mid – late 1<sup>st</sup> century AD.

AH: <4113> Italian Sigillata, Dr 18 (FW 515) to north of AF <4149>. Chipped. Rim slightly uneven (Figs 5.68, 5.133), stamp (Fig. 5.69) *in p. p.* SEX.M.CL. (OCK 1211). Late 1<sup>st</sup> century AD.

AI: <4110> Italian Sigillata, Dr 18 (FW 515). Lime encrusted, chipped, stamped *in p. p.* S...M...I (OCK 1212 or 1213). Late 1<sup>st</sup> century AD (Fig. 5.133).

AJ: <4118> Eastern Sigillata, *Atlante* form 40a (FW 508). Chipped (Figs 5.68, 5.132). Rosette stamp in centre of base (Fig. 5.69). Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

AL: <4126> Italian Sigillata, Dr 27/*Conspectus formarum* 32 (FW 512). Chipped, stamp (Fig. 5.69) *in p. p.* SVLPICI (OCK 2997). Mid – late 1<sup>st</sup> century AD (Figs 5.68, 5.132).

AM: <4134> Italian Sigillata, Dr 18 (FW 515). Chipped, stamp (Figs 5.69, 5.133) *in p. p.* SEX MP (OCK 1213.18), rouletted. Late 1<sup>st</sup> century AD.

AN: <4131> Italian Sigillata, Dr 18 (FW 515), under <4134>. Chipped, stamp (Figs 5.69, 5.133), lunate (illegible). Late 1<sup>st</sup> century AD.

AO: <4127> Italian Sigillata, Dr 18 (FW 515). In centre of tomb. Chipped. Stamped (Figs 5.69, 5.133) *in p. p.* RASINPIS (OCK 1690). Late 1<sup>st</sup> century AD.

AQ: <4138> Italian Sigillata, Dr 18 (FW 515). Chipped (Figs 5.68, 5.133). Stamp (Fig. 5.69) on base *in p. p.* SEX.M.F (OCK 1212.16). Two graffiti and another one which may be a graffito. Late 1<sup>st</sup> century AD.

AR: <4132> Italian Sigillata, Dr 18 (FW 515). Overlapping faience bowl AY. Stamped (Figs 5.69, 5.133) *in p. p.* SEX.M.F (OCK 1212). Late 1<sup>st</sup> century AD (Fig. 5.68).

AS: <4137> Italian Sigillata, Dr 27/*Conspectus formarum* 32 (FW 512). Chipped. Stamp on base but illegible (illiterate?). Mid – late 1<sup>st</sup> century AD (Fig. 5.132).

AT: <4129> Italian Sigillata, Dr 18 (FW 515). Chipped. Stamped (Figs 5.69, 5.134) *in p. p.* LRASIN^IPIS (OCK 1690). Late 1<sup>st</sup> century AD.

AU: <4116> Italian Sigillata, Dr 18 (FW 515). Chipped. Stamped (Figs 5.69, 5.134) *in p. p.* CORN^ELI (OCK 612.12 or similar). Graffiti. Late 1<sup>st</sup> century AD.

AV: <4111>. Italian Sigillata, Dr 18 (FW 515). Chipped. Stamp (Fig. 5.69) *in p. p.* .I.I.VI. The V and I are ligatured. Late 1<sup>st</sup> century AD (Figs 5.68, 5.134).

AW: <4115> Italian Sigillata, Dr 18 (FW 515). Some lime encrustation, chipped. Stamp *in p. p.* .I.I.VI (Fig. 5.134). Late 1<sup>st</sup> century AD.

AX: <4128> Italian Sigillata, Dr 18 (FW 515). Chipped.

T17



T17 BC (J27)



T17 BC (stamp)

T18



T18 A (J33)

Figure 5.70. Lamps from Tombs 17 and 18. 1:2 (FP 2002).

Stamped *in p. p.* SEX.M.F (OCK 1212). Rouletted. Late 1<sup>st</sup> century AD (Fig. 5.134).

AZ: <4124> Italian Sigillata, Dr 18 (FW 515). Chipped. Stamped (Figs 5.69, 5.134) *in p. p.* SEXMCL (OCK 1211.5). Late 1<sup>st</sup> century AD.

BA: <4130> Italian Sigillata, Dr 18 (FW 515). Chipped. Stamped (Figs 5.69, 5.134) *in p. p.* SEX.M.P (OCK 1213.14). Late 1<sup>st</sup> century AD.

BE: <4125> Italian Sigillata, Dr 18 (FW 515). Broken. Stamped SEX.MF ( or P) (OCK 1213 or 1214) Rouletted, graffiti on underside. Late 1<sup>st</sup> century AD (Fig. 5.134).

BF: <4112> Italian Sigillata, Dr 18 (FW 515). Chipped.

Stamp (Figs 5.69, 5.134) *in p. p.* .I.I.VI. Late 1<sup>st</sup> century AD.

BG: <4119> Italian Sigillata, Dr 18 (FW 515). Chipped. Stamped *in p. p.* CORNE... (OCK 612). Graffiti. Some lime encrustation. Late 1<sup>st</sup> century AD (Fig. 5.134).

AK: <4156> Flagon with strainer and handle, soft sandy fabric. Broken into many pieces (Fig. 5.149).

O: <4153> Handmade decorated incense burner (probably HM 336); flaky black fabric, grass tempered, faint red outer surface, white spots. Handle and base missing (Fig. 5.150).

#### Lamps

BC: <4155> (J27) Lamp in a light sandy fabric with a brown surface (Deneauve VIIA). Stamped CCLLO.SVC (Fig. 5.70). A fragment was found >1 m away from the main body of the lamp. Plain rim with two grooves round discus decorated with two palm fronds (Figs 5.70, 5.142). Late 1<sup>st</sup> century – early 2<sup>nd</sup> century AD.

BM: <4154> (J28) Base fragments of a second lamp (cf. Deneauve 14). Soft sandy fabric with brown surface. Stamped COPPIRE (Fig. 5.142). Late 1<sup>st</sup> century – early 2<sup>nd</sup> century AD.

#### Faience

L: Faience dish under dish K <4114>. Shattered, possibly fallen off an amphora (Fig. 8.2, no. 8).

T: Small faience cup fallen on its side (Fig. 8.2, no. 4). This was almost certainly imported from Roman Egypt (Tagart 1983, 141 no. 4 for parallels).

U: Small faience cup, fallen on its side, as T above.

V: Small faience cup, stacked within T and U (and of same type).

Z: Small faience cup inside AA <4122> and of same type as T above.

AE: Small blue faience bowl stacked within AB <4133>. Contained a small fragment of burnt bone. This bowl is a larger version of the cups T, U, V, Z, and AG (Fig. 8.2, no. 5). Also imported from Egypt – since many examples are known at ad-Dākhla and al-Khārja oases, they may have come direct to Fazzān along the desert route through the Western and Libyan Deserts (Tagart 1983, 151 no 5).

AG: Small blue faience cup, as T above.

AP: Shattered blue faience bowl, same type as AE above (Fig. 8.2, no. 6). In centre of tomb.

AY: Faience bowl, same type as AE above (Fig. 8.2, no. 6).

#### Glass

Mi: <4141> Glass bowl under L; broken, possibly fallen. Same type as BH (Fig. 8.6).

Mii: Fragmentary pillar moulded glass bowl.

N: <4150> Pillar moulded bowl, turquoise glass (Fig. 8.4). Possibly fallen.

P: Handled glass vessel (flagon?) in very fragile state

with bowl I <4123>.

Q: Glass vessel similar to P, immediately above saddle quern R.

BB: Pillar moulded glass bowl (Fig. 8.4), very slightly turquoise glass (<4151>?).

BD: Shattered remains of glass vessel. Not possible to distinguish shape.

BH: <4140> Large broken glass bowl under BG <4119>. Same type as Mi (Fig. 8.5).

#### Quern

R: <4163> (SMC 276). Saddle quern at east end, south of amphorae E <4148> and F <4160>. Red sandstone, damaged (Fig. 5.129). Dimensions: 45 cm long x 30 cm wide x 2.5 cm thick. Worn on upper side.

#### Other

BI: <4166> White plaster amphora bung on floor of tomb, flat side down. Lime?

BJ: <4262> Lump of chalk or limestone 5 inches by 4 inches by three and a half inches; to west of saddle quern R. Worn on at least one surface, two smaller fragments nearby.

BK: <4165> Amphora bung, pot and plaster. On tomb floor.

BL: <4152> Plaster (decorative), a thin piece of plaster with a cross motif in sand relief.

#### From level 2

2 copper alloy rivet plates.

#### From outside the tomb (but within funerary enclosure)

W: <4143> (A133) Mid Roman Tripolitanian (?) amphora. (AM 26). Set vertical on south side of offering table, east side of tomb. D: 33.5 cm, H: 69.5 cm, capacity: 25 l (Fig. 5.146). Fabric: grey black, with white inclusions. Graffito below shoulder. 2<sup>nd</sup> – 4<sup>th</sup> century AD?

BQ: <4276> Amphora. Set vertical on north side of offering table. No dimensions preserved.

BN: <4277> Handmade pottery vessel, c. 0.50 m to east of offering table.

BO: <4169> Handmade pottery, Berber Red fabric, only base survived, by north side of offering table on east side of tomb.

BP: <4167> Handmade pot, Berber Red fabric, only globular base survived by north side of offering table on east side of tomb.

BR: <4168> Handmade vessel, with near vertical high neck and impressed decorated flat-top rim (HM 333?). Berber Red fabric, with exterior painted lattice (Fig. 5.151) – probably from north side of offering table.

#### Comments/discussion

This tomb is quite exceptional in terms of the number of grave goods it contained: 10 amphorae (8 inside and 2 outside); 4 other large pots in local handmade

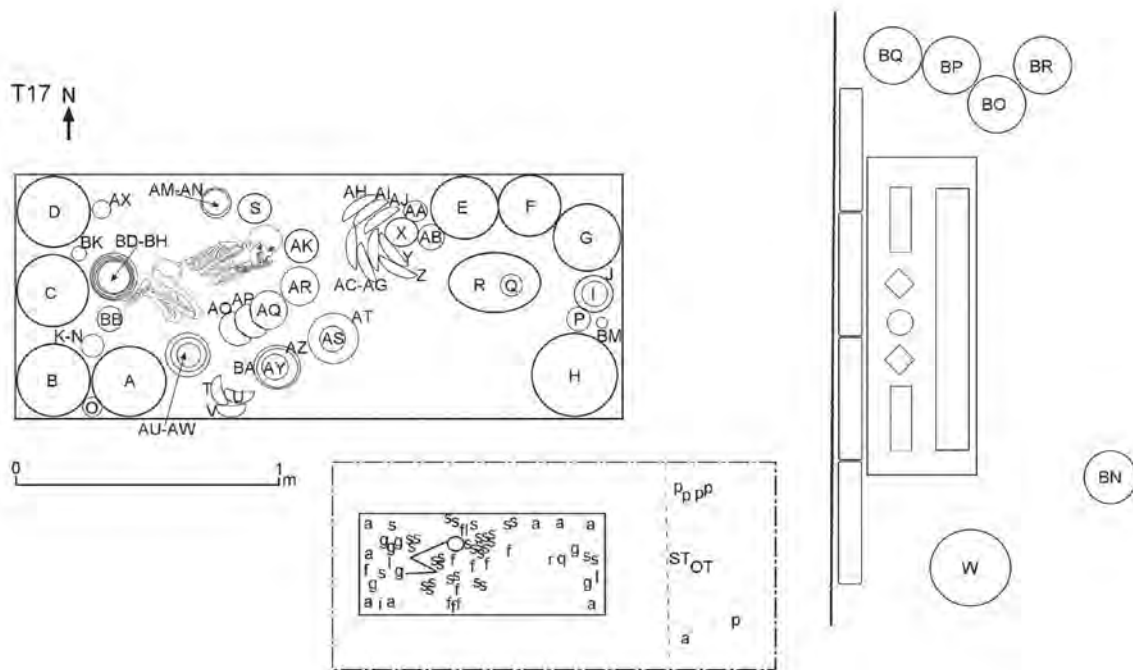


Figure 5.71. Schematic plan of finds (listed by capital letter identifiers) within burial chamber of Tomb 17. The letters in the smaller inset plan denote: OT = offering table; ST = stela; a = amphora; f = faience vessel; fl = flagon; g = glass vessel; i = incense burner; l = lamp; p = handmade pot; q = saddle quern; r = rubber; s = sigillata vessel.

wares outside by east-side offering table; 30 fineware vessel (2 Eastern Sigillata the rest Italian Sigillata); 1 flagon; 1 incense burner in local handmade fabric; 2 lamps; 9 faience vessels; 8 glass vessels and a saddle quern. None of the other tombs have even half as many. It seems natural to presume that this was the tomb of a wealthy individual. CMD thought that this tomb might be one of a pair with the neighbouring Tomb 15, since both tombs share many similarities in appearance and contents. He thought that perhaps Tomb 17 was the resting place of a male, as it had so many grave goods, while Tomb 15 might be the tomb of a female. This comment, in an unpublished series of notes on the tombs contradicts his published comments (Daniels 1973a, 39) in which he said that Tombs 15 and 17 were probably occupied by females, given the presence of saddle querns. On the other hand, the lack of beadwork and the preponderance of amphorae and drinking and feasting vessels might actually favour both burials having been for adult males.

The disposition of finds outside and inside the burial chamber can be reconstructed with some confidence (Fig. 5.71). The offering table and red-painted stela on the east side were flanked by a pair of amphorae set vertically in the ground (BQ and W), with additional large bulbous vessels in local handmade fabrics (3 to north BO, BP, BR and 1 to south BN). Inside the chamber, the amphorae were positioned in the corners

and along the end walls, with 4 at the east end (E–H) and 4 at the west (A–D). An incense burner (O) was *in situ* on the shoulders of amphorae A and B in the south-west corner. A stack of vessels, comprising a sigillata dish (K), three glass bowls (Mi–ii, N) and a faience dish (L) had probably fallen from the shoulders of amphorae B and C. Just east of this group was another glass bowl (BB) and immediately north again was a stack comprising a lamp, 2 glass vessels (BB, BD, BH) and 3 Dragendorff 18 dishes. There was an isolated Dragendorff 18 dish (AX) by amphora D near the north-west corner, along with an amphora bung (BK) and the broken off neck of flagon AK. This material was probably positioned around the feet and behind the legs of the body. Towards the middle of the north side there was a stack of 3 Dragendorff 18 dishes (S, AM, AN), just behind where the head probably lay. To the east and immediately above the presumed position of the skull was flagon AK. In front of the body and running in a diagonal line north-east to south-west were several stacked piles of sigillata and faience vessels (X–Z, AA–AJ formed one large stack, AS–AT another, AO–AR a third, AY–AZ, BA a fourth, T–V (all faience bowls) a fifth, AU–AV a sixth). The knee-cap and fragment of long bone was preserved beneath vessel AV, strongly suggesting that the body was lain in the more or less triangular space defined by the disposition of grave goods in the western half of the tomb. There is a further

open space in the eastern half of the tomb – though this could have accommodated perished organic goods. At the east end, alongside the amphorae, a saddle quern (R) and lump of chalk (BJ) had been placed on the floor of the tomb, with a glass vessel (Q) on the quern. A final stack, comprising 2 Dragendorff 29 bowls (I–J), a handled glass vessel (P) and a fragmentary lamp (BM) had been placed on the shoulder of amphorae G and H against the east wall.

There are a number of interesting points to note from the stamps and graffiti present on the imported pottery vessels. Almost all the graffiti were on Italian Sigillata vessels of Dragendorff 18 type (FW 515) and the majority of these appear to be a cursive *IL*, presumably the initials of the owner of this set of vessels at some stage, though not necessarily the person they were buried with. It is also notable that the vessels were systematically chipped (that is, had a triangular chip knocked out of their rim) prior to being placed in the grave. Several other items were broken and had pieces distributed in different parts of the tomb (for example, the neck and handle of flagon AK were found near amphora D in the north-west corner). This practice has been noted in other Garamantian tombs and cemeteries and indicates that the vessels were deliberately being altered before passing from life use to death use.

**Tomb number: 18 (GER011.T18)**

**Date:** Late 2<sup>nd</sup> – early 3<sup>rd</sup> century AD (or later).

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.72).

**Stele:** uncertain type, on east side.

**Offering table:** Type 4 on east side.

**Construction details:** The walling, which was partially destroyed on the southern side before excavation began, formed a square *c.* 3 x 3 m. The width of the walling, was *c.* 0.28 m, and it survived to a height of *c.* 0.26 m (three brick courses). Within this wall there was the circular shaft, which had an internal diameter of *c.* 2 m, and a depth of 1.15 m. Unlike some of the other tombs of this type (e.g. T19, T22), the space between the mudbrick external walls and the shaft had been infilled with mudbrick. There was a badly damaged stele and offering table set on a plastered base to the east. Traces of white plaster were also evident on the eastern side of the tomb itself. The height of the surviving superstructure to the east was *c.* 0.65 m above ground level at the time of excavation in 1973. The tomb was built on top of the western end of Tomb 52, into which the shaft appears to have cut slightly.

**Excavation notes:** Upon excavation of the interior of the shaft, it was found to be filled with clean yellow/orange sand and fragments of mudbrick. The excavator

believed this to be the remains of robbing, which had partly destroyed the shaft to the east and west. At a depth of 1 m larger pieces of mudbrick were found. From a depth of *c.* 0.60 m fragments of the skeleton were found. These were in a poor state of preservation. This tomb was eventually almost totally dug away to allow access to Tomb 52 beneath.

**Skeleton:** At a depth of *c.* 0.60 m fragments of the disarticulated skeleton began to appear in the shaft fill. The only record of these is that they were, ‘skeletal remains in scattered and ‘sugary’ condition’.

**Contents**

*From the shaft fill:*

*Lamp*

A: <4053> (J33) Lamp (Deneauve VIII B), off-centre filling hole, heart-shaped moulding, handle partly lost (Figs 5.70, 5.143). Soot in nozzle and weathered surface, reddish-buff fabric. Traces of egg-moulding on rim and standing figure on discus. No stamp. 3<sup>rd</sup> – 4<sup>th</sup> century AD.

*Other*

Broken point from the stele, presumably dropped in during robbing or post-robbing backfill.

From the area of loose sand to the south and east of the tomb:

Sherds of ARS closed form (FW 528, Hayes 121).

Fragments of amphora.

Handmade lattice-painted fragments.

At least two incense burners.

Glass.

Crude decorated gourd fragment.

**Comments/discussion**

There are no photographs of the tomb from the main season of excavation in 1973, but at least the written record is sufficient to describe it. The tomb seems to have been one of a number that used the principle of

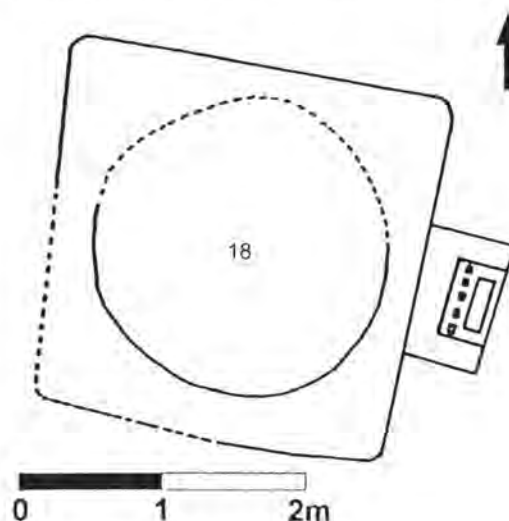


Figure 5.72. Plan of Tomb 18.

a circular shaft inside a square-plan wall. Some of these, such as Tombs 11, 19 or 22 seem to have had the space between the walls and the shaft left empty. Others, such as Tombs 28 or 29 seem to have had the walls and shaft made all as one build. Tomb 18 is mid-way between these two models, with discrete elements (the walls and the shaft) subsequently joined by a mudbrick fill, at least on top. The lamp was not in a primary depositional context and could be intrusive. Architecturally and stratigraphically the tomb appears likely to be Phase II, though the lamp suggests we cannot exclude a Phase-III date.

**Tomb number: 19 (GER011.T19)**

**Date:** Late 2<sup>nd</sup> – 3<sup>rd</sup> century AD.

**Tomb type:** 4b, square tomb, with drum-type shaft (possibly stepped 5b) (Fig. 5.73).

**Stele:** No.

**Offering table:** Type 4a (simple) (Fig. 5.74).

**Construction details:** The roughly square-plan wall around the shaft measured 2.55 x 2.85 m, and survived to a height of 0.45–0.60 m (four brick courses). On its eastern side, the wall appeared to have been stepped and was c.0.60 m in width. The eastern face of the wall also revealed some traces of white plaster. The internal shaft diameter was 1.15 m. The shaft was originally roofed with what is described as a ‘solid mudbrick chamber roof, c.0.30 m thick’, suggesting that it might have been either a simple cap, or corbelled like that of Tomb 12. To the east of the tomb there was a small and simple Type 4 offering table in poor condition, with traces of red pigment on its east side (Fig. 5.74). Like Tombs 11 and 22, this tomb appears to have had the space between the square-plan wall and the shaft either left empty or filled with sand.

**Excavation notes:** Before excavation the tomb was covered and surrounded by loose sand. This was cleared to reveal the mudbrick roof. This appears to have been removed. In the process of clearing the roof it was discovered that a pot had been embedded in it. Beneath the roof was a fill of clean orange sand, which continued down to the mudbrick base, at a depth of c.75cm.

**Skeleton:** None recovered.

**Contents**

Apart from the pot which was found embedded in the roof (no further details survive in the archive), the only recorded finds are fragments of local wares.

**Comments/discussion**

This tomb is interesting in that it combines several common elements – the circular shaft, square-plan wall, offering table – with what appears to be a unique feature, the stepped eastern wall. It may be that this stepping is an attempt to emulate the *mastaba*-like structures of tombs

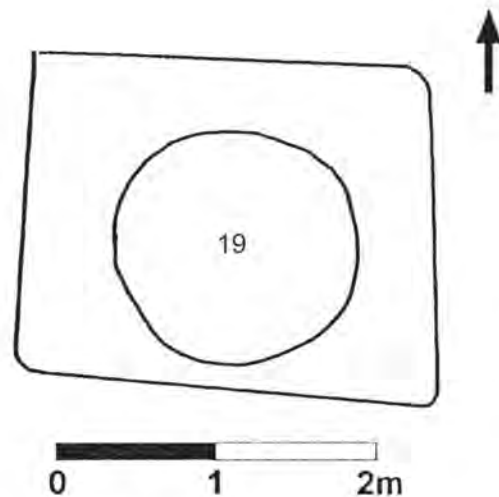


Figure 5.73. Plan of Tomb 19.



Figure 5.74. General view of Tomb 19, looking west (CMD 1973).

such as 52, or even those in the Royal Cemetery. Precise dating of the tomb is difficult given the lack of finds, but its general construction style suggests it is contemporary with Tombs 11, 19 and 22, which are dated to the later 2<sup>nd</sup> – 3<sup>rd</sup> centuries. It is possible that the tomb had been robbed though the roof with the ‘embedded pot’ part of the original tomb contents abandoned in the robber hole, though this possibility does not seem to have been recognised at the time of excavation.

**Tomb number: 20 (GER011.T20)**

**Date:** Mid 2<sup>nd</sup> century AD.

**Tomb type:** 4b, Sub-square superstructure, sub-square shaft (Figs 5.75–5.76).

**Stele:** No, although there is a setting which seems likely to have originally held one.

**Offering table:** No, although there is a low mudbrick platform which seems likely to have originally held one.

**Construction details:** This tomb originally had a mudbrick roof, some of which survived until it was removed in 1973 (Fig. 5.76). There was a funerary

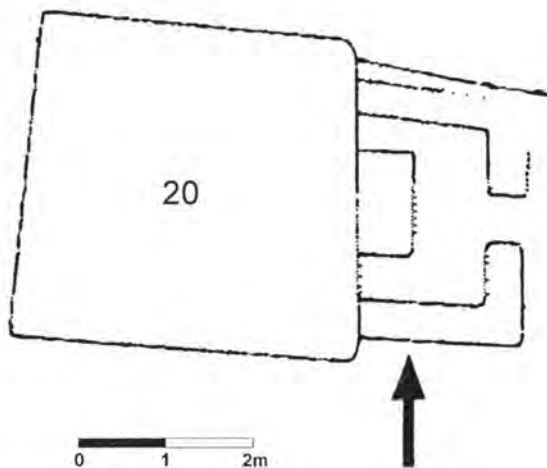


Figure 5.75. Plan of Tomb 20.



Figure 5.76. General view of Tomb 20, looking south-west (CMD 1973).

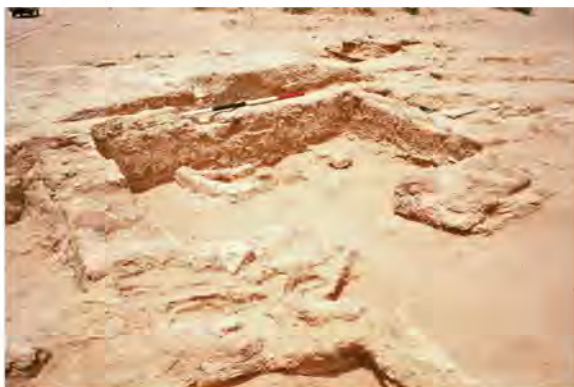


Figure 5.77. General view of funerary court on east side of Tomb 20, looking west (CMD 1973).

enclosure to the east, and against the east side of the tomb there was a mudbrick foundation for an offering table and/or stele (Fig. 5.77). The dimensions of the exterior mudbrick walls of the tomb were *c.* 3.7 (east-west) x 3.2 m (north-south). The central shaft was also rectangular in plan, with dimensions of *c.* 1.35 x 1.2 m internally. The depth of the tomb, from the top of the roof, appears to have been some 2 m. The internal features were unusual. The internal shaft was aligned

east-west, quite normally, but there were three distinct zones at the base, almost like three steps running east-west. The top step, the northernmost, was constructed of mudbrick (*c.* 0.40 m high x 0.40 m wide), as was the second below it (at least 0.20 m high x 0.30 m wide). At the bottom, the southernmost zone was simply sand. The burial was placed on the topmost step, *c.* 2 m below the top surface of the surface marker and offset in the north-east corner. It later emerged that Tomb 20 had been built over the top of an earlier stepped tomb (subsequently identified as Tomb 53, see below) and had used the roof of this monument as a convenient shelf on which to place the deceased.

**Excavation notes:** There were indications that the tomb had been robbed in antiquity. The lower part of the shaft was filled with mudbrick debris, covered by sand.

**Skeleton:** The skeleton, found on the topmost step, was described as 'mangled'. Photographs suggest that the legs were *in situ* – if so, then the body was laid on its left side, with head to west and facing north.

#### Contents

There were no finds from inside this tomb, though a cylindrical carnelian bead was recovered from layer 1 above (Fig. 8.21, no. 6) – again suggesting that the chamber had been robbed.

#### Comments/discussion

The explanation of the stepped internal arrangement was that Tomb 20 was built over an earlier rectangular chamber (Tomb 53) on the same alignment and used the stepped roof of that tomb as the base of its own burial chamber. Tomb 20 overlay 25/7, a layer of yellow mudbrick debris. This layer seems to be contemporary with Tomb 25, but went over the tops of Tombs 52 and 53. Tomb 20 was therefore later than both Tombs 52 and 53. Tomb 20 may have been contemporary with Tomb 18, which also sat on top of the layer.

#### Tomb number: 21 (GER011.T21)

**Date:** 4<sup>th</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.78).

**Stele:** A single rectangular slab of stone set vertically on the eastern side may be the remains of a type 5 stele (Fig. 5.79).

**Offering table:** There was also a possible mudbrick seating for an offering table on the eastern side.

**Construction details:** This tomb is square in plan, with an off-centre circular shaft. Photographs of it suggest that there might have been some subsidence as the southern side appears to be almost a foot lower than the northern side, though an alternative explanation for both the off-centre shaft and the lower southern side of the superstructure is that this side of the tomb was damaged

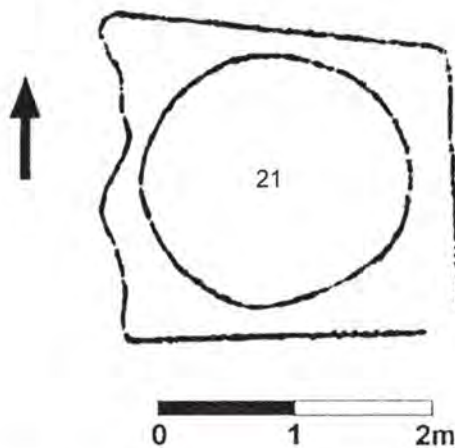


Figure 5.78. Plan of Tomb 21.



Figure 5.79. General view of Tomb 21, looking west (CMD 1973).

by robbers. It is possible that there was a base for an offering table on the eastern side. In one photograph there appears to be a single square piece of stone on the east side, possibly the remains of a stele.

**Excavation notes:** The tomb was originally covered by a layer of blown sand. Clearing this revealed that the tomb had been broken into. The fill of the shaft was sand, which appears to have continued to the bottom of the tomb. A deposit of sand and mudbrick was found to the east of the tomb. At the bottom of the tomb a mudbrick wall was found, running north-south below the tomb walls. This was the eastern wall of Tomb 50.

**Skeleton:** A few disarticulated fragments of bone were recovered.

#### Contents

One fragment of TRS (possibly Hayes form 3?) recovered from the fill of the shaft.

#### Comments/discussion

This tomb had been clearly broken into and robbed, but it is difficult to know if it originally contained any grave goods.

#### Tomb number: 22 (GER011.T22)

**Date:** 3<sup>rd</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.80).

**Stele:** No.

**Offering table:** No.

**Construction details:** The exterior wall was c.2.7 m square, and now only survives on the northern and eastern sides, where it stood to a height of 0.40 m (four courses of mudbrick). The central shaft structure was c.1.6 m in diameter externally and 0.80 m in diameter internally at the base. A ledge was found on the western side of the shaft, filled with clean orange sand. Below the bottom of the tomb a straight mudbrick wall was found, running east-west. This was subsequently identified as the southern wall of Tomb 50.

**Excavation notes:** Upon excavation it was found that the shaft fill comprised sand and mudbrick debris.

**Skeleton:** Disarticulated battered fragments of the skeleton were mixed in with the robber shaft fill.

#### Contents

Nondescript fragments of Berber Red Ware pottery, a flagon rim, a lamp fragment and a tiny glass fragment were found in the fill of the shaft.

A burnt distal tibia of an ovicaprine was recovered in the shaft fill.

#### Comments/discussion

This tomb was built above Tomb 50 and appears to date to the later phase of the cemetery. It was clearly robbed and it is difficult to be sure of the original contents of the tomb.

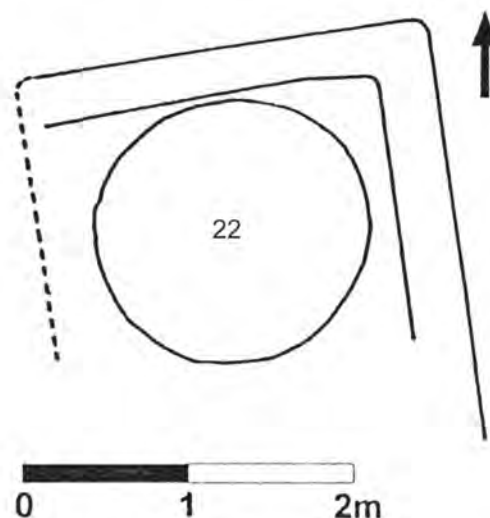


Figure 5.80. Plan of Tomb 22.



**Tomb number: 23 (GER011.T23)****Date:** 3<sup>rd</sup> century AD.**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.81).**Stele:** No, although plans suggest there may have been a setting for one on the eastern side.**Offering table:** No, although sketch plans suggest there may have been a setting for one on the eastern side.**Construction details:** This tomb comprised a circular-plan shaft inside a square retaining wall. In the site notes it was recorded that there were traces of a possible forecourt wall associated with Tomb 23, on its east side, but this was not recorded on plan. The shaft was relatively shallow, being only 1m deep.**Skeleton:** Only fragments of disarticulated bones were found.**Contents**There were no contents recorded. The sandy layer *above* the tomb produced:One rim sherd of fineware (a South Gaulish Dr 37). 1<sup>st</sup> century AD.

One fragment of faience.

One fragment of an amphora.

One fragment of a local coarseware.

**Comments/discussion**

This tomb is presumably contemporary with similarly constructed tombs in the cemetery, including Tombs 21, 27, 25 and 18. If there were originally grave goods they were comprehensively robbed. The fact that the top of the tomb was visible at modern ground level will have meant that it was a prime target for robbing.

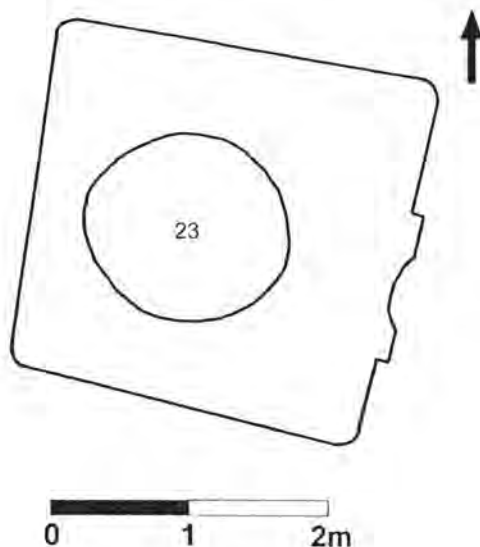


Figure 5.81. Plan of Tomb 23.

**Tomb number: 24 (GER011.T24)****Date:** Late 1<sup>st</sup> – 2<sup>nd</sup> century AD.**Tomb type:** 4b, rectangular tomb with drum-type shaft (Figs 5.82–5.83).**Stele:** Type 5c.**Offering table:** Type 4a.**Construction details:** The exterior walls had lengths of approximately 3.6 m. There was a four-point type 5c stele to the west, in association with a simple type 4a offering table. The offering table underlay the funerary enclosure wall of Tomb 20 to the west (Figs 5.84–5.85). Tomb 24 appears to have had a mudbrick funerary enclosure to its west, of which only a part of the southern side survived. The mudbrick central circular shaft appears to have been a distinct construction from the exterior wall. It evidently had a corbelled dome capping it (Fig. 5.83), though with signs of a potential robber hole penetrating into the shaft.**Skeleton:** It is recorded that there was a skeleton, on its right side, oriented head to east and facing north.**Contents**

It was noted that one fragment of late Italian Sigillata (probably a late variant of Dr 18) was found 'with the skeleton', along with a few other sherds, including an amphora body sherd.

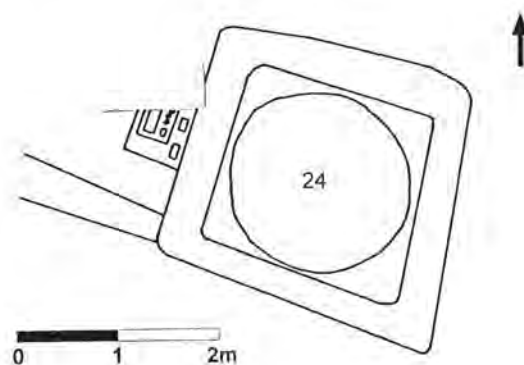
**Comments/discussion**We cannot even be sure if the tomb had grave goods which were robbed; or whether the few sherds recovered were intrusive as a result of robbery of the tomb. The style of construction of this tomb matches nearby tombs such as 21, 22 and 23. These have been dated to the 3<sup>rd</sup> century AD. However, this tomb is beneath the forecourt wall of Tomb 20. While this need not argue for a significantly earlier date, it does at least place it earlier in the sequence than Tomb 20.

Figure 5.82. Plan of Tomb 24.



Figure 5.83. General view of Tomb 24 (foreground), with Tomb 20 to rear, looking north-west (CMD 1973).



Figure 5.84. Forecourt wall of Tomb 20 (left) overlying stele and offering table of Tomb 24, looking east (CMD 1973).



Figure 5.85. Forecourt wall of Tomb 20 (left) overlying stele and offering table of Tomb 24 (right), looking north (CMD 1973).

**Tomb number: 25 (GER011.T25)**

**Date:** Mid – Late 3<sup>rd</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.86).

**Stele:** Type 5c.

**Offering table:** Type 4a.

**Construction details:** This was a small tomb with a circular-plan shaft within a square perimeter wall. There were a stele and offering table on the west side. The tomb had a largely intact white mudbrick cap over the shaft, but had been broken into via a robbing shaft near its south-east corner. Both the stele and offering table were made from a soft, large-grained purple sandstone Fig. 5.87).

**Excavation notes:** The tomb was originally covered by a layer of wind-blown sand (1). Upon excavation it was found that the southern wall of the tomb had been partly destroyed by what appears to have been an attempted robbery (2). However, it does not appear as though the robbers actually penetrated the shaft of the tomb. The roof of the tomb was intact: a white mudbrick cap, encrusted with salt. It was removed and revealed the undisturbed clean, dark orange sand of

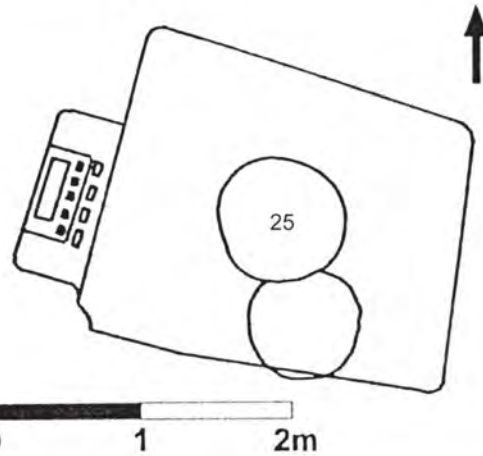


Figure 5.86. Plan of Tomb 25.



Figure 5.87. Stele and offering table of Tomb 25, looking east (CMD 1973).

the shaft filling (3). This was some 0.70 m thick, and contained only one bone, the proximal metatarsal of a sheep or goat. Beneath this sandy layer was a layer of mud pan, similar in character to mudbrick (4). This varied in thickness, from 7.5 cm over the pelvis of the skeleton to 15 cm over its hands. Below this mud level, there was a dirty orange sand level, containing the skeleton (5). The area outside, bounded by Tombs 18, 25, 28 and 30 was 'paved' with a yellow mudbrick layer (7). It continued south over Tombs 52 and 53, but went below Tomb 20. From the description it appears to have been essentially a layer of trampled mudbrick debris and dirty sand. It was contemporary with Tomb 25, but earlier than 18.

**Skeleton:** Well-preserved. A mature female in a crouched inhumation, lying on her right side with head to the west, facing south.

#### Contents

From layer 5:

A: <4046> Small bowl, cf. ARS Hayes form 44 (rather coarse variant). Found beside the drawn-up knees (Fig. 5.136).

A necklace of 290 small ostrich eggshell beads (1.5 x 4 mm), including two slightly larger black beads (probably discoloured or burnt ostrich eggshell). Found looped in a single string around the neck and below the head and mandible.

There were fragments of one or two incense burners and a rim of a globular handmade pot with painted lattice decoration on its neck by the north side of the offering table outside the tomb on its west side.

#### Comments/Discussion

This intact female burial is an interesting example of a simply furnished tomb, with a single pottery vessel and a necklace worn on the body. The pot suggests a later 3<sup>rd</sup>-century date.

#### Tomb number: 26 (GER011.T26)

This is not actually a tomb at all, but was numbered as such in the original sequence. It refers to a depression which was thought to be a small circular tomb, but which, when excavated, turned out to be empty ground. Some human bone fragments were found during the course of the excavation, along with some local coarse ware sherds, but nothing to suggest that all of this was anything other than debris from robbing and tomb construction. The location of the excavation is not shown on any plans, but probably lay between Tombs 25, 27 and 28.

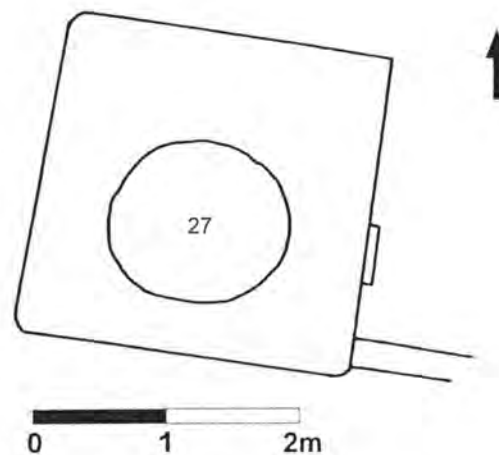


Figure 5.88. Plan of Tomb 27.



Figure 5.89. General view of Tomb 27, looking north (CMD 1973).

#### Tomb number: 27 (GER011.T27)

**Date:** Mid – late 2<sup>nd</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.88).

**Stele:** No, although part of a setting remains by the east wall, which might have supported one.

**Offering table:** No, although part of a setting remains by the east wall, which might have supported one.

**Construction details:** It appears that this tomb originally had separate shaft and retaining wall structures, but that these were bonded together with at least a layer of mudbrick, across the top of the tomb (Fig. 5.89).

**Skeleton:** Some disarticulated bones noted.

#### Contents

A few sherds of amphora and local handmade wares.

#### Comments/discussion

The tomb had evidently been comprehensively robbed though the roof of the shaft. The construction technique suggests that this tomb was possibly contemporary with Tombs 11, 18, 19, 28 and 29.

**Tomb number: 28 (GER011.T28)****Date:** Mid 4<sup>th</sup> – 5<sup>th</sup> century AD?**Tomb type:** 4b, rectangular tomb with drum-type shaft (Figs 5.90–5.91).**Stele:** No.**Offering table:** No.

**Construction details:** There was a funerary enclosure on the east side though only the north side of this was well preserved. There was no trace of either a stele or an offering table, though it is possible that the robbers of the tomb had broken in through the east front, where the funerary furniture would have stood. The superstructure appears to have been *c.*50 cm high, and entirely flat on top.

**Skeleton:** This comprised a few disarticulated and scattered bones recovered from the shaft fill, ‘in delicate condition’.

**Contents**

A number of undistinguished sherds were recovered from the shaft fill, including fragments of an amphora, a jug or flagon body sherd and various pieces of Berber Red Ware. Of greater interest is a large ARS plate, although this does not appear to have been drawn properly. The thumbnail sketch which accompanies the short list of finds suggests that it was probably a comparatively late ARS form (perhaps Hayes 32/58,

as it was stamped with a series of circles and lines, probably falling within Hayes’ Stamp Style A (Hayes 1972: 218–9). It would appear to be mid 4<sup>th</sup> – mid 5<sup>th</sup> century AD. The profile sketch is insufficiently detailed to allow any further clarification.

**Comments/discussion**

As with other tombs in this part of the site, the surviving documentation is very poor. We can at least be sure that it looked something like Tombs 27, 29 or 23, but, beyond this, details are rare. It is doubly unfortunate as this is one of the few tombs on site to have produced a large late Tunisian ARS dish, datable to the mid 4<sup>th</sup> – mid 5<sup>th</sup> centuries AD. We cannot be sure whether this dish was part of the tomb’s original contents or whether it was residual backfill from elsewhere, after an episode of robbing. That the tomb was robbed seems relatively clear however, as suggested by the disarticulated bone and the fact that only fragments of other ceramics were recovered. The most important point about this tomb, however, is that if we can accept the date of mid 4<sup>th</sup> – mid 5<sup>th</sup> centuries AD for the dish, and by association the tomb itself, this extends the date range for this type of tomb construction. Most of the tombs of this type are without good dating evidence, and have been assumed to date to the later 2<sup>nd</sup> century AD onwards.

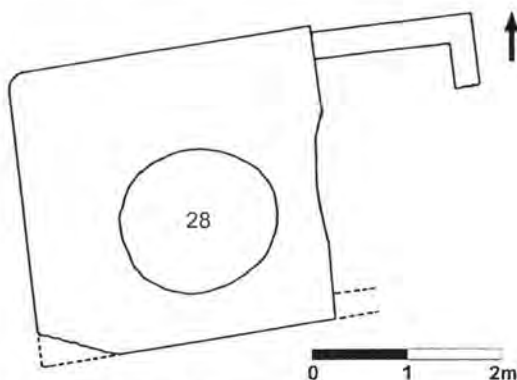


Figure 5.90. Plan of Tomb 28.



Figure 5.91. General view of Tomb 28, looking west (CMD 1973).

**Tomb number: 29 (GER011.T29)****Date:** 3<sup>rd</sup> century AD (or later).**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.92).**Stele:** Type 5c.**Offering table:** Type 4a.

**Construction details:** Judging from the photographs, the width of the outer wall at its narrowest points was *c.*0.40 m. The height of the superstructure above ground was *c.*0.30 m. The shaft diameter appears to have been 0.60–0.70 m. There were the remains of an enclosure wall attached to the southernmost point of the eastern wall (Fig. 5.93–5.94). It may be that a very low wall in the same position at the northern end of the eastern wall

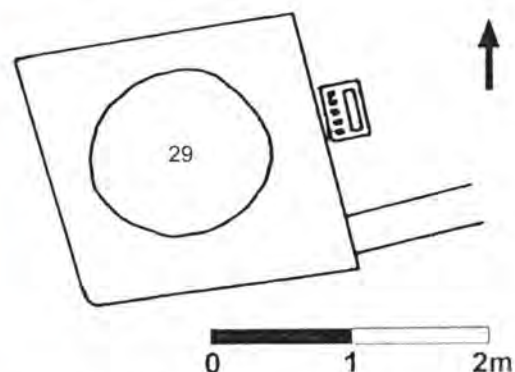


Figure 5.92. Plan of Tomb 29.

may represent the north side of the funerary enclosure wall, perhaps mostly destroyed by the construction of Tomb 39. Alternatively, it may have been the top of a buried structure. A purple, four-point Type 5c stele was found against the east side of the tomb, in association with a small Type 4a offering table (Fig. 5.94).

**Skeleton:** A few fragments of disarticulated bones were recovered from the fill of the shaft.

**Contents**

No finds were recovered from the heavily robbed shaft of the tomb, although a separate small cache of bones, a fragment of an amphora and a fragment of a local coarse ware were found between this tomb and Tomb 28 to the south.

**Comments/discussion**

This is another of the square tombs with central circular shaft which dominate across the eastern part of the excavated area. Dating of this particular example is difficult given the complete lack of finds. It presumably dates to between the mid 2<sup>nd</sup> century AD and the mid 5<sup>th</sup>, on our current understanding of the site chronology. It might be pointed out that this tomb is at the highest point in the excavated area, and it seems clear that it never had any other construction built over the top of it. This might tend to suggest a later date within the specified range, rather than an earlier date. The tomb had clearly been robbed.



Figure 5.93. General view of Tomb 29, looking south-west (CMD 1973).



Figure 5.94. Detail of forecourt and stele/offering table of Tomb 29, looking west (CMD 1973).

**Tomb number: 30 (GER011.T30)**

**Date:** 2<sup>nd</sup> century AD?

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.95).

**Stele:** No.

**Offering table:** No.

**Construction details:** The square retaining wall appears to have been c.3 by 3 m, with each side being c.20 cm thick. The central shaft was constructed separately and might have been built from slightly thinner walls. The diameter of the shaft was c.2 m externally and c.1.4 m internally. The shaft walls continued down to a depth of 1.75m below the top of the tomb; no floor was recognised at this level, but excavation ceased a short distance below the bottom of the walls.

**Excavation notes:** The sandy shaft fill was not described in detail, although it was noted that the majority of the disarticulated human bones appeared in a concentration c.1.3 m below the top of the tomb.

**Skeleton:** No detail was given regarding the bones recovered, beyond the fact that most of them occurred disarticulated in the fill of the shaft.

**Contents**

*From the fill of the shaft:*

Two fragments of a dark amphora.

Handmade ware sherds (Berber Red Ware).

Rim of a green/brown glazed dish. A note records that this rim appears to be similar to a complete one recovered from Tomb 51. It is unlikely to be later than the mid 2<sup>nd</sup> century AD.

**Comments/discussion**

This tomb had been heavily robbed. One very interesting find from the tomb was the fragment of a green/brown glazed dish. This is almost certainly early Roman in date. If this piece was part of the original contents of the tomb then it would indicate that this class of tomb

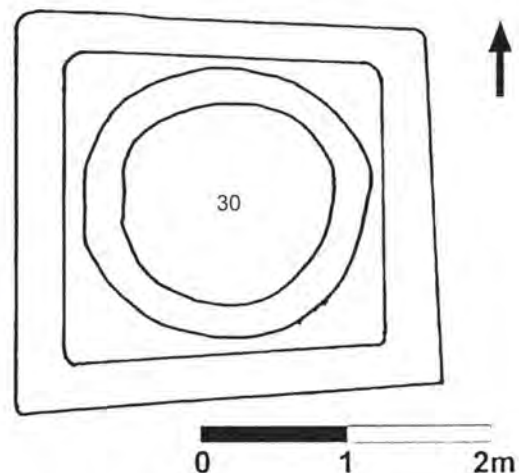


Figure 5.95. Plan of Tomb 30.

possibly began around the earlier 2<sup>nd</sup> century. However, we cannot be sure that it is not random debris which found its way into the shaft some time after the tomb was robbed.

**Tomb number: 31 (GER011.T31)**

**Date:** 3<sup>rd</sup> century AD?

**Tomb type:** 4b?

**Stele:** No.

**Offering table:** No.

**Construction details:** This appeared at first sight to be a slightly unusual tomb, comprising an oval shaft butted up against a north-south solid mudbrick wall to the east (Fig. 5.96). The shaft was orientated roughly north-south, with dimensions: 1.2 x 1 m. The total depth of the shaft was c. 1.35 m. The superstructure over the shaft comprised a corbelled mudbrick dome. It is likely, however, that this tomb was originally another rectangular surface marker, with a central circular shaft, and had simply lost its west side to later construction

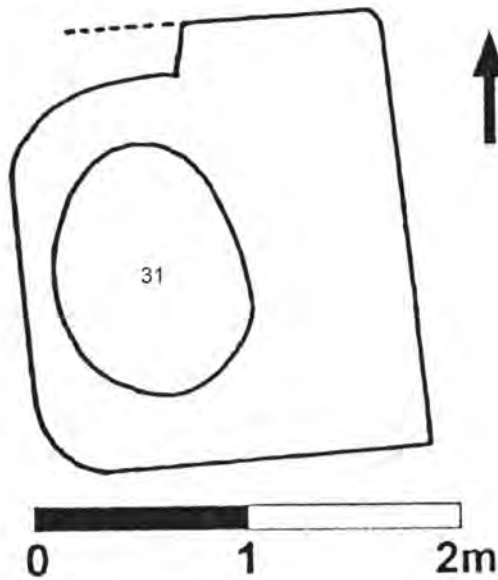


Figure 5.96. Plan of Tomb 31.



Figure 5.97. General view of Tomb 31 (left) and lined shafts of Tombs 40 and 41 (centre foreground), looking south.

(Tombs 40–41) or robbing (Fig. 5.97).

**Excavation notes:** The upper part of the shaft, to a depth of c.0.85 m, was filled with loose sand; this sand contained a few fragments of disarticulated human bone. At this depth there was a hard mud pan, representing the original burial level.

**Skeleton:** Two halves of a child's skull were recovered from the hard mud pan, at a depth of c.0.85 m. They were reported to otherwise be in good condition. They were accompanied, seemingly both above and below the mud-pan, by other fragments of human bones in very poor condition. There is no record of whether they were also the bones of a child.

#### Contents

*From the sandy fill above the mud-pan:*

A small, white ostrich egg-shell bead.

A slightly larger circular carnelian bead (Fig. 8.21, no. 7), 4 x 6 mm.

#### Comments/discussion

Much of the outer wall is missing, except on the eastern side, and the dome over the shaft is unusual in that it protrudes to a height of several inches above the extant eastern wall. It is possible that the tomb was originally stepped, but the superstructure was destroyed when the tomb was robbed, evidently through a hole in the dome. This tomb does have a further unusual element in that it appears that the child's burial was primary here. This is significant because other children found at GER011 were either buried outside any tomb or placed in a tomb as a secondary burial (cf. Tomb 9).

**Tomb number: 32 (GER011.T32)**

This number designated a badly damaged rectangular mudbrick tomb in the northern part of the site that does not appear to have been excavated.

**Tomb number: 33 (GER011.T33)**

**Date:** 2<sup>nd</sup> century AD?

**Tomb type:** 3b, drum-type, with cylindrical shaft (Fig. 5.98).

**Stele:** No.

**Offering table:** No.

**Construction details:** This tomb is circular both in overall plan and in its shaft plan, with an internal shaft diameter of c. 1.15 m. It was constructed in white mudbrick. The shaft depth was c. 1.15 m deep. The surviving written description makes a passing reference to a shaft cap; although it was clear that the tomb had been robbed, it may be that it still retained a partial covering at the time of excavation.

**Skeleton:** This tomb contained two skeletons, both at a depth of c. 1.1 m. They were both found in the same layer, and the excavator believed them to be

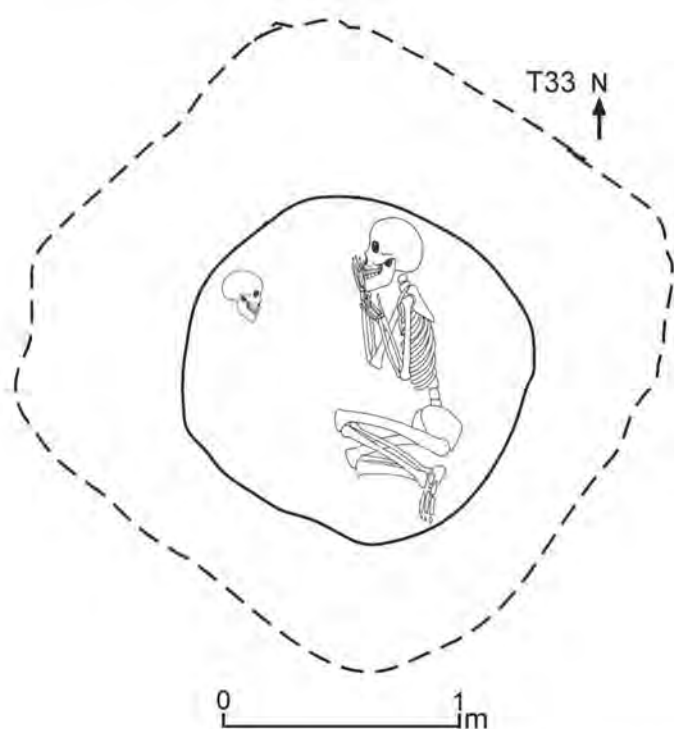


Figure 5.98. Plan of Tomb 33. The orientation of the adult burial is certain, the child skull orientation is more conjectural.

contemporary with one another. They were in a very fragmentary state, and very few of the bones survived lifting. Some of the damage to the bones seems to have been caused by falling mudbrick. i) The skeleton to the east was placed almost centrally within the tomb. It was lying on its right side, with its head to the north, facing west. The legs were drawn up underneath it. ii) The skeleton to the west was hard up against the shaft wall, and in an even poorer condition. The vertebrae survived *in situ* and indicated that it had lain on its left side, with head to the north, facing to the east. The legs of this skeleton appear to have been flexed in the same manner as those of the other skeleton. One possibility is that this double burial concerned an adult and a child/sub-adult.

#### Contents

##### *From fill of shaft*

Late Italian Sigillata sherd, Dr 18, 2<sup>nd</sup> century AD.

Sherd of amphora.

Glass beads of several distinctive types (total 24) including: a Hellenistic type eye bead (Fig. 8.21, no. 2, 9 x 12 mm); a turquoise melon bead (Fig. 8.21, no. 1, 8 x 11 mm); 2 greyish brown ring/circular beads (Fig. 8.21, no. 3, 3 x 12 mm and 4.5 x 6 mm); 22 small greyish brown ring/cylindrical beads (average dimensions 3 x 4 mm).

Two stone beads, one probably amazonite.

Copper alloy ring.

#### Comments/discussion

This tomb is very unusual in that it appears to have had two contemporary, or near-contemporary burials.

It is unlikely that there was a significant gap between their deposition, as the shaft will have been sealed. The fact that one was centrally placed while the other was against the wall might suggest that the central burial was earlier, but the fact that it had been robbed means we cannot be sure if the placing was in relation to some now missing grave goods. The construction of the shaft is of the drum-like type common in this section of the excavation, although it is fractionally larger than its neighbours. Although the tomb was quite a high-level burial and overlay the corner of Tomb 42, the late ITS (and the eye-bead as an even earlier artefact) might favour a Phase II date. The ITS was found during initial excavation, not with the skeletons, and so could be residual.

**Tomb number:** 34 (GER011.T34)

**Date:** 2<sup>nd</sup> century AD.

**Tomb type:** 4b, sub-square superstructure with sub-circular shaft (Fig. 5.99).

**Stele:** No.

**Offering table:** No.

**Construction details:** The length of the only completely excavated side, the eastern wall, was c.4.3 m. The shaft diameter was at least c.2 m. Two additional 'chambers' had been cut into the original mudbrick superstructure. One of these was simply hacked into the northern end of the eastern wall, on the outside of the tomb. The other was a scooped out niche in the interior of the shaft on its south-west side. This niche was found to contain bones (burial A). The central shaft was c.1.2 m deep.

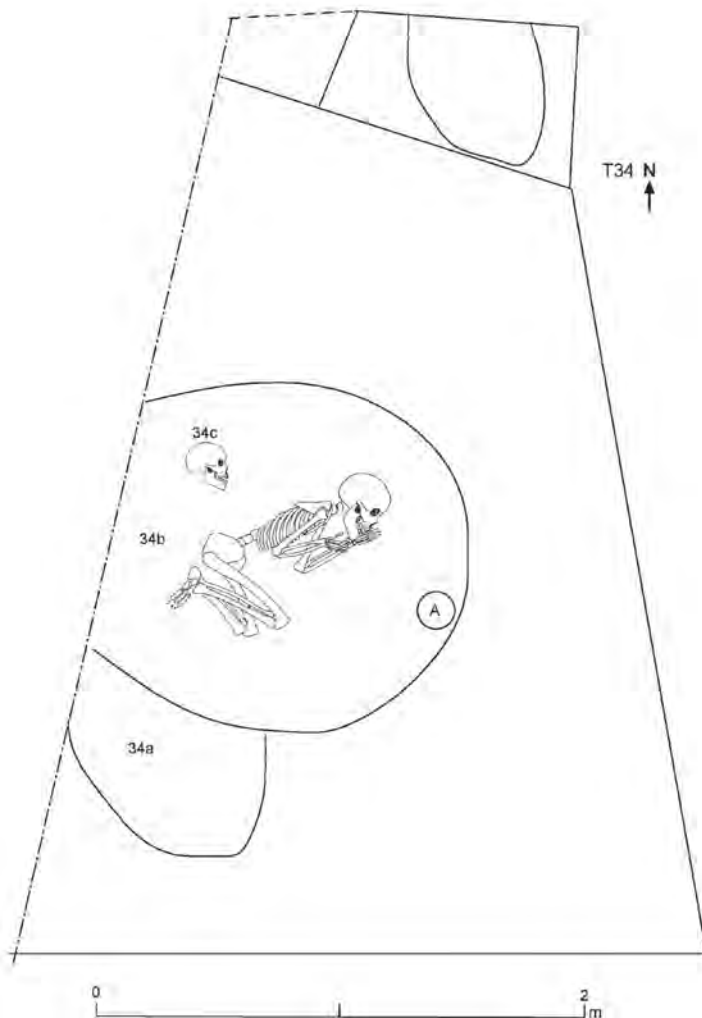


Figure 5.99. Plan of Tomb 34. The orientation of the skull 34C is conjectural.

**Excavation notes:** The shaft was filled with sand. At a depth of c.0.80 m two skulls were found, in association with a scatter of disarticulated human bones (burials B and C). At the bottom of the shaft a further burial was found (burial D), in association with a flagon.

**Skeletons:** In all there were four burials contained within this tomb. Beginning with the topmost:

*i) Burial A:* This was located in the small secondary niche, scooped out of the south-western side of the internal shaft wall. It was described only as, ‘a bundle of bones, rather than a burial’, so was presumably lacking full articulation.

*ii) Burial B:* At a depth of c.0.80 m, close to the western wall of the tomb, Burial B in fact consisted only of a cranium. The skull was smaller than the nearby Burial C, lay to the south of it, and was upside-down, facing to the east.

*iii) Burial C:* This also was a cranium, found to the north of Burial B, at the same level. Both skulls may have been associated with a scatter of disarticulated bones at this same level (4). Skull C was larger than

that of B, was also upside-down, but faced to the south.

*iv) Burial D:* Seemingly the main, original burial in layer 5. This was a crouched articulated inhumation, lying on its left side, orientated east-west, with head to east facing to the south. Its hands were in front of its face.

#### **Contents**

*From the small secondary excavation cut into the north of the east wall:*

Fragments of red fine ware (possibly ARS).

An incense burner.

*From the secondary burial A:*

Fragments of ARS Hayes form 3, Hayes form 8 or 5, along with sherds of Hayes 8A. Also Berber Red Ware fragments.

*From the bottom level, in association with the main burial D:*

A: <4047> single handled flagon in sandy red fabric, with glossy exterior (ARS or coarseware?), handle and rim missing (Figs 5.100, 5.149).



T34



T34 A

T36



T36 A (J32)

Figure 5.100. Finds from Tombs 34 and 36 (FP 2002).

#### Comments/discussion

This tomb is unique in that it seems to have contained four burials. It is clear that there was originally one main burial (Burial D) and that over time others were added. We cannot be sure whether burials A or B and C were added next, although since A is little more than a scatter of bones, it may even be that these bones are only a part of the scatter found lower down in the tomb (in association with B and C). We can probably safely assume that this tomb was chosen for additional burials because of its size, which is rather larger than any others in this corner of the site. The date of the tomb is difficult without a proper date for the flagon found at the base. The fragments of ARS found within the middle layers of the tomb certainly date to the mid – late 2<sup>nd</sup> century AD, but these could very easily be residual or secondary.

#### Tomb number: 35 (GER011.T35)

This tomb lay mainly beneath the western baulk of the CMD trench and was not investigated in detail.

#### Tomb number: 36 (GER011.T36)

**Date:** Early 4<sup>th</sup> century AD or later?

**Tomb type:** 3b, drum-type.

**Stele:** No.

**Offering table:** No.

**Construction details:** This was a drum tomb, similar to others in this part of the site and probably dating to the later period of the site's use. It was adjacent and abutting Tomb 44 and both overlay and partly cut down

into a large rectangular tomb (Tomb 42 – as visible in Fig. 5.101). The internal diameter of the shaft was c.1.20–1.35 m and was 1.2 m deep.

**Excavation notes:** The shaft appeared to have been broken into through its south wall.

**Skeleton:** Two or three main deposits of disarticulated bone were recorded within the robbed shaft.

#### Contents

*Listed as coming from context 2:*

Fragment of amphora.

Rim of Hayes TRS form 5. Early – mid 4<sup>th</sup> century AD.

A: <4051> (J32) Lamp, reddish-brown finish (TRS?), with stylised laurel wreaths on rim (tips at spout), unpierced handle, undecorated discus (Figs 5.100, 5.143) – found quite high in the fill of the robbed shaft. Late type, 4<sup>th</sup> – 5<sup>th</sup> century AD?



Figure 5.101. Drum Tomb 36 overlying rectangular Tomb 42, looking west (CMD 1973).

**Comments/discussion**

We cannot be sure whether the rim fragment of TRS form 5 was residual or not. If it was originally part of the grave-good assemblage from this tomb, it would date it to *c.*AD 300–350 (cf. Hayes 1972: 305). The lamp could be later still.

**Tomb number: 37 (GER011.T37)**

**Date:** 4<sup>th</sup> century AD?

**Tomb type:** 3b, drum-type?

**Stele:** No.

**Offering table:** No.

**Construction details:** This was part of the base of a probable circular drum-like tomb, which had already been mostly destroyed by the time of excavation (see Fig. 5.13). It was located between Tombs 34 and 45 at the north-west limit of the excavation. Only a crescent of mudbrick structure survived, and the skeleton was revealed beneath the lost southern side of the marker.

**Skeleton:** A crouched, partly articulated inhumation of a child, lying on left side, with head to west, facing north. The bones show some signs of disturbance.

**Contents**

None recorded.

**Comments/discussion**

This does not appear to have been the standard drum tomb, as the structure had minimal height surviving and the burial was not deep. It is possible that this burial was under a simpler form of rough mudbrick cover in an open area of ground, rather than having had a proper tomb over it.

**Tomb number: 38 (GER011.T38)**

**Date:** 3<sup>rd</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.102).

**Stele:** No.

**Offering table:** No.

**Construction details:** The tomb was located near the north-eastern limits of the excavated area. A funerary enclosure was attached to the eastern side of the tomb, but unusually seems to have had an entrance in its northern side.

**Skeleton:** No.

**Excavation notes:** The notebook suggests that the excavation of the robbed shaft was undertaken right at the end of the 1973 season, but was not completed.

**Contents**

The only recorded find from the tomb was a single sherd of an amphora.

**Comments/discussion**

Presumably this robbed tomb dates to the later period

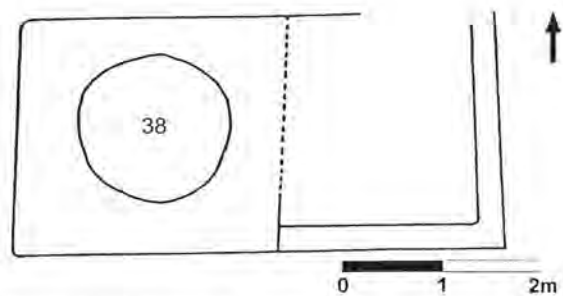


Figure 5.102. Plan of Tomb 38.

of the site's use, which is to say from the later 2<sup>nd</sup> century until the mid 4<sup>th</sup> century. This is based on the relative level of the tomb, its construction method and similarities with others in this area of the cemetery.

**Tomb number: 39 (GER011.T39)**

**Date:** 2<sup>nd</sup> – 4<sup>th</sup> century AD?

**Tomb type:** Uncertain, probably 4b (Fig. 5.103).

**Stele:** No.

**Offering table:** No.

**Construction details:** This tomb comprised just the south-west corner of a structure that extended outside the excavated area. It is not clear from the description whether this was part of square/rectangular Type 4b tomb marker or the south side of a funerary enclosure that was attached to a presumably Type 4b tomb lying outside the trench to the east.

**Skeleton:** None recorded.

**Contents**

*From the area to the south:*

TRS 3 (FW 532), rim and body sherds (probably single vessel).

A group of small crushed bones (infant burial?).

**Comments/discussion**

This tomb is one of the highest tombs on site, and so

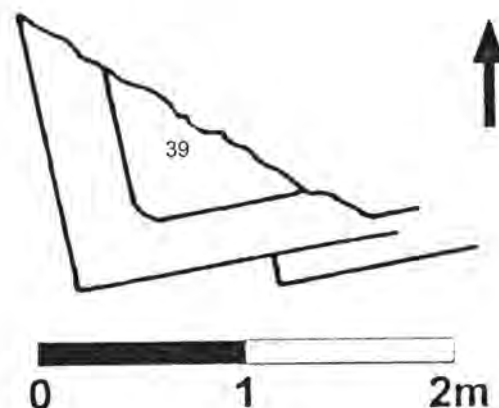


Figure 5.103. Plan of Tomb 39.

may date to the latest period of use, perhaps 4<sup>th</sup> century. On the other hand, neighbouring structures at this level (Tombs 29 and 38) are dated to the 2<sup>nd</sup> – 3<sup>rd</sup> centuries.

**Tomb number: 40 (GER011.T40)**

**Date:** 4<sup>th</sup> century AD?

**Tomb type:** 3b, drum-type, with hexagonal internal shaft plan (Fig. 5.104).

**Stele:** No.

**Offering table:** No.

**Construction details:** This tomb used a very distinct method of construction, one that was shared by the neighbouring Tomb 41 (Figs 5.97, 5.105). It consisted of a round superstructure built over a hexagonal lined shaft. The lower part of the superstructure was built of white mudbrick with white mortar, while the vaulting was of grey mudbrick. The shaft walls were formed by large mudbrick slabs set on end; these were very uniform in size: 0.36–0.37 m wide, 0.47–0.48 m high and 6–8 cm thick. A robber cut had broken into the tomb from the north side, though the burial was left relatively undisturbed in this case.

**Excavation details:** The shaft was filled with fairly clean orange sand. At the bottom of the shaft there was a child's skeleton. The floor of the tomb was of grey mudbrick overlying clean orange sand.

**Skeleton:** A child's skeleton was found in a poor state of preservation at the bottom of the shaft. It lay on its right side with its head to the north. Its head was tucked down into its chest, so that it faced south-west. It was tightly crouched with the hands below the head and the heels brought up hard against the pelvis. The bones were very fragile.

**Contents**

In front of the forehead of the child was found a small amulet of mother-of-pearl (Fig. 8.21, no. 20). It was originally pierced with two holes, although one had broken in antiquity. Some pottery was found to the north of the tomb during initial clearing; this appears to have been only fragments of Berber Red Ware.

**Comments/discussion**

This technique of shaft construction – a hexagonal chamber formed of bricks set on end – is shared only by the neighbouring Tomb 41 at GER011, though it is quite common in the escarpment shaft burials, where the linings were more generally of stone slabs. Nonetheless the surface appearance of the tomb – a flat-topped drum-like structure with a vaulted roof over the shaft – places it within the later sequence of tombs. This is another (rare) example of a child being given an individual burial in a tomb monument.

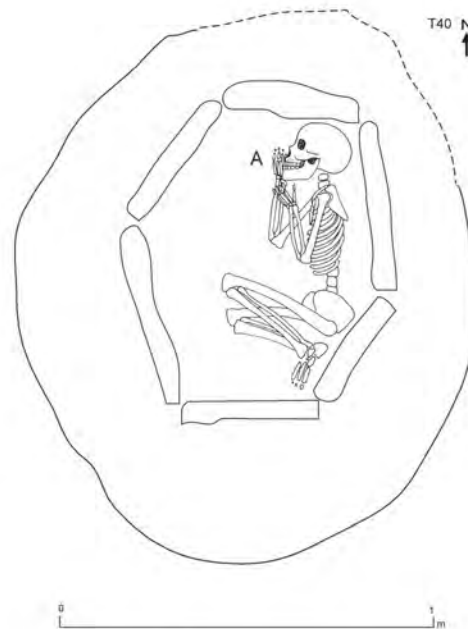


Figure 5.104. Plan of Tomb 40, showing orientation of body and location of the amulet (A).



Figure 5.105. Slab-lining of Tomb 40, looking south (CMD 1973).

**Tomb number: 41 (GER011.T41)****Date:** 4<sup>th</sup> century AD?**Tomb type:** 3b, drum type, with hexagonal internal shaft plan.**Stele:** No.**Offering table:** No.

**Construction details:** This tomb shares its construction technique with the adjacent Tomb 40. It has the same hexagonal chamber formed by large mudbrick slabs set on end. The dimensions of the blocks are almost identical to those used in Tomb 40: width: 0.32 m; height: 0.48 m; thickness: 6 cm. Note however that two of these were 0.56 m high. The tomb was constructed in green mudbrick (as opposed to Tomb 40, built in white mudbrick). The thickness of the walls averaged 0.30 m. White mortar was used throughout the construction. A rough corbelled dome capped the structure. This was built of white mudbrick, although some of the bricks were green and a few were grey-orange. White mortar had been plastered over the exterior of the tomb. The greatest surviving height of the tomb was 1.02 m, and the external diameter of the tomb was 1.2 m. The floor was of grey mudbrick overlying clean sand. At some point part of the north-eastern wall had been destroyed, presumably by tomb robbers.

**Skeleton:** The child's skeleton was articulated and quite well preserved, lain on right side with head to west and facing south.

**Contents***From the general area of the tomb:*

Incense burner fragments.

Berber Red Ware rim.

G: <4188> Wide-mouthed handmade vessel, with near vertical high neck and impressed decorated flat-top rim (HM 333?). Berber Red fabric, with exterior red painted lattice over white slip (Fig. 5.151).

**Comments/discussion**

This tomb has obvious similarities with Tomb 40, and we might presume that they were built either at the same time or not far apart chronologically. Both are stratigraphically late and presumably both date to the later period of the site's use (3<sup>rd</sup> – mid 4<sup>th</sup> century AD).

**Tomb number: 42 (GER011.T42)****Date:** Late 1<sup>st</sup> – 2<sup>nd</sup> century AD.

**Tomb type:** 5b, sub-rectangular superstructure, almost certainly originally stepped, with sub-square chamber (Figs. 5.106–5.107).

**Stele:** Type 8, picket fence, though quite rough.

**Offering table:** Type 3 (unusual U-shaped single trough)

**Construction details:** This tomb was overlain by Tombs 36 and 44. After the removal of those structures,

its layout became clear. Its walls were constructed in white mudbrick, with external lengths of 4.40 m (east-west) and 4.05 m (north-south). The central part of the superstructure was higher than the edge walls and appears to have been stepped in also. This was thus fairly clearly a type 5b stepped tomb, though damaged by subsequent burials. There was originally a flat mudbrick roof over the tomb, part of which survived on the eastern side. A four-point red-painted stele was found against the eastern side of the tomb, associated with a simple offering table and two pots (Fig. 5.107). Internally, there was a mudbrick bench-like structure along the southern side of the chamber. This stretched from the east wall to the west wall and appears to have been at least 0.30 m wide. The burial chamber appears to have measured c.2.1 x 1.75 m. It continued down to the floor of the tomb. The fill of the tomb comprised a layer of sand and white mudbrick rubble.

**Excavation notes:** At a depth of 0.30 m below the wall tops a skeleton was found (Skeleton 1) in a rubble layer. The rubble layer continued below the skeleton and it was noted that it was full of 'air pockets' and occasional

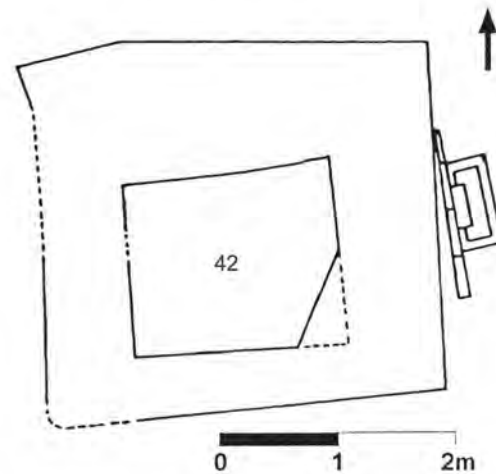


Figure 5.106. Plan of Tomb 42.



Figure 5.107. General view of Tomb 42, looking north-west (CMD 1977).

finds of reddish pigments. It is not recorded exactly how far above the tomb floor Skeleton 1 was. However, it is recorded that the rubble layer continued to the floor, and that at the bottom a large number of artefacts were recovered. These artefacts seem to have been surrounded by sand, which was flecked with coloured pigments (presumably traces of the ochre from the upper burial). Towards the northern side, in this bottom sandy layer, there was a second skeleton (Skeleton 2). Judging from the sketch plan, this skeleton was either very poorly preserved or had been disturbed as only two longbones were recorded near the centre of the northern part of the chamber, traces of brown pigment (ochre?) and further bone fragments extended from here to below glass vessels H and I. There were also some further fragmentary bones and brown pigment noted towards the western wall of the chamber close to and running beneath glass bowl Q. It is not clear whether the bones by vessel Q were part of the same skeleton as skeleton 2 or a third individual.

**Skeleton:** i) *Skeleton 1* was an articulated crouched inhumation, lying on its left side with the head to the east, facing south. It was identified in the field as a male. It was covered with brown ochre (called 'haematite' in CMD's notes) for most of its length (this is the skeleton reported as J54 in Chapter 7). ii) *Skeleton 2* was the primary burial at the bottom of the tomb, but was poorly preserved, being represented only by a few long-bones and other fragmentary bones, again covered in brown pigment. It is plausible that the remains represent a body laid on its left side, with head to east (close to the saddle quern), facing south.

#### Contents

##### *Amphorae*

A: <4247> (A141) Mid Roman Tripolitanian amphora (AM 22). D: 29.5 cm, H: 62.5 cm, capacity: 22.6 l (Fig. 5.147). Fabric: grey surface with lighter slip. Traces of red paint below handle and on neck. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

## T42



T42 N

Figure 5.108. Terra Sigillata dish from Tomb 42 (FP 2002).

B: <4248> (A142) Early Roman Tripolitanian amphora/Tripolitana I (AM 19). Small example: D: 25.5 cm, H: 74.5 cm, capacity: 20 l (Fig. 5.147). Fabric: sandy, salmon brown with white flecks. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

C: <4249> (A143) Miscellaneous Tripolitanian (?) amphora (not in AF 2, variant of AM 26?). D: 25 cm, H: 65 cm, capacity: 19 l (Fig. 5.147). Fabric: grey exterior with lighter slip. 1<sup>st</sup> – 2<sup>nd</sup> century AD?

D: <4250> (A144) Mid Roman Tripolitanian (?) amphora (AM 26). D: 26.5 cm, H: 60.5 cm, capacity: 18.9 l (Fig. 5.147). Fabric: reddish fabric, with dark plum surface. 1<sup>st</sup> – 2<sup>nd</sup> century AD?

E: <4251> (A145) Early Roman Tripolitanian amphora, with thickened lip in place of rim (AM 15). D: 27.5, H: 64.5, capacity: 17.4 l (Fig. 5.147). Fabric: grey exterior, with traces of lighter slip. Late 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

##### *Other Ceramics*

M: <4253> (H153) Italian Sigillata, Dr 18 (FW 515). Some lime encrustation, chipped (Fig. 5.135). Stamped *in p. p.* SEXMCL (OCK 1211).

N: <4254> (H154) Italian Sigillata, Dr 18 (FW 515). Lime encrusted, chipped, no stamp visible (Figs 5.108, 5.135).

An additional chip from a Dr 18 did not match either of the above.

##### *Lamp*

R: <4252> (J37) Lamp, light sandy fabric. Deneauve VIIA. Rim plain, two grooves round discus decorated with Eros as archer (Figs 5.126, 5.144). Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

##### *Glass*

H: <4258> Glass bowl; flaking, fairly clear glass (Fig. 8.6).

I: <4259> Glass bowl; flaking, fairly clear glass (Fig. 8.6).

J: Devitrified glass bowl (Fig. 8.8).

O: Glass fragments, no form identifiable.

P: Glass (circular) devitrified.

Q: Glass fragments, no form identifiable. Not collected.

S: Glass (devitrified) not collected.

##### *Faience*

K: Faience bowl; impossible to lift because of plant roots (Fig. 8.2, no. 7).

L: Faience bowl; impossible to lift because of plant roots (Fig. 8.2, no. 7).

##### *Other*

F: <4255> (282). Saddle quern, lava, worn surface, chalk in holes (Fig. 5.129).

G: <4257> Chalk rubber or pounder (later broke into three pieces).

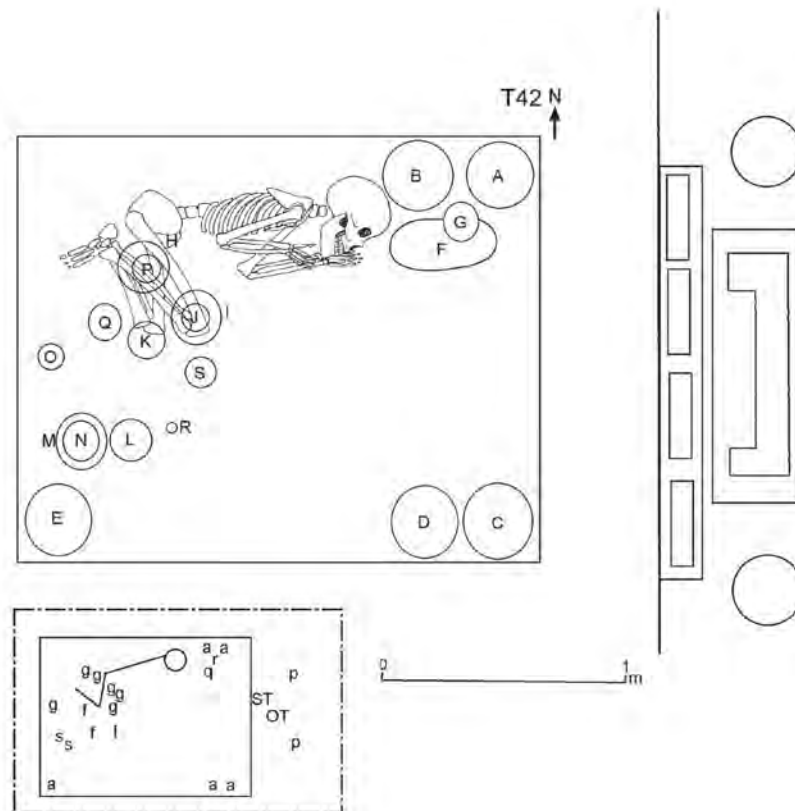


Figure 5.109. Schematic plan of finds (labelled with capital letter identifiers) within burial chamber of Tomb 42. The letters in the smaller inset plan denote: OT = offering table; ST = stele; a = amphora; f = faience vessel; g = glass vessel; l = lamp; p = handmade pot; q = saddle quern; r = rubber; s = sigillata vessel.

#### Outside tomb

Two additional pots, presumably in local handmade ware, are reported to have been found placed on the north and south side respectively of the offering table at the east exterior face of the tomb. No further details.

From the same area there is a record of South Gaulish Sigillata (form uncertain) and ARS Hayes 29 rim sherd and amphora sherds.

A charred bone was recovered from the offering table and some charred dates from the southern pot.

#### Comments/discussion

It seems that this tomb, like Tomb 51, was partially disturbed in antiquity, with the insertion of a secondary burial, after the roof of the tomb was breached. This must have been prior to the construction of Tomb 36, but possibly relates to the vestigial traces of Tomb 44, which also post-dated Tomb 42, but was possibly itself partially demolished at the time Tomb 36 was constructed. It is not clear if there had been some disturbance of the original burial or whether the bones of that deep burial had simply not survived to any significant extent due to the moisture content of the soil. The fact that the ceramics and other artefacts appeared

relatively untouched suggests that the tomb had not been robbed. The primary burial is another example of the richly furnished burials of late 1<sup>st</sup> – early 2<sup>nd</sup> century date. The covering of both Skeletons 1 and 2 with a layer of ochre is a distinctive aspect.

The positioning of artefacts in the base of the tomb is again of interest (Fig. 5.109). The amphorae were distributed between the corners of the tomb, two in the north-east (A–B), two in the south-east (C–D) and one in the south-west (E). The saddle quern and ‘chalk’ rubber (F–G) were placed close to the east wall, immediately south of amphorae A–B. If the skeleton of the primary burial is correctly interpreted, this would place it close to the north wall of the tomb, lying with its head to east extending close to the saddle quern. The traces of bones and ‘ochre’ extending beneath some of the glass vessels at the west end of the chamber may indicate that some of these vessels were piled up on top of the corpse. Though this would be slightly unusual in relation to the majority of other burials, it is paralleled in the slightly better preserved primary burial in Tomb 52. An alternative is that there was a separate body – perhaps a small child inserted at the west end of the

chamber, with the large assemblage of glass vessels H–J, P–Q, S and faience bowl K deposited close to the feet of the primary burial. Tight against the west wall there was a further glass bowl (O) and slightly to the south of the main concentration of vessel glass, there was a further line of two Dragendorff 18 dishes in a stack (M–N), a second faience bowl (L) and a lamp (R). A large area of the floor in the southern and eastern part of the chamber was empty of visible finds – though could have been used for organic materials that have subsequently perished.

**Tomb number: 43 (GER011.T43)**

**Date:** 3<sup>rd</sup> – 4<sup>th</sup> century AD.

**Tomb type:** 4b, rectangular tomb with drum-type shaft (Fig. 5.110).

**Stele:** Type 5a?

**Offering table:** Type 4a.

**Construction details:** The average width of the perimeter wall was c.0.45 m. The diameter of the surface of the tomb was 2.10 m, into which a hole had been cut, unusually to the south of the actual shaft itself. The roof was vaulted. The whole structure was constructed from brown mudbrick. A stele and small offering table were set into a plastered mudbrick step (c.1 x 0.50 m) built against the east side of the tomb. The offering table had five small niches to the west of a single larger trough. A single flat-topped side point of a type 5a stele was preserved *in situ* behind the offering table.

**Excavation notes:** The shaft filling was of dirty yellow sand mixed through with lumps of mudbrick. The disturbed contents were found from a depth of 45 cm below the present surface, continuing down to the tomb base, at 1.1 m. The base of the tomb was formed from

clean orange sand, and it was on this that the burial had been laid.

**Skeleton:** The skeleton appears to have been partially disturbed and most of the bones had disintegrated or been displaced. The only surviving traces *in situ* were the impression of a cranium in the sand by the eastern arc of the tomb wall; the distal ends of the tibiae and the fibulae of both legs; both feet; and a dark brown stain marking the position of the torso. The burial was evidently crouched; the distance from the cranium impression to the feet was 1.12 m. It seems to have lain on its right side facing north with its head lying to the east.

**Contents**

Almost all of the contents were disturbed and broken, and almost all came from the northern section of the tomb. There were:

An incense burner.

Sherds representing almost all of a Hayes TRS form 2 (FW 531), 3<sup>rd</sup> – 4<sup>th</sup> century.

A glass vessel with very thin walls.

A thick (glass?) hemi-spherical glass base – of a lamp or drinking horn (rhyton?).

From outside the tomb close to the offering table there was evidently a second incense burner.

**Comments/discussion**

The presence of the TRS ware dish in this tomb, if it is an original grave good, indicates a date somewhere between the later 3<sup>rd</sup> century and the early 5<sup>th</sup> century AD. The positioning of the finds within the tomb is not absolutely certain because of the robbed state of the tomb, but the incense burner was evidently placed just in front of the skull, with the TRS dish and the two glass vessels against the north side of the shaft and thus in the eyeline of the deceased.

**Tomb number: 44 (GER011.T44)**

**Date:** 2<sup>nd</sup> century AD or later?

**Tomb type:** Uncertain.

**Comments/discussion**

This ‘tomb’ was in fact only a mudbrick wall found during cleaning over the top of Tomb 42. It almost certainly was part of a tomb, as there are no other non-tomb structures known from this part of the mound. The wall overlay the eastern edge of Tomb 42, but if the structure had extended to the west, it will have been impinged on by a later drum tomb, Tomb 36. If it did originally extend further across the top surface of Tomb 42, it is likely that it was the superstructure over the secondary skeleton (Skeleton 1) placed inside the broken-in vault of Tomb 42 (see above, Tomb 42). However, the record of the features relating to Tomb 44 is rather scanty.

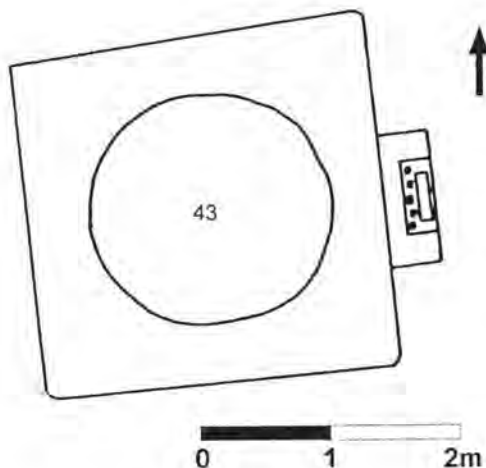


Figure 5.110. Plan of Tomb 43.

**Tomb number: 45 (GER011.T45)****Date:** 2<sup>nd</sup> – 4<sup>th</sup> century AD?**Tomb type:** 3b, drum-type, with hexagonal internal shaft plan.**Stele:** No.**Offering table:** No.**Construction details:** The external diameter of the tomb was *c.* 1.2 m. Internally, the tomb resembled Tombs 40 and 41, with their hexagonal-shaped shafts. Unlike Tombs 40 and 41, which were constructed internally using large mudbrick slabs set on end, Tomb 45 was built in the more traditional manner, using courses of mudbrick, but still producing a multi-angular shaft shape.**Skeleton:** A crouched inhumation was found, tightly packed within the tomb. It lay on its left side, with its head to the west facing north. Its hands were placed under its head, and, unusually, it had its left leg crossed over its right knee (perhaps a result of forcing the body into the restricted space. It was in good condition.**Contents**A handmade Berber Red Ware open bowl (HM 346) was found laid on top of the left shoulder and ribcage of the deceased against the southern wall of the tomb. 1<sup>st</sup> – 4<sup>th</sup> century AD.**Comments/discussion**The tomb appears to have been opened by robbers from the north side, but there was minimal signs of disturbance of the burial, which was simply furnished. The fact that this is a small circular tomb does tend to suggest that it dates to the later period of site use (later 2<sup>nd</sup> – 4<sup>th</sup> century).**Tomb number: 46 (GER011.T46)****Date:** 2<sup>nd</sup> – 4<sup>th</sup> century AD?**Physical description:** This was not a tomb but the unmarked burial of a child, immediately east of Tomb 33. While Tomb 33 was being cleaned, the skeleton was found in a rough cut in the ground. The burial was not signposted in any way.**Skeleton:** The child's skeleton was found lying on its back with its head to the west, facing upwards. Its arms and legs did not appear to have been bound together, nor had any effort been expended on them to keep them in any sort of neat order. This prompted CMD to suggest that the skeleton had simply been thrown into a pit.**Comments/discussion**

Children seem to have been treated in diverse ways at Sāniat bin Huwaydī. That in Tomb 40 seems to have had the tomb built specially for it. That in Tomb 9 was at least accorded a position as a secondary burial in a large tomb. Even that laid out between Tombs 21 and 22 (Tomb 49) had some grave goods placed with it.

This child was presumably not so well thought of, though it was buried within the cemetery between tomb monuments but without any grave goods or marker of its own.

**Tombs 47–48.**

These numbers do not appear to have been used – or alternatively structures to which they were provisionally assigned were not excavated – and there is no record of what features they designated.

**Tomb number: 49 (GER011.T49)****Date:** 4<sup>th</sup> century or 5<sup>th</sup> century AD?**Physical description:** As with the child's burial just described (Tomb 46) this was not a tomb, but merely the unmarked inhumation of a child alongside other tomb structures. In this case, the burial was in the narrow space between Tombs 21 and 22.**Skeleton:** The child's skeleton lay between the two tombs, on its right side with its head to the east, facing north (Fig. 5.111). The surviving photograph indicates that it was a flexed inhumation, though not tightly contracted like many of the crouch burials. It was almost intact, though the lower legs and feet were missing, as was the back of the skull. Otherwise the skeleton was in a good state of preservation.**Contents**

Two artefacts were recovered with this body:

A: <4050> (J31) TRS (?) small lamp, unperforated handle, rim with simple relief scroll, dots and branch, undecorated discus (Figs 5.126, 5.142). This was found near the legs (back of the knees?). 4<sup>th</sup> – 5<sup>th</sup> century AD.

An iron ring, was found on the forefinger of the right hand, close to the face.

**Comments/discussion**

This child's burial has been treated in a similar manner to that of 'Tomb 46', which is to say, laid out in a shallow scoop in the ground, rather than in a tomb.



Figure 5.111. General view of Burial 49, looking south (CMD 1977).



Whereas burial 46 appears to have simply been thrown in a pit with no grave goods, this older child was at least laid out in an orderly fashion and had both a lamp and an iron ring as grave goods. The date of the burial is indicated by the lamp as 4<sup>th</sup> or 5<sup>th</sup> century AD.

**Tomb number: 50 (GER011.T50)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 4b, sub-square superstructure with sub-square shaft (Figs 5.112–5.113).

**Stele:** A small two-point stele (type 6?) stood to the west of Tomb 50 (Fig. 5.113).

**Offering table:** Not preserved, but disturbance in front of stele.

**Construction details:** This tomb lay beneath Tombs 21 and 22. It originally came to light as a wall at the bottom of the shaft of Tomb 21. Its exterior dimensions were c.2.4 m square, slightly smaller than Tombs 52 and 53. The dimensions of the shaft were: north wall 1.25 m; east wall 1 m; south wall 1.2 m; west wall 1.1 m. It seems to have been built in mudbrick throughout. Some complete mudbricks survived inside the fill of the tomb and measured 0.47 m by 0.31 m by 6 cm.

**Excavation notes:** Seven layers were distinguished as the tomb was excavated. The top-most, layer G (general) consisted simply of wind-blown sand on top of the tomb. Below this was layer 1, a mix of compacted sand and fragments of mudbrick on top of the tomb. A very similar layer was discovered on top of Tomb 53 slightly to the north, and in that case it was recorded that it seemed to extend to Tomb 50. It seems reasonable to conclude that this is one and the same layer. Below this and within the shaft of the tomb itself was layer 4. This consisted of a fill of loose clean sand, with a few

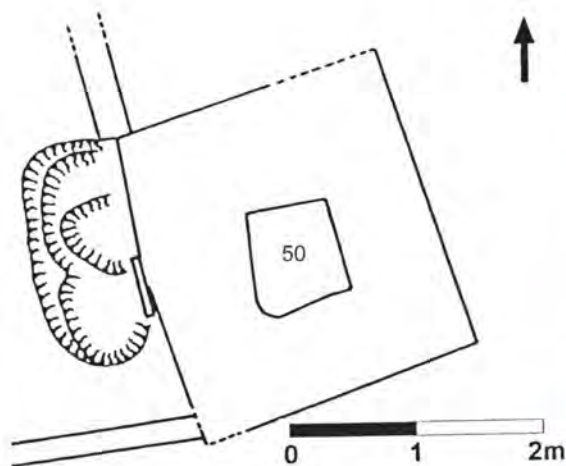


Figure 5.112. Plan of Tomb 50.

lumps of mudbrick. It is not recorded how deep this layer was. Immediately below level 4 was what appears to have been the collapsed roof of the tomb (layer 5). This was a jumbled layer of large mudbrick lumps and some complete bricks, of the dimensions noted above. This was 0.34–0.38 m deep, and contained pockets of clean sand. Below this was the layer with the skeleton (layer 6), loose clean sand, shot through with patches of black soil and fragments of charcoal. The bottom of this tomb had been cut into the natural earth. The original excavators noted that the tomb did not appear to have been disturbed, beyond the breaking-in/collapse of the original roof. Near the north-east corner of the chamber there was a small depression in the tomb floor containing ash, some 24 cm deep. To the south-east of the tomb an area was excavated (layer 2) to trace the tomb walls. It was found to be clean compact sand. To the west of the tomb another area was excavated. This area lies between Tomb 50 and Tomb 3 and is bounded on its southern side by the low enclosure wall (Fig. 5.114). It was found that the area contained clean sand mixed with traces of occupation debris and mudbrick fragments.



Figure 5.113. General view of Tomb 50, looking east (CMD 1977).



Figure 5.114. General view showing relationship between Tomb 50 (left) and Tomb 3 (right), looking south (CMD 1977).

**Skeleton:** The skeleton was in very poor condition, most of the bones having deteriorated in the wet conditions beyond the point at which they might have been recovered. They were only visible as small fragments and traces of lighter-coloured sand. However, when first exposed the outline of the skeleton was clearly visible on the floor of the chamber, close to the north wall of the chamber. The body lay on its right side, with head to west, facing south.

#### Contents

##### *From 1 (above tomb)*

Amphora wall sherd (found 1973).

Berber Red Ware sherd (found 1977).

##### *From 2 (to the south-east of the tomb, outside)*

Berber Red Ware fragments and two everted rims (HM 335/337?).

Bones.

##### *From 3 (to the west of the tomb, between it and Tomb 3)*

Amphora wall sherd.

##### *From 4 (loose clean sand fill at top of tomb shaft)*

Six small fragments of Berber Red Ware; not diagnostic.

##### *From 5 (collapsed mudbrick roof, in tomb shaft)*

One sherd of Berber Red Ware, lattice pattern painted stripes.

##### *From 6 (Tomb bottom, with skeleton)*

Berber Red Ware fragment – thin walled.

Berber Red Ware, white slip and tartan.

One burnt date (small find <72>).

#### Comments/discussion

It seems that Tomb 50 was one of a number of early tombs which were sealed when hollow: there was no sand fill in the tomb, as far as can be detected. This makes it harder to decide whether there were grave goods which were robbed: the absence of protecting sand meant that robbers could have removed grave goods easily, after having made only a small hole in the roof. Since Tombs 21 and 22 overlay Tomb 50, any tomb robbing here would have had to have occurred in the Garamantian period. The fragments of painted handmade Garamantian pottery found at the bottom *may* have been part of a grave-good assemblage, but equally they may simply have trickled down through the coarse debris of the collapsed roof at a later date. The fact that similar lattice-painted pieces are found both at the bottom and in the mix of the roof rubble suggests that that latter is more likely. If this was the case, then Tomb 50 appears to be unique among the early tombs in that it had no preserved grave goods, though there could of course have been many organic inclusions with the burial that have not survived. The absence of imported goods is striking.

#### **Tomb number: 51 (GER011.T51)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 4b, rectangular superstructure with rectangular shaft (Figs 5.115–5.116).

**Stele:** No.

**Offering table:** No.

**Construction details:** The tomb was constructed in mudbrick throughout and had a compacted mud floor. It appears that the original roof was vaulted, although little of this survived. The eastern and western walls of the rectangular tomb chamber had internal lengths of c.2 m, while the northern and southern walls had internal lengths of c.3 m. Most of the western wall had been destroyed. The irregular shape represented on the plan (Fig. 5.115) reflects the overhang of the surviving elements of the roof.

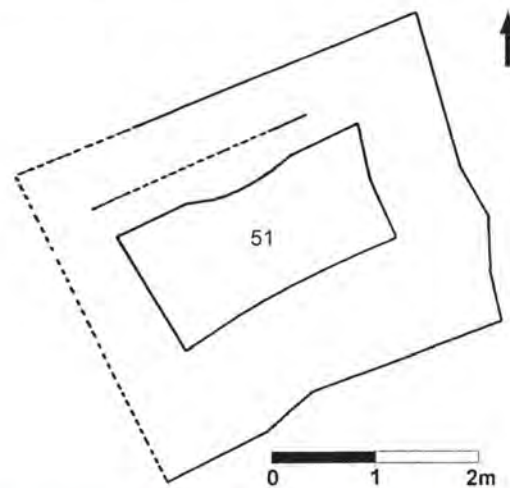


Figure 5.115. Plan of Tomb 51.



Figure 5.116. General view of interior of Tomb 51, looking north-east (CMD 1977).

**Excavation notes:** Upon excavation it was found that there were three principal layers within the tomb. The topmost (layer 5) was a rubble layer, comprised mainly of mudbrick debris mixed in with sand and mortar. This layer was c.0.70 m deep and was found to contain disarticulated bones (see below) and also some beads in the north-east corner. This layer did not reach the side walls of the tomb, however. At the sides, beneath the remnants of the roof vaulting, the tomb fill was sand. This is important for understanding the history of the tomb (see further below, Comments/discussion). Layer 5 came down on to another deep rubble layer, 6. This was distinguished from 5 by the fact that it contained more pieces of mudbrick which were still mortared together, and had to be excavated with a pick rather than a trowel. As with 5, layer 6 gave way to sand towards the walls of the tomb. Layer 6 contained an upright amphora in the south-eastern corner, as well as small fragments of bone. The layer was c.0.75 m deep. Below 6 but above the tomb floor was a final layer, 7, which was thin (3–4 cm deep) and sandy. It was noted that it was often purplish in colour. This layer contained the majority of pottery, glass and faience vessels from the tomb, almost all of them located towards the north wall. Below layer 7 was the tomb floor. This was of compacted mud and was found to be damp. Several of the vessels had actually sunk into the floor.

Since the western wall of the tomb had been demolished, an area to the west of the tomb was excavated to determine its position. Four layers were found. The topmost (layer 1) was soft dirty sand, c.7 cm deep, in effect the modern ground surface. Below this was a 0.25 m-deep layer of hard-packed brown sand (2). Below this was a spread of mortar (3), which appears to have extended to c.0.65 m from the tomb, and carried on northwards to lie in the same relationship with the western wall of Tomb 9. It was only c.2 cm thick. Finally, below this there was a layer of cleanish hard-packed sand which was at least 0.30 m deep (4). It was not excavated beyond this depth. At this depth it appears to have been still above the floor of the tomb.

**Skeleton:** Three collections of disarticulated bones were found during the excavation of this tomb.

i–ii) At a height of at least 0.75 m above the tomb floor, in the deep layer (5) of mudbrick and sand, two collections were found. One, in the north-western corner seems to have been composed of small fragments. The other, towards the western end, appears to have been only two fragmentary longbone shafts.

iii) The third group, on the tomb floor, represented the primary burial, but preservation was poor in damp conditions. However, two surviving long bones must

represent the upper legs of a crouch burial laid on its left side, with head to west, facing north.

#### Contents

##### *Primarily from the lowest layer (7)*

##### *Amphorae*

V: <4242> (A140) Early Roman Tripolitanian/Tripolitana 1 (AM 19). D: 31, H: 89, capacity: 41.31 l (Fig. 5.147). Fabric: brick red with plum surfaces and white slip. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

From layer 5. <4212> Early Roman Tripolitanian/Riley Early Roman Amphora 11B (AM 18). Rim only. Purplish fabric, with white flecks and light slip. Late 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

##### *Other Ceramics*

H: <4243> (H162) Italian green glazed pot (FW 517). Chipped (Figs 5.117, 5.136). Late 1<sup>st</sup> century AD?

S: <4235> (H150) ARS Hayes form 3b (FW 519). Chipped. Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD (Fig. 5.136).

T: <4236> Spouted jug or feeder with strainer, ARS Hayes form 121.1 (FW 529) or possibly ARS 126 variant (Figs 5.117, 5.136). Chipped. 2<sup>nd</sup> century AD?

U: <4287> Handmade tripod incense burner, with large handle (form not in AF 2), buff fabric, surface reddish in places with white dots (Fig. 5.150).

W: <4288> Handmade tripod incense burner, with large handle (form not in AF 2), buff, reddish in places with white dots (Fig. 5.150).

One jug/flagon handle.

Two fragments of Berber Red Ware rims.

One fragment of a tartan-decorated Berber Red Ware jar.

##### *Lamp*

M: <4244> (J34) Lamp with pale green surface (from top of layer 6). Circular moulding on spout, egg-moulding on rim, broken discus (Figs 5.117, 5.143).

##### *Glass*

A: Glass dish? 15 cm diameter, rim only remaining.

B: <4230> Glass bowl, very flaky and opaque, bad condition (Fig. 8.7).

C: Glass bowl (Fig. 8.8).

E: Devitrified glass vessel (Fig. 8.8) – plate?

F: Devitrified glass vessel, no attempt made to lift it.

G: Devitrified glass bottle.

L: Glass bowl (Fig. 8.8).

N: Very thin glass bottle (Fig. 8.8).

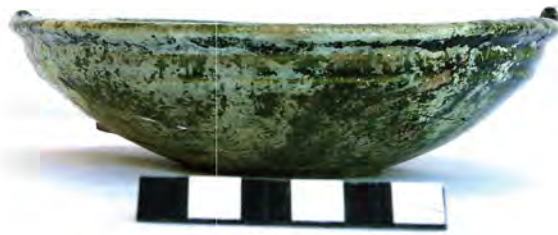
O: <4231> Glass bottle (square), very broken and in poor condition (Fig. 8.7). Once greenish.

Y: Conical glass vessel from below faience vessel J (Fig. 8.8).

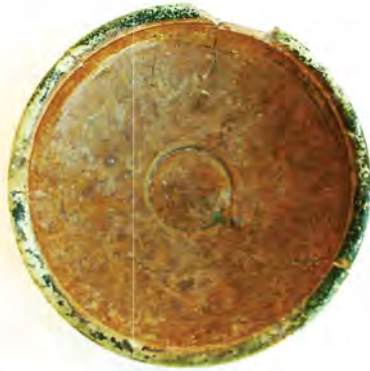
##### *Faience*

D: Faience bowl, similar to Tomb 17T (Tagart 1983, 151, no. 4). Lifted with adhesive.

J: Faience bulbous pot with everted rim (Tagart 1983,



T51 H



T51 H (top view)



T51 H (underside)

T51



T51 T (H151)



T51 M (J34)



T51 M (stamp)

Figure 5.117. Finds from Tomb 51 (FP 2002).

149, no. 2). Lifted with adhesive and tissue paper (Fig. 8.1, no. 2).

R: Blue faience bowl, similar to Tomb 17T (Tagart 1983, 151, no. 4). Lifted with adhesive and tissue paper.

*Other*

X: Lump of haematite or ochre.

Z: Piece of chalk, rubbed smooth on one side (from level 6).

I, K, P: Gourd? Fragments were thought to represent

gourd (I and K came from the floor of the tomb, I within dish H, P from levels 5/6), but this interpretation was subsequently abandoned and the material considered as dried mud. In view of finds of gourd from the Desert Migrations Project (DMP) excavations, the original interpretation may be worth reconsidering, though the material was discarded.

One piece of a limestone (?) rubber.

Beads (all from 5): Several hundred small flat beads

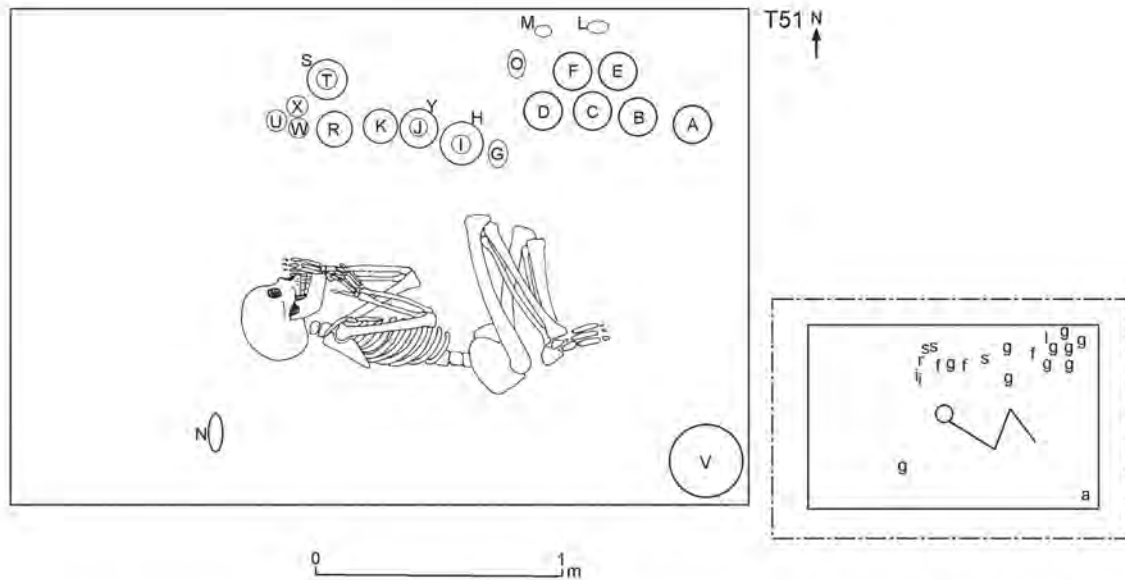


Figure 5.118. Schematic plan of finds (labelled with capital letter identifiers) within burial chamber of Tomb 51. The letters in the smaller inset plan denote: a = amphora; f = faience vessel; g = glass vessel; i = incense burner; l = lamp; r = rubber; s = sigillata vessel.

of ostrich eggshell, along with some small black beads and an amber-coloured (spherical) bead about 6 mm in diameter. The ostrich eggshell (described in the notebook as 'bone or ivory') evidently had a consistent diameter: 1.88 mm and thickness: 0.78–1.56 mm. The 'amber bead' is likewise a probable misidentification for carnelian, but again no further record exists. The black beads, if stone, were possibly steatite. A separate record lists a worn amazonite bead from 51 G.

#### Comments/discussion

The overall assemblage of finds suggests a date in the early – mid 2<sup>nd</sup> century AD for this tomb. The tomb had been broken into through its roof in antiquity – perhaps for purposes of secondary interment rather than grave robbing. CMD believed that the early rectangular tombs were originally laid out with a body and grave goods, with varying degrees of care; then, the shaft of the tomb was filled with mudbrick, along with parts of other skeletons and ceramics and even other quasi-valuables, such as necklaces (Daniels 1973a, but especially 1977a; see also 1989). He believed that the purpose of the mudbrick fill was to smash the grave goods so they could not be retrieved by tomb robbers. However, examination of Tomb 51 might suggest an alternative scenario. Here, it appears that the shaft was originally carefully filled with sand. This is suggested by the bottom layer, 7, and the fact that towards the walls of the tomb, the layers of mudbrick rubble (5 and 6) give way to sand. This implies that the tomb was originally filled

to the top with sand; at some point, robbers broke open the roof and tunneled through the sand, but only in the centre of the tomb. They left the sand by the walls intact. A third alternative would interpret the primary burial here as being left in an empty sealed vault. Only when the roof was broken in at a later date was the interior partially filled up with mudbrick roofing material and rubbish, but this was concentrated along the centre of the tomb below the broken vault. A secondary burial, associated with a bead necklace, seems to have been lain on this platform. Over time, wind-blown sand filled the voids around the edges of the tomb. Each of these interpretations has plausible aspects and none is conclusive. More excavations, such as those of the DMP, may shed further light on this.

The finds assemblage is striking, with 1 amphora, 10 glass vessels, 3 faience vessels, 3 fine ware imports and 2 local incense burners. The disposition of finds in the tomb is also quite distinctive. The vast bulk of the finds were concentrated along the north wall of the tomb from the north-east corner westwards for about two thirds of the length of the chamber (Fig. 5.118). A single amphora (V) stood isolated in the south-east corner, and a glass bottle (N) lay about two thirds along the length of the south wall. If the position of the body has been correctly interpreted from the scant remains, then it is clear that the major concentration of glass, faience and *terra sigillata* vessels was arranged in a linear pattern directly in front of the corpse. Starting at the feet end, there was a double line comprising a front

rank of three glass and one faience bowls (A–D), with three further glass vessels (E–F, O) just to the north. A further glass bowl (L) was propped against the wall to north and a lamp (M) came from a slightly higher level in the same area. To the west of the first lines of glass and faience vessels was a second line comprising a glass bottle (G), a green glazed dish (H), two possible gourds (I, K), 2 faience vessels (J, R). The line will have terminated directly in front of where one would expect the skull of the body to have been lain. Two handmade incense burners and a lump of red ‘haematite’ (or ochre?) were added at the west end of the line, while an ARS dish and a feeder bottle were slight offset to the north. While we cannot absolutely exclude the possibility that the tomb was robbed and that material from other areas of the tomb floor has been removed, the apparent concentration of finds in front of the body here is certainly interesting.

**Tomb number: 52 (GER011.T52)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 5b, rectangular stepped superstructure with sub-rectangular shaft (Figs 5.119–5.122).

**Stele:** Type 8.

**Offering table:** Yes, unique type with U-shaped trough and three small compartments.

**Construction details**

This tomb lay below Tombs 25 and 18. The circular shaft of Tomb 18 cut through the western side of Tomb 52. In plan, Tomb 52 was rectangular and aligned east-west. Against its west face it had an *in situ* type 8 (picket fence) red-painted stele and an unusual offering table, with a U-shaped trough and three small compartments (Fig. 5.123). These were surrounded by a funerary enclosure demarcated by a low oval forecourt wall. Additional pots for funerary offerings had been positioned directly north and south of the offering table (see below). The tomb was constructed using a pale mudbrick and appears to have has a stepped superstructure. Figs 5.120–122 suggest that the tomb may have originally had a stepped, sub-pyramidal appearance. The cross-section suggests that it was originally roofed. The external dimensions of the tomb were c.2.75 m (east-west) by 2.25 m (north-south). The funerary chamber below the tomb was c.1.75 x 0.90 m and at least 1.2 m deep.

**Excavation notes:** The tomb was originally covered in wind-blown loose sand (layer 1), some 0.40–0.45 m deep. This sand separated the tomb from Tomb 25 above. Upon excavation it was found that the top of the shaft of Tomb 52 was also full of loose, clean sand (2). This continued down to a depth of 1.2 m from the top of the tomb. Below this layer there was a layer

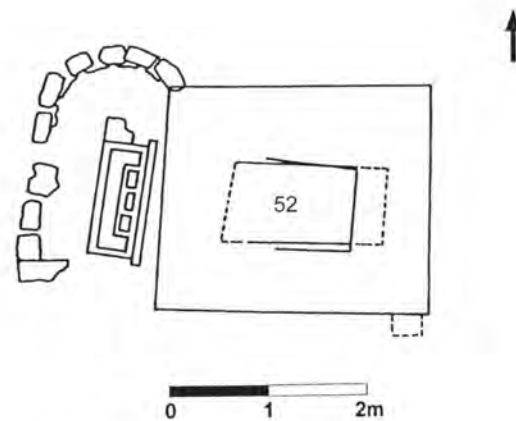


Figure 5.119. Plan of Tomb 52 and forecourt.



Figure 5.120. General view of Tomb 52, overlain by Tomb 18, looking west (CMD 1973).



Figure 5.121. Excavation in progress of Tomb 52, centre top, and Tomb 17, left, looking north (CMD 1977).

of mudbrick rubble and sand (3). This layer began just above the tops of the various amphorae that were stacked around the tomb, and continued almost to the tomb floor. The mudbricks varied from half-bricks to small fragments, but the rubble was not hard-packed. Immediately below this level there was a discoloured sandy layer (4), some 2–4 cm thick. The discolourations varied from black to white and were sometimes purple. These colours were generally concentrated around the



Figure 5.122. Tomb 52 and forecourt, looking north (CMD 1977).



Figure 5.123. Detail of stele, offering table and associated pottery vessels on west side of Tomb 52, looking east (CMD 1977).



Figure 5.124. Grave goods in situ in Tomb 52, looking south (CMD 1977).

grave goods, seemingly underneath them as well as above (Fig. 5.124). The skeleton was found at the bottom of the tomb (5). It seems that the floor of the tomb had cut into the natural sub-soil.

**Skeleton:** The skeleton was in very poor condition, again seemingly because of the dampness of the ground at this depth, rather than as a result of robbing. On excavation, its orientation could be observed, though the bone did not survive attempts to lift them. It was of adult size, laid out on its right side in a crouched

position with the head towards the west (towards the stele and offering table), facing south.

#### Contents

##### *Amphorae*

A: <4239> (A137) Early Roman Tripolitanian amphora (AM 15). D: 33 cm, H: 70 cm, capacity: 28.4 l (Fig. 5.147). Late 1<sup>st</sup> century BC – 1<sup>st</sup> century AD?

B: <4240> (A138) Miscellaneous Tripolitanian (?) amphora, with T-shaped rim (not in AF 2). Probably early Tripolitanian type. D: 28.5 cm, H: 66 cm, capacity: 22 l (Fig. 5.147). Fabric: brick red, with plum surfaces. 1<sup>st</sup> – early 2<sup>nd</sup> AD century?

C: <4237> (A135) Mid Roman Tripolitanian amphora (AM 26). D: 31 cm, H: 68.5 cm, capacity: 27.5 l (Fig. 5.148). Fabric: brick red, with plum surfaces. Graffiti cut on shoulder. 2<sup>nd</sup> – 4<sup>th</sup> century AD?

D: <4238> (A136) Miscellaneous Tripolitanian (?) amphora (not in AF 2). Probably early Tripolitanian type. D: 27.5 cm, H: 67.5 cm, capacity: 22 l (Fig. 5.148). Fabric: red, with darker surfaces. 1<sup>st</sup> – 2<sup>nd</sup> century AD?

E: <4241> (A139) Early Roman Tripolitanian amphora/Tripolitana I (AM 19) (small). D: 27 cm, H: 72.5 cm, capacity: 20.5 l (Fig. 5.148). Fabric: red, with darker surfaces and lemon slip. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

##### *Other Ceramics*

H: <4220> South Gaulish Sigillata, Dr 37 (FW 516). Not chipped. Decorated: Circular panel with representation of Leda and swan, flanked by rectangular panels with running lions. Vessel was standing on its side against amphora C <4237> and contained glass bowl I <4224> and a mass of devitrified glass (U, V), as well as a lump red/violet coloured material. Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD (Figs 5.125, 5.136).

J: <4227> Italian Sigillata, Dr 18 (FW 515). Stacked above similar bowl K <4226>. Chipped. Stamp (lunate) of LRASINPIS (OCK 1690). Late 1<sup>st</sup> century AD (Figs 5.125, 5.135).

K: <4226> Italian Sigillata, Dr 18 (FW 515). Below K <4227>. Chipped. Stamp in *p. p.* SEXMCL (OCK 1211.5). No graffiti, slight salt (?). Late 1<sup>st</sup> century AD (Fig. 5.135).

Q: <4225> Italian Sigillata, Dr 18 (FW 515). Top dish of a pile of three, resting on dish R <4228>. Chipped. Stamp (Figs 5.125, 5.135) *in p. p.* base SEXMCL (OCK 1211.5). No graffiti, slight salt.

R: <4228> Italian Sigillata, Dr 18 (FW 515). Below dish Q. Chipped. Stamp *in p. p.* ...NPIS (OCK 1690), rouletted, no graffiti. Late 1<sup>st</sup> century AD (Fig. 5.135).

S: <4229> Italian Sigillata, Dr 18 (FW 515). Below dish R, bottom plate of the pile of three. Chipped. Stamped (lunate) LRA...PISAN (OCK 1690.55). Rouletted, graffiti on base. Late 1<sup>st</sup> century AD (Fig. 5.135).

G: <4233> Handmade tripod incense burner (form not

T52



T52 H (H144)



T52 H (detail)



T52 H (detail)



T52 J (H145)



T52 J (stamp)



T52 Q (H147)



T52 Q (stamp)

Figure 5.125 Fineware from Tomb 52 (FP 2002).

in *AF* 2), large handle, painted stripes (Fig. 5.150). Layer 4 <4219>. Two joining handmade rim sherds, soft grey fabric, painted lattice pattern (white on red body). Possibly **HM 333** (Fig. 5.151).

Another fragment similar to <4219>.

12 Berber Red Ware body sherds and one Berber Red Ware handle.

#### Lamps

M: <4234> (J35) Lamp, Deneauve VIIA, resting on edge of saddle quern <4245>. Brown fabric, orange-brown slip, spout broken. Stamp on base, ANCHIA, decorated disc with branch motif (Figs 5.126, 5.143). Late 1<sup>st</sup> century AD.

T: <4232> (J36) Lamp, Deneauve VIIA, discus broken, sandy fabric, brown surface, burnt on spout,

no stamp, weathered (Figs 5.126, 5.143). Mid 1<sup>st</sup> – mid 2<sup>nd</sup> century AD.

#### Glass

F: <4221> Glass pillar moulded bowl, very fragmentary with a substantial part missing (Fig. 8.4). Glass very flaky, almost devitrified. Found c.10 cm above floor; may originally have been placed on top of amphora E and fell off during filling of tomb.

I: <4224> Pillar moulded glass bowl; only fragments left (Fig. 8.4). Found inside dish H.

L: <4223> Pillar moulded bowl, between two groups of fineware dishes (Fig. 8.4). Glass flaky and fragmentary, once turquoise.

U: Devitrified glass inside bowl H.

V: <4222> Fragments of a green-glass pillar moulded



T42



T42 R (J37)

T52



T52 M (J35)



T52 T (J36)



T52 M (stamp)

T49



T49 A (J31)

T53



T53 D (J39)



Figure 5.126. Lamps from Tombs 42, 49, 52 and 53. 1:2 (FP 2002).

bowl (Fig. 8.4). Found beside bowl H.

*Other*

N: <4245>. Saddle quern. Worn on both sides, corner missing. Fine-grained light stone, c.2.5 cm thick.

O: <4246> Saddle quern – fragment of second smaller quern on top of N. Reddish stone.

P: 4261. Fragments of white stone on top of saddle quern <4245>.

*Finds associated with the stele and offering table*

W: Amphora neck, fragmentary; on north side of table. Probably from an amphora deposited outside Tomb 17 rather than 52 (no further records exist of this amphora).

X: <4278> Handmade pot base; on north side of table.

Broken straight-sided rim fragments inside, fabric: black, soft, red surfaces, lattice pattern of white slip on red body (HM 333 *vel sim.*). Also a rim from a second Berber Red Ware vessel (HM 337 *vel sim.*).

Y: <4296> Amphora, south side of table. Upright against south end of the stele. Not in AF 2, but probable variant of AM 26, with more rounded and everted rim. Purple fabric, white lumps, dark surfaces; rim and base only.

**Comments/discussion**

The tomb appears to have been unrobbed. The skeleton was very fragmentary and in a poor state due to a water table that was higher in the past. This is also indicated

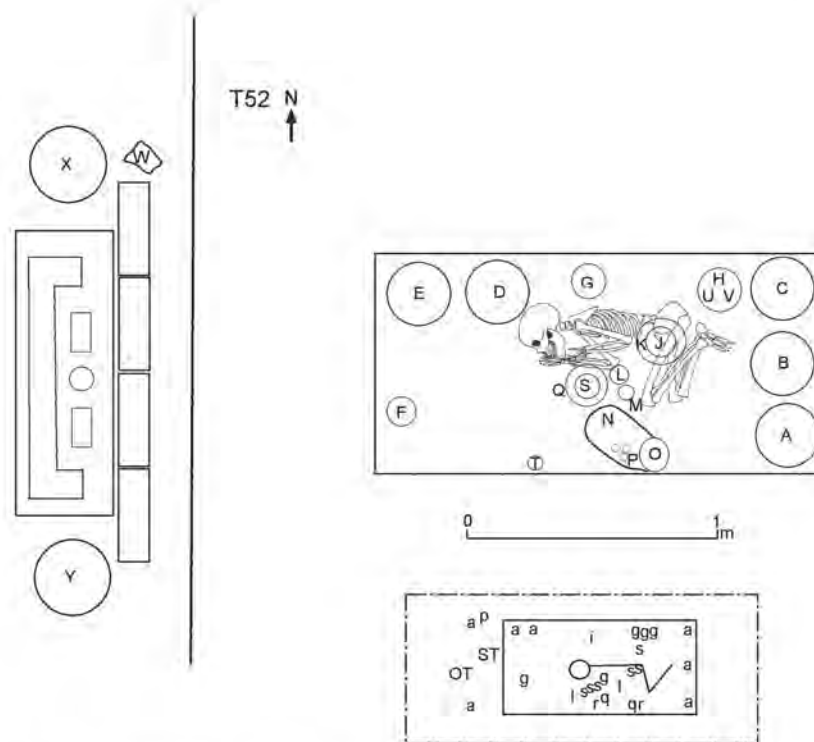


Figure 5.127. Schematic plan of finds (labelled with capital letter identifiers) within burial chamber of Tomb 52. The letters in the smaller inset plan denote: OT = offering table; ST = stele; a = amphora; g = glass vessel; i = incense burner; l = lamp; p = handmade pot; q = saddle quern; r = rubber; s = sigillata vessel.

by the salt encrustations on dishes <4225> and <4226>, and from the excavations in Tomb 51, the bottom of which was damp even in 1977 (cf. Discussion of Tomb 51 above; Daniels 1977a, 6). This is another example of an early Classic Garamantian rectangular tomb. The contents are again impressive: 5 amphorae inside (and 1 or 2 more plus 1 large local handmade pot in the offering area to the west), 6 *terra sigillata* vessels, 5 glass bowls, 2 lamps, 2 saddle querns. The disposition of finds around the body can be reconstructed with some confidence (Fig. 5.127). Three amphorae lined the east end of the chamber (A–C), with a further pair in the north-west corner of the tomb and extending along the north wall (D–E). The body was laid in the centre of the tomb with head to west, towards the offering table outside the tomb. A Gaulish Sigillata bowl (H), with three glass vessels inside (I, U, V), was propped against amphora C in the north-east corner, behind the legs of the body, and midway along the north wall, an incense burner (G) was positioned behind the back. Fragments of a further glass vessel (F) were recovered spread along the west end of the tomb – it is possible that this vessel had originally sat on top of amphora E and fallen and broken during infilling. Once again, there was a major concentration of grave goods immediately in front of the body, including a stack of three *terra sigillata* dishes (Q–S) and a glass bowl (L), along with two imported

lamps (M, T) and two saddle querns (N, O). A final stack of *terra sigillata* vessels (J–K) had evidently been placed on the pelvis of the deceased.

**Tomb number: 53 (GER011.T53)**

**Date:** Late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

**Tomb type:** 4b, sub-rectangular superstructure with sub-rectangular shaft (Fig. 5.128).

**Stele:** No.

**Offering table:** No.

**Construction details:** Much of the superstructure of this tomb had been destroyed by the construction of Tomb 20, which cut through the south wall. The external dimensions can be estimated at 3.2 x 2.8 m internal dimensions of the primary chamber have been recorded: north and south walls 1.8 m; east and west walls 0.8 m. The tomb was constructed throughout in mudbrick. The structure of the tomb is not completely understood. In addition to the primary chamber in the centre of the superstructure (c.2 x 1 m), there was a possible secondary chamber to its south. This second chamber was mostly obscured by Tomb 20, but was set into the external southern wall of the tomb superstructure. A brief attempt was made to re-examine this tomb in January 2000, but this was hindered by the considerable degradation of the tomb since it was excavated: wind-blown sand had

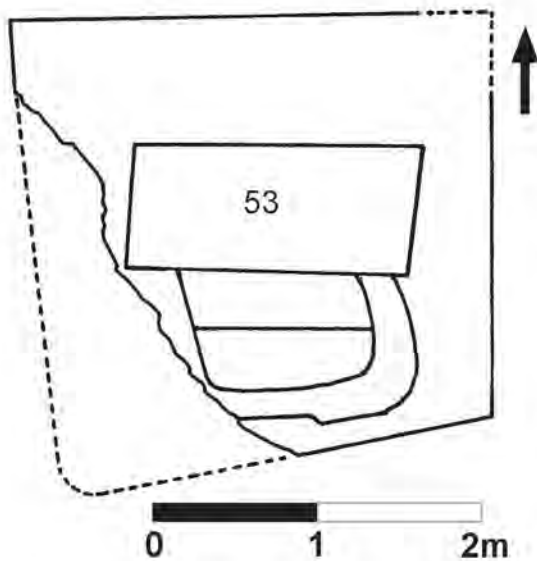


Figure 5.128. Plan of Tomb 53.

combined with mudbrick collapse, dumped rubbish and a small bush to render the lower parts of the tomb not easily accessible.

**Excavation details:** Before excavation it was apparent that the tomb was covered by a layer of wind-blown sand (layer 1). Layer 1 spread over Tomb 53 and extended south to meet the north wall of Tomb 50. There was a small (0.15 x 0.15 m) deposit of burnt bone adjacent to Tomb 50. Layer 1 also underlay both Tombs 25 and 20. Below 1, to the south of the tomb, was a thin layer of hard-packed sand intermixed with mudbrick rubble (4), which also seems to have extended as far as Tomb 50. Immediately above Tomb 53 was a rather trampled mudbrick layer (3). The upper fill of the tomb shaft was comprised of mudbrick rubble. At some point the shaft of Tomb 20 had cut through the southern part of it. The rubble fill on the same level as Tomb 20 was labelled 5, while that below it was labelled 6. In practice there was no distinction between the two layers. Below the mudbrick rubble fill there was a layer of loose, clean sand, interspersed with patches of ash 7. There is no record of exactly how deep this layer was, except that it was 'level with skeleton'. The bottom of the tomb was cut into the natural sub-soil.

**Skeleton:** The skeleton was in very poor condition due to depth of burial in an area with high water table, though its articulation was clear when first exposed. The burial was crouched; lain on the left side with head towards the east and facing south. The remains of the skull and leg bones were lifted.

### Contents

#### Amphorae

A: <4295> (A152). Early Roman Tripolitanian amphora/Tripolitana I (AM 19). Bottom broken, neck in corner (Fig. 5.148). Leaning in north-west corner at 45°. D: 31 cm, H: 60+ cm (base gone). Fabric: purplish with white flecks. 1<sup>st</sup> – 2<sup>nd</sup> century AD.

B: <4294> Mid Roman amphora (AM 28), flanged rim and bifid handle similar to Dressel 2–4. Leaning in south-west corner; more upright than amphora A (Fig. 5.148). D: 21.5 cm, H: 57+ cm (base gone). Fabric: red, with lemon slip. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

F: <4275> (A146) Mid Roman amphora (AM 27). Nearly upright in south-east corner (Fig. 5.148). D: 28.5 cm, H: 56+ cm (base gone). Fabric: grey with white flecks. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

G: <4283> (A151) Early – mid Roman amphora, with slightly everted, flat-topped rim (not in AF 2). Tripolitanian? D: 27, H: 71, capacity: 20 l (Fig. 5.148). Fabric: dark purplish with white flecks. 2<sup>nd</sup> century AD?

H: <4280> A149 Mid Roman Tripolitanian (AM 22). In north-east corner. D: 28 cm, H: 57 cm, capacity: 17 l (Fig. 5.148). Fabric: grey with white flecks, purplish core. 2<sup>nd</sup> – 4<sup>th</sup> century AD.

#### Lamp

D: <4285> (J39) Volute lamp in a light fabric (?) with dull chocolate-brown slip, Deneauve VA. Broken handle, nozzle with moulded volutes. Rim plain, discus with indistinct erotic scene, no stamp (Figs 5.126, 5.143). Mid 1<sup>st</sup> century AD.

#### Faïence

C: Faïence bowl with moulded relief decoration, figured scene (Tagart 1983, 148–49, no. 1), placed in crook between amphorae A <4295> and B <4294>. Blue-green, very fragmentary. Late 1<sup>st</sup> or 2<sup>nd</sup> century AD (Fig. 8.1, no. 1).

#### Glass

N: Group of small fragments of devitrified glass, in area around the legs of the skeleton (Fig. 8.8).

O: Group of small fragments of devitrified glass, at base of amphora <4295>.

#### Other

Copper alloy riveted plate (belt end or similar) 19 x 25 x 3 mm.

I: Saddle quern to west of amphorae F <4275> and G <4283>. Broken, but two chips close by (Fig. 5.129).

J: <4298> Large white stone rubber, on saddle quern 'I'.

K: Irregular lump of stone on saddle quern 'I'.

L: <4292> Stone rubber on south edge of saddle quern 'I'. Worn. Traces of red ochre or haematite on it.

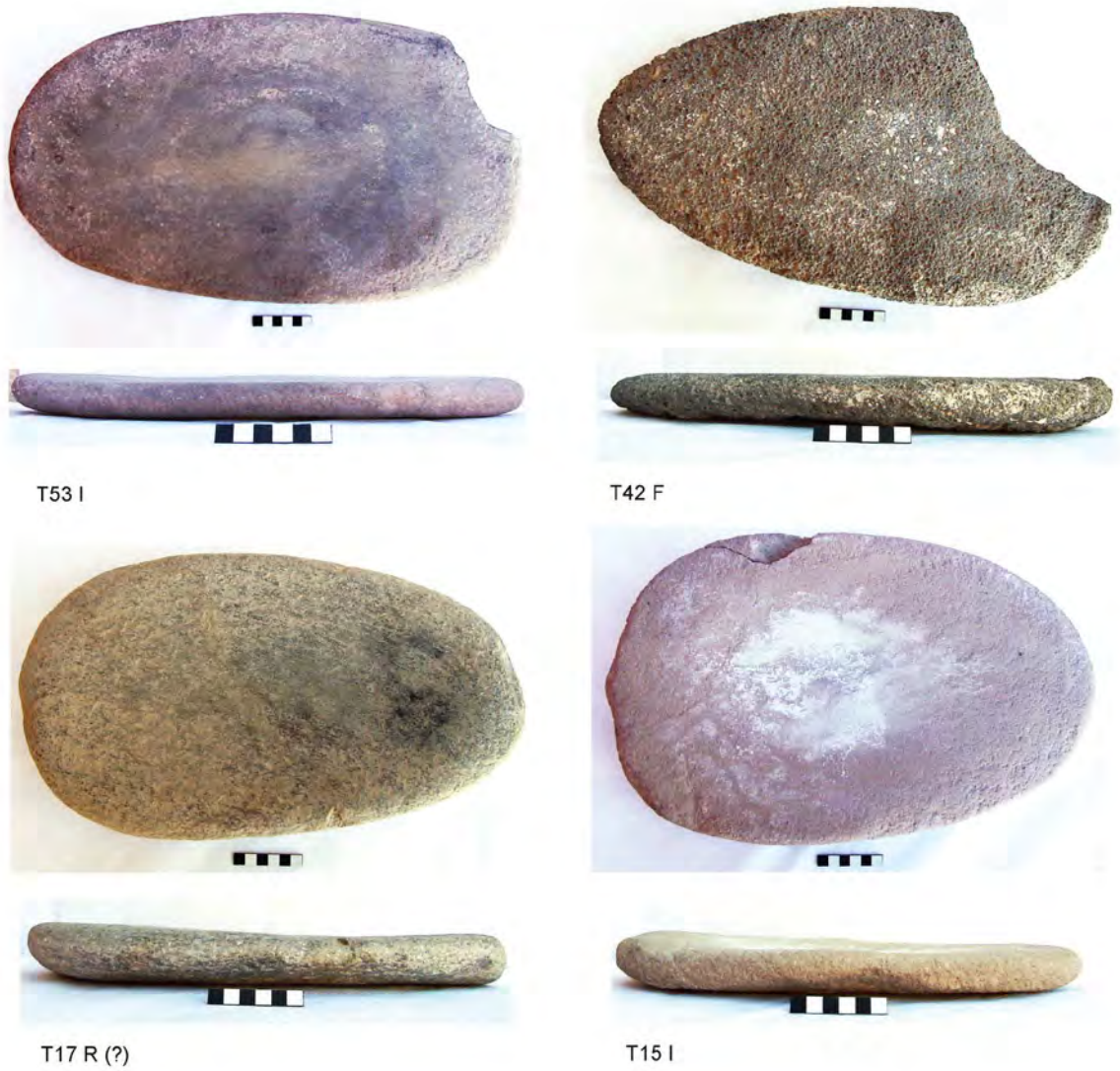


Figure 5.129. Saddle querns from early burials excavated by CMD.

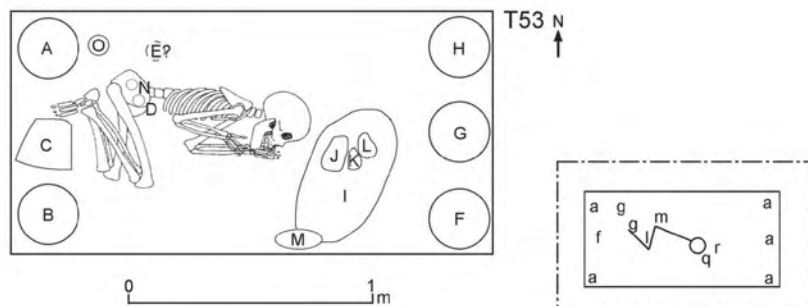


Figure 5.130. Schematic plan of finds (labelled with capital letter identifiers) within burial chamber of Tomb 53. The letters in the smaller inset plan denote: a = amphora; f = faience vessel; g = glass vessel; l = lamp; m = metal artefact; q = saddle quern; r = rubber; s = sigillata vessel.

**Comments/discussion**

The grave goods included 5 amphorae, a large faience bowl, two glass vessels, a lamp, a saddle quern and rubber, several small blocks of chalk or quartz. The absence of finewares is interesting. This is clearly not due to the cessation of supply at this time, as the various amphora types in this tomb are found in neighbouring tombs with imported finewares. The integrity of the finds and the lack of obvious disturbance suggests that this tomb was unrobbed (Fig. 5.130). The poor condition of the skeleton was probably due to the depth of the burial and the presence of a high water table (as for Tombs 51 and 52).

As in some other burials of this type, the amphora were positioned in the corners of the chamber at the west end (A, B) and at the east end (H and F), with the fifth amphora (G) between the eastern pair. A large faience bowl (C) was wedged between amphorae A and B. Two very fragmentary glass vessels were positioned near amphora A, by the feet (O) and ankles (N) of the body. A large lamp (D) was placed behind the knees and a copper alloy rivetted strap end came for the area just to the north of this. The head of the deceased was resting against saddle quern (I), on top of which were a series of assorted rubbers (J–M), at least one with traces of red pigment on. This burial does not replicate the behaviour observed in a number of other burials of having a large stack of Mediterranean imports immediately in front of the deceased.

**Tomb number: 54 (GER011.T54)**

**Date:** 2<sup>nd</sup> – 4<sup>th</sup> century AD?

**Physical description:** As with burials 46 and 49, this is not a tomb, but rather an inhumation placed in a shallow scoop in the sand beside a tomb. In this case the burial was located immediately to the south-west of Tomb 5.

**Skeleton:** This was reported as a ‘female’ skeleton, crouched, and lying on her left side. Her head was to the south, and she faced west. The skeleton was in fairly good condition, but was found to be insufficiently robust to withstand the lifting process.

**Contents**

*A number of artefacts were found in association with this burial:*

Amphorae sherds, x 2.

A fragment of late Italian Sigillata, Dr 18.

Five sherds of Berber Red Ware.

*Glass*

A glass beaker is recorded as having been found nearby. It seems to have been recovered as a rim and a base (Fig. 8.7).

*Beads*

From the area of the skeleton’s waist, there was a

‘necklace’ of green, white and reddish beads. No detailed record of these survives.

*Other*

**Earring:** A copper alloy earring with a red carnelian pendant (5 x 19 x 9 mm) was found in the area of the left ear (Fig. 8.25).

**Burnt bones:** A small collection of burnt animal bones was also found nearby.

**Comments/discussion**

It is unusual for the archive notes to distinguish between male and female burials. The burial may have been designated ‘female’ on the basis of the earring and bead-chain, though analysis of the bones confirms the attribution. Burials outside of tombs are also unusual, and the other recorded examples have been burials of children (46 and 49). The material associated with the skeleton would suggest that it was laid out in the 2<sup>nd</sup> century AD, but the context and depth of burial does not exclude a later date.

## DISCUSSION OF THE SĀNIAT BIN HUWAYDĪ CEMETERY

### Tomb Evolution and Phasing

CMD believed that there was a more or less linear evolution in techniques and styles of tomb construction at Sāniat bin Huwaydī (cf. Daniels 1973a; 1977a). He thought the cemetery began in the second half of the 1<sup>st</sup> century AD with burials in large rectangular tombs with rectangular shafts. He argued that the fashion subsequently changed to square-plan structures above circular shafts in the mid 2<sup>nd</sup> century, and then finally became simple free-standing drum-like tombs over cylindrical shafts, perhaps in the later 3<sup>rd</sup> century. Rectangular or square tombs often had stelae and offering tables. CMD did not comment in detail in print on the earlier work done by Ayoub, which purported to show that small drum-like tombs predominated in all phases of the site’s use, and that these too often had stelae and offering tables associated with them. In fact, as argued above, there are serious problems with accepting Ayoub’s description of all the tombs he excavated as being drum tombs (or even having had cylindrical shafts), as some of the assemblages were clearly too large to have been accommodated along with a crouch burial in the typical cylindrical shafts revealed by CMD’s excavations. It is virtually certain that some of Ayoub’s early tombs must have been in rectangular funerary chambers much like those revealed by

CMD. However, it is equally clear from CMD's own excavation that in the long life of the cemetery from the 1<sup>st</sup> – 4<sup>th</sup> or 5<sup>th</sup> centuries AD there were long periods where circular and rectilinear burial structures co-existed.

The tomb typology devised by the FP from a study of numerous Garamantian cemeteries, including GER011 as well as the escarpment sites, makes a basic distinction between the surface appearance of the tomb or grave and the subterranean structure in which the body was interred. The most important distinctions were 1) between rectilinear and circular shapes and 2) between simple piled cairns and built structures with vertical outer walls. Leaving aside for the moment the evidence for different types of subterranean funerary chamber at Sāniat bin Huwaydī, the basic division in the cemetery appears to have been between circular (type 3b) and rectilinear (type 4b) surface markers. Although varying in construction somewhat over

time, this distinction holds true for all phases of the cemetery. Some of the cylindrical and rectilinear surface markers may have had a stepped superstructure – the most suggestive traces relate to early rectangular tombs (type 5b), but stepped circular tombs (type 5a) are known from other sites and may well once have existed at Sāniat bin Huwaydī, but have been damaged by robbing activity beyond the point where the upper tier can be recognised.

The typology issue is complicated by the fact that many of the tombs of later 2<sup>nd</sup> – 4<sup>th</sup> century date comprised circular shafts below square or rectangular surface markers. It is notable that most of the drum tombs on Figure 5.13 occur in the west side of the site, where Ayoub's excavations had certainly extended. It is possible that some of these apparent drum tombs are in fact the shaft structures of rectangular tombs, whose surface markers had been dug away by Ayoub's workmen (I am grateful

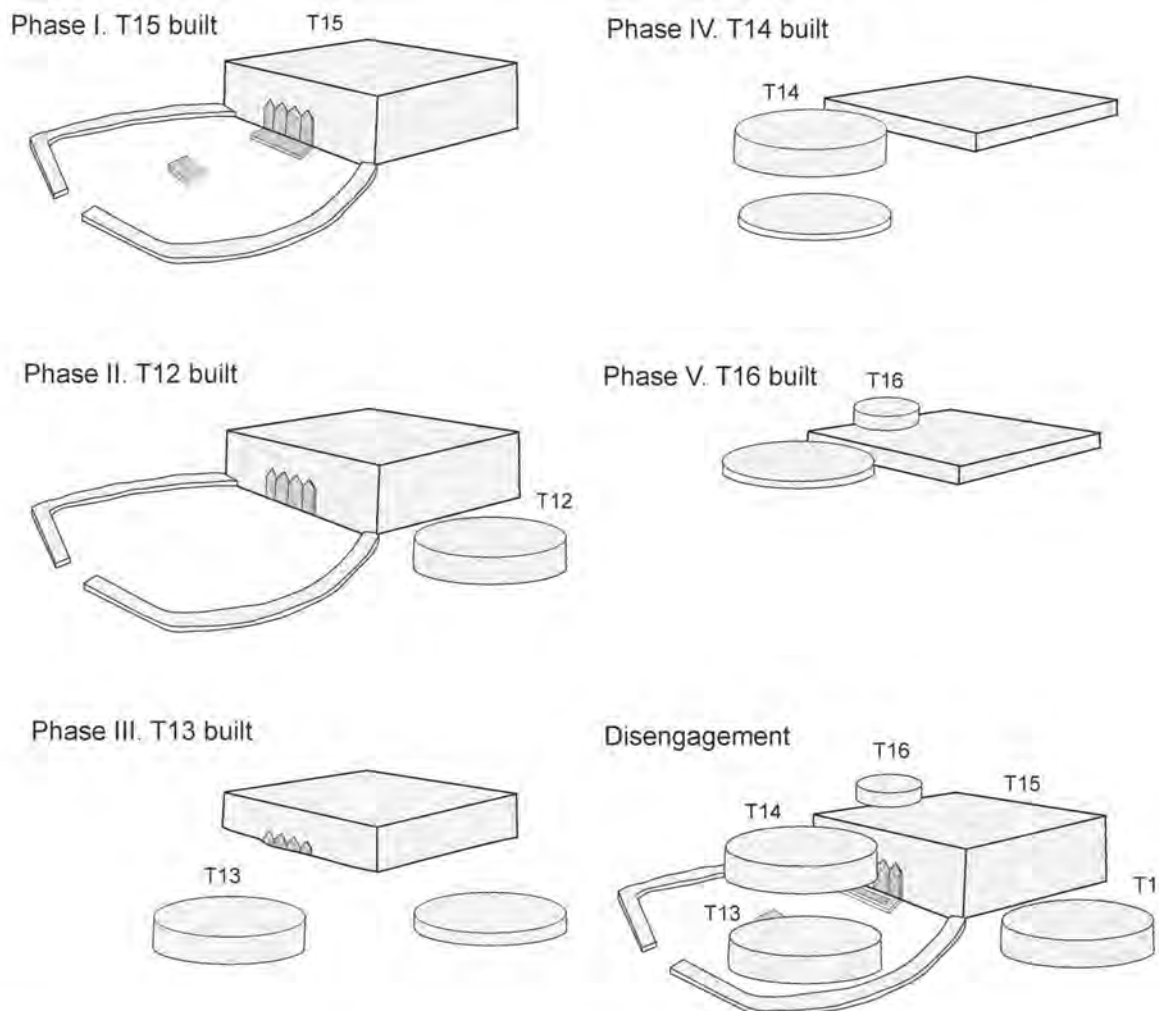


Figure 5.131. The sequence of burials involving rectangular Tomb 15 and drum Tombs 12–14 and 16, reflecting progressive build-up of ground level within the cemetery.

Table 5.1. Comparative data for all the GER011 burials, including (with less certainty) those excavated by Ayoub.

Burial Number	Tomb type	Cyl./ Hexag. Shaft/ Rect Chamber	Stele type (orient)	Offering table type (orient)	Robbed/ Unrobbed	Sex	Adult/ Child	Position (L/R side)	Head to (facing)	Double inhumation	Red ochre	Date (Early, Mid, Late – all centuries are AD)	Phase
GER011.A1.1	3b	CS	6	4d	R?	?	A?	Crouched?	?			4th c.	III
GER011.A1.2	3b	CS	6	4d?	U/R	F?	A	Crouched	E		√	3rd – 4th c.	III
GER011.A1.3	3b	CS	6c	4	U/R	F?	A?	Crouched	?			L3rd c.	III
GER011.A1.4	5b	?	6a (E)	4 (E)	U/R	?	?	Crouched?	E?		√	4th c.	III
GER011.A1.5	3b	CS	8? (E)	4d (E)	U/R	?	?	Crouched?	E?			M3rd c.	III
GER011.A1.6	3b	CS	6	4a	U/R	?	?	Crouched	?			4th c.	III
GER011.A2.1	3b?	?		3	U/R	?	?	Crouched	?			2nd c.	II
GER011.A2.2	3b?	?		4a	U/R	?	?	?	?			L1st – 2nd c.	II
GER011.A2.3	3b?	?		3	U/R	?	?	Crouched?	?			2nd c.	II
GER011.A2.4	3b?	?		3	U/R	?	?	Crouched?	?			E2nd c.	II
GER011.A3.1	3b?	?		4c/d	U/R	?	?	Crouched	?			L1st c.	I
GER011.A3.2	3b?	?		4c/d	U/R	?	?	Crouched	?			L1st c.	I
GER011.A3.3	3b?	?		4c/d	U/R	?	?	Crouched	?			L1st c.	I
GER011.A4.1	3b?	?		4d	U/R	?	?	Crouched	?			1st c.	I
GER011.01	4b	RC	8 (W)	3 (W)	?	?	?	?	?			L1st – E2nd c.	I
GER011.03	4b	RC	8 (E)	4d (E)	R	?	?	?	?			L1st – E2nd c.	I
GER011.06	5b	RC	6a (W)	4a (W)	?	?	?	?	?			L1st – End c.	I
GER011.09 i	4b	RC			U/R	F	A	Crouched L	W (N)	√		E – M2nd c.	I
GER011.09 ii						-	C	?	?			?	I/II?
GER011.11	4b	CS	(E)	(E)	R	F?	A	?	?			L2nd – 3rd c.	III
GER011.12	3b	CS			R?	?	A	Crouched R	N (W)?			2nd – 3rd c.	II
GER011.13	3b	CS			R	F?	A	?	?			3rd – 4th c.	III?
GER011.14	3b	CS			R	?	A	?	?			L3rd – 4th c.	III
GER011.15 i	5b	RC	8 (W)	4 (W)	U/ R?	?	A	Crouched L	W (N)		√	L1st – E2nd c.	I
GER011.15 ii								Crouched R	W (S)			?	I?II?
GER011.16	3b	CS			R	?	A	?	?			1st – 2nd c.	III
GER011.17	4b/5b?	RC	8 (E)	4 (E)	U/R	?	A	Crouched L	E (S)		√	L1st – E2nd c.	I
GER011.18	4b	CS	? (E)	4 (E)	R	F?	A	?	?			L2nd – E3rd c.	II/III?
GER011.19	4b/5b?	CS		4b (E)	R							L2nd – 3rd c.	II
GER011.20	4b	RC	(E)	(E)	R	?	A?	Crouched L	W (N)			M2nd c.	II
GER011.21	4b	CS	5?(E)		R							3rd c.	III
GER011.22	4b	CS			R	F?	A					3rd c.	II
GER011.23	4b	CS	(E)	(E)	R							3rd c.	I/II?

Table 5.1. Comparative data for all the GER011 burials, including (with less certainty) those excavated by Ayoub. (cont.)

Burial Number	Tomb type	Cyl./ Hexag. Shaft/ Rect Chamber	Stele type (orient)	Offering table type (orient)	Robbed/ Unrobbed	Sex	Adult/ Child	Position (L/R side)	Head to (facing)	Double Inhumation	Red ochre	Date (Early, Mid, Late – all centuries are AD)	Phase
GER011.24	4b	CS	5c (W)	4a (W)	?	?	?	Crouched R	E (N)			1st – 2nd c.?	I/II?
GER011.25	4b	CS	5c (W)	4a (W)	R	F	A	Crouched R	W (S)			2nd – 3rd c.	II
GER011.27	4b	CS	(E)	(E)	R	M	A					M–L2nd c.	II
GER011.28	4b	CS	(E)	(E)	R	M?	A					4th – 5th c.?	II/III
GER011.29	4b	CS	5c (E)	4a (E)	R							3rd c.	II
GER011.30	4b	CS			R	F	A					2nd c.	II
GER011.31	4b?	CS			R	?	C					4th c.	II
GER011.33 i	3b	CS			R	?	A?	Crouched R	N (W)	√		4th c.	II
GER011.33 ii							C	Crouched L	N (E)			4th c.	II
GER011.34 iv	4b	CS			R	?	E	Crouched L	E (S)	√√		2nd c.	II
GER011.34 iii						?	?					?	II/III
GER011.34 ii						?	A					?	II/III
GER011.34 i						M	A					?	II/III
GER011.36	3b	CS			R							E4th c.	III
GER011.37	3b	CS			R	?	C	Crouched L	W (N)			4th c.	III
GER011.38	4b	CS			R							3rd – 4th c.	II
GER011.39	4b?											?	II/III?
GER011.40	3b	HS			R	?	C	Crouched R	N (W)			4th c.	III
GER011.41	3b	HS			R	?	C	Crouched R	W (S)			4th c.	III
GER011.42 i	5b	RC	8 (E)	3 (E)		M	A	Crouched L	E (S)		√	L1st – 2nd c.	I
GER011.42 ii						?	A	Crouched L	E (S)		√	?	I/II
GER011.43	4b	CS	5a (E)	4a (E)	R	M	A	Crouched R	E (N)			3rd c.	III
GER011.45	3b	HS			R	M?	A	Crouched L	W (N)			4th c.	II/III
GER011.46	2a				U/R	?	C	Supine contracted	W (-)			4th – 5th c.	II/III?
GER011.49	2a				U/R	?	C	Crouched R	E (N)			4th – 5th c.	III
GER011.50	4b	RC	6? (W)	(W)	R?	F	A	Crouched R	W (S)			L1st – E2nd c.	I
GER011.51 iii	4b	RC			?	?	A	Crouched L	W (N)	√	√	L1st – E2nd c.	I
GER011.51 i-ii							?					?	I/II
GER011.52	4b	RC	8 (W)	4a? (W)	U/R	?	A	Crouched R	W (S)		√	L1st – E2nd c.	I
GER011.53	4b	RC			U/R	?	A	Crouched L	E (S)		√	L1st – E2nd c.	I
GER011.54	2a				U/R	F	A	Crouched L	S (W)			4th c.?	II/III?



to Matt Hobson for this interesting suggestion). On the other hand, some drum tombs are certainly attested in Garamantian mudbrick cemeteries and the 'drums' on Figure 5.13 are too close to one another to allow space for square superstructures of tombs that look closely contemporary to judge by level of construction. On balance, it seems clear that drum tombs were far less common than Ayoub asserts, but not wholly absent.

As we have seen, the early tombs at Sāniat bin Huwaydī tended to have large rectangular chambers below their surface monuments – and these were often packed with imported pottery, glass and faience ware. The later burials almost invariably comprised vertical shafts lined with mudbrick, whether beneath a circular or rectangular surface marker and in general contained smaller quantities of imported goods. In some areas of the site we can follow the sequence of superimposed burials and the build-up of ground level in the cemetery in considerable detail (Fig. 5.131).

Table 5.1 summarises the structural data and, where known, the gender/age of deceased, burial orientation, dating and phase assignment for each tomb. The phasing of tombs is based partly on architectural and stratigraphic arguments, partly on tomb contents. The use of finds within tombs is not entirely straightforward in this regard, as many tombs had been robbed or opened at some point after their initial construction. Some tombs were clearly reused for secondary interments at an uncertain interval after they were initially sealed, with the original roof of the tomb chamber or shaft being broken in and a secondary burial made at a higher level. It is apparent that the life of the cemetery spanned the later 1<sup>st</sup>–5<sup>th</sup> centuries AD. Despite some changes in tomb morphology, one of the striking aspects of the funerary rituals and behaviours demonstrated at the site is how consistent these were across so long a period.

#### *Phase I: Late 1<sup>st</sup> to Early 2<sup>nd</sup> centuries AD*

As CMD observed, the earliest phase on the site was dominated by large, rectangular-plan tombs (type 4b) with rectangular chambers. Some at least of these rectangular tombs had stepped superstructures (type 5b), similar to the *mastaba* form and, here at least, of far earlier date than the examples attested at the Royal Cemetery (GSC030–031, see Chapter 6 below). These were all orientated roughly east-west, and there is a hint in the plan that they were laid out in roughly north-south lines, perhaps relating to a series of lanes

or access routes through the cemetery (a model 7 nucleated cemetery in the *AF* typology, Mattingly 2003, 215–16). The tombs were built of mudbrick and some show evidence of having been plastered on the outside.

Several of these tombs had stelae and offering tables on either their eastern or western faces; this placing seems to correlate with the orientation of the body inside the tomb (see below). Some of them, including Tombs 3, 15 and 52, had low walls attached to them creating irregular funerary enclosures directly in front of the tomb marker, where offering tables and stelae were placed (Mattingly 2003, 210–13). Sometimes, additional offering vessels were also placed within these enclosures and it is possible that some of the larger enclosures could have been used for 'incubation' – the Libyan practice of sleeping by the tombs of ancestors in order to receive visions (Mattingly 2003, 232). It is possible that additional enclosures existed when the cemetery was first laid out, but have been obliterated by later burials.

Stelae and offering tables were of distinctive types in this phase, with a preference for red-painted 4-point 'picket fence' type 8 stelae (see Figs 5.38, 5.123). Offering tables were often quite large and of high quality working, with complex and sometimes asymmetrical arrangements of different shaped compartments (types 4d/4c). Both stelae and offering table types are virtually unique to this site (there is a single example of a picket fence stele from Zinkekrā (Mattingly 2007, 97) and seem limited to this early phase, being superseded by more representative types in subsequent phases.

Some of the tombs had been robbed in antiquity, but many at this level were intact because wind-blown sand had raised the ground level within the cemetery and later phases of burials were superimposed. Though these later tombs sometimes cut into or damaged the superstructure of the earlier burials, there is no clear evidence of systematic robbing of an underlying tomb prior to the construction of a later one, though occasionally a secondary burial had been inserted into the top of a broken open shaft of an early tomb (see above, Tombs 9, 15, 34, 42).

It was plain that these large early tombs were customarily richly furnished with grave goods, including amphorae, *terra sigillata* (mainly Italian, but also some South Gaulish), glass vessels, saddle querns, lamps and miscellaneous local ceramics. Where robbing had taken place, the process of emptying the tombs of

their contents had often been undertaken quite systematically.

Although CMD originally believed that the shafts of the tombs above the burials were normally filled by their constructors with broken mudbrick, stray human bones and other broken goods (Daniels 1977a, 5–6), it seems plain that many of the shaft fills of this character that he excavated were in fact the backfill of later tomb robbers – just how much later though is an important point to which we shall return. A fuller discussion of this topic can be found under Tomb 51. It is not certain whether tomb chambers were routinely backfilled after the deposition of the body and grave goods – since the rectangular and cylindrical shafts were roofed over with corbelled or dome-like mudbrick structures, it is possible that the vaults could have been sealed empty – making the work of later tomb robbers all the easier. However, one feasible interpretation of Tomb 51 is that it was initially filled with fine sand (and subsequent work by the DMP is showing a similar pattern of infilled shafts and grave structures). Practice may have varied, rather than following a single consistent pattern.

In view of the doubts expressed about Ayoub's tomb descriptions, it is uncertain whether the large rectangular tombs were accompanied in this phase by a number of smaller round tombs. All of the tombs Ayoub excavated were, according to his own account (1968a), small and round. The area excavated by him seems to have lain directly to the west of the area explored by CMD (Tombs 9 and 51 may have been among the tombs in Ayoub's fourth layer of burials that he partially exposed, but did not excavate). From the finewares recovered from these tombs we know that the more spectacular tombs in Ayoub's layers 3–4 were late 1<sup>st</sup> or early 2<sup>nd</sup> century AD in date, broadly contemporary with the larger rectangular tombs excavated by CMD. It seems certain that some of Ayoub's tombs with large artefact assemblages were rectangular with rectangular chambers, but, on the other hand, we cannot exclude the possibility that some early tombs had cylindrical chambers, though CMD found none.

#### *Phase II: Mid 2<sup>nd</sup> to Late 3<sup>rd</sup> centuries AD*

The division made here between Phase I and Phase II is perhaps slightly arbitrary, as there does not seem to be a distinct cut-off point between the introduction or cessation of tomb styles. Rather, there seems to have been long periods of

co-existence of styles. Nonetheless, it does seem that at around the middle of the 2<sup>nd</sup> century AD a change was taking place. The large rectangular tombs with rectangular chambers seem to have gone out of fashion, to be replaced gradually with tombs with circular shafts below square or rectangular platforms of mudbrick. Sometimes, the rectangular shape was created by low retaining walls only, with the space between these outer walls and the shaft infilled by sand or rubble. The shafts were generally sealed with corbelled domes and it is probable that when first constructed the entire structures were then covered over with a flat roof of mudbrick, to give them the appearance of low square or rectangular tombs (with some examples probably stepped). In some cases the newer types of tombs were built directly on top of the older types, as was the case with Tomb 11, built over Tomb 17. Small type 3b drum tombs were also certainly being built by this phase and continued in subsequent phases.

The earliest example of a type 4b surface marker with a cylindrical shaft below might be Tomb 25, which contained a variant of ARS form Hayes 44. This should indicate a date in the mid-late 3<sup>rd</sup> century. Tomb 23 contained a fragment of a South Gaulish Sigillata vessel, Dr 37 (early – mid 2<sup>nd</sup> century AD) and Tomb 24 contained a few sherds of late Italian Sigillata (Dr 18). The construction of small drum-like tombs in Phase II is attested by Tomb 33.

Some of the larger tombs of Phase II continued to be marked by offering tables, stelae and funerary enclosures, most commonly on the east side of the tomb, but sometimes on the west. The picket fence (type 8) stelae were in general replaced with the more common forms of Classic Garamantian stelae – the type 4 'hands' and type 6 two-point stelae (though these latter may have been erected in pairs or with smaller individual side stelae (type 5) to provide the normal four-point array. Other tombs had a mudbrick platform built against the centre of the east or west side, on which now lost stelae and offering table would have been set (for example, Tomb 20). Funerary enclosures appear to have been more numerous and more regularly rectangular in this period than in Phase I.

The rise in cemetery level due to drifting sand and the superimposition of tombs had by now disrupted the initial orderly layout of the cemetery (Fig. 5.131), making it the type site for a model 8 nucleated cemetery with heavy infilling (Mattingly 2003, 215–16).

*Phase III (Late 3<sup>rd</sup> century – 4<sup>th</sup> century AD and Possibly Later)*

As with the preceding phase, precise start and end points are difficult to pin down for this period of the site's use. CMD suspected that this final phase might have continued into the 5<sup>th</sup> century, although there is only limited evidence to support this – in part due to the much more complete despoliation and robbing of the later burials. This phase is characterised by the increasing use of small, 3b drum-tombs. Some at least of the child burials belong in this phase, including those that were simply inserted in pits in the ground (see below). Circular shafts beneath square or rectangular surface structures (type 4b) almost certainly extended into Phase III also. Tomb 28 contained part of a large ARS vessel which appears to have been a Hayes 32/58 and to have been decorated in Stamp Style A, both features supporting a date in the 4<sup>th</sup>–5<sup>th</sup> centuries AD. Tomb 43 contained a large flat-based TRS dish (Hayes type 2), likely to date from the later 3<sup>rd</sup> century AD at the earliest.

All the tombs dug by Ayoub which date to this period (A1.1–A1.6) appear to have been accompanied by stelae and offering tables. Ayoub's sketch (Fig. 5.14) suggests the stelae were the Type 6 two-point variety and offering tables generally of the standard type 4, but the position of the stelae to the side of offering tables is otherwise unattested and the detail of the image is not to be trusted. CMD's excavations support the view that some tombs were still marked by funerary furniture in this final phase, though the higher proportion of small circular tombs at this date seems to have reduced the percentage so marked and no examples of funerary enclosures can certainly be ascribed to such a late date.

Over time, the cemetery became increasingly crowded and lacking in coherent layout, due to the twin processes of infilling between and superimposition above existing burials.

The principal dating evidence for tombs of this period is provided by late ARS and TRS and by late lamps. A number of tombs are recorded as either Phase II or III because there is some conflict between stratigraphic position of the tomb and the presence of late pottery (which could be intrusive due to robbing or secondary burials being inserted into earlier tombs). With regard to the end of Phase III and the cessation of burial at the site, clear dating is hampered by difficulties with the identification of the later ceramics. Certainly we

possess evidence that shows that drum-like tombs were being constructed in the 4<sup>th</sup> century: Tombs A1.5 and A1.6 of Ayoub's first layer contained large flat-based ARS dishes of the 4<sup>th</sup> century, and Tomb 36 contained a Tripolitanian Red Slip Ware form Hayes 5, again dating to the 4<sup>th</sup> century. There are two further stray TRS vessels (substantially complete) in the SMC, lacking precise context, but which must surely have originated in late burials of 4<sup>th</sup>- or 5<sup>th</sup>-century date. Some of the latest lamps also have date ranges spanning the 4<sup>th</sup>–5<sup>th</sup> centuries. The pottery evidence is discussed further below.

### **Treatment of Bodies at Sāniat bin Huwaydī**

Disappointingly, there is comparatively little evidence to shed light on the treatment of the bodies during the burial process. Almost all were crouched inhumations, although one cremation was claimed by Ayoub from Tomb A2.3, a second-century tomb. There seems no doubt that this tomb did contain a glass *modiolus* among a large array of grave goods, but whether it was used to contain a cremated burial cannot be taken as certain. It is possible that Ayoub has interpreted this as a cremation simply because of the presence of what he interpreted as 'cinerary urn' (the *modiolus* could have been used for quite other purposes by the Garamantes than as an ash receptacle) – given the unreliability of many of his observations it is best to leave a question mark against this aberrant burial rite.

Ayoub is almost certainly more reliable in reporting that a number of bodies were wrapped in matting or leather. The relatively wet soil conditions in the lower burials at Sāniat bin Huwaydī – caused by the high water table beneath the centre of the oasis belt – has not favoured preservation of organic materials, but a number of traces of textile fragments, leather and matting were noted. These can be correlated with similar practices for wrapping the bodies of the deceased in textile or leather shrouds or in matting, as observed by CMD at Zinkekrā (see below, Chapter 6) and subsequently by the DMP (Mattingly *et al.* 2007; 2008). One of the bodies Ayoub found (in Tomb A1.1) was found 'wrapped in a leather coffin', presumably a shroud (Ayoub 1968a, 1). Both the bodies in Tomb 42 had been coated with red pigment (ochre or haematite), and solid lumps of pigment (or haematite) were noted in other burials too.

Table 5.2. Body orientation, tomb types and dates.

Tomb No	Type	Stel& OFT (E/W)	On L/R side	Head to	Facing	Phase
GER011.01	4b	W		W?		I
GER011.03	4b	E		E?		I
GER011.06	5b	W		W?		I
GER011.09 i	4b		L	W	N	I
GER011.11	4b	E		E?		II
GER011.12	3b		R	N?	W?	II
GER011.15 i	5b	W	L	W	N	I
GER011.15 ii			R	W	S	I?II?
GER011.17	4b/5b?	E	L	E	S	I
GER011.18	4b	E		E?		II
GER011.19	4b/5b?	E		E?		II
GER011.20	4b	E	L	W	N	II
GER011.21	4b	E		E?		II
GER011.23	4b	E		E?		II
GER011.24	4b	W	R	E	N	I/II
GER011.25	4b	W	R	W	S	II
GER011.27	4b	E		E?		II
GER011.28	4b	E		E?		II/III
GER011.29	4b	E		E?		II
GER011.33 i	3b		R	N	W	II/III
GER011.33 ii			L	N	E	II/III
GER011.34 iv	4b		L	E	S	II
GER011.37	3b		L	W	N	III
GER011.38	4b	E		E?		II
GER011.40	3b		R	N	W	II/III
GER011.41	3b		R	W	S	II/III
GER011.42 i	5b	E	L	E	S	I
GER011.42 ii			L	E	S	I/II
GER011.43	4b	E	R	E	N	II
GER011.45	3b		L	W	N	II
GER011.46	2a		Supine contracted	W	-	III?
GER011.49	2a		R	E	N	III
GER011.50	4b	W	R	W	S	I
GER011.51 iii	4b		L	W	N	I
GER011.52	4b	W	R	W	S	I
GER011.53	4b		L	E	S	I
GER011.54	2a		L	S	W	II/III?

Information on body orientation is not as full or complete as it might have been, owing to the extent of tomb robbing (disarticulation), the poor state of preservation of the bones in the intact lower-lying tombs (water related decomposition) and the relatively rapid and superficial recording in some cases. Ayoub generally says nothing beyond the fact that there was a burial in a crouched position. Nevertheless, from the CMD work, we have information for 24 skeletons (Table 5.2). Of these, the following orientation of the head can be noted: head to east 8; to south 1; to west 12; to north 3.

It seems clear that it was usual for bodies within many of the tombs to be laid out with their heads towards either the east or the west, generally in relation to the end of the tomb where offering tables and stelae were placed. Of 11 examples where we know both burial orientation and the side on which the funerary furniture of offering tables and stelae had been placed, in five cases these coincided with a west orientation, four occasions with an east orientation, with only two examples where body and funerary furniture were not at the same end (one example each of head to east and to west). In circular shafts orientation was more varied. Nonetheless, in the two cases where we have funerary furniture associated with a cylindrical shafts and an intact body, in both cases the corpse was aligned east-west and head was placed towards the end marked by the stelae/offering table. This suggests that for a number of robbed tombs where the original disposition of the body is unknown, but where we have evidence of funerary furniture against either the east or west side of the tomb, we could predict with some confidence the original orientation. This would potentially add the following 10 to the list of

burials with head laid to east: Tombs 3, 11, 18, 19, 21, 23, 27, 28, 29, 38; and Tomb 6 to those with head to west. The totals of certain and probable alignments (head towards) are thus: east 18, west 13, north 3, and south 1. Bodies were laid in more or less equal numbers on the left (13 examples) or right side (11 examples), with one example of a contacted corpse lain on its back. There thus seems to have been no clear preference for the direction in which the corpse faced within the grave between south (10 examples) and north (9 examples); however, with just four looking west and one to east there was evidently some aversion displayed for facing the body towards the eastern horizon. Earlier analysis of a larger sample of Garamantian burials revealed similar trends in orientation (Mattingly 2003, 227; cf. also the eastern emphasis in burial orientation recorded by Belmonte *et al.* 2002). In so far as we can sex the burials, there are no apparent gender differences (though the sample at GER011 remains rather small), nor does there seem to be significant difference between the three phases. The DMP work will, in due course, offer a fuller analysis of these aspects, based on a much larger sample of burials.

### Infant and Juvenile Burials

Seven or eight burials involving infants or juveniles were found at Sāniat bin Huwaydī. The tombs or burials which definitely contained infants or juveniles are: Tombs 9, 31, 33, 37, 40 and Burials 46 and 49. The eighth burial was either Tomb 18 or Tomb 36, though the material from these two burials had become hopelessly mixed in the Museum stores when the bones were first re-examined in 1997.

Table 5.3. Juvenile or infant burials at Sāniat bin Huwaydī.

Tomb/burial number	Tomb/burial type	Date of burial	Grave goods
GER011.T9	4b Secondary	Mid/Late?	A necklace
GER011.T18 or 36	4b/3b Primary	Mid or Late	Uncertain
GER011.T31	4b? Primary?	Late?	Ostrich eggshell bead; a larger red bead
GER011.T33	3b Primary? (with an adult)	Mid or Late	Glass beads, amphora and fineware sherds
GER011.T37	3b Primary	Late	No
GER011.T40	3b Primary	Late	Mother of pearl amulet
GER011.T46	2a Primary	Late	No
GER011.T49	2a Primary	Late	Iron ring; small lamp

None of the earlier tombs excavated by CMD had any infant burials, with the exception of Tomb 9; though in this case the child was clearly deposited as a secondary burial, and so could post date the tomb's construction by a considerable amount. However, it is worth noting that the deterioration of bone in the deeper earlier burials was such that infant burials were very unlikely to have been noted had they been present.

The evidence illustrates four different scenarios for child burial at Sāniat bin Huwaydī (Table 5.3): primary burials within individual tombs (Tombs 18/36, 31, 37, 40); primary burial in a tomb along with an adult (Tomb 33?); secondary insertion into a previously occupied monument (Tomb 9) and burials in unmarked pits outside tombs (Burials 46, 49). To this list of possibilities we must add another, the disposal of infant remains at other locations, even within settlements – as seems to have been the case at the village of Sāniat Jibrīl, where a 3–6 month old and a pair of twins (possibly neonate or foetal) were identified among the collected animal bone (see Chapter 9 below). Tomb 40 is one of a pair of drum-type tombs with small hexagonal shafts, perhaps best suited for child interments. Tomb 37 represents a similar class of small monument, although the drum over the body had been almost wholly destroyed when excavated. The shallow burial below this small surface marker was a crouched inhumation with no grave goods. Burial 46 was a simple 'shaft' burial, and was only a few metres away from Tomb 37. The body was lying on its back, with one arm thrown out to the side. It had the appearance of having been thrown casually (or rather forced) into the pit. No grave goods were recovered from this burial either. By way of contrast, Burial 49 seems to have been more deliberately laid out between Tombs 22 and 21 (and so clearly post-dates both of these). It was lightly flexed in a shallow pit or shaft, with its head towards the east; the lower legs and feet were missing.

Some of the other child burials were furnished with grave goods. Burial 49 contained an iron ring found on one of its fingers, and a small lamp was found near its legs. In the case of Tomb 31 the tomb had been badly disturbed by robbing, but an ostrich eggshell bead and a carnelian bead were recovered. As always with heavily robbed tombs, the possibility that these items were residual in a later backfill cannot be ruled out. By contrast, Tomb 40 appears to have been untouched, and a mother of pearl amulet was found in front of the forehead of the child, seemingly *in situ*.

These burials are very interesting and help to throw new light on what we understand of Garamantian burial customs and Garamantian society. The fact that children do not seem to have been buried at the cemetery until the later periods cannot be pressed too far. There are certainly several instances from Phases II–III of children being accorded formal burial in purpose built tombs, with accompanying grave goods. It is equally clear that on occasion, children were also buried in the same tomb as an adult (presumably where death was near simultaneous with that of an agnate relation) or in simpler unmarked pits or shaft graves with or without grave goods.

### Grave Goods at Sāniat bin Huwaydī

Table 5.4 summarises the available evidence for grave goods and furnishing of burials at Sāniat bin Huwaydī. Robbed tombs by and large tended to yield only broken fragments of material that may (or may not) have been associated (see Tables 5.1 and 7.6 for summary of robbed/unrobbed state). It was rarely feasible to make an accurate assessment of the quantities present in such cases and the table tends to distinguish between complete (or substantially complete) artefacts, which are given as numerals and cases where sherds of a particular type of material were present, indicated by a tick mark. The best evidence for grave goods at the site comes from the Phase I tombs. This is due mainly to the fact that some of the earlier tombs had managed to survive unrobbed until CMD excavated them. Most of the later tombs had suffered robbing to a greater or lesser degree, though Ayoub seems to have had better luck than CMD in this respect. Many of the Phase II–III tombs had smaller circular shafts than the Phase I rectangular funerary chambers and seem to have been less furnished with grave goods. However, we need to be careful not to read too much into the preponderance of late 1<sup>st</sup>- and early 2<sup>nd</sup>-century imports into the region in comparison with apparently smaller quantities of later goods. There are finds from Sāniat bin Huwaydī that date to the 4<sup>th</sup> or 5<sup>th</sup> centuries and comparison with other late cemeteries, such as the Royal Cemetery (GSC030–031, see Chapter 6) would suggest that the sort of combinations of imported and local goods observed in the early burials were still being replicated in late antiquity – that is, amphorae, flagons, finewares, glassware, lamps, incense burners.







Table 5.5. Phase I: Ceramic grave goods from 16 tombs (\* = Phase I/II?).

Tomb	Amphoras	ITS/SG/ESA	ARS/TRS	Wheelmade	Local ware	Lamps
1	1				1	
3	1		1		1	
6	1				1	
9	3		1		1	1
15	3	7	1	1	1	1
17	10	30		1	5	2
24*			1		1	
42	5	3			2	1
50	1				1	
51	2	1	2	1	4	1
52	6	6			4	2
53	5					1
A3.1	7	7		3	4	2
A3.2	5	6		1		2
A3.3	7	9		7		2
A4.1	8			6	3	
<b>Totals</b>	<b>65</b>	<b>69</b>	<b>6</b>	<b>20</b>	<b>29+</b>	<b>15</b>

Preservation of organic materials was generally poor at this site because of the relatively elevated water table here. It must thus be borne in mind that these categories of find were potentially far more significant when the tombs were first furnished. More recent work by the DMP at escarpment cemeteries, where there is far better organic preservation, has graphically demonstrated the importance of such material in Garamantian burials (Mattingly *et al.* 2007; 2008; 2009). Finally, there is no indication that fine sieving was carried out by either CMD or Ayoub, with the consequence that the numbers of beads recovered probably drastically under-represents their original importance in funerary assemblages. One of the major targets of later tomb robbers appears to have been the impressive beadwork of the Garamantes – a point again amply illustrated by the DMP work on cemeteries.

### Ceramics

There are five principal classes of ceramics represented at Sāniat bin Huwaydī: four classes of imported wares from the Mediterranean (amphorae, finewares, coarsewares, lamps) and

local handmade wares. Not every tomb produced ceramics, and tombs that did rarely contained every class. Tables 5.5–5.7 show the distribution of ceramics, by type of ceramic, present in tombs in each Phase. It can be seen from these tables that ceramics of all classes are less common in tombs of Phase III than Phase II and similarly ceramics were less abundant in Phase II than Phase I. It seems likely that the drop results partly from the extensive robbing that characterised the later phases of tombs, and partly from changing fashions. Variations in supply are probably not a major factor. Indeed finds of ARS (largely dating to Phase II) are far more common overall in the Wādī al-Ajāl than ITS (mostly Phase I), whereas at Sāniat bin Huwaydī ITS vessels outnumber ARS vessels by 69 to 27. Robbing is certainly attested, however, and we might also note that Phase II tombs did not generally have the internal space of Phase I tombs: the Phase II tombs were clearly being built with fewer grave goods in mind. It is also clear from even a cursory comparison between the assemblage of wares and forms at Sāniat bin Huwaydī and the overall type series for the Garamantian period presented in *AF 2* (Mattingly 2007, 305–431) that the material included in

Table 5.6. Phase II: Ceramic grave goods summaries from 20 tombs. Finewares are divided between Italian/Gaulish Sigillata plus other early finewares and African/Tripolitanian Red Slip Wares.

Tomb	Amphorae	ITS/SG/Other	ARS/TRS	Wheelmade	Local ware	Lamps
11			1		1	
12				1	1	1
18	1		1		3	1
19					1	
20						
21			1			
22				1	1	
23	1	1			1	
25				1	3	
27	1				1	
29	1				1	
30	1	1			1	
34			1	1	2	
38	1					
43			1		2	
45					1	
A2.1	3	1	4	2		2
A2.2	7		4	3		1
A2.3	4		9	7		2
A2.4	6	1	7	5		2
<b>Totals</b>	<b>26</b>	<b>4</b>	<b>29</b>	<b>21</b>	<b>19</b>	<b>9</b>

the tombs was a highly selective sample of the available ceramics. As noted in *AF I* (Mattingly 2003, 228–29, cf. also Fontana 1995), the pottery vessels in funerary contexts emphasise aspects of consumption, particularly drinking and feasting, the use of olive oil in cooking and as lamp fuel, and so. There is thus a strong element here of adopting external material culture related to status and display – amphorae of exotic foodstuffs and drinks, drinking and serving vessels in fine ceramics, glass and faience, and lamps. Of the humbler imported coarsewares – which are abundantly attested in the Wādī al-Ajāl – the material present at GER011 is almost entirely limited to flagons and jugs (serving vessels for drinking?), while bowls and casseroles are rare.

In the tables that follow the default assumption where sherds rather than complete vessels were recorded, is that a single vessel was present, unless the surviving records specifies a number

of different vessels. The quantification of locally made ceramics is likely to understate their importance as these were least well recorded (especially in Ayoub’s excavations).

#### Phase I tombs: ceramic grave goods summaries

The most striking aspect of the Phase I assemblages is the large quantity and range of goods in many of these tombs. There were an average of 12.75 ceramic grave goods per Phase I tomb (and the total would have been higher if the robbed Tombs 1, 3, 6, 24 were excluded). The architecture of these early tombs, with large rectangular subterranean chambers, was clearly a factor in facilitating the deposition of such large numbers of artefacts. There is a strong emphasis on imported amphorae and finewares (mainly ITS), with a lesser number of other wheelmade wares and lamps. However, locally produced vessels (incense burners and large

Table 5.7. Phase III: Ceramic grave goods summaries from 20 tombs (\* = Phase II/III?).

Tomb	Amphorae	Late ITS	ARS/TRS	Wheelmade	Local ware	Lamps
13					1	
14	1		1		1	
16			1	1	1	
28*	1		1	1	1	
31*						
33*	1	1				
36	1		1			1
37						
39*			1			
40*					1	
41*					2	
46*						
49						1
54*	1	1			1	
A1.1	2			1	1	3
A1.2	3			2	2	2
A1.3	3			1	1	1
A1.4	3			1	1	
A1.5	2		1	1		1
A1.6	2		1			1
<b>Totals</b>	<b>20</b>	<b>2</b>	<b>7</b>	<b>8</b>	<b>13</b>	<b>10</b>

globular pots) were also present in most tombs. Most of the ceramics listed were retrieved from within the tomb chamber or shaft, but in a few cases some vessels were also recovered outside the tomb by the offering table.

#### Phase II tombs: ceramic grave goods summaries

There were numerically and proportionally fewer ceramic grave goods per tomb in this phase, though a higher number of burials had been robbed. The average number of vessels per tomb was 5.4. The smaller floor area of the cylindrical shafts that characterised most of these burials may help account for the drop in overall numbers of grave goods from Phase I. Imported amphorae and finewares still predominated overall, but other imported wheelmade and local vessels appear relatively more important than in Phase I.

#### Phase III: Ceramic grave goods summaries

The components of the ceramic assemblage remained the same in the last phase of the site, but the overall numbers and the proportions of different elements show considerable variance from the previous phases. The average number of ceramic grave goods per tomb is only 3. Robbing of tombs is a much more seriously distorting factor in this phase, with a large proportion of these tombs producing at best fragmentary pottery and some tombs had been completely cleaned out by robbers. Amphorae still appear to have been an important element, though the data are potentially distorted by the assemblage reported by Ayoub. Nonetheless, the decline in the amount of imported fineware and wheelmade wares is likely to be real as there was little late ARS and TRS from the surface of the cemetery either. Locally made vessels may have been proportionally more significant in this Phase.

Table 5.8. Fineware vessel distribution by phase. Numbers in parentheses refer to the average for that phase. Part of the difference may be accounted for by the higher level of robbing in the later tombs, though there may well have been some overall decline in ceramic imports over time. NB the Phase III total includes some tombs that are assigned to either Phase II or III.

	Phase I (16 tombs)	Phase II (20 tombs)	Phase III (20 tombs)
Total ITS/S. Gaulish	69 (4.3)	4 (0.2)	2 (0.1)
Total ARS/TRS	6 (0.4)	29 (1.5)	7 (0.4)
<b>Total fineware</b>	<b>75</b>	<b>33</b>	<b>9</b>
<b>Overall average vessels per tomb</b>	<b>4.7</b>	<b>1.7</b>	<b>0.5</b>

### Finewares

The principal classes of finewares attested at the site are: Italian Sigillata and African Red Slip Ware (Table 5.8, with Figs 5.132–5.141). Some South Gaulish Sigillata vessels were recorded by Ayoub (Ayoub and Salam 1968: H3 – though this was actually Italian Sigillata, H4 and H22) and a Tripolitanian Red Slip Ware dish was also found in one tomb (Tomb 36). An Eastern Sigillata A vessel was found by Ayoub in Tomb A3.3 (H80). From Tomb A2.4 Ayoub recovered a vessel in Cypriot Sigillata (H78). Tomb A2.1, also dug by Ayoub, was highly unusual in that although it clearly contained 2<sup>nd</sup>-century AD material, it also yielded a Hellenistic *lagynos* dated to the 2<sup>nd</sup> century BC (Mattingly 2007, 328–329, FW 507). Beyond the material attributed to specific tombs by Ayoub, there are a number of intact vessels in the SMC that

have either no provenance at all (H199–201, F26), or just a general indication that they came from Sāniat bin Huwaydī (H79, H87, H90, H94).

### Forms Represented in Italian Sigillata (ITS)

By far the most common form represented at Sāniat bin Huwaydī (Table 5.9) is Dragendorff (Dr) 18 (Figs 5.132–5.135), with 50 examples (including two unprovenanced examples, H87, H90). There are an additional six examples of rim sherds of the form from CMD's work (mainly from robbed tombs). It is possible that this style of small dish with pedestal base was used as a drinking vessel by the Garamantes. The next most popular is Dr 29 with five examples (Figs 5.136–5.140), but overall the numbers of the larger fineware serving dishes are small alongside the numbers of Dr 18 and other small dishes and cups (Fig. 5.132).

Table 5.9. Quantities of ITS forms found at Sāniat bin Huwaydī.

AF form	Other reference	Vessel type	No. of examples	Tomb/vessels	Tomb/sherds
FW 511	Dr. 24/25	Cup	1	T17 (AB)	
FW 512	Dr. 27	Cup	2	T17 (AL, AS)	
FW 514	Cons form 20.4, Corinth 12	Dish	2	TA3.1 (H40), T17 (AF)	
FW 515	Dr. 18	Dish/cup	50 (6)	TA3.1 (H25, H31, H88), TA3.2 (H34, H85, H89), TA3.3 (H38, H39, H81–84, H86–87), T15 (H, K, L, M, N), T17 (K, S, X, Y, AC, AD, AH, AI, AM, AN, AO, AQ, AR, AT, AU, AV, AW, AX, AZ, BA, BE, BF, BG), T42 (M), T52 (J, K, Q, R, S), Unprov. H87, H90	Unprov. T3, T24, T33, T42, T54
FW 517		Dish/cup	1	T51 (H)	
FW513	Dr. 29	Bowl	5	TA3.1 (H3), T15 (F, G), T17 (I, J)	
		Total	62		

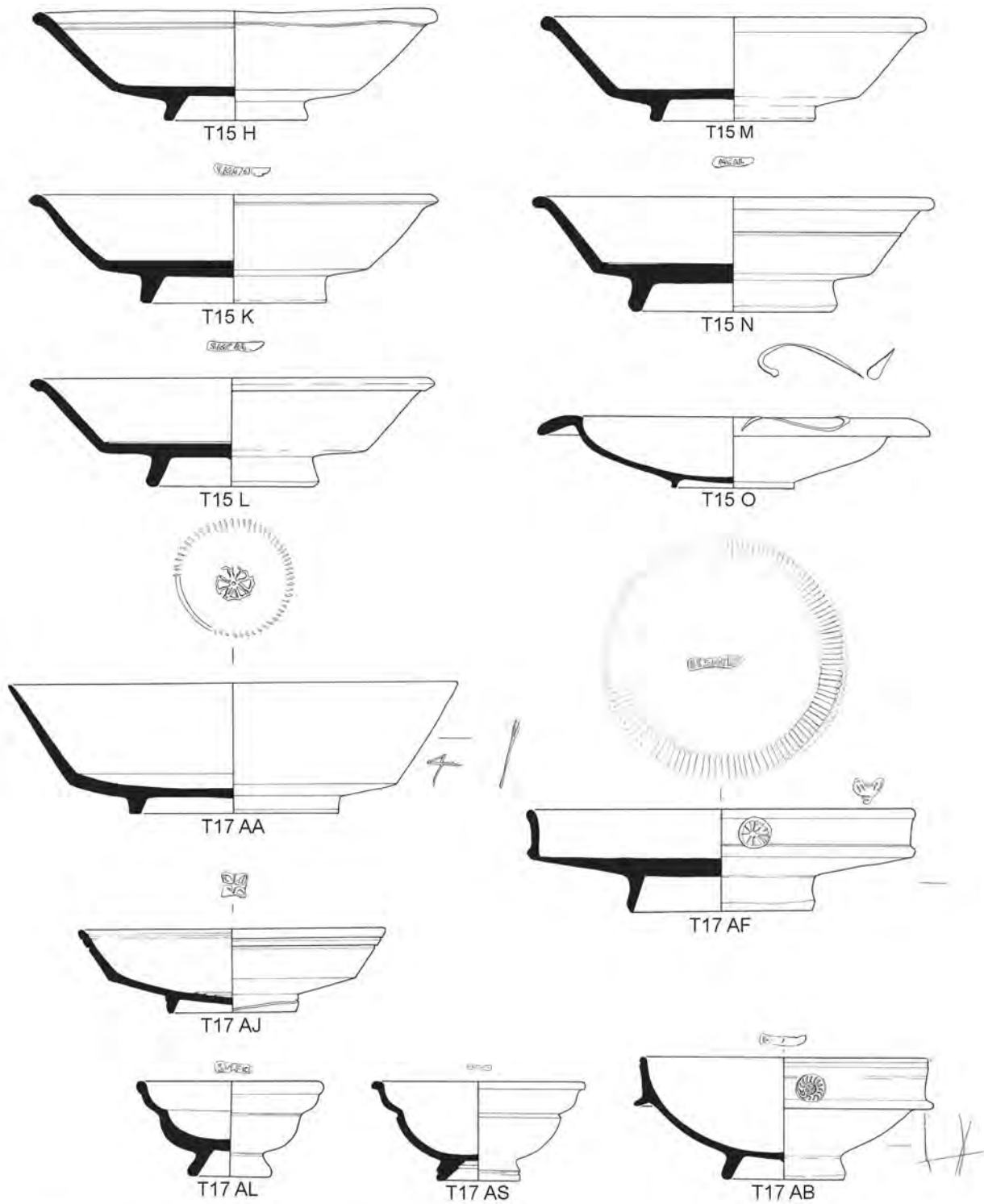


Figure 5.132. Fineware from Tomb 15 and Tomb 17. 1:3.

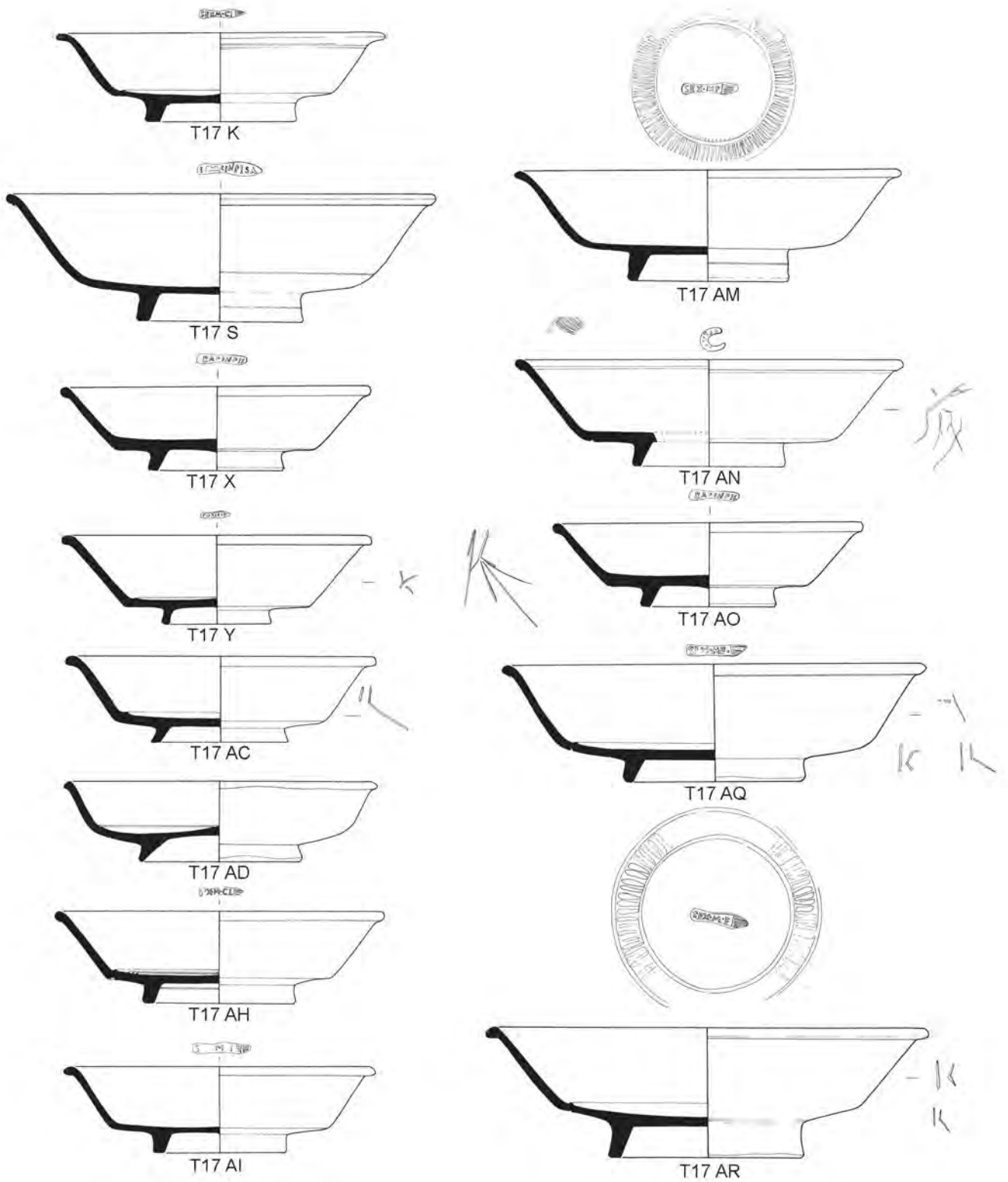


Figure 5.133. Fineware from Tomb 17, continued. 1:3.

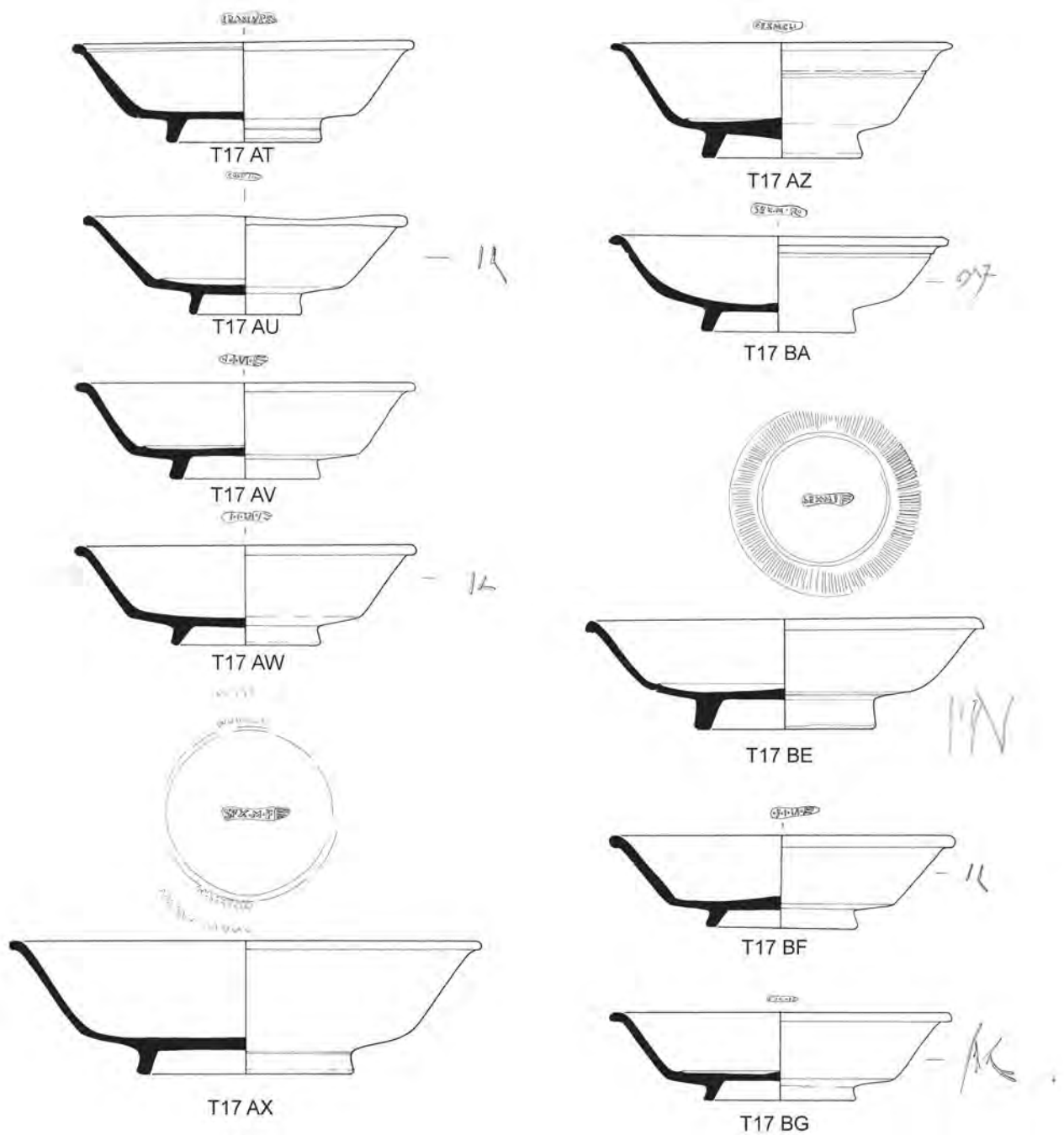


Figure 5.134. Fineware from Tomb 17, continued. 1:3.

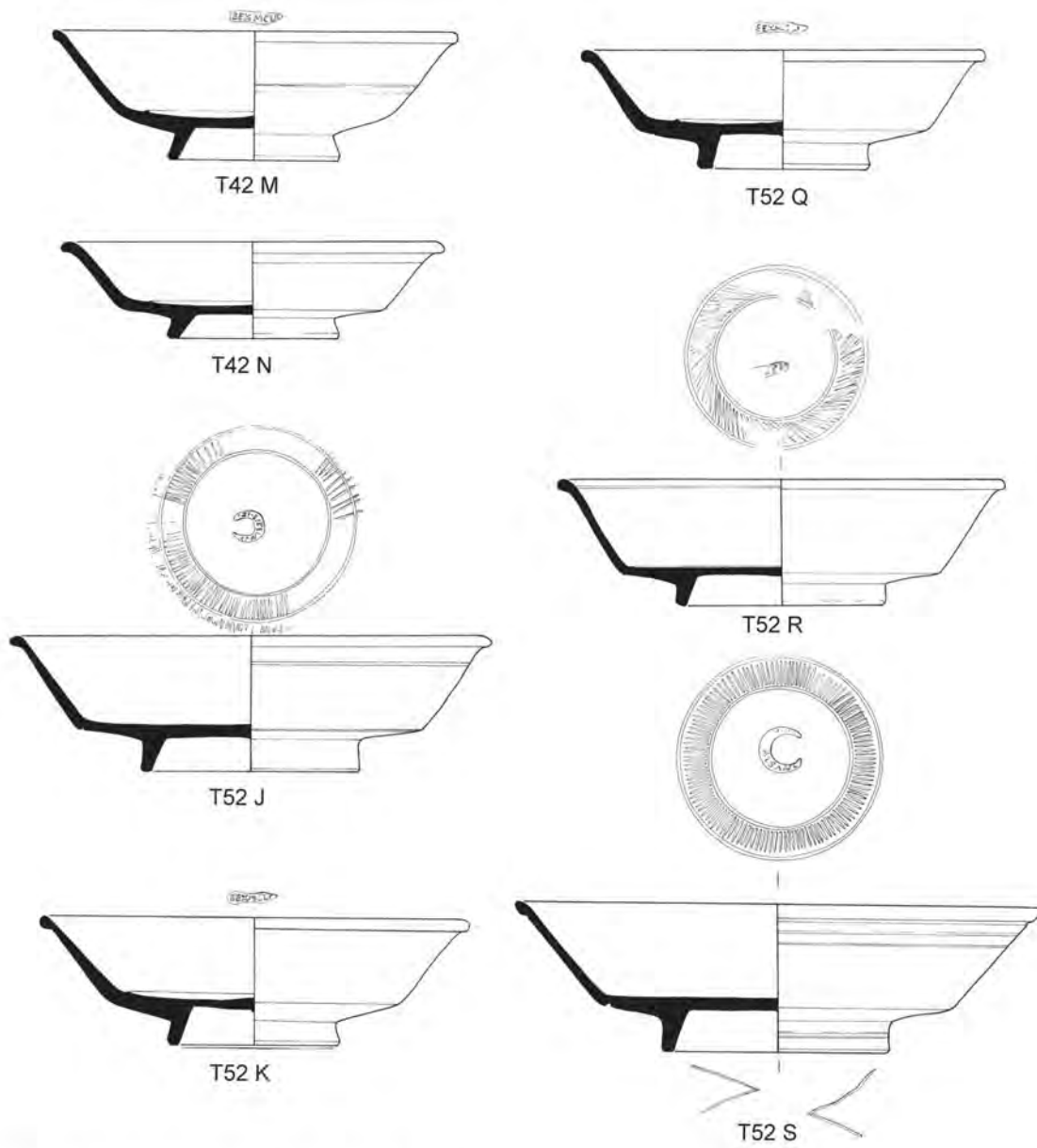


Figure 5.135. Fineware from Tomb 42 and Tomb 52. 1:3.



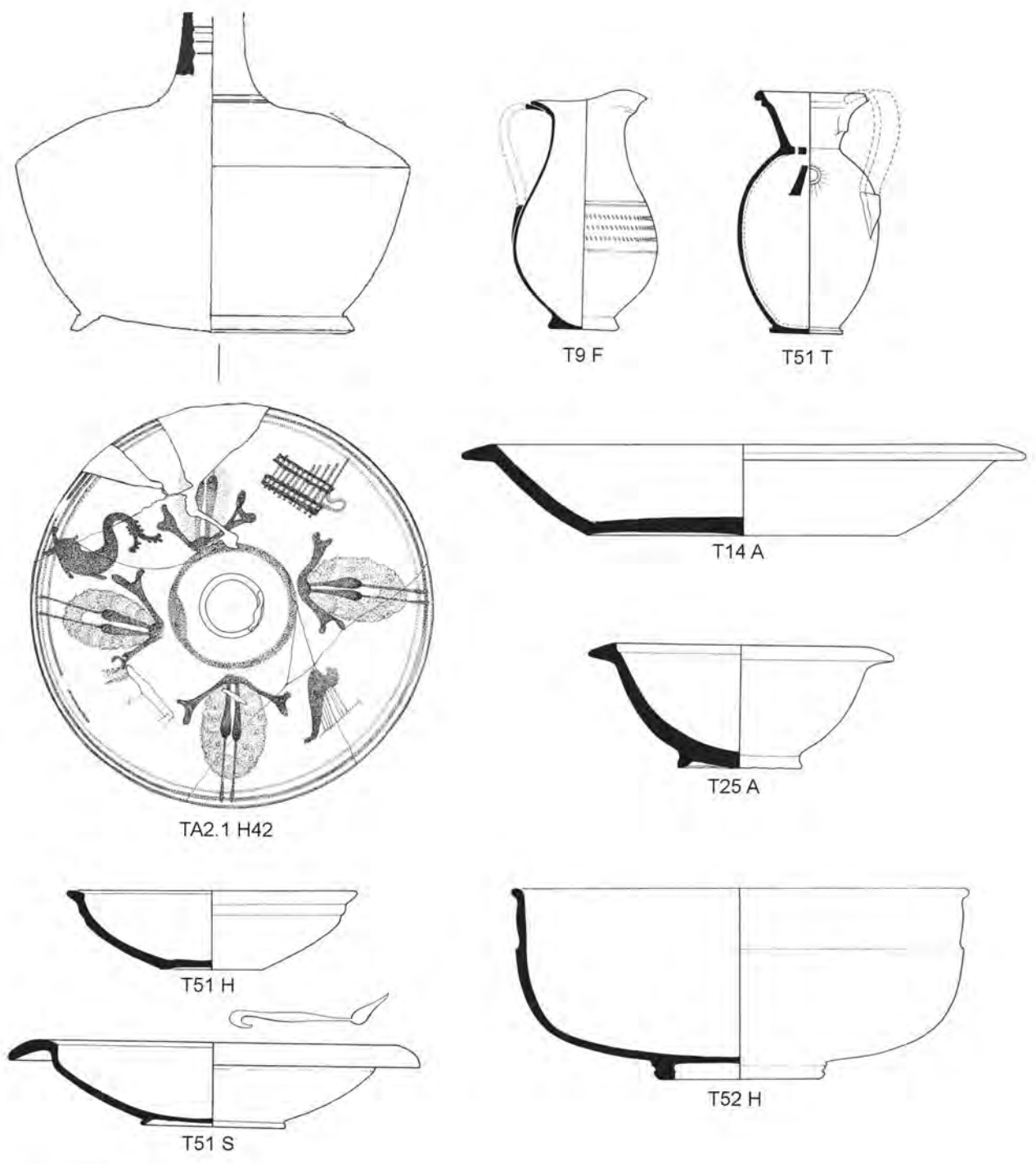
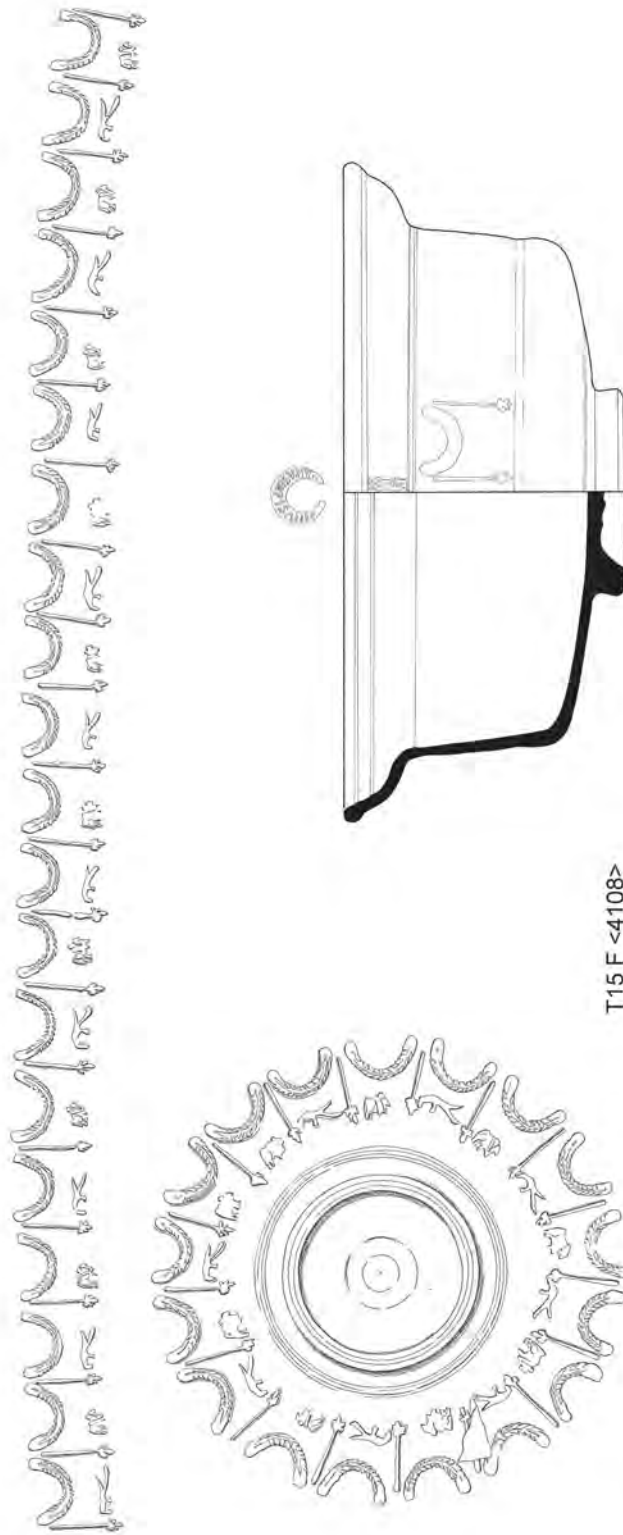


Figure 5.136. Further fineware forms from various tombs excavated by Ayoub and CMD. 1:3.



T15 F <4108>

Figure 5.137. Decorated sigillata vessel Dr 29, Tomb 15 F. 1:3.

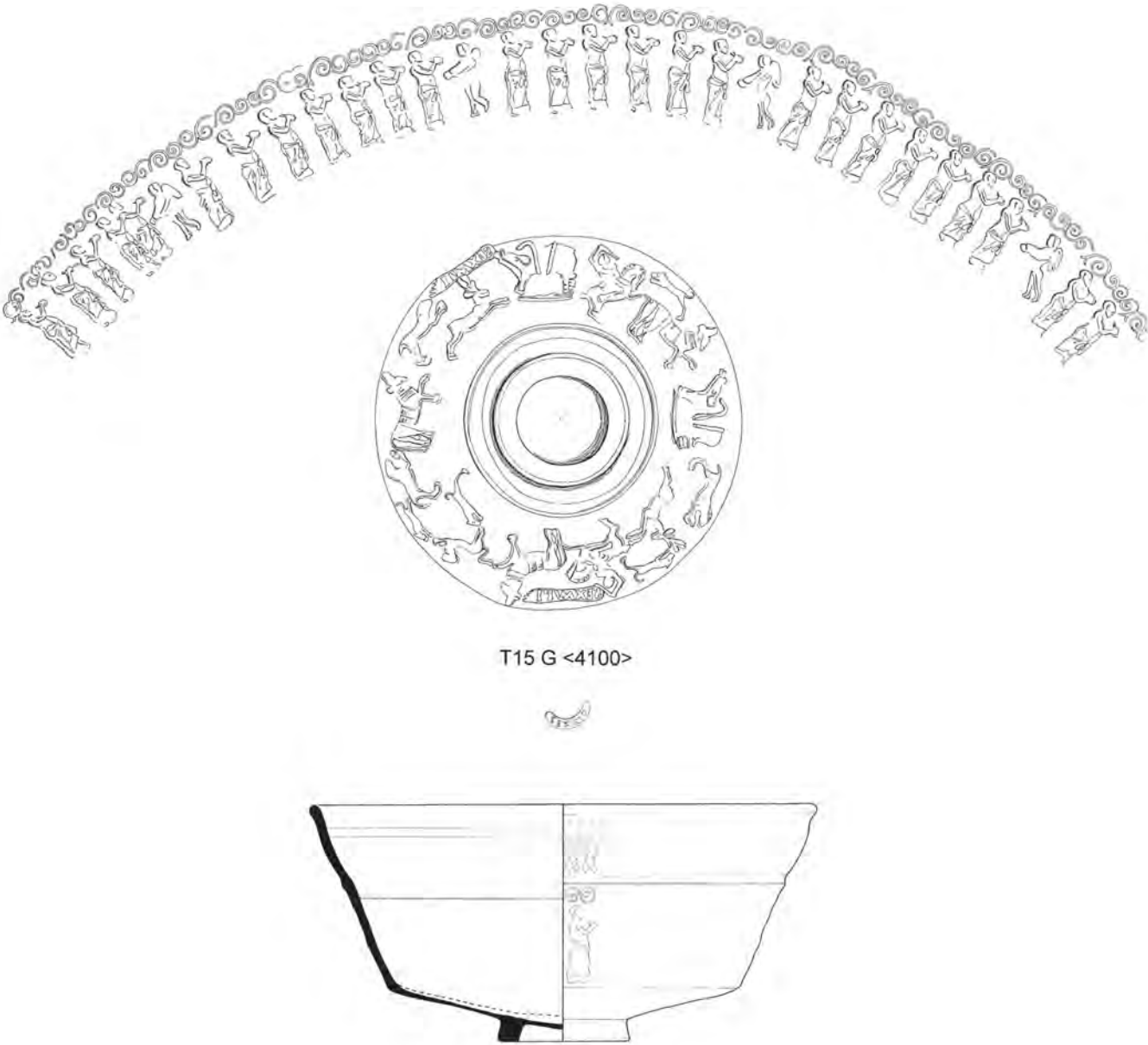


Figure 5.138. Decorated sigillata vessel Dr 29, Tomb 15 G. 1:3.



T17 I &lt;4123&gt;

Figure 5.139. Decorated sigillata vessel Dr 29, Tomb 17 I. 1:3.

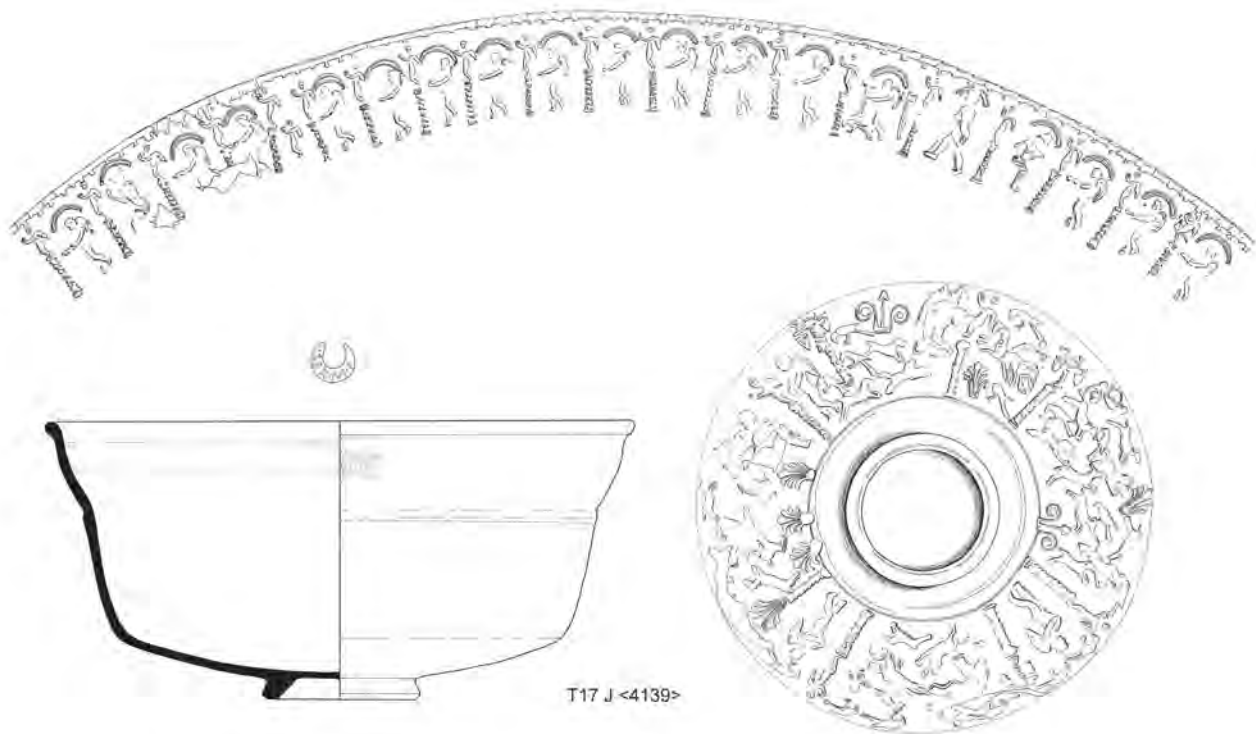


Figure 5.140. Decorated sigillata vessel Dr 29, Tomb 17 J. 1:3.

### Italian Sigillata Stamps and Graffiti

Table 5.10 contains information on the stamps found on the ITS vessels excavated by CMD, as studied by Dr Philip Kenrick (see above, Figs 5.60, 5.69). The first column, on the left, refers to the vessel catalogue number. The second column shows the stamp. The third provides the potter's number and stamp die type, as found in the OCK. Thus '1690.12', refers to potter 1690 and die type 12. Where no potter or die is indicated the example is either too fragmentary to suggest an exact match, or does not match exactly any type already in the catalogue.

The potters represented were primarily from Pisa (Table 5.11) and this impression is strengthened further when one takes account of additional stamps relating to some of these same potters on the vessels recovered by Ayoub (Table 5.12 and Figs 5.19, 5.26, 5.29–5.30).

There are in addition quite a number of graffiti on the underside of Italian sigillata vessels (see Figs 5.26, 5.29–5.30, 5.132–5.135). Particularly intriguing is the fact that identical names and symbols occur on a number of separate dishes not simply within a single tomb group, but with

correlations also existing between neighbouring tombs (see discussion of Tombs A3.2 and A3.3). It has been suggested above that these personal graffiti (including Libyan names written in Latin letters) more likely relate to Tripolitanian merchants than to Garamantian owners of the vessels. The marks were perhaps designed to allow merchants to control and protect their stock of goods in transit on the caravan routes from the north, where cargoes of groups of merchants travelling together would have had to be laden and unladen on a daily basis. No examples of such graffiti were evident on the ARS vessels from GER011, though more recent work has shown that similar marks do occur on some ARS imports to Fazzān.

The evidence of the stamps and graffiti combined seem to indicate that batches of pottery arriving at Jarma were regularly kept together as groups for inclusion in burials, with the contents of closely adjacent tombs sometimes providing a snapshot of goods that were currently available or that had just arrived. There is far less evidence to suggest that burial assemblages consisted of long-curved material that had arrived over extended periods of time, with considerable mixing of goods of varied production and date.

Table 5.10. Stamps on Italian Sigillata and parallels in OCK. The ^ symbol indicates ligatured letters.

Cat. No.	Stamp	Potter and die type	Comments
T17 AA	?	?	
T17 AJ	?	?	
T17 AN	?	?	
T17 AC	?	?	Possibly illiterate
T17 AD	?	?	Possibly illiterate
T17 AS	?	?	Possibly illiterate
T17 AV	.I.I.V.I	?	
T17 AW	.I.I.V.I	?	
T17 BF	.I.I.V.I	?	
T17 AU	CORN^ELI	612.12 or similar	
T17 X	CORN^ELI	612.12 or similar	
T17 Y	CORN^ELI	612.12 or similar	
T17 BG	CORNE...	612	
T52 J	LRASIN.PIS ?	1690.57	
T17 AT	LRASIN^IPIS (?)	1690	
T17 S	LRASIN^IPISA	1690. Die close to 11 or 12	
T15 S	LRASINPISANI	1690.51 or similar	
T52 R	...NPIS	1690	
T52 S	...PISAN	1690.55	
T17 AB	?	?	Possibly Rasinus Pisanus
T15 N	M.N.	1229?	
T17 AI	S...M...I	1212 or 1213	
T17 AH	SEX.M.CL	1211	
T17 AR	SEX.M.F	1212	
T17 AX	SEX.M.F	1212	
T17 I	SEX.M.F	1212	
T17 AQ	SEX.M.F	1212.16	
T17 BA	SEX.M.P	1213.14	
T17 AF	SEX.M.P	1213.19	
T17 J	SEX.M.P	1213.35	
T17 BE	SEX.MF (or P)	1212 or 1213	
T17 AM	SEX.MP	1213.18	
T17 K	SEX.M.CL	1211	
T15 G	SEX.M^VPI	1214.1	
T17 AZ	SEX.MCL	1211	Last stroke probably across the toes
T42 M	SEX.MCL	1211	
T52 K	SEX.MCL	1211.5	
T52 Q	SEX.MCL	1211.5	
T17 I	SEX.MF	1212	
T17 I	SEX.MP	1213.37 or similar	
T15 C	SMCAL	1210.5	
T15 K	SMCAL	1210.5	
T17 AL	SVLPICI	2007	

Table 5.11. Italian potters represented by CMD stamps from GER011.

OCK Number	Name	Details
612	Cornelius	Of Arezzo, c.AD 10–50+
1210	Sex. M(urrius) Cal()	Of Pisa, c.AD 80–100+
1211	Sex. M(urrius) Cladus	Of Pisa, c.AD 80+
1212	Sex. M(urrius) Fes(tus)	Of Pisa, c.AD 60–150
1213	Sex. M(urrius) P()	Of Pisa, c.AD 50–150
1214	Sex. M(urrius) Pi(sanus)	Of Pisa, late 1st to early 2nd c. AD
1229	M.N.()	Of Etruria, c.AD 30+. All other instances in OCK catalogue (six) found in Etruria.
1690	L.Rasinius Pisanus	Of Pisa, c.AD 50–120
2007	Sulpicius	c.AD 15+ (as the stamp is in planta pedis) but little other information

Table 5.12. Stamps on Italian Sigillata including both CMD and Ayoub's examples at GER011.

No. of examples	Tomb and Cat. No.	Stamp	Potter and die type (OCK)	Comments
6	T17 AA, AC, AD, AJ, AN, AS	?	?	Illiterate or illegible
4	T17 X, Y AU, BG	CORN <sup>A</sup> ELI and variants	612	Cornelius of Arezzo, c.AD 10–50+
2	A3.1 (H40), A3.2 (H89)	C.P.P. (retro) and variant CPPO	1342.39 or similar	C. P( ) Pi(sanus) of Pisa, c.AD 50–100+
3	T17 AV, AW, BF	.I.I.V.I	?	?
12	T15 S, T17 S, AB, AT, T52 J, R, S; A3.1 (H25, H31, H88), A3.3 (H39), unprov. (H90)	LRASINPISANI and variants	1690	L. Rasinius Pisanus of Pisa, c.AD 50–120
1	T15 N	M.N.	1229?	M.N.() of Etruria, c.AD 30+. All other instances in OCK catalogue (six) found in Etruria.
2	T15 C, K	SMCAL	1210	Sex. M(urrius) Cal() of Pisa, c.AD 80–100+
6	T17 K, AH, AZ, T42 M, T52 K, Q	SEX.M.CL and variants	1211	Sex. M(urrius) Cladus of Pisa, c.AD 80+
5	T17 I, AQ, AR, AX, A3.3 (H38)	SEX.M.F and variants	1212	Sex. M(urrius) Fes(tus) of Pisa, c.AD 60–150
10	T17 I, J, AF, AM, BA, A3.2 (H34), A3.3 (H81-H84)	SEX.M.P and variants	1213	Sex. M(urrius) P() of Pisa, c.AD 50–150
2	T17 AI, BE	SEX.MF (or P)	1212 or 1213	See above
2	T15 G, A3.1 (H3)	SEXM <sup>A</sup> VPI and variants	1214	Sex. M(urrius) Pi(sanus) of Pisa, late 1st to early 2nd c. AD
2	A3.3 (H86), unprov. (H87)	SEX [...]	1211-1214	See above
1	A3.2 (H85)	SEX M [...]	1211-1214	See above
1	T17 AL	SVLPICI	2007	Sulpicius c.AD 15+ (as the stamp is in planta pedis) but little other information

### Italian Green Glazed Ware

Two tombs yielded vessels produced in a salt-glazed green fineware, identifiable as Italian products of the late 1<sup>st</sup> or early 2<sup>nd</sup> century AD (Fig. 5.117). Tomb 51 (vessel H) was an intact dish (FW 517) and Tomb 30 produced a rim sherd of a vessel thought to be of the same type. Subsequent to CMD's work, unpublished excavation at the site by Ziegert exposed an early tomb with a pair of vases in this ware, ornamented by appliqué figures of divinities (Fig. 5.141).

### South Gaulish Sigillata

Two South Gaulish vessels were found by Ayoub at Sāniat bin Huwaydī. He originally claimed four South Gaulish vessels as he believed that the platter H80 and bowl H3 were also Gaulish (Ayoub and Abdel Salam 1968 – both are in fact Italian and included in Table 5.9). The two certain examples both came from Tomb A3.1. The first is an unstamped, marbled Dr 37 bowl (H4), with a decorative band featuring 3 repeats of confronting stags and an erotic scene below an egg and tongue frieze. The second is a Dr 36 dish (H22) with five barbotine leaves on the rim (Fig. 5.26). In addition, CMD recorded a sherd of an unstratified Dr 29 and from Tomb 23 a Dr 37 bowl rim and further body sherds of Gaulish sigillata from Tombs 42 and Trench 2. Tomb 17 AD may also be a Gaulish product (suggestion from P. Kenrick).

Table 5.13. Eastern Sigillata A finds from GER011.

Tomb	Vessel no	AF form code	Other ref
A3.3	H80	FW 508	Atlante 40A
T17	AA	FW 509	Atlante 40C
T17	AJ	FW 508	Atlante 40A
Unprov	H94	FW 508	Atlante 40A
Unprov	H79	FW510	Atlante 51

### Eastern Sigillata A

At least five examples of Eastern sigillata A are known from the site (Table 5.13 and Figs 5.68–5.69, 5.132), two from CMD Tomb 17 (AA, AJ) and another from Ayoub's Tomb A3.3 (H80), with a further bowl (H79) and a dish (H94) identified as Eastern sigillata A in the SMC, but for which provenance is no more specific than Sāniat bin Huwaydī.



Unprovenanced - Arretine



Green glazed vases



Unprovenanced TRS Form 3

Figure 5.141. Unprovenanced finewares from GER011 (FP 2002).



*Cypriot Lustre Ware*

A single example of Cypriot lustre ware was recovered by Ayoub from Tomb 2.4 (H78) (Fig. 5.24 – not in *AF* 2 series, but cf. Athenian Agora type No. 5, group G174). It dates to the late 1<sup>st</sup> – early 2<sup>nd</sup> century AD.

*Hellenistic Lagynos*

This exceptional Hellenistic import (H42) is datable to the 2<sup>nd</sup> – 1<sup>st</sup> century BC (FW 507) but was included in Tomb A2.1, which clearly dates to the 2<sup>nd</sup> century AD (Figs 5.18, 5.136). The *lagynos* was damaged (handle and neck missing) and is likely to have been curated for a considerable period prior to burial.

*African Red Slip and Tripolitanian Red Slip Ware (ARS and TRS)*

Some 36 ARS/TRS vessels, and a further 13 diagnostic fragments thereof, were recovered from the site. They occurred in all phases, but the majority (29 vessels or part-vessels) came from Phase II. Each of the major fabrics ('A' from northern Tunisia, 'C' from central Tunisia and 'D', also from northern Tunisia) is represented, although 'C' and 'D' are found as little more than a few vessels. The forms represented are shown in Table 5.14 (see also Figs 5.18, 5.20, 5.22, 5.24, 5.26, 5.132, 5.136).

The popularity of ARS forms Hayes 3 and Hayes 6 tends to suggest that the assemblage as a whole dates to quite early in the life-span of the ARS range, perhaps the middle of the 2<sup>nd</sup> century. By the end of the 2<sup>nd</sup> century it is normal to find Mediterranean assemblages dominated by the

Table 5.14. African Red Slip Ware (ARS) and Tripolitanian Red Slip Ware (TRS) Hayes forms.

AF form	Hayes Form No	No.	Tombs/vessels	Tombs/sherds
	<b>ARS</b>			
FW 518	Form 2 ('A' ware)	1	A2.1 H66	
FW 519-520	Form 3 ('A' ware)	9 (1)	A2.1 H70, A2.3 H64, H77, A2.4 H27, H68, H69, H95; T15 O, T51 S	T34
FW 521	Form 4 ('A' ware)	1	A2.2 H30	
FW 522	Form 5 ('A' ware)	2	A2.1 H71; A2.4 H32	
FW 523	Form 6 ('A' ware)	8	A2.2 H74 (?), H96; A2.3 H22, H33, H72, H73, H75; A2.4 H74 (?), H76	
FW 524	Form 8 ('A' ware)	2 (2)	A2.3 H41, H100	T3; T34
	Form 9 ('A' ware)	(2)		Unprov; TR7
	Hayes 29	(1)		T42
	Hayes 44	1	T25 A	
FW 529	Hayes 121	2 (2)	A2.2 H7; T51 T	Unprov; T18
FW 530	Hayes 137	1	T9 F	
-	Miscellaneous ARS flagons/flasks	1	A2.4 H11;	
-	Miscellaneous late ARS	4	A1.5 H301; A1.6 H35; A2.1 H300 (?); T28	
	<b>TRS</b>			
FW 531	Hayes 2	1 (2)	T14 A	T11; T43
FW 532	Hayes 3	1 (5)	Unprov H93	Unprov (x 2); T16, T21, T39;
FW 533	Hayes 4	1	Unprov H37	
-	Hayes 5	1	T36	
	<b>Total</b>	<b>36 (13)</b>		

forms Hayes 8 and Hayes 9 (cf. Reynolds 1995; Hawthorne 1998). Hayes form 9 has only been recovered outside tombs at GER011.

At first sight ARS and TRS were not well represented in CMD's tombs. Ayoub ostensibly dug only ten tombs in which he could have found ARS, given their date of construction, and he found over 20 vessels. CMD dug 28 of the appropriate date and found only eight intact vessels. From this it is pretty clear that the list of tombs recognised by Ayoub must represent only a small percentage of the total number of burials his workmen cleared, especially as the material reported by Ayoub was relatively intact, not fragments. CMD did recover quite a number of fragmentary ARS and TRS vessels from robbed burials and unstratified sherds.

At least nine tombs contained some late Roman fineware (TRS). It is unfortunate that two of the latest pottery finds from the site do not have a secure context, being recorded in the SMC as simply from the cemetery. The fact that both vessels were retrieved as substantially complete vessels suggests that these had been included in tombs originally and this suggests the use of the cemetery extended into the 5<sup>th</sup> century. Details of these unprovenanced vessels are as follows:

H37: Dish in Tripolitanian Red Slip (TRS), Hayes form 4 (FW 533). This was a fragmentary, but substantially complete vessel and seems to relate to Ayoub's earliest

and least systematic excavations (first catalogued as 'pottery shop' find). 4<sup>th</sup> century AD+.

H93: Dish in Tripolitanian Red Slip, Hayes form 3 (FW 532). This was a single large fragment. 5<sup>th</sup> century AD+ (Fig. 5.141).

Given the many demonstrable confusions in Ayoub's record keeping, it cannot be absolutely excluded that these late finds came from another site in the Jarma area (perhaps the parallel excavations being carried out in the early 1960s at the Royal Cemetery GSC030–031, where TRS was certainly collected). It would be helpful to have confirmation of the provenance in the form of future finds of late TRS from Sāniat bin Huwaydī.

### Lamps

A total of 35 imported lamps was recovered by Ayoub (22) and CMD (13). The details are summarised in Table 5.15 (with Figs 5.16, 5.19, 5.28, 5.43, 5.100, 5.117, 5.126, 5.61, 5.70, 5.142–5.144). The lamps are representative in particular of African production, though there are a few that may be of Italian origin (parallels cited are from Broneer 1930; Deneauve 1969; Joly 1974). The date span of the lamps runs from the 1st century AD to 4<sup>th</sup>–5<sup>th</sup> century AD, and confirms the picture suggested by the imported finewares.

Table 5.15. Summary catalogue of lamps from excavations by Ayoub and CMD at GER011. Dimensions in mm.

Tomb	Lamp no.	Description	Dims	Type	Stamp	Date
A2.2	J1	Volute relief lamp, with moulded nozzle. Rim: narrow, moulded tongues. Handle. Discus: man restraining horse. N African or Italian?	L: 137 D: 84	Deneauve XA	LASCIVI (cursive script)	M 1st c. AD
A3.1	J2	Relief lamp, plain nozzle. Rim: plain. Discus: broken, relief unclear.	L: 105 D: 71		MNOVIVS TI	L 1st – M 2nd c. AD
A3.3	J3	Stamped lamp, plain nozzle. Rim: plain. Discus: broken, but plain. (Twin of J19)	L: 106 D: 73		CIVN (N retro) DRAC (stamped or incised)	L 1st – M 2nd c. AD
A3.2	J4	Relief lamp, with plain nozzle. Rim: plain. Discus: wreath.	L: 111 D: 76		CIVN (N retro) DRAC (stamped or incised)	L 1st – M 2nd c. AD
A1.6	J5	Relief lamp, heart-shaped nozzle Rim: relief dots & incised dots/loops. Handle: semi-pierced. Discus: <i>venator</i> with spear & leopard.	L: 112 D: 77			M–L 3rd c. AD
A3.3	J6	Relief lamp, plain nozzle. Rim: plain. Discus: raised circles and 'spokes' round central boss.	L: 103 D: 71	Deneauve VIIIA (793)	ANCHIA	L 1st – E 2nd c. AD
A1.5	J7	North African relief lamp, heart-shaped nozzle. Rim: incised loops & relief dots. Handle: semi-pierced. Discus: bust of Tanit & crescent moon.	L: 95 D: 70	Deneauve 425; Joly 672		M 3rd c AD?
A2.1	J8	North African relief lamp, plain nozzle. Rim: plain. Handle: broken. Discus: 2 birds.	L: 110 D: 74			2nd c. AD

Table 5.15. Summary catalogue of lamps from excavations by Ayoub and CMD at GER011. Dimensions in mm. (cont.)

A3.1	J9	Relief lamp, metallic slip, elongated nozzle & pair of short volutes. Rim: faint rippling. Discus: bird in front of trident.	L: 122 D: 79		Illegible	M – L 1st c. AD
A1.4 (or A1.2?)	J10	Tripolitanian lamp. Rim: crude leaf bands. Discus: circular, plain. Overfired black and vitrified.	L: 105 D: 75			4th c. AD
A1.3	J11	North African relief lamp, plain nozzle. Rim: incised grooves & hooks. Handle: semi-pierced. Discus: Diana holding a bow with dog.	L: 98 D: 75	Deneauve 1137, July 638	SANIO/N LUCER/NI (Moulded)	L 3rd c. AD
A2.3	J12	Relief lamp, plain nozzle. Rim: plain. Discus: running antelope.	L: 99 D: 72	Deneauve 354	relief 'X' (on side)	2nd c. AD?
A2.3	J14	Elongated lamp, nozzle with channel to discus. Rim: 3 lines of relief dots. Discus: plain.	L: 113 D: 65		INIRIFXI	L 1st – 2nd c. AD
A1.2	J15	N African relief lamp, heart-shaped nozzle. Rim: relief dots within incised dots & loop surround. Handle: just pierced. Discus: donkey (broken)	L: 99 D: 73	Deneauve 922, July 700		M 3rd c. AD
A1.1	J16	Tripolitanian lamp. Rim: S-scrolls & cog-wheel pattern. Discus: plain.	L: 113 D: 76			(L?) 4th c. AD
A2.4	J17	Italian volute relief lamp, nozzle with rounded lip & moulded volutes. Rim: plain. Discus: Pegasus.	L: 116 D: 82	Broneer type XXIV or XXIII	LVIL (1 of 2 <i>in p. p.</i> )	M 1st c. AD
A2.4	J18	N African relief lamp, plain nozzle. Rim: stamped egg-band. Discus: 3 seated women (divinities?).	L: 146 D: 113		C CLO SVC	L 1st – E 2nd c. AD
A3.2	J19	Stamped lamp, plain nozzle. Discus: broken, but plain. (Twin of J3)	L: 104 D: 72		CIVN (retro) DRAC (stamped or incised)	L 1st – M 2nd c. AD
A1.1	J20	Relief lamp, heart-shaped nozzle. Rim: relief dots, incised loops and dots. Discus: 2 snakes flanking brazier.	L: 100 D: 71	Deneauve 595	3 faint incised symbols	M 3rd – E 4th c. AD
A1.2	J21	Relief lamp, heart-shaped nozzle. Rim: relief dots, incised loops & dots. Discus: hunter/shepherd & dog.	L: 93 D: 70			M 3rd – E 4th c. AD
A2.1	J22	Relief lamp, metallic slip on plain nozzle. Rim: plain. Discus: part of bird.	L: 94 D: 65	July 43	M NOVIS TI.	1st – E 2nd c. AD
A1.1	J23	Tripolitanian oil lamp, plain nozzle. Rim: hook-scrolls flanking handle & nozzle. Discus: circular plain, surrounded by cog-wheel pattern.	L: 120 D: 78			4th c. AD
T15	J26 (J)	Central Italian relief lamp, rounded short nozzle, sandy brown buff fabric. Rim: plain, wide. Handle: slightly triangular. Discus: radiate sol.	L: 106 D: 73 H: 28	Bailey BM2, Q1281; Deneauve 581	stamp illegible	L 1st – E 2nd c. AD
T17	J27 (BC)	Lamp, nozzle with traces of dots & horizontal line, light sandy fabric with a brown surface. Rim: plain, 2 grooves round discus. Handle: rounded. Discus: 2 palm fronds (tips behind handle).	L: ? D: 74? H: 26	Deneauve VIIA	CCLO.SVC	L 1st – E 2nd c. AD
T17	J28 (BM)	Stamped lamp, base only, soft sandy fabric, brown surface.	L: ? D: 67?	Deneauve VIIA	COPPIRE	L 1st – E 2nd c. AD
T12	J29 (A)	Relief lamp, heart-shaped nozzle greenish/brown surface. Rim: relief lettering. Discus: man on horse, battleaxe in right hand.	L: 115 D: 76 H: 29	Deneauve type VIIIB; July 747	LUCER/NI SANION (on rim, faint motif on base)	M 2nd – E 3rd c. AD
T49	J31 (A)	TRS (?) lamp, rounded nozzle with edge ridge. Rim: simple relief scrolls, dots and frond. Handle: unpierced, squarish. Discus: undecorated.	L: 117 D: 78 H: 30	Libya Antiqua 8 (1971), nos 722, 731		4th – 5th c. AD
T36	J32 (A)	TRS (?) lamp, rounded nozzle, reddish-brown finish. Rim: stylised wreaths, tips at spout. Handle: unpierced, wedge-shape. Discus: cordon ridge, undecorated.	L: 116 D: 80 H: 29			4th – 5th c. AD?

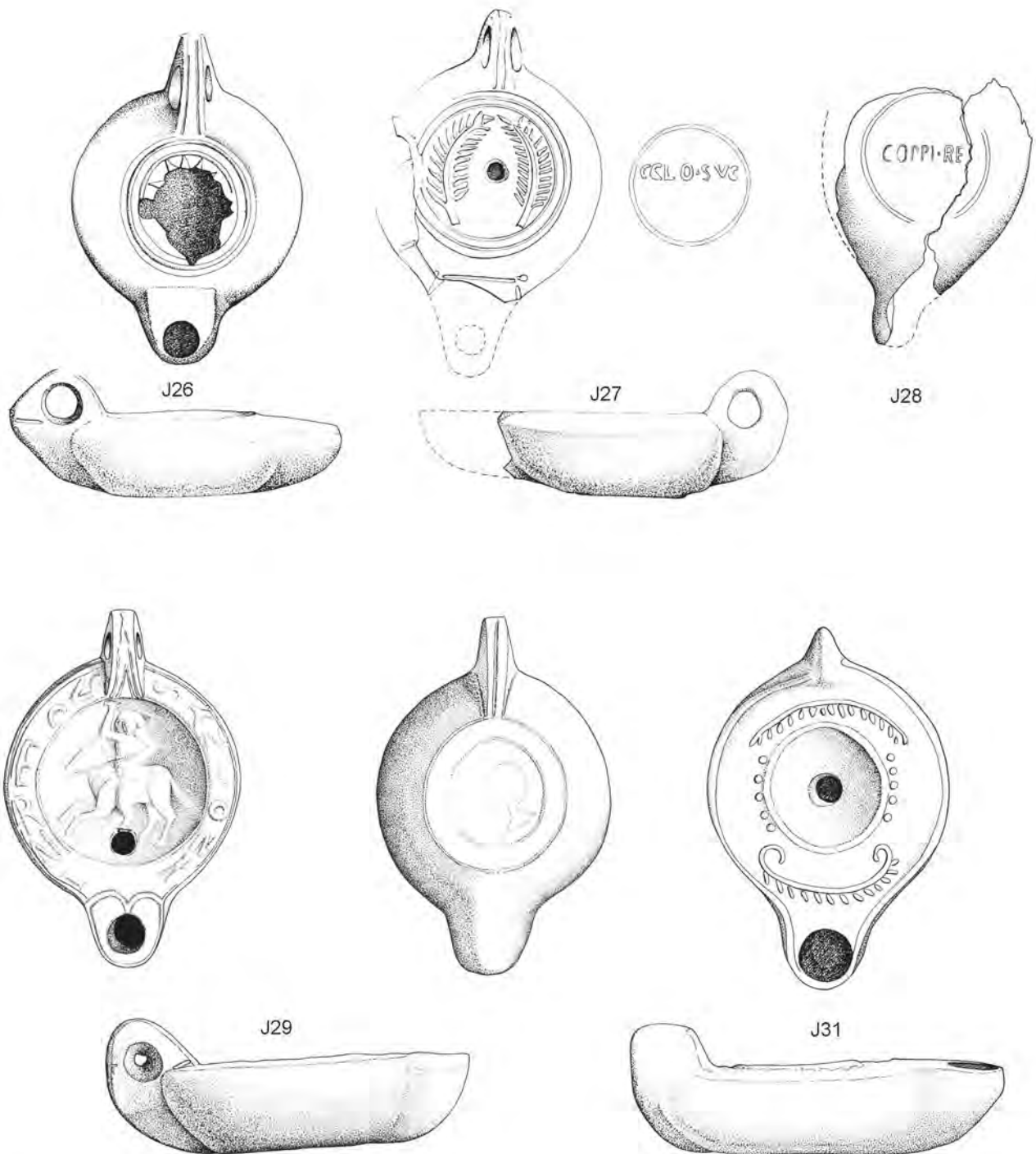


Figure 5.142. Lamps from CMD excavations J26–J29, J31. 1:2.

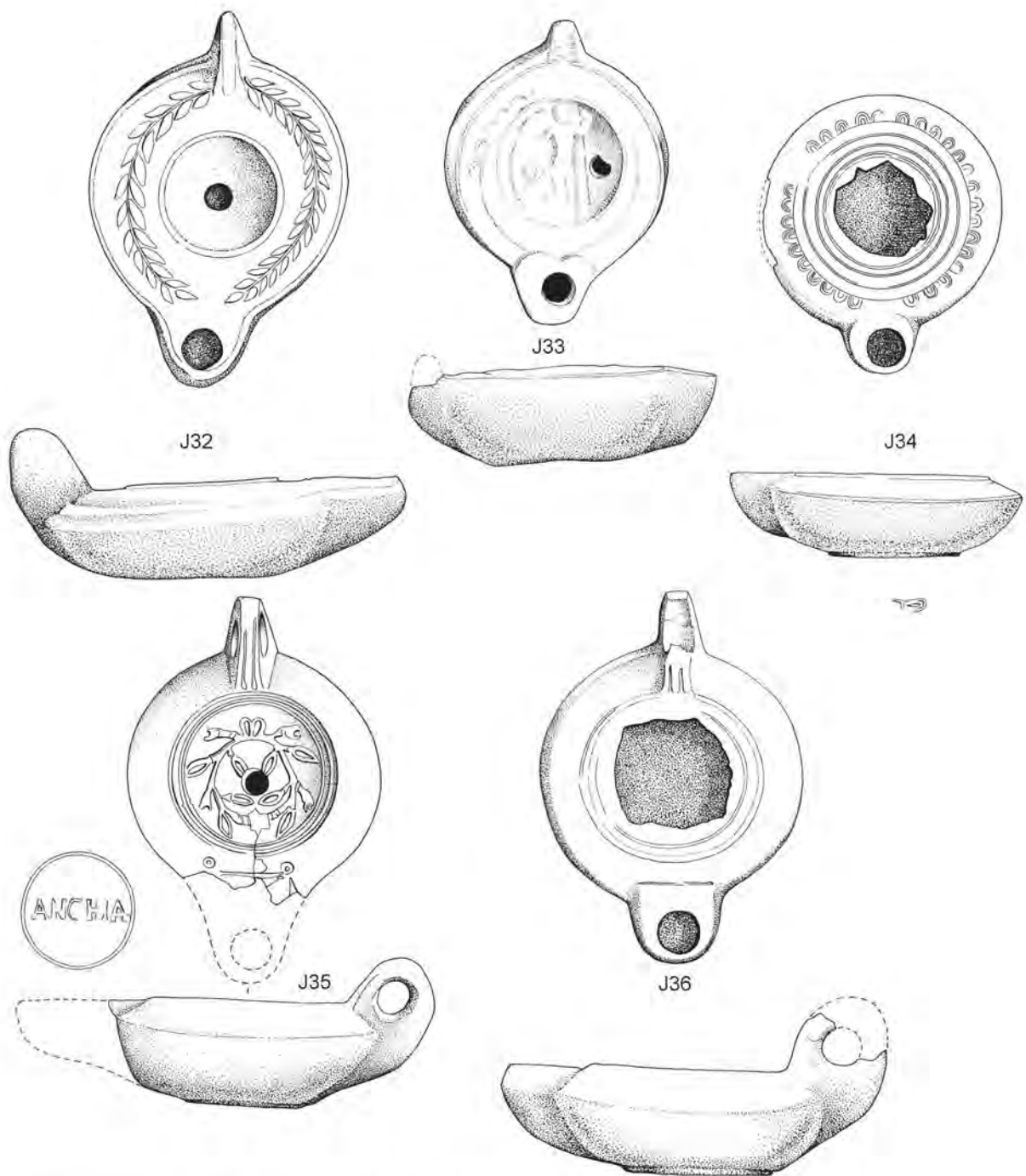


Figure 5.143. Lamps from CMD excavations J32–J36. 1:2.

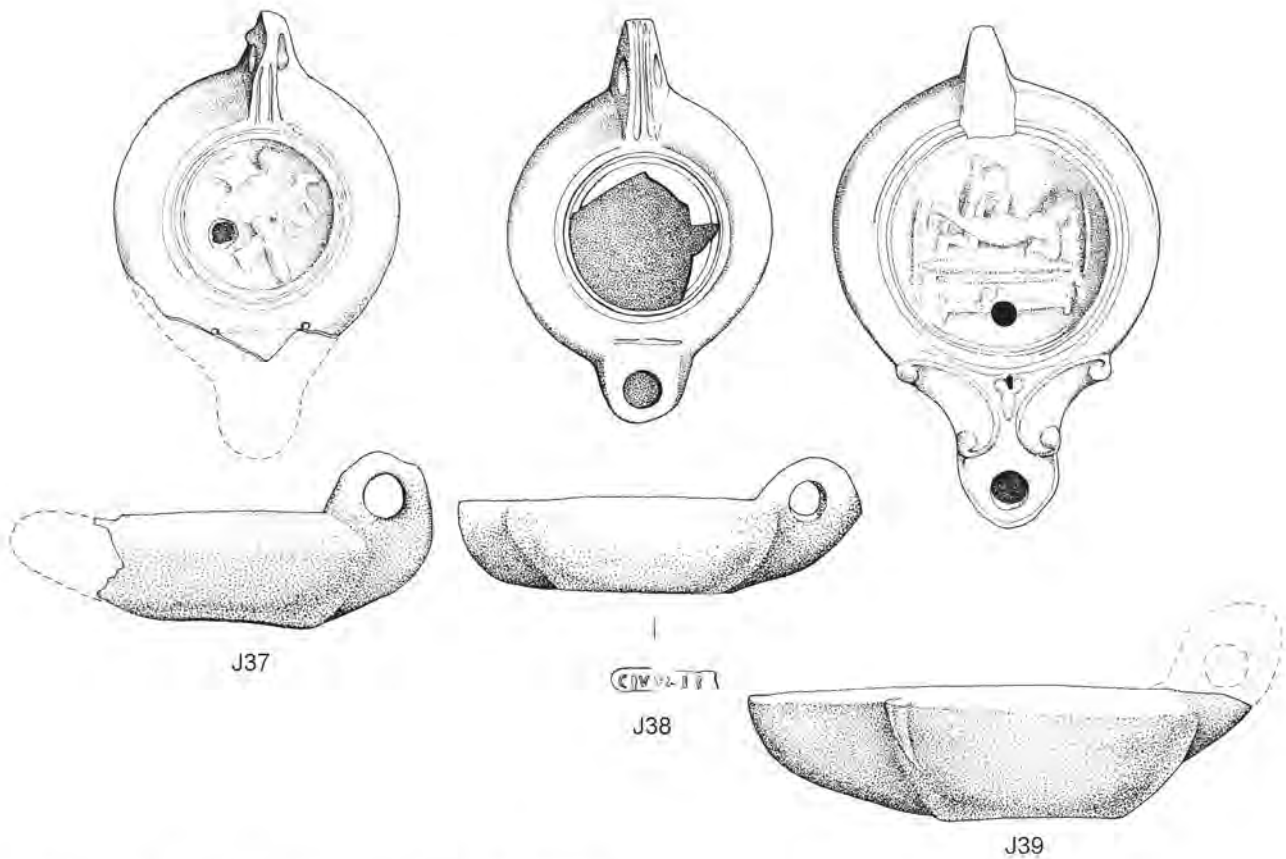


Figure 5.144. Lamps from CMD excavations J37–J39. 1:2.

Table 5.15. Summary catalogue of lamps from excavations by Ayoub and CMD at GER011. Dimensions in mm. (cont.)

T18	J33 (A)	N African relief lamp, heart-shaped nozzle, reddish-buff fabric. Rim: egg-moulding and outer groove. Handle: triangular. Discus: standing figure.	L: 97 D: 71 H: 30	Deneauve VIII B (798)		3rd – 4th c. AD
T51	J34 (M)	Italian lamp, nozzle with circular moulding at spout, pale green surface. Rim: egg moulding. Discus: 3 concentric grooves.	L: 86 D: 75 H: 26	Deneauve VIID	GIR[.]? faint, <i>in p. p.</i>	M 1st c. AD
T52	J35 (M)	Relief lamp, nozzle 2 dots & horizontal line at back, brown fabric, orange-brown slip. Rim: plain. Handle: semi-pierced. Discus: branch motif.	L: ? D: 79 H: 33	Deneauve VIIA	ANCHIA	L 1st c. AD
T52	J36 (T)	Lamp, rounded nozzle, sandy fabric, brown surface. Rim: plain. Handle: rounded. Discus: broken, grooves round edge.	L: 115 D: 81 H: 32	Deneauve VIIA		M 1st – M 2nd c. AD
T42	J37 (R)	Relief lamp, nozzle missing, traces of 2 dots and faint line. Rim: plain, 2 grooves round discus. Discus: Eros walking r. with bow.	L: 117 D: 75 H: 29	Deneauve VIIA		L 1st – E 2nd c. AD
T9	J38 (C)	Lamp, metallic finish, rounded nozzle. Rim: plain, incised grooves round discus. Handle: triangular. Discus: lost.	L: 106 D: 70 H: 25	Deneauve VIIA	CIVNALE	L 1st – E 2nd c. AD
T53	J39 (D)	Relief volute lamp, nozzle with moulded volutes, in a light fabric (?) with dull brown slip. Rim: plain, 3 grooves round discus. Handle: broken. Discus: Erotic scene on bed.	L: 132 D: 87 H: 35	Deneauve VA; Joly 1294 for erotic scene		M 1st c. AD

## Amphorae

Sāniat bin Huwaydī is the most important site in the Wādī al-Ajāl with regard to the creation of the amphora type series recorded in *AF 2* (Mattingly 2007, 336–363). CMD recovered 31 intact (or nearly so) amphorae (Table 5.16 and Figs 5.145–5.148), while Ayoub attributed 61 to his tombs at the site and there are another 50 that are either indicated by him as coming from the site (no specific tomb indicated) or that are unprovenanced in the SMC and likely from GER011. Cumulatively these form the bulk of the large collection currently in Jarma Museum and its stores. John Dore had been making a full and detailed record of all of these prior to his tragic death in 2008. It is hoped to be able to bring this work to completion in due course. For the present, the best identified material relates to CMD's excavations and this is what will be commented on most fully here. The amphorae from Ayoub's excavations are not so easily identifiable in the stores, though they may well cover a longer production timespan than the CMD assemblage (which is essentially late 1<sup>st</sup> and early 2<sup>nd</sup> century AD).

The intact amphorae recovered by CMD were found only in Phase I tombs. Later amphora sherds are certainly found at the site, and it

is likely that some later classic Tripolitanian amphorae in Jarma Museum may come from here, but at present the CMD records are the only data on which we can rely. Most of the amphorae seem to be of Tripolitanian production, with the commonest form, Type **AM 19**, correlated with the Tripolitania I series. This group of 10 amphorae was presumably used to transport olive oil to Fazzān. It is likely that some of the other forms present might have been used for fish products or wine. All the amphorae appear to have been opened (and contents consumed?) before deposition in the tombs.

A further point of interest in this assemblage is that numerous vessels yielded evidence of incised graffiti – made both pre- and post-firing (Figs 5.145–5.148), and also traces of painted inscriptions or signs in red pigment. More work needs to be done on this material (Dore had been re-cataloguing all the material in Jarma Museum and this task will now be completed as part of the DMP work). However, the graffiti and *dipinti* include quite a number of signs or formula that equate better with Neo-Punic or Libyan scripts, rather than Latin. It is quite likely that these marks related to the production and trade of amphorae from northern Libya, by potters and merchant who were conversant in Libyan and Punic.

Table 5.16. Amphora classes at Sāniat bin Huwaydī (data from CMD's excavations only).

Amphora Class	Tombs								Total
	T1	T 9	T15	T17	T42	T51	T52	T53	
AM 9				3					3
AM 15				2	1		1		4
AM 18						1			
AM 19	1		3	2	1	1	1	1	10
AM 22					1			1	2
AM 24		1							2
AM 26		2		1	2		2?		7
AM 27				1				1	2
AM 28								1	1
Other Tripolitanian							2		
<b>TOTAL</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>9</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>31</b>

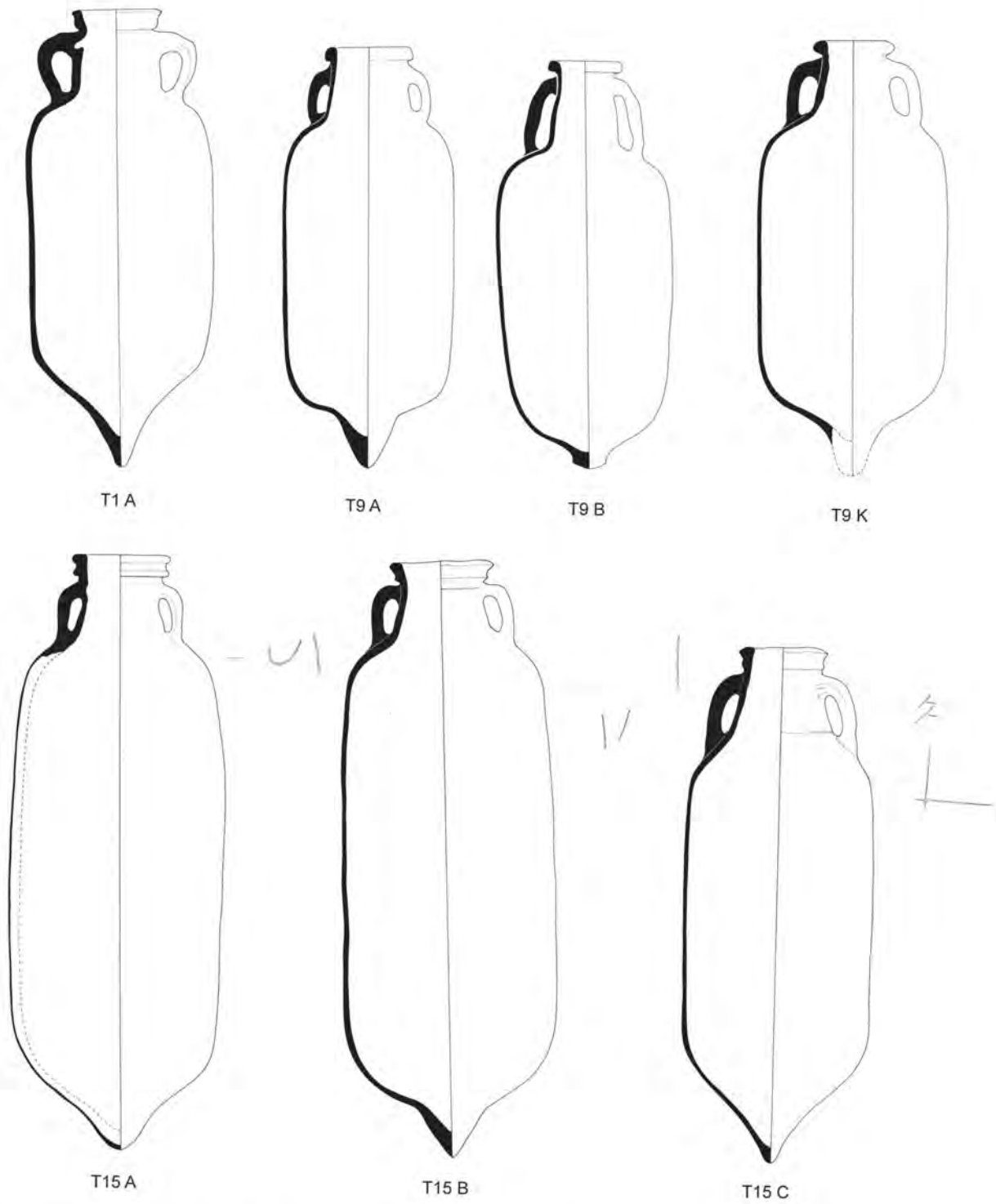


Figure 5.145. Amphorae from CMD excavations, Tomb 9 and Tomb 15. 1:10.



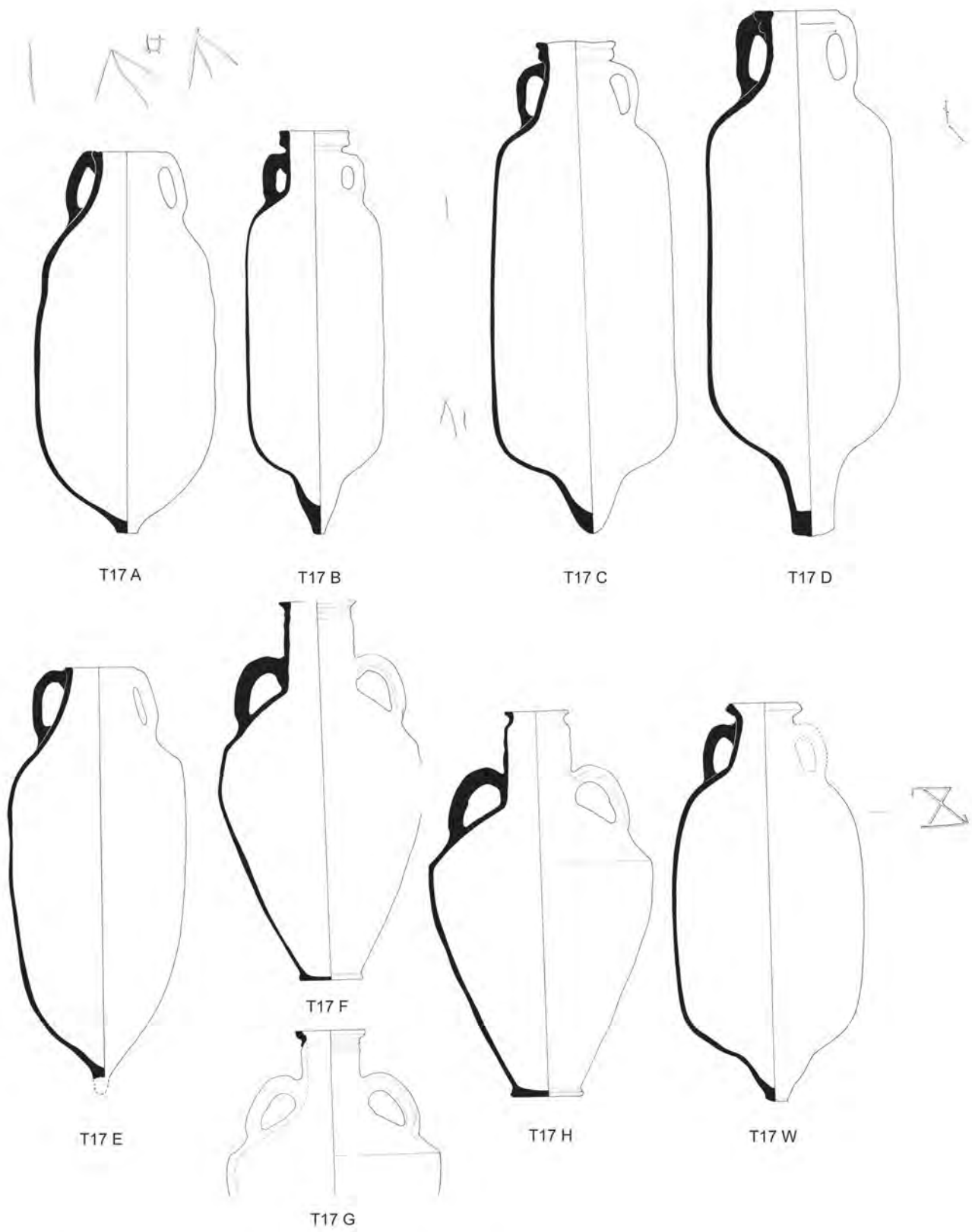


Figure 5.146. Amphorae from CMD excavations, Tomb 17. 1:10.

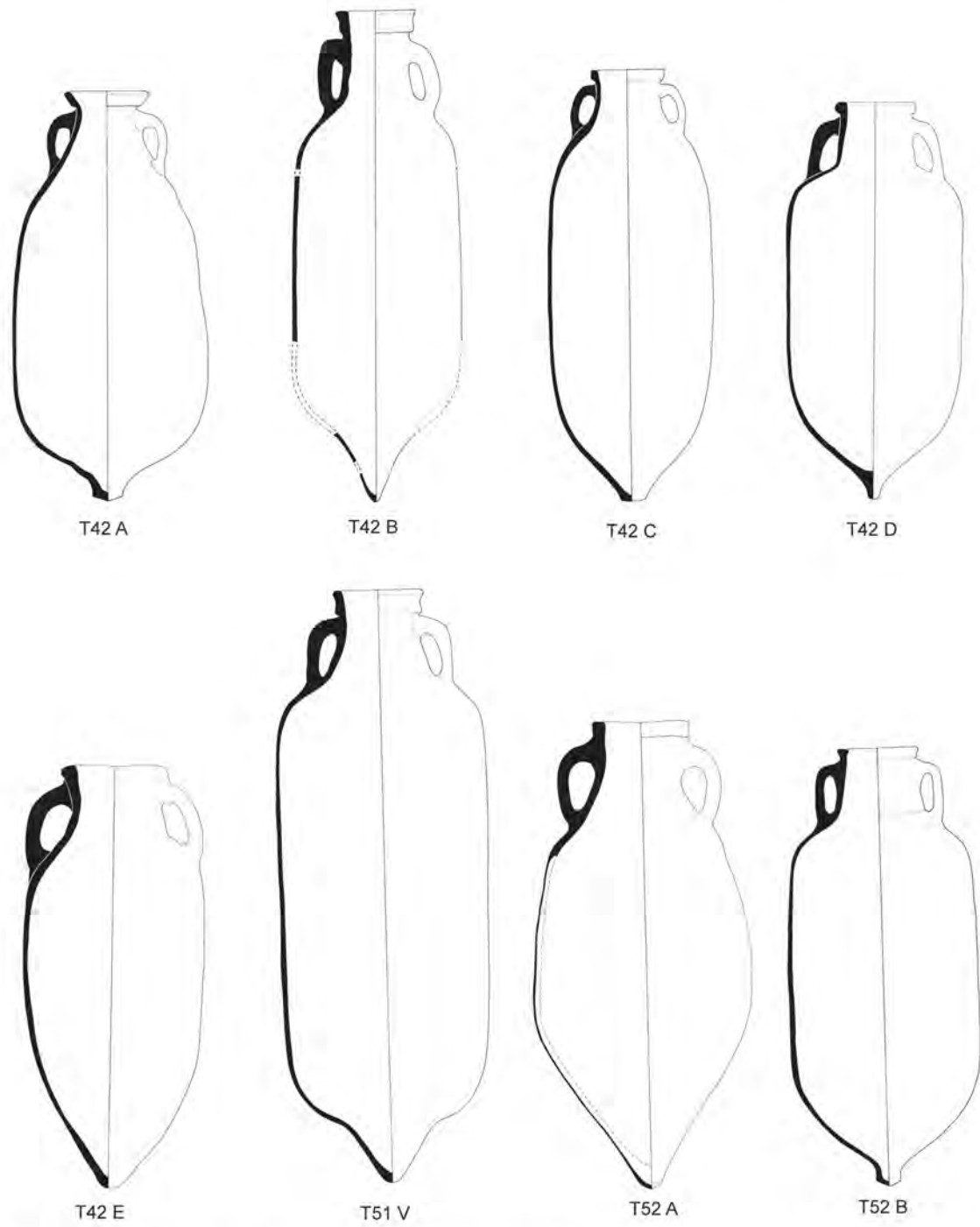


Figure 5.147. Amphorae from CMD excavations, Tomb 42, Tomb 51 and Tomb 52. 1:10.

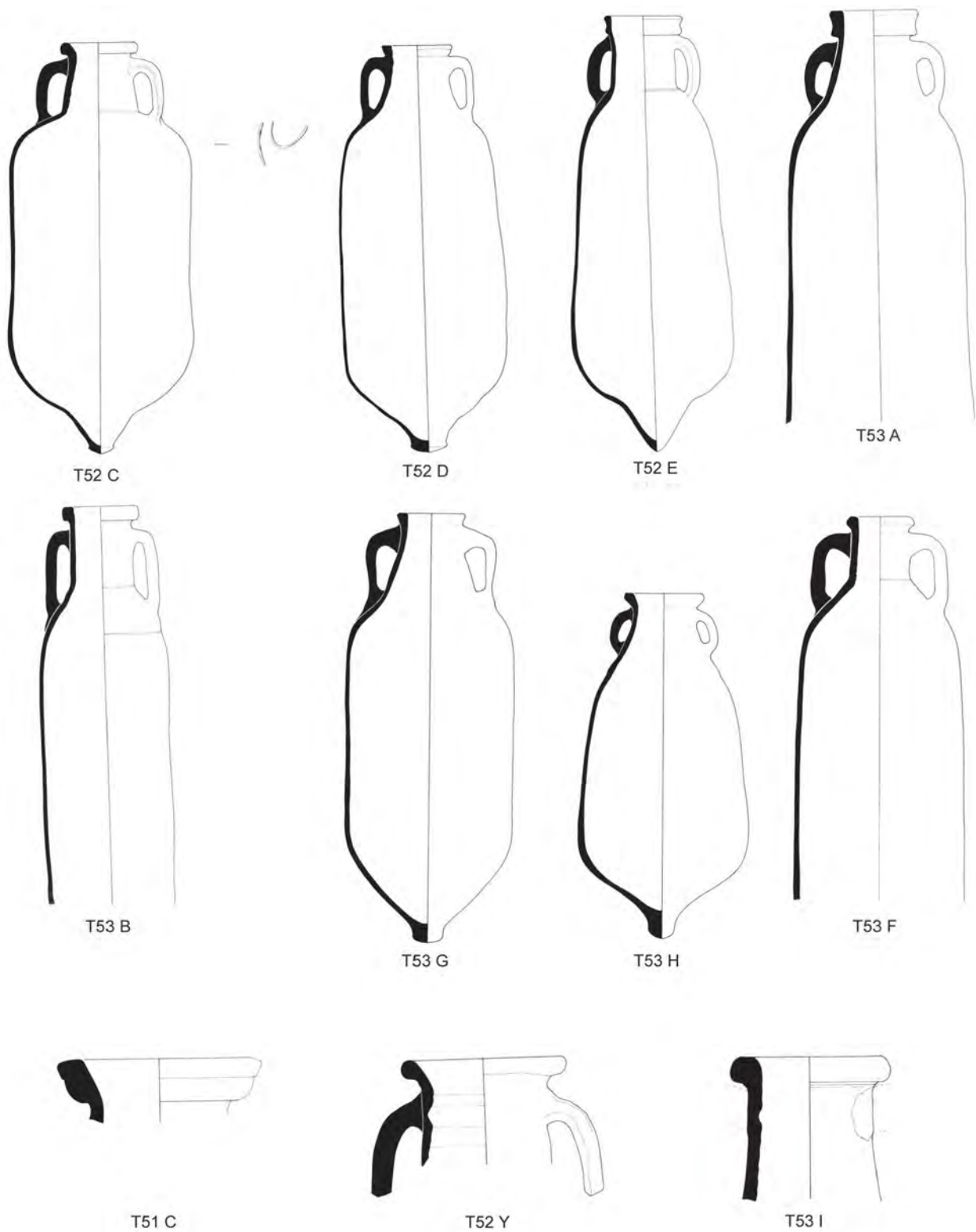


Figure 5.148. Amphorae from CMD excavations, Tomb 52 and Tomb 53. 1:10, apart from T51 C, T52 Y, T53 I, 1:4.

### Imported Wheelmade Coarsewares

Imported wheelmade coarsewares were not particularly common at Sāniat bin Huwaydī, apparently occurring in only eight of the tombs that CMD excavated and 13 of those reported by Ayoub. This figure is likely to be lower than it ought to be: the level of recording for many of the tombs was very poor, and it is entirely possible that imported wheelmade wares have been overlooked or dismissed in the notes as ‘sherds’, with no further qualifiers. Nonetheless we can make some observations. Ayoub’s work seems to have produced far more in the way of wheelmade wares than that of CMD – probably a factor of excavating a larger number of tombs overall, as his tomb groups (at best) represent the intact tombs he encountered out of a larger number that were robbed.

Flagons and jugs seem to be disproportionately well represented in comparison with other

imported coarseware vessels (Table 5.17 and Figs 5.18, 5.20, 5.23, 5.25, 5.31, 5.61, 5.100, 5.149). The imported wheelmade coarsewares probably came predominantly from northern Tripolitania or neighbouring Tunisia. It is possible that some local wheelmade imitations were produced in time. What is most striking about the table is the overwhelming predominance of flagons and jugs, with no less than 51 examples, if we include a few fineware examples along with the coarsewares. The emphasis here is clearly on vessels for serving liquids. The relatively small number of bowls in coarseware or handmade wares presumably reflects the fact that a large percentage of the fineware vessels were of that type. However, the overall assemblage of imported coarseware forms in the area (as represented in *AF 2*) is very different and very much more extensive than this funerary assemblage, indicating that it is a highly selective and context-specific combination.

Table 5.17. Flagons and jugs found during Ayoub’s and CMD’s excavations.

Tomb	Tankards	Vases	Cups/Bowls	Flagons and jugs
A1.1				F50
A1.2				F53 (also attributed to A1.5), F55
A1.3			F57?	
A.1.4				H350
A1.5				F53 (also attributed to A1.2)
A2.1				H36, H63
A2.2				H5, H15, H101 (plus 2 fine ware flagons/flasks H7, H44)
A2.3				H13, H19, H45, H46, H99, H102, H202 (?)
A2.4				H10, H20, H21, H97 (plus ARS flagon H11)
A3.1		H49		(plus ARS jug H43)
A3.2			H98, H204	H17
A3.3		H49, H51	H16	H6, H8, H18, H60, H62, H188
A4.1			H59	H9, H47, H58
T12	12 C			
T15				15 D
T16				frag
T17				17 AK
T22				frag
T28				frag
T34				frag
T51				frag
Totals	1	3	5	51

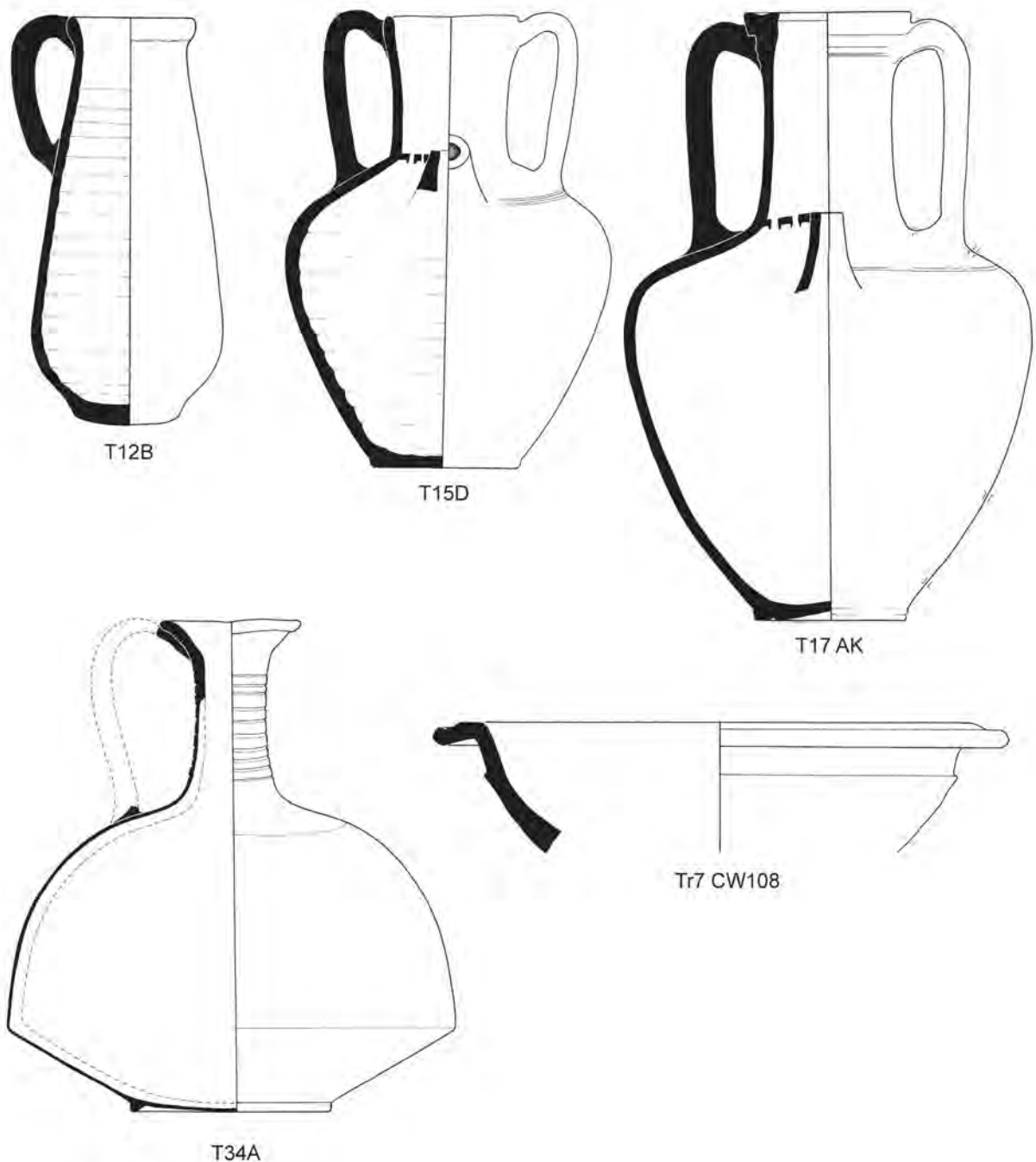


Figure 5.149. Jugs and flagons. 1:3.

Vases were found in two tombs, Tomb A3.1 (H49) and Tomb A3.3 (H49 and H51). Bowls and cups/small bowls were found in four tombs, A1.3 (F57?), A3.2 (H98, H204), A3.3 (H59) and A4.1 (H59) (see Fig. 5.31 for some additional unprovenanced examples from Ayoub's work).

#### Locally Produced Handmade Wares

Although the published works of Caputo, Ayoub and CMD have tended to stress the importance of the imported ceramics in the Garamantian burials, there is ample evidence for the inclusion of local handmade pottery in burial rituals in the Wādī al-Ajāl. Despite the fact that local handmade wares were less likely to be noted by Ayoub, such vessels are attested in the vast majority of tombs excavated at the site (whether preserved as intact vessels or recorded as broken sherds. In Phase I,

12/16 tombs have yielded local handmade wares, In Phase II, 13/20 and in Phase III, 11/20. The majority of locally made wares at Sāniat bin Huwaydī seem to have been handmade in the standard range of Berber Red fabrics. As already mentioned a number of examples of possible locally manufactured wheelmade pottery can be noted (Tomb A1.4, H57; A3.2, H17, A4.1, H6, H47, H55).

Local handmade wares form the rest of the local material. In CMD's excavation notes these forms were not reported on in great detail, though it is clear that two main classes of vessel tended to be represented. The first of these were incense burners, often taking the form of a cup mounted on a tripod above a flat base and with a single wide handle (Fig. 5.150). Decoration may be incised and painted on these vessels and they are often very friable and crumbly when found. Fourteen examples are known from eleven tombs (Tombs A1.2 x 2, A3.1, T9, T15, T17, T18 x 2, T34, T41, T43, T51 x 2, T52) and they may have been

present in many others in fragmentary form that went un-noted by Ayoub or CMD. The placement of incense burners within burials also deserves comment. These artefacts were often spatially isolated from the imported vessels (Tomb 9 in a corner of the tomb; Tomb 17 placed on the shoulders of two amphorae, but away from the stacks of other artefacts on the tomb floor; Tomb 51, at the extreme end of a line of other vessels close to the head; Tomb 52 near the middle of north wall on its own behind the back of deceased). A larger sample of well-excavated burials is needed to reach firmer conclusions about this aspect of burial ritual, but there does seem to be a strong local tradition represented here, that was quite separate from the considerations of selection of imported pottery to go into the tombs.

The incense burners from the CMD excavations were as follows:

GER011.T17 O <4153> Small cup without handle, base missing, but possibly originally tripod form. Decoration: painted white spots on exterior.

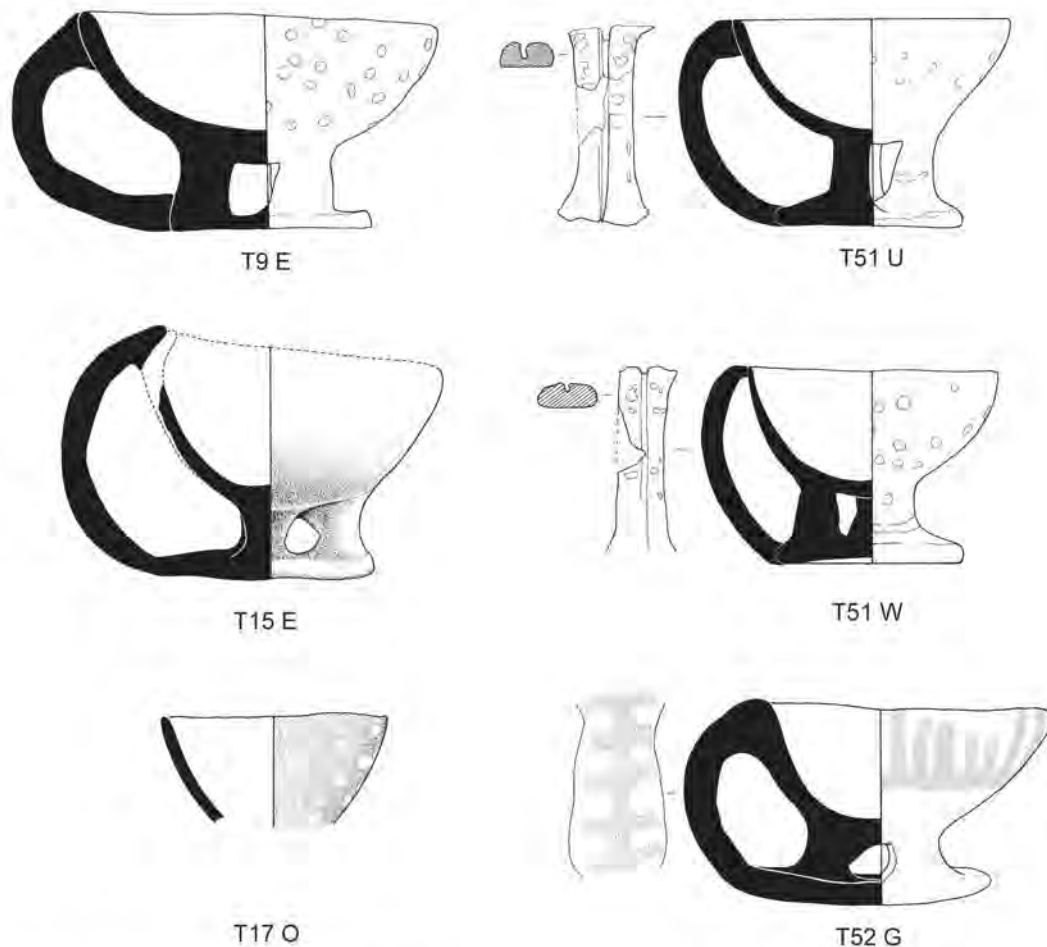


Figure 5.150. Incense burners in handmade wares. 1:3.

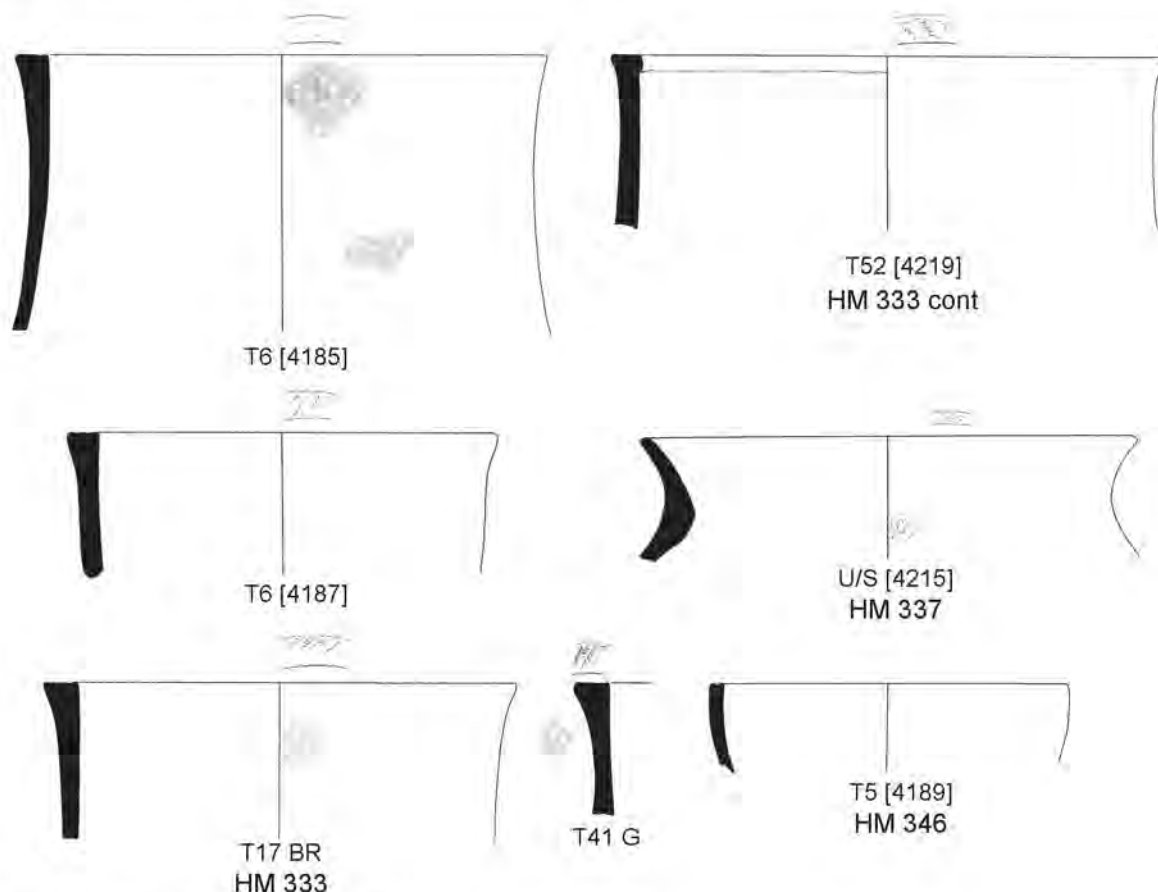


Figure 5.151. Other handmade forms. 1:3.

GER011.T9 E <4286> Tripod form, with large handle.

Decoration: painted spots.

GER011.T15 E <4109> Tripod form, with large handle.

Decoration: plain.

GER011.T51 W <4288> Tripod form, with large handle. Decoration: painted spots.

GER011.T51 U <4287> Tripod form, with large handle. Decoration: painted spots.

GER011.T52 G <4233> Tripod form, with large handle. Decoration: painted stripes.

The second common category comprised large globular jars with high and often everted rims (HM 337–338). These vessels were also frequently painted, often with a lattice decoration (Figs 5.27, 5.151). Some of these have been found inside tombs, but more commonly they were placed alongside offering tables outside the tombs, presumably as receptacles for liquid offerings to dead ancestors.

### Glass and Faience

Finds of glass and faience vessels were also quite abundant in tombs at Sāniat bin Huwaydī – and probably a good deal more common than the available evidence would suggest. Although

both the CMD work and the Ayoub excavations yielded a number of vessels that were well enough preserved to be lifted, much of the glassware was in rather parlous state due to fragmentation and devitrification. For the CMD tombs there is a reasonably complete record of all glass vessels present, but the same cannot be assumed for the earlier work of Ayoub (and there is quite a lot of unprovenanced fragmentary glass in the SMC, for example, C10–C21). Table 5.18 summarises occurrence of faience and glass vessels (these are reported on in fuller detail in Chapter 8 below, with Figs 8.1–8.9). There are some similarities with the ceramic assemblage in terms of a fair number of small bowls/dishes and cup – which could all have served as drinking vessels – and a number of bottles and flagons that complement pottery flagons and jugs. On the other hand there is a much larger component here of substantial bowls – with a significant number of pillar moulded vessels. The practicalities of transporting large open glass and faience vessels 1000 km overland from the Mediterranean coast is a further factor to reflect on. Given that the assemblage here comes from a small area of a single cemetery among many around Jarma,

Table 5.18. Faience and glass vessels at GER011. At least two further (robbed) tombs (T1, T23) had fragments of faience and two others fragments of glass (T18, T22).

Type of vessel	Faience	Tomb/vessel No.	Glass No.	Tomb/vessel No.
Figured urn	1	T53 C		
Cinerary urn			1	TA3.3
Bowls	8	TA2.4 H1; T17 AE, AP, AY; T51 D, R; unprov H91, C20	12	TA2.3 C8; TA2.4 C9; T9 G; T17 M, BH; T42 H, I, J; T51 A, B, C, L
Pillar moulded bowls			10	TA3.1 C3, C4; TA3.2 C1; TA3.3 C2; T17 BB; T52 F, I, L, V
Bowl with handles and spout	1	TA2.2 H65		
Dishes	3	T17 L; T42 K, L		
Rectangular dish	1	T9 I		
Beakers/cups	5	T17 T, U, V, Z, AG	5	TA1.6 C5, T9 D, H; T14; T54
Drinking horn			1	TA2.1 C7
Bottles and flagons			5	T17 P, Q; T51 G, N, O
Plates			1	T51 E.
Miscellaneous vessels	1	T51 J	9	T42 O, P, R, S; T51 F, Y; T52 U; T53 N, O
<b>Totals</b>	<b>20</b>		<b>44</b>	

it does suggest that imports of glass and faience were on an extraordinary scale, considering the logistical difficulties and the distances involved. Further commentary on the nature of the glass imports will be found in the Catalogue and discussion in Chapter 8.

### Saddle Querns and Mortars

Saddle querns, or fragments thereof, were found in a number of Phase I and Phase II tombs (Table 5.19). It is clear from the ceramic grave goods associated with these querns that they all date to the 2<sup>nd</sup> century AD or earlier. There are two main types attested – a large flat oval variety in a number of different stones that is only associated with the late 1<sup>st</sup>-century tombs (Fig. 5.129) and a narrower and thicker type, often worn by use into somewhat lunate profiles (Fig. 5.21). This latter type is characteristic of the 2<sup>nd</sup>-century tombs excavated by Ayoub. No saddle querns appear to have been buried after this date. This is very interesting, as we know from Sāniat Jibrīl that after that time saddle querns were replaced with rotary querns. The fact that rotary querns were not buried with people suggests a shift in their cultural significance.

An interesting sub-class of grinding tool is the mortar. Two mortars were recovered from Sāniat

bin Huwaydī, from Tombs A3.2 (SMC 97) and A3.3 (SMC 99). They appear to date to the later 1<sup>st</sup> century AD. The two from this site are now only known from sketches in the catalogue, and appear to have been rough blocks of stone with hemispherical depressions carved into one surface. In the past these have been interpreted as possible offering tables (cf. comments in the SMC, Volume II.1), although their original position *inside* the tombs would seem definitively to rule this out.

Table 5.19. Saddle querns and rubbers recovered from Sāniat bin Huwaydī.

Tomb	Saddle quern	Rubber	Phase
15	Yes	1	I
17	Yes	1	I
42	Yes	No	I
51	No	1	I
52	Yes	1	I
53	Yes	3	I
A2.1	Yes	No	II
A2.2	Yes	1	II
A2.3	Yes	No	II



### Artefact Placement Within Burials

In terms of the placing of items within the tombs, the best evidence comes from the sketch plans of burials excavated by CMD (Figs 5.35, 5.44, 5.51, 5.62, 5.71, 5.98–5.99, 5.104, 5.109, 5.118, 5.127, 5.130). The most common pattern seems to have been to arrange ceramic vessels towards the walls of the tomb, as in Tomb 15 for example. This is particularly true of amphorae, which were often left leaning in corners or at the ends of the rectangular chambers. As is clear from the detailed presentation of individual tombs above, there was considerable variation in overall composition of grave assemblages and the arrangement of items within the burial (see especially Tombs 9, 12, 15, 17, 34, 40, 42, 51, 52, 53). In the larger tombs, in addition to multiple amphorae, there was a tendency to include large numbers of imported fineware dishes, with glass and faience vessels – often stacked inside each other and placed on the floor of the tomb along one or more of the walls, around (and even directly upon) the body or balanced on the shoulders of adjacent amphorae. In Tomb 17 the finewares and glass/faience vessels were set down in a series of stacks along a diagonal band across the centre of the tomb, with the greatest numbers right in front of the deceased body. Saddle querns, where these were buried, sometimes protruded out towards the centre of the tomb, often ending in close proximity to the head of the deceased. In Tomb 42 both bodies buried at different levels and some of the grave goods were covered in red coloured pigments (described in CMD's records as 'haematite', but equivalent to what the FP has designated 'ochre').

One feature of the treatment of grave goods that stands out is the common practice of breaking off chips of many items before they were buried. This was done to virtually all classes of material, with the possible exception of bead necklaces and other personal jewellery. Certainly it was usual for ceramic vessels, including amphorae, finewares, coarsewares and lamps to have a chip knocked out of their rim. Even saddle querns also seem to have been deliberately broken, and in the case of Tomb 17, fragments of the saddle quern were found built into the superstructure. Lamps were regularly broken, and it appears that the same was true of glass vessels, although they were frequently too fragmentary and devitrified to allow accurate assessment. Although sometimes crudely done, in most cases the removal of a triangular sherd from

the ceramic vessels seems to have been skilfully executed, to leave the vessel seemingly whole, but no longer physically intact. In some cases the chips taken from vessels were found within the burial chamber, but in many instances this was not so. There is at least one instance where a chip was found in the grave that does not match any of the vessels retrieved from the tomb. This suggests that the breaking of vessels may have been ritually performed at the grave side. All eight fineware vessels in Tomb 15 were deliberately chipped, as well as the flagon and lamp. Other tombs where almost all fineware was chipped include: Tomb 9 (1 chipped/0 intact); Tomb 42 (2/0 intact); Tomb 51 (3/0), Tomb 52 (5/1). Interestingly, Tomb 17, with the largest fineware assemblage, contained only six chipped examples and 25 unchipped, suggesting that a sample of chipped vessels could on occasion suffice.

Beads were generally worn on the body, whether around the neck (Tomb A1.2, Tomb 25) or around the waist/hips (Tomb 54), but in most cases it is not clear from the record of Ayoub's or CMD's excavations where the beads were retrieved from. The DMP work has suggested there is a strong correlation between beadwork and female burials, but small numbers of beads and beads worn as amulets are known also from male burials (Mattingly *et al.* 2008, 252, 259–60; 2009, 115–17, 126–27).

The excavations at Sāniat bin Huwaydī provide us with our most vivid insights to date on Garamantian burial customs and on the range of Mediterranean imports that were transported to their heartlands across nearly 1,000 km of desert terrain. Despite the depredations of generations of tomb robbers, exacerbated particularly in its initial phase by the treasure-hunting aspect of Ayoub's excavations, the dossier of material assembled on funerary structures and grave goods is detailed and impressive. The best-preserved and unrobbed burials are especially valuable for our understanding of funerary behaviour and belief. The cemetery was evidently in use across several centuries and although there are some observable differences in the tomb structures, funerary furniture and tomb contents across this period, there were also clearly strong continuities in relation to funerary ritual and practice. The next chapter will present further excavations made by CMD at additional Garamantian cemeteries and this will make clearer the unifying aspects of Garamantian funerary practice.

## 6. EXCAVATIONS OF OTHER GARAMANTIAN CEMETERIES AND BURIALS

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(with contributions from J. N. Dore<sup>†</sup>, A. Leone)

### INTRODUCTION

In addition to the major cemetery excavation at Sāniat bin Huwaydī (above, Chapter 5), CMD carried out excavations at a number of other funerary sites in the Wādī al-Ajāl: type 2a/2b shaft burials at Tāqallit (TAG001), a mudbrick pyramid at al-Ḥaḥīya (ELH001), type 2b shaft burials at Zinkekrā (ZIN013), a type 5b rectangular stepped tomb from the Royal Cemetery (GSC030.T5); mausolea at Tuwash and al-Fugār (TWE001/FUG001), and burials below type 1a simple mound cairns at al-Khara‘iq (CHA005) and Ikhlif (CLF010). Most of these excavations were small-scale interventions at known cemeteries or incidental discoveries of burials as part of investigations at Garamantian escarpment settlement sites (Fig. 6.1

for locations of most of the sites discussed in this chapter; CHA005 and CLF010 are included on Fig. 2.1). Some of the latter have been reported on in Chapter 2 above, but further detail is given here of the burial rites and monuments observed. Much of the human bone recovered in the excavations has been lost in subsequent moves of the Jarma museum stores and only a limited amount can be said about the physical characteristics of the individuals buried (see Chapter 7). Nonetheless, it has seemed worthwhile to draw together the available information on these sites. The order of reporting broadly follows the Wādī al-Ajāl from west to east. For the local context of each cemetery and for the detail of CMD’s equally significant survey of cemetery sites along the Wādī, the reader is referred to the *AF 2* (Mattingly 2007).

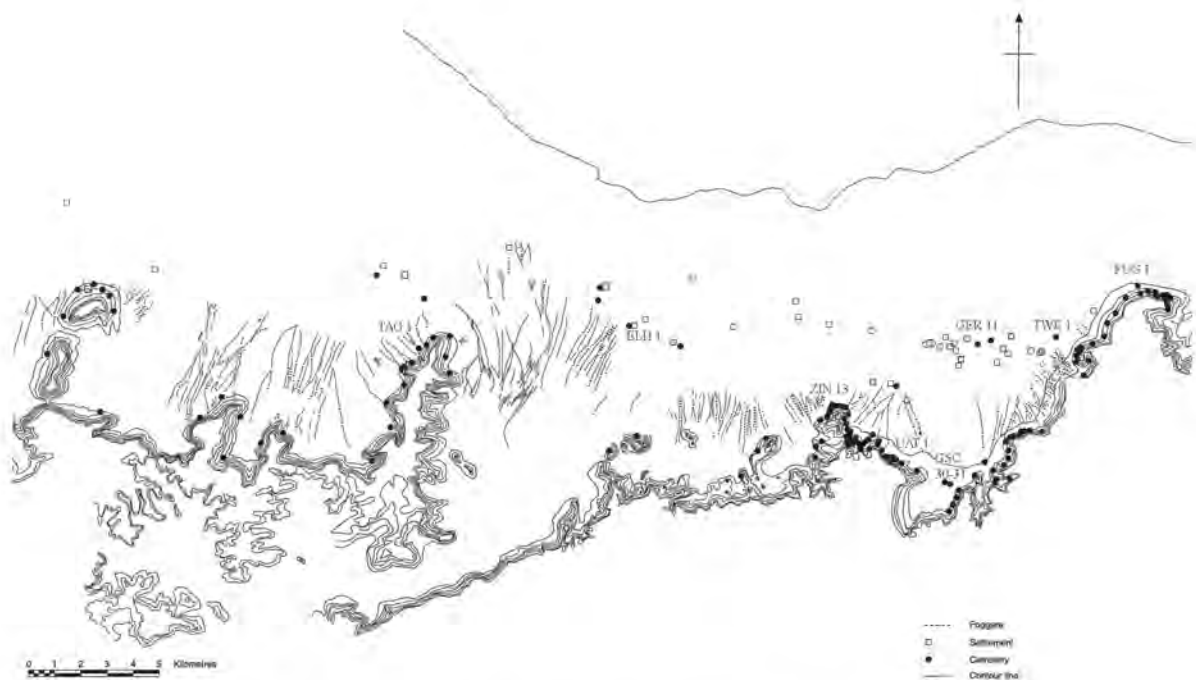


Figure 6.1. Main cemeteries in western Wādī al-Ajāl where CMD excavated (CHA005 and CLF010 are shown on Fig. 2.1).

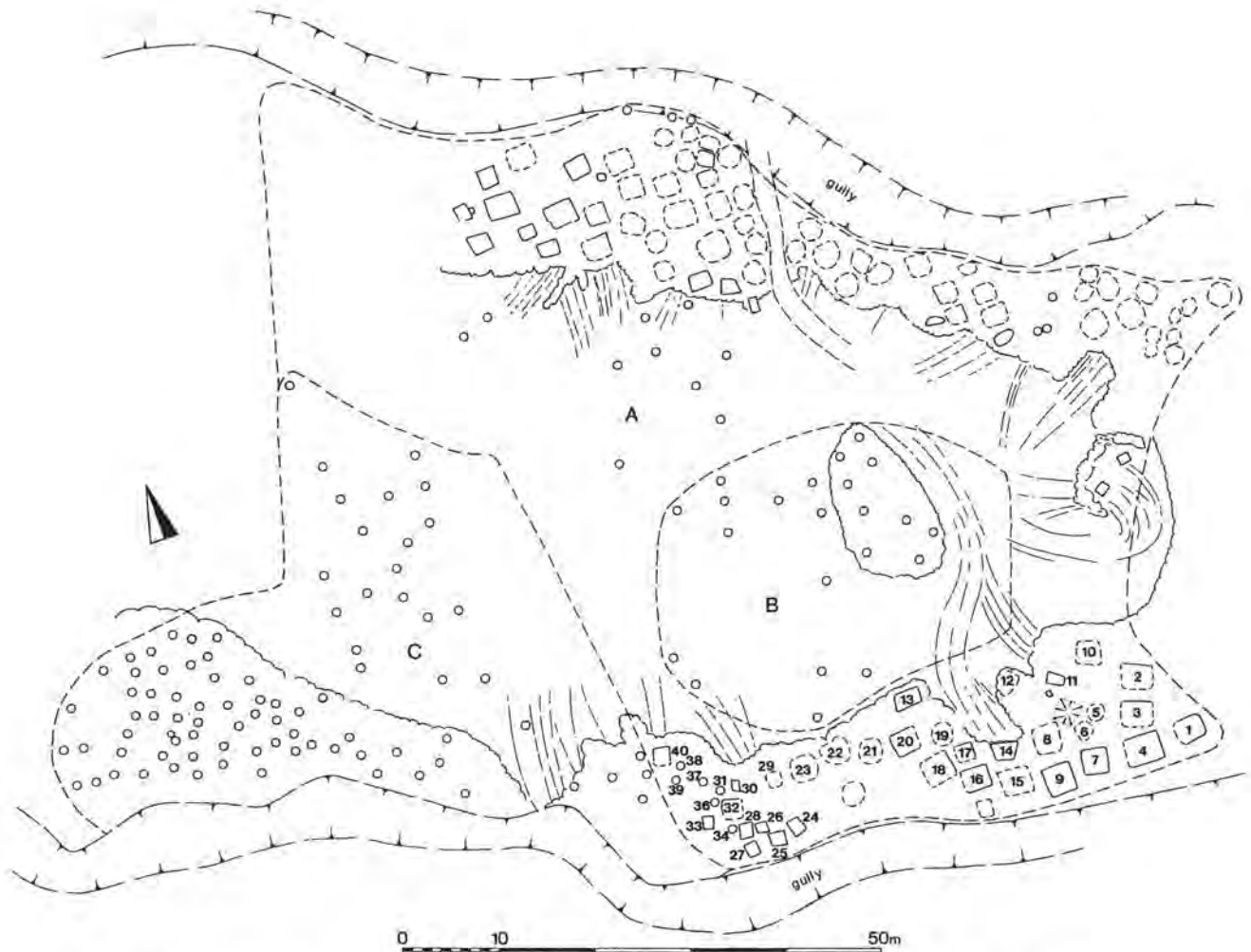


Figure 6.2. TAG001, overall plan of the cemetery as preserved in 2000, showing zones A–C identified by CMD.

### TĀQALLIT (TAG001)

This is a large nucleated cemetery c.400 m south-west of the northern tip of the spur called Tāqallit (26°32.24/12°53.24). It is among the largest of the monumental cemeteries on the escarpment west of Zinkekrā and is also significant because of the large number of offering tables and stelae that have been found there. The site lies on the west side of a low ridge crossed by the seasonal water-courses but free from the foggaras. The cemetery measures some 130 x 130 m, just over half the area (Fig. 6.2, area A) being occupied by upstanding monumental tombs, many with stepped superstructures (primarily type 5b), the rest by shaft graves without superstructures (mainly type 2a and 2b). These latter form two groups, one large area (C) on the west side of the cemetery, the other (B) an area completely encircled by monumental tombs. Offering tables were found beside both types of burial and so were fragments of stelae, although noticeably fewer were found amongst the shaft graves in the western group than

elsewhere. The site was first recorded by Caputo who excavated three graves in the eastern part of the site, recovering some late Roman pottery from one of them (Pace *et al.* 1951, 381–84). CMD visited the site in 1959, making surface collections, writing detailed notes on surface finds and test-excavating three graves. A hand-written report on this work forms the basis for this section. In 2000, a new survey of the cemetery was made, but by this time substantial areas of the site had been destroyed by bulldozing. The site has seen renewed investigation by the Desert Migrations Project (DMP) in 2009 (Mattingly *et al.* 2009).

#### Monumental Tombs

These numbered about 150. Most were square or sub-rectangular in plan, although a few were circular. The majority consisted of two or three stepped stories (Fig. 6.3). The size of their bases varies between 3.8 x 3.7 m and 2.5 x 2.5 m, and the average height of the steps about 0.6 m, although in

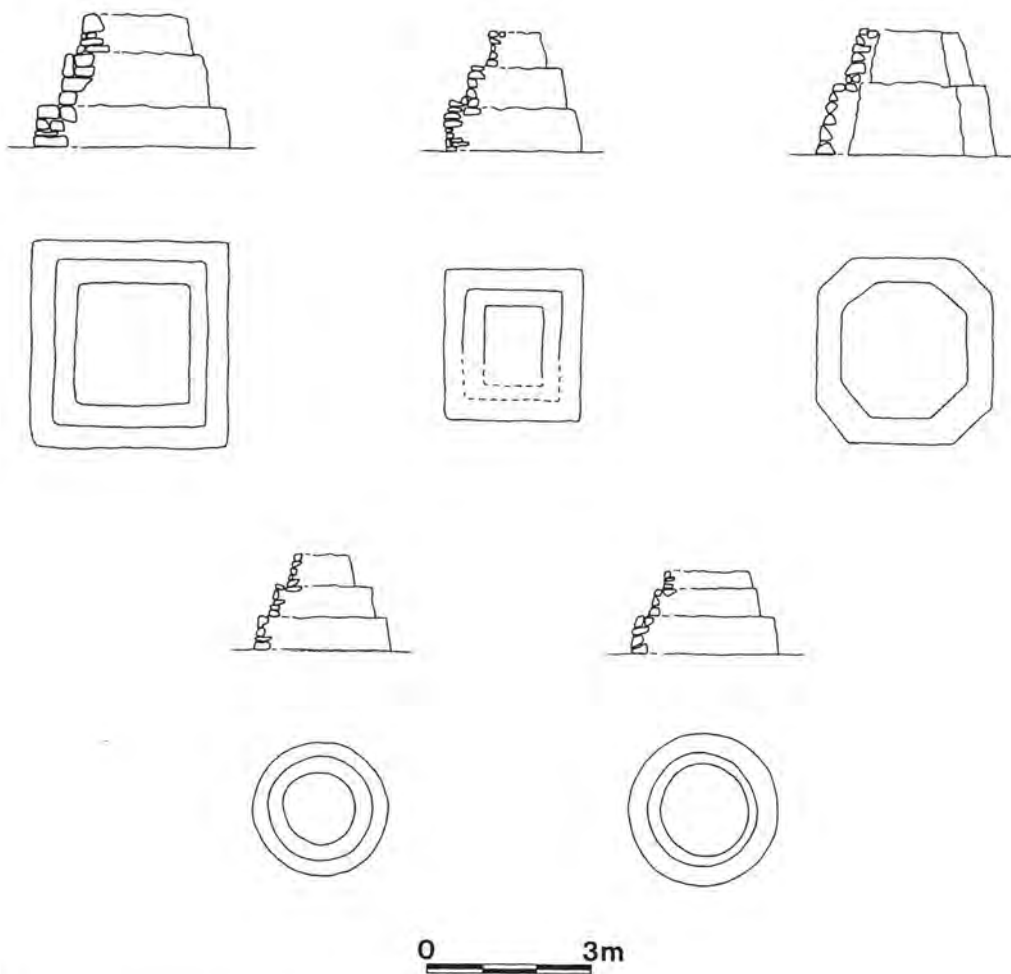


Figure 6.3. TAG001, stepped tombs, typical plans and profiles of tombs.

the case of a tomb with only two steps, it was 1.5 m (Fig. 6.4). All were stone-built, large pieces often being used as quoins to strengthen the corners. CMD noted no evidence for plastering, but during the 2000 survey, some substantial fragments of mud-plaster were found covering the outside of Tomb 8, extending up the face at least 0.40 m high (AF 1, fig. 6.22e). It seems likely that the other tombs had also been originally mud-plastered, and similar mud-plaster has subsequently been noted by the DMP on a stepped tomb in the Waṭwāt area (Mattingly *et al.* 2008, 242–43). This plaster has generally been eroded off the exposed superstructures of the stone tombs on the escarpment but was probably a recurrent feature of monumental tombs. It should be noted that when intact, monumental stepped tombs will have had a very similar appearance whether built in mudbrick in the Waḍī cemeteries or mud-plastered in the escarpment cemeteries. The exceptional examples in the Royal cemeteries (see below GSC030–31) even had a lime-rich plaster.

The stepped tombs were placed over shallow excavated shafts or sub-rectangular chambers, sometimes with stone-lining (average dimensions *c.* 1.2 x 1 m by *c.* 0.60–1 m deep). These were then back-filled, sealed over with large slabs and the monument erected over the top. In most cases



Figure 6.4. Type 5b stepped tombs on the south side of cemetery TAG001 (DMP 2009).

there were signs of robbing activity, with holes dug into the sides or top of the stepped structures. The robbing has a certain uniformity, with a high proportion of the tombs apparently broken into from the east side (Mattingly *et al.* 2009, 117). Their eastern sides have either been demolished by the intruder or have collapsed as a result. Fragments of offering tables and stelae were commonly noted amongst the robbing disturbance and seem to have been generally placed against the eastern face of tombs (Fig. 6.5).

In addition to the monumental stepped tombs the cemetery had several areas of simpler burials.



Figure 6.5. TAG001.T92, type 4 offering table and type 5b stele *in situ* against east face of stepped tomb (DMP 2009).

### Simple Shaft Graves

These consist of 150–200+ units. In an excavated example the skeleton lay *c.*0.45 m below the surface of the ground, in an unlined shaft (type 2a). It is now uncertain whether some of the graves were marked at the surface by stone rings or covered by low stone mounds (types 2b and 2c). Those in Area C had very little surviving sign of stone piles; those in the Area B retained enough material, scattered by robbers, to suggest that they had had some surface marker. CMD recorded just three offering-tables *in situ* by shafts in Area C, but very little trace of stelae, while scattered amongst the Area B graves, by contrast, were many tables and fragments of stele and hands, though none were *in situ*. The shafts in Area B thus appear to be higher status burials than those in Area C. It is noteworthy that the monumental stepped tombs encircled Area B, which might suggest that Area B was the primary core of the cemetery.

### Offering Tables and Stele

Numerous fragments of stelae and offering tables were found. By 2000, most of these had been removed from the site, although a few stone fragments were noted, especially by the monumental tombs, though some also in Area B. Altogether, 43 complete or nearly complete offering tables were found (Fig. 6.6) along with a further eight small fragments and four doubtful objects which could have been parts of tables. The forms of the offering tables show slight individual variations, but all were clearly of a single type (type 4). In size they vary from approximately 0.34 x 0.23 x 0.11 m to 0.62 x 0.41 x 0.18 m.

The majority (26) were rectangular with an elongated trough in front of a series of five small rectangular holes cut into one of the longer raised edges (type 4a). Sometimes, three edges were treated in this way (type 4b), when there were as many as nine (three examples) or 11 holes (six examples) (Figs 6.5–6.6).

Occasionally, the holes were circular (type 4d), or asymmetrically disposed (type 4c) and very rarely the table itself was more sub-circular (type 4f). Only two tables appeared to be without holes. Four were decorated with incised or scored line patterns (type 4e) Two had what was clearly a Libyan text of three letters engraved (Fig. 6.6, T8; Fig. 6.7, T53), while two more had less certain symbols scratched on their edges.

Three tables were apparently *in situ* beside graves in the western group (C). One was set in the sand to the west of the shaft, with the remains of a stele adjacent. A second table was placed to the east of a shaft grave while the position of the third example was not clearcut.

### Stelae ('Hands and Horns')

These stone elements were divided by CMD into two groups: four-fingered 'hands', and two-fingered 'claws' or 'horns'. These corresponded with the 'stele quadridigitata' and 'stele a corno' (or 'stele bicornes') previously noted by Caputo (Pace *et al.* 1951, 408–12). These can now be correlated with FP typology as type 2/4 (hands) and type 5/6 (horns). In all about 17 'hands' and 13 'horns' (or fragments clearly restorable) were found. Four of the type 4 stelae bore Libyan inscriptions, but only one possible fragment of a

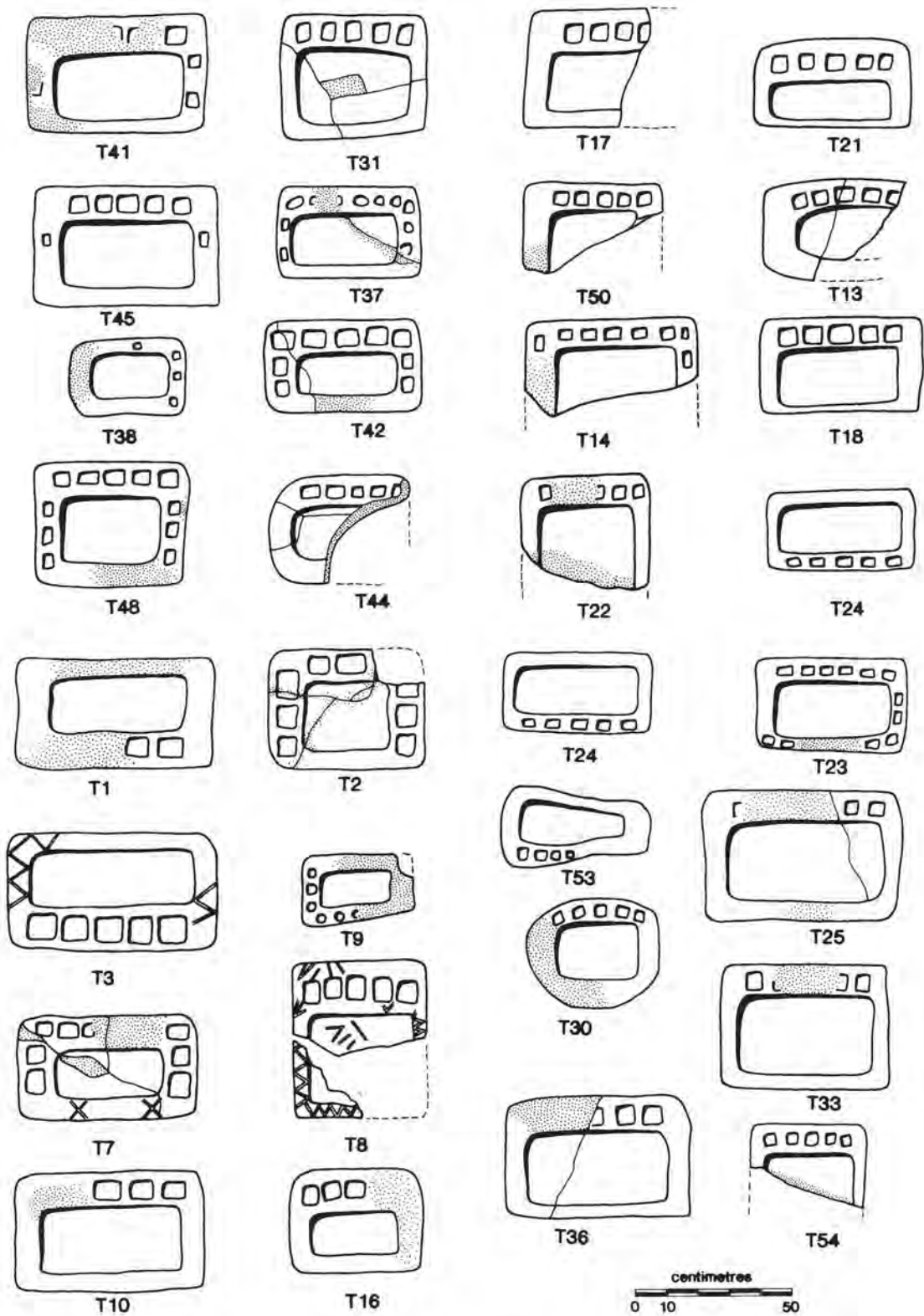


Figure 6.6. TAG001, measured sketches of offering tables (CMD 1959).

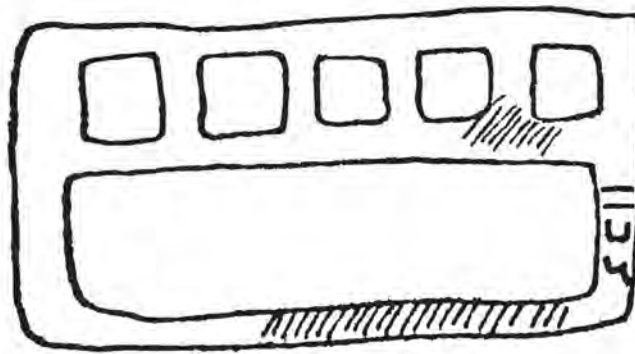


Figure 6.7. Sketch of offering table with inscription, Tomb 53 (CMD 1959).

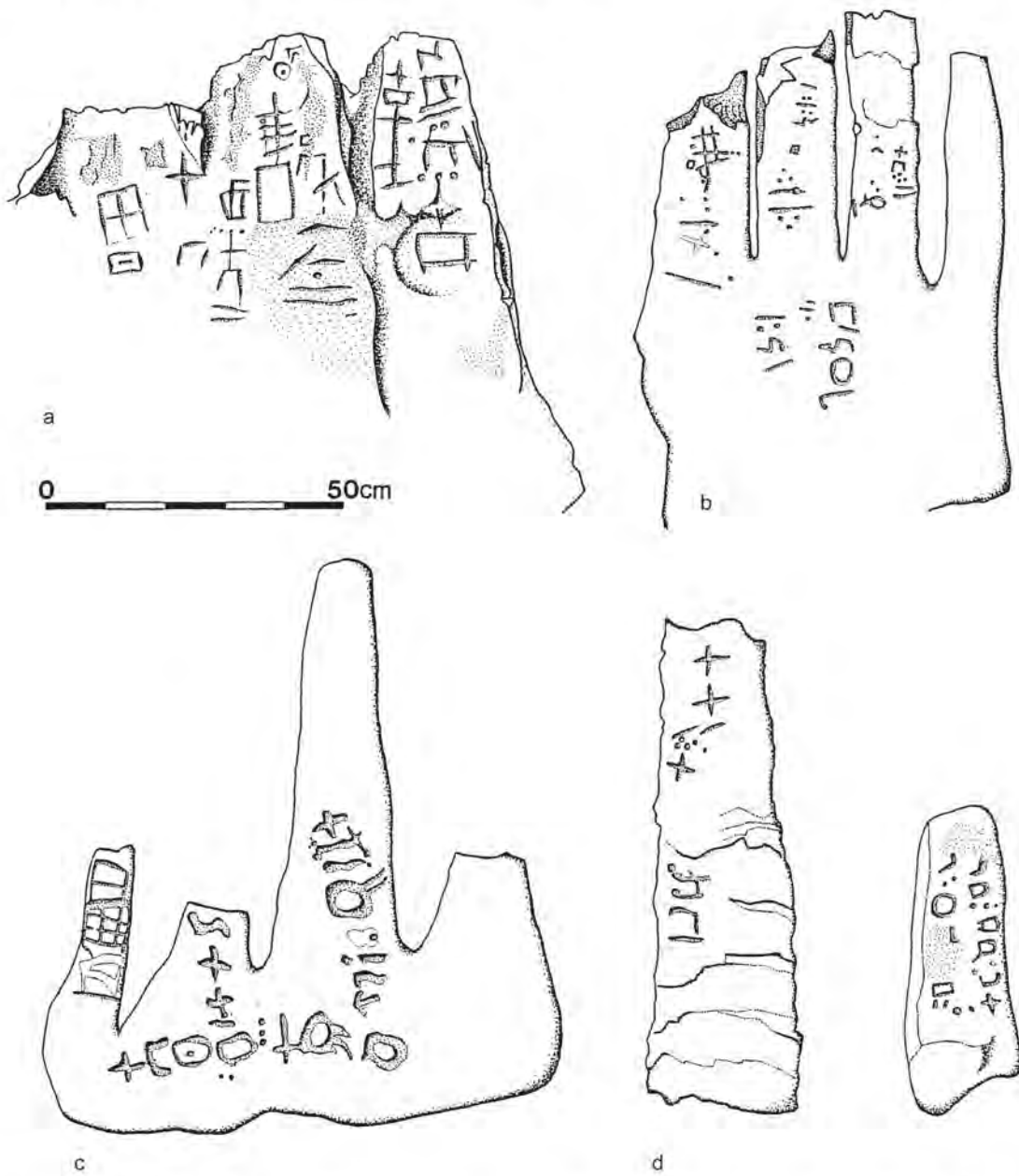


Figure 6.8. Inscribed stelae from TAG001: a) H.59 (Inscription #41); b) H.73 (#42); c) H.116 (#43); d) H.6 and H.42 (#44–45).



Figure 6.9. Inscribed stone, possibly a reused stela, built into south face of T.7 (CMD 1963).

letter was noted on a type 5/6 stela (Fig. 6.8). These inscriptions were published by CMD in 1975 with a small group of other inscribed material from the Wadī (Daniels 1975). It is now recognised that the distinction between the ‘hands’ and ‘horns’ is less clearcut than was suggested by the number of digits or points. It is evident that two-point stela were commonly erected in pairs or were accompanied by two single-point small stelae (type 5), in either case making four points in total and thus conforming to the norm suggested by the type 2/4 ‘hands’ (Mattingly 2003, 206–10).

The ‘hand’ stelae at TAG001 are quite distinctive because of the efforts to separate the individual ‘digits’ one from the other, making these most commonly type 4 (Fig. 6.8a–c), rather than the grooved type 2. Moderately complete fragments of these ranged from 0.45 x 0.60 x 0.08 m to 0.86 x 0.71 x 0.13 m in size. In many cases only the stumps of the digits survived although occasionally where the whole stela had been thrown down at an early date, it either remained intact or the fragments were preserved where they had broken. One ‘hand’ was *in situ* beside an offering table and several

others were still standing in the sand. In the case of these only the stumps of digits protruded, the palms being covered by rubble build up around the tombs, probably due to the robbing and collapse of the superstructure. The presence of inscriptions on the lower parts of two stelae (e.g. Fig. 6.8b–c, #42 and 43) could have been either an original feature added when these were first erected or have been added after the stelae had been moved from their original position. Excavations of additional stelae *in situ* are necessary to resolve this, as at present all the known engraved examples had been displaced.

The ‘horn’ stelae were less well preserved than the ‘hands’. They vary in size, the largest being 68 x 58 x 12 cm. As well as having two points, several of the horns were pincer-shaped (type 6a), which differentiates them from the true ‘stela bicornis’ (type 6b/6c) that Caputo (Pace *et al.* 1951, 300–1, 351) found at GSC030-031 and UAT008–009 (fig. 9, 1–3) or the single, similarly-shaped stela Chabot illustrates (1940, 119, no. 545). One fragment of a horn appeared to be built into the basal platform of a tomb. However, on closer inspection it appeared possible that the portion containing the horn was secondary, added when that tomb was turned into a rough shelter.

Further fragments were found of what may have been free-standing ‘stelae’, forming the side points of type 5 sets. These included 10 substantial fragments and about 60 pieces so small and broken they could have come equally from broken up ‘hands’ or ‘horns’. The single-point stelae vary in size from 0.19 x 0.1 x 0.08 m to 0.73 x 0.25 x 0.1 m. Only two of the larger ones bear traces of Libyan inscriptions which have for the most part been erased (Fig. 6.8d, no. 44–45). The extremely small percentage of engraved stelae indicates that inscribed memorials were not the norm at Tāqallit.

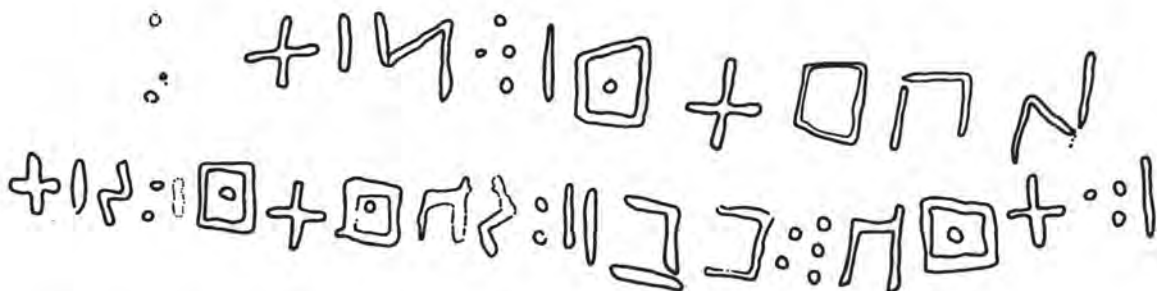


Figure 6.10. Inscription incorporated into T.7



The stumps of several stelae were still in position beside monumental tombs, although none beside simple graves. Generally, the *in situ* examples were set up on the east side of tombs (Fig. 6.5), though occasionally on the west side.

One inscribed block, which may have originally been a stela was built into the south side of T7 but clearly in a reused capacity (Figs 6.9–6.10). As far as could be ascertained that tomb was in its original state, which implies either that its builders were reusing portions of existing, contemporary monuments, or that the stela dated from an earlier era. The most likely explanation is that the stela had originally stood alongside an earlier shaft burial and had been reused (and plastered over) in the stepped tomb.

#### Other Inscribed Stones

CMD recorded three additional inscribed stones. The first was found amongst the monumental tombs towards the northern end of the cemetery. It is a flattish slab 0.40 x 0.28 x 0.09 m, with what might be called a plain vertical cartouche on its face. Within this are two T-shaped symbols (Fig. 6.11a, #48).

As far as Tāqallit is concerned the object is unique. Whether or not it was some form of gravestone is not clear. The other two stones were both natural boulders, inscribed but otherwise undecorated. One was situated amongst the tombs towards the south edge of the cemetery, the other lay in the small stream bed which marks its south-western extremity, beyond the simple graves (Figs 6.11b–c, #46–47). These are similar to other inscriptions found along the escarpment in this area (e.g. at TAG008), which were thought likely to be associated with foggaras.

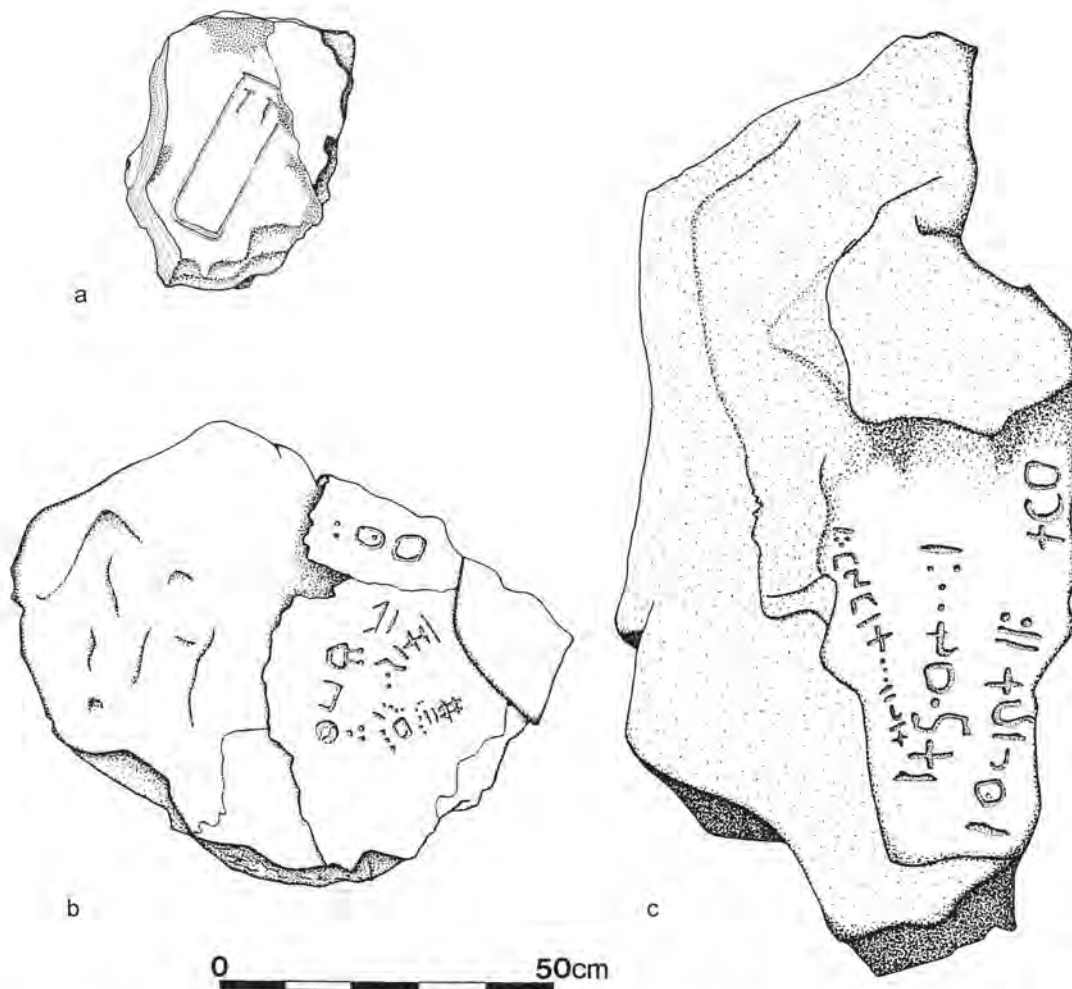


Figure 6.11. Inscribed stones a) Possible stela fragment #48; b) Inscribed boulder #46; Inscribed boulder, #47.

## Excavations

Only three graves were excavated in 1959. All lay in the western zone of shaft burials (Area C), where it was possible to excavate without the labour (and responsibility) of destroying tombs. Few finds were recovered.

### Grave 1

This shaft yielded a few fragments of bone only and had probably been robbed.

### Grave 2

This shaft contained even fewer fragments of bone and had probably been robbed.

### Grave 3

An offering table and stele were still *in situ* by the east side of this grave. The burial had been disturbed prior to excavation, but it was reasonably certain that the body had been in a crouched position, lying on its side. Fragments of the skull were found but none of any size. No pottery was found, the only finds being 65 beads. These were of ostrich eggshell, D: 4–5 mm, 1.5 mm thick. A similarly sized bead, but of light brown polished stone, was found lying beside one of the upstanding tombs on the edge of the western grave area.

## Dating and Tomb Descriptions

Little pottery was collected from the site. Early sherd collections by Caputo and the material noted by CMD and the FP includes material which ranges from possibly 1<sup>st</sup>–6<sup>th</sup> centuries AD (Pace *et al.* 1951, 381–84). The recent DMP work at the site supports the view that the monumental stepped tombs were of Late Garamantian date (Mattingly *et al.* 2009, 121–22).

CMD's descriptions of individual tombs are difficult to correlate with the more recent overall survey or with the current state of preservation. During the 2000 season, the site was resurveyed and some additional recording made of the best-preserved south-east area of monumental tombs.

**1.1:** an amorphous stone mound with rounded corners, 2.5 x 2 x 1.07 m. **1.2:** square superstructure, probably stepped at c.1 m high, robbed. Cist grave visible below east side. **1.3:** rectangular stepped superstructure c.3 x 2.5 x 1.5 m. Robbed from east side. **1.4:** rectangular stepped superstructure, c.3.7 x 2.65 x 1.65 m. Robbed from east side revealing cist below. **1.5:** heavily robbed,

possible Libyan inscription on north-west corner. **1.6:** sub-circular tomb, heavily robbed, possibly attached to Tomb 1.5. On the north side of these tombs was an excavated pit. **1.7:** rectangular stepped tomb 2.93 x 2.8 x 2.1 m. Libyan inscription (reused?) built in to south side of tomb (Figs 6.9–6.10). **1.8:** near square, 2.9 x 3 x 1.75 m high. Stepped at 0.85 m. Robbed from east side. Fragments of plastering 0.40 m high survive on outside face at north-east corner. **1.9:** near square, 2.9 x 2.7 m and 1.7 m high. Stepped at 0.85 m, robbed from east. **1.10:** oval cairn, some facing intact on south side, possible addition, robbed, on east side. **1.11:** fragments of sub-circular cairn, with rounded south-west side. **1.12:** large mass of bulldozed rubble, with possible elements of cairn surviving on south side. **1.13:** heavily robbed, c.2.3 x 2 m. Part of internal cist visible with slab roof c.0.70 m above ground surface. **1.14:** corner of superstructure preserved at edge of bulldozing. **1.15:** near square stepped structure, 2.9 x 3 x 2.5 m. Squared corners. **1.16:** Stepped rectangular tomb, 2.96 x 2.4 x 2 m. **1.17:** small cairn. **1.18:** near square stepped tomb, 2.9 x 2.8 x 1.1 m. **1.19:** rectangular stepped tomb, only south-west corner survives. **1.20:** rectangular stepped 2.9 x 2.6 x 1.3 m. Robbed from east, large slab over cist visible. **1.21:** superstructure robbed, sandy pit over cist. **1.22:** oval stepped, 2.2 x 2.06 x 1.3 m, robbed from north. **1.23:** oval stepped structure 2.5 x 2.3 x 1.3 m; covering slab of cist visible at level of first step, c.0.50 m above ground. **1.24:** cist of large blocks, superstructure removed. **1.25:** remnants of cist, no superstructure. **1.26–1.28:** 3 cist graves with no superstructures. **1.29:** north side of sub-circular tomb, c.1 m high. **1.30:** remnants of cist grave on north side of T1.32. **1.31:** remnants of cist grave on north side of T1.32. **1.32:** robbed rectangular stepped tomb 2.4 x >1.7 x 1.1 m. **1.33–40:** cist graves or small mounds with no significant superstructures.



Figure 6.12. Excavation underway at ELH001 (CMD 1959?).

## AL-ḤAṬĪYA (ELH001)

A short distance to the west of *qasr* ELH 006 and settlement ELH005, CMD was the first to recognise a cemetery of pyramid tombs. CMD's original recording identified *c.*30 pyramid tombs, of which three had upstanding superstructures, the rest had been reduced to low mounds of crumbled mudbrick (Mattingly 2007, 75 for location plan, 76–77 for gazetteer entry). Erosion of their bases indicated the absence of stone foundations, and this was confirmed during test excavation by CMD of one grave in the winter of 1962–1963.

Before digging began it consisted of a low mound of mudbrick 4.1 m in diameter. The actual burial shaft was just over 1 m square, encased by the remains of a square mudbrick wall 60–70 cm thick (Fig. 6.12). The excavation was abandoned at a depth of 1.2 m, however, as no trace of bone or pottery had materialised, and the shaft was then too narrow for deeper digging. Excavations by the DMP at a similar cemetery a few km away on the west side of the Tāqallit promontory (TAG012) suggests that the base of the funerary chambers below the pyramids in such cemeteries can be between 1.5–1.8 m deep (Mattingly *et al.* 2009, 111).

## ZINKEKRĀ

### Cemetery ZIN013

In 1967 CMD put in two main trenches at ZIN002.013 to investigate settlement structures and deposits on either side of the prominent terrace wall that ran along the lower northern slope of the Zinkekrā hill (see Fig. 1.1 for location). The easternmost, called simply 'the East Trench' extended for some 6 m to the north of the terrace wall (Figs 1.44–1.45). During the course of this excavation three skeletons in slab-lined type 2b shaft graves were found, evidently part of a cemetery on that side of the wall. CMD did not explicitly mention these burials in his 1968 report on the site, limiting himself to indicating the existence of burials with the letter 'b' (Daniels 1968a, 123, fig. 5, leaving the more detailed drawings of the graves on p. 124, fig. 6 unexplained). Because of the collapse of the terrace wall across the top of the graves, they had been protected from subsequent tomb robbing. He subsequently returned to the site in April 1973, expanding the excavation area where he had located the burials with the hope of accessing a larger sample of preserved burials to augment the sample of skeletal material. However, it appears that only four additional shaft burials were located (though one of these contained a

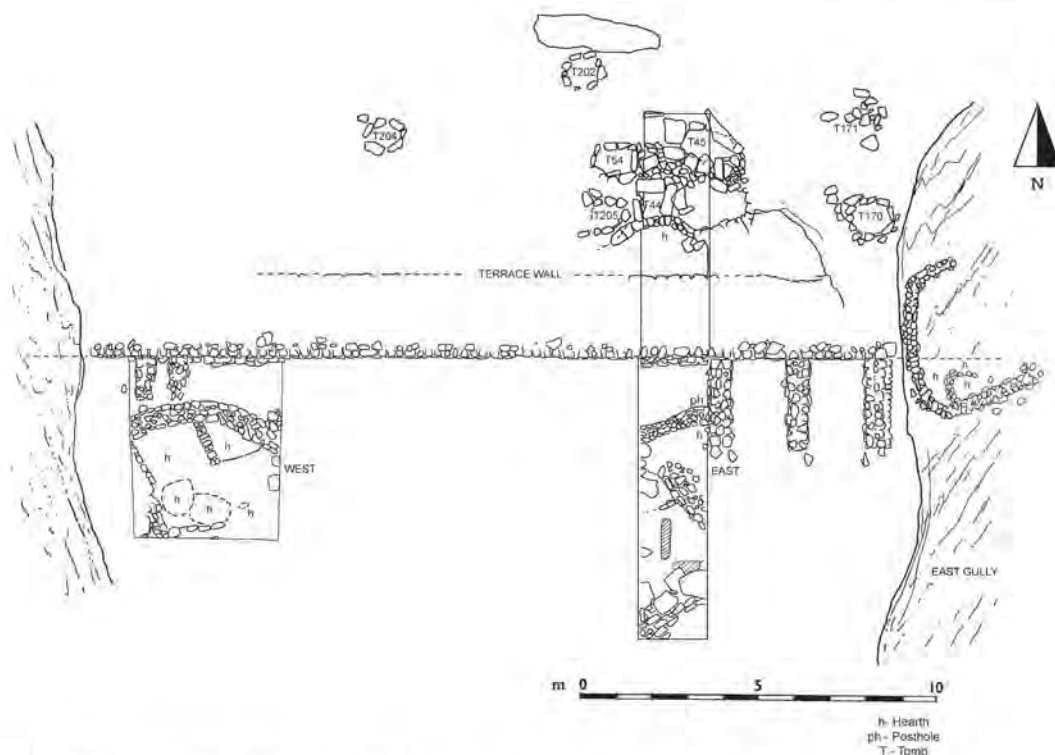


Figure 6.13. Plan of excavated burials at ZIN002.013.

double or treble inhumation), with much of the excavation involving removal of spoil from the earlier excavations and elucidating the structural sequence of a series of buildings immediately north of the terrace wall (Fig. 6.13).

The date of deposition of the skeletons is difficult to assess. They were placed immediately to the north of wall 61, which, according to the AMS dates and the stratigraphic sequence dates to the 7<sup>th</sup> century BC (see above, Chapter 1). However, we can only be sure of the stratigraphic sequence to the south of wall 61. We know that the burials were cut into the latest occupation deposits on the north side of the terrace and subsequently were covered by the collapse of the terrace wall, but since we do not know precise dates for these events, this does not narrow the possibilities significantly. One scenario is that these burials relate to the extensive Classic Garamantian cemeteries that were created along the fringes of the earlier settlement area in the early centuries AD. However, an earlier date, more nearly contemporaneous with the last phases of the settlement in the latter centuries BC is perhaps made more likely by the limited range of grave goods encountered here.

**Tomb number: ZIN002.013 Burial 44**

**Date:** 2<sup>nd</sup> – 1<sup>st</sup> century BC?

**Tomb type:** 2b, lined shaft burial.

**Construction details:** This was a roughly oval shallow shaft burial c.1.4 m (north-south x 1.10 east west, with a slab lining and interior dimensions of c.0.75 m diameter (Fig. 6.14). The shaft had a sandy fill and traces of matting were noted around the edges of the base of the shaft. There were a few fragments of textile and many fragments of leather about the bones (representing a leather shroud?). The head of the corpse had been placed on a wooden sleeping headrest, of which only the base survived. Four beads were recovered, three of them from the chest area.

**Skeleton:** The skeleton was a crouched inhumation lying on its right side with its head to the north, facing west, and with its hands in front of its face (Fig. 6.15).

**Contents**

A few sherds of not closely diagnostic handmade ware (Zinkekrā ware) from the grave fill.

Wooden headrest (tripartite type)

Four beads: i) barrel shaped ultramarine glass bead; ii) ring bead of dark ultramarine glass; iii) circular bead of amethyst translucent glass; iv) ring bead of amethyst translucent glass.

Leather. Matting.

Single carbonised date stone.



Figure 6.14. Shaft burial ZIN013 44, looking east (CMD 1967).



Figure 6.15. Shaft burial ZIN013 44, detail of skeleton, north to top (CMD 1967).

**Comments/discussion**

This is a simple shaft burial, with contents that reflect the furnishing of the grave and the ritual deposition of the corpse, rather than the material possessions of the deceased. The grave was lined with straw or reed matting and the body wrapped in a leather shroud had been carefully positioned on a wooden head rest. The only personal items consisted of the four beads. As there was no indication the burial had been robbed, there is no reason to believe that there had been significantly more beads present (though a few could have been missed for want of sieving). The pottery sherds should date to the 1<sup>st</sup> millennium BC, but are not closely diagnostic and could relate to the earlier occupation levels into which the grave was dug. However, the glass beads point towards the latter centuries BC. The inclusion of a date could be accidental, though a similar occurrence of a single date stone has been noted in at least two burials excavated by the DMP and suggests this could be part of the burial ritual (Mattingly *et al.* 2009, 118–19, TAG006.T1 and T2).



Figure 6.16. Shaft burial ZIN013 45, looking east (CMD 1967).



Figure 6.18. Shaft burial ZIN013 45, detail of skeleton, looking east (CMD 1967).



Figure 6.17. Wooden headrest from ZIN013 45: a) Side view; b) View of decorated base from above (with upper element removed); c) View of decorated underside of upper element of head rest (CMD 1967).

**Tomb number: ZIN002.013 Burial 45**

**Date:** 2<sup>nd</sup> – 1<sup>st</sup> century BC?

**Tomb type:** 2b, lined shaft burial.

**Construction details:** This was an elongated oval shaft, delimited by large boulders and vertical set slabs (Fig. 6.16). Overall external dimensions were 2 m east-west x 1.75 m north-south, internally 1.4 x 0.75 m. Several fragments of leather were reported from the grave, especially from between the legs of the skeleton. Reed matting was also found, tied together with string. It was in a very fragmentary state and could not be moved without disintegrating. It appears that the matting originally lined the grave. The head was supported by a wooden sleeping support – better preserved than that in 44. The headrest consisted of an upright stem, a horizontal base bar and two upward curving bars to support the neck at the top (Fig. 6.17). The bodies appear to have been placed carefully in the grave with the neck resting on the head rest.

**Skeleton:** This skeleton was lying on its back in a crouched position, aligned east-west and head to east, with the knees drawn up and hands clasped in front of its face (Fig. 6.18).

**Contents**

Headrest (tripartite type).

Leather.

Matting.

**Comments/discussion**

This is another simple shaft burial, with very limited material contents. The grave was lined with straw or reed matting and the deceased provided with a probable leather shroud and a wooden headrest.

**Tomb number: ZIN002.013 Burial 54**

**Date:** 2<sup>nd</sup> - 1<sup>st</sup> century BC?

**Tomb type:** 2b, lined shaft burial.

**Construction details:** This skeleton was found in a shaft like 44 and 45, 1.3 east-west x 1.3 m north-south externally, c.1 x 0.65 m internally. This burial had not survived as well as the previous two. The shaft was lined with slabs, but there was no capstone to the cist. Many boulders had fallen (or been deposited) into the grave. Sand had blown in over these rocks. The head of the deceased was resting on a wooden headrest. Small fragments of textile were found throughout the grave, both over and underlying the skeleton. Matting survived below the body and to a height of c.0.13 m around the walls of the cist.

**Skeleton:** The skeleton lay beneath the rocks, with head to west, facing south. It lay on its right side, tightly crouched with the left arm bent backwards. The right knee was close to the mandible and cradled by the right arm. Parts of the skeleton had fallen away, possibly caused by decomposition following burial in an unusually tight crouched position, and exacerbated by the rock falls. The skull had been crushed by the boulders.

**Contents**

Wooden headrest.

Textiles.

Matting.

**Comments/discussion**

This third simple shaft burial formed a close group with 44 and 45, with very similar contents – a wooden headrest, some textile (perhaps a shroud) and matting lining the shaft.

**Tomb number: ZIN002.013 Burial 170**

**Date:** 2<sup>nd</sup> – 1<sup>st</sup> century BC?

**Tomb type:** 2b, lined shaft burial.

**Construction details:** A stone-lined shallow shaft at the east end of ZIN002.013, north of the terrace wall and close to the west side of the gully wash. The cist was oval, c.1.20 x 0.78 m (externally) and 1.06 x 0.60 m (internally), with its longer axis running south-west to north-east. The cist filling was of fairly clean orange-brown sand. The body had been wrapped in coarse matting which extended up the west side of the cist for about 0.17 m. A grey mud-pan surrounded the skeleton, interpreted as the remains of decomposition processes.

There were maggot larvae cases behind the head and spine. Textile fragments, similar in appearance to those in graves 54, 202 and 209 were found on and beneath the body. A small wooden headrest was also found. It crumbled on removal. Part of a single bead was also recovered.

**Skeleton:** The skeleton was of a juvenile, crouched on its left side with the head to the east, facing south. The bones were in a good state of preservation, except for the skull which was broken.

**Contents**

Wooden headrest, simple block type (cf. 209 below), 14.5 cm long, 8 cm deep by 6 cm high.

Bead: single fragmentary turquoise blue glass bead.

Textile.

Matting.

**Comments/discussion**

The burial is of similar type to the previous group of three, with similar limited contents, reflecting a ritual that focused on the grave furnishing. Again, the absence of pottery is telling.

**Tomb number: ZIN002.013 Burial 171**

**Date:** 2<sup>nd</sup> – 1<sup>st</sup> century BC?

**Tomb type:** 2a, simple shaft burial.

**Construction details:** This burial was found at the north-eastern end of ZIN002.013, north of the terrace wall. It was partially destroyed by the East Gully. The burial had been dug into an occupation layer (167) and so must post-date that layer. The grave was oval and was not delimited by any stones (that is, this was a type 2a shaft burial). The north-eastern section of the grave had been washed away and the feet had been lost. A blue (glass?) bead was found between the skull and the right knee. There were traces of some heavily folded organic material between the pelvis and the knees, probably leather.

**Skeleton:** The skeleton was a female lying crouched on her left-hand-side with her head to the west, facing north. The right arm was wrapped around the head and the skull lay on the left hand.

**Contents**

Bead: single blueish grey opaque glass ring bead.

Leather.

**Comments/discussion**

The burial is of even simpler type than the others in this cemetery area, with similar limited contents, reflecting a ritual that focused on the grave furnishing. Again, the absence of pottery is telling. It is not clear whether the material under the legs was a preserved remnant of a leather shroud or a separate garment folded and placed beneath the body. The bead is unlikely to represent the only recovery from an *in situ* necklace and looks like more like a bead worn as an amulet.

**Tomb number: ZIN002.013 Burial 202 and 209****Date:** 2<sup>nd</sup> – 1<sup>st</sup> century BC?**Tomb type:** 2b, lined shaft burial.

**Construction details:** **209** was the primary burial in the shaft beneath the secondary burial **202**. The body from pelvis to neck was covered by layers of heavy coarse matting, laid fold on fold up to 7 cm thick in parts. Several large stones had been laid on the feet and legs of the body. A further single layer of matting was found to line the cist, extending under the skeleton and up the sides of the grave to a height of c.25 cm. The left side of the skull was supported by a headrest, of the simple block type, placed on the matting on the tomb floor. It was in a very fragile condition and crumbled when an attempt was made to move it. Several small fragments of textiles were preserved under the skull and feet and over the matting. These were very similar in character to those found in burial **202** above. One small ostrich eggshell bead was found by the right cheek. Three small wooden vessels, one in good condition, were also found, to the west of the lower arms.

**202** was a secondary burial inserted into the top of the shaft originally occupied by burial **209**. The two skeletons were very close together, so close in fact that the highest point of the head of burial **209** was at a fractionally higher level than the lowest point of the higher burial. The shaft appears to have been enlarged vertically in the south-east corner. These bones were very close to the surface of the cist and, with the exception of the skull, in good condition. The fill of the shaft at this level was clean yellow sand. The skull seems to have been supported by a small mound of sand in lieu of a headrest. The body was cradled in a plain-weave textile fabric, which was in a good state of repair and had been heavily folded behind the spine and in front of the hands.. The textile behind the head had preserved the short, straight, dark brown hair of the scalp. A quantity of carbonised date-stones were found between the hands and the knees.

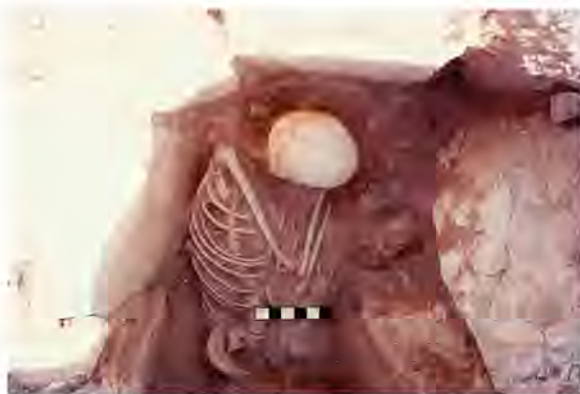


Figure 6.19. Shaft burial ZIN013 209, detail of skeleton, looking south (CMD 1973).

**Skeleton:** i) The primary skeleton **209** was in good condition, with the exception of feet and lower left leg, which had been crushed by the stones. It was a female, lying on her left side with her head to the south, facing westwards (Fig. 6.19). The hands were below and in front of the face.

ii) The secondary burial **202** was of a very large male, in a crouched position lying on his left side with his head to the north, facing east. The hands were in front of the face.

iii) Some bones were recovered from the surface of the cist, probably unrelated to burial **202**, and appeared to be of a child, perhaps a tertiary insert.

**Contents***With 209*

Wooden bowl.

Two wooden cups.

Wooden headrest of simple block type, c.18 x 4.5 x 10 cm (Fig. 6.20).

Bead: a single small ostrich eggshell bead (1 x 3.5 mm).

Textile.

Matting.

*With 202*

Textile.

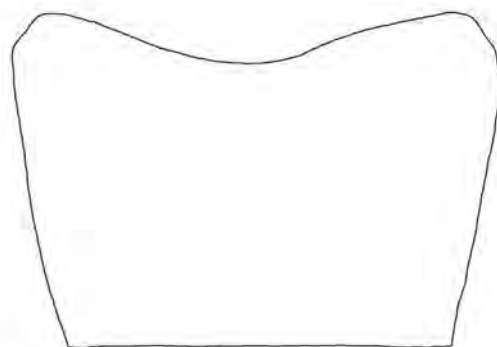
Dates.

**Comments/discussion**

This burial provided both the most complex sequence of funerary features and what was relatively speaking the

ZIN 013 209 Headrest

Side view



Top view



0 10 cm

Figure 6.20. Block-type wooden headrest from ZIN013 209.

richest assemblage of artefacts. The primary burial was similar to others in the group with indications of a textile shroud, matting and a wooden headrest, but with the addition of a number of personal artefacts in the grave – three wooden vessels and an ostrich eggshell bead. The absence of pottery vessels and the inclusion of a solitary bead rather than a necklace is noteworthy. The secondary burial of an extremely robust male was much more poorly furnished, with simply traces of textile (a shroud?) and some carbonised dates. The possible third burial was not recognised as articulated when excavated, but was at the same level as burial 202 and may well have been a child with an agnate relationship to the robust man who died contemporaneously. Other cases of adult and child burials in a single grave have been noted in the DMP work.

**Tomb number: ZIN002.013 Burial 204**

**Date:** 2<sup>nd</sup>–1<sup>st</sup> century BC?

**Tomb type:** 2b, lined shaft burial.

**Construction details:** At the extreme west end of ZIN002.013, north of the terrace wall, an area of flat stones was investigated. It was found that these were merely tumble, as they overlay an occupation layer. Cut into this occupation layer, however, a shaft grave



Figure 6.21. Shaft burial ZIN013 204, detail of skeleton, looking west (CMD 1973).

was found. It had been built in cist-fashion from rocks, but was not formed of large slabs like the graves 44, 45 and 54 slightly further east. Instead it appeared to have been built from smaller rocks, although there is the possibility that an original tomb construction had been subsequently disturbed. The body had been laid on coarse matting, and it appeared that the matting had also originally at least partially covered the body. The matting was coarse but well made, the tying elements being two-ply string interwoven at regular intervals of 3 cm.

**Skeleton:** The skeleton was lying on its right hand-side with the head to the west and facing south (Fig. 6.21). It was crouched with the hands in front of its face. The skeleton was female, and the bones were in good condition.

**Contents**

Matting.

**Comments/discussion**

This body appears to have been simply wrapped in matting and placed in a shallow, lined shaft, with no other grave goods.

**Cemeteries ZIN109, ZIN280, ZIN286**

A series of cemeteries on the south side of the Zinkekrā hill was also investigated, mainly by survey methods, but evidently with some clearance and cleaning of tombs with attached stelae and offering tables (AF 2, figs 9.8, 9.14, 9.15). The records of this work are not very detailed, but it appears that at least one skull was recovered from a tomb in the Classic Garamantian cemetery at ZIN109.

**Tomb number: ZIN003.109 Burial 3**

**Date:** 1<sup>st</sup>–4<sup>th</sup> c. AD

**Tomb type:** Probably built tomb (4b or 5b), damaged by robbing.

**Stele:** Type 2a

**Offering table:** 2d (mix of circular and rectangular compartments)

**Construction details:** The tomb appears to have had a built outer wall, but the superstructure had been destroyed by robbers. The sub-rectangular shape and presence of offering table and stele on east side, suggests that it may have been a stepped monument originally, perhaps type 5b. Clearance of the exterior of the tomb exposed the offering table and stele fully (see Mattingly 2007, 96, fig. 9.8 for a photo), while further clearance inside the tomb revealed the skull of a body, which appears to have been *in situ* in the sketch plan.

**Skeleton:** The skeleton was lying on its right-hand side



with the head to the south and facing east. It is not clear whether other elements of the skeleton were present in addition to the skull.

#### Contents

There is no record of any contents, but it appears that excavation of the burial was not complete.

#### Comments/discussion

The stele and offering table type cannot be more closely dated than within the bracket 1<sup>st</sup> – 4<sup>th</sup> century AD.

### Discussion of the Zinkekrā burials

The main group of burials recorded here (ZIN013) were all in type 2a unlined or type 2b lined shafts. The lack of imported goods from the Roman world suggests a date prior to the 1<sup>st</sup> century AD, though structurally they share many features with Classic Garamantian shaft burials. The lining of burials with matting and the wrapping of the corpse in a leather or textile shroud have also been paralleled in the DMP work in cemeteries of the latter centuries BC and early centuries AD (Mattingly *et al.* 2007, 138–39, 144). The inclusion of headrests is also attested (though rare) in other Garamantian graves (Mattingly *et al.* 2007, 138, 148). The near ubiquity of headrests in the ZIN013 group is a distinctive and unusual feature, again perhaps indicative of date.

Since all the burials appear to form part of a contemporaneous cemetery, following a single burial tradition, the lack of consistency in burial orientation is of some interest (Table 6.1). Bodies were variously laid on their right or left sides, and in one case on its back (in that case possibly in order to fit the deceased into a rather narrow grave). The sample size is small, of course, but nor is there any discernible pattern in the direction in which the head was laid or in which the skull faced. Overall, there seems to have been a slight preference for east-west aligned burials and for the body to be placed with head facing south. The use of headrests in these burials gave a number of the skulls a rather downward looking appearance, so the ‘head facing’ direction represents the notional direction faced rather than the actual one in every case.

Finally the near absence of pottery and the presence of wooden vessels might suggest a date before pottery became well established as grave goods. Taking into account all these points, and the fact that the shafts were cut directly into the latest occupation deposits on the north slopes of Zinkekrā, with no intervening hillwash layers, suggests that this cemetery may have dated to the 2<sup>nd</sup> or more likely 1<sup>st</sup> century BC.

Table 6.1. Summary of burial orientation at ZIN013.

Burial number	L or R side	Orientation (Head to)	Head facing	Sex
ZIN013 44	R	N-S (N)	W	Female
ZIN013 45	On back	E-W (E)	Up	Male
ZIN013 54	R	E-W (W)	S	Female?
ZIN013 170	L	E-W (E)	S	Male?
ZIN013 171	L	E-W (W)	N	Female
ZIN013 202	L	N-S (N)	E	Male
ZIN013 204	R	E-W (W)	S	Female
ZIN013 209	L	N-S (S)	W	Female

### THE ROYAL CEMETERY, JARMA ESCARPMENT (GSC030–031)

The so-called Royal Cemetery lies due south of modern Jarma and is now bisected by the modern tarmac road up the escarpment, heading towards the Barjūj agricultural project and the ENI oil well (Elephant Field) on the Massak (Fig. 6.22). The cemetery comprises two main groups of tombs, GSC030 on the west side of the road is a south-north linear arrangement of massive type 5b rectangular stepped tombs. This has often been referred to since Ayoub's time as the Kings'

cemetery (Ayoub 1967a/b). On the other side of the modern road embankment, though originally laid out across level ground *c.*100 m east of the line of GSC030, was a second larger group of tombs (GSC031), again predominantly the type 5b rectangular stepped form (or *mastaba*). Following Ayoub again, this group is often referred to as the Queens' Cemetery. Although there are some south-north linear elements in the western part of GSC031, suggestive of an initial scheme of two parallel lines of tombs, the subsequent development of GSC031 towards the north-east appears much more haphazard and the assumed

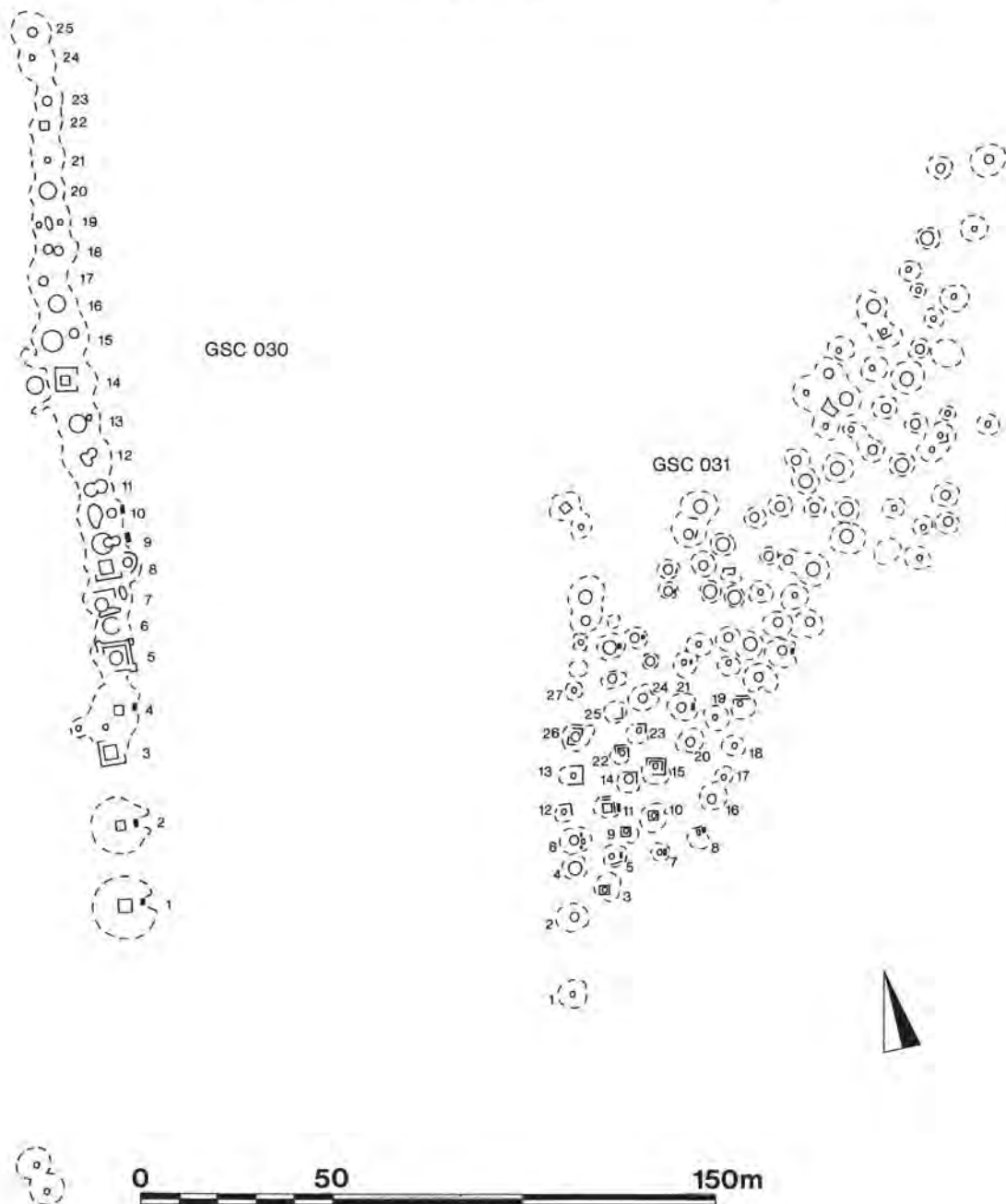


Figure 6.22. The so-called Royal Cemetery, GSC030–031.

primary south-north line of tombs that marked the western edge of GSC031 was not extended as far north as the line of GSC030.

It must be stated at the outset that there is no clear proof that either cemetery was 'Royal', or that Kings/Men were interred in west cemetery and Queens/Women in the east cemetery. Nonetheless, the stepped monuments in GSC030 are by far the largest yet recorded in Fazzān, and some of the larger examples in GSC031 also exceed

other known examples. Given the proximity to Old Jarma, the Garamantian capital, it is thus a reasonable hypothesis that the tombs housed some of the most important people in Garamantian society. Despite Ayoub's attempt to interpret them as representing a linear dynastic series running from the 1<sup>st</sup> century AD onwards (1967b), there is nothing to support his early origin for the series and all the excavated tombs are unequivocally Late Garamantian (4<sup>th</sup> – 6<sup>th</sup> centuries AD).



Figure 6.23. Finds from GSC030.T1 (from Pace et al. 1951, colour plate III).

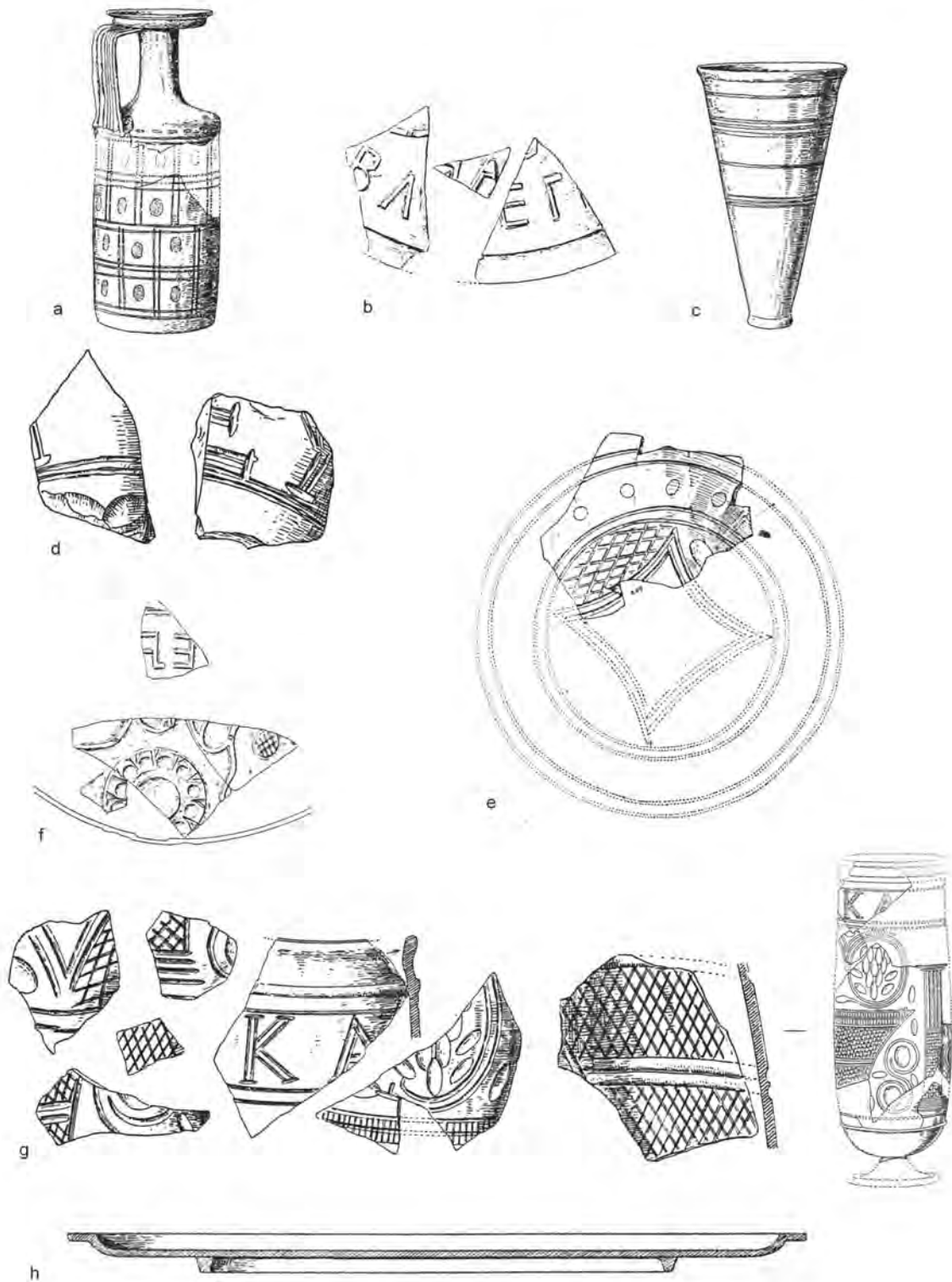


Figure 6.24. Glass fragments from a)–b) GSC030.T1; c) GSC030.T2; d)–g) GSC030.T3 (from Pace et al. 1951, figs 85, 88, 95, 101–104).

Pottery from Tomb 5 suggests a date in the first half of the 4<sup>th</sup> century AD. The latest material, from Tomb 14, may date as late as the early 6<sup>th</sup> century AD. Material recovered by Caputo also appears to be of broadly 4<sup>th</sup>- to 5<sup>th</sup>-century date (Fontana 1995; see also Chapter 8 below for discussion of the glassware).

The two sites have inevitably attracted the attention of tomb robbers and all the major monuments in GSC030 are obviously broken into through the top, with large spoil mounds piled around them disguising the original form of the tombs. They have also been previously explored by several archaeologists. Caputo excavated the three most southerly tombs of GSC030.T1–T3 (his *Necropoli monumentale*) in 1934 (Pace *et al.* 1951, 292–320), and a further five were cleared by Ayoub in 1962–63 (tombs GSC030.T4, T5, T14, T20, T25). In December 1962, while Ayoub's workmen were working at the site, CMD visited and it was arranged for him to complete the excavation of GSC030.T5. No record of his excavation of this tomb has previously been published and the notes in the archive are fairly brief. However, in view of the importance of the site, it was felt worth attempting a clear account here.

Excavation and surface survey suggest that most of the tombs in this cemetery had type 5b rectangular/square stepped superstructures sealing large rectangular and circular/oval chambers with corbelled roofs (Pace 1935, 169). There is clear evidence that these large tombs were normally accompanied on the east side by massive offering tables and stelae (again the largest examples yet recorded anywhere in Fazzān). Many of the surviving elements of stele and offering tables were removed from the site during the 1960s to Sabhā Museum for safe-keeping (now returned to Jarma Museum, Ruprechtsberger 1997, 75). Careful comparison with the published accounts of Ayoub and Caputo and CMD's notes (where GSC030 is generally labelled 'ROY' and GSC031 'RO2') allows us to identify some elements of the funerary furniture with specific tombs.

### Tombs and Contents in GSC030

The following information can be reconstructed on the burials excavated by Ayoub, Caputo and CMD.

**30.1:** Excavated by Caputo (Pace *et al.* 1951, 292–300). Near square, flat-topped stepped tomb (5b), exterior white plastered (exterior dimension c.6.30 (east-west), interior chamber 3.07 x 3.07 m square. The step was about 0.60 m wide, but height of step and tomb unclear). Against the east exterior face was a low platform 2.15 x 0.32 m – presumably the base for two pairs of red painted stone type 6c stelae, fragments of which were found close by. There was no sign of an offering table, but one had presumably stood in front and below the stelae platform. The tomb had been heavily robbed after a hole was dug through its vault. Caputo noted fragments of skeleton disturbed by ancient robbing and recovered quite a few finds as follows:

Fragments of 2 lamps.

At least 6 glass vessels, including: a bottle with circular facet cuts in the centre of squares defined by a grid of vertical and horizontal lines; a cup and conical beaker decorated with grape clusters; several fragments with relief lettering – see discussion in Chapter 8 below (Figs 6.23a–b, 6.24a–b).

A small rubber.

2 handmade incense burners HM 336 (Fig. 6.23c).

By 1977, the stelae had been dumped into the tomb chamber. Amphorae sherds were noted in area.

A 4<sup>th</sup>–5<sup>th</sup>-century AD date seems likely.

**30.2:** Also excavated by Caputo (Pace *et al.* 1951, 300–306). This was another type 5b rectangular stepped stone superstructure (external dimensions not exposed, but can be estimated as c.7.20 m sq, internal chamber was c.3.4 x 3.6 m. Against east face of tomb were two red painted type 6c stelae (making 4 points total). Caputo noted fragments of skeleton disturbed by ancient robbing and recovered finds as follows:

Parts of 2 amphorae and an amphora bung.

A coarseware jug or flagon.

Fragments of handmade incense burners .

A lamp.

A conical glass beaker/lamp (Fig. 6.24c).

3 stone and 4 silver beads.

A triangular small ivory 'comb', with perforation in narrow end and row of 13 'teeth' on lower edge. Grindstones.

Fragments of basketry.

A 4<sup>th</sup>–5<sup>th</sup>-century AD date seems likely.



Figure 6.25. Finds from GSC030.T3: a) TRS Hayes form 2 (H24); b) TRS Hayes form 2 (H26) (FP 2002).

**30.3:** Also excavated by Caputo (Pace *et al.* 1951, 306–19). This was another type 5b large rectangular stepped superstructure 7.4 (east-west) x 6.8 m (north-south), with lower step 1.12 m high, upper surviving to 0.50 m high. The robbed chamber was *c.* 4.12 x 3.30 m, with maximum preserved depth to sandy fill *c.* 1.90 m. Incomplete red-painted ‘horns’ and large offering table 1.6 x 0.73 x 0.39 m to east of tomb. Tomb heavily robbed and Caputo recovered finds as follows:

Fragments of at least 2 amphorae.

5 TRS bowls (2 further TRS bowls, Hayes form 2 – H24, H26 – were recovered by Ayoub (1967a, 13) when cleaning this tomb (Fig. 6.25a–b).

At least 6 fine glass vessels, including incised and facet cut decoration (Fig. 6.24g–h).

A triangular small ivory ‘comb’ similar to that from Tomb 30.2, with perforation in narrow end and row of 8 ‘teeth’ on lower edge.

5 stone beads, including some probably carnelian.

Fragments of textiles (Fig. 6.23d).

A 4<sup>th</sup>–5<sup>th</sup>-century AD date seems likely.

**30.4:** Excavated by Ayoub in 1961. Type 5b, near square stepped stone superstructure with white plastered surfaces, external dimensions estimated at *c.* 7.25 m square, with squarish internal chamber *c.* 2.65 x 2.65 m. Heavily robbed. No offering table or stele found. Elements of disturbed skeleton recovered, including a skull (K1 in Chapter 7 below). Finds included:

Amphorae fragments.

Imported TRS bowl, Hayes form 3 (H28) (Fig. 6.26a).

A feeder bottle, Hayes ARS type 121/1 (H12) (Fig. 6.26b–c).

A large quantity of glass (see Chapter 8 below).

Textile fragments.

Beads.

A 4<sup>th</sup>–5<sup>th</sup>-century AD date seems likely.

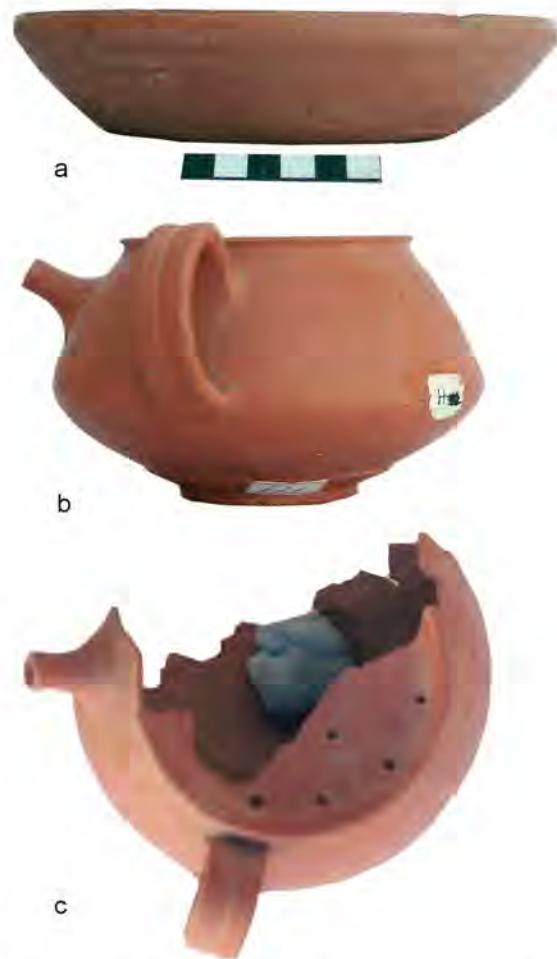


Figure 6.26. Finds from GSC030.T4: a) Imported TRS Hayes form 3 bowl (H28); b)–c) Hayes ARS type 121/1 feeder bottle (H12) (FP 2002).

**30.5:** Excavated by CMD between 23<sup>rd</sup>–26<sup>th</sup> December 1962. See below for fuller account.

**30.6:** Probable robbing pit into tomb/mound between Tombs 5 and 7. A few sherds of amphorae, imported finewares and local handmade pottery around the mound.

**30.7:** Type 5b, rectangular stepped stone superstructure with much of east side (5.55+ m) and parts of north side (4.85+ m) exposed. Preserved to top of first step with parts of mud plaster facing to wall surviving. Additional robbing pit on east side, over likely location of offering table. Single fragment of Type 6 stele found not *in situ* on east side. Sherds of imported finewares, amphorae, jugs/flagons and handmade wares noted.

**30.8:** Type 5b(?), rectangular stone superstructure only partly exposed at south-east and south-west corners, suggesting sides 5.5 m long, unless corners are edges

of first step. Plaster facing visible at corners, and lower step probably preserved. No trace of stele or offering table. Sherds of imported finewares and amphorae noted.

**30.9-3.13:** A series of mounds of stone and sand, with evidence of robbing pits in top and some supplementary spoil mounds, especially in east side. All these are probably robbed tombs of similar type to 30.1-30.8.



Figure 6.27. Finds from GSC030.T14: a)–b) ARS Hayes form 96 (H29) (FP 2002).

**30.14:** Excavated by Ayoub (1967a, 16–18). Large Type 5b, rectangular stepped stone superstructure *c.* 7.3 x 7.35 m with step *c.* 0.35 m wide. A broken Type 5/6 stele, measuring 0.54 x 0.67 m, and a large Type 4 offering table, apparently deliberately smashed, were found on the east side. Tomb heavily robbed but elements of skeleton found in chamber, including skull K2 mentioned in Chapter 7 below. Finds included: Imported ARS, Hayes form 96 (H29), later 5<sup>th</sup> – early 6<sup>th</sup> century AD (Fig. 6.27a–b). Handmade decorated incense-burners. Glass. Fragments of worked ivory.

**30.15-30.21:** Further series of robbed tombs, preserved as mounds of sand/rubble with central robbing pit. Few traces of superstructure, but some plaster and traces of wall suggest same type as others in cemetery. Some fragments of stelae and offering tables recovered on east side. Finds included:

Fragments of glass.

Sherds of amphorae.

Flagons.

Handmade local wares.

**30.22:** Almost certainly Ayoub's Tomb '20', excavated in 1963 (1967a, 18). Heavily robbed. Described by Ayoub as unusual in having a circular stone superstructure *c.* 6 m across (type 3b) over a circular burial chamber *c.* 2.75–3 m across. Excavation of chamber recovered: F1: Neck fragment of handmade Berber Red Ware pot with white painted decoration. (Fig. 6.28a).

F7 (Ayoub 1967b, 18, gives F1 in error): Handmade jar, elongated straight neck and rim fragment, from vessel with fine geometric red on white painted decoration. Late Garamantian (Fig. 6.28b).

F6: Large handmade jar, with straight rim connected to body by two knobbed handles. The pot is a second example with the fine geometric red on white painted decoration. Late Garamantian (Fig. 6.28c).

A human skull.

Beads: 25 carnelian and glass beads.

A stone stele was found 3 m to the east of the tomb.

In 1977, a sherd of imported fineware and sherds of other imported coarsewares were noted.

**30.23-30.24:** Robbed tombs/mounds, with no visible superstructure. Surface sherds of amphorae and local handmade wares.

**30.25:** Excavated by Ayoub (1967a, 18). Small circular tomb (type 3b), exterior dimensions not recorded, but with a circular shaft *c.* 1.5 m diameter and 1 m deep. Previously robbed, skeleton was very decayed; other finds limited to two fragments of glass and a sherd of handmade pottery (Ayoub 1967a, 17, plate 5). In 1977 further handmade sherds and amphorae fragments noted to east of tomb.



Figure 6.28. Finds from GSC030.T22 a) Neck of handmade pot with white painted decoration (F1); b) Handmade jar with elongated straight neck and fine geometric red on white painted decoration (F7); c) Large handmade jar, with straight rim and fine geometric red on white painted decoration (F6) (FP 2002).

### Tombs and Contents in GSC031

Two tombs were investigated by Caputo (his *Necropoli orientale*) and three by Ayoub (his 'Queens' Tombs) (Pace *et al* 1951, 357–60; Ayoub 1967a, 18–21). Ayoub variously identified 96 or 134 tombs in this cemetery, which he suggested were organised in 27 groups and of two main types, rectangular stepped tombs (type 5b) and drum tombs (type 3b). Not all these could be identified by the FP when the cemetery was surveyed in 1999 and the heavy robbing of the cemetery overall obscures many features. In the absence of earlier cemetery plans, determining which tombs were excavated by Caputo and which by Ayoub remains difficult. CMD had started numbering tombs from the south-west edge of cemetery (nos 1–27 on Fig. 6.22) and had recorded observations on the first 13 of

the tombs in April 1977, but does not seem to have returned to complete the survey of the rest. His notes on GSC031.T1–GSC031.T13 were published in *AF* 2. The tombs appear to have been predominantly stepped monuments of type 5b, essentially smaller examples of the main type used in the south-north line of tombs 100 m to the west at GSC030. The external dimensions at ground level were generally between 3–4.5 m long (compared to the GSC030 monuments, which regularly exceed 7 m per side). The highest surviving structure (GSC031.T13) stood *c.* 1.65 m tall to flat roof. Type 6 stelae (again generally in pairs to provide four points altogether) were common, accompanied on the east side of many tombs with type 4 offering tables. Some of these were large compared to most other sites in the Wadī, though generally smaller than those associated with the GSC030 tombs. There were



evidently some circular markers also. The dating evidence suggests that, like GSC030, this was a late Garamantian cemetery.

**Tomb 1:** Excavated by Caputo (Pace *et al.* 1951, 358–9). A rectangular stone stepped superstructure (type 5b). Chamber with corbelled stone roofing with internal diameter of 2 m and depth of 1.95 m. Finds included:

Fragments of amphora.

Remains of organic material.

Finewares.

Fragments of glass.

**Tomb 2:** Excavated by Caputo (Pace *et al.* 1951, 356–60). Rectangular stepped stone superstructure with mud plastered sides painted white (Type 5b). Three-point stele on east side, one fallen. Contained:

A few bones.

A Tripolitanian amphora.

Fragments of an incense burner with incised decoration (Pace *et al.* 1951, fig. 152).

Glass with red painted decoration.

3 beads.

**Tomb 3:** Excavated by Ayoub (1962, 18–19). Rectangular stepped stone superstructure with base 2.7 x 2.1 x 0.45 m high. Stone type 6 stele on east side of tomb. Finds included:

Amphora fragments.

A handmade incense burner.

Glass fragments.

**Tomb 30/32:** Excavated by Ayoub (1967a, 19–20). Rectangular stepped stone superstructure c.3 m square (type 5b). Mud-plastered surfaces, painted white, east and north sides well-preserved. There was a large well-made rectangular offering table on east side of tomb, 1.32 x 0.68 x 0.46 m, with 11 small sockets and large basin.



Figure 6.29. Finds from GSC031.T30/32: incense burner with incised and painted decoration (H2) (FP 2002).

Finds from robbed chamber included:

A skull (K4 reported in Chapter 7 below) and parts of skeleton of a 'female'.

H2: a handmade incense burner with incised and painted decoration (HM 336) (Fig. 6.29).

Fragments of glass.

An ostrich eggshell necklace.

**Tomb 96/134:** Excavated by Ayoub (1967a, 20). Tomb at north-east end of cemetery. Small circular grave. Identified as 'female' burial, finds included:

F3: a fragment of decorated handmade pottery. White cross and dot decoration.

A glass bead.

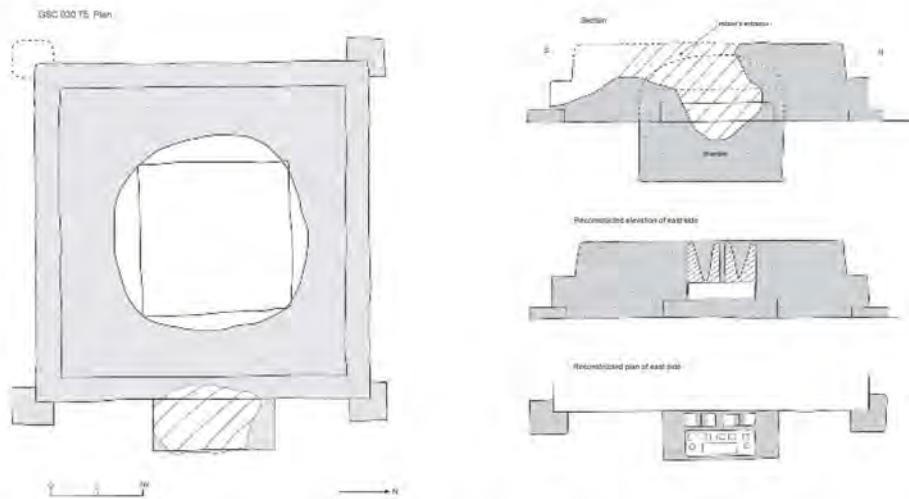


Figure 6.30. Stepped tomb GSC030.T5. Plan (left); Cross section (top right); Reconstructed elevation with offering table and stele (right).

### Tomb GSC030.T5

The large stepped tomb structure excavated by CMD in December 1962 was never published in any detail by either him or Ayoub. The following detail can be reconstructed from the archival notes.



Figure 6.31. Stepped tomb GSC030.T5, detail of plastered and stepped north side, looking west (CMD 1963).

### Tomb number: GSC030.T5

**Date:** 4<sup>th</sup> century AD (or possibly 5<sup>th</sup> century)

**Tomb type:** 5b, 2-stepped rectangular tomb.

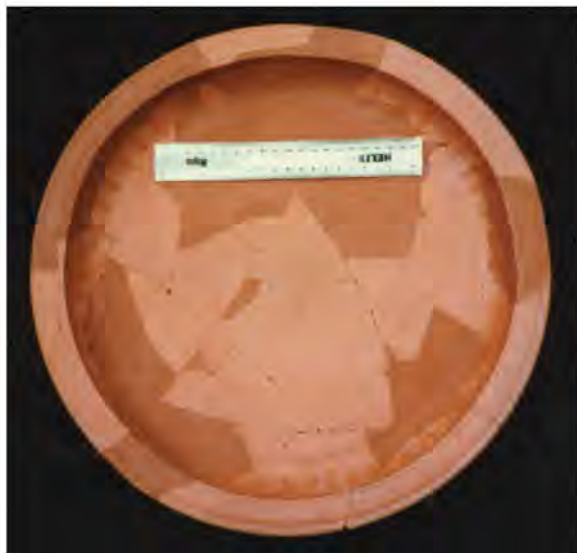
**Stele:** Type 6c x 2 (4-point stele), broken into a number of fragments, these were at least 1.65 m tall x 0.75 m wide at the base.

**Offering table:** Type 4b (large). Only one fragment was recovered, measuring 0.70 (east-west) x 0.45+ m (north-south) x c.0.5 m thick. The original north-south dimension is likely to have been in excess of 1.5 m.

**Construction details:** The tomb had previously been robbed and was deeply buried in rubble and sand. The robbers appear to have broken in both through the top of the stepped superstructure, destroying the centre of the corbelled vault over the tomb chamber, and through its east front, pushing aside the stele and offering table and tunnelling in through the wall and the pedestal on which the funerary furniture had been set (Fig. 6.30). Nonetheless, enough survived of the tomb to reconstruct its original form and appearance with some confidence (Fig. 6.30 left). It should be noted that subsequent to the excavation the tomb structure was consolidated and some details now look different on the ground. For instance, the robber hole in the east front has been transformed into a narrow, vertical sided 'entrance' into the tomb, whereas this face of the tomb was almost certainly closed in antiquity. The dimensions given below have been taken from CMD's notes and sketches made at the time of excavation. The above-ground tomb marker comprised a near square two-stepped stone superstructure c.7.35 x 7.30 m. The core of the structure comprised mud-bonded small unworked stone, though with the outer faces quite carefully coursed and with some use of proper mortar. The lower step was c.1–1.05 m high, the second step was c.0.80–0.85 m, with traces of the flat top of the



Figure 6.32. Stepped tomb GSC030.T5, detail of funerary chamber, showing remains of corbelled vault, looking east (CMD 1963).



a)



b)

Figure 6.33. Finds from GSC030.T5: a) Hayes ARS 59 dish; b) Hayes ARS 61 (CMD).

tomb preserved a total of 1.85 m above the exterior ground level. All visible faces of the stepped structure had been coated with a lime-rich plaster (Fig. 6.31). Low projecting square platforms were traced at the north-east, south-east and north-west angles and assumed to exist at the remaining south-west corner. These platforms were c.0.75 x 0.75 m and 0.25 m high, with fragments of plaster still preserved on the top and side surfaces of the south-east step. At the centre of the east side of the tomb was a larger platform, almost entirely robbed out, but originally 2.65 x 1.10 m by 0.45 m high, probably the seating for stelae and offering table. It appears that a robber hole had been dug through this platform and into the east wall of the tomb in an (unsuccessful) attempt to access the chamber. The burial chamber was sub-rectangular in shape, c.3.3 x 3.6m, with its floor at a depth of c.3.25 m below the flat top of the monument (Fig. 6.32). It was covered by a 'false vault', with irregular pendentives forming a round corbelled vault with a maximum surviving height below the bottom of the vault of c.2.2 m, with the vault estimated to have risen c.0.80 m above the pendentives. Some mortar bonding had also been used in the vault construction. The use of mortar is unusual in Garamantian tombs, as is the quality of the lime plaster applied to the exterior of the tomb.

**Excavation notes:** The work evidently concentrated on clearing the fill from around the north and east sides and from within the centre of the tomb. It is likely that Ayoub's workmen had already advanced the excavation some way when CMD became involved, since the completion of the excavation and its rapid recording only took four days more (22–26 December 1962). Against the west side under a fill of sand were fragments of leather and some basketry. Pottery finds in the chamber included fragments of ARS dishes, several handmade incense burners, glass fragments, part of an imported Tripolitanian lamp (Hayes 1972, 314, Type I) and at least two amphorae, thought to have been deposited full, one with an improvised stopper. One of the amphorae had an incised 'Libyan' graffito. A worked stone tool was also found. Further fragments of imported pottery and skeletal remains were scattered around the exterior of the tomb and a fragment of ARS was found built into the north-east corner step.

**Skeleton:** Disarticulated bone was found both inside and outside the tomb. A note in CMD's writing lists body parts identified, suggesting that this was a burial of a single individual: "several skull frags, several fragments of mandible, R pelvis, R & L humeri, 1 radius, R & L shoulder blades, 2 heel bones, 1 humerus, L ulna, 1 tibia, 9 ribs, 1 radius?, 7 vertebrae, several

hand and foot bones". There is no mention of the age of the individual (presumably adult?) and the material no longer survives in Jarma Museum, unless skull K3 reported in Chapter 7 belongs with this tomb.

#### Contents

*Excavated contexts and associated finds were as follows:*

**GSC030.T5.1.** General clearance outside the tomb.  
ARS stamped sherd of early to mid 5<sup>th</sup> century AD.  
2 TRS sherds of late 4<sup>th</sup> – early 5<sup>th</sup> century.  
Scattered human bone.

**GSC030.T5.2.** Clearance of rubble and robber spoil inside tomb, down to floor of chamber.

At least 2 amphorae, plus stoppers (indicating that the amphorae had been full when taken to the tomb). There was a possible Libyan graffito on one of the amphora sherds.

ARS dish, Hayes form 59.1 (Figs 6.33a, 6.34), broken, but probably intact prior to robbing. AD 325–350. Hayes 1972, 96, Form 59.1, Pl.XIIa).

ARS dish, Hayes form 61.1 (Figs 6.33b, 6.34), broken, but probably intact prior to robbing. AD 325–350 (Hayes 1972, 101, Form 61.1, Pl.XIIb).

Fragments of two incense burners (**HM 336**), with incised and painted decoration: a) in red, yellow and white; b) in red and white.

Fragments of at least 3 lamps probably of early–mid 4<sup>th</sup>-century AD date.

Many fragments of glass.

A lithic tool – probably a small Acheulean biface.

Traces of hair, leather and plaited straw matting.

Scattered human bone.

**GSC030.T5.3.** Pottery sherd built into plastered pedestal at the north-east corner of the tomb.

ARS sherd of later 3<sup>rd</sup> – early 4<sup>th</sup> century AD.

**G (general).** Surface sharding also yielded fineware

fragments (presumably body sherds of ARS?), one of late 1<sup>st</sup> – early 2<sup>nd</sup> century ARS, one of mid–late 3<sup>rd</sup> century AD and a 4<sup>th</sup>-century AD lamp fragment.

#### Comments/discussion

Everything about this tomb was on a large scale, from the exterior dimensions of the tomb, to the size of the subterranean chamber, to the impressively large offering table and stelae on its east side. But in many respects it was a typical Garamantian burial, though of late date. The fine whitish plaster of the tomb marker will have been a highly visible monument, set off further by the red painted stelae and offering table placed against its east side. The tips of the stele probably came up level with the top of the flat roof of the monument. The pottery finds inside the tomb suggest a date in the first half of the 4<sup>th</sup> century AD. However, if the material recovered outside the tomb originated within the chamber, this could push the date later in the 4<sup>th</sup> century or even into the early 5<sup>th</sup> century. Some finds from the adjacent burials to the south, T3 and T4, also support a late 4<sup>th</sup>- or early 5<sup>th</sup>-century AD date. The tomb provides important evidence for the long continuation of the stepped tomb monument tradition in Garamantian society (whereas at Sāniat bin Huwaydī we noted that the early stepped rectangular tombs had been succeeded by different monumental types). The two type 6c stelae may be a late variant of the traditional Garamantian 4-point stele, while the offering table is a large version of the typical Classic Garamantian type. The nature of the assemblage of imported goods from the Mediterranean is also similar to those of the Classic Garamantian (amphorae, fineware dishes, lamps, glass vessels). Evidently, the burial also included material of more local origin, including leather and matting, along with traditional incised and painted incense burners.

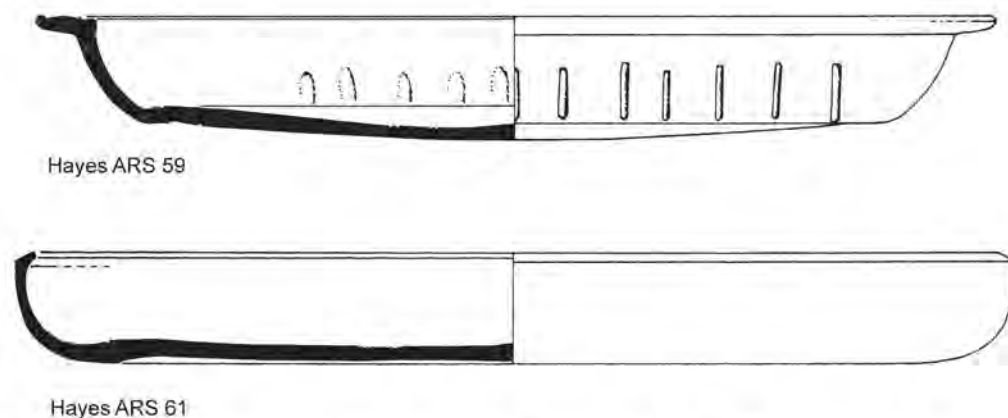


Figure 6.34. Finds from GSC030.T5: a) Hayes ARS 59 dish; b) Hayes ARS 61 (from Hayes 1972, 98 and 102). 1:3.

## THE TUWASH AND AL-FUGĀR MAUSOLEA (TWE001 AND FUG001)

CMD followed his excavation at the Royal Cemetery immediately by examining some stone foundations he had spotted from the main road close to the village of Tuwash. On 1 January 1963 he began excavation on the largest of the Tuwash mausolea and in the course of a few days defined all three structures (Fig. 6.35) and probed beneath them in an attempt to ascertain if they covered local style burials (Daniels 1971a, 267–68).

### The Tuwash mausolea

The largest of the stone structures Tomb 1 (TWE 001/1) measured c.8.1 m x 6.2 m and 1.2 m high. Three stepped courses were preserved on the north, west and south sides, with a single block from a fourth stone course on the south side. The sides were constructed of tightly fitted faced blocks enclosing a rubble core. No evidence was found for any burial within/beneath the structure. One block on the west face was heavily worn and had several incised marks on it. Traces of possibly two Libyan inscriptions were recorded on the exposed upper surface of another block. Excavation produced rare sherds from surface and core, a small fragment of a moulding, and part of a blue glass bead (D: 8 mm).

The second structure (TWE 001/2) lay c.50 m north of TWE 001/1. Only small parts of the stone casing were preserved, mainly in the south-east corner, but the original dimensions were estimated to have been very similar to the first structure, measuring c.7.9 m x c.6.1 m. It again had a rubble core, through which a sondage was cut, which failed to find any trace of a burial.

The third mausoleum TWE 001/3 lay c.25 m north-west of 2 and was smaller than the other two and aligned differently (1 and 2 being more or less east-west, while 3 is north-west to south-east).

### The al-Fugār Mausoleum

The al-Fugār mausoleum FUG001 was identified by Caputo as ‘necropoli di Brech’ (Ibrayk) (Pace *et al.* 1951, 360–61), on the edge of a large Islamic cemetery, east of the marabout of Sīdī ‘Alī Jed’bāh. The central feature of the site was excavated in

December 1962, but no further work was possible within the cemetery (Figs 6.35–6.36a and b). Although it is clear that the mausoleum must have sat within a Garamantian cemetery, the continued use of the area as a burial ground in more recent times has obliterated other ancient burials (though the work of the DMP in 2007 recorded a large group of ashlar blocks c.100 m west of FUG001 (Fig. 6.37), which probably represents the bulldozed trace of a second mausoleum (Mattingly *et al.* 2007, 145).

Excavation of the FUG001 mausoleum by CMD revealed a platform measuring c.5.64 x 4.06 m. The casing of sandstone blocks was exposed to foundation level and was heavily eroded. The main platform was constructed of two courses of faced blocks with a rubble core. Over this, at the west end of the platform was a superstructure c.3.15 m square, preserved only at its foundation level, but probably akin to the tower-like *cella* of the UAT 001 structure.

Several loose blocks carried incised Libyan graffiti, ground-out hollows, incised lines and ‘feet’. Within the *cella* was a narrow ‘chamber’ with an entrance on its east side. The chamber was originally stone floored with paving blocks underlying the walls. Most of this had been robbed out, however, and only two fragments of the floor survived. This floor overlay a rubble and mud mortar fill. If this narrow chamber was used for the interment of a body, there would not have been space for the normal flexed arrangement of the corpse. A sondage was excavated beneath the chamber floor to a depth of c.1m down to an apparently natural sandy surface but no trace of a burial chamber was found.

### Discussion of the So-called Mausolea

It is striking that no burial chamber has been found beneath any of the mausolea in the Wādī al-Ajāl. Although there are slight traces at al-Fugār of a recess in the superstructure on the east side, the space was not adequate for the insertion of a crouched burial. As argued in *AF 1*, it may be best to consider the adaptation of the mausoleum architectural form in Garamantian society more in terms of funerary temples or empty cenotaphs within burial grounds of Garamantian rite (Mattingly 2003, 190–92).

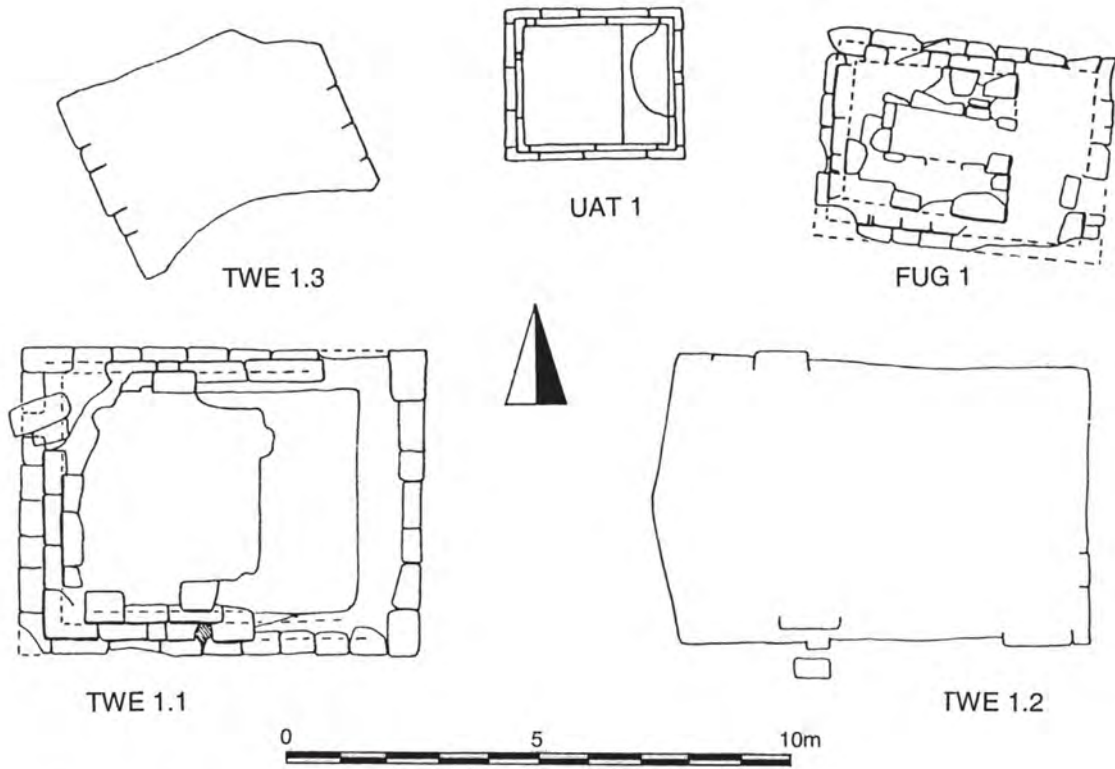


Figure 6.35. Plans of mausolea excavated by CMD at TWE001.



Figure 6.36. FUG001, mausoleum as excavated: a) Looking west; b) Looking north (CMD 1965).



Figure 6.37. FUG001: ashlar blocks from a suspected second mausoleum to west of the example excavated by CMD (DMP 2007).

## AL-KHARA'IQ

During trial excavations at the escarpment settlement site at al-Khara'iq (see above Chapter 2), two or possibly three burials were recorded below settlement features. Unfortunately, little detail of these has survived in the archive, but the burials all pre-dated Garamantian settlement features that probably related to the Early Garamantian and Proto-Urban Garamantian phases. In other words, these burials are most likely of the 1<sup>st</sup> millennium BC. No certain grave goods were recorded with any of them.

### **Tomb number: CHA005D**

**Date:** 1<sup>st</sup> millennium BC

**Tomb type:** Type 1a, mound cairn with rough central cist

**Construction details:** The burial was found by chance during excavation in the CHA005 escarpment settlement site. Room 2 of complex CHA005D was built against and partly cutting into a low cairn. Excavation of the west wall of the room uncovered the skull of an underlying burial (Figs 2.33–2.34). The burial seemed to have been placed in an east-west aligned shallow scoop (1.20 x 0.60 by 0.10 m deep) with a cist structure of large blocks and slabs constructed around and over the skeleton (type 1a). A few pot sherds were associated with the burial, though not necessarily deposited in it. The excavation notes suggest that some material from earlier occupation deposits including carbonised date stones could have been incorporated in the burial. An alternative possibility is to view the date stones as a deliberate inclusion and to assume that the 'organic' deposit in the bottom of the grave cut represents vestigial traces of a shroud (textile or leather or matting).

**Skeleton:** The skeleton was tightly contracted, lying on its right side with head to east, facing north (Fig. 6.38).

### **Contents**

The pottery sherds were handmade vessels with impressed 'stipple' decoration – from the description probably of Early Garamantian date.

Leather (shroud?).

Carbonised date stones.

### **Comments/discussion**

Although buried under a cairn, aspects of this burial are reminiscent of the shaft burials at ZIN013 (above) – simple crouched inhumation, probably wrapped in a leather shroud, with little buried with the body. While the few pot sherds and the date stones could have related to earlier occupation levels, they are not unparalleled in Garamantian burial contexts (see above ZIN002.013



Figure 6.38. CHA005D, skeleton, looking south (CMD 1973).

burial 44). It seems that al-Khara'iq burial was most likely contemporary with Early or Proto-Urban Garamantian occupation at the site and was overlain by a later three-roomed structure, also probably of Garamantian date.

### **CHA003**

In a trial trench examining the remains of the destroyed enclosure wall to locate its foundations, a burial was found just south of the wall, apparently cut by it. No further details were recorded.

### **CHA008**

Outside the enclosure wall CHA003, a small trial excavation in 1973 (Site CHA (8)1) produced unstratified finds from the vicinity of the western break in the enclosure wall, along with a skeleton from an unrecognised burial. It is possible that this is the same burial referred to as CHA003, but no more detailed record survives.

## IKHLIF (CLF10)

A single burial was excavated during work on the escarpment settlement at Ikhlif in the eastern Wādī al-Ajāl in 1973.

**Tomb number:** Ikhlif (CLF10) Area 5

**Date:** 1<sup>st</sup> millennium BC

**Tomb type:** 1a, simple mound cairn

**Construction details:** Area 5 comprised a robbed mound cairn. Removal of the upper layers of stone revealed a rough stone-lined cist infilled with rubble and blown sand (Fig. 6.39). At least one of the cover slabs seems to have been disturbed by robbers, but they seem to have decided not to proceed further. Beneath this was a relatively undisturbed burial. Decayed organic material, probably a leather shroud but also including traces of textiles, was noted around the bones.

**Skeleton:** The body was tightly contracted on its left side, arms in front of face, head to north, facing east (Fig. 6.40). The left arm was pinned beneath the rest of the skeleton and the skull facing slightly downwards, suggesting that the body had been squeezed into the cist.



Figure 6.39. CLF010, Area 5, excavation of cairn in progress, showing skeleton set to one side of the cist below the cairn (CMD 1973).



Figure 6.40. CLF010, Area 5, skeleton as excavated, looking east (CMD 1973).

### Contents

Handmade pottery sherd <3408> was a single rim sherd of a jar/bowl HM 324 in hard dark fabric in the debris (Fig. 2.52).

Leather.

Textile.

### Comments/discussion

The cairn burial is very similar to CHA005, in terms of structure, the treatment of the body and the contents of the burial. It also probably dates to either the Early or Proto-Urban Garamantian phase in the 1<sup>st</sup> millennium BC.

## OVERALL CONCLUSIONS RELATING TO GARAMANTIAN FUNERARY RITES

In *AF 1*, the summary of Garamantian funerary practice and the typologies of cemeteries, burials and funerary furniture (offering tables and stelae) were constructed largely on the picture built up by CMD (Mattingly 2003, 187–234). The interested reader is thus referred in the first instance to that extended discussion for additional details. It is in the nature of this sort of pioneering work that many questions remain and, in this context, the current work of the Desert Migrations Project (DMP) seeks to build on the foundations laid by CMD (Mattingly *et al.* 2007; 2008; 2009). The results of the DMP will hopefully in the near future allow a fuller analysis at a different level of detail of Garamantian burial traditions.

A few comments only are offered here in the interim. The cemetery excavations discussed in this chapter were individually quite small scale, but cumulatively they add up to a significant group of investigations of Garamantian burial rites and grave goods.

The sites reported in Chapters 1–2 and 3–4 have provided interesting snapshots of different phases of Garamantian settlement. In a similar way, the cemeteries discussed in this chapter offer complementary information on earlier and later periods to set alongside the detailed data from Sāniat bin Huwaydī presented in Chapter 5.

In particular, it appears that the aceramic (or virtually aceramic) burials at Zinkekrā, Khara‘iq and Ikhlif relate to the Early or Proto-Urban Garamantian phases, before the main phase of Mediterranean imports transformed the nature of burial assemblages in Fazzān. Key features



of burials of this period that presage later stages of development are the crouched rite, with clear emphasis on the east side of the burials, and the use of textile or leather shrouds. Other interesting aspects concern the apparent inclusion of some food offerings (even if only a token date), the significance of beads and headrests, the lining of burial shafts with matting, and the inclusion of wooden vessels in lieu of ceramics. At present it is not possible to date these burials closely, though the DMP will hopefully clarify this in the next few years.

The Classic Garamantian cemeteries surveyed and excavated by CMD reveal an extraordinary diversity of burial types – from pyramids, to stepped tombs, to shaft burials and so on – with an evolved set of burial rites and funerary assemblages that links between them. In support of the information presented here, it is clear from extensive survey work in Fazzān that the typical imported goods attested at Sāniat bin Huwaydī were widely replicated in Garamantian funerary contexts across time, space and social ranking. Even relatively simple shaft burials of Classic Garamantian date have been found to contain some Roman imports from the list of common material – amphorae, fine pottery, flagons, glassware. The implications are significant for the overall scale of Roman imports into the region across the period from the 1<sup>st</sup> – 4<sup>th</sup> centuries AD. It is also clear that Mediterranean goods were combined in Garamantian funerary assemblages with items of Saharan origin and local significance (ochre, incense burners, handmade pottery, leather and textile shrouds and garments, beadwork and amulets). The escarpment cemeteries in general yield a wider array of organic materials than the oasis-centre cemetery of Sāniat bin Huwaydī, because the high water table at the latter site has caused the more extensive deterioration of such materials.

Another interesting insight into the changing cultural significance of specific imported forms is provided by the evidence of Roman-style mausolea in Garamantian lands. Their interpretation is not straightforward, since no actual burials have been located under these structures, though a funerary association is clear from their location within known cemeteries. It may be better to consider the ‘mausolea’ to have been adopted to serve some other purpose within Garamantian burial rituals – perhaps as funerary temples or shrines. If so, this is another example of selective adaptation of Mediterranean culture and ideas by the Garamantes.

At the other end of the era, the Late Garamantian Royal Cemeteries offer a significant window on the continuance of these trends into late antiquity. The excavated burials at GSC030–031 attest to continuing imports of essentially the same categories of artefact from the Mediterranean world in the 4<sup>th</sup> – 6<sup>th</sup> centuries AD – thus after the apparent end of the latest phase of burials at Sāniat bin Huwaydī. These late imports included some remarkable and high prestige glassware. Yet at the same time, there was a continuing representation also of incense burners, handmade pottery traditions and fine textiles of local manufacture.

It is possible that by the 5<sup>th</sup> and 6<sup>th</sup> centuries imports from the Mediterranean were rarer and more restricted in circulation (GSC030–031 is after all plausibly identified as a royal cemetery). However, the evidence also suggests that we should be careful not to assume on the basis of the Sāniat bin Huwaydī excavations that there was little contact with the Mediterranean world after the mid 4<sup>th</sup> century. The quality of the glassware from GSC030 is particularly noteworthy (see Chapter 8 for fuller discussion) and indicates that the Garamantes retained privileged access to Roman markets.

## 7. HUMAN SKELETAL REMAINS

By E. Nikita, F. Crivellaro, J. Stock, R. Foley and M. Lahr

(with minor contributions from S. Chapman, D. J. Mattingly)

### INTRODUCTION

The present chapter offers a brief description of the human osteological material recovered from the Daniels' (CMD) excavations and found in store in the Jarma Museum in the late 1990s. The cataloguing and the preliminary analysis of that material were undertaken in association with the Fazzān Project (FP) and the Desert Migrations Project (DMP) and took place in the Jarma Museum, Fazzān, Libya. There are indications that CMD had the human bones studied in the 1970s, but there is no trace of a finalised report or the original records in the archive and our attempts to contact the suspected author have failed to elicit anything. A primary objective of the renewed study was, thus, to create a catalogue of all the human remains in the store at Jarma and to collect information, from box and bag markings, in order to identify archaeological locations and provenance for the remains present. As such, the current chapter has a primarily descriptive character and focuses mainly on the elements that were recovered and their state of preservation. Nevertheless, in addition to the strictly descriptive information, the palaeodemographic profile of the population represented by this relatively small skeletal sample and the observed pathologies are given, while a tentative assessment of the biological affinities of the population is attempted using cranial non-metric traits. The skeletons studied are correlated with the excavated burials, along with comments on the evidence of robbing/disturbance of the grave in an appendix at the end of this chapter (Table 7.6).

### Research Background

Since most of the human remains in the collection had been 'bagged' with the intention of separating each individual skeleton, it should have been possible to compile a complete inventory of the individuals/contexts excavated from each archaeological site. However, most of the original polythene bags had disintegrated, leading to the scrambling of post-cranial remains and fragments;

furthermore, some of the actual cardboard boxes had collapsed onto others, further commingling the fragmentary skeletal remains. A major and highly time consuming task of the 1997 FP season was to re-order the material into a more stable and retrievable state. In most cases this involved painstaking 'micro-excavation' of each box by Simon Chapman, in an attempt to regroup and re-bag bones of individuals defined by original packing and labelling. Boxes were also re-marked with their original annotations. As a result of this work, much of the material could be firmly reassigned to a particular cemetery and burial, but some of the boxes containing elements from a number of separate burials had become hopelessly mixed (as will be apparent in the tabulated data below). Nonetheless, a significant corpus of the material excavated by CMD was available for study.

Further work on cataloguing the CMD skeletal material was undertaken in December 2002 by Marta Lahr and Robert Foley. In 2007, at the start of the DMP, this work was completed with additional assistance from Federica Crivellaro and Jay Stock, and the material was further reviewed by Efthymia Nikita as part of her work on the DMP skeletons in 2008 and 2009. All human skeletal remains already housed at the Jarma Museum have been further conserved, reboxed, labelled and analysed for osteobiographic information and morphometrics where possible. These have been given a new general numbering system, starting with J1. Numbers for the CMD skeletal material range from J1 to J61.

### Methods

The examination of the CMD human skeletal material took place at the Jarma Museum. The information collected includes state of preservation, sex and age at death, morphometric data from the cranium and the post cranial skeleton, frequency of non-metric cranial traits and subperiosteal moulds.

For the state of preservation an analytical catalogue of the elements recovered by individual

was created, while any evidence of bleaching, weathering or fragmentation was recorded. In addition, the presence of cartilage on the joints was also scored as evidence of good bone preservation. All the above characteristics were scored as present or absent with the exception of weathering, where a graded system with five levels was used (Buikstra and Ubelaker 1994).

The determination of sex was performed only for the adolescent and adult individuals, as the sexually dimorphic traits only begin to develop during puberty and are fully expressed by young adulthood (Mays 1998). Thus, all younger individuals remained 'unknown' as to sex. For the rest, the primary criterion applied was the morphology of the pelvis, using the Phenice method (Phenice 1969), the sciatic notch index (Boucher 1955; 1957; Walker 2005) and the presence or absence of a pre-auricular sulcus (Buikstra and Ubelaker 1994). Whenever the pelvis was not preserved, the morphology of the skull was used as a sex indicator. In particular, the size of the nuchal crest, the mastoid process, the supra-orbital ridge and the mental eminence, as well as the shape of the supra-orbital margin were examined following Buikstra and Ubelaker (1994). In rare occasions where neither the pelvis nor the skull was present, the overall size of the bones and the raggedness of the muscle markings were used as an indicator of probable sex.

The assessment of the age at death of the individuals was based on a combination of methods. For sub-adults, the main method applied was the examination of dental development (Ubelaker 1989) corroborated by the stage of epiphyseal closure (Baker *et al.* 2005; Scheuer and Black 2004). In adults, age estimation was based on the morphology of the pubic symphysis (Brooks and Suchey 1990), the auricular surface (Lovejoy *et al.* 1985), and the sternal rib ends (Iskan and Loth 1986), as well as on the level of cranial suture closure with a preference for the lateral-anterior sutures (Meindl and Lovejoy 1985). Based on these methods, the population was divided into the following age groups:

Infant: 0–2 years  
 Young child: 2–6 years  
 Mature child: 6–12 years  
 Adolescent: 12–18 years  
 Young adult: 18–35 years  
 Mid adult: 35–50 years  
 Old adult: over 50 years

All observable pathologies were recorded per individual in an attempt to assess how stressful the lifestyle in the Sahara desert was for the Garamantes. The identified pathological conditions included degenerative and dental diseases, nutritional/metabolic disorders and trauma, with a view to exploring the degree to which Garamantian individuals suffered from a range of potential stressors – unbalanced diet, crowded urban conditions, strenuous physical activities, and traumas. The identification of each condition was based on the following diagnostic criteria. Degenerative diseases were identified as present when lipping was expressed at least as sharp ridges or when there was pitting or eburnation on the articular facets (Rogers 2000). Among the dental diseases, caries was scored as present when a small cavity was observed, even with no clear evidence of penetration to the dentine (Hillson 2001). Abscesses were considered present on any tooth socket exhibiting perforation of the alveolus originating from the root apex, whether or not the tooth was recovered (Lieverse *et al.* 2007). For ante mortem tooth loss, the criterion employed was that the alveolar margin of the missing tooth had to be dull (Delgado-Darias *et al.* 2005). Finally, periodontal disease was identified not only by a loss of alveolar bone and recession of the alveolar crest and of the alveolar interdental septae, but also by porosity reflecting exposure of the underlying cancellous bone (following Lieverse *et al.* 2007). Cribriform orbitalia and porotic hyperostosis were identified as present when the roof of the orbit and the postero-central portion of the parietal bones, respectively, exhibited pitting ranging from fine to large irregular apertures (Fairgrieve and Molto 2000; Steinbock 1976), as well as thickening of the cranial vault. Finally, in the current study the types of trauma identified included fractures and two cases of trephination.

Thirty-four cranial non-metric traits described by Hauser and DeStefano (1989) were additionally scored as present/absent. The characterisation of these traits as present or absent was based on Dodo (1974) and Hanihara and Ishida (2001a–d). The obtained values were afterwards used for a preliminary assessment of the biological affinities of the population to Egyptian, Sudanese, Tunisian, Algerian and Sub-Saharan African populations by applying the Mean Measure of Divergence (Sjøvold 1973).

## INVENTORY

In the current chapter an analytical description of the skeletal material excavated in the sites reported in Chapters 5 and 6 will be presented. The information provided focuses primarily on the state of preservation of each skeleton, since most of the burials were disrupted and many skeletons were incomplete or mixed. Indeed, there are two main factors that affect the contextual integrity of the material under examination. The first of these is robbing activity in the past, which had targeted many tombs in the Garamantian cemeteries. Quite a lot of human bone was found disarticulated within burial shafts. While it is probable that most of the material relates to the body (or bodies) originally interred there, we cannot exclude the possibility of mixing of bones from, for instance, adjacent burials. The second issue relates to the mixing of bone in the Jarma store due to the deterioration of the CMD packaging. We believe we were able to minimise this in most cases, and have assigned 'uncertain' provenance to the most irretrievably mixed material. In addition to the state of preservation of the material, information on the age and sex of the individuals is also provided along with any evidence of pathology.

The presentation of the material is organised by cemetery. Given that no skeletal material has been identified as certainly surviving from Ayoub's excavations at Sāniat bin Huwaydī, the bulk of the material presented here came from CMD's excavations at the same site (called by him SBH in site notation and by us GER011). A further important group of skeletons was recovered by CMD in his excavations on the north side of Zinkekrā (ZIN 13 East = ZIN002.013). There is a single skeleton from al-Khara'iq (CMD's Charaig 5D = CHA005) and another from Ikhliif (Cleff 2 Area 5 = CLF010). Further bones were found labelled Al-Fjayj 4 (= FJJ004.T4), ZIN 109(4) (= ZIN109.T4), GSC 3 (G) (= GSC003, surface grab?), although we have not been able to trace in the archive any account of burials being excavated there by CMD. These are most likely surface collections of bone/skulls from robbed burials. Finally, there is a skull labelled 'G1', but this identifier is not recognised by us (it predates the designation of the FP excavations at GER001 as site 'G1') and could relate to the work of another team. No bones have survived from the CMD excavations at Tāqallit (TAG001) or the Royal Cemetery (GSC030.T5). There are

three skulls in the store of Jarma Museum, which have evidently been on display at some point in the past, labeled K1, K3 and K4. Two of these (K1 and K4) certainly originated from Ayoub's work at the Royal Cemetery (GSC030–031, Ayoub 1967b, 215, 218) and K3 is likely to have come from there as well (a fourth skull, K2, was recorded from GSC030.T14 in Ayoub 1967b, 217, but now appears to be lost).

Analytically, the elements preserved per cemetery and per tomb are given below. Numbers in bold represent the context number assigned to the burial/skeleton or the layer where the skeletal elements were found (where this was part of the record).

### **Sāniat bin Huwaydī (SBH or GER 011)**

#### **GER011.T9 skeleton 1 [J38–39]**

The remains of the body included the R temporal, R-L parietals, L ulna (proximal epiphysis), 1 thoracic vertebra, rib segments. In addition to the many missing elements, the preservation of the remaining ones was poor, with extensive bleaching and fragmentation and complete absence of cartilage. The level of weathering was scored as '5' meaning that the bone was practically falling apart. The diagnosis of the sex was based on the general size of the skeletal elements preserved and revealed a female, while the stage of epiphyseal fusion placed the individual in the young adult age group. Quite severe porotic hyperostosis was visible on the parietals (Fig. 7.1a/b), suggesting an advanced anaemic condition.

#### **GER011.T9 skeleton 2 [J35]**

The recovered elements included part of the parietals, occipital, mandible (part of the corpus), unidentifiable bone fragments. The state of preservation was poor, namely, there was evidence of bleaching and fragmentation along with extensive weathering (level 5), while any evidence of cartilage was missing. The stage of dental development indicates that the remains belonged to a mature child. The only pathology was porotic hyperostosis on the parietals and the occipital, lesions that were in the process of healing.

#### **GER011.T11 [J52]**

The examined skeletal elements consisted of the L humerus (distal epiphysis), R scapula (spine, acromion, glenoid fossa), L radius (distal epiphysis), sternum, 3 cervical vertebrae, 6 thoracic vertebrae, 5 lumbar vertebrae, rib segments, L tibia (part of diaphysis, distal epiphysis), 8 manual phalanges, L hamate, R capitate,



a



b

Figure 7.1. GER011.T9, skeleton 1. a) Partial remains of the cranium of an adult, probably female; b) Detail showing evidence of quite severe porotic hyperostosis.

R scaphoid, 8 metacarpals, R-L tali, L calcaneus, R-L naviculars, R-L 1<sup>st</sup> cuneiforms, R-L cuboids, 4 pedal phalanges, 5 metatarsals, R patella. The state of preservation was fairly good, with minimal weathering (level 1) and no bleaching. However, certain elements were fragmented and no cartilage was preserved. The overall size and robusticity of the elements indicated that the individual was female, while the stage of epiphyseal closure assigned the individual to the adolescent age category. Very mild arthritic changes were observed in the lumbar vertebrae (L3 and L4), surprising in someone so young.

#### GER011.T12 [J37]

The only preserved element of the skeleton was the superior pubic ramus, with no sign of bleaching or weathering. The sex of the individual was impossible to assess while, in terms of age, it can be tentatively classified as young adult based on a small section of the pubic symphysis that could be observed. No pathologies were recorded.

#### GER011.T13 skeleton 2 [J46]

The remains of the individual included the L temporal, cranial vault fragments, L clavicle, R scapula (acromion, coracoid process, glenoid fossa), L humerus (distal epiphysis), R humerus (distal epiphysis), 1 thoracic vertebra, 1 lumbar vertebra, L femur (head, distal epiphysis), R femur (distal epiphysis), L tibia (proximal epiphysis), R tibia, R fibula (proximal 1/2), L calcaneus, L talus, R 1<sup>st</sup> cuneiform. The preservation was moderate with fragmentation and no cartilage but also without any bleaching. The level of weathering was '2', indicating that there was flaking of the outermost layers of the bone. Based on the size of the mastoid process and the stage of epiphyseal closure, the individual was identified as female young adult. No pathologies were observed.

#### GER011.T14 skeleton 1 [J1]

The skeletal remains consisted of small fragments of the calvarium, L radius (distal epiphysis, diaphysis), R radius (distal epiphysis), L ulna (proximal epiphysis), R ulna (proximal epiphysis), sternum, 5 cervical vertebrae, 6 thoracic vertebrae, 3 lumbar vertebrae, rib segments, L os coxa (ilium), L femur (distal epiphysis), R femur (head, distal epiphysis, greater trochanter), L tibia (proximal epiphysis, medial malleolus), R tibia (proximal epiphysis), R-L patellae, 6 metatarsals, 8 pedal phalanges, R-L calcanei, L navicular, L cuboid, R 3<sup>rd</sup> cuneiform, 6 metacarpals, 8 manual phalanges. The preservation was moderate with no bleaching and weathering level '1' (cracking of the bone surfaces), but also with extensive fragmentation and no cartilage. The individual was identified as male based on the overall size of the elements, and young adult according to the sternal rib end morphology. No pathologies were scored.

#### GER011 tomb designation uncertain (perhaps tomb 15, skeleton 1) [J12]

The skeletal elements retrieved consisted of the cranium, mandible, L scapula (spine, coracoid process), R scapula (acromion), R-L clavicles, R-L humeri, L radius (proximal epiphysis, diaphysis), R ulna, 4 cervical vertebrae, 7 thoracic vertebrae, 3 cervical vertebrae, rib segments, R os coxa (ischium, pubis), R femur, R-L tibiae, R fibula (distal epiphysis), L patella, 6 metacarpals, 5 manual phalanges, R scaphoid, R hamate, R-L calcanei, L talus, R-L naviculars, L cuboid, 10 metatarsals, 1 pedal phalanx. The state of preservation was overall good with some evidence of fragmentation but no bleaching or weathering, while cartilage was preserved on certain joints. The sex of the individual was identified as male based on

the pelvic and cranial morphology. In respect to the age, he was a young adult, as revealed by the stage of cranial suture closure. The observed pathologies included periodontal disease on the maxilla, calculus that affected the mandibular molars, an abscess on the upper left third molar and vertebral osteophytosis on the cervical, thoracic and lumbar vertebrae.

#### **GER011.T15 skeleton 2 [J56]**

The preserved elements of the individual included the L ulna (distal epiphysis), axis, 8 vertebral bodies, rib segments, sacrum, 2 manual phalanges, 1 metatarsal. The preservation was rather poor with extensive fragmentation of all elements and no cartilage remaining on the joint surfaces. The level of weathering was set to '2' and no bleaching could be seen. The individual was identified as male mid adult according to the size of the muscle markings and the sternal rib end morphology, respectively. Severe vertebral osteophytosis was observable on the lumbar vertebral bodies.

#### **GER011.T16 skeleton 2 [J60]**

The human remains from this tomb consisted of very poorly preserved bone fragments. The sex of the

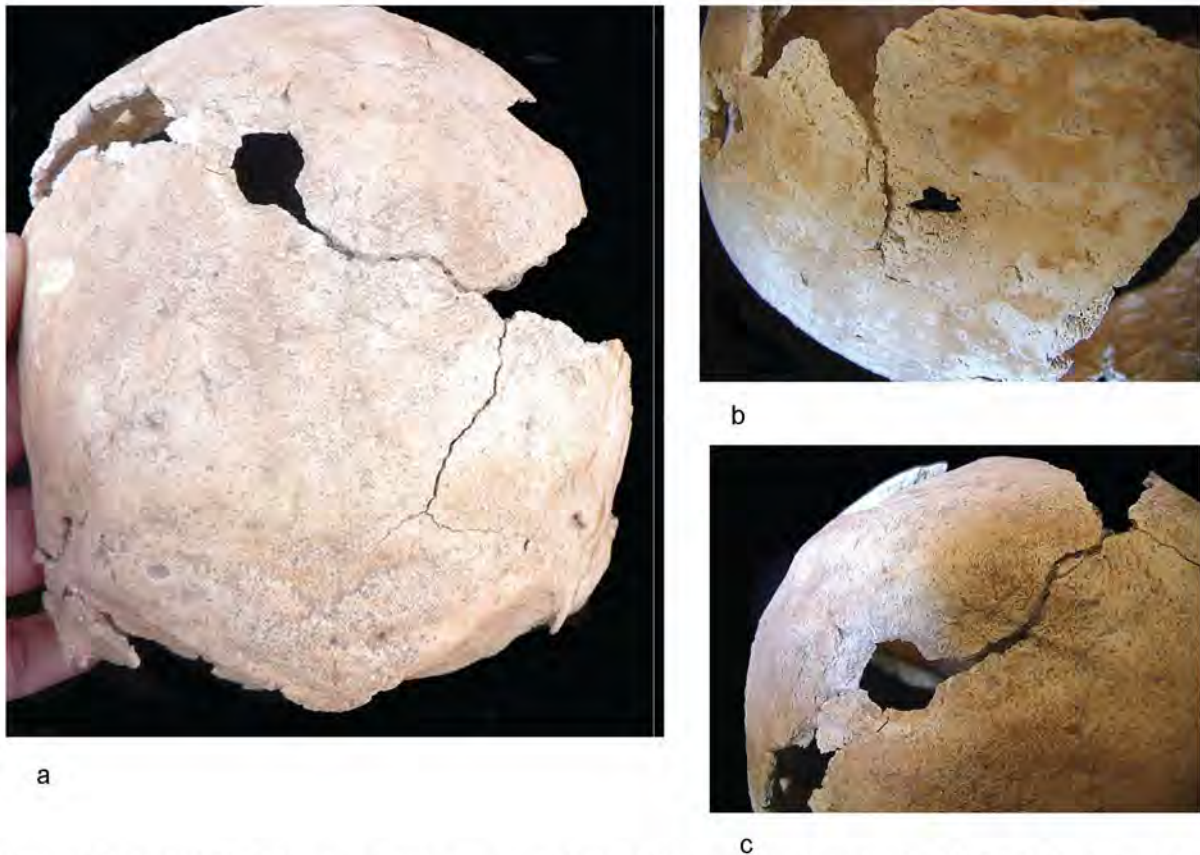
individual was impossible to be assessed while the degree of epiphyseal fusion tentatively indicated a young adult. No pathology was observed.

#### **GER011.T17 skeleton 4 [no J number]**

The remains from this tomb consisted of very poorly preserved post-cranial fragments. The remains were undiagnostic, but overall indicated an adult individual.

#### **GER011.T18 [J43]**

The skeletal elements retrieved from the tomb included the L scapula (spine), R scapula (superior 2/3), L clavicle, L humerus, L ulna (proximal part of diaphysis), 1 cervical vertebra, 3 thoracic vertebrae, rib segments, L os coxa (acetabulum, ischium, part of ilium), R-L femora, R-L fibulae, R-L patellae, 2 manual phalanges, L scaphoid, R capitate, 1 metacarpal, 7 metatarsals, 4 pedal phalanges, R-L tali, R-L calcanei, R-L cuboids, R-L naviculars, L 1<sup>st</sup> cuneiform, R-L 2<sup>nd</sup> and 3<sup>rd</sup> cuneiforms. The state of preservation of the above material was very good, with no evidence of bleaching or weathering. Moreover, cartilage was preserved on numerous joint surfaces. However, certain elements were fragmented.



*Figure 7.2. GER011.T20. a) Cranium, showing two cranial lesions likely to represent trephinations. b) Detail of the left parietal near the sagittal suture, showing a large hole that shows extensive evidence of healing along all margins; c) A small circular perforation on the right parietal. As the surface of the latter is very eroded, it is impossible to establish whether the wound had healed prior to death. This lesion, with its sharp circular internal edge, could also be the result of an arrow wound.*

The pelvic morphology indicated a female individual, while the auricular surface morphology suggested a mid adult. Among the pathologies, severe arthritis was seen on the manual and pedal phalanges and minor vertebral osteophytosis on the thoracic vertebrae.

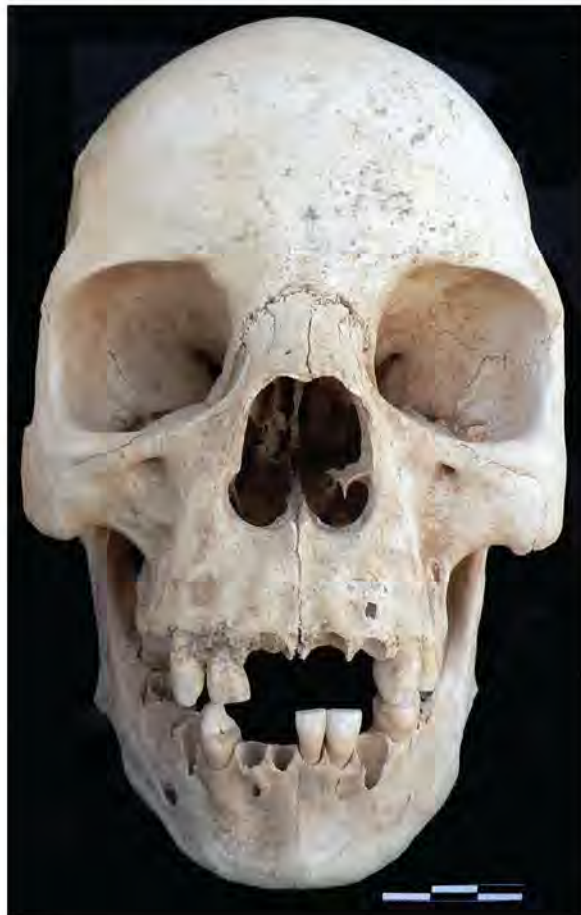
#### GER011.T20 [no J number]

The identifiable portions of this individual consisted of the fragmentary remains of the skull. The remains of this individual became mixed in the past, since re-fitted pieces of the cranium were identified in different large boxes in the store in 2002, and many post-cranial elements had become commingled with those of skeletons T27 and T34. The skull corresponds to that of an older individual, with the sutures almost fused. The sex of the individual was identified as male based on the size of the nuchal crest and the mastoid process. The skull was very large and robust, with extraordinary development of the occipital torus and other superstructures. Preserved are portions of both parietals, occipital (including the foramen magnum) and R mastoid region. Two fragments of the frontal show

very pronounced erosion. The skull has evidence of two trephinations (Fig. 7.2) both on the L parietal. One of these, located *c.* 2 cm from the frontal, shows evidence of healing, with only a small perforation visible – 5.9 mm sagittally and 4.6 mm coronally. The other trephination is located almost on the sagittal suture, *c.* 1.5 cm above lambda. This also shows evidence of substantial healing, but the perforation is much larger – 13.4 mm sagittally and 11.5 mm coronally, with the surrounding area towards the sagittal suture located on a generally depressed area.

#### GER011.T22 [J36]

The only remaining elements of the skeleton consisted of the L humerus (head) and L calcaneus. Besides the loss of most elements, the preservation of the bones was very good, with no bleaching or weathering and remains of cartilage on the joints. However, there was evidence of fragmentation. The individual was identified as a young adult female based on the stage of epiphyseal fusion and the size of the bones, respectively. No pathologies were observed.



a



b



c

Figure 7.3. GER011.T24. a) Cranium and mandible of a young female adult; b)–c) Both upper and lower dentition show incidence of caries and abscesses, including ante-mortem loss of several teeth.

**GER011.T24 [no J number]**

This skeleton comprised a complete skull and mandible of a young individual, as indicated from the fact that the spheno-occipital synchondrosis had just fused and the third upper molars had just come into occlusion and were unworn. The size of the cranium and degree of robusticity suggest a female. Both the upper and

lower dentition show evidence of substantial infections, including caries, abscesses and ante-mortem tooth loss (Fig. 7.3). A very large occlusal caries on the upper L second premolar destroyed most of the crown, and is associated with an abscess at the root. The upper R second premolar, first and second molars were lost ante-mortem, with the alveoli showing signs of



a



b



c



d



e

*Figure 7.4. GER011.T25. a)–b) Cranium and mandible of old adult female. The cranium shows extensive ante-mortem loss of dentition, dental disease, and pronounced wear of lower anterior teeth; c)–e) Osteoarthritic changes are visible in various portions of the post-cranium, particularly in: c) the cervical vertebrae; d) On the clavicular ends (very severe); e) On the feet. The severe localised arthritis on the neck and upper thorax suggest that these may relate to the persistent carrying of heavy loads on the upper back.*



infection and resorption. In the mandible, all molars except the R third molar, were lost ante-mortem, with some alveolar resorption already taking place, while the remaining molar has a caries in the crown. This level of dental disease and loss of teeth is very extraordinary in someone who would have been in the early 20s at the time of death, and may reflect a more systemic chronic illness.

#### **GER011.T25 [J5]**

The elements retrieved from the tomb included the cranium, mandible, L scapula, R scapula (glenoid fossa), R-L clavicles, L humerus, L radius (proximal epiphysis, diaphysis), R radius, L ulna (proximal epiphysis), R ulna (proximal epiphysis), sternum, 6 cervical vertebrae, 9 thoracic vertebrae, rib segments, L os coxa (ilium, part of acetabulum), R os coxa (acetabulum, ischium), R-L femurs, R-L tibiae, R-L fibulae, 7 metatarsals, R-L tali, R-L naviculars, R-L cuboids, R-L 1st, 2nd, 3rd cuneiforms, 11 pedal phalanges, 6 metacarpals, 19 manual phalanges, R-L capitates, R-L hamates, R-L trapezoids, R-L trapezia, R-L scaphoids, L lunate, hyoid. The preservation of the material was moderate. On the one hand, there was evidence of cartilage on numerous joints and no bleaching; on the other, many elements were fragmented and the weathering level was '4' (fibrous bone surface and weathering penetration into deeper cavities). The morphology of the pelvis and the skull pointed to a female individual, while the morphology of the auricular surface and the sternal rib end to an old adult. The observed pathologies include dental disease and major arthritic changes throughout the skeleton. The dentition shows evidence of periodontal disease on the maxilla and mandible, ante mortem loss of maxillary and mandibular premolars and molars, and very pronounced degree of wear. The degree of osteoarthritis is severe but localised, visible on the acromial end of the clavicles (which include eburnation), the pedal phalanges and the metacarpals, and osteophytosis and pitting on the cervical and thoracic vertebrae (Fig. 7.4).

#### **GER011.T27 [J8]**

The preserved skeletal elements included cranial pieces and most probably the post-cranial fragmentary elements listed here, but which had become partly commingled with those of tombs 20 and 34. The elements that most probably belong to this individual are a L clavicle (sternal end), L ulna (proximal epiphysis), L os coxa (acetabulum, ischium), R os coxa (acetabulum, ischium, ilium), R femur (part of diaphysis, head), R tibia (proximal epiphysis). The preservation of these elements was particularly poor,

with signs of bleaching and fragmentation, no evidence of cartilage and weathering level '4', according to the stage of epiphyseal fusion. The cranium is very fragile, with one side extremely eroded. Most of the vault is preserved, as well as the L temporal bone, but no face. The cranium is very long (200 mm), which together with the degree of development of the nuchal muscle insertions, suggest a male individual. The skull has two holes, one of which has evidence of extensive healing and is most likely the result of a trephination. The other is a small circular hole within a larger depressed area, resulting in a wound that has a much wider external than internal diameter. This wound, which has a sharp internal margin, is located next to a depression towards the sagittal suture. Although it could also be the result of a trephination, the lesion could equally represent the outcome of an arrow wound (Fig. 7.5).

#### **GER011.T28 skeleton 1 [J55]**

The skeletal elements available for examination consisted of the L ulna (part of olecranon process), R radius (head), R ulna (proximal epiphysis, distal epiphysis, part of diaphysis), 3 thoracic vertebrae, R os coxa (part of acetabulum), R femur (part of diaphysis), 1 metacarpal, R calcaneus. The preservation of the material was poor, with bleaching and fragmentation on many elements, no cartilage, and weathering level '4'. The sex of the individual was determined as male based on the robusticity of the bones, and the age as young adult according to epiphyseal closure. The only observed pathology was mild arthritis on the olecranon process.

#### **GER011.T29 skeleton 1 [J58]**

The only elements retrieved from this tomb were unidentifiable bone fragments with weathering level '2'. No sex diagnostic criteria could be applied, while the age was generally assessed as 'adult' based on the size of the elements. No pathologies could be seen.

#### **GER011.T30 [J53]**

The preserved elements consisted of the R temporal, parietals, sternum, 1 cervical vertebra, 6 thoracic vertebrae, 1 lumbar vertebra, rib segments, L femur (distal epiphysis, head), 1 metacarpal, 1 manual phalanx, 1 metatarsal. The elements showed evidence of bleaching and fragmentation, with no signs of cartilage. However, the weathering level was '1'. Based on the size of the mastoid process, the sex of the individual was identified as female and according to the sternal rib end morphology, the age was that of a young adult. The only pathology manifested was mild vertebral osteophytosis on the thoracic vertebrae.



Figure 7.5. GER011.T27. a)–b) Cranial remains of an adult, probably male. The partial vault has two perforations; c)–d) One showing extensive evidence of healing and which could be the result of a trephination; e) Another, with a sharp circular internal margin that could be an arrow or similar wound.

#### GER011.T33, skeleton 2 [J13]

The retrieved elements consisted of the calvarium (part of occipital and parietals), R clavicle (sternal end), L humerus (head), R humerus (head), sternum, 6 cervical vertebrae, 7 thoracic vertebrae, 2 lumbar vertebrae, sacral segments, L os coxa (ischium), R os coxa (ischium, pubis), 4 metatarsals. The state of preservation was fairly good with absence of bleaching, evidence of cartilage and weathering level '2'. Certain elements, however, were fragmented. The sex of the individual was determined as probably male based on the pelvic morphology and the age as adolescent according to the stage of epiphyseal fusion. No pathology was observed.

#### GER011.T34A [J47]

The elements remaining from the skeleton were the L scapula (acromion, glenoid fossa), R humerus (distal 1/3), L radius (proximal 1/2), R radius (head), L femur (head, part of diaphysis), L tibia (diaphysis), R tibia (diaphysis), L fibula (distal epiphysis), R 2<sup>nd</sup> cuneiform. Their preservation was moderate, with fragmentation, no bleaching, no cartilage and weathering level '3' (the external layers of bone have been removed but the weathering does not penetrate deeper than 1–1.5 mm). The individual was characterised as male based on the robusticity of the elements and young adult according to the stage of epiphyseal closure. The only observed pathology was osteoarthritis and it affected the head of the R radius and the L scapular glenoid fossa.

**GER011.T34B [J59]**

Only unidentifiable bone fragments were retrieved from the tomb. The sex of the individual was impossible to assess, while the age was generally set as 'adult' based on the size of the bones. No pathologies were seen.

**GER011.T34D [J61]**

The preserved elements included the L radius (proximal epiphysis), L ulna (proximal 1/3, distal epiphysis), 2 cervical vertebrae, 4 thoracic vertebrae, 5 lumbar vertebrae, rib segments, sacral segments, 5 manual phalanges, R-L scaphoids, L capitate, R trapezium, R hamate, R talus. Besides the partial preservation of the skeleton, there was no evidence of bleaching or weathering, while cartilage remained on some of the joints. However, most elements were fragmented. The size of the muscle markings suggest a female, and the sternal rib end morphology a mid adult. Moderate vertebral osteophytosis affected the thoracic and lumbar vertebrae.

**GER011.T37 [J21]**

The elements examined consisted of the cranium, mandible, R-L scapulae, R-L humeri, R-L radii, R-L ulnae, vertebral bodies, rib segments, R-L os coxae, R-L femora, R-L tibiae, R-L fibulae, hands, feet. The preservation of the elements was good as there was no bleaching or weathering. Nevertheless, no cartilage remained on the joint surfaces and some elements were fragmented. The sex of the individual was not determined as, according to the stage of dental development, the skeleton was that of a young child. The maxillary permanent first molar crowns are visible in the crypts, unerupted, at stage 5–6 of formation, while the deciduous molars are in occlusion, suggesting an age of 3–5 years at the time of death. The only pathology observed was occlusal caries on the L maxillary deciduous molar.

**GER011.T40 [J2, J20]**

The retrieved elements consisted of part of the frontal and parietals, L zygomatic, L humerus (proximal 1/3), L ulna (proximal 1/2), sternum, 15 vertebral bodies, rib segments, L os coxa (ilium), R os coxa (ilium), L tibia (proximal 1/2, distal epiphysis), R tibia (proximal 1/2, distal epiphysis), R-L calcanei, L talus, 2 metatarsals, R-L 1st cuneiforms, L navicular, 10 pedal phalanges. The preservation was overall good with no bleaching and weathering level '1', although there was some fragmentation and all cartilage had disintegrated. The individual was identified as a mature child on the basis of epiphyseal fusion, thus, its sex was not assessed. No pathologies were found.

**GER011.T41 [J22]**

The surviving elements included the calvarium, mandible, R-L scapulae, R-L clavicles, R-L humeri, R-L radii, R-L ulnae, vertebral bodies, rib segments, R-L os coxae, R-L femora, R-L tibiae, R-L fibulae, hands, feet. The preservation of these elements was rather good with some fragmentation but no bleaching nor weathering. Also, no cartilage was preserved. The dental development indicated a young child, estimated to have been between 2 and 4 years of age at the time of death, whose sex was not assessed. No pathology was recorded.

**GER011.T42 skeleton 3 [J54]**

The preserved skeleton consisted of part of the frontal, R temporal, parietals, mandibular condyles, L scapula (acromion), L humerus (distal 1/2, part of the diaphysis), R humerus (distal epiphysis, part of the diaphysis, part of the head), R radius (part of the diaphysis), L ulna (proximal diaphysis), R ulna (proximal 1/2), sternum, 7 cervical vertebrae, 8 thoracic vertebrae, 3 lumbar vertebrae, rib segments, sacral segments, L os coxa (acetabulum, ischium), 18 manual phalanges, 1 metacarpal. The state of preservation was moderate with signs of bleaching and fragmentation. However, cartilage remained on some joints and the weathering level was '2'. The size of the mastoid process and the shape of the supra-orbital margin indicated a male individual, while the stage of cranial suture closure a young adult. No pathologies were found.

**GER011.T43 skeleton 3 [J51]**

The preserved skeletal elements consisted of 2 thoracic vertebrae, 1 lumbar vertebra, rib segments, L femur (head, part of diaphysis), 2 R femora (proximal 1/3, head, part of the diaphysis), R tibia (part of the diaphysis, distal epiphysis), 2 manual phalanges. The state of preservation was moderate with no bleaching, no cartilage, fragmentation, and weathering level '2'. The remains appeared to belong to two individuals, both male on the basis of the robusticity of the elements, and young adults according to the sternal rib end morphology. Severe vertebral osteophytosis affected the lumbar vertebrae of one of the two men and moderate osteophytosis the thoracic vertebrae of the same individual.

**GER011.T45 [J42]**

The skeleton was preserved almost intact, although some commingling with elements from GER011.T18 and ZIN054 had taken place at the time of examination. However, the consistent morphology and state of preservation of the elements described below strongly

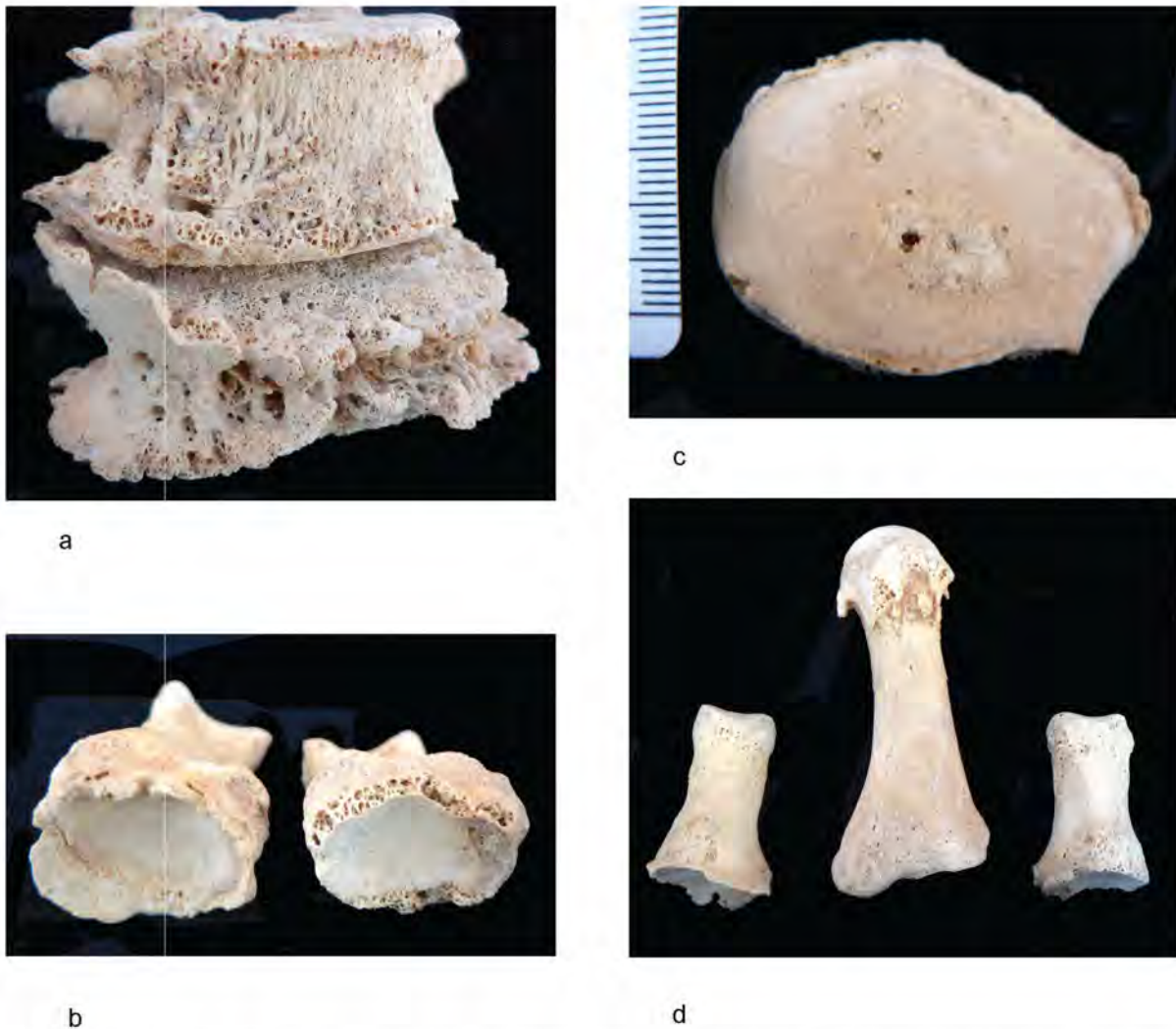


Figure 7.6. GER011.T45. Examples of severe osteoarthritic changes affecting: a) The lumbar spine (showing osteophytes, collapse of the vertebral bodies, and extensive pitting of articular surfaces); b) The femoral distal epiphyses; c) The L patella; d) The feet.

suggest they belonged to a single individual. More specifically, the retrieved elements included the L scapula (spine, acromion, glenoid fossa, coracoid process), R scapula (glenoid fossa, coracoid process), R-L humeri, R-L clavicles, R-L radii, R-L ulnae, sternum, 5 cervical vertebrae, 10 thoracic vertebrae, 5 lumbar vertebrae, sacrum, L os coxa (ischium), R os coxa, R-L femora, R-L tibiae, R-L fibulae, L patella, 10 metacarpals, 18 manual phalanges, R-L capitates, R-L scaphoids, R-L trapezia, R-L trapezoids, R-L pisiforms, L lunate, R hamate, R-L tali, R-L calcanei, 10 metatarsals, 2 pedal phalanges, R 1st cuneiform, R-L 3<sup>rd</sup> cuneiforms. The state of preservation was very good, with only a few elements being fragmented, no bleaching, no weathering and cartilage preservation on most joints. The robusticity of the skeleton indicated a male individual with various indicators suggesting a mature or old adult. An exostosis was located on

the R fibular diaphysis, moderate osteoarthritis on the sternal end of the clavicles, extreme osteoarthritis on the scapular glenoid fossae, on the femoral distal epiphyses, the L patella and feet. Finally, extreme vertebral osteophytosis affected the lumbar vertebrae, moderate the thoracic and cervical vertebrae and mild the sacro-lumbar articulation (Fig. 7.6).

**Post Scriptum Note:** During the 2010 fieldwork of the DMP, and after the completion of the current chapter, a cranium clearly labeled as that from GER011.T45 was discovered in one of the old storage rooms in the Jarma Museum. The characteristics of the skull in terms of sexually dimorphic traits, confirmed that the individual was an adult male, as had been shown from his postcranial skeleton. Among the observed pathologies was porotic hyperostosis at the healing stage, mild periodontal disease, an abscess on the left third maxillary molar and

ante-mortem tooth loss of the maxillary right fourth premolar, the right second molar and the left second and third molars. The non-metric cranial traits were scored but not included in the above overall analyses. Furthermore, the skull was digitised with the aim to be used in future biodistance analyses.

#### **GER011.T46 [J24]**

The skeletal elements available for examination consisted of the cranium, mandible, R-L scapulae, R-L humeri, R-L radii, R-L ulnae, rib segments, R-L os coxae, vertebral bodies, R-L femora, R-L tibiae, R-L fibulae, hands, feet. The preservation was exceptional with no evidence of bleaching, weathering or fragmentation. Based on the stage of dental development, the skeleton was assigned to the age group of young children (aged between 5 and 6 years at the time of death), thus the sex of the individual remains unknown. No pathologies appeared to have affected the skeleton.

#### **GER011.T49 [J9]**

Only the calvarium and part of the maxilla remained of the skeleton. These elements appeared to be moderately preserved with no bleaching or weathering but with extensive fragmentation. The sex of the individual was not assessed since the dental development revealed a child, probably aged around 6–7 years at the time of death on the basis that the permanent first molars had just erupted and were in occlusion. No pathology was found.

#### **GER011.T50 skeletons 1/3/6 [J45]**

Among the elements found were the R scapula (acromion), L clavicle, R clavicle (sternal 1/2), L humerus (proximal 1/3, distal epiphysis), R radius (proximal 1/3), R ulna (proximal epiphysis), sternal fragments, 1 cervical vertebra, 2 lumbar vertebrae, R femur (distal epiphysis, head), L fibula (distal epiphysis), L patella. Their preservation was moderate with fragmentation and weathering level '3', but without any bleaching. Also, no cartilage remained on the joints. The size of the elements revealed a female individual, and the stage of epiphyseal closure a mid adult. No pathologies were observed.

#### **GER011.T53 skeleton 7 [J57]**

Only unidentifiable bone fragments were found in the tomb, showing evidence of fragmentation but no sign of bleaching or cartilage. The weathering level was '2'. The absence of any sex diagnostic trait prohibited the sexing of the skeleton, while the overall size of the elements allowed just a general characterisation of the individual as 'adult'. No pathology could be traced.

#### **GER011.T54 [J48]**

The retrieved elements included the L zygomatic, mandible, L scapula (spine), L clavicle, R clavicle (sternal 1/2), L humerus (proximal diaphysis), R humerus, R radius (proximal epiphysis), L ulna (proximal epiphysis), R ulna (proximal epiphysis, diaphysis), 7 cervical vertebrae, 12 thoracic vertebrae, 5 lumbar vertebrae, rib segments, L os coxa (part of ilium), R os coxa (part of ilium), L femur (diaphysis, distal epiphysis, head), R femur (distal epiphysis, diaphysis), L tibia (proximal epiphysis), R tibia (distal epiphysis, proximal epiphysis), R-L tali, R-L calcanei, R-L 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cuneiforms, R navicular, 9 metatarsals, 7 pedal phalanges, 7 manual phalanges, 2 metacarpals, R hamate, R capitate, R triquetral, L scaphoid. The state of preservation was moderate since most elements were fragmented, but there was no bleaching, the weathering level was '1' and cartilage could be seen on some joints. The overall size of the elements, as well as the shape of the mandible, classified the individual as female, and the morphology of the sternal rib end as young adult. No pathologies were present.

#### **GER011.T54 (J57)**

Only unidentifiable bone fragments remained from the skeleton in this tomb.

### **Zinkekrā (ZIN 13 East, ZIN002.013)**

#### **ZIN002.013 Burial 44 [J6]**

The skeleton was almost intact preserving the cranium, L scapula (acromion, spine), R scapula (glenoid fossa, lateral border), L clavicle, R clavicle (lateral 1/2), L humerus (diaphysis, distal epiphysis), R humerus, R-L radii, R-L ulnae, sternum, 7 cervical vertebrae, 10 thoracic vertebrae, 5 lumbar vertebrae, rib segments, sacrum, L os coxa (ischium, ilium), R os coxa, R-L femora, R-L tibiae, R-L patellae, L fibula (distal 1/2), R fibula (diaphysis), 10 metacarpals, 20 manual phalanges, R-L capitates, R-L hamates, R-L scaphoids, R lunate, L trapezium, R-L trapezoids, L triquetral, R-L tali, R-L calcanei, 8 metatarsals, 10 pedal phalanges, R-L 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cuneiforms, R-L cuboids. The preservation of the material was very good since, although some elements were fragmented, there was no bleaching or weathering and cartilage was preserved on most joints. Based on the morphology of the skull and the pelvis, the individual was sexed as female, while the morphology of the pubic symphysis indicated an old adult. The observed dental pathologies included gross caries on the maxillary right P3 and canine, and ante mortem loss of the maxillary M2s and mandibular posterior teeth except left M3. An exostosis was traced



Figure 7.7. ZIN13.44. Skeleton of old adult female, showing a)–c) Extensive ante-mortem loss of dentition, high incidence of dental disease (caries and abscesses), and very localised arthritic changes in the cranium; d)–e) Arthritic change was mild to moderate on the spine and in the hands.

on the distal part of the right fibular diaphysis. Severe osteoarthritis affected the acetabulum and the sacro-lumbar articulation. Moderate to severe arthritis was observed in the manual phalanges, and severe in the feet, including arthritic fusion of some of the phalanges. In the spine severe vertebral osteophytosis was observed

on the lumbar vertebrae and moderate on the thoracic and cervical vertebrae. (Fig. 7.7).

#### ZIN002.013 Burial 45 [J4]

The examined elements included the mandible, R-L scapulae, R-L clavicles, R-L humeri, R-L radii, R-L

ulnae, sternum, 9 thoracic vertebrae, 1 lumbar vertebra, rib segments, L os coxa (ischium, ilium), R os coxa (ischium, ilium), R-L tibiae, R-L fibulae, R-L patellae, R-L tali, R-L calcanei, R-L cuboids, R-L naviculars, R-L 1st, 2nd, 3rd cuneiforms, 11 pedal phalanges, 9 metatarsals, 9 metacarpals, 17 manual phalanges, R-L lunates, R-L scaphoids, R-L pisiforms, R-L trapezia, R-L trapezoids, R-L capitates, R-L hamates, hyoid. The overall preservation was good as there was no bleaching, the weathering level was '1' and cartilage was maintained on certain joints. Nevertheless, some elements were fragmented. The shape of the pelvis and the mandible pointed to a male individual, while the sternal rib end morphology to an old adult. The only dental pathology was ante mortem loss of the mandibular right M1, M2, and left P3, M1, M2. An exostotic formation was seen on the iliac crest, moderate arthritis on the left talus and mild arthritis on the sternal end of the clavicles. Finally, moderate vertebral osteophytosis had afflicted the thoracic and lumbar vertebrae and mild the sacro-lumbar articulation, with some compression of the vertebral bodies. Arthritic changes were also seen on the pedal phalanges.

#### ZIN002.013 Burial 54 [J44]

The only elements available for examination were the L scapula (spine, glenoid fossa, acromion), R scapula (spine, glenoid fossa, acromion), L clavicle, L humerus (diaphysis), R humerus (proximal epiphysis, diaphysis), L radius, R-L ulnae. The preservation was moderate with evidence of bleaching and fragmentation, but no weathering and some cartilage remnants on the joints. The size of the elements sexed the individual as probably female and the stage of epiphyseal fusion aged her as young adult. No pathologies were recorded.

#### ZIN002.013 Burial 170 [J23]

The skeletal elements examined consisted of the cranium (missing part of the occipital), mandible, R-L scapulae, L clavicle, R clavicle (sternal 1/2), L humerus, R humerus (missing head), R-L radii, R ulna, L ulna (diaphysis, distal epiphysis), 7 cervical vertebrae, 11 thoracic vertebrae, 5 lumbar vertebrae, rib segments, sacrum, R-L os coxae, L femur, R femur (missing head), R-L fibulae, R-L patellae, 10 metatarsals, 13 pedal phalanges, R-L tali, R-L calcanei, R-L naviculars, R-L cuboids, R-L 1<sup>st</sup> and 2<sup>nd</sup> cuneiforms, R 3<sup>rd</sup> cuneiform, 10 metacarpals, 28 manual phalanges, R-L hamates, R-L capitates, R-L trapezoids, R lunate, R-L triquetrals. The state of preservation was moderate, with fragmentation and no cartilage, but also no bleaching and weathering level '1'. The skull showed post-mortem distortion in the form of bilateral compression. The pelvic morphology suggests probably



a



b

Figure 7.8. ZIN13.170. a) Cranium and mandible of an adolescent, showing evidence of dental disease and cribra orbitalia; b) The preserved right central incisor shows severe enamel hypoplasia.

a male individual, and the stage of epiphyseal fusion an adolescent, probably between 14 and 18 years of age. Among the observed pathologies were severe cribra orbitalia, mild periodontal disease, occlusal caries and abscess on the mandibular right M1, and, finally, an exostosis on the right clavicle. The preserved incisor shows severe enamel hypoplasia, pointing to incidences of arrested growth during infancy (Fig. 7.8).

**ZIN002.013 Burial 171 [J10, J25]**

The skeletal elements from this burial may represent those of two individuals since the level of arthritis differs markedly between some bones, and while the size of the very arthritic set of bones suggests a male adult, the pelvis and skull point to a female adult. The material examined consisted of the cranium (missing R zygomatic), mandible (missing R ramus), L scapula (lateral border), R scapula (coracoid process, glenoid fossa), R-L clavicles, L humerus (missing head), R humerus (missing head), L radius (proximal epiphysis, diaphysis), R radius (proximal epiphysis, diaphysis), R-L ulnae, sternum, 6 cervical vertebrae, 9 thoracic vertebrae, 5 lumbar vertebrae, rib segments, sacrum, L os coxa (ilium, ischium), R-L femora, R-L tibiae, L fibula (diaphysis, distal epiphysis), R fibula (diaphysis, distal epiphysis), R-L patellae, 5 metacarpals, 19 manual phalanges, R lunate, L trapezium, R hamate, R triquetral, L capitate, R-L pisiforms, R-L tali, R-L calcanei, 6 metatarsals, 1 pedal phalanx, R 1<sup>st</sup> cuneiform, L cuboid, R-L naviculars. The preservation of the material was

good with no bleaching or weathering and cartilage on most joints. However, fragmentation was an issue on many elements. The individual was sexed as female based on the morphology of the pelvis and the skull, and aged as old adult using the sternal rib end morphology. In terms of pathologies, an abscess was recorded on the mandibular left canine, and ante mortem loss had affected all mandibular molars and all maxillary anterior teeth. An exostosis was additionally found on the right and left calcanei, while mild vertebral osteophytosis had afflicted the thoracic vertebrae, moderate the cervical ones and severe the lumbar vertebrae and the sacro-lumbar articulation (Fig. 7.9).

**ZIN002.013 Burial 202, skeleton 1 [J11]**

The excavated elements consisted of the L scapula, L clavicle (sternal 1/3, lateral 1/3), L humerus, R humerus (distal epiphysis), L radius, R radius (proximal 1/2), L ulna (proximal 1/2), sternum, 3 cervical vertebrae, 11 thoracic vertebrae, 5 lumbar vertebrae, rib segments, sacrum, L os coxa (ilium, ischium), R os coxa, R-L



Figure 7.9. ZIN13.171. a)–b) Cranium and c)–d) Mandible of an edentulous old adult female, also showing signs of extensive dental disease prior to loss of dentition.



femora, L tibia, R-L fibulae, R-L patellae, 7 metacarpals, 26 manual phalanges, R-L scaphoids, R lunate, R-L trapezoids, R-L hamates, R-L capitates, R-L calcanei, R-L tali, 10 metatarsals, 3 pedal phalanges, R-L naviculars, R-L cuboids, R-L 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cuneiforms. The preservation was moderate with no bleaching or cartilage, weathering level '1' and fragmentation. The sex of the individual was determined as male according to the morphology of the pelvis, and his age as young adult based on the morphology of the pubic symphysis. An exostosis was found on the L calcaneus and osteoarthritis on the vertebral end of the ribs. Vertebral osteophytosis had mildly afflicted the thoracic and moderately afflicted the lumbar vertebrae. The L patella was partially deformed, with a thickened and pitted area of attachment of the knee tendons, while the corresponding area of the tibia showed osteophytes. This suggests a healed injury to the knee which resulted in a chronic inflammation (Fig. 7.10). Because of the size and degree of robusticity, this skeleton was nicknamed 'Hercules' by the excavators, as revealed in some of the old labels.

#### ZIN002.013 Burial 202, skeleton 2 [J26]

The preserved elements included fragments of the cranium and the mandible, R humerus, R radius, R ulna, L ulna (proximal 1/2), 8 vertebral bodies, rib segments, L tibia (proximal 1/3). Although some elements were fragmented, there was no bleaching or weathering and cartilage was present on certain joints. Thus, the



Figure 7.10. ZIN13.202. a)–c) post-cranial remains of an adult male, showing porotic and osteophytic lesions on the left tibia and patella, consistent with a partially healed injury to the left knee.

overall preservation of the material was moderate. The dental development of the individual revealed a young child (probably between 2 and 3 years of age), so the sex could not be determined. No pathologies were observed, but the deciduous teeth present show heavy wear, outstanding for a child that young.

#### ZIN002.013 Burial 204 [J49]

The retrieved elements included the cranium, mandible, R scapula (lateral border, spine, acromion), R clavicle, R humerus, R radius, L radius (proximal 1/3), R ulna, sternum, 7 cervical vertebrae, 11 thoracic vertebrae, 5 lumbar vertebrae, sacrum, L os coxa (ilium, ischium), R os coxa (ischium, part of acetabulum), R-L femora, R-L tibiae, R patella, 10 metacarpals, 19 manual phalanges, R-L lunates, R hamate, R trapezoid, R scaphoid, R-L tali, R-L calcanei, R-L naviculars, R-L cuboids, L 1<sup>st</sup> cuneiform, R-L 1<sup>st</sup> and 2<sup>nd</sup> cuneiforms, 10 metatarsals, 9 pedal phalanges. The preservation was overall good with limited fragmentation, no bleaching or weathering and cartilage remnants on some joints. The individual was found to be a female mid adult according to the morphology of the pelvis and the skull and the morphology of the auricular surface, respectively. The recorded dental pathologies included periodontal disease on the mandible and ante mortem loss of the maxillary M1s and all mandibular posterior teeth except the P3s. The cranium had evidence of healed cribra orbitalia, and a small healed lesion on the left parietal. In addition, a healed fracture was located on one of the metatarsals and mild vertebral osteophytosis on the cervical and lumbar vertebrae (Fig. 7.11).

#### ZIN002.013 Burial 209 [J50]

The skeletal elements excavated included the cranium, mandible, L scapula (superior 1/2), R scapula (superior 1/2), R-L clavicles, L humerus (missing head), R humerus, R-L radii, R-L ulnae, 7 cervical vertebrae, 12 thoracic vertebrae, 4 lumbar vertebrae, rib segments, sacrum, L os coxa (ilium, ischium), R os coxa (ilium, ischium), L femur (proximal epiphysis, part of diaphysis), R femur (proximal epiphysis, part of diaphysis), L fibula, R fibula (distal epiphysis), R patella, 10 metacarpals, 23 manual phalanges, R capitata, R hamate, R lunate, L trapezoid, 6 metatarsals, 8 pedal phalanges, R-L tali, R-L calcanei, R-L naviculars, R cuboid, L 1<sup>st</sup> cuneiform, R-L 2<sup>nd</sup> cuneiforms, R 3<sup>rd</sup> cuneiform. The preservation of the material was generally good with some fragmentation, but no bleaching or weathering, and some cartilage preservation on the joints. The sex of the individual was assessed as female based on the pelvic and cranial

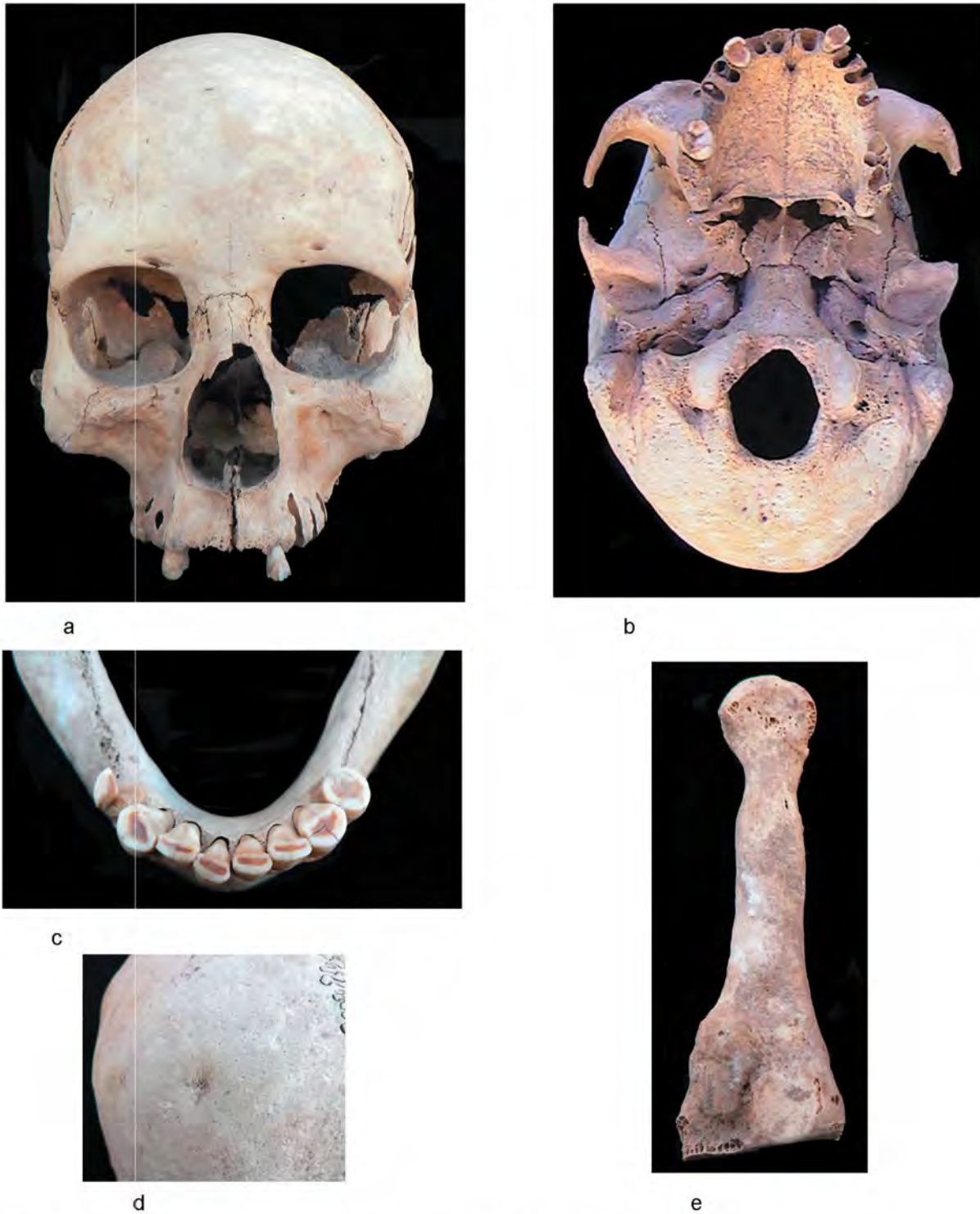


Figure 7.11. ZIN13.204. Skeletal remains of adult female: a)–b) the cranium shows extensive ante-mortem loss of posterior dentition; c) including complete resorption of the molar alveolar surface of the mandible, dental disease and severe dental wear; d) A healed wound on the left parietal; e) Healed fracture observed in one of the feet.

morphology, and the age as mid adult according to the sternal rib end morphology. Among the pathologies, mild cribra orbitalia in the process of healing were recorded, along with occlusal caries on the maxillary left M3 and ante mortem loss of both mandibular M2s.

The left lower central incisor was lost ante-mortem with complete resorption of the alveolus, suggesting intentional evulsion of the tooth. Finally, mild vertebral osteophytosis was seen on the cervical and lumbar vertebrae (Fig. 7.12).



Figure 7.12. ZIN13.209. a)–b) Cranial remains of adult female; c)–d) Showing heavy dental wear on remaining anterior dentition, a large caries on the right upper M3, and ante-mortem loss of both mandibular M2s.

**Zinkekrā (ZIN 109, ZIN003.109)**

**ZIN109 Burial 4) [J18]**

Only a partial and fragmented cranium was preserved from the skeleton, namely a partial calvarium (missing part of the occipital and L temporal) and the face. This cranium was found in a box together with the remains

of at least another four individuals, and although some of the post-cranial fragments may have belonged to this individual, it was not possible to ascertain which. The preservation was relatively good with no bleaching, weathering level '1' and cartilage on the occipital condyles. However, parts of the cranium were fragmented. The cranial morphology indicated a female

individual and the stage of suture closure a young adult. A small caries was visible on the left upper P4. The only other pathology recorded was mild healing cribra orbitalia.

### al-Khara'iq (Charaig 5D, CHA005)

#### CHA005D skeleton 4 [J40]

Almost the entire skeleton was preserved, namely the cranium, mandible, L scapula (acromion, glenoid fossa, coracoid process), R scapula (acromion, glenoid fossa), R-L clavicles, L humerus (missing head), R humerus (missing head), L radius (proximal epiphysis and diaphysis), R radius, R-L ulnae, sternum, 6 cervical vertebrae, 7 thoracic vertebrae, rib segments, sacrum, L os coxa (iliac crest, ischium), R os coxa (ischium, ilium), L femur (proximal epiphysis and diaphysis), R femur (proximal 2/3), R-L tibiae, L fibula (proximal epiphysis, diaphysis), R fibula (proximal epiphysis, diaphysis), R-L patellae, 8 metacarpals, 7 manual phalanges, L capitate, L trapezoid, R-L tali, R-L calcanei, R-L naviculars, R-L cuboids, R-L 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cuneiforms, 10 metatarsals, 14 manual phalanges were recovered from the tomb. The elements were in excellent state of preservation with no bleaching or weathering, but also with cartilage on numerous joint surfaces. Nevertheless, some elements were fragmented. The shape of the pelvis and the skull indicate a male individual, while the morphology of the auricular surface a mid adult. Moderate healed cribra orbitalia was observed, and an exostosis on the right and left calcanei. The maxillary left molars had been lost ante mortem, as did the mandibular left M3, right PM3, PM4, M1, M2. Severe arthritis had affected the proximal femoral epiphyses and both patellae, as well as the metacarpals. The degree of pitting on the patellar surface suggests quite severe arthritis of the knee. In addition, mild vertebral osteophytosis was recorded on the cervical vertebrae, moderate on the thoracic vertebrae and extreme on the sacro-lumbar articulation (Fig. 7.13).

#### CHA005D skeleton 10 [J41]

Only the right and left femora remained from the skeleton. Their preservation was very good with no bleaching or fragmentation and weathering level '2'. Based on the diameter of the femoral heads, the individual was sexed as female, while the stage of epiphyseal fusion indicated a young adult. No pathologies were seen. It is uncertain if this was correctly labelled (or whether this material came from a different context that has got mixed up with CHA005D 10, as there was no mention of a second skeleton in this burial in the excavation notes. It could



Figure 7.13. CHA005D. Well-preserved skeleton of an adult male, a) Showing severe arthritic changes in the proximal femoral epiphyses; b) and in both knees.

conceivably be from the second burial uncovered at al-Khara'iq (CHA003/008), or alternatively represent the missing femora from ZIN002.013.T45, which is otherwise complete.

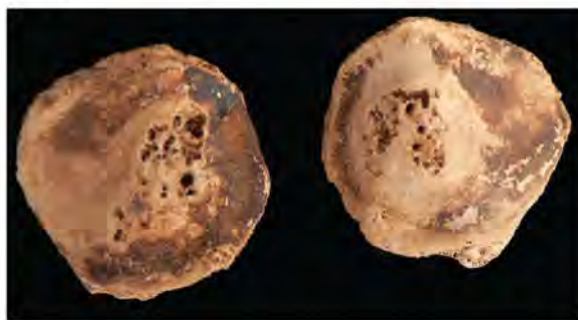
### Ikhliif (Cleff 2 area 5, CLF010)

#### CLF010 [J7]

The excavated elements consisted of the cranium, mandible, R-L clavicles, R-L humeri, R-L radii, R-L ulnae, sternum, 7 cervical vertebrae, 12 thoracic vertebrae, 5 lumbar vertebrae, rib segments, R-L femora, R-L tibiae, R-L fibulae, R-L patellae, all tarsals, 10 metatarsals, 11 pedal phalanges, R-L scaphoids, R lunate, R-L pisiforms, R-L triquetrals, R-L trapezia, R-L trapezoids, R-L capitates, R-L hamates, 10 metacarpals, 23 phalanges, R-L os coxae. The preservation of the elements was excellent with no bleaching or weathering, no fragmentation and cartilage on most joints. The individual was identified as female on the basis of pelvic morphology, and aged as old adult based on the erosion of the pubic surface. Among the observed pathologies, mild cribra orbitalia in the process of healing was recorded on both orbits. In respect to dental diseases, buccal caries had affected the maxillary left M3, while the maxillary right PM3, M1, M3 and the entire mandibular posterior dentition were lost ante mortem. Extreme osteoarthritis was



a



b

Figure 7.14. CLF010. Skeletal remains of old adult female, showing osteoarthritic changes in several articulations, particularly severe in a) The lower spine (with extensive osteophytes and pitting of articular surface of lumbar vertebrae); b) The knees, as shown by the porotic eroded surface of both patellae.

recorded on the sternal end of the clavicles, moderate vertebral osteophytosis affected the cervical and thoracic vertebrae, and extreme osteophytosis in the lumbar vertebrae, sacro-iliac and sacro-lumbar articulations. Both patellae showed extreme arthritic changes, suggesting severe knee arthritis (Fig. 7.14). Finally, a healed fracture on the diaphysis of the right ulna was observed.

#### al-Fjayj 4 (FJJ004)

##### FJJ004.T4 [J17]

Only a few elements remained from the skeleton – L parietal, part of the frontal, R scapula, sternum, rib segments, R-L os coxae, R-L femurs, R tibia, R-L fibulae, 3 metacarpals, 10 manual phalanges, R-L tali, R-L calcanei, 5 metatarsals, 4 pedal phalanges. The elements were very well preserved as there was no bleaching, weathering or fragmentation. In contrast, cartilage was found on the joints. The stage of epiphyseal fusion placed the individual in the ‘mature child’ age group, thus, the sex was impossible to ascertain.



a



b



c

Figure 7.15. FJJ004.T4. Scant remains of a child skeleton showing evidence of very severe porotic hyperostosis and cribra orbitalia, both lesions associated with anaemic conditions of varying aetiology.

The pathologies observed were severe porotic hyperostosis on the L parietal and very severe cribra orbitalia. These conditions are related, and probably reflect extreme anaemia (Fig. 7.15).

#### Uncertain origin

##### Uncertain, either GER011.T20, GER011.T23, GSC0003.T3 or ZIN002.013 burial 54 [J30]

The examined elements included only the R and L humerus (the latter missing the head). There was evidence of bleaching and fragmentation, but no cartilage, while the weathering level was ‘2’. The sex of the individual was identified as probably male using the size of the muscle markings. The age could only be generally determined as ‘adult’ given that the epiphyses were fully fused to the diaphysis. No pathology was found.

##### Uncertain, either GER011.T20, GER011.T23, GSC0003.T3 or ZIN002.013 burial 54 [J31]

The elements recovered consisted of the L humerus (distal 1/3), R humerus, R radius, R ulna, 5 cervical vertebrae, 9 thoracic vertebrae, 2 lumbar vertebrae, L femur (distal epiphysis), L tibia (diaphysis), R tibia (diaphysis and distal epiphysis), R fibula, R-L patellae, R-L tali, R-L calcanei, R-L naviculars, R-L 1<sup>st</sup> cuneiforms, R-L 3<sup>rd</sup> cuneiforms, L 2<sup>nd</sup> cuneiform, 9 metatarsals, 3 pedal phalanges, 8 metacarpals,

4 manual phalanges, L capitate, L pisiform. The overall preservation was good with no bleaching and no weathering, while cartilage was found on many joints. Nevertheless, several elements were fragmented. The individual was identified as probably male, according to the size of the muscle markings, and young adult, given the stage of epiphyseal fusion. The recorded pathologies were moderate osteoarthritis on both tali, extreme vertebral osteophytosis on the cervical vertebrae and moderate on the thoracic and lumbar ones.

**Uncertain, either GER011.T20, GER011.T23, GSC0003.T3 or ZIN002.013 burial 54 [J32]**

The preserved elements included the L clavicle (sternal 1/2), L humerus (head, distal epiphysis), R humerus (head), L radius (head), sternum, 3 cervical vertebrae, 7 thoracic vertebrae, 3 lumbar vertebrae, 1 rib, sacrum, L-R os coxae, L femur (diaphysis, distal epiphysis), R femur (diaphysis, head, distal epiphysis), L calcaneus, 2 metatarsals, 2 pedal phalanges, R-L cuboids, R-L naviculars, R-L 1st cuneiforms. The preservation of the skeletal material was moderate with evidence of bleaching and fragmentation. No cartilage remained on the bones, while the weathering level was '2'. The sex of the individual was found to be female based on the pelvic morphology and the age young adult according to the morphology of the pubic symphysis. Moderate osteoarthritis was recorded on the sternal end of the left clavicle and extreme osteoarthritis on the right and left ischia. Finally, moderate vertebral osteophytosis was present on the thoracic vertebrae and the sacro-lumbar articulation and extreme osteophytosis on the lumbar vertebrae. (Fig. 7.16a).

**Uncertain, either GER011.T20, GER011.T23, GSC0003.T3 or ZIN002.013 Burial 54 [J33]**

The elements retrieved consisted of the L temporal, part of the occipital, L humerus (head), R humerus (head), 3 thoracic vertebrae, 5 lumbar vertebrae, L os coxa (ischium, part of ilium), R os coxa (ischium, part of ilium), R femur (proximal 1/4). The preservation was rather poor as there was bleaching, fragmentation, weathering level '4' and no cartilage. The size of the mastoid process was that of a male individual and the stage of epiphyseal fusion suggested a young adult. Moderate arthritis was seen on the femoral head and extreme vertebral osteophytosis on the lumbar vertebrae.

**Uncertain, either GER011.T21, GER011.T31, GER011.T33 skeleton 1, GER011.T34C, GER011.T51, GER011.T52, GER011.Tr7 A/B [J3]**

The remaining elements included the R scapula, R radius, L ulna, 1 thoracic vertebra, 1 lumbar vertebra,



a



b

*Figure 7.16. Uncertain skeletal elements: a) J32 showing very severe osteoarthritis of the spine, extending to other articulations; b) J16 showing extremely severe arthritis of the cervical and lumbar spine.*

rib segments, L fibula, L patella, 9 metacarpals, 9 manual phalanges, R capitate, R-L scaphoids, L hamate, 10 metatarsals, 2 pedal phalanges, R calcaneus, L talus. The preservation was very good with no evidence of weathering or fragmentation and cartilage on numerous joints. However, certain elements were bleached. The size of the muscle markings suggested a female and the sternal rib end morphology a mid adult. No pathology was found.

**Uncertain, either GER011.T21, GER011.T31, GER011.T33 skeleton 1, GER011.T34C, GER011.T51, GER011.T52, GER011.Tr7 A/B [J14]**

The skeletal material examined consisted of the L humerus (head), R humerus (head, distal epiphysis), R scapula, R clavicle, sternum, rib segments, 3 cervical vertebrae, 6 thoracic vertebrae, 3 lumbar vertebrae, R femur (distal epiphysis, part of diaphysis, head), R tibia (proximal epiphysis, distal epiphysis), 2 metacarpals, 4 manual phalanges, R talus, R-L 1<sup>st</sup> cuneiforms, R patella. The state of preservation was moderate with no bleaching, no cartilage, weathering level '2' and fragmentation of some bones. The size of the muscle markings was that of a female and the sternal rib end morphology that of a young adult. The only pathology was moderate osteoarthritis on the right patella.

**Uncertain, either GER011.T21, GER011.T31, GER011.T33 skeleton 1, GER011.T34C, GER011.T51, GER011.T52, GER011.Tr7 A/B [J15]**

The preserved elements included the L humerus (head), sternum, 1 lumbar vertebra, L os coxa (part of ilium, ischium, acetabulum), R os coxa (part of ilium), L femur (proximal epiphysis), R femur (greater trochanter), L tibia (distal epiphysis), L fibula (distal epiphysis). The preservation was moderate as there was no bleaching, no cartilage, weathering level '2' and fragmentation. The lack of a preauricular sulcus pointed to a male individual and the stage of epiphyseal fusion to a young adult. Mild vertebral osteophytosis on the lumbar vertebrae was the only pathology observed.

**Uncertain, either GER011.T21, GER011.T31, GER011.T33 skeleton 1, GER011.T34C, GER011.T51, GER011.T52, GER011.Tr7 A/B [J16]**

The remaining skeletal elements consisted of the L scapula (inferior 1/2), 3 cervical vertebrae, 5 thoracic vertebrae, 3 lumbar vertebrae, rib segments, L os coxa (ischium, ilium), L femur (distal 1/3), R femur (proximal 3/4, part of distal epiphysis), L tibia (distal 3/4), R tibia (part of diaphysis), L patella, 3 metacarpals, 7 manual phalanges, 2 pedal phalanges, R-L cuboids, R talus, R navicular, R 2<sup>nd</sup> cuneiform. The preservation of the elements was overall good with no bleaching or weathering, cartilage and fragmentation of some bones. Based on the size of the muscle markings, the individual's sex was identified as male and, according to the auricular surface morphology, as young adult. The recorded pathologies included extreme osteoarthritis on the L patella and on the R femoral proximal epiphysis. Finally, extreme vertebral arthritic changes affected the cervical and lumbar vertebrae (Fig. 7.16b).

**Uncertain, either GER011.T21, GER011.T31, GER011.T33 skeleton 1, GER011.T34C, GER011.T51, GER011.T52, GER011.Tr7 A/B, ZIN002.013 [J34]**

The remaining elements consisted of the L scapula (acromion, coracoid process, glenoid fossa), L humerus (head), R humerus (head), L ulna (proximal epiphysis), sternum, 5 cervical vertebrae, 12 thoracic vertebrae, 3 lumbar vertebrae, rib segments, sacrum, L os coxa, R os coxa (ischium, part of acetabulum), R tibia, L patella, R-L tali, R calcaneus, 6 metatarsals, 4 pedal phalanges, 2 manual phalanges, 5 metacarpals. The preservation of the material was moderate with bleaching, cartilage, weathering level '2' and fragmentation. The individual was probably male based on the pelvic morphology, and young adult, according to the auricular surface morphology. The only traced pathology was moderate vertebral osteophytosis on the lumbar vertebrae.

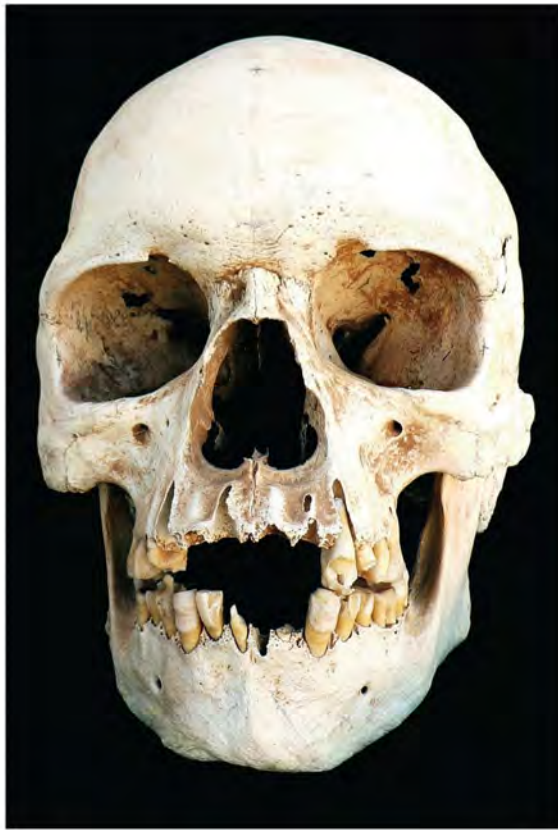
There was further mixed disarticulated bone from GER011.T7 T17, T24, T27, T36, T42, T52, GER011 Trench 7, and ZIN002.013 levels 19, 40, 93, 107, 182, that could not be separated into individual burials.

#### **GSC030 and 031. Skulls K1, K3(?) and K4**

Three relatively well-preserved skulls labelled SM-K1, SM-K3 and SM-K4 were found in the Jarma Museum store in 2007. All three crania had been part of the Sābha Museum (SM) display for a period of time, and though their provenance information had been lost when they were subsequently removed from display and placed in a box in the store, two of these can be identified with confidence. These three crania relate to burials excavated by Ayoub in the 1960s. Two of the skulls are specifically referred to as SM K1 and SM K4 in Ayoub's brief published reports on the Royal Cemetery, GSC030–031 and this the likely provenance also of the third example, K3 (Ayoub 1967a, 11–21; 1967b, 211–18). A fourth skull (K2) was recovered from GSC030.T14 and was evidently at one time on display in the Sābha Museum, but cannot now be identified in the Jarma store (Ayoub 1967a, 16; 1967b, 217) The three crania are briefly described below.

#### **GSC030. T4 SM-K1**

The identification with this tomb is given by Ayoub (1967a, 18; 1967b, 215). Large cranium and mandible from an adult male. The cranium is very well-preserved, although the basicranium has been broken when the skull was removed from the museum display and some



a



b



c



d

*Figure 7.17. GSC030.T4, SM-K1. a)–d) Cranium with mandible of an adult male, with black staining and breakage of basicranium as a result of having been mounted in a display case. The skull has evidence of dental disease, as well as two healed wounds on the parietals.*

of the teeth have been lost post-mortem, while the brittle enamel of the remaining ones has been partially broken. The skull is robust, having relatively large supraorbital ridges, a narrow vault and large maxilla. Both upper M2s were lost ante-mortem, with complete resorption of the alveolar surface, especially on the

right side. This infection is mirrored in the ante-mortem loss of the lower right M2, around which there is also evidence of an abscess. Two healed lesions are visible on the parietals – one a small wound on the left parietal (possibly a small depressed fracture), the other a wound along the right posterior temporal lines (Fig. 7.17).



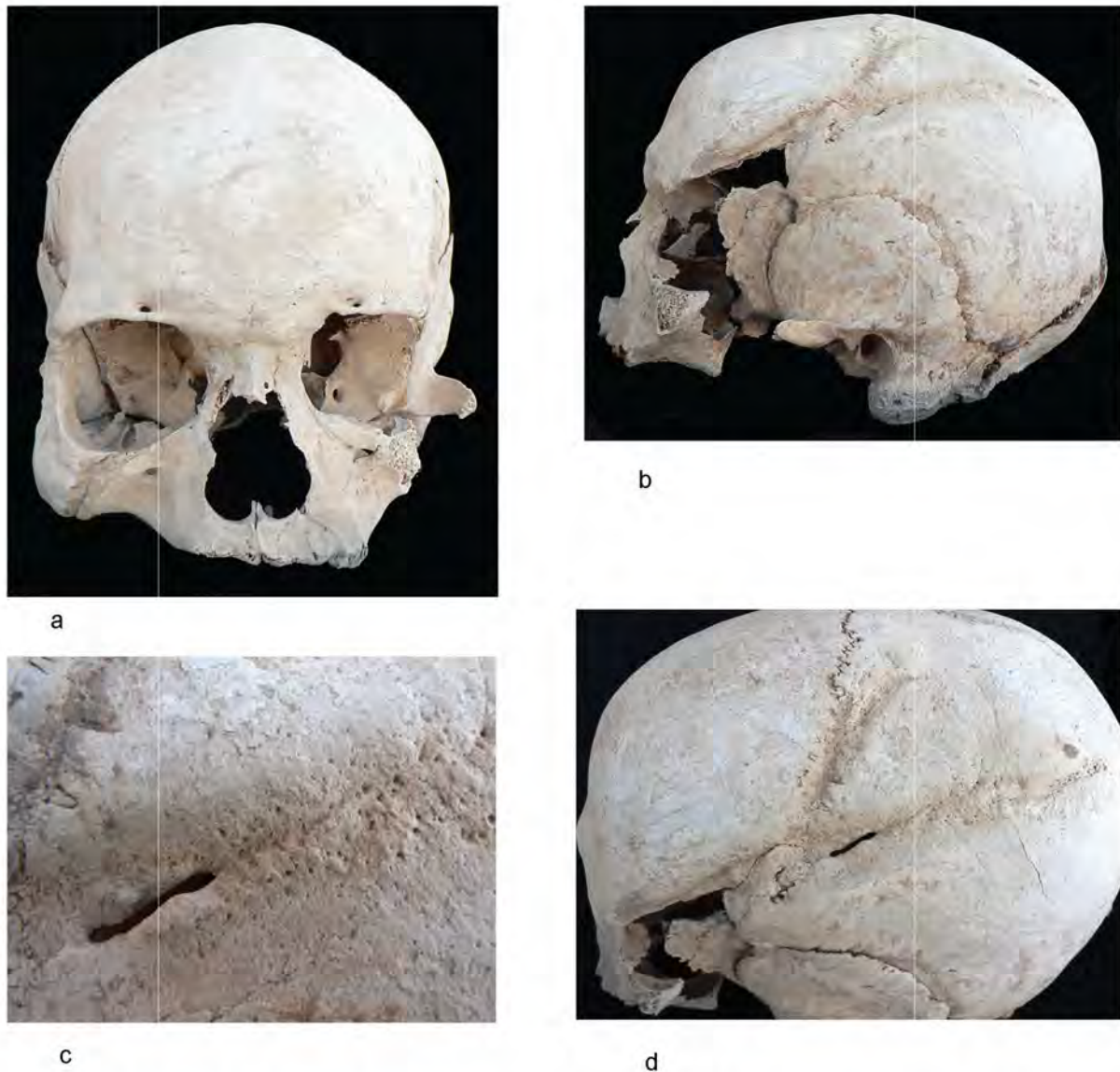


Figure 7.18. GSC030, tomb uncertain, SM-K3. Edentulous cranium of an old male, with complete resorption of maxillary alveolar surface. The cranium also has a very large lesion across the left parietal and frontal bones. This lesion is consistent with a major sword wound to the head, which had, nevertheless, mostly healed by the time of death.

#### GSC030 or GSC031, tomb uncertain SM-K3

The likelihood is that K3, like K1, K2 and K4 came from the Royal Cemetery (GSC030–031). Is it possible to narrow down the possible findspot further? Leaving to one side the tombs to which we can definitely relate the other Sābha Museum skulls, at GSC030 Ayoub excavated Tomb 3 (no skull mentioned among finds), Tomb 5 (CMD recovered fragments of skull and mandible), Tomb 20 (a skull in a ‘decayed state’), Tomb 25 (no mention of skull). At GSC031 Ayoub excavated Tomb 3 (no mention of skull among meagre finds), Tomb 33 (female skull, ‘much decayed’), Tomb 95 (no mention of skull). The most likely tombs are thus GSC030 Tomb 5 (with the skull reconstructed from fragments) or Tomb 20. Given the remarkable wound inflicted on (and survived by) this individual, the point is important.

Cranium without a mandible of an older, edentulous adult male. The cranium is relatively well preserved, although missing the left malar bone and part of the palate and basicranium. The latter must have broken as the skull was removed from the display mount. The cranium had been reconstructed at some point in the past. The skull is relatively robust, and like SM-K1, with moderately developed supraorbital ridges. All maxillary teeth were lost ante-mortem, resulting in complete resorption of the alveolar process and shortening of the face. The cranium has a very large lesion extending from the frontal across the left parietal. The lesion, probably resulting from a sword wound, had largely healed in life, pointing to sophisticated medical practices at the time (Fig. 7.18).



Figure 7.19. SM-K4. Cranium of a young adult female, with black staining and breakage of basicranium as a result of having been mounted in a display case. Both central incisors were lost ante-mortem, with complete resorption of alveoli, suggesting intentional evulsion of those teeth.

#### GSC031.T30 SM-K4

The provenance is certain (Ayoub 1967a, 20; 1967b, 218). Cranium without mandible of a young adult female. The cranium is relatively well preserved, although there is breakage of the basicranium as the skull was removed from the display mount. The comparative shape, large size and flatness of the face give this skull a strikingly different appearance from the other two SM-K crania described. Most of the teeth were lost post-mortem; a preserved right molar shows little wear, suggesting the individual was a very young adult. Both the left and right central incisors were lost ante-mortem, with complete resorption of the alveolar process. Given the young age of the individual, this suggests intentional evulsion of the incisors. No pathologies were observed (Fig. 7.19).

## DISCUSSION

From the above presented information, the following observations concerning the preservation, paleodemography, paleopathology and biological affinities of the Garamantian skeletons excavated by Daniels can be drawn.

### Preservation

From the 56 skeletons presented in this chapter, 49 showed evidence of fragmentation, 13 had signs of bleaching and 31 were affected by weathering. Nevertheless, 24 preserved cartilage on the joint surfaces. The extent of weathering was graded using a 5-level system. As such, nine skeletons were classified in the level '1' category, 14 in level '2', two in level '3', four in level '4' and two in level '5'. Thus, the majority of the elements were mildly weathered and the majority appeared strong and compact, with good sub-periosteal survival and very well preserved cortical bone layers. Besides the extensive fragmentation of the material, the bones that displayed breaks could usually be accurately refitted with little effort. The areas that were mostly damaged post-depositionally were those of thick trabecular bone covered only with thin layers of cortical bone, that is, primarily the ends of the large long bones. Few bones bore evidence of insect/larval attack, which was somewhat surprising in the light of the numerous insect eggs in several of the CMD boxes.

### Paleodemography

In total, the skeletal remains from 68 archaeological features were described. The minimum number of individuals (MNI) recovered from these was 56. Of these, 22 were males, 21 females, eight sub-adults younger than 12 years old and five remained of unknown sex due to the poor preservation of the material, lacking any sex diagnostic traits. Thus, the sex ratio in the sample under examination was 1.04 demonstrating a balance between sexes. This is in accordance to the results obtained from Site 96/129 in the Wādī Tanzzūft, Fazzān, predating the Garamantian skeletons presented here and belonging to the 4<sup>th</sup> – 3<sup>rd</sup> millennium BP, where the ratio of males to females was 0.9 (Ricci *et al.* 2002). Also, this value is in accordance to that reported for other North African prehistoric sites, for which the value ranges between 0.7 and 1.33 (for details see Ricci *et al.* 2002).

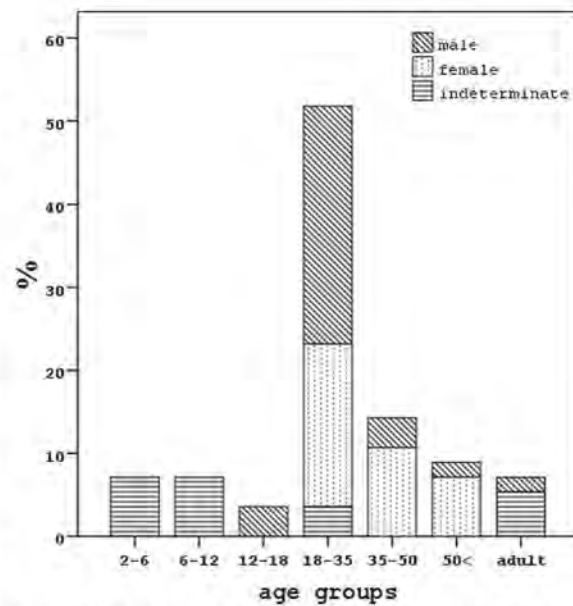


Figure 7.20. Mortality distribution by sex (total sample).

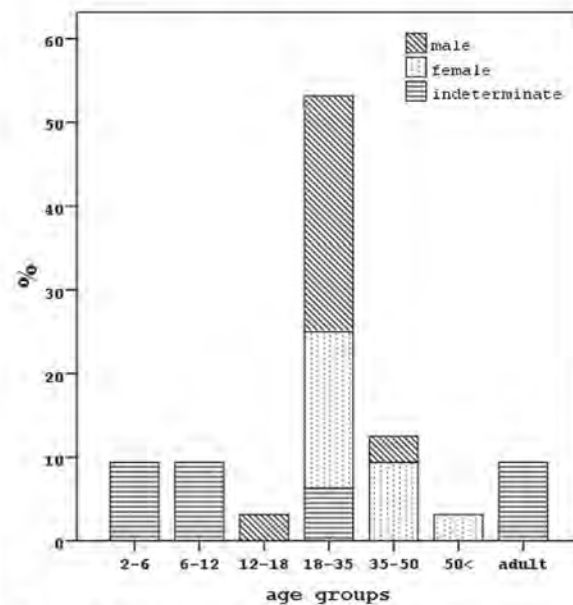


Figure 7.21. Mortality distribution by sex (Sāniat bin Huwaydī).

The mortality distribution presented in Figure 7.20 shows a complete absence of infants, which is surprising given that in most archaeological populations infant mortality is high (for comparison see Ricci *et al.* 2002). However, this phenomenon in the current population should probably be explained as a result of taphonomic factors than as a true population event. The mortality of children appears to be moderate and the same (7.1 percent) for young and mature children. It should be noted that there is evidence from settlement sites for burial of neonates and very young infants

beneath floors of dwellings (see Chapter 3 above), so not all children were necessarily interred in formal cemeteries. This percentage is similar to that obtained from the Wādī Tanzzūft, where the percentage of deceased children ranged between 4 and 7 percent. In contrast, the mortality of adolescents in the current sample is smaller (3.6 percent), while the corresponding value in the Wādī Tanzzūft was around 7 percent. Moreover, in the sample under examination the highest mortality is observed among young adults and reaches 51.8 percent, while that of mid adults drops to 14.3 percent. Contrary to that, each of these two age categories represents 25 percent of the total deaths in the Wādī Tanzzūft. Finally, the percentage of individuals older than 50 years is in our sample 8.9, similar to that from Wādī Tanzzūft, which ranged around 11 percent. Although some of the figures presented above seem to differ substantially between the two populations of Fazzān, it should be stressed that the sample size from the Tanezzuft Valley consists of merely 28 individuals, thus the percentages obtained should be treated with caution. In any case, the overall picture that emerges is similar between the two populations with relatively low child and adolescent mortality, high mortality among young adults and very few individuals reaching the fifth decade.

At this point it should be noted that the cemeteries from which the above Garamantian skeletons were excavated do not all date from the same period. Furthermore, not all known tombs were excavated. Thus, the paleodemographic reconstruction offered above may not be representative of the true age profile of the population. For that reason, the paleodemographic profile of Sāniat bin Huwaydī, a cemetery dated between the 1<sup>st</sup> and 5<sup>th</sup> centuries AD, will be additionally presented at this point (Fig. 7.21), as this is the cemetery with the greatest number of individuals examined in the current chapter. The skeletal material from Sāniat bin Huwaydī consists of 11 males, 10 females, 5 individuals of unknown sex and 6 children aged 2 to 12 years old. The ratio of males to females was 1:1, thus similar to that obtained for the entire sample and still within the range of the North African archaeological populations. In addition, the mortality profile of Sāniat bin Huwaydī is very similar to that obtained for the entire sample. In specific, children mortality ranges around 10 percent, while adolescents' drops to 3.1 percent. Young adults exhibit the highest levels of mortality at 53.1 percent, with mid adults following at

12.5 percent. The percentage of older than 50 years adults is very low (3.1 percent) while for 9.4 percent of the individuals sex could not be determined and the age was generally assigned as 'adult'.

### Paleopathology

A preliminary analysis of the pathologies observed among the Garamantian material excavated by CMD was carried out. The identified pathological conditions consist of degenerative and dental diseases, nutritional/metabolic disorders, as well as trauma. No cases of serious infectious diseases (leprosy, tuberculosis, syphilis) were observed. The purpose of the paleopathological study of the material was to explore the degree to which Garamantian individuals suffered from a range of potential stressors – unbalanced diet, crowded urban conditions, strenuous physical activities, and traumas. The results of our study are given in Tables 7.1–7.3 by age and sex group.

For the adolescent and adult individuals, it can be seen from the above that the incidence of degenerative diseases was overall 41.67 percent for osteoarthritis and 68.75 percent for vertebral osteophytosis. Among the dental pathologies, ante-mortem tooth loss was observed in 72.72 percent of the population, periodontal disease in 33.33 percent, caries in 41.67 percent and dental abscesses in 25 percent. In terms of the nutritional/metabolic disorders, there was evidence of cribra orbitalia in 37.5 percent of the sample, while porotic hyperostosis was only found in the sub-adult portion of the population. Evidence of premortem trauma was observed indirectly as exostoses associated with some traumatic event in 19.44 percent of the sample. It should be mentioned that healed fractures were also traced on two females (mid and old adults, respectively). Two cases of trephination with evidence of healing were also found, one of those in an adult male skull dating to the Classic Garamantian period (Figs 7.2 and 7.5). Among the sub-adults, the only pathologies observed were caries, porotic hyperostosis and cribra orbitalia. However, the sub-adult sample size is too small for any meaningful percentages to be presented.

The above frequencies are either comparable or slightly high in relation to those of other North African archaeological populations. For example, among the Nubian C-Group, the percentage of caries, abscesses and ante-mortem tooth loss ranged from

Table 7.1. Frequency of pathologies in males.

Age groups	Disease expression	Osteoarthritis	Vertebral Osteophytosis	Caries	AM tooth loss	Abscess	Periodontal disease	Calculus	Cribrra orbitalia	Porotic hyperostosis	Exostosis
12-18	Present	0	0	1 (100%)	0	1 (100%)	1 (100%)	0	1 (100%)	0	1 (50%)
12-18	Absent	2 (100%)	2 (100%)	0	1 (100%)	0	0	1 (100%)	0	2 (100%)	1
18-35	Present	7 (46.67%)	9 (69.23)	0	1 (50%)	1 (50%)	1 (50%)	1 (50%)	1 (20%)	0	2 (13.33%)
18-35	Absent	8 (53.33%)	4 (30.77%)	2 (100%)	1 (50%)	1 (50%)	1 (50%)	1 (50%)	4 (80%)	5 (100%)	13 (86.67%)
35-50	Present	1 (50%)	2 (100%)	0	1 (100%)	0	0	0	1 (100%)	0	1 (50%)
35-50	Absent	1 (50%)	0	1 (100%)	0	1 (100%)	1 (100%)	1 (100%)	0	1 (100%)	1 (50%)
50<	Present	1 (100%)	1 (100%)	0	1 (100%)	0	0	0	0	0	1 (100%)
50<	Absent	0	0	1 (100%)	0	1 (100%)	1 (100%)	1 (100%)	0	0	0

Table 7.2. Frequency of pathologies in females.

Age groups	Disease expression	Osteoarthritis	Vertebral Osteophytosis	Caries	AM tooth loss	Abscess	Periodontal disease	Calculus	Cribrra orbitalia	Porotic hyperostosis	Exostosis
18-35	Present	2 (25%)	2 (33.33%)	0	0	0	0	0	1 (33.33%)	0	0
18-35	Absent	6 (75%)	4 (66.67%)	1 (100%)	1 (100%)	1 (100%)	1 (100%)	1 (100%)	2 (66.67%)	6 (100%)	8 (100%)
35-50	Present	1 (33.33%)	4 (100%)	2 (100%)	2 (100%)	0	1 (50%)	0	1 (50%)	0	0
35-50	Absent	3 (66.67%)	0	0	0	2 (100%)	1 (50%)	2 (100%)	1 (50%)	2 (100%)	4 (100%)
50<	Present	3 (66.67%)	4 (100%)	2 (50%)	3 (100%)	1	1	0	1 (25%)	0	2 (50%)
50<	Absent	1 (33.33%)	0	2 (50%)	0	3	3	4 (100%)	3 (75%)	3 (100%)	2 (50%)

Table 7.3. Frequency of pathologies in subadults.

Age groups	Disease expression	Osteoarthritis	Vertebral Osteophytosis	Caries	AM tooth loss	Abscess	Periodontal disease	Calculus	Cribrra orbitalia	Porotic hyperostosis	Exostosis
2-6	Present	0	0	1 (25%)	0	0	0	0	0	0	0
2-6	Absent	4 (100%)	4 (100%)	3 (75%)	4 (100%)	4 (100%)	4 (100%)	4 (100%)	4 (100%)	4 (100%)	4 (100%)
6-12	Present	0	0	0	0	0	0	0	1 (50%)	2 (50%)	0
6-12	Absent	2 (100%)	1 (100%)	2 (100%)	2 (100%)	2 (100%)	2 (100%)	2 (100%)	1 (50%)	2 (50%)	2 (100%)

36.4 percent to 42.4 percent (Beckett and Lovell 1994), while the equivalent for the Garamantes, as given above, was 25–72.72 percent. This comes as no surprise since one of the foundations of the Garamantian economy was agriculture that involved, among other crops, the cultivation of emmer wheat, bread wheat, barley, dates and grapes, all of which are cariogenic (Mitchell 2005; Van der Veen 1992a; 1992b; 1995).

In terms of nutritional/metabolic disorders, although porotic hyperostosis was absent from the adult sample in all but one individual, cribra orbitalia exhibited a rather high expression and comparable to that obtained from Egyptians and Nubians dating from the Palaeolithic to Dynastic times, where the frequency of cribra orbitalia ranged between 12.5 percent (Palaeolithic Jebel Sahaba) and 52.2 percent (Dynastic Tarkhan) (Starling 2005). On the other hand, the frequencies obtained from the Garamantes are much higher than those from Tombos, New Kingdom Nubia, where cribra orbitalia affected only 11 percent of the population (Buzon 2006). Since the processes producing these lesions are not yet determined, their implications vary. The most common cause for porotic hyperostosis and cribra orbitalia is iron-deficiency anaemia (Larsen 1997) that may have a dietary origin from insufficient iron intake in the diet (or the presence of iron-intake suppressors in elements of the diet), or it may originate from high intestinal parasite loads, leading to persistent blood loss. The lesions can also be associated with certain genetic diseases, such as thalassemia or sickle-cell anaemia (Angel 1966; Martin *et al.* 1985; Roberts and Manchester 1995; Stuart-Macadam 1989). However, given that the post-cranial elements did not exhibit the lesions associated with genetic anaemias (Hershkovitz *et al.* 1997), this causative factor seems unlikely for our population. Nevertheless, it should be stressed that some scholars proposed a weak relationship between cribra orbitalia and anaemias in general, and suggest that these lesions express a general unrelated chronic health problem (Wapler *et al.* 2004). Therefore, if iron-deficiency was the primary etiology of the lesions observed, their extensive incidence should indicate either a diet deprived of iron or an environment rich in intestinal parasites. Alternatively, if anaemia is unrelated to the development of such lesions, then these manifestations express in general a rather high incidence of chronic health disturbances.

The incidence of direct traumatic lesions was particularly low and this might seem to contrast with the emphasis the Garamantes placed on defensive structures during the Early, Proto-Urban and Late periods (although the sample here is comparatively small and poorly dated). Moreover, given that the direct evidence of trauma on females is larger than that in males, most lesions probably resulted from accidents and not warfare. Nevertheless, healed depressed fractures were observed in two skulls, while one of the crania from the Royal Cemetery shows a healed lesion resulting from a very serious head wound, probably a sword cut. Finally, special mention should be made of the evidence of trephination found, which, together with the treatment of the major head wound of one of the individuals in the Royal Cemetery, indicates that the Garamantes were aware of and practiced invasive medical procedures. Again, it is interesting to note that the overall frequency of trauma in the Garamantian sample was substantially smaller than that among the Nubian Kulubnarti, where 18 to 23 percent of the population had evidence of long-bone fractures, the majority of which seemed to be due to accidental falls and not direct violence, as in our sample (Burrell *et al.* 1986).

The incidence of degenerative diseases of the skeleton, affecting primarily the spine, is high – approximately half the adult population suffered from some arthritis, while in several individuals the condition was severe. Of particular interest is the presence in at least four individuals of relatively severe degenerative changes of the knee, as well as the moderately high incidence of arthritis in the feet. These again point to occupational tear and wear.

Finally, particularly important are not only the conditions that were identified but also the ones that were apparently missing from our sample, primarily infectious diseases. This lack is surprising since leprosy and tuberculosis have been reported in desert environments (Selinus and Alloway 2005), while the Garamantian urban centres and increased population sizes would favour the multiplication and spread of pathogens. Therefore, the absence of infectious conditions in this admittedly small sample might suggest that, in spite of the appearance of some urban centres, the majority of the population still occupied small villages throughout the Wādī al-Ajāl, evidence of which has been identified archaeologically (Mattingly 2003 and Chapters 3–4 above).

Table 7.4. Non metric cranial traits used in the current study and references.

Traits	References
metopic suture	Hauser and De Stefano (1989)
metopic fissure	Hauser and De Stefano (1989)
supranasal suture	Hauser and De Stefano (1989)
supraorbital structures	Dodo (1974)
infraorbital foramina	Hauser and De Stefano (1989)
parietal foramina	Hauser and De Stefano (1989)
mental foramina	Hauser and De Stefano (1989)
ethmoidal foramina	Hauser and De Stefano (1989)
lesser palatine foramina	Hauser and De Stefano (1989)
squamous ossicle	Hanihara and Ishida (2001)
parietal notch bone	Dodo (1974)
epipteric bone	Dodo (1974)
ossicle at asterion	Ossenberg (1969)
occipitomastoid wormians	Dodo (1974)
coronal ossicles	Hanihara and Ishida (2001)
sagittal ossicles	Hanihara and Ishida (2001)
lambdoid ossicles	Dodo (1974)
inca bone	Dodo (1974)
divided occipital condyles	Hauser and De Stefano (1989)
hypoglossal canal bridging	Dodo (1974)
mandibular torus	Dodo (1974)
maxillary torus	Hauser and De Stefano (1989)
auditory torus	Kennedy (1986)
palatine torus	Hauser and De Stefano (1989)
apertures at the floor of auditory meatus	Hauser and De Stefano (1989)
divided parietal bone	Hauser and De Stefano (1989)
divided temporal squama	Hauser and De Stefano (1989)
os japonicum	Dodo (1974)
marginal tubercle	Hauser and De Stefano (1989)
mylohyoid bridge	Dodo (1974)
foramen of Vesalius	Dodo (1974)
fused ovale and spinous	Dodo (1974)
zygomaxillary tubercle	Hauser and De Stefano (1989)
thinness of parietal bones	Hauser and De Stefano (1989)

## Biological Affinities

Thirty-four non-metric cranial and mandibular traits were examined and scored as present/absent to assess the biological affinities of the Garamantes to other North African populations. These traits are given in Table 7.4 and were selected based on their successful use by other researchers exploring the biological affinities of other archaeological populations (Blom 1998; Hanihara *et al.* 2003; Prowse and Lovell 1996; Sutter and Mertz 2004). The frequency of each was calculated according to the 'individual count' method and whenever there was bilateral asymmetry in their expression, the most pronounced expression was used (Sutter and Mertz 2004).

The North African populations used for the assessment of the Garamantian biological affinities were all approximately contemporary to the Garamantes. The only exception is the Sub-Saharan samples, which are Neolithic, thus, predating the Garamantian civilisation, although no further specification of their date is available. A list of the populations used for the current biodistance analysis, including the Garamantes, is given in Table 7.5.

The modified Smith's mean measure of divergence (MMD) (Sjøvold 1973) was used for the assessment of the biological affinities of the various populations based on the frequencies of the cranial epigenetic traits, since, besides its drawbacks, this method appears to be valid overall and is used in the majority of publications on non-metric traits (Hanihara *et al.* 2003; Irish 1998; Scott and Turner 1997; Sutter and Mertz 2004). In addition, by employing the MMD, the results of the current study are more directly comparable to those of other researchers. The matrix of the standardised MMDs was analysed using the hierarchical clustering procedure of Ward (1963) in order to obtain a cladogram depicting the affinities of the various African groups (Fig. 7.22).

From Figure 7.22, it can be seen that the Garamantes cluster most closely to the Sub-Saharan Africans and secondarily to the Roman Egyptians from Alexandria and the Nubians from Soleb. Populations from Algeria and Tunisia are somewhat more distant but still rather close to the Garamantes. The most distant groups appear to be the Sudanese Jebel Moya and Kerma, as well as those from Gizeh. Overall, these results are reasonable given that from the archaeological evidence it is known that the Garamantes were in

Table 7.5. North African samples included in the biodistance analysis.

Population	N	Dating	Origin	Collection
Garamantes	14	1st mill. BC – 1st mill. AD	Libya (Fazzān)	Jarma Museum (Jarma, Libya)
Jebel Moya	15	1st mill. BC	Sudan	Duckworth Laboratory (Cambridge, UK)
Kerma	133	2nd – 1st mill. BC	Sudan	Duckworth Laboratory (Cambridge, UK)
Gizeh	150	1st mill. BC	Egypt	Duckworth Laboratory (Cambridge, UK)
Alexandrian-ptolemaic	21	1st mill. BC	Egypt	Musée de l'Homme (Paris, France)
Various sites	13	1st mill. BC	Algeria	Musée de l'Homme (Paris, France)
Soleb	27	2nd – 1st mill. BC	Sudan	Musée de l'Homme (Paris, France)
Phoenicians	20	1st mill. BC	Tunisia	Musée de l'Homme (Paris, France)
sub-Saharan Africans	14	Neolithic	Chad, Mali, Niger	Musée de l'Homme (Paris, France)

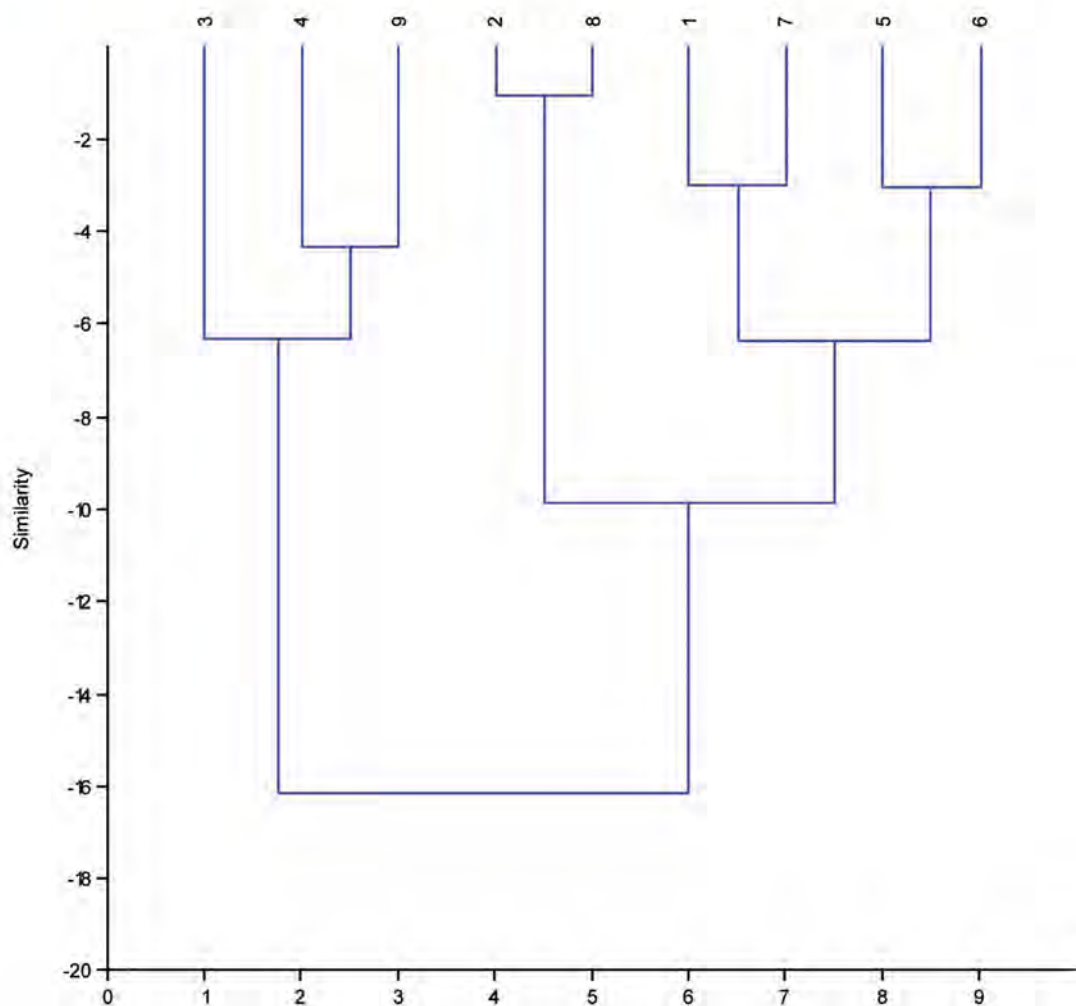


Figure 7.22. Biological affinities of the Garamantes and other North African populations (No. 1 represents the Garamantes, No. 2 the Algerians, No. 3 the Jebel Moya, No. 4 the Kerma, No. 5 the Egyptians, No. 6 the Soleb, No. 7 the sub Saharans, No. 8 the Tunisians, No. 9 the Gizeh).



close connection with Sub-Saharan Africa, and at different times with people from Egypt and the Mediterranean coast of Africa. However, the only statistically significant distances between the Garamantes and the other North African groups included all Sudanese populations (even the Soleb) and Gizeh. Naturally, further research is needed to verify these conclusions.

### Summary

The current chapter offered a brief description of the human skeletal material excavated by CMD near Jarma. This material is currently kept at the Jarma Museum, Fazzān, Libya, and consists of 56 skeletons retrieved from 68 archaeological features. The preservation of the bones was overall moderate, with the majority being fragmented, few showing evidence of bleaching and almost half preserving cartilage on the joint surfaces. Finally, although many elements were weathered, that was rather mild in expression. The biggest preservation issue relating to these remains was the commingling of bones that happened since excavation as the bags in which they were originally placed disintegrated. In respect to paleodemography, the sex ratio in the sample indicated a balance between sexes, which is in accordance to the results obtained from other

North African archaeological populations. The mortality distribution demonstrated an absence of infants, moderate mortality among children, low among adolescents, high among young adults, moderate among mid adults and very few individuals reaching the fifth decade. The paleopathological examination of the material showed a high incidence of dental diseases, osteoarthritis and nutritional/metabolic disorders, but comparable to that of other North African groups. In contrast, the prevalence of traumas was low and there was no evidence of infectious diseases. Finally, as far as the biological affinities of the Garamantes are concerned, they appear to cluster most closely to the Sub-Saharan Africans and the Roman Egyptians and secondarily to populations from Algeria and Tunisia. Although Nubians from Soleb seemed to be close to the Garamantes on the cladogram, their statistical difference as well as the distance between the Garamantes and the other Sudanese groups was significant. Because of the relatively small size of the sample, more detailed comments on the overall population characteristics, including morphometric cranial and postcranial data and musculoskeletal activity indicators, will be reserved for expanded discussion in association with the skeletal material collected by the DMP.

### Appendix: Summary Correlation Data

Table 7.6. Correlation of excavated burials and human remains reported in this chapter.

Site & Burial no.	CMD site number	Skeleton recovered	Evidence of robbing	Integrity of bones certain	Integrity of bones possible	Complete (C) or partial (P) skeleton
<b>Sāniat bin Huwaydī</b>						
GER011.T9 (sk 1)	SBH 9, 9–1	Partial preservation		J38, J39		P
GER011.T9 (sk 2)	SBH 9–2	Articulated?			J35	P
GER011.T11	SBH 11	Disarticulated fragments	√		J52	P
GER011.T12	SBH 12	Articulated		J37		C
GER011.T13	SBH 13	Disarticulated fragments	√		J46	P
GER011.T14	SBH 14	Disarticulated fragments	√		J1	P
GER011.T15 (sk 1)	SBH 15	Articulated		Missing. May be box 8 or 9? Or J12		C
GER011.T15 (sk 2)	SBH 15	Articulated, but poorly preserved		J56		P
GER011.T16	SBH 16 (2)	Disarticulated fragments	√		J60	P

Site & Burial no.	CMD site number	Skeleton recovered	Evidence of robbing	Integrity of bones certain	Integrity of bones possible	Complete (C) or partial (P) skeleton
GER011.T18	SBH 18	Disarticulated fragments	√		J43	P
GER011.T22	SBH 22	Few disarticulated fragments	√		J36	P
GER011.T25	SBH 25	Articulated		J5		C
GER011.T27	SBH 27	Few disarticulated fragments	√	J8		P
GER011.T28	SBH 28	Few disarticulated fragments	√	J55		P
GER011.T29	SBH 29	Few disarticulated fragments	√	J58		
GER011.T30	SBH 30	Disarticulated fragments	√	J53		
GER011.T33	SBH 33 (sk 2)	Articulated? but poor preservation	√		J13	
GER011.T34A	SBH 34 A	Disarticulated fragments	√		J47	
GER011.T34B	SBH 34 B	Skull and disarticulated fragments	√		J59 p-c only. Skull missing?	
GER011.T34D	SBH 34 D	Articulated			J61	
GER011.T37	SBH 37	Articulated	√	J21		
GER011.T40	SBH 40	Articulated but poor preservation	√	J2 & J20		
GER011.T41	SBH 41	Articulated	√	J22		C
GER011.T42	SBH 42	Articulated but poorly preserved			Probably J54	P
GER011.T43	SBH 43	Articulated but poor preservation	√		J51	P
GER011.T45	SBH 45	Articulated	√	J42		C?
GER011.T46	SBH 46	Articulated		J24		
GER011.T49	SBH 49	Articulated		J9		C
GER011.T50	SBH 50	Articulated but v poor preservation		J45		P
GER011.T53	SBH 53	Articulated but v poor preservation		J57		P
GER011.T54	SBH 54	Articulated but poor preservation		J48		P
<b>Zinkekrā</b>						
ZIN013 Burial 44	Zin 13 44	Articulated		J6		C
ZIN013 Burial 45	Zin 13 45	Articulated		J4		C
ZIN013 Burial 54	Zin 13 5A or 54	Articulated, but poor preservation		J44	J30–J33	C
ZIN013 Burial 170	Zin 13 170	Articulated		J23		C
ZIN013 Burial 171	Zin 13 171	Articulated		J25	J25	C
ZIN013 Burial 202(sk 1)	Zin 13 202	Articulated		J11		C

Table 7.6. Correlation of excavated burials and human remains reported in this chapter. (cont.)

Site & Burial no.	CMD site number	Skeleton recovered	Evidence of robbing	Integrity of bones certain	Integrity of bones possible	Complete (C) or partial (P) skeleton
ZIN013 Burial202 (sk 2)	Zin 13 202 B	Disarticulated fragments		J26		P
ZIN013 Burial204	Zin 13 204	Articulated		J49		C
ZIN013 Burial209	Zin 13 209	Articulated		J50		C
<b>Other cemeteries</b>						
CHA005D	CHA 5D 4	Articulated		J40		C
CHA005D	CHA 5D 10	Articulated		J41		C
CLF010	CLF 2 (Area 5)	Articulated		J7		C
FJJ004.3	Fjej 4 (3)	Disarticulated fragments	√	J17		P
<b>Uncertain origin</b>						
GER011.T20	SBH 20	Partially articulated	√		J30–J33	P
GER011.T21	SBH 21	Few disarticulated fragments	√		J3/J14–J16/J34? Missing	
GER011.T23	SBH 23	Few disarticulated fragments	√		J30–J33	P
GER011.T31	SBH 31	Articulated? but poor preservation	√		J3/J14–J16/J34? Missing	
GER011.T33	SBH 33 (sk 1)	Articulated? but poor preservation	√		J3/J14–J16/J34? Missing	
GER011.T34C	SBH 34 C	Skull only	√	-	Missing J3/ J14–J16/ J34?	
GER011.T51	SBH 51	Articulated but v poor preservation			J3/J14–J16/J34? Missing	
GER011.T52	SBH 52	Articulated but v poor preservation			J3/J14–J16/J34? SC box 10	P
GER011.Tr 7 A/B	SBH Tr 7 A/B	Articulated but poor preservation?		In SC list – child?	J3/J14–J16/J34? Missing	P
GSC003 (G)	GSC 3 (G)	Disarticulated fragments	√		J30–J33	P
<b>Mixed disarticulated bone</b>						
GER011.T17	SBH 17	Articulated, but v poorly preserved			some material in box 10?	P
GER011.T24	SBH 24	Articulated	?	SC box 8 or 9?		C?
GER011.T36	SBH 36	Disarticulated fragments	√	-		

## Part IV.

### Other Excavation Finds



## 8. NON-CERAMIC FINDS FROM CMD'S EXCAVATIONS AND THE WORK OF M. S. AYOUB

By B. Hoffmann, D. J. Mattingly, C. Tagart, F. Cole and J. P. Wild

### INTRODUCTION

Finds reports on various aspects of the overall assemblage appear to have been commissioned by CMD during his lifetime, but what remained in the archive was far from a complete record. Many items from the Zinkekrā excavations were illustrated in the original report (Daniels 1968a), and are reproduced in Chapter 1, to which reference will be made as appropriate. The material from Sāniat Jibrīl and Sāniat bin Huwaydī has never been published. For some categories, archive reports existed on file, for others there were important clues as to his intentions in his archived correspondence. But for some classes of artefact, the trail was cold. Charlotte Tagart is known to have done a considerable amount of work on the finds from Sāniat Jibrīl and Sāniat bin Huwaydī in particular, but sadly little of this existed in publishable form in the archive. It has proved difficult to combine partial reports completed at various times and using different descriptive terms and recording criteria, especially when not all the artefacts were readily available for reappraisal. Records for some categories appear to be incomplete or missing from the archive (stone tools, stone grinding and pounding equipment). This section on the non-ceramic finds from his excavations can thus make no claims to completeness or consistency. While quite a lot of material was drawn to a superb standard by Miriam Daniels, some material can only be illustrated photographically or in drawings of different style and convention. The guiding principle followed here has been to illustrate as fully as possible, even at the risk of sacrificing consistency of presentation. Nonetheless, despite these various riders, it is hoped that there is considerable value in this catalogue. It represents one of the largest and most extraordinary assemblages of material culture from anywhere in the Saharan zone.

A basic distinction in the presentation of the non-ceramic finds has been made between those from Sāniat bin Huwaydī on the one hand and those from other sites excavated by CMD (including

Old Jarma) on the other. CMD's finds from Old Jarma (GER001) are included here, rather than held over for publication in *AF 4*, because they were commonly included in the draft catalogues and were not in general reviewed by the Fazzān Project (FP) specialists working on new material from Jarma.

The sub-sections of the Chapter are arranged in the following order:

*Discussion of the Glass Assemblage from the Excavations of CMD and M. S. Ayoub*  
(by B. Hoffmann)

*The Glass and Faience Vessels from Sāniat bin Huwaydī* (by B. Hoffmann, C. Tagart, with D. Mattingly)

*Glass and Faience Vessels from Other CMD Excavations* (by B. Hoffmann, with C. Tagart)

*Glass Objects from Sāniat bin Huwaydī* (by B. Hoffmann and C. Tagart)

*Glass and Faience Objects from Other CMD Excavations* (by B. Hoffmann, C. Tagart, with D. Mattingly)

*Beads from Sāniat bin Huwaydī* (by C. Tagart, with D. Mattingly)

*Beads from Zinkekrā, Sāniat Jibrīl and Old Jarma*  
(by B. Hoffmann, C. Tagart and D. Mattingly)

*Bead Grinders* (by Franca Cole)

*Stone Rings or Bangles* (by C. Tagart, D. Mattingly and B. Hoffmann)

*Metal Artefacts from Sāniat bin Huwaydī* (by C. Tagart and D. Mattingly)

*Metal Artefacts from Other CMD Excavations*  
(by C. Tagart and D. Mattingly)

*Stone Artefacts from Sāniat bin Huwaydī (by C. Tagart)*

*Stone Artefacts and Unusual Stone Occurrences from Other Sites (by C. Tagart, D. Mattingly and B. Hoffmann)*

*Miscellaneous Materials from Sāniat bin Huwaydī (by C. Tagart)*

*Items in Miscellaneous Materials from Other CMD Excavations (by C. Tagart and D. Mattingly)*

*Textiles from Zinkekrā (by J. P. Wild)*

*Pottery with Impressed Matting Decoration (by J. P. Wild)*

### Abbreviations

Key abbreviations used in the catalogues are as follows: Dims = dimensions (length x breadth of irregular artefacts/fragments); L = length; W = width/breadth; H = height; Th = thickness; D = diameter; Dp = diameter of perforation of e.g. bead; ext = exterior; max = maximum preserved of broken object; EVE = estimated vessel equivalent (% of whole vessel). All measurements are mm, unless stated otherwise.

## DISCUSSION OF THE GLASS ASSEMBLAGE FROM THE EXCAVATIONS OF C. M. DANIELS AND M. S. AYOUB

By B. Hoffmann

### Introduction

The glass reported in this volume relates to the excavations carried out separately (but often at the same sites) by CMD and Mohammed Ayoub. The material is currently held in two separate locations. CMD had permission to export for study the fragmentary vessel glass from his excavations and this material was re-examined by the author at the University of Newcastle in 2000. In total, the Newcastle assemblage comprised 483 fragments of Roman vessel glass, as well as about two dozen bags of devitrified colourless glass material. The material included some glass objects and vessel glass from the Roman and very early Islamic periods, as well as a number of later Islamic glass

objects. The intact and reconstructed vessels from CMD's excavations at Sāniat bin Huwaydī remained in Libya and in recent years some of these have been on permanent display in the Jarma Museum, along with similar vessels recovered by Ayoub. Also on display in the Museum is a certain amount of fragmentary material, most probably excavated by Ayoub (Ayoub 1967b; 1968a; el-Kilani 1968). The Jarma Museum holdings comprise 507 fragments of vessel glass from at least 67 different vessels. In addition, not on display, there are a further 14 vessels (in 425 fragments) from CMD's excavations at Sāniat bin Huwaydī. The total assemblage is thus over 1400 fragments from more than 100 imported vessels. Additional glass finds have been reported by Caputo from Italian excavations in the 1930s (Pace *et al.* 1951). Despite several very similar vessels, and even fragments that may have come from the same vessels, there is no indication that any of the actual material from the Italian excavations is represented among the assemblage held by Jarma Museum.

As there is a large overlap of vessel types between the various sections of the catalogues, it was decided to discuss the material together here, allowing the reader the chance of linking similar vessels from the different collections. Finds from surface survey work by CMD and FP have already been published in *AF 2* with a summary discussion (Hoffmann 2007, 480–86). A full comparison of all the different assemblages will be produced in a separate report, when the excavations at Old Jarma are published in *AF 4*, and this will draw on all the evidence available from the different projects.

The series of sites excavated by CMD provides a useful window from a series of different sites on the overall pattern of glass imports into the region. At Tinda and Zinkekrā there was little vessel glass until the very last phases of occupation or, more likely, until the encroachment of the Classic Garamantian cemeteries on these early Garamantian settlements. Although the cemetery at Sāniat bin Huwaydī (GER011) continued in use from the 1<sup>st</sup>–5<sup>th</sup> centuries AD, the largest and most intact assemblages of vessel glass related to the earliest phases of burial, broadly the later 1<sup>st</sup> and early 2<sup>nd</sup> century AD. The material from the Royal Cemetery (GSC030–031) was predominantly late (4<sup>th</sup>–6<sup>th</sup> centuries) and many of the now unprovenanced fragments of late Roman glass in Jarma Museum almost certainly derived from Ayoub's slightly haphazard interventions at this site.

The settlement of Sāniat Jibrīl is the third key site, in that a large amount of fragmentary vessel glass was recovered there in contexts dating between the 1<sup>st</sup> and 4<sup>th</sup> centuries AD, intersecting at either end with material from the two previously mentioned cemetery sites. The larger-scale FP excavations at Old Jarma will add another significant assemblage to this group, but in combination with the previously published survey material, we are now in a position to make some robust statements about the access of the Garamantes to Roman glass across this broad period.

The vessels excavated by both Ayoub and CMD from Sāniat bin Huwaydī can almost all be identified in the material preserved in Newcastle or Jarma. Most of the remaining vessels appear to have come from a series of excavations by Ayoub and CMD at the Royal Cemetery (GSC030–031) or Old Jarma (GER001), with a small number of finds from elsewhere. Unfortunately the surviving information on vessel provenance is much less secure for this material, though some fragments from GSC030.T4 are identifiable with glass vessels mentioned in Ayoub's interim reports (1967a; 1967b). Nonetheless, there are some substantial collections of fragments that are recorded in the Sabhā Museum Catalogue (now lost, but transcribed by CMD in the late 1960s) as having come from GSC030–031 and the late Roman date of the bulk of this material fits with the dating of the cemetery. There are other fragments which CMD suspected came from GSC030–031, which are again consistent with a rich high status assemblage of Late Roman date. Thus, although many fragments in the catalogues (below) were recorded as technically unprovenanced, for the bulk of the Late Roman material, it is believed that the vast majority derived from Ayoub's activities at the Royal Cemetery.

### Hellenistic Glass

The colourless bowls from GER002, TIN001 and ZIN002.022 (Fig. 8.13b, e, f) are most likely to come from shallow bowls with flaring sides. Similar conical straight rims with internal wheel-cut grooves and good quality colourless glass can be found amongst the glass from the Canosa group (for example, Stern and Schlick-Nolte 1994, 246f, no. 63 and 262–265, no. 69), which date to the late Hellenistic period (mid 2<sup>nd</sup> – 1<sup>st</sup> century BC). The group appears to be tightly knit and was originally defined by a number of grave groups

from the tombs of Canosa in Southern Italy, but is increasingly recognised amongst the glass ware from Hellenistic sites around the Mediterranean, including Magna Graecia as well as Etruria, Sicily, Greece, the Black Sea Region (Grose 1989, 186), as well from Sidi Khrebish/Berenice in Benghazi, Cyrenaica (Price 1985b, 290). Grose (1989, 189, n. 15) highlights the missing cut line under the rim on the outside of the Benghazi fragments, setting them apart from most other vessels in the group and it is interesting to note that the same holds true for the vessels from the Fazzān. Within this group, large- to medium-sized plates with outplayed rims like our examples form the most common vessel type and can occur with (Stern and Schlick-Nolte 1994f, no. 69, D: 300 mm) and – as in our case – without gilding. Even allowing for the large assemblage from the Canosa cemetery, the highest concentration of these vessels known at present remains Southern Italy, but it is unclear whether that reflects proximity to a manufacturing centre. An origin in Egypt, traditionally the first choice for manufacturing high quality glass, is debatable due to the lack of examples from there (Grose 1989, 189).

### Early Roman Cast Glass

The majority of the complete vessels in Jarma Museum come from so-called pillar moulded bowls which are one of the most common glass finds on Roman sites in occupation in the second half of the 1<sup>st</sup> and early 2<sup>nd</sup> century AD (Grose 1989, 244–247; Isings 1957, form 3). They were exported in large numbers with Meyer (1993, 17f) reporting examples not only from the Red Sea port of Quseir al-Qadim, but also at Meroe, Timna and Heis, as well as stratified finds along the road from Coptos to Berenike at Didymoi, dated AD 76–86 (Brun 2003, 378). Due to their huge popularity it is difficult to ascertain when exactly in the early 2<sup>nd</sup> century they ceased to be part of the current set of table wares, but their absence from the deposits at Krokodilo (settled in AD 100), while they are extremely common in the rubbish deposits of Didymoi (dating to AD 76–86) may point to a comparatively early date (Brun 2003). They are, however, usually found in large numbers in the towns of Roman Africa (Harden 1936, 118f; Oliver 1990a; Price 1985a/b, 291; Tatton-Brown 1994, 945, no. 83, pl. 7, fig. 1). Ten examples were recovered from the cemetery excavations at Sāniat bin Huwaydī (Fig. 8.4). In addition to the examples



from this cemetery, another eight were found during the survey by CMD and the FP at Waṭwāt, Sāniat Jibrīl and Jarma (Hoffmann 2007, 487–90), as well as two unpublished examples from the FP excavations at Old Jarma and three examples from Sāniat Jibrīl (Fig. 8.11a, i–j). In total, there are at least 23 examples from the Fazzān overall, making the type the most popular in the Fazzān, and thus following a trend to be observed all over the Roman world between the second quarter to the end of the 1<sup>st</sup> century AD (Grose 1989, 244–247).

Apart from the high frequency of this type as such, it is also noteworthy that especially within the cemeteries, there is a very strong tendency towards a particular size of the bowl in the Jarma area, with diameters typically c.110–125 mm. This is unusual, as within the Roman Empire these bowls tend towards larger diameters of c.160–180 mm, suggesting a conscious selection for carriage across the desert to Fazzān.

In contrast with the Canosa bowls discussed earlier is a group of cast bowls with near horizontal rim (for example, Figs 8.13a (unprovenanced) and 8.14a from ZIN024.T3) dating to the opposite chronological end of Roman cast glass and which were variously produced in millefiori, strongly coloured and colourless glass. They belong to a group of vessels which appear to imitate shapes popular in mid to late 1<sup>st</sup> century AD pottery and metalwork, often characterised by very strong carinations and broad rims. Similar profiles occur in vessels of very different sizes, and this may reflect an attempt to create sets of glass table ware. The examples from the Fazzān illustrate this with diameters ranging from 90 mm to 380 mm. Colourless examples are attested in the Fazzān in several fragments, including two examples from Classic Garamantian cemeteries at Zinkekrā, and others from the FP excavations at Old Jarma, from survey at Sāniat Jibrīl (Mattingly 2007, 487). Outside the Fazzān, further examples are known from Tripoli (Price 1985b, 69 and 96, fig. 6:1 no.2), Cyrene (Oliver 1990, 95, fig. 1, 95 and fig. 2, 96), as well as from Karanis (Harden 1936, 61f) and Quseir al-Qadim (Meyer 1993, pl. 3, 52–59) in Egypt.

Enough is preserved of the unprovenanced large plate (Fig. 8.13a) to be certain of its original circular shape, as well as its large diameter, exceeding even a fragmentary dark blue platter (Fig. 8.15a). (D: 340 mm), and thus making it one of the largest cast plates of this type (for example, Raddatz 1973, 62, fig. 20.11, taf. 16.3 (D: 310 mm); Rützi 1991, vol. 2, 35f, no. 776 (D: c.350 mm), no. 777

(D: c.400 mm) and no. 778 (D: c.500 mm)). Smaller bowls of this type are very common in Africa and Libyan examples include pieces from Forte delle Vite in Tripolitania and Cyrene (Oliver 1990, 95 no. 96 pl. 8, fig. 2; Price 1985a, 69, fig. 16:1 no. 2), as well as a further bowl from Sāniat Jibrīl (Hoffmann 2007, 487). Two footrings probably related to smaller versions of this type of vessel (Fig. 8.11e and f). The majority of dated vessels of this type are found in contexts of the late 1<sup>st</sup> and early 2<sup>nd</sup> century, although they do occasionally occur up to the 3<sup>rd</sup> century AD (Grose 1991; 15, Hoffmann 2002, 64–5) and a case has recently been made that this pattern may have been revived in Egypt in the 2<sup>nd</sup> and 3<sup>rd</sup> centuries AD (Nenna, pers. comm.).

The dark blue very large plate from GSC030.T4 (Fig. 8.15a) only survives in a series of fragments, but what makes it unusual is not so much its colour, as its extreme size with a c.340 mm diameter (cf. a large plate in Augst with a nearly 500 mm diameter, Grose 1991, 8 or a 410 mm diameter dark blue plate with facet and figure cutting from Albegna in Northern Italy, Massabo 1998). It is usually assumed that the strongly coloured dishes are slightly earlier than their colourless equivalents and saw their highest popularity between c.AD 25–60 or perhaps somewhat later (Grose 1991, 9). The GSC030.T4 plate was recorded amongst a box of fragments marked as from Royal Cemetery tomb 4, which is certainly a Late Roman context. This suggests that the platter was either deposited a long time after it first arrived in the Fazzān or that the piece was not found at this site at all, but has been subsequently added to the box. In favour of the first explanation is the fact that Caputo reports that during his excavations of Tomb 3 (the next one to the south), he found an ‘impressive platter of blue glass’, the diameter being given as 480 mm and which appears to have had a very similar profile (Pace *et al.* 1951, 313 fig. 106, see in this volume Fig. 6.24h). In any case, both Tombs 3 and 4 had been robbed and their contents mixed and dispersed prior to modern excavation (Pace *et al.* 1951, 310) it is thus possible that fragments from a single vessel were recovered from the two adjacent tombs due to the activity of earlier robbers.

The millefiori fragment from Sāniat Jibrīl (not illustrated) was too small to allow any detailed statements about its original vessel shape. The combination of purple with white inclusions is one of the most common millefiori types in the Roman period with more than 50 examples known

from the Northwestern Provinces alone (where this material is probably most intensively studied, see Hoffmann 2002, 52) and further examples from Syria (Clairmont 1963, 11, nos 11–14; 16), Italy (De Bellis 1998, 54f. nos. 32 and 33) and possibly from Illyricum (Clairmont 1975, 43, no. 4). The colour combination suggests imitation of Egyptian porphyry, but we know too little about millefiori and its estimation in Roman society to hazard any guesses as to how this may have influenced the value of the original glass vessel. The majority of vessels produced in this material comprised pillar moulded bowls, although the vessels from Dura and Salona appear to be flat segmental bowls. In the Northwestern provinces this material can be found on sites in occupation in the Claudio-Neronian and Flavian periods (Hoffmann 2002, 52). The millefiori fragment is not unique in the Fazzān: a second piece of millefiori glass with a dark blue matrix was found at ELH005 during the FP survey (Hoffmann 2007, 487) and another example was identified in the FP Jarma excavations.

### Mould-Blown Glass

Only one vessel from Sāniat bin Huwaydī belongs to the mould-blown glass wares (Fig. 8.7, GER011.TA1.6 C5). The small carinated beaker has a two-zone decor, which is separated by horizontal lines. The upper zone of alternating twigs of berries and leaves can be paralleled on a shallow cylindrical beaker in the Collection of Erwin Oppenländer (Saldern *et al.* 1974, 159, no. 446, 163 (fig.), top left), while the lower zone with a stylised vine-scroll can be found on a slightly higher beaker in the same collection (Saldern *et al.* 1974, 162, no. 52, 163 (fig.), top right). Berries of the same style are known from a cylindrical (?) beaker from the Unexplored Mansion site at Knossos (Price 1992, 444, pl. 341, 97), while similar beakers with leaves and almonds in several museum collections have recently been discussed by Wight (2000). Similar vegetal designs can be found as part of the so-called Syro-Palaestian workshops of mould-blown vessels (Calvi 1965; Stern 1995, 166f). The closest parallel, is a near identical beaker that formed part of the Constable-Maxwell collection (Sotheby's 1979, 168f, lot 301). With the exception of the fragment from Knossos, none of these parallels has a reliable find spot, so that little can be said about the likely origin. Price (1991, 64–69) and Wight (2000, 68) argue for a date for these beakers of the second and third quarter of the

1<sup>st</sup> century AD. The assemblage with the example from Sāniat bin Huwaydī (if Ayoub's account is to be trusted) would suggest a date for the tomb of the later 3<sup>rd</sup> century AD.

Two fragments of mould-blown glass were found by CMD at Sāniat Jibrīl (Fig. 8.12e and f). Whereas usually in mould-blown glass the raised patterns leave a negative indent on the inside of the vessel, in the example from GER002 4 11, the central blob displays a flat surface on the inside, suggesting that the originally mould-blown vessel may have been decorated further by adding the blob. It is not clear if a Late Roman sprinkler with a similar design in the Sammlung Oppenländer (Saldern *et al.* 1974, 168, no. 483) and in the Sammlung Hentrich (Saldern 1974, 63, no. 44) share this internal feature. Both are dated to the 3<sup>rd</sup> – 4<sup>th</sup> century AD.

### Early Roman Freeblown Glass

#### *Glass with Raised Ledges*

Colourless glass vessels with raised cut-out ledges like GER 002 4 55 (not illustrated) form a close-knit group with the more common conical beakers with interlocking honeycomb facets (Oliver 1984). These tablewares were particularly common in the Flavian period and the first half of the 2<sup>nd</sup> century AD. While conical drinking vessels, both in a tall and squat variety are the most common shape, there are also cylindrical and globular beakers, as well as small jugs, which belong to this group (Hoffmann 2002, 91; Price and Cool 1995, 71–4). They are extremely common throughout the Empire, and the facet-cut varieties have been also found beyond the frontiers as far away as Scandinavia and Afghanistan. Undecorated beakers (that is, beakers with ledges such as the Fazzān example are only rarely found outside the empire, although their occurrence at the Red Sea port of Quseir al-Qadim suggests that they too were exported. (Meyer 1993, 146, pl. 4.66; 66–71 and 148, pl. 5.78; 91 and 92).

#### *Tall Beakers with Wheel-Cut Grooves and Separately Blown Feet*

These beakers with wheel-cut lines, which include Isings form 34 (Isings 1957, 48–9), form a large family of closely related vessels. Their separately blown feet are only one of many possible bases, including the much more common tubular

footrings and flat bases. For the most part they date to the late 1<sup>st</sup> and early 2<sup>nd</sup> century AD and tend to be colourless (Foy and Nenna 2003b, 254f., figs 92–98). The unusual purplish colour of one unprovenanced fragment (Fig. 8.16d) may be due to the excessive use of manganese during the decolouration of the glass, rather than an intended colouring. Similar cases have occasionally been found in the south of France, but usually in combination with other feet (Foy and Nenna 2003b, 254). Separately blown feet are found on a similar beaker from Karanis (Harden 1936, 137 and 149f., pl. xv; Meyer 1993, pl. 8D), while other examples from the Eastern Desert site of Didymoi are dated to AD 86–100 (Brun 2003, 379–80, fig. 2.3). These vessels are equally common in the late 1<sup>st</sup> century AD in the South of France (at Arles, Foy and Nenna 2001, 186, no. 320), Northern Italy and modern Switzerland (Berger 1960, 69–70, type V; Biaggio-Simona 1991, taf. 11, type 139.2.006 and 12 type 236.1.025), suggesting a pan-Mediterranean distribution.

#### *Other Drinking Vessels*

Early 2<sup>nd</sup>-century drinking vessels are attested by the globular or carinated beaker (Fig. 8.11v, GER002 6 19), the globular bowl (Fig. 8.11u, ZIN280.T4) and the conical beaker (Fig. 8.14c, ZIN280.T4). All belong to a large and varied group of drinking vessels, which include a wide range of shapes, including the conical and globular or carinated shapes attested here, but can also be cylindrical or vessels and beakers with a strong constriction in the middle. The feet vary from flat bases to tubular base rings and occasionally high, separately blown feet. They occur from the late 1<sup>st</sup> century onwards and continued well into the second half of the 2<sup>nd</sup> century (Oliver 1990, 97; Price 1985b, 72). A further four, perhaps five, vessels of this group were discovered during the more recent surveys and excavations, attesting their wide popularity at the time. Libyan parallels outside the Fazzān include colourless bowls from Cyrene, Sabratha and Tripoli (Hayes 1986, 307, fig. 119, B 18; Oliver 1990, 97, fig. 2; 106–7; Price 1985b, 72, fig. 6:1, nos 9–13); while a blue-green vessel with similar rim and decoration was found in Sabratha (Hayes 1986, 302, fig. 119, A32). In contrast, an unillustrated example from GER002 4 10 had a much smaller diameter and it thus more likely to come from a small jar. Small globular jars with similar rims were popular as *balsamaria*. The

rolled in or bent rim edge found on the majority of these small vessels, is, however, missing in our example. Parallels from the South of France, Slovenia and Austria are dated to the 1<sup>st</sup> and 2<sup>nd</sup> century AD (Sternini 1990, 25, no. 41, pl. 12.27).

#### *Modioli*

*Modioli* are cylindrical vessels with a single handle and slightly out-turned rim. They derive their name from their superficially similar shape to the corn measures used in Italy, but they are for the most part substantially smaller than these measures (compare for example the 90 mm high *modiolus* from Cavarzere in Adria Museum (Bonomi 1996, 161, no. 363)). The nearly 200 mm high examples (Fig. 8.9 – one certain, one probable) from Sāniat bin Huwaydī are amongst the largest known examples, and it would have been unwise to attempt to lift these vessels by their rather small band handle, even when empty. An example of similar size and rim construction comes from Herculaneum, casa del colonnate tuscanico (VI, 17) (Scattozza Höricht 1986, 42 and pl. XXIX, 2888), while another was found in Toulon (Foy and Nenna 2001, 175, no. 280), with further examples of the same type in the museums of Vaison, Lyon and Marseille (Foy and Nenna 2003b, 253f, figs 87 and 88). Complete *modioli* are particularly common in Southern France and Italy, and possibly especially so around the Bay of Naples (although this may reflect a higher level of research rather than a real concentration) and come frequently from 1<sup>st</sup>-century AD cemetery sites (Foy and Nenna 2003b, 254; Isings 1957, 52f, form 37; Scattozza Höricht 1986, 42, form 22), but similar rims are also found on settlements sites elsewhere (for example, Knossos, Price 1992, 431f, and 450, pl. 346, 238–240).

#### *Large Tubular Rimmed Bowls*

The cemetery of Sāniat bin Huwaydī produced six unusually large tubular rimmed bowls from tombs securely dated to the later 1<sup>st</sup> century AD (Figs 8.5–8.6). While smaller varieties of these bowls can be found all over the Roman period in the 1<sup>st</sup> – 2<sup>nd</sup> century AD (Hoffmann 2002, 178), large tubular rims are mainly restricted to the Northwestern Roman provinces. They are particularly well documented in Britain and occur from the mid 1<sup>st</sup> – mid 2<sup>nd</sup> century AD (Biaggio-Simona 1991, tav. 7, type 000.1.155; 139.2.009;

176.2.260; 176.2.026; Hoffmann 2002, 181–183; Price and Cottam 1998, 78–80). There are so far no good parallels for these large sized bowls from south of the Mediterranean.

#### *Cylindrical Bowls with Fire-Rounded Rims*

Cylindrical bowls with fire-rounded rims (Fig. 8.11t – GER001.4 16, Fig. 8.12g – GER002 4 2) occur both from the second half of the 2<sup>nd</sup>/early 3<sup>rd</sup> century, and then later again as the rims of the very popular stemmed lamps and goblets in 4<sup>th</sup> – 6<sup>th</sup> century contexts (Bergman and Oliver 1980, 106, no. 170; Isings 1957, 139, form 111). It is hard to decide on the shape of the rim alone which of these two types is represented by the Fazzān fragments, but the substantial diameter and the thickness of the GER002 example suggests a drinking vessel or bowl, perhaps similar to the cylindrical beakers with single or double footings (Isings 1957, 101–2, form 85), whereas the GER001 example is small enough to be either from a stemmed flute (Isings 1957, 102, form 86; Leclant 1973, for a painted example from Meroe; Pace *et al.* 1951, figs 104 and 105, for a cut example from the Royal Cemetery, see above Fig. 6.24g), or from a Late Roman stemmed glass lamp (Carthage: Hayes 1978, 190, fig. 4.31; Tatton-Brown 1994, 284, fig. 15.2, no. 16; Sabratha: Hayes 1986, 311, fig. 121, B54). Further examples are known from a 4<sup>th</sup>-century deposit in the ad-Dākhla Oasis in Egypt (Marchini 1999, 78, no. 18, fig. 2j) and five examples were also found in the more recent survey work in the Fazzān (Hoffmann 2007, 487–88).

#### *Bottles and Jugs*

By comparison to other vessel types bottles for storage purposes (containers) and jugs for tableware appear to be rare amongst the glass material from the Fazzān. On most Roman sites in the Western Roman Empire (blue-green) glass containers can form up to half of the total glass assemblage, and glass table ware jugs and flasks often form another 10–20 percent of the assemblage. In the Eastern provinces these percentages tend to be somewhat lower, but the scarcity of these closed shapes from the Fazzān especially in the Early Roman period is unusual and suggests some element of selectivity on the part of the Garamantes from the available repertoire of Roman glass.

#### *Square Bottles*

Several square bottles are preserved in Jarma Museum, one example from Sāniat bin Huwaydī (Fig. 8.7, GER011.51 O), an unprovenanced one (Fig. 8.16g), as well as a number of body fragments ostensibly from GSC030.T4. There are at least three more bottles known from CMD's other excavations, as well as from survey at Qaṣr bin Dughba and Tuwash (Hoffmann 2007, 469, TWE029; 491, GBD001). Mould-blown square bottles are a common vessel type of the Early Roman period. With their large variation in base sizes and heights, they were very popular for storage purposes. Most of these variations can be categorised in tall examples (mainly used for liquids) and a squat variety, whose rim diameters would occasionally also have allowed the storage of objects up to egg-size. In addition to the mould-blown version found in the Fazzān, which is ubiquitous in the Western provinces, there appears to be in the Eastern provinces in particular, a free-blown and flattened variety of these containers. Other local differences are expressed in differences of glass colour and rim shape, as well as in the patterns on the base of the bottles (Charlesworth 1966; Hoffmann 2002, 215–7; Isings 1957, 63–67 form 50). The two bottles in the Museum come from mould-blown bottles with comparatively small base sizes, and at least one of them appears to have come from a 'tall bottle'. All square bottles identified in the Fazzān are blue-green and display (if they survive) the standard mushroom-shaped rim seen on Figure 8.7 (GER011.51 O).

The combination of these indicators (rim shape/blue-green colour/production type) is more common in the Western provinces of the Roman Empire, where bottle glass can often form up to 60 percent of an early Roman assemblage. In the Eastern Mediterranean this type of square bottle is much rarer and has been recorded in Cyrenaica (Oliver 1990, 101 pl. 16, 161, fig. 4) and Tripolitania (Price 1985b, 86 and 100, nos 70–73), as well as in Egypt (Brun 2003, 381, form Krokodilo; Meyer 1993, pl. 11, 242 and 243; Woolley and Randall-Maciver 1910, 73). It also appears to be widely distributed outside the Roman Empire, with finds in Nubia, Axum, Taxila-Sirkap and many other locations all around the Roman Empire (Meyer 1993, 32; Woolley and Randall-Maciver 1910, 72, pl. 37, 7339). The majority of square bottles date to the 1<sup>st</sup> and 2<sup>nd</sup> century AD, although due to their great popularity they also occur in 3<sup>rd</sup> century contexts.

Square bottles carry a large amount of different designs on the base, the importance of which is only partially understood and may at times refer to the intended contents, while at other times they may be just a mark of the bottle maker (Hoffmann 2002, 223f and 259f). All three bases recorded in the Fazzān have different patterns (Figs 8.7, 8.16g), including the very common three circles around a central dot, which may suggest that they arrived at different times in the oasis, rather than as a single batch (which frequently share the same base mark). While the Tuwash base fragment is rather unusual (Hoffmann 2007, 489) and can at present not be paralleled, the others bases showing a single circle and, in the case of an unprovenanced cylindrical base (Fig. 8.14h), no design at all, are normal for Roman vessels of this type.

Both container types (cylindrical and prismatic) came into use around the middle of the 1<sup>st</sup> century AD, the cylindrical containers usually vanished from glass assemblages in the early 2<sup>nd</sup> century AD, while the prismatic, especially the square containers remained in use throughout the century in large numbers, and can be found frequently as old pieces in 3<sup>rd</sup> and sometimes 4<sup>th</sup> century contexts (Hoffmann 2002, 172f; Price and Cool 1995, 184). While cylindrical bottles (Isings form 51) tend to be mostly freeblown, prismatic containers (mostly Isings form 50) vary in their production techniques from region to region (Charlesworth 1966; Hoffmann 2002, 206–218; Isings 1957, 63–69, form 50 and 51; Price and Cool 1995, 179–185). In the West, most prismatic containers were blown into moulds and have patterns on the base as attested in the Fazzān examples (African examples include: Oliver 1990, 101, pl. 16, 161, fig. 4; Price 1985b, 86 and 100, nos 70–73; Meyer 1993, pl. 11, 242 and 243; Woolley and MacIver 1910, 73), while in some of the Eastern provinces free-blowing and subsequent flattening proved more popular (for Egyptian examples, Harden 1936, 248–50; Meyer 1993, 31).

### Vessels that Span the Early and Late Roman Periods

#### *Trailed decoration*

The trailed decoration on GER002 4 22 belonged most likely to a vessel with snake-thread decoration (Fig. 8.12h). In the West these are mainly known in a multi-coloured variety often associated with the Cologne workshops (Follmann-Schulz 1992,

57–60, no. 32 and 33; Fremersdorf 1959). Colourless snake-thread (as in the GER002 example) has a much wider distribution and occurs on a number of drinking vessels and jugs of the late 2<sup>nd</sup> and early 3<sup>rd</sup> century AD (Barag 1969; Harden 1934; Harden *et al.* 1987, 105–7).

#### *Wheel-Cut Decoration*

Wheel-cut decoration on free-blown vessels (Fig. 8.17o–r) can be found throughout the Roman period, but was particularly frequent in the 2<sup>nd</sup> century AD, sometimes in combination with facet-cutting (see above) or by itself. Because of its huge popularity its presence cannot necessarily be seen as an indicator of high-quality glass ware (Hoffmann 2002, 109–114). Several further examples of glasses with wheel-cut lines were found at Old Jarma during the FP excavation of the Fazzān Project, as well as at al-Abyaḍ (Pace *et al.* 1951, 379, fig. 167) attesting to the wide distribution of this type of decoration in the Wādī al-Ajāl, as well as in the Roman empire.

#### *Conical Bowls*

Conical bowls occur in various sizes and varieties in the Fazzān assemblage. They include small conical bowls from Sāniat bin Huwaydī (Fig. 8.7, T9 G and T51 B), as well as a very large, deep bowl from the Royal Cemetery (Fig. 8.15b, GSC030.T4); while two others are from a deep dish with a conical rim (Fig. 8.16e and f, GSC030.T4? and unprovenanced). Further examples were found at Waḥwāt during the FP survey (Hoffmann 2007, 489), during CMD's excavations (Fig. 8.13d, unprovenanced; Fig. 8.14d, ZIN280.T3), as well as the FP excavations at Old Jarma.

Their relative simplicity in design ensured their long popularity especially in the Eastern Mediterranean, beginning with vessels in Hadrianic levels in Knossos (Price 1992, 448, pl. 344, 187), pre-3<sup>rd</sup>-century examples from Cyprus (Harden 1955, 48, pl. V, a and fig. 19a; Vessberg and Westholm 1956, 129, fig. 42, 4) and Tipasa (Lancel 1967, 90, nos 181–194, pl. X, 2 and 3). They occur in 3<sup>rd</sup>-century deposits in the Eastern Desert at Didymoi/Egypt (Brun 2003, 385f, fig. 9.1 and 2), but they are still found in late Roman levels (4<sup>th</sup>–6<sup>th</sup> century AD) in the *taberna* under the temple of Magna Mater (Sternini 2001, 38, fig. 6.26) as well as in Carthage (Tatton-Brown 1994, 282–4, fig. 15.1, no. 7) and at

Douch, Kharga Oasis (Nenna 2003b, 96, fig. 4.3) and Karanis (Harden 1936, 56, pl. 11.28; 125 pl. 15, 345). Similar rims also occur in the early Islamic levels at Qal'at Sem'an in Syria (Dussart 2003, 173, figs 4 and 4a).

#### *Cylindrical Bowls with Fire-Rounded Rims*

Straight, fire-rounded rims tend to be more common than the cracked-off rims on most sites and are thus even more likely to span the entirety of the Roman glass production period. The diameter of one piece from GSC030.T4 (Fig. 8.15c) is too large to have come from either the stemmed goblets (Isings 1957, 102, form 86) or any of a large variety of beakers and small cups with fire-rounded rims, examples of which were found during the excavations in Jarma. Instead it (and most likely a similar example from the FP Jarma excavations) is likely to come either from dishes or large bowls, early examples of which can be found in large numbers in Tripolitania, at Tipasa (Lancel 1967, 94, no. 181, pl. X, 7 and 9) and further west along the Mediterranean (Price 1985b, 78, fig. 6:4, nos. 46–47). A further example of this type of dish in Milan Museum has close affinities to 3<sup>rd</sup>- and 4<sup>th</sup>-century plates from Israeli sites such as Hanita, as well as material from Cyprus and the Western provinces (Roffia 1993, 94, 96 and 99, no. 96 with further references).

Late Roman examples of dishes and bowls which provide a good comparison for the very thick glass material of Fig. 8.15c, come from the Late Roman contexts at the Temple of Magna Mater in Rome (Sternini 2001, 36, fig. 6, 21–23). In addition, similar, though slightly smaller low cylindrical vessels were also in use in the early Islamic period, so that the theoretical date range of the Jarma vessel, may have to be extended to the 10<sup>th</sup> century AD (Carboni 2001, 38, cat. no. 1.3)

#### **Late Roman Glass (late 3<sup>rd</sup> – 7<sup>th</sup> centuries)**

The colourless footring with applied blue/green trail (not illustrated) is the only polychrome glass from the excavation assemblage. The footring is itself not diagnostic for the vessel shape. It might originally have belonged to either a bowl, jug or small jar, but the colour combination of blue-green (and other shades of blue and green) on colourless glass was particularly popular in the Late Roman period in the Eastern Mediterranean and might suggest a late date for this fragment (Platz-Horster 1976, 60, nos 110–111).

#### *Late Roman Beakers with Blobbed Decoration*

A further variety of Late Roman drinking vessels comprises cups, bowls and lamps with blobbed decoration (Fig. 8.14f, unprovenanced; see also an example from the FP survey work (Hoffmann 2007, 487). These can be added to the two vessels recovered by Caputo from the Royal Cemetery (see Pace *et al.* 1951, 298, figs 86 and 87, see above Fig. 6.23b). While the fragments from the survey only show a single large dark-blue blob, Figure 8.14f attests to a more complex pattern of (at least) two rows of smaller blobbing on the vessel. Recent research into this type of decoration has shown that the decorative patterns vary widely from region to region, but double lines of blobbing have so far not been recognised in any study of this material, so that it would appear more likely that this is a fragment of a (better known) triangle with a base line of four blobs, as seen on a number of vessels around the Mediterranean (Foy 1995b, 227, pl. 9; Harden *et al.* 1987, 113, no. 46; Sazanov 1995; Weinberg and Goldstein 1988, 88–93). The latter can be combined with alternating larger blobs, similar to the arrangement found on the Caputo glasses. While these regional studies are able to pick up on specific trends, they are far from complete and the existence of a conical beaker with two parallel rows of blobs in the Wolff collection (without provenance), should allow caution in the reconstruction of the vessel (Stern 2001, 293, cat. no. 157). Blobbed decoration can occur on a number of vessels including on vessels with slightly everted cracked-off rims discussed above.

#### *Thick-Walled Late Roman Moulded and Cut Glass*

One of the most unusual vessels of the assemblage in Jarma Museum is again an unprovenanced piece (Fig. 8.12i). The rarity of the design and the quality suggest that it may originally have come from the Royal Cemetery (GSC030), either from Ayoub's or CMD's interventions. According to Ayoub (1967b, 216), when CMD excavated Tomb 5 he found there a glass dish, but the few notes in the CMD archive do not correspond with this vessel. The material is thus most likely to have derived from one of Ayoub's own excavations at either GSC030 or GSC031. Dark peacock green is not a common glass colour in Roman glass (for a 1<sup>st</sup>-century example, see Follmann-Schulz 1992, 16–7, no 7).

But the vessel raises a number of questions about its manufacture. The vessel clearly shows raised areas of decoration, suggesting that similarly to the 'Hochschliffgläser' it was originally cut from a much thicker blank. However, the surface between the raised areas shows no traces of polishing or wheel-cutting and instead has the glistening characteristics of a blown glass. This is also the case with the facets on the circular band, which display no traces of having been cut. The lines and hatchings, however, are very clearly cut into the material and have 'blunted' the glass in the characteristic manner, thus suggesting a complex multi-stage design and production process.

One way to explain the unusual feature of this flat bowl is to assume that it was initially formed in a mould, though given the extreme thickness of the glass the exact process remains to be determined. The mould would have already contained the main features of the raised decoration and only the finer details were cut later into the glass after the bowl had cooled down. An alternative form of production would have started with a thick blank, from which in a lengthy cutting process the main features were cut. Similar to modern crystal manufacture, the vessel would then have been dipped into an acid bath to remove the traces of the cutting and grinding and produce a smooth surface, which was again followed by a second level of cutting, which was left with the dulled surface unaltered. While this second explanation would not demand the introduction of a different manufacturing technique, this latter process also has its problems. Such large-scale cutting should have opened up at least one of the visible air bubbles in the glass (for which there is no evidence) and more problematically there is a complete absence of evidence for the use of acid baths in antiquity (M. E. Stern, pers. comm.).

At least as interesting as the problems of its manufacture is the fact that these fragments show very close affinities to a number of fragments reported by Caputo from the southernmost tomb (GSC030.T1) of the Royal Cemetery (Caputo in Pace *et al.* 1951, 298, fig. 88, see here Fig. 6.24b above). A comparison with the Caputo fragments and the new sherds seems to make it more than likely that all come from near identical, but differently coloured vessels. In addition a further bowl, described as 'verdastra' (greenish), from Tomb 3 in the same cemetery appears to reproduce the same form of decoration with the raised circle

with added facet in combination with vegetation, which is defined through a combination of raised areas and cut lines (Pace *et al.* 1951, 311f, fig. 103, see above Fig. 6.24f). Thus, while the origin of this piece is not fully resolved, it seems by a process of elimination that the fragments are most likely to come from Ayoub's excavations.

The style of cutting, especially the incised lines around the letters (?) and on the leaves are very similar to a colourless skyphos from Zülpich-Enzen, near Cologne. The shallow two-handled cup displays raised leaves and wheat-ears with further incised lines and the inscription ZHCAIC KALWS. The raised lettering shows alongside it further incised lines at the foot of the raised area, similarly to our pieces. The cup was found in a grave dating to the second half of the 4<sup>th</sup> century AD (Follmann-Schulz 1992, 70–1, no. 39). In addition to this cup there are a further five colourless cups known from Germany, as well as a jug from Trier and numerous bowls from Britain, from Ephesos in Turkey and from Sidi Khrebish in Libya (J. Price, pers. comm.). In addition there is a deep blue bowl with similar letters from Douch, Kharga Oasis in Egypt. The majority of these vessels come from 3<sup>rd</sup>- and 4<sup>th</sup>-century contexts (Nenna 2003b, 90, fig. 4.6), which agrees well with the evidence from the two tombs excavated by Caputo, both of which produced substantial amounts of 4<sup>th</sup>- and possibly 5<sup>th</sup>-century glassware (Pace *et al.* 1951, 292–320).

#### *Conchylia-cups*

*Conchylia-cups*, beakers decorated with sea-creatures, are among the rarest of the Roman luxury glasses and the recognition of an example from GER002 4 35 (Fig. 8.12,d) in the Fazzān caused its publication in advance of the remaining glass material (Tagart 1982). These vessels are often claimed as products of the Cologne workshops, based on the occurrence of at least 4 beakers plus several loose fish in Cologne (Fremersdorf 1961, 26–8, pls 20 and 21). Some of these fish (Fremersdorf 1961, pl. 20 top and pls 22–3), as well as one of the examples in the Wolff collection (Stern 2001, 173, cat. no. 173) have thin trails spiralling around their body and provide, therefore, a good parallel to the Sāniat Jibrīl example. However, unlike many of the surviving fragments, there is no indication of fins or eyes on the Fazzān piece, leading Tagart (Tagart 1982, 83) to identify it as a conch shell, rather than a fish.

Shells and other forms of ground-hugging marine life are commonly found in the lowest registers of *conchylia* beakers. Most of these vessels were made of colourless glass and the shapes range from conical beakers on applied feet (Fremersdorf 1961, pl. 21) to hemispherical cups with rounded bases (Fremersdorf 1961, pls 22–23).

Apart from the Cologne examples there are also finds of single fish or vessels from Trier (Fremersdorf 1961, 28, pl. 23; Goethert-Polaschek 1977, 63, no. 241, type 51b, pl. 40), from Ostia and Rome (Morin-Jean 1913, 163), from Corinth, Crete, Beirut (in the Museum in Leiden) and Tyre (in the Louvre) as well as in the museums of Barcelona, and in the Museo Sacro in the Vatican and in the Wolff collection, as well as many other large glass collections. In addition several hollow shells, possibly from similar vessels, were found in Aquileia (Fremersdorf 1961, 26–28; Price 1992, 427–428, no. 160, pl. 344; Stern 2001, 141 and 173f, cat. no. 68 and 69). Fremersdorf was convinced that these beakers were produced in Cologne and refuted an earlier theory that saw the production in Trier (Fremersdorf 1961, 28). Their wide distribution throughout the Mediterranean coupled with any lack of production waste of this type of vessel in either Trier or Cologne must, however, raise doubts, and Morin-Jean's suggestion of multiple workshops should not be disregarded. The arguments for an Egyptian origin, however, as proposed by Tagart are so far unsupported by finds of finished objects or production waste (Harden *et al.* 1987, 255, no. 144; Morin-Jean 1913, 166; Tagart 1982, 84). The question of the likely origin of these vessels may furthermore be complicated by Stern's observation that isolated fish and shells appear more widely distributed than the *conchylia* beakers themselves and she discusses the possibility that the decorative elements may have had a second lease of life as trinkets or amulets after the initial breakage of the vessels (Stern 2001, 141). The original usage of these highly fragile cups is somewhat of a problem, as their applied decoration would have made them of limited use as drinking vessels, being both difficult to hold as well as very fragile, and Stern draws attention to their suitability as (hanging) oil lamps (Stern 2001, 141).

The date of the group has recently come under review. While the glass from Cologne, Kattenbug is dated by the other accompanying grave goods to the second half of the 4<sup>th</sup> century, a date which

is supported by the finds associated with the Trier example (Goethert-Polaschek 1977, 319, grave group 252), Fremersdorf favoured an earlier date in the later 3<sup>rd</sup> century. His reasoning appears mostly based upon a potentially spurious reference in the *Historia Augusta* (HA, *Tacitus* 9), which states that the emperor Tacitus himself produced glass vessels with applied snakes, molluscs and fish. However, this earlier date has recently received more solid support from the find of a fish in a 3<sup>rd</sup>-century context in Crete (Stern 2001, 141).

#### *Honey-comb beakers*

Optically blown glass is in many ways a hybrid between mould-blown and free-blown glass, and there are good reasons to include it in either category, as the vessel is first blown into a mould and so acquires the typical mould-blown patterning on the body, in a second step the glass is inflated and manipulated by further blowing, thereby distorting the original pattern. This technique is attested by fragments of two unprovenanced examples of Late Roman honeycomb beakers, in colourless glass (Fig. 8.14j) and in olive green glass (Fig. 8.14i). In addition further fragments are known from the FP survey and excavations. The vessels are usually deep hemispherical or globular, with a rarer variety being conical (Isings 1957, 133, form 107a) and usually have a round base, which precludes them standing without support, while the rim tends to be generally cracked-off and slightly outplayed (Dusenberry 1971, 16; Isings 1957, 133, form 107a). The majority of these vessels are made out of colourless or olive green glass, but other shapes and colours exist, such as a dark-blue double-handled stemmed goblet in the Berlin Museums and its greenish counterpart in Michigan, which were found in Aleppo and Cairo respectively (Effenberger and Severin 1992, 98, no. 22).

The vessels are a standard component of large very Late Roman assemblages throughout the empire (Dusenberry 1971, 16; Effenberger and Severin 1992, 98, no. 22; Fremersdorf 1961, 57–8; Harden 1936, 165, no. 472, pl. XVI), although they rarely occur in large numbers. They occur also on the Red Sea ports, such as Berenike (J. Price, pers. comm.) and have been found as Roman export finds in graves of the Korean Silla Dynasty, dating to the 6<sup>th</sup> century (Bergman and Oliver 1980, 121). While their presence in Jarma



is thus in no way surprising, their concentration around Jarma is unusual. Price and Cottam date the British examples from Beadlam and Fishbourne Beach tentatively into the second half of the 4<sup>th</sup> century (Price and Cottam 1998, 118), while the complete example from Cologne, Jakobstrasse was found with coins of the first half of the 4<sup>th</sup> century AD (Fremersdorf 1961, 57–8, pl. 113). The olive green example from Ferschweiler near Trier (Goethert-Polaschek 1977, 62, no. 237 pl. 23, 209a; 40) and two further olive-green examples from Cologne (Fremersdorf 1961, 58, pls. 114f) have been dated to the 4<sup>th</sup> century. In Hungary two examples have been found in graves dating to the last third of the 4<sup>th</sup> century and the early 5<sup>th</sup> century (Barkoczi 1988, 95–6, no. 142). In the last 10 years finds from the dated sites in the South of France (Foy 1995b, 200, type 13e) and Egypt (Nenna 2003b, 94) have pushed the dates to the late 4<sup>th</sup> and entire 5<sup>th</sup> century AD as the main period of circulation.

#### *Late Roman Conical Beaker with Wheel-Cut Geometrical Decoration*

Another unprovenanced piece that might have come from GSC030 is from a colourless conical beaker with fire-rounded rim (Figs 8.16n and 8.18f). While this shape could possibly derive from a Late Roman conical beaker/lamp, it is not easy to find a parallel for the combination with wheel-cutting using geometrical design, such as the filled triangles. Similar designs can occasionally be found on segmental bowls such as the mid 4<sup>th</sup>-century example from Lunel-Viel, South-Eastern France or on a similar, but undated bowl from Kempton/Germany (Foy 1995b, 191, Pl. 3.4; Paolucci 1997, 126f). A 3<sup>rd</sup>-century cylindrical beaker with fire-rounded rim from Cologne and now in Bonn Museum, is a further example of the use of close set triangles on a Roman period vessel, although the style is less confident than on the present example (Follmann-Schulz 1992, 65f, no. 36). On the other hand, the vessel shape in combination with a different style of wheel-cut design can be found on a bowl from the first quarter of the 5<sup>th</sup> century AD at Clos des Lombards, Narbonne (Foy 1995b, 192, pl. 3.10). Without further dated examples of this type of decoration in combination with the vessel type it remains currently impossible to give more precise indication as to the likely origin and precise date of the vessel.

#### *Thin-Walled Vessels with Facet-Cutting and Wheel-Cut Lines*

Two (or three) other unprovenanced vessels that may have come from GSC030 (Figs 8.16h–k and 8.18e) are examples of a well-recognised group of late 3<sup>rd</sup>–4<sup>th</sup> century AD table wares. The patterns of these vessels are highly divergent and frequently include columns and baskets, but also stylised plant designs, as well as areas of waffle-like cutting. Amongst the better known shapes of this type are tall cylindrical flutes such as the one found by Petrie at Hawara (in Manchester Museum) and the tall flute from Tomb 3 Royal Cemetery (Pace *et al.* 1951, 312, fig. 104 and 105, see Fig. 6.24g). The latter specimen is extremely close to the fragments in the Museum and the two vessels may originally have been near identical and have come from adjacent tombs at GSC030.

Examples of this type of cutting, characterised by the oval facet surrounded by a circular line, as well as the organically shaped hatching again surrounded by wheel-cut lines are found in many of the 3<sup>rd</sup>-century sites in the Roman empire, and include fragments from Dura-Europos, which have to date to before AD 253 (Clairmont 1963, 78, pl. VII and XXIX, 304–306), Aquileia, Cologne (Paolucci 1997, 119f) and Trier, St. Matthias (Goethert-Polaschek 1977, 29, no. 71, pl. 31.32). In the later 4<sup>th</sup> and 5<sup>th</sup> century AD a similar type of decoration is found on thick-walled vessels, such as the one from Pécs, Hungary (Barkoczi 1988, 104f) and Douch, Kharga Oasis (Nenna 2003b, 95, fig. 3.2; see below).

Some of the vessels have double stroke wheel-cut letters, as was the case with material from GSC030.T3 recorded by Caputo (Pace *et al.* 1951, 312, fig. 104 and 105, see Fig. 6.24g). An unprovenanced vessel that is closely related (and likely was found by Ayoub in GSC030.T4) also has incised inscriptions as part of a larger pattern of wheel-cut decoration (Fig. 8.15q). The letters are characteristically executed with double lines, usually using the Greek alphabet. This group was first identified as of Eastern origin (with finds from Asia Minor, the Levant and Egypt) by Donald Harden in the late 1960s and was in 2003 reviewed by Nenna, who drew attention to a further group of stemmed goblets (including one from Gebel Khor Abu Sinna, west of Kalabsha) and bowls from Egypt (Hawara, Ain-et-Turba, Douch) that belong to this group. In addition a jug

with very similar decoration is part of the Wolff collection. Based on the concentrations of finds most of which appear to belong to the 3<sup>rd</sup> and early 4<sup>th</sup> century AD, Nenna suggests an Egyptian origin for this overall group of decorated glass (Harden 1969; Nenna 2003b, 90, fig. 4.2; 2003b, 366–7, figs 15–19; Stern 2001, 137f and 161f, cat. no. 58).

#### *Thick-Walled Vessels with Wheel-Cut Double-Stroke Letters and Facet-Cutting*

This group has recently been separated from the aforementioned, after it became clear that the two most likely represent at least two different workshops. The two are closely related and the thick-walled vessels may have developed out of the thin-walled vessels discussed above. The objects are usually executed on much thicker glass, either colourless or as in our case purple (occasionally appearing black). Most of the known examples of this group date to the 4<sup>th</sup> and early 5<sup>th</sup> century AD, with examples from Cologne, Jerusalem, and a further piece from Douch, Kharga Oasis, Egypt as well as a very dark purple fragment with vertical *hastae* from GSC030.T3 (Pace *et al.* 1951, 311 fig. 101, see above Fig. 6.24d).

The inscription on the Douch piece is reconstructed as ΠΙΕ ΖΕΣΑΙΣ ΑΕΙ (drink and live for ever), suggesting their use as drinking vessels. Nenna (2003a, 369–370, fig. 25) sees this group as the output of a single workshop, which works in the wider tradition of thick-walled facet-cut vessels with large facets surrounded by wheel-cut circles (such as Fig. 8.16l and m, 8.16a–b, all likely from GSC030) While examples of these vessels can be found in many of the larger centres of the Late Roman world (including Cologne), there seems to be a concentration in Egypt, which has led both Harden and Nenna to propose an Egyptian origin for this type of glass.

#### *Late Roman Cylindrical Bottles and Bowls with Abraded Geometrical Designs*

A body fragment from GSC030.T4 (Fig. 8.15p), as well as an unprovenanced example (Fig. 8.17a) are both fragments of a large cylindrical bottle with geometrical design, which can be found in contexts dating from the 4<sup>th</sup> – 5<sup>th</sup> and occasionally 6<sup>th</sup> centuries throughout the Mediterranean and the Northwestern provinces

(Barkoczi 1988, 201–2, nos. 501–503; Bergman and Oliver 1980, 99 no. 154; Doppelfeld 1966, 65, pls 150–151; Foy 1995b, 195; Fünfschilling 2000, 165, fig. 7; Paolucci 1997, 138), but appear to be particularly common all over Egypt (Harden *et al.* 1968; Klein 2000, 81, no. 105; Nenna 2003a, 371f). Their popularity in the Fazzān is attested by further fragments from the FP excavations at Jarma, Qaṣr bin Dughba (Hoffmann 2007, 490, fig. 44.13g–i, GBD001), Zinkekrā (ZIN287 4, not illustrated), GSC030 (Hoffmann 2007, 490, fig. 8.12a; also Pace *et al.* 1951, 296, fig. 85, see in this volume Fig. 6.24a). The unprovenanced fragments in Jarma Museum (Fig. 8.17a) show very much the same characteristics as Caputo's bottle, including the triple line in the upper body and the off-set between the second and third row of squares. We should, therefore, expect either two very similar bottles or further fragments of the same bottle, collected later. In the absence of better details on the origin of the material, no decision can be made at this point.

The typical Late Roman funnel rims of these, as well as the more common undecorated bottles are known from Sāniat Jibrīl (Fig. 8.13h, also Hoffmann 2007, 488 for survey finds), Old Jarma (FP excavations), GSC030.T4 (Fig. 8.15d–e). A further, larger rim as well as the large three stranded handles, which may have come from the same bottle, are without provenance (Fig. 8.17l–m). from the find from GER002 (Fig. 8.13h) represents the less common variety without trail under the rim, seen mainly on flasks. The funnel rim replaced the earlier rim types on bottles in the early 3<sup>rd</sup> century and remained popular throughout the late Roman and Early Byzantine period. Their general popularity is attested by numerous finds of the vessel throughout Africa (Shepherd 1995, fig. 53.7; Tatton-Brown 1984, 207, fig. 68, 93–5; Hayes 1993, 292, figs 38–9; Hayes 1986, 309, fig. 121, B41) as well as in the Egyptian deserts (Dakhlah oasis: Marchini 1999, 76, no. 3, figs 1c, 2g and 3f; Kharga oasis: Nenna 2003b, fig. 4, 4; Didymoi, Eastern Desert: Brun 2003, 385, fig. 9.6) and the Sudan (Woolley and Randall-MacIver 1910, 72, pl. 39, 7361 and 7362). They were much more frequent in the Fazzān than their blue-green predecessors or for that matter any other forms of substantially sized bottles or jugs from the 1<sup>st</sup> – 2<sup>nd</sup> centuries AD, which might indicate a shift of popularity towards drinking vessels in the Late Roman period.

### *Other Vessels with Abraded Geometrical Designs*

In addition to the abraded design of cylindrical bottles, there also exists a series of bowls and bulbous beakers which so closely resemble the designs on the bottle, that one is tempted to assume that they were originally intended by the decorators of the 4<sup>th</sup> and early 5<sup>th</sup> century to be used as sets (Nenna 2003a, 372, figs 33–34). These include a series of unprovenanced fragments (and one probably from GSC030.T4) in the Jarma Museum (Figs 8.16p, 8.17b–f). To these can be added a vessel from GSC030.T1 (Pace *et al.* 1951, 297) and another from UAT008–009 (Caputo's 'Necropoli meridionale' tomb 21, Pace *et al.* 1951, 341). Parallels for the diamond design of at least two of the bowls come from a purple bowl from Ismant el-Kharab, Dakhleh Oasis, Egypt (Marchini 1999, 81, fig. 4d). Abraded decoration is present on at least nine other fragments from CMD's excavations. Only one example (Fig. 8.16o), with its gabled wheel-cut line and a slightly off-set vertical strokes cannot be identified as to vessel type, while the remaining fragments come either from decorated bowls with outsplayed rim or cylindrical bottles.

### **Undecorated Late Roman Vessels**

#### *Late Roman Bowls with Cracked-Off Rims*

Late Roman bowls and cups with cracked-off rims are attested in several examples, both in colourless and greenish glass. Some examples were left rough, as GER002 2 4 (not illustrated), unprovenanced example (Fig. 8.11c) and GER001.003 19 (Fig. 8.12k), while others such as an unprovenanced example (Fig. 8.11o) appear to have been ground smooth. The bowls are generally dated to the late 3<sup>rd</sup> and 4<sup>th</sup> century (Isings 1957, 113–116, 126–133, forms 96 and 106) with the olive green bowls with unworked rims apparently increasing in popularity throughout and beyond this period. The bowls and beakers existed in a wide variety of decorations, ranging from the optically blown honey-comb beakers to plain examples. Figure 8.11c, with abraded lines under the rim, most likely belonged - to judge by the diameter - to a bowl, while the GER 002 2 4 example with its flaring sides might suggest a shallower, segmental

bowl. Beakers and bowls with cracked of rims are known from Sabratha (Hayes 1986, 308, fig. 120, B24) and Carthage (Hayes 1986, 308, fig. 120, B24; Hayes 1993, 290, fig. 1.4–5; Tatton-Brown 1984, 197, fig. 65.18, 198, fig 66.34–35; Tatton-Brown 1994, 284, fig. 15.2, no. 23), as well as Berenice/Sidi Khrebish (pers. comm. J. Price). The FP survey has added further examples of this type (Hoffmann 2007, 487).

#### *Late Roman Bowl with Fire-Rounded Collar Rim*

One rim from GSC030.T4 is comparatively unusual (Fig. 8.15g). As far as the weathering permits to reconstruct the production process, it seems that the rim may have been formed by turning the rim out and down and then fusing the glass into a solid ring. While collar rims *per se* are a very common phenomenon of the late Roman period (e.g. Sternini 2001, 38–42, figs 7, 28–49), these thickened rims are not as frequently found, or at least documented, but similar rims come from 6 – 7<sup>th</sup>-century contexts in Italy (Sternini 1995, 262, figs 20, 51).

#### *Vessels with Outsplayed Rim*

Jarma Museum holds a large number of fragments of vessels from GSC030.T4 with cracked-off outsplayed or slightly everted rims, both left rough (Fig. 8.15n, 8.15o) and ground smooth (Fig. 8.15i–m, 8.16a–c). There are further unprovenanced examples (Fig. 8.17g–h), at least seven from the FP Jarma excavations, one from GER002 2 44 (not illustrated), four from surface survey at GER002 (Hoffmann 2007, 487) and one from Tāqallit (Hoffmann 2007, 489, TAG012). All of these are likely to represent a large variety of Late Roman drinking vessels and lamps, of which Isings form 106 (Isings 1957, 126f) is probably the most widely known, although a large number of other shapes employed the same rim type (forms 96, 108, 109, 116 and 177, Isings 1957, 113–116; 131–138 and 143–148), which was also used on later lamps (Yelda Olcay 2001, 80–85). Most of these vessels exist with a large number of different decorations (wheel-cutting, facet-cutting, applied blobs or trails, indents). Outsplayed rims are considered typical for the glass assemblages of the 3<sup>rd</sup> – 5<sup>th</sup> centuries (Meyer 1993, pl. 7, 131–144; Sternini 2001, 27), while rims without grinding are still found in the 7<sup>th</sup> century AD (Sternini 2001, 45–47, fig. 9 nos 68–70, 74).

Similar rims occur throughout the African provinces and include examples from Late Roman and Byzantine Carthage (Hayes 1993, 290, fig. 1.3–5 and 293 fig. 2, 23; Tatton-Brown 1984, 197, fig. 65, 16 and 198f, fig. 66, 33–35; 1994, 284, fig. 15.1, no. 10) and Sabratha (Hayes 1986, fig. 120, B18, B23–4), Egyptian examples include a complete beaker from Ismant al-Kharab, Dakhlah oasis (Marchini 1999, 82, fig. 4e).

#### *Conical Lamp or Beaker*

The conical lamp from Sāniat bin Huwaydī (Fig. 8.9, GER011.TA2.1, C7) is a large example of a Late Roman hanging lamp. Without any attached form of suspension it is usually assumed to have been used suspended from a metal ring on long chains, but a wooden tripod stand was found at Karanis in close proximity to a conical lamp (Weinberg and Goldstein 1988, 89 and 332, pl. 4.17). Similar lamps have been recovered from the Royal Cemetery (Fig. 8.15o, 8.16a–c, from GSC030.T4; Fig. 6.23b, from GSC030.T2, Pace *et al.* 1951, 298 and fig. 87) and UAT002.T10 (Pace *et al.* 1951, 331). The type, which can be decorated with wheel-incised lines or with blue blobbed decoration, is particularly common on sites in the Near East and the Nile Valley (Dussart 1995, 346f; Weinberg and Goldstein 1988, 89), as well as in the the Black Sea region (Sazanov 1995, 332, type 3, fig. 1), Pannonia (Barkoczi 1988, 85, no. 110) and occasionally in the West (Goethert-Polaschek 1977, 74, pl. 43, 314 with further examples). The highest popularity of these vessels is the 4<sup>th</sup> century, but Barkoczi, Dussart and Sazanov extend the dating into the 5<sup>th</sup> and early 6<sup>th</sup> century AD. Weinberg, discussing one of the 4<sup>th</sup>-century production sites for these cones at Jalame, suggests that the colourless lamps probably came from the Syro-Palaestian area, while Egyptian cone lamps were more likely to be dark green (Weinberg and Goldstein 1988, 86–90). Apart from their use as lamps, which is well attested both archaeologically as well as in art, there seems to be some evidence that these vessels could also have been used as drinking vessels (Weinberg and Goldstein 1988, 90f). The presence of other late lamps that cannot be used as drinking vessels (see below) in the study area suggests that they may have been used in Southern Libya in either capacity.

#### *Lamps with Hollow Stem*

Far more widely distributed than the conical hanging lamp are lamps with a small bowl and a smooth, hollow stem as those represented by a group of unprovenanced examples (Fig. 8.17i–k). They can be found all over the Mediterranean and the Near East, and were produced in several workshops (Foy *et al.* 2003, 57 and 66). The type is usually identified from its hollow stems, while the upper body only rarely survives (Foy *et al.* 2003, 67, fig. 21, VRR 392 for a surviving example; Saldern 1980, 49–52; Yelda Olcay 2001, 83, fig. 3, for complete examples from Nakolea/Turkey). Dated examples range mostly from the 4<sup>th</sup> to the 7<sup>th</sup> century AD (Saldern 1980, 49–52), but they have also been found in stratified Umayyad contexts in Beth Shean, Jerash and Pella amongst others sites (Hadad 1998).

#### **Islamic Glass?**

A narrow necked bottle or jug with abraded decoration on the neck represents a possible Islamic sherd, though the recorded context (GSC030.T4) would favour a Late Roman date (Fig. 8.15h). This type of decoration as well as the steely blue of the glass material are both rather uncommon in Roman contexts, but can be paralleled amongst Islamic glass (for the colour compare, Carboni and Whitehouse 2001, 189f, no. 94). Bottles with facet-cut decoration on a cylindrical or tapering neck are common on high-class sites of the Fatimid and Abbasid period, that is, the 9<sup>th</sup>–12<sup>th</sup> centuries AD (Kröger 1995, 174), and the rarer bottles with abraded patterns, such as an example from Sidi Khrebish, Benghazi, Libya are likely to have a similar date range (Price and Hoffmann, in preparation). In the context of the Late Garamantian burial at GSC030.T4 this possible Islamic vessel clearly stands out, but the circumstances of Ayoub's excavation and the subsequent poor storage of finds leave ample scope for a later piece to have become mixed with more securely attributed vessels.

#### **Glass of Indeterminate Type**

Amongst the remaining vessel fragments in the Jarma Museum collection are applied (Fig. 8.8, GER011.T42 J, where the context suggests an Early Roman date) and tubular base rings (Figs 8.17n, unprovenanced example and 8.8 T51E).

Applied base rings were in use on a number of Roman and Islamic vessel types. Tubular base rings such as the example cited above were frequently used on drinking vessels and smaller jugs in a large variety of shapes. The coloured trail on the base suggests the corresponding use of coloured trail in the upper body, but little can be said about the style of this decoration, apart from the fact that the combination of sky-blue trails on colourless glass was particularly popular in the 3<sup>rd</sup> and 4<sup>th</sup> centuries AD, but can be found in other periods as well.

#### *Other Bottles and Jars*

Among other flasks and bottles from the CMD work is a specimen from GER001.3 1, with a long narrow neck (not illustrated) and an unprovenanced fragment of a indeterminate handle (Fig. 8.14g). A folded rim (not illustrated) from GER001.003 1 could theoretically belong to a large globular jar (Isings 1957, 81–2, form 63 or 84, form 65). As these large 1<sup>st</sup>-century storage jars are otherwise unknown in the Fazzān, it may, however, be more likely that this fragment was part of a wide-necked cylindrical or square storage bottle of the late 1<sup>st</sup> or 2<sup>nd</sup> century AD.

## THE GLASS AND FAIENCE VESSELS FROM SĀNIAT BIN HUWAYDĪ

By B. Hoffmann and C. Tagart, with D. Mattingly

This catalogue was prepared by amalgamating listings produced at different times by the first and second named authors, with the third author primarily responsible for overall editing, confirming provenance of each piece and for bringing together the illustrations from originals by Miriam Daniels and Birgitta Hoffmann. It deals with the important assemblage of ‘intact’ vessel glass and faience from the cemetery of Sāniat bin Huwaydī (GER011). Finds from other excavations undertaken by CMD follow in the next section, while material from the CMD and FP survey work was reported on by B. Hoffmann in the *AF2* catalogue, with an extended discussion (Hoffmann 2007, 480–93). Hoffmann’s discussion of the overall glass assemblage in the preceding section only includes items seen by her in Jarma museum or Newcastle.

## Catalogue

### *Faience Vessels*

A total of 20 faience vessels have come from excavations at Sāniat bin Huwaydī (Table 8.1 and Fig. 8.1), 16 from the CMD work and four from Ayoub’s operation (of which only two have a provenance). Most of the vessels have been discussed in some detail by Tagart (1983), so only brief entries are included here. In addition, small fragments of faience were recovered in two other heavily robbed tombs, T1 and T23. Other faience vessels and fragments were found by CMD at various Classic Garamantian cemetery sites (TWE015, UAT005, ZIN109, ZIN280). All the complete vessels from GER011 tombs came from Phase I burials of the later 1<sup>st</sup> century or early 2<sup>nd</sup> century AD.

#### **Figured Urn**

GER011.T53 C (Fig. 8.1, no. 1)

Cylindrical vessel/urn with moulded relief decoration. Greenish-blue glaze internally and externally, weathered externally. Moulded relief decoration in horizontal zones. Flat-topped upright rim with band of short vertical ribs below, then a band of poor guilloche ornament. Narrow rounded offset marks top edge of main zone, which featured a running male figure with outstretched arms (gladiator?) and legs of a second figure to the left. Another rounded offset marks the lower edge of decorative zone, base is missing but was probably slightly recessed with a low broad base ring. The vessel was too fragmentary to lift, but is well paralleled by moulded relief vessels from Roman Egypt (Grimm 1972). Rim D: 200, H: c.185, Th (rim): 10.

Table 8.1. *Faience vessels: Sāniat bin Huwaydī (GER 011).*

Type of vessel	No.	Examples from GER011
Small cups	5	T17 T, U, V, Z, AG
Small bowls	1	T17 AE
Bowls	7	TA2.4 H1; T17 AP, AY; T51 D, R; unprov H91, C20
Bowl with spout and handles	1	TA2.2 H65
Dishes	3	T17 L; T42 K, L
Rectangular dish	1	T9 I
Bulbous pot	1	T51 J
Figured urn	1	T53 C
Total	20	

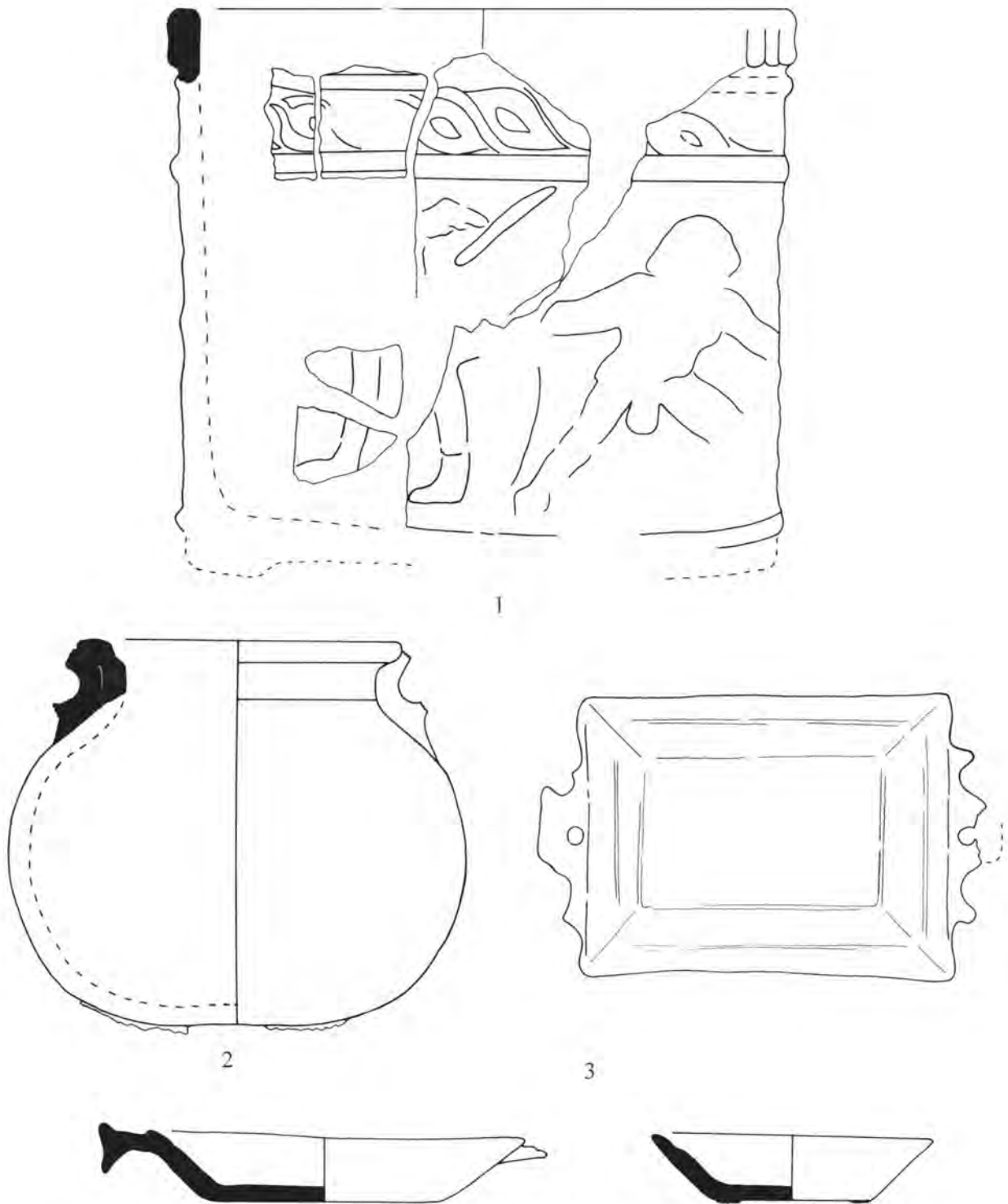


Figure 8.1. Faience vessels from Sāniat bin Huwaydī (GER011), nos 1–3. 1:2.

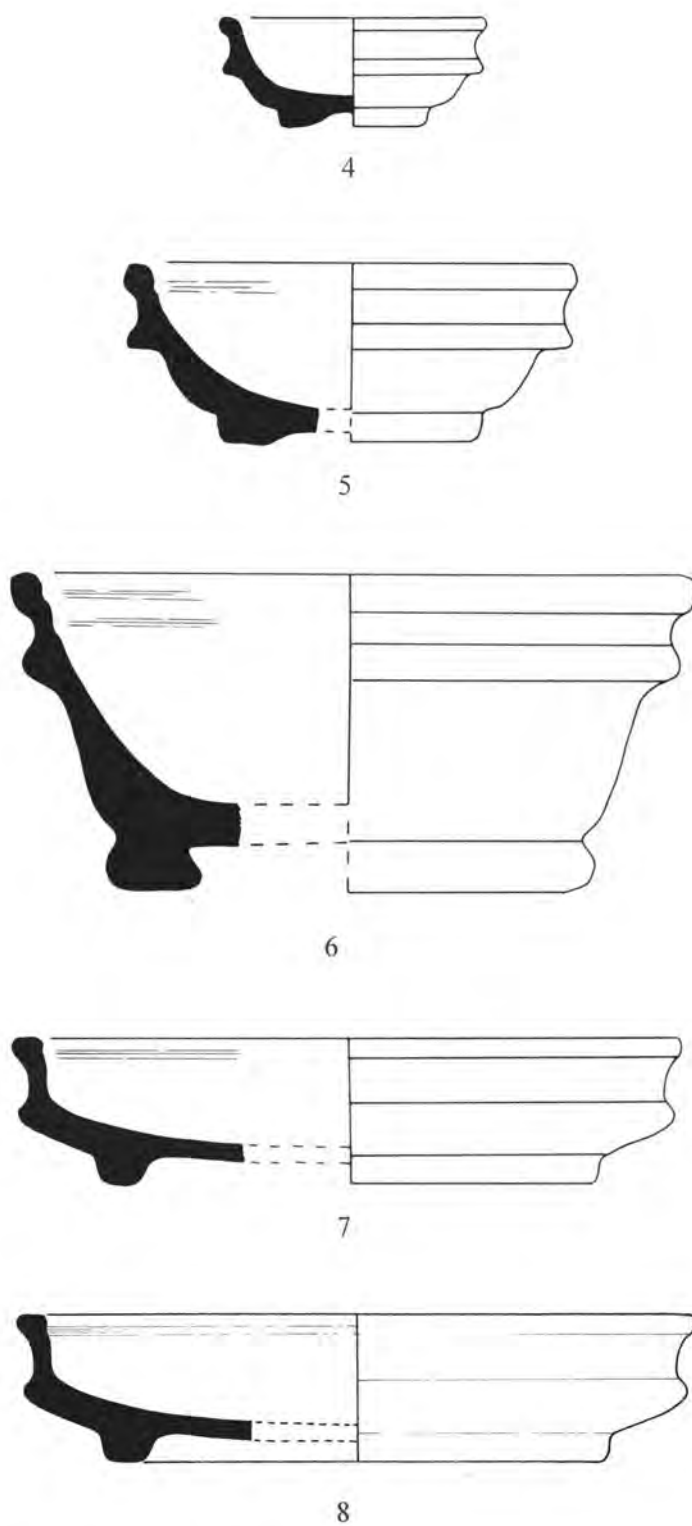
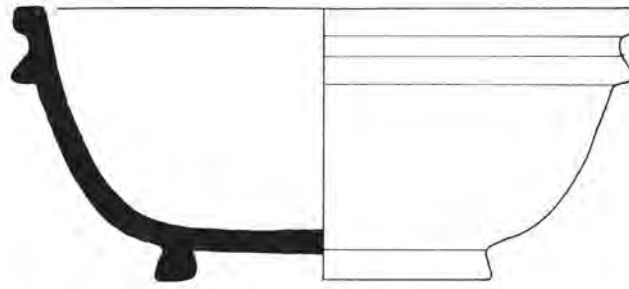
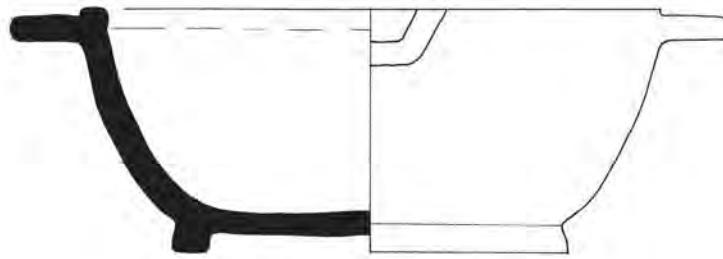


Figure 8.2. Faience vessels from Sāniat bin Huwaydī, nos 4–8. 1:2.



9



10

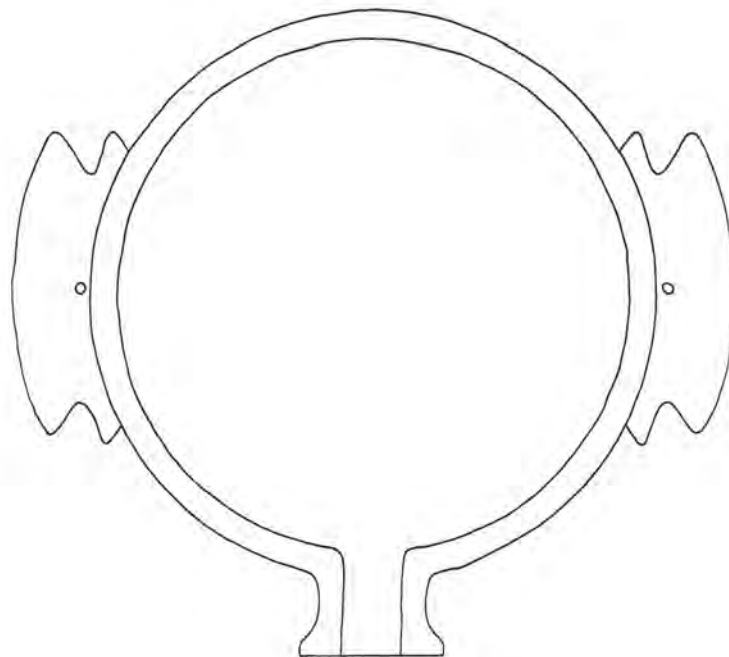


Figure 8.3. Faience vessels from Sāniat bin Huwaydī, nos 9–10. 1:2.



**Bulbous Pot**

GER011.T51 J (Fig. 8.1, no. 2)

Fragmentary remains of a crumbly vessel (described in excavation notes as 'teapot-like'). Too fragile to lift in one piece. Pale green-turquoise colour to both surfaces. Similar to British Museum specimen (illustrated in Fig. 8.1, no. 2). Approximate dimensions: Rim D: 105, Max. D: 148, H: 126.

**Rectangular Dish**

GER011.T9 I (Fig. 8.1, no. 3)

Rectangular blue green faience dish with moulded handles. Too fragile to lift, but almost certainly a type known at Memphis (Petrie 1909, Pls 49–50). Approximate L: 150, W: 90, H: 22.

**Small Cups**

GER011.T17 T, U, V, Z, AG (Fig. 8.2, no. 4)

A set of five small cups, with double external mouldings and moulded base ring. Rim D: 70, Base D: 37, H: 30.

**Small Bowl (Fig. 8.2, cf. no. 5)**

GER011.T17 AE

A small version of the standard faience bowl (and essentially a larger version of the cup described above). Dims: not recorded.

**Bowls**

GER011.T17 AP, AY (Fig. 8.2, no. 5)

A pair of the standard form of faience bowl with double external mouldings and moulded base ring. Approximate Rim D: 120, Base D: 70, H: 50.

GER011.T51 D, R

A pair of the standard form of faience bowl with double external mouldings and moulded base ring. See T17 AP, AY for indicative dimensions.

GER011.TA2.4 H1 (Fig. 8.2, no. 6)

Large bowl with double external mouldings and separately moulded base ring. Rim D: 160, Base D: 87, H: 70.

GER011 (Ayoub Tomb unknown) H91 (Fig. 8.3, no. 9)

Probably same type as TA2.4 H1 above. Rim D: 150, Base D: 96, H: 7880.

**Bowl with Spout and Handles**

GER011.TA2.2 H65 (Fig. 8.3, no. 10)

Shallow bowl with moulded spout and horizontal handles (handles are similar to those on rectangular dish from T9 J – see below). Rim D: 147–50, Base D: 100, H: 62–64.

**Dishes**

GER011.T17 L (Fig. 8.2, no. 8)

46 joining pieces and c.100 fragments of a faience vessel. The form of this dish was similar to T42 K–L below. Glazing nearly completely vanished. D(rim): 150 D(footring): c.100, H: 37.

GER011.T42 K, L (Fig. 8.2, no.7)

A pair of faience dishes with double external mouldings and broad moulded base ring. Too fragile to lift. Rim D: 180, Base D: 134, H: 39.

Table 8.2. Glass vessels from Sāniat bin Huwaydī (GER 011).

Type of vessel	No.	Examples from GER011
Modiolus	1(+17)	TA3.3 C6
Pillar moulded bowls	10	TA3.1 C3, C4; TA3.2 C1; TA3.3 C2; T17 BB; T52 F, I, L, V
Bowls with hollow rims	10	TA2.3 C8; TA2.4 C9; T17 M, BH; T42 H, I, J; T51 A, C, L
Bowls with rounded rims	2	T9 G; T51 B
Beakers	4	TA1.6 C5, T9 D, H; T14, T54
Drinking horn/lamp	1	TA2.1 C7
Bottles & flagons	5	T17 P, Q; T51 G, N, O
Plates	1	T51 E
Miscellaneous vessels	9	T42 O, P, R, S; T51 F, Y; T52 U; T53 N, O
Total	43 (44)	

**Glass Vessels**

A total of 44 glass vessels was recognised or retrieved from the excavations at Sāniat bin Huwaydī (Table 8.2). Nine items are listed by Ayoub in relation to his numbered sequence of burials and there are eight further items in the Sabhā Museum catalogue that may have come from the site, but whose provenance is not certain (C10, C11, C12, C13, C18, C19, C20, C21 – they are not listed in the table or in the catalogue below). No less than 35 separate items were recorded by CMD – a testimony to the more careful nature of his excavations, though some pieces were devitrified and reduced to little more than flakes. Two other robbed tombs yielded glass fragments suggesting that they too had contained glass vessels originally (T18, T22).

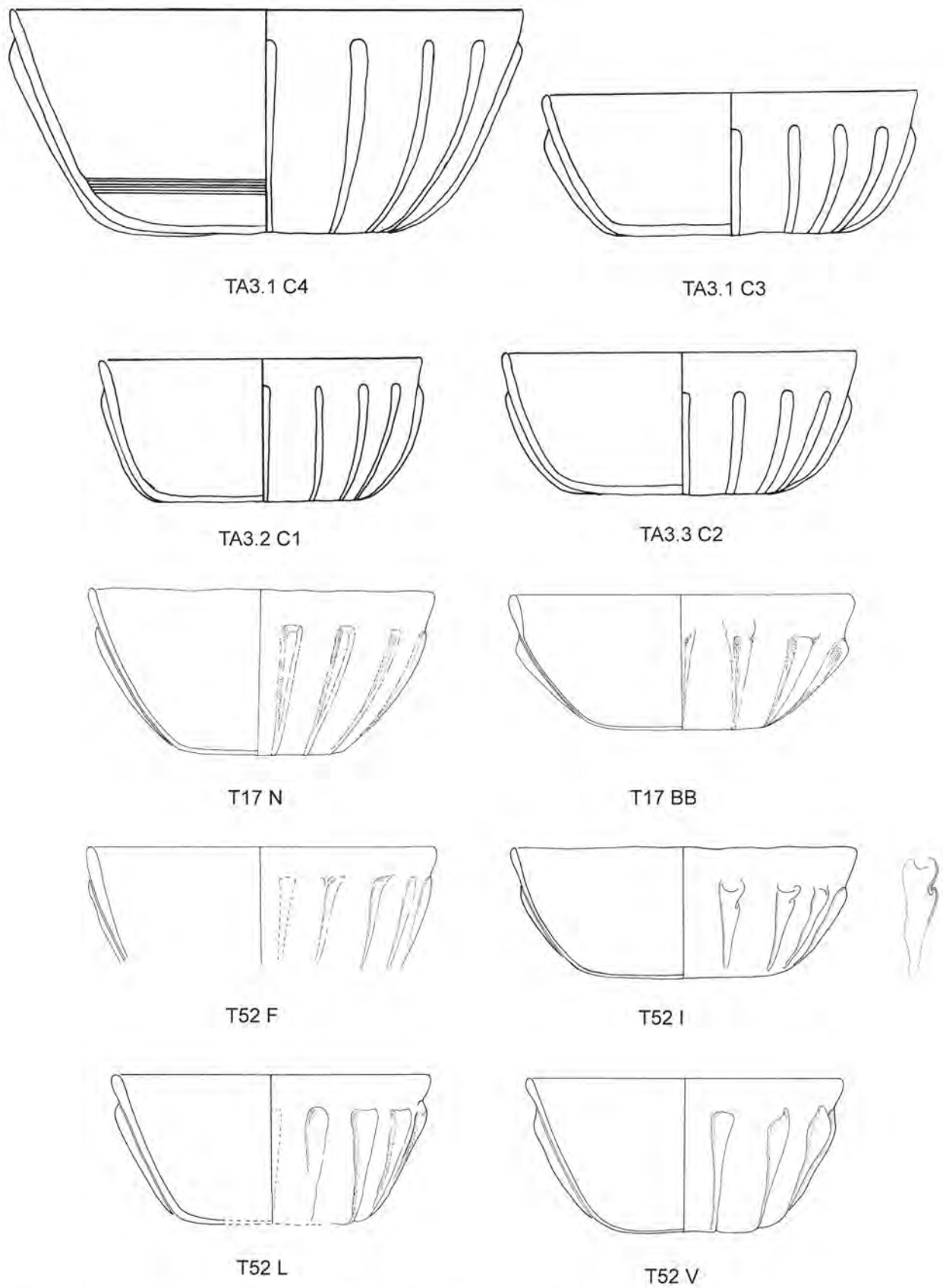


Figure 8.4. Glass vessels from Sāniat bin Huwaydī, pillar moulded bowls. 1:2.

**Pillar Moulded Bowls**

GER011.TA3.1 C3 (Fig. 8.4)

Pillar moulded bowl, blue-green. Complete, except for one small hole in body (2 cm across). Straight rim, deep bowl, flat base. 16 vertical ribs, not extending onto base. Thick layer of black weathering. Pitted. Rim D: 124, H: 48, Th: 2.

GER011.TA3.1 C4 (Fig. 8.4)

8 joining fragments. 95 % complete. Cast. Blue-green. Rim, body and base of pillar moulded bowl. 17 vertical ribs, extending onto the base. Deep bowl with straight rim. Inside group of three close-set wheel-cut lines. Silver iridescence in places. Rim D: 175, H: 78–80, Th: 4.

GER011.TA3.2 C1 (Fig. 8.4)

Pillar moulded bowl, complete except for one missing rim fragment. Blue-green/colourless. Deep bowl with 19 shallow, near vertical ribs. Rim straight. Flat base. Black layer of weathering over most of the surface. Pitted. Rim D: 114, H: 50, Th: 4.

GER011.TA3.3 C2 (Fig. 8.4)

Pillar moulded bowl, blue-green. Complete, except for damage to the rim. Straight rim, deep bowl, flat base. Sixteen vertical ribs, not extending onto base. Thick layer of black weathering. Pitted. D: 127, H: 48, Th: 2.

GER011.T17 N <4150> (Fig. 8.4)

5 joining fragments (rim body and base). Blue-green. Pillar moulded bowl. 11 near vertical ribs, not extending onto the flat base. Some areas of black weathering. No bubbles. D: 125, H(ext): 57, Th: 1.

GER011.T17 BB <4151> (Fig. 8.4)

20 joining fragments (but incomplete), blue-green. Pillar moulded bowl. 11 surviving ribs, not extending onto the base. Black and white layer of weathering. No bubbles. D: 115, H(ext): 44, Th: 2.

GER011.T52 F <4221> (Fig. 8.4)

17 mostly joining fragments (rim, body and base). Blue-green. Pillar moulded bowl with uneven rim, incomplete when buried. 15 preserved vertical ribs, not extending onto the flat base. Black layer of weathering, laminating. Isings type 3 D: 120, H: 55, Th: 1–4.

GER011.T52 I <4224> (Fig. 8.4)

3 joining fragments, blue-green. Pillar moulded bowl. 11 preserved ribs, extending slightly onto the flat base. No bubbles. Black layer of weathering in places. D: 118, H(ext): 45, Th: 2.

GER011.T52 L <4223> (Fig. 8.4)

8 joining fragments (rim, body and base), blue-green. Pillar moulded bowl. 16 preserved near vertical ribs that do not extend onto the flat base. No bubbles no weathering. D: 115, H(ext): 51, Th: 2.

GER011.T52 V <4222> (Fig. 8.4)

8 joining fragments (rim body and base), blue-green. Pillar moulded bowl. 16 preserved, near vertical ribs,

not extending onto the flat base. No bubbles. No weathering. D: 115, H(ext): 50, Th: 2.

**Tubular Rimmed Bowls**

GER011.TA2.3 C8 (Fig. 8.5)

About 100 joining fragments, 90% of vessel. Blown, colourless. Rim, body and base of tubular rimmed bowl. Large tubular rim, folded out, down and in. Straight, slightly convex body, carination toward base. Applied base ring. Small bubbles. Very elongated bubbles in the rim area. Black layer of weathering. Pitted surface. D(rim): 265, D(base): 120, H: 140, Th: 3.

GER011.TA2.4 C9 (Fig. 8.5)

About 100 fragments, joining. Blown, colourless. Rim, body and base of large tubular rimmed bowl. Large tubular rim, folded out, down and in. Slightly curving (?) body, turning towards base. Applied base ring. Black layer of weathering and pitting. Uneven profile as reconstructed. D (rim): 260, D(base): 110, H(ext): 126–142, Th: 3.5.

GER011.T17 BH <4140> (Fig. 8.5)

52 mostly joining fragments (rim, body and base). Tubular rimmed bowl. Rim turned out, down and in, forming a large tube. Cylindrical body, slight carination below rim, then gently curving towards the applied base ring. Thick solid pushed in foot and base, floor fairly flat. Small bubbles. Brown black layer of weathering. Late 1<sup>st</sup> century (Flavian) form. D(base): 120–124, D(rim): 270, H(ext): 142, Th: 2.

GER011.T17 M <4141> (Fig. 8.6)

40 large and c.50 small to tiny fragments (rim, body and base, 75% complete), blue-green. Tubular rimmed bowl. Fire rounded rim turned out, down and in, forming a large tube. Hemispherical body. Applied base ring. Thick solid pushed in foot and base, as T17 BH, base rises to point in centre. Isings type 44, Flavian. Many bubbles. Black layer of weathering. D(rim): 302, D(base): 136, H: 152, Th: 2–3.

GER011.T42 H <4258> (Fig. 8.6)

5 joining fragments, rim and body, greenish. Tubular rimmed bowl. Large tubular rim, bent out down and in (with second hollow in thickness of fold), rim uneven, with lightly incised lines. Externally cylindrical body, curving towards base. Rather angular and thick base with hollow, pushed in base ring at obtuse angle to base. Isings type 44, Flavian. Elongated bubbles. Large areas of black weathering. D(rim): 262, H(ext): 121, Th: 2.

GER011.T42 I <4259> (Fig. 8.6)

44 fragments (rim body and base), mostly joining, greenish/colourless. Tubular rimmed bowl, shape and technique as T42 H. Fire-rounded rim turned out, down and in, creating a large tube. Hemispherical body. Applied base ring. Many bubbles. Black layer of weathering. D(rim): 244, D(base): 120, H: 122, Th: 2.

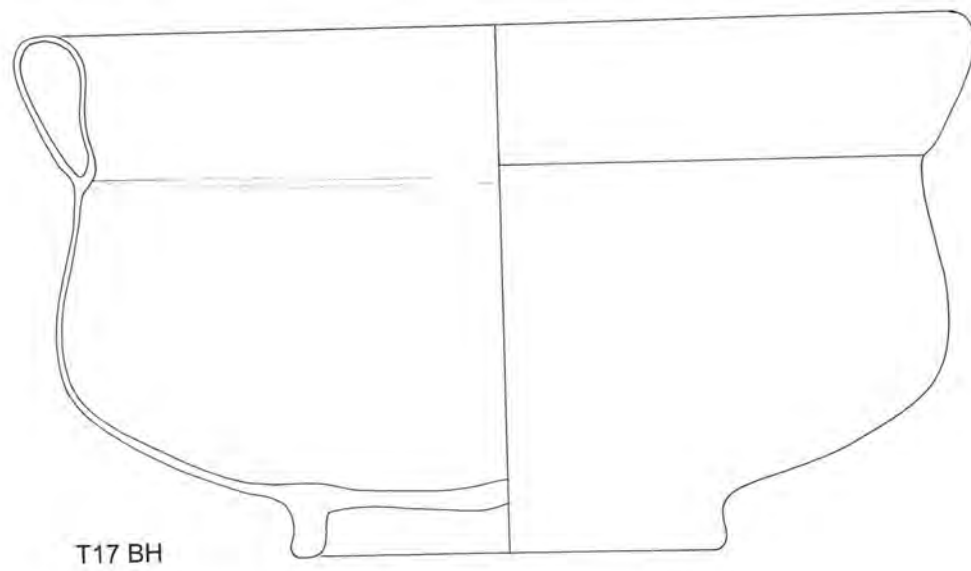
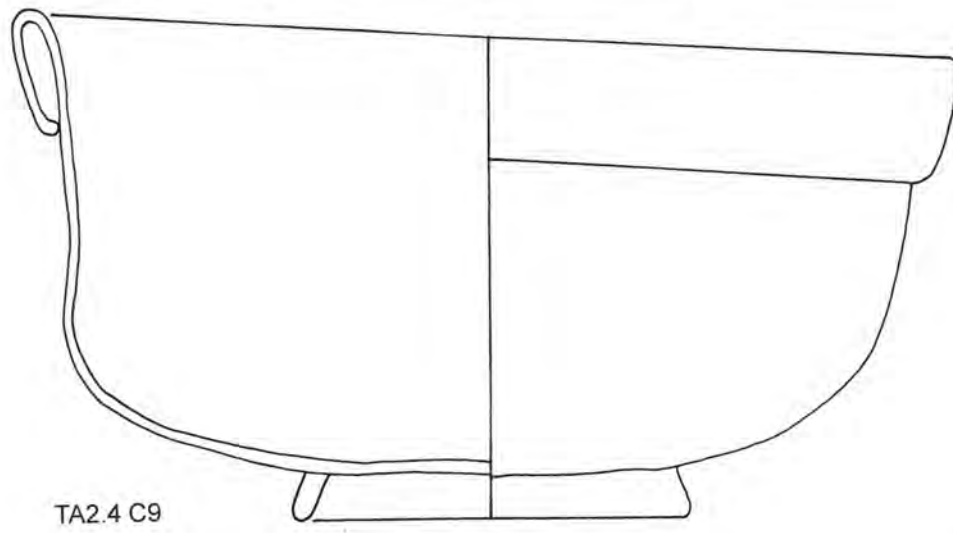
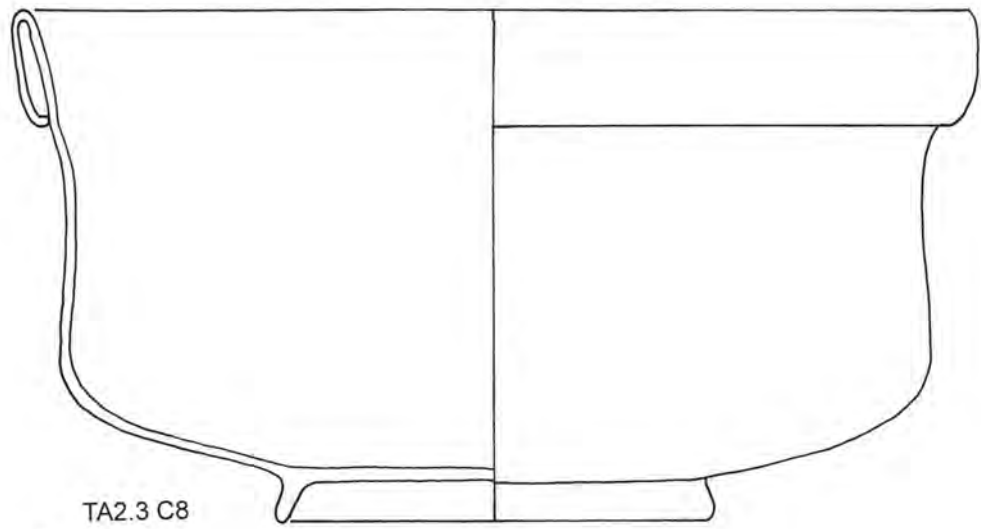


Figure 8.5. Glass vessels from Sāniat bin Huwaydī, large tubular rimmed bowls (i). 1:2.

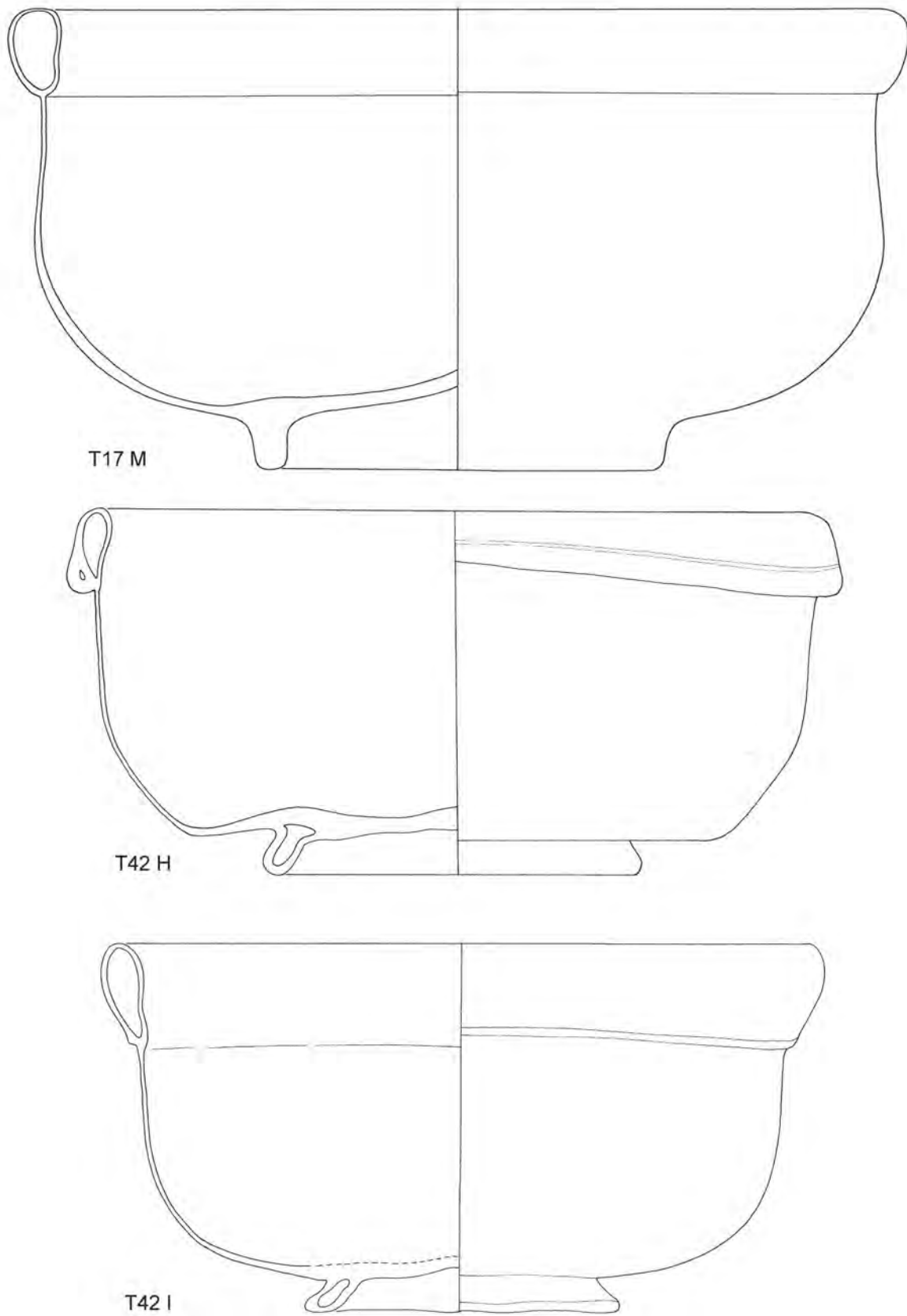


Figure 8.6. Glass vessels from Sāniat bin Huwaydī, large tubular rimmed bowls, (ii). 1:2.

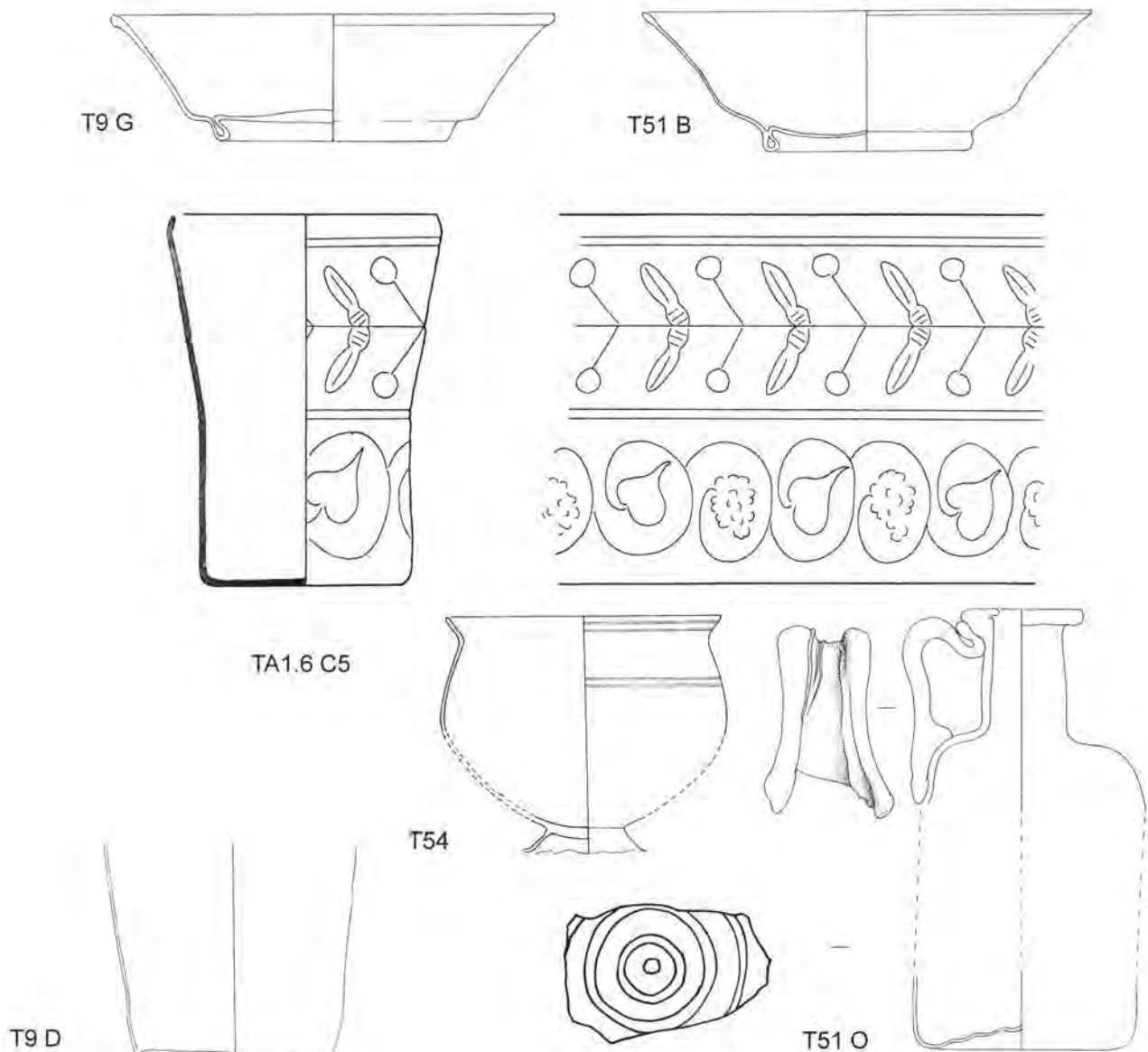


Figure 8.7. Miscellaneous glass vessels from Sāniat bin Huwaydī (i). 1:2.

#### Conical Freeblown Bowls with Rounded Rims

GER011.T9 G <4290> (Fig. 8.7)

9 joining fragments, colour? Conical bowl. Thickened fire-rounded rim (cf. Isings 80; Harden 1936, 78, no. 1). Conical body, outplayed and slightly concave sides. Tubular base ring and thickened base. Black layer of weathering. D: 128, D(base): 66, H: 35, Th: 3.

GER011.T51 B <4230> (Fig. 8.7)

17 large and *c.*50 small–tiny fragments (rim, body and base, 50% of vessel preserved). Colour? Rim, thickened and fire-rounded. Conical body form as T9 G, except that more concave and base is not thickened. Cf. Isings 80? Tubular base ring. Completely devitrified and covered in black weathering. D(base): 62, D(rim): 130, H: 41, Th: 1–5.

#### Conical Tubular Rimmed Bowls

GER011.T51 A

Four rim fragments from bowl similar to T51 C below. Rim D: 120.

GER011.T51 C (Fig. 8.8)

Numerous fragments including rim and base, some joining. Colourless with bluish/green tinge, badly weathered. Hollow rounded and thickened rim folded out and down; convex outplayed sides, convex base with tubular base ring and pointed kick; reamer mark on underside (Karanis Class II A (c), = Harden 1936, cat. nos 117–21). Early type. Rim D: 140, Base D: 55, Th: 1.

GER011.T51 L (Fig. 8.8)

Numerous fragments, including rim and base, some joining. Colourless with bluish green tinge, similar to T51 C. Rim D: 140, Base D: 55, Th: 1.

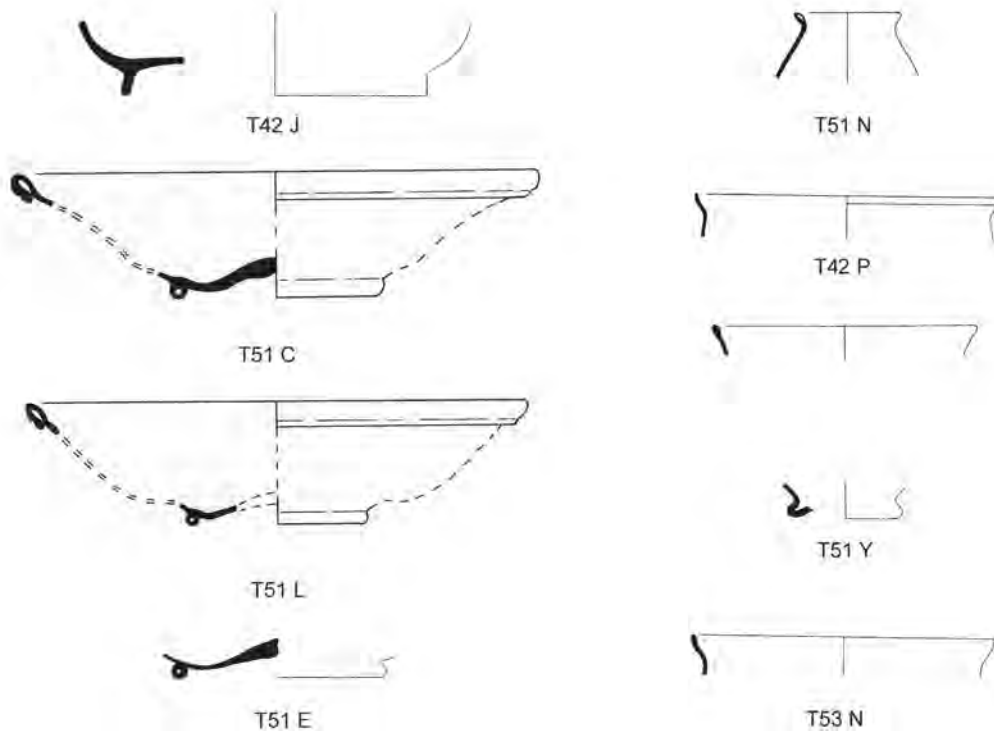


Figure 8.8. Miscellaneous glass vessels from Sāniat bin Huwaydī (ii). 1:2.

#### Applied Foot of Bowl

GER011.T42 J (Fig. 8.8)

Devitrified bowl, only part recovered – 6 fragments (2 joining), colourless, deep bowl base. Applied base ring with start of slightly outward flaring and slightly concave sides. Now crumbling opaque creamy white iridescent enamelling. D: 81, H: 22+, Th: 2–3.

#### Modiolus ‘Cinerary Urn’

GER011.TA2.3 C6 (Fig. 8.9)

Survives as 50 joining fragments, about 80% of the vessel complete. Blown, Blue/green. Rim, body, base and handle of *modiolus*. Everted fire-rounded rim, turned to near horizontal position. Hollow tube under rim. Slightly conical body. Tubular basering. Base descending to touch the ground, then slightly domed. Band handle attached about 1/3 of body below rim, then pulled up and attached just below hollow tube. Black layer of weathering and some pitting. Cf. Isings type 37, later 1<sup>st</sup> century AD. Rim D: 200, Base D: 160, H: 180, Th: 1.

GER011 (?) Uncertain provenance (Fig. 8.9)

A second *modiolus* in the Jarma Museum most likely also originated from Ayoub’s excavations at GER011. 24 fragments, joining to form complete rim and base and parts of body. Blown. Greenish-colourless. Everted fire-rounded rim. Hollow tube under rim. Conical body, mostly missing. Tubular basering. Slightly domed base. Small bubbles. Black layer of weathering. Devitrified, some glass back with cloth for stabilisation. D(rim): 152, D(base): 90, preserved H(ext) from rim: 32 and from base: 88, Th: 1.

#### Beakers

GER011.TA1.6 C5 (Fig. 8.7)

Mould-blown beaker, 95% complete, small part of rim and upper frieze missing. Yellow-green. Beaker. Rim cracked-off and ground smooth (?). Concave body with flat base. Motif: from above: 2 horizontal lines, upper frieze: central rib with stylised ears of grain and poppy head (or pomegranates) branching off it. Double horizontal lines. Lower frieze: Stylized vine-scroll with alternating grapes and vine leaves. 3 part mould: 1 base mould and 2 body moulds. Mould seams join in circle on base. Silver weathering. D(rim): 65, D(base): 60, H: 89, Th: 1.

GER011.T9 D <4274> (Fig. 8.7)

Thin, flat based, beaker with slightly flaring walls, in white or pale green glass, rim missing. Could also be base of a thin bottle? D: 74.

GER011.T9 H

Beaker of white glass, too decayed to lift.

GER011.T14

Beaker of encrusted glass, too decayed to lift.

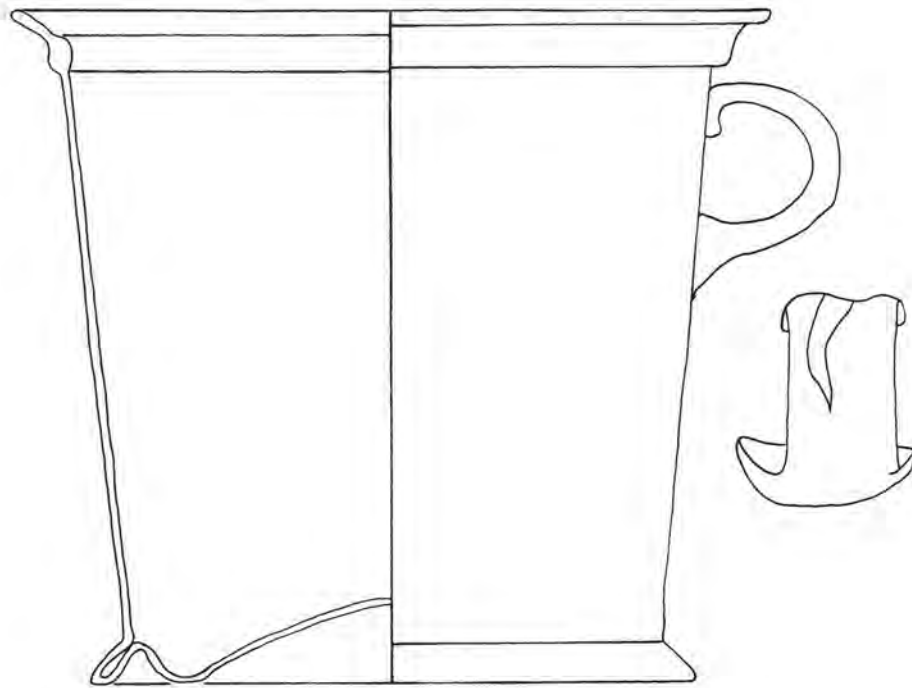
GER011.T54 (Fig. 8.7)

Small thin-walled cup. Everted rim, two pairs of exterior grooves, high foot and pad base.

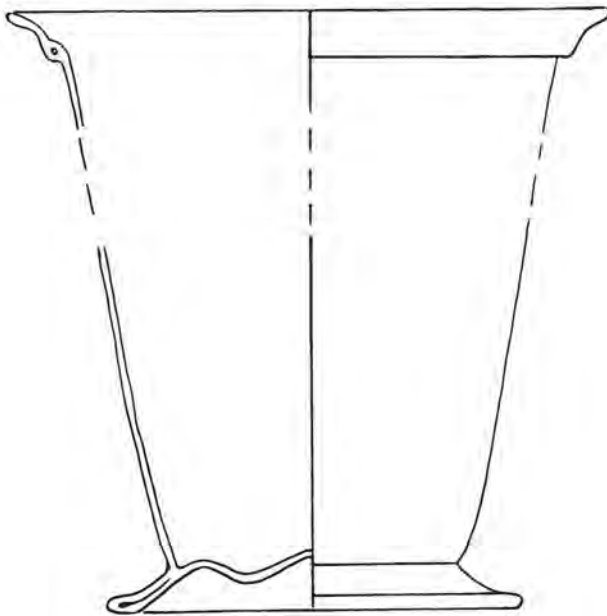
#### Conical Lamp or Drinking Horn

GER011.TA2.1 C7 (Fig. 8.9)

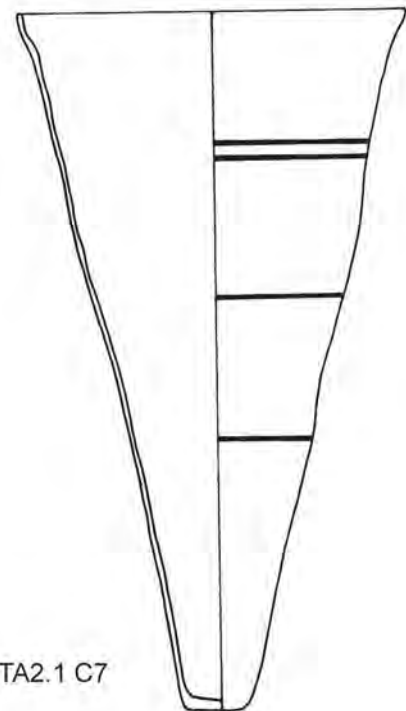
50 fragments, rim, body and base (mostly joining), colourless, but with purple streaks. Conical lamp or drinking horn. Late Roman outplayed rim, cracked-off and left rough. Conical body. Flat base. No pontil mark.



TA2.3 C6



Unprov.



TA2.1 C7

Figure 8.9. Miscellaneous glass vessels from Sāniat bin Huwaydī (iii) modioli and beaker or lamp. 1:2.



Abraded lines on body: 3.7 cm below rim, 4 cm below rim, 7.7 cm below rim and 9 cm above bases. Glass nearly completely devitrified. D(base): 18, D(rim): 104, H(ext): 184, Th: 2.

#### Bottles and Flagons

GER011.17 P

Handled glass vessel – flagon. Fragmentary.

GER011.17 Q

Flagon? Similar to T17 P. Fragmentary.

GER011.T51 G

Devitrified glass bottle, no attempt to lift it.

GER011.T51 N (Fig. 8.8)

Devitrified thin glass bottle, no attempt to lift it.

GER011.T51 O <4231> (Fig. 8.7)

86 fragments (rim, body, base), blue-green. Square bottle. Rim folded out, up and in and flattened. Straight neck, square straight body. Flat base with 3 concentric circles with central pellet. Broad band handle with thickened edges. Small bubbles. Silver weathering. Cf. Isings type 50. D: 66, D(rim): 46, D(rim internal): 16, H(neck): 35, H(handle): 38, W(handle): 27 H(ext): (estimated) 130, Th: 2.

#### Plates

GER011.T51 E (Fig. 8.8)

Devitrified glass plate. Only base lifted – similar to T51 C bowl. Base D: 57.

#### Miscellaneous

GER011.42 O

Mass of small clear fragments of unidentified glass vessel.

GER011.42 P (Fig. 8.8)

Devitrified fragments of a circular glass vessel.

GER011.42 R

Devitrified fragments of a glass vessel.

GER011.42 S

Devitrified fragments of a glass vessel.

GER011.T51 F

Devitrified glass vessel. No attempt to lift.

GER011.T51 Y (Fig. 8.8)

Devitrified glass vessel. No attempt to lift.

GER011.T52 U

Devitrified small white glass vessel. No attempt to lift.

GER011.T53 N (Fig. 8.8)

Devitrified glass vessel. No attempt to lift.

GER011.T53 O

Devitrified glass vessel. No attempt to lift.

## THE GLASS AND FAIENCE VESSELS FROM OTHER SITES EXCAVATED BY CMD AND M. S. AYOUB

By B. Hoffmann, with C. Tagart

This is the catalogue of the fragments of glass and faience vessels from CMD's other excavations in the Fazzān combined with material in the Jarma Museum, mostly now lacking certain provenance, but probably deriving from excavations by Ayoub. The material is spatially divided at present, between a collection of glass fragments held in Newcastle University for the purpose of study and material on display or in store in Jarma Museum. The first section of this catalogue will deal with the material held in Newcastle, the second with that in Jarma. Amongst the large amount of fragmentary material in Jarma Museum a good deal certainly or probably derived from Ayoub's excavations at the Royal Cemetery (GSC030–031). The remaining material came primarily from Zinkekrā (ZIN numbers) and Sāniat Jibrīl (GER002), with smaller amounts from Old Jarma (GER001) and Tinda (TIN001). Zinkekrā was both an Early and Proto-urban Garamantian escarpment settlement and later an extensive Classic Garamantian funerary zone (1<sup>st</sup> – 4<sup>th</sup> centuries AD), and in fact almost all the vessel glass reported here seems to have originated from robbed burials in the cemeteries (ZIN022, ZIN024, ZIN109, ZIN220, ZIN280, ZIN287). Tinda was another Proto-urban Garamantian escarpment settlement, Old Jarma was the Garamantian capital from the 4<sup>th</sup> – 3<sup>rd</sup> century BC onwards, though glass finds are rare before the 1<sup>st</sup> century AD, and Sāniat Jibrīl an oasis centre village spanning the 1<sup>st</sup> century BC to 4<sup>th</sup> century AD. Some items are of uncertain provenance, as their full context information has been lost. These are most likely to have originated in either the CMD or Ayoub excavations and are included here as illustrative of further material that arrived in the Garamantian heartlands. Most of this unprovenanced material probably originated from the Royal Cemetery (GSC030–031), Old Jarma (GER001) or Sāniat bin Huwaydī (GER011).

An earlier catalogue of some of this material had been prepared in the 1980s by Charlotte Tagart, of which a computer print-out was available when the material was reviewed by the author in 2000 and (for the Jarma Museum material) in 2002. Three roughly mounted groups of glass fragments were found in the archive and have been used

Table 8.3. Occurrence of glass at main sites excavated by CMD. \* = total includes excavation, surface collection and FP survey collections.

Site	Type	Glass Frags	'Intact' vessels
CHA005	Escarp Settlement	1	
CLF010	Early Cemetery	0	
GER001	Urban Centre	12	
GER002	Oasis Settlements	c.250*	
GER011	Classic Cemetery	-	43
GER027	Oasis Settlements	0	
GSC030	Classic-Late Cemetery	18	
TAG001	Classic-Late Cemetery	0	
TIN001	Escarp Settlement	1	
ZIN001-003	Escarp Settlement	0	
ZIN022	Classic Cemetery	2	
ZIN024	Classic Cemetery	11	
ZIN109	Classic Cemetery	1	
ZIN220	Classic Cemetery	2	
ZIN280	Classic Cemetery	9	
ZIN287	Classic Cemetery	1	
	Total	c.300	43

here, along with selected drawings by the present author of additional pieces, although the order of arrangement differs from the listing below (Figs 8.11–8.14). A number of pieces were missing from the material inspected in 2000, having mostly deteriorated into sand. Relevant descriptions for additional illustrated pieces have been added from Tagart's database at the end of the section. Where there was a discrepancy in the identification of pieces, the solution adopted normally reflects the views of the first-named author. The dating of the material is provided in the discussion essay at the start of this chapter.

Table 8.3 summarises recorded sherds of glass from the key CMD sites. There are uncertainties here, caused by progressive fragmentation of sherds between original record and re-study and in trying to reconcile diverse survey and excavation databases. But the broad picture is clear. The assemblage here is dominated by the site of Sāniat Jibrīl (GER002), complementing the picture from the best excavated cemetery Sāniat bin Huwaydī (GER011) presented in the last section. This is in part a reflection on the scale of work at each site. Old Jarma, the Garamantian capital, has now

yielded much more glass as a result of the FP excavations (to be presented in *AF 4*). The limited scale of work carried out by CMD at GER027 and TAG001 – both sites where we would expect to find glass – can explain the apparent absence there. However, there was abundant excavation of 1<sup>st</sup>-millennium BC occupation sites at Zinkekrā. It is clear that vessel glass did not arrive in the area in that phase. All the vessel glass and most of the faience finds – from survey work and limited clearance around burials – essentially relate to cemeteries on the south side of the hill, that date to the 1<sup>st</sup> – 4<sup>th</sup> centuries AD. However, there were glass beads from earlier occupation levels (see further below).

### The Faience

#### Vessels

ZIN003.100 11 (Fig. 8.10, no. 1)

6 joining rim and body fragments. Rounded rim. Cylindrical body. Pronounced ledge at carination. Outer layer of glazing gone. D: c.160, H(ext): 22, Th: 6.

ZIN280 T4 (Fig. 8.10, no. 2)

1 base fragment. Base ring. Mid blue glazing both sides. D: c.100-120, H(ext): 21, Th: 12.

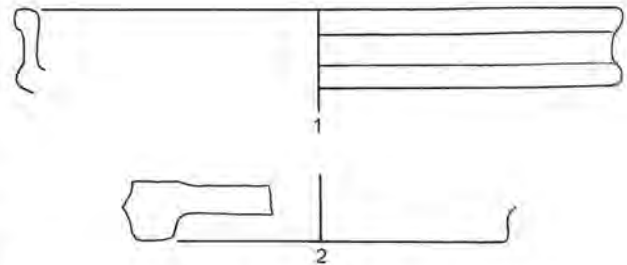


Figure 8.10. Faience vessels from other CMD excavations. 1:2.

#### Body fragments

ZIN109 (gen) (Not illustrated)

Body fragment, faience. Curved body, both surfaces surviving. Dims: 18 x 28, Th: 6.

ZIN280 T4 (Not illustrated)

Body fragment, faience. Only one surface surviving. Dims: 17 x 10, Th(ext): 1.0

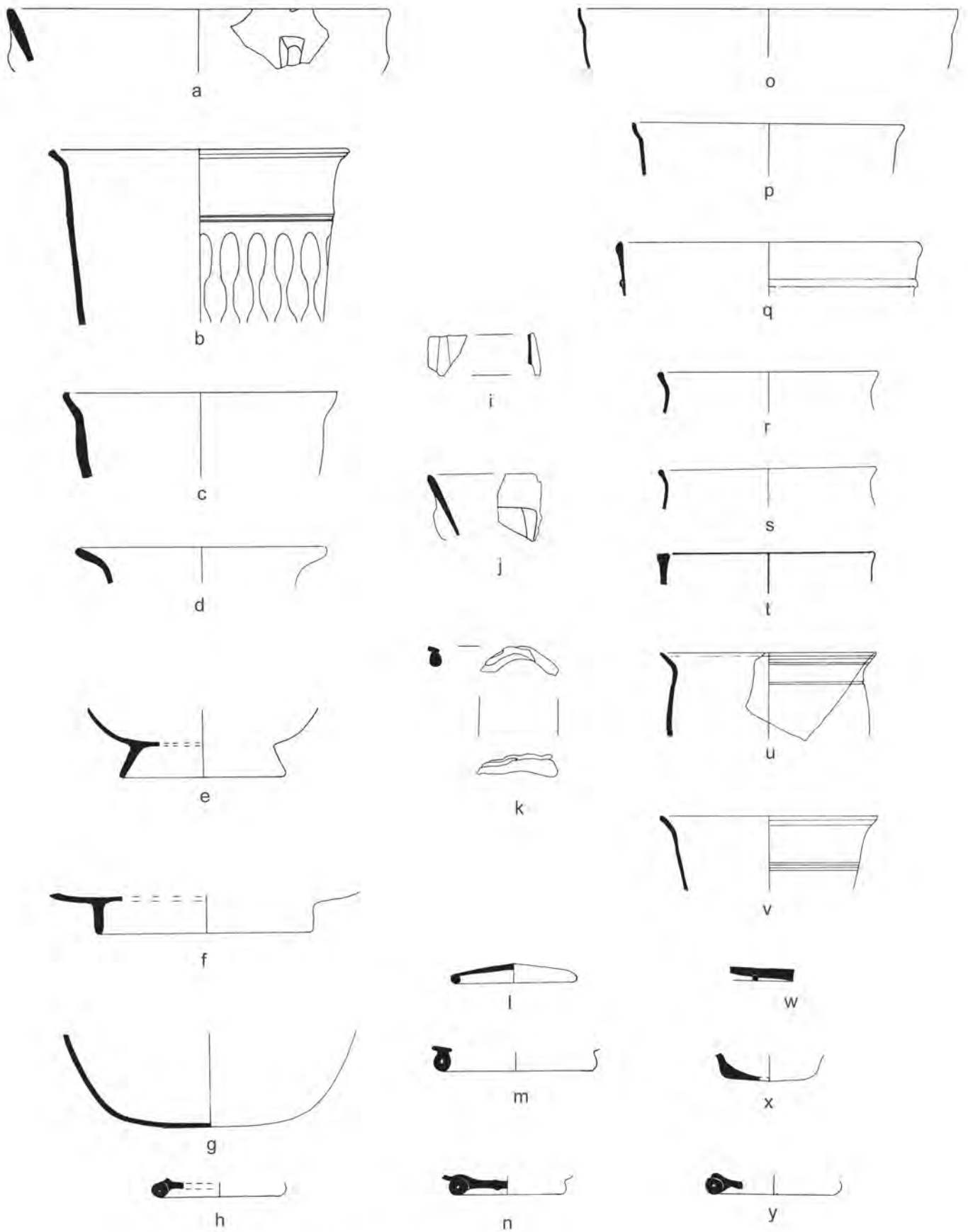


Figure 8.11. Vessel glass from other CMD excavations (i). 1:2.

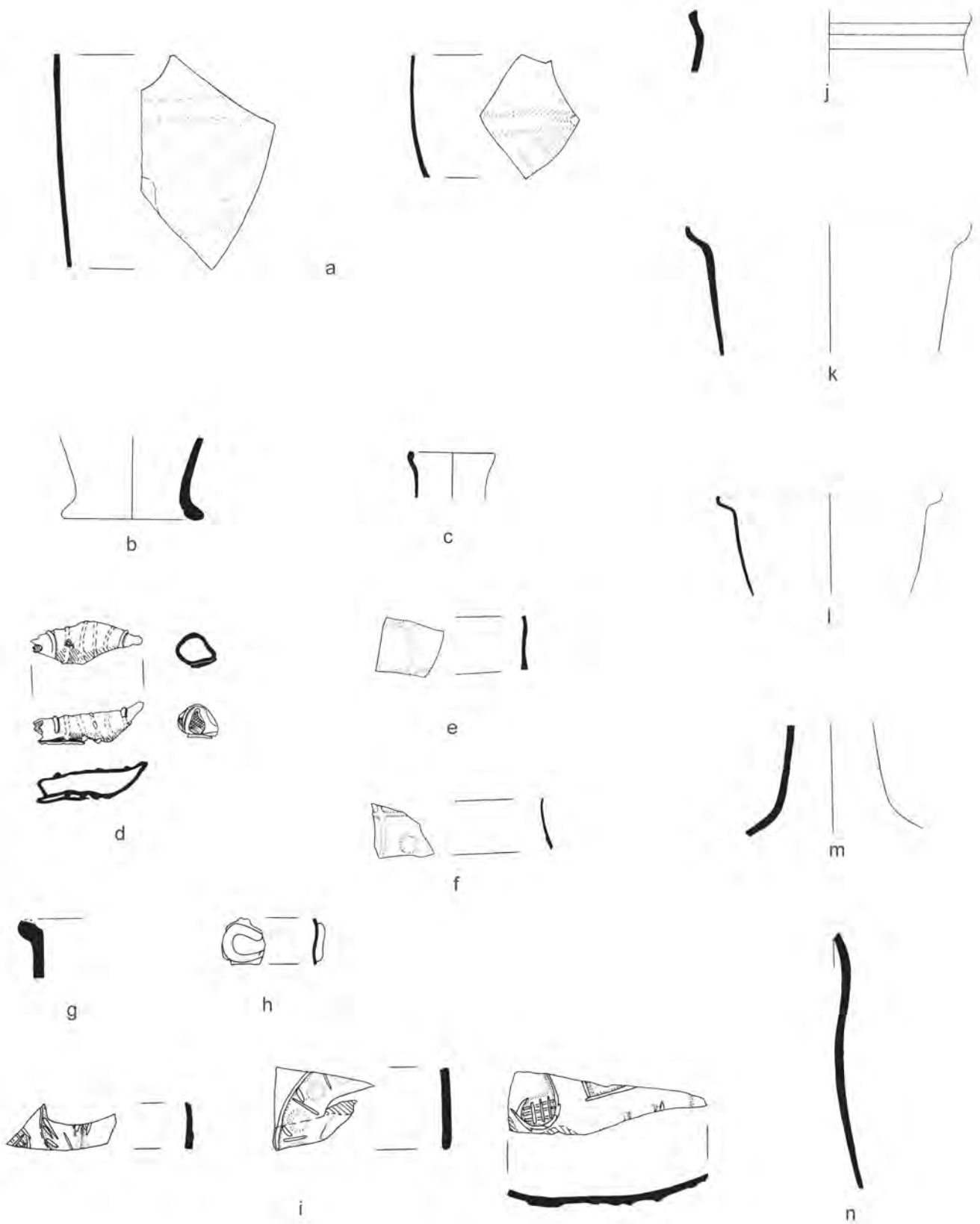


Figure 8.12. Vessel glass from other CMD excavations (ii). 1:2.

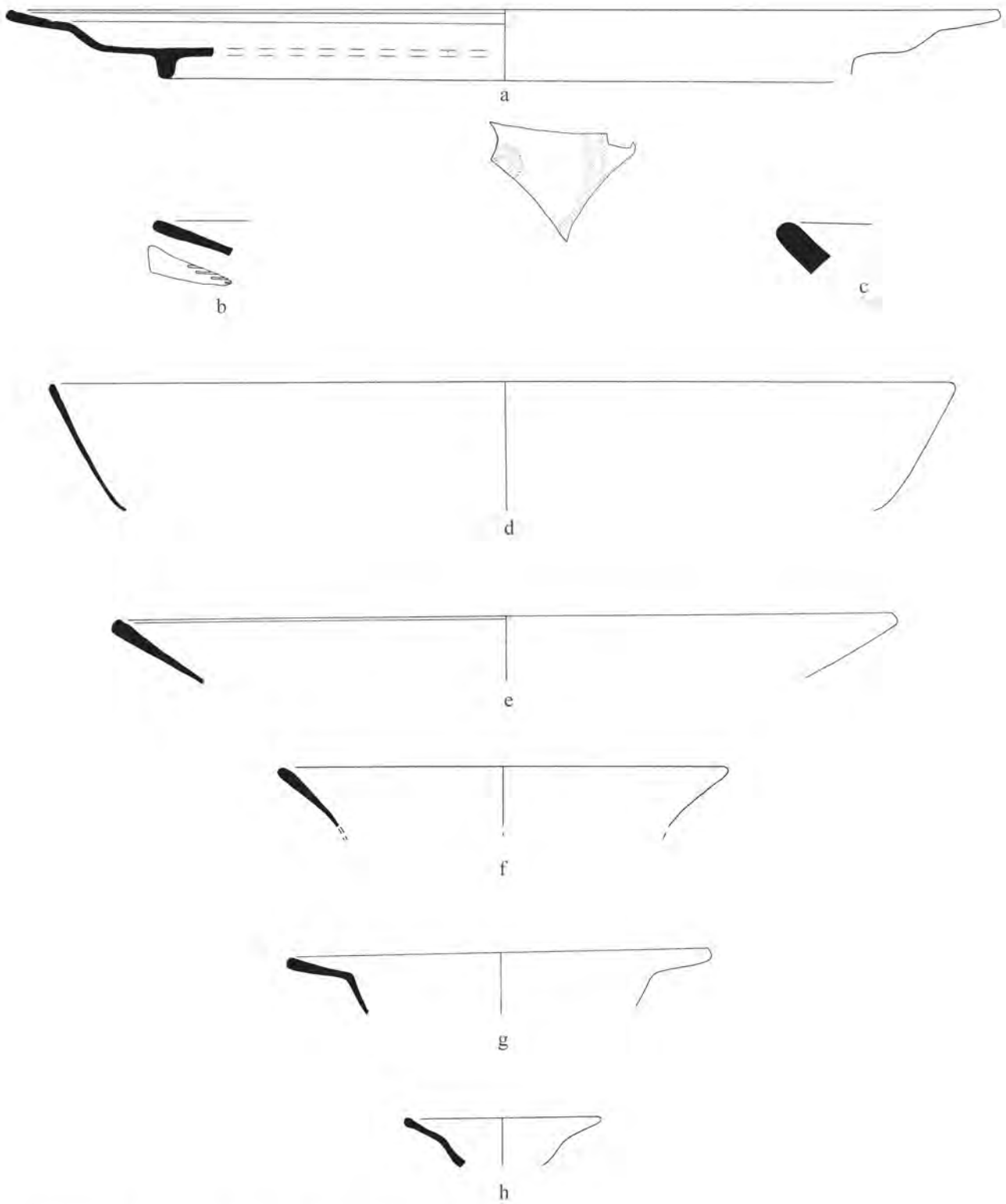


Figure 8.13. Vessel glass from other CMD excavations (iii). 1:2.

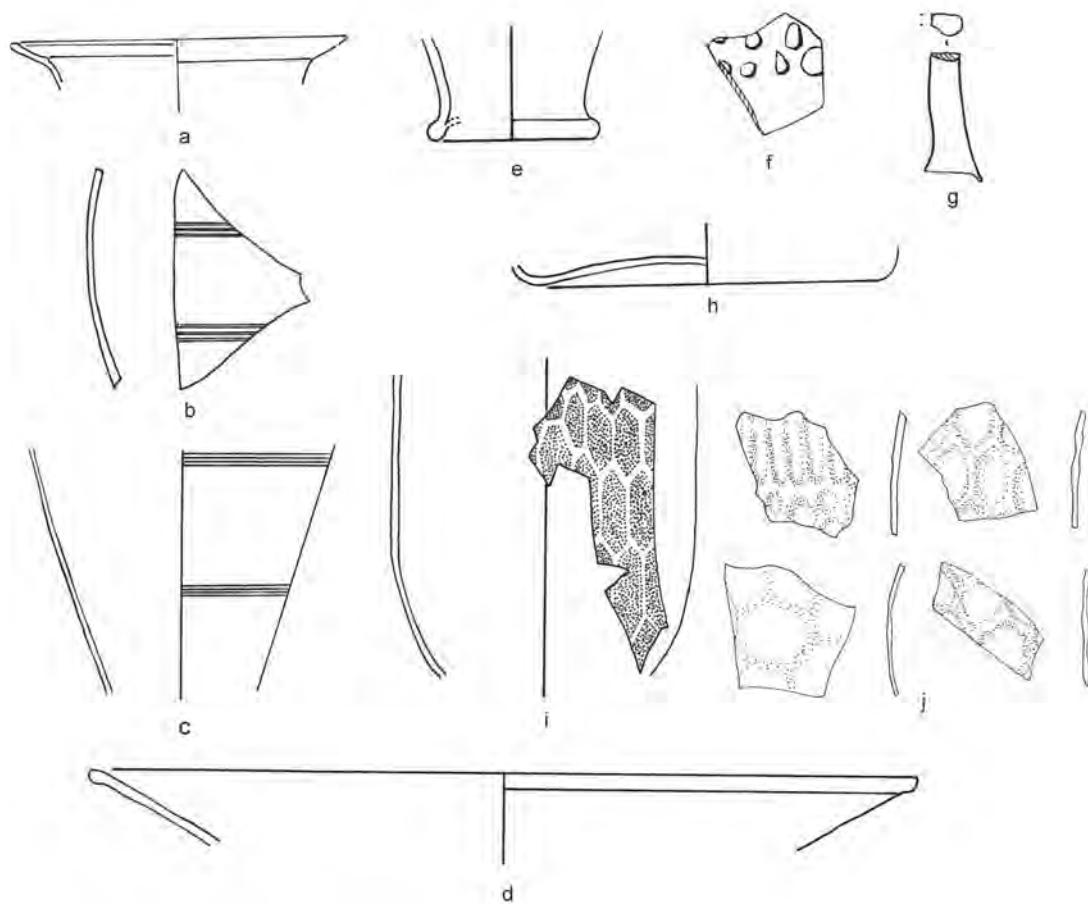


Figure 8.14. Vessel glass from other CMD excavations (iv). 1:2.

### Glass Vessels

#### Cast Glass

##### Millefiori

GER002 (gen) (Not illustrated)

Fragment, body. Millefiori: purple with white inclusions. Grey layer of weathering in places. Dims: 10 x 15, Th: 3.

##### Colourless Conical Bowl

GER002 Area 4 11 (Fig. 8.13b)

Fragment, rim. Colourless. Straight rim, conical body. Silver layer of weathering, Surface heavily pitted. (Blown or Cast?), edge of wheel-cut decoration internally (4 grooves parallel to rim). Dims: 7 x 16, Th: 3, EVE: 20.

TIN001 Area D (s) (Fig. 8.13e)

6 fragments (some joining, but may represent more than one vessel of similar type), rim and body. Colourless. Straight rim, (wheel-polished), conical body. Wheel-cut groove on the inside below the rim. White layer of weathering. D: 260, H(ext): 23, Th: 2, EVE: 40.

ZIN.022 T3 (Fig. 8.13f)

Fragment, rim. Colourless. Straight rim (wheel-polished), conical body. 2 abraded lines on the inside below the rim, milky layer of weathering. D: c.160, H(ext): 23, Th: 2, EVE: 40.

##### Bowl with Nearly Horizontal Rim

Unprovenanced (Fig. 8.13a)

130 fragments (Rim, body, base), some joining (c. 15% or vessel surviving; profile of vessel complete). Colourless. Cast. Large plate. Near horizontal broad rim with pronounced turn towards the body. Shallow body on footring. 2 wheel-cut grooves on the rim. Below the plate cut out roundel in centre of plate and 2 further concentric wheel-cut grooves. Very few small bubbles. White specks on surface and matt layer of weathering, Cracks through the body in places. D(footring): 220, D(rim): 380, Th: 3–5, EVE: 100.

ZIN024 T2 (Not illustrated)

Three joining fragments, rim. Colourless. Broad rim. Conical body? Traces of wheel-polishing on rim and body. Tiny bubbles. White layer of weathering in places.

D: 140, H(ext): 18, Th: 1, EVE: 20.

ZIN024 T3 (Fig. 8.14a)

Fragment, rim. Colourless. Broad rim with two low ledges on the edges. Traces of wheel-polishing on the inside. No bubbles. Cracked. Milky layer of weathering. D: 90, H(ext): 12, Th: 2, EVE: 20.

#### *Footrings*

ZIN109 T10 (Fig. 8.11e)

Fragment, base. Colourless. High footing. Traces of wheel-polishing on the outside. White layer or weathering in places. D: c.70, H(ext): 23, Th: 2, EVE: 40.

ZIN280 T3 (Fig. 8.11f)

Fragment, base. Colourless. High footing. Signs of wheel-polishing on the outside. White layer of weathering. D: c.60, H(ext): 13, Th: 2, EVE: 20.

#### **Pillar Moulded Bowls**

GER002 Trench 5 (s) (Fig. 8.11a)

Fragment, Rim. Blue-green. Pillar moulded bowl. Straight rim, wheel-polished, one rib preserved. Surface heavily pitted. Milky weathering. D: 140, H(ext): 21, Th: 3, EVE: 20.

GER002 (grab) (Fig. 8.11j)

Fragment, rim. Blue-green. Pillar moulded bowl. Straight rim, wheel-polished, one rib preserved. Surface heavily pitted. Milky weathering in places. D: fragment too small to measure. Dims: 16 x 24, Th: 3, EVE: 20.

GER002 (grab) Fig. 8.11i)

Fragment, body. Blue-green. Pillar moulded bowl. One rib. Inside Wheel-polished. Matt surface. Dims: 15 x 13, Th: 1, EVE: 20.

#### **Mould-Blown**

GER002 Area 4 11 (Fig. 8.12f)

Fragment, body. Colourless. Vertical and horizontal raised grid lines surrounding a central (?) blob. None of the motifs has a corresponding depression on the interior. Applied blob? Silver weathering. Pitted surface? Dims: 17 x 19, Th: 1, EVE: 20 or 14.

GER002 Area 4 26 (Fig. 8.12, e)

Fragment, body. Greenish. Vertical and horizontal raised grid lines. Silver iridescence. Surface slightly pitted. Dims: 17 x 21, Th: 2, EVE: 20 or 14.

#### **Optically Blown HoneyComb Beaker**

Unprovenanced (Fig. 8.14j)

4 fragments, body, probably all from the same vessel. Colourless. Cylindrical piriform vessel, covered with honey-comb shaped cells under an upper frieze of parallel, vertical lines. The size of the cells increase and the ribs flatten out with increasing distance from

the rime. Optically blown. Milky white layer of weathering. a): Dims: 30 x 34, Th: 2; b): Dims: 32 x 35, Th: 1; c): Dims: 21 x 31, Th: 1.5; d): Dims: 12 x 31, Th: 2, EVE: 60.

Unprovenanced (Fig. 8.14i)

9 fragments, 6 joining, body. Olive green. Tall beaker? Cylindrical vessel with curved base (?) with optically blown honeycomb pattern. The honeycombs lengthen towards the base. D: c.80, H(ext): 82, Th: 1.5–1, EVE: 40.

#### **Polychrome Glass**

*Vessel with Applied Footring.*

Unprovenanced (Not illustrated)

2 joining fragments. Colourless and blue-green. Footring. Blue-green applied footing on colourless vessel. Vessel cracked throughout. No iridescence. D: 70, H(ext): 11, Th: 2, EVE: 20 or 14.

#### **Colourless with Raised Ledges**

GER002 Area 4 55 (Not illustrated)

Fragment, rim. Colourless. Lightly outplayed rim, fire-rounded? Ground smooth? Below rim raised double ledge. Thick white layer of weathering. Glass cracked throughout. D: c.70–80, H(ext): 24, Th: 2, EVE: 20.

#### **Colourless with Facet-Cutting**

ZIN280 T4 (Fig. 8.11b)

Fragment, rim and body. Colourless. Slightly outplayed rim, ground smooth. Tall conical body. Below rim, a small ledge c.3 cm below rim deep wheel-cut double groove. Below that at least three rows of oval facets in quincunx, separated by narrow ledges. Tiny bubbles. Milky weathering in places. D: 100, H(ext): 52, Th: 2, EVE: 40.

#### **Colourless with Abraded Lines**

ZIN287 4 (Not illustrated)

Fragment, body. Colourless. 3 short abraded lines. No bubbles. No weathering. Dims: 13 x 15, Th: 1, EVE: 20 or 14.

#### *Bowl with Outplayed Rim and Abraded Lines under the Rim*

Unprovenanced (Fig. 8.11o)

5 fragments, 4 joining. Colourless. Outplayed rim, cracked-off and ground smooth. Band of abraded lines under the rim. No bubbles. White dots of weathering. D: c.140, H(ext): 23, Th: 1, EVE: 40.

A similar vessel was illustrated from GER002 Area 5 44 (Fig. 8.11p), though no written account survives in the archive.

**Colourless with Wheel-Cut Lines***Colourless Beaker with Wheel-Cut Lines and Cracked-Off Rim*

GER002 Area 6 19 (Fig. 8.11v)

Fragment, rim. Colourless. Beaker or cup with wheel-cut lines. Outsplayed rim, cracked-off and ground smooth? Globular body? Two wheel-cut lines below rim, two further wheel-cut lines on body. No bubbles. Thick white layer of weathering. Pitted surface underneath. D: 70, H(ext): 27, Th: 1, EVE: 40.

ZIN280 T4 (Fig. 8.11u)

Fragment, rim. Colourless. Cup with wheel-cut lines. Outsplayed rim, cracked-off and ground smooth. Globular body. Two wheel-cut lines below rim, two further wheel-cut lines on the body. No bubbles. Thick white and orange layer of weathering. D: 90, H(ext): 29, Th: 2, EVE: 40.

*Vessels with Wheel-Cut Lines – not Identifiable to Shape*

ZIN280 T4 (Fig. 8.14b)

Fragment, body. Colourless. Beaker, cup or bottle with wheel-cut lines. Two bands of three wheel-cut lines. No bubbles. Milky layer of weathering. Dims: 34 x 63, Th: 2–3, EVE: 20.

*Conical Tall Beaker with Wheel-Cut Lines*

ZIN280 T4 (Fig. 8.14c)

3 fragments, 2 joining. Colourless. Conical tall vessel with 2 bands of wheel-cut lines. White layer of weathering. D: 70, H(ext): 58, Th: 1.5, EVE: 40.

**Colourless with Trails***Snake-Thread*

GER002 Area 4 22 (Fig. 8.12h for fragment a)

5 fragments, body. Colourless?. Body fragment with thick curving trail. Thick layer of white and brown weathering. Glass completely opaque. Dims (of two largest pieces): a) 16 x 15, Th: 1 b) 7 x 9, Th: 1, EVE: 20 or 14.

*Conchylia/Fish-Beaker*

GER002 Area 4 35 (Fig. 8.12d)

Body fragment. Colourless. Fish or fish-beaker (Tagart 1982, 81–84). Pointed irregular body with one end missing with colourless trail spun around the entire body in regular distances. Base flattened. White layer of weathering, surface pitted, where exposed. L(ext): 38, D(max): 13, H(max): 9 (tail 14 above ground). Th: 1, EVE: 20?

*Beaker with Fire-Rounded Rim and Applied Trail*

GER002 Area 8 (s) (Fig. 8.11q)

Fragment, rim. Colourless. Straight fire-rounded rim.

Cylindrical body. Applied colourless trail about 1.5 cm below rim. Bowl or large cup. Thick white and brown layer of weathering. Pitted surface. D: 120, H(ext): 18, Th: 1, EVE: 40.

**Colourless Undecorated***Conical Bowl*

ZIN280 T3 (Fig. 8.14d)

Three joining fragments. Colourless. Fire rounded straight rim on conical deep bowl. No bubbles. Occasional milky layer of weathering. D: 220, H(ext): 20, Th: 1.5, EVE: 40.

*Cylindrical Bowl*

GER002 Area 4 2 (Fig. 8.12g)

Fragment, rim. Colourless? Cylindrical body with thickened rim, glass heavily devitrified, and now opaque white and brown. Cracks throughout. D: 140, H(ext): 21, Th: 3, EVE: 20.

*Cylindrical Cup*

GER001.4 16 (Fig. 8.11t)

Fragment, rim. Colourless. Straight fire-rounded rim. No bubbles? Glass cracked throughout. D: 80, H(ext): 10, Th: 1.5, EVE: 20.

*Slightly Outsplayed, Cracked-Off Rim (Late Roman Bowl)*

GER002 Area 2 44 (Not illustrated)

Fragment, rim. Colourless. Slightly outsplayed cracked-off rim. Ground smooth. White layer of weathering. D: 90, H(ext): 18, Th: 1, EVE: 20.

*Slightly Outsplayed Fire-Rounded Rim*

GER002 Area 4 26 (Fig. 8.11r)

Fragment, rim. Colourless. Slightly outsplayed fire-rounded rim. White and black layer of weathering. D: 70, H(ext): 13, Th: 1, EVE: 20.

There is another near identical fragment from the same context ((Fig. 8.11s).

*Outsplayed Bottle or Jug Rim*

GER002 Area 5 2/3 (Fig. 8.13h)

Fragment, rim. Colourless? Fire-rounded rim, outsplayed. Bottle or jug. Heavy layer of iridescence. D: 65, H(ext): 13, Th: 2, EVE: 14.

*Flat Base*

GER002 Area 7 2 (Fig. 8.11x)

Fragment, base. Colourless. Flat base, slightly constriction between body and base. Thick layer of white and orange weathering. Cracks throughout the body, on the brink of collapse. D: 34, H(ext): 8, Th: 2, EVE: 20.



*Applied Base Ring*

GER002 Area 6 (grab) (Fig. 8.12b)

Fragment, base. Colourless. Applied sub-circular base-ring. Overlap of glass trail visible. Surface heavily weathered and pitted. D: c.40, H(ext): 6, Th: 1, EVE: 20 or 14.

GER002 Area 8 2 (Fig. 8.11w)

Fragment, base. Colourless. Applied base ring. White and brown layer of weathering. Pitted surface. Cracked. D: c.60, H(ext): 5, Th: 4, EVE: 20 or 14.

*Folded Base*

GER002 Area 4 5/2 (Fig. 8.11h)

Fragment, base. Colourless? Folded base-ring. Glass covered with heavy white opaque layer of weathering. Cracked throughout. D: 52, H(ext): 7, Th: 2.

GER002 Area 4 11 (Not illustrated)

Fragment, base. Colourless. Folded base-ring. Slightly domed base. Pontil mark. Very heavy pitting of surface. Some rainbow iris. D: c.46, H(ext): 8, Th: 2, EVE: 20 or 14.

GER002 Area 4 97 (Fig. 8.11y)

Fragment, base. Colourless. Folded footing. Nearly complete. Pontil-mark. Glass covered with heavy white opaque layer of weathering. Cracked throughout. D: 42, H(ext): 9, Th: 2, EVE: 20 or 14.

GER002 Area 5 2/3 (Fig. 8.11n)

Fragment, base. Colourless? Folded footing. Glass covered with opaque layer of iridescence. D: 56, H(ext): 7, Th: 2, EVE: 20 or 14.

GER002 Area 6 (s) (Fig. 8.14e)

Fragment, base. Colourless. Tall beaker? Folded base-ring with flaring body. Glass entirely disintegrated. Thick white layer of weathering, cracks through entire body. On the brink of collapse. D: 46, H(ext): 27, Th: 3, EVE: 40.

There is another fragment of a similar folded footing from GER002 Area 5 2/3 b (Fig. 8.11m), though no written record survives in the archive.

*Greenish with blobbed decoration*

Unprovenanced (Fig. 8.14f)

Fragment, body. Greenish with 7 dark blue blobs. Curved body, globular? Small irregular blobs in two horizontal lines close together. Dims: 28 x 28, Th: 2, EVE: 14 or 20.

**Greenish undecorated***Deep Conical Bowl*

Unprovenanced (Fig. 8.13d)

140 fragments (rim, body and base), some joining. (c.20% of original vessels), from two near identical bowls. Greenish. Deep bowls. Fire-rounded straight

rim. Conical body. Applied footing. Elongated bubbles. Brown patches of weathering. D (rim): 290 D(base): 120, H (from rim to turn of body): 36, H (footring): 7, Th: 1-2, EVE: 200.

**Greenish undecorated***Thin Walled Beaker with Outsplayed Rim*

GER002 Area 7 1 (Fig. 8.12l)

10 fragments, some joining, rim and body. Greenish. Outsplayed rim, cracked-off and left rough(?). Globular body. Heavy weathering. D: 80, H(ext): 24, Th: 1, EVE: 40.

*Flat Base*

Unprovenanced (Fig. 8.11g)

2 joining fragments, base. Greenish. Flat base, Globular body. Milky layer of weathering. D(base): c.60-80, H(ext): 29, EVE: 14 or 17?

*Handle*

Unprovenanced (Fig. 8.14g)

Fragment, handle. Greenish. Part of band handle? Elongated bubbles. No weathering. L: 34, W(ext): 13, Th: 4, EVE: 14.

**Blue-Green with Wheel-Cut Lines***Beaker with Outsplayed Rim*

GER002 Area 4 10 (Not illustrated)

Fragment, rim. Blue-green. Rim outsplayed, edge missing. Wheel-cut line below the rim. Surface slightly pitted. Silver layer of weathering. Dims: c.40, H(ext): 12, Th: 1, EVE: 20.

*Vessel with Wheel-Cut Lines*

ZIN220 (Not illustrated)

Fragment, body. Blue-green. Cylindrical body. Two horizontal Wheel-cut lines. No bubbles. No weathering. Dims: 20 x 18, Th: 1, EVE: 20 or 14.

**Blue-Green Undecorated***Bottle or Jug Neck*

GER001.3 1 (Not illustrated)

Fragment, body. Blue-green. Cylindrical neck of bottle or jug. Surface slightly pitted. Silver iridescence. Dims: c.28, H(ext): 39, Th: 15, EVE: 14.

*Folded Base-Ring*

GER002 Area 7 1 (Not illustrated)

Fragment, base. Blue-green. Folded footing. Pitted surface. D: 40, H(ext): 6 Th: 2, EVE: 20.

**Olive Green Glass***Thick Walled Beaker with Slightly Outsplayed Rim*

Unprovenanced (Fig. 8.11c)

2 joining fragments, rim. Olive green. Beaker. Slightly outplayed rim, Cracked-off and left rough. Globular body? White stippling. D: 110, H(ext): 29, Th: 4, EVE: 40.

*Outplayed and Cracked-Off Rim*

GER001.3 19 (Fig. 8.12k)

Fragment, rim and body. Olive green. Outplayed and cracked-off rim. Globular body. Surface heavily pitted. Black layer of weathering. D: c.100, H(ext): 40, Th: 1, EVE: 60.

**Bottles**

*Folded Rim*

GER001.3 1 (Not illustrated)

Fragment, rim. Blue-green. Folded rim. Rim folded out, up and in. Bottle or jar. Small bubbles. Silver iridescence. D: c.160, H(ext): 7, Th: 3, EVE: 14 or 20.

*Cylindrical Bottle?*

Unprovenanced (Fig. 8.14h)

3 fragments, 2 joining. Blue-green. Flat base with of cylindrical vessel; slightly domed. Bottle. Heavy silver iridescence. Surface pitted in places. D: c.80–120, H(ext): 6, Th: 2, EVE: 14.

**Additional Illustrated Pieces Recorded by**

**C. Tagart**

GER001.3 1 (Fig. 8.13c)

Rim fragment of deep bowl (or perhaps a splayed base), smooth rounded profile, pale green colourless, with many small bubbles and pitting, some iridescence. Th: 9.

GER002 (grab) (Fig. 8.12m)

Neck fragment of a bottle or flask, colourless, with few bubbles, iridescent pitting and heavy brownish enamelling.

GER002 43, S (Fig. 8.11k)

Possible further fragment of a pillar moulded bowl in aquamarine blue glass, with middle section of moulded rib.

GER002 Trench 5 (grab) (Fig. 8.12c)

Rim and neck fragment from a small flask.

ZIN024 T2 (Fig. 8.11d)

Three joining sherds of a bowl with flaring rim, in colourless glass with brownish-purple tinge, slight dulling and milkiness. Wheel-polished, thick polished rim.

ZIN024 T2 (Fig. 8.13g)

Similar bowl to above, with larger diameter, in colourless glass with yellowish tinge, slight dulling. Wheel-polished surfaces, thick polished rim.

There are several further illustrated glass fragments for which no record was found in the archive – a lid from GER002 Area 4 19 (Fig. 8.11i), a rim from GER002 Area 7 2 (Fig. 8.12j) and a wall sherd of a tall vessel from GER002 Area 7 2 (Fig. 8.12n).

*Glass from the Royal Cemetery*

Italian excavations in the 1930s had yielded late Roman glass from the so-called Royal Cemetery (GSC030–031, see above Chapter 6). Ayoub excavated a further series of tombs at this important cemetery and there are indications that fragmentary glass vessels or glass fragments were retrieved from GSC030.T4, T5, T14, T15–T21, T25 and GSC031.T1, T2, T3 and T30/32 (Ayoub 1968a; el-Kilani 1968). In addition CMD recovered glass fragments from GSC030.T5. The only clear indication of provenance on any of the Late Roman glass in the Jarra Museum is an indication that two boxes of fragments came from GSC030.T4 (these were labelled D14 and D16), though it is possible that finds from other Royal Cemetery tombs were later amalgamated with these. Three further boxes of fragments (numbered D10, D11 and D15) were strongly suspected by CMD in the late 1960s of deriving from Ayoub's excavations at the Royal Cemetery. With varying degrees of confidence, then, the following material is thought to derive from this Late Roman cemetery, though with the exception of some of the material assigned to GSC030.T4, the association with particular tombs is not possible.

**Material from Box D16 = GSC030.T4**

*Cast Dark Blue Plate*

GSC030.T4 (Fig. 8.15a)

1 fragment, dark blue translucent. Rim of large plate. Cast. Near horizontal rim with double ledges. Very shallow body. Small bubbles. Wheel-cut line under rim which stops in the middle of the fragments. Patches of white weathering. D: 340, H(ext): 14, Th: 3, EVE: 60 Plus 3 additional body fragments and a further rim fragment from the same vessel.

*Conical Bowl or Dish with Fire-Rounded Rim*

GSC030.T4 (Fig. 8.15b)

7 rim fragments (4 joining) colourless. Blown. Rim of large conical bowl with straight thickened fire-rounded rim. Conical body. Very few elongated bubbles. Milky layer of weathering. D: c.320, H(ext): 35, Th: 2.5, EVE: 40.

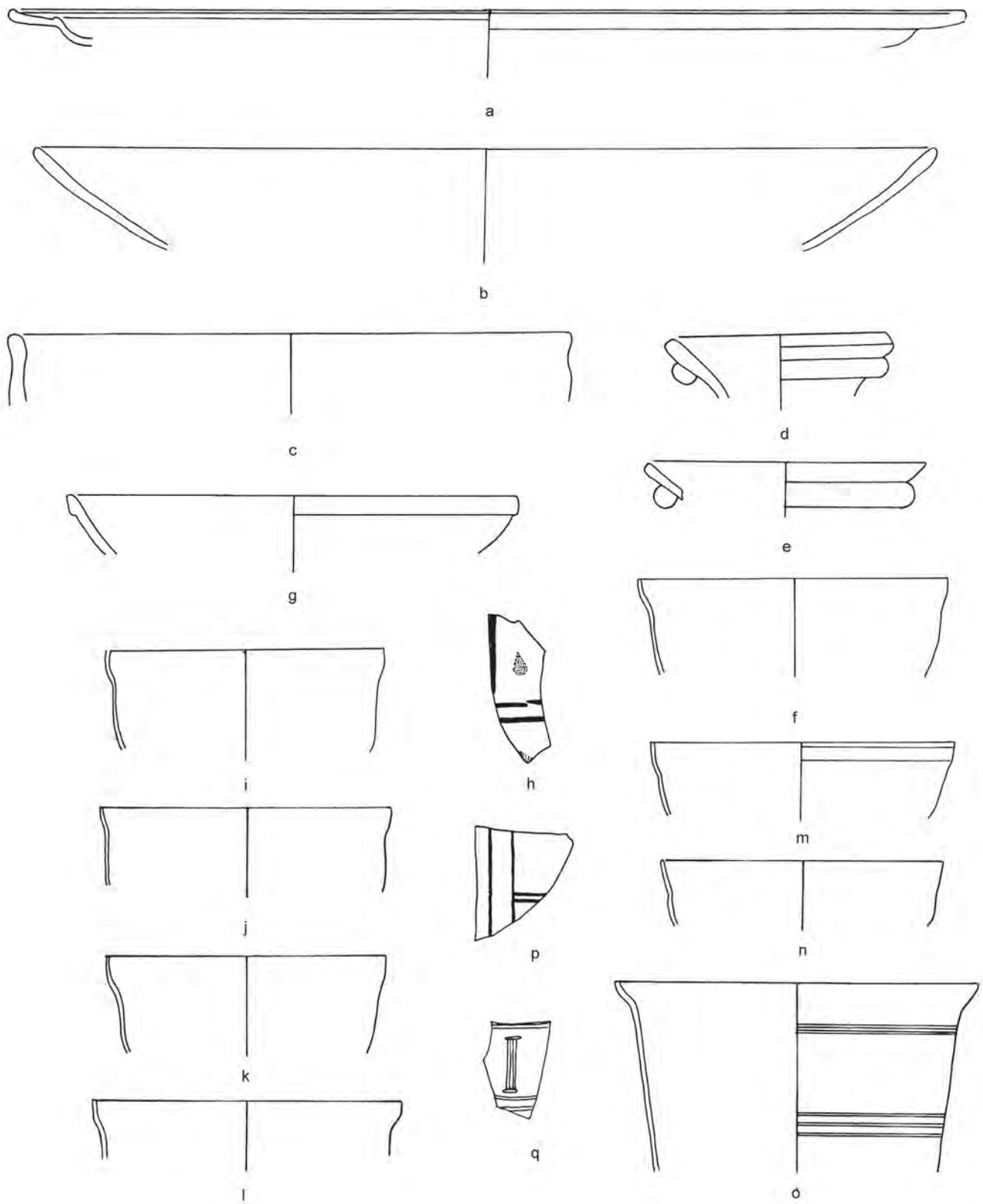


Figure 8.15. Vessel glass probably from Ayoub's excavations (i). 1:2.

*Cylindrical Bowl or Dish with Fire-Rounded Rim*

GSC030.T4 (Fig. 8.15c)

Rim fragment, colourless. Bowl. Fire-rounded rim with straight, cylindrical body. White opaque layer of weathering. Brown strain cracks. D: c. 200, H(ext): 25, Th: 5, EVE: 20.

*Late Bottle Rim*

GSC030.T4 (Fig. 8.15d)

Rim fragment, colourless. Late bottle rim. Everted fire-rounded rim with applied self-coloured trail below the rim. Brown opaque layer of weathering. D: c. 80, H(ext): 21, Th: 4, EVE: 17.

Probably from the same vessel: 3 body fragments, colourless, including neck of bottle or flask.

GSC030.T4 (Fig. 8.15e)

Rim fragment, greenish. Late bottle rim. Everted fire-rounded rim with applied self-coloured trail under the rim. Elongated bubbles. No weathering.

D: c. 100, H(ext): 16, Th: 3, EVE: 17.

*Late Roman Outsplayed Rim*

GSC030.T4 (Fig. 8.15f)

Rim fragment, colourless. Late bowl. Outsplayed rim, cracked-off and ground smooth. Globular(?) body. Silver iridescence. D: 110, H(ext): 35mm Th: 2, EVE: 40.

*Bowl with Fire-Rounded Collar Rim*

GSC030.T4 (Fig. 8.15g)

Rim fragment, colourless. Blown. Conical (?) bowl with thickened fire-rounded rim. Cracks in surface. Milky layer of weathering. D: 160, H(ext): 22, Th: 4, EVE: 20.

*Square Bottle*

GSC030.T4 (Not illustrated)

8 body fragments, blue-green. Square bottle, probably all from the same vessels.

Typical Dims: 33, x 54, 80, x 42, Th: 2.5–3.5.

*Bottle (Islamic?)*

GSC030.T4 (Fig. 8.15h)

Body fragment, dark blue translucent, not normal cobalt blue, more greenish. Neck of bottle. Abraded pattern: little blob, 2 horizontal lines, further facet. Dims: 54, x 20, Th: 3.

*Further Unidentifiable Fragments*

1 body fragment, dark blue. Not from cast plate. Dims: 25 x 23, Th: 1.

12 body fragments, colourless. Probably from some of the vessels listed above.

**Material from Box D14 = GSC030.T4***Late Roman Outsplayed Rim, Ground Smooth*

GSC030.T4 (Fig. 8.15i)

Rim fragment, colourless. Beaker or bowl. Late Roman outsplayed rim, cracked-off and ground smooth. Bubbly glass. Milky layer of weathering. D: 100, H(ext): 36, Th: 1.5, EVE: 40.

GSC030.T4 (Fig. 8.15j)

Rim fragment, colourless. Late Roman bowl or beaker. Late Roman outsplayed rim, cracked-off and ground smooth. Milky, white layer of weathering. D: 105, H(ext): 29, Th: 1, EVE: 40.

GSC030.T4 (Fig. 8.15k)

Rim fragment, colourless. Late Roman bowl or beaker. Late Roman outsplayed rim, cracked-off and ground smooth. Bubbly glass. Milky later of weathering. D: 100, H(ext): 34, Th: 1, EVE: 40.

GSC030.T4 (Fig. 8.15l)

Rim fragment, greenish colourless. Late Roman beaker or bowl. Late Roman outsplayed rim, cracked-off and ground smooth. Small bubbles. Milky layer of weathering. D: 110, H(ext): 19, Th: 1, EVE: 20.

GSC030.T4 (Fig. 8.15m)

Rim fragment, colourless. Blown. Beaker or bowl. Late Roman outsplayed rim, cracked-off and ground smooth. Conical Body? Band of wheel-cut lines below rim. Milky layer of weathering. D: 110, H(ext): 26, Th: 2, EVE: 40.

*Late Roman Outsplayed Rim, Cracked-Off and Left Rough*

GSC030.T4 (Fig. 8.15n)

Rim fragment, colourless. Beaker or bowl. Late Roman outsplayed rim, cracked-off and left rough. Small bubbles. Milky layer of weathering. D: 100, H(ext): 25, Th: 2, EVE: 40.

*Late Roman Conical Lamp or Beaker with Wheel-Cut Lines*

GSC030.T4 (Fig. 8.15o)

Rim fragment, olive green. Conical lamp?. Late Roman outsplayed rim, cracked-off and left rough. Four wheel-cut lines 1.5 cm below rim. Group of 3 abraded bands 4.7 cm below rim. Small bubbles and inclusions. Milky layer of weathering. D: 130, H(ext): 67, TH: 2, EVE: 60.

GSC030.T4 (Fig. 8.16a)

Rim fragment, greenish. Late Roman lamp?. Late Roman outsplayed rim, cracked-off and ground smooth. White layer of weathering. D: 120, H(ext): 33, Th: 2mm EVE: 40.

GSC030.T4 (Fig. 8.16b)

Rim fragment, olive green. Freeblown. Late Roman lamp?. Late Roman outsplayed rim, cracked-off and

ground smooth. Abraded line 2 cm below the rim. Milky spots of weathering. D: 120, H(ext): 33, Th: 2, EVE: 40.

GSC030.T4 (Fig. 8.16c)

3 rim fragments (2 joining), olive green. Probably from the same vessel, Late Roman lamp. Late Roman outplayed rim, cracked-off and ground smooth. Small bubbles. Milky layer of weathering. D: 105, H(ext): 49, Th: 1.5, EVE: 40.

*Late Roman Bottle with Abraded Design*

GSC030.T4 (Fig. 8.15p)

Body fragment, greenish. Bottle? Straight cylindrical body. Double abraded lines meeting at right angles. Milky white layer of weathering. Dims: 41 x 35, Th: 1, EVE: 17.

*Further Unidentifiable Fragments from D14*

1 body fragment each in olive green, yellow green and yellow brown; 6 body fragments, greenish; 4 body fragments, blue-green and blue-green/colourless; 4 body fragment, greenish colourless, 14 body fragment, colourless.

**Glass in the Museum of Uncertain Provenance (Possibly not from GSC030–031)**

*Tall, Wheel-Cut Beaker on Separately Blown Foot*

Unprovenanced (Fig. 8.16d)

2 joining fragments, purplish. Blown. Conical body. Separately blown foot. 2 parallel wheel-cut lines on the body. Black layer of weathering over most of vessel. Otherwise badly pitted. D(base): 40, H(ext): 57, H(base): 7, Th: 1.5, EVE: 40.

*Conical Bowl*

GSC030.T4? (Figs 8.16e, 8.18c)

Rim fragment, greenish/colourless. Large shallow bowl. Straight fire-rounded rim, conical body. Wheel-cut line under the rim. Elongated bubbles. Milky weathering. D: 260, H(ext): 38, Th: 1, EVE: 20.

Unprovenanced (Fig. 8.16f)

1 rim fragment, colourless. Bowl? Straight fire-rounded rim. Conical body. White layer of weathering. D: 240, H(ext): 23, Th: 3, EVE: 20.

*Square Bottle*

Unprovenanced (Fig. 8.16g)

20 joining fragments, mould-blown. Blue-green. Square bottle. Rim and parts of neck missing. 3 stranded handle. Straight square body. Flat base lightly pushed in. Basemark: Vegetation creating a quadrefoil? S1: 62, S2: 65, H(ext): 157, H(shoulder): 122, EVE: 80.

**Late Roman Cut Glass from Box D10 (probably mostly GSC030–031)**

*Monochrome with Cut Decoration*

GSC030? (numbered 128, 131 and 136) (Fig. 8.12i)  
4 fragments (2 joining), body, probably from the same vessel. Dark peacock green. Large dish. Segmental bowl? With central raised cutting, further remains of leaves and remains of letters. The raised glass material is not cut out off the surrounding glass, but the entirety of the material shows the same fire-polish finish, the linear cuts define only the raised areas. Especially around the leaves in 136 the glass material slopes gently from very low to the higher areas with an unbroken or dulled surface, making it clear that this was not created by cutting. Also the roundels are moulded, not facet cut. Inside fire-polished. No grooves visible. Tiny bubbles. White speckles on the surface. Dims: 131 28 x 32, Th: 2; 128 16 x 38, Th: 3; 136 21 x 68, Th: 3, EVE: 40.

*Vessels with Inscribed Letters with Double Strokes*

Unprovenanced (Fig. 8.15q)

Body fragment, colourless. Wheel-cut. Straight body. Cylindrical or slightly conical. Wheel-cut decoration: 3 horizontal lines, vertical hasta with double line, 2 vertical lines (I or T?). No bubbles. Milky weathering. Cracks throughout body. Dims: 33 x 24, Th: 2, EVE: 20.

Unprovenanced (Fig. 8.18a)

3 fragments, 2 joining. Purple translucent. Deep bowl or dish. Straight rim, ground smooth. Conical or segmental body. Wheel-cut decoration: a) horizontal line: fishbone hatching, Greek letters with double strokes [PIE ZE]SE[S]; b) and c) horizontal line, fishbone hatching, Greek Letter E in double stroke letters. Small bubbles. Milky layer of weathering. a) D: 200, H (ext): 49, Th: 5, EVE: 40. b) and c): D: 200, H(ext): 52, Th: 4.5, EVE: 40.

*Thin-Walled Vessels with Facet-Cutting and Wheel-Cut Decoration*

Unprovenanced (Figs 8.16h–j, 8.18e)

Body fragment, colourless. Wheel-cut, raised motif: Horizontal line. Rectangular box with hatching. No bubbles. No weathering. Dims: 24, x 27, Th: 3, EVE: 20.

2 further body fragments, colourless. Conical body? Facet-cutting /wheel-cutting with raised design. Deep wheel-cut lines with hatching. Small bubbles. Milky weathering. Dims: a) 35 x 25. b) 33 x 30, Th: 2.5, EVE: 20.

Unprovenanced (Fig. 8.16k)

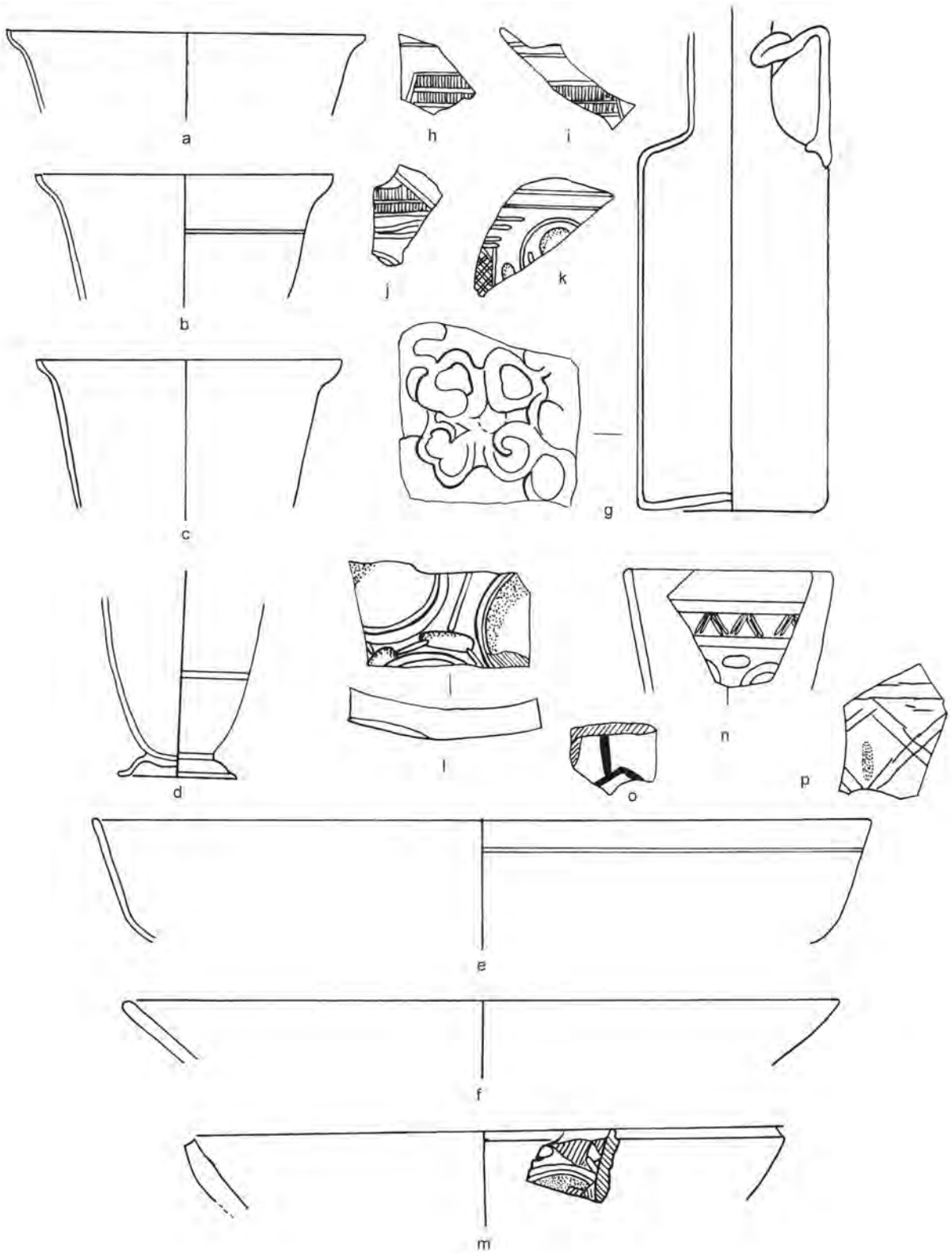


Figure 8.16. Vessel glass probably from Ayoub's excavations (ii). 1:2.

Body fragment, colourless. Cylindrical vessel, bottle or jug? Wheel-cut and facet-cut decoration: 2 horizontal lines. Large oval facet, surrounded by circle. Small oval facet on the left hand side. Further to the left stylised column with cross-hatching on the column shaft. Dims: 45 x 40, Th: 3, EVE: 20.

#### *Thick-Walled Vessel with Facet-Cutting*

Unprovenanced (Figs 8.16l; 8.18b)

1 fragment, dark purple, appearing black. Blown. Segmental bowl? Facet-cut: large round facets with surrounding circles, separated by short wheel-cut strokes, alternating with oval facets. White dots of weathering. Dims: 58 x 35, Th: 9, EVE: 20.

Unprovenanced (Fig. 8.16m)

1 rim fragment, dark purple translucent, appearing black. Blown. Segmental bowl? Probably from the same vessel as the previous entry. Facet cut: Large round facet with surrounding circle, framed with wheel-cut lines and oval facets. Chipped. Small white dots of weathering. Dims: 27 x 28, Th: 9, EVE: 20.

#### *Conical Beaker with Geometrical Decoration*

Unprovenanced (Figs 8.16n, 8.18f)

Rim fragment, colourless. Blown. Conical Beaker. Fire-rounded rim. Conical body. Tool marks outside rim and triple lines on the inside. Wheel-cut decoration: Uneven horizontal line, double zig-zags. Horizontal line. Wheel-cut circles separated by small oval facets. Small bubbles. Whitish layer of weathering. D: 75, H(ext): 41, Th: 2.5, EVE: 40.

#### *Abraded Decoration*

Unprovenanced (Fig. 8.16o)

1 body fragment, colourless. Globular vessel. Gabled wheel-cut lines and slightly off-set vertical line. Black layer of weathering. Dims: 30 x 25, Th: 1, EVE: 20.

#### *Cylindrical Bottle with Abraded Design*

Unprovenanced (Fig. 8.17a)

3 body fragments, almost certainly from the same vessel, olive green. Bottle. Straight, cylindrical body: abraded decoration: 3 horizontal lines below squares formed by double vertical and horizontal lines. In the centre of the resulting field, abraded roundish 'facets'. No bubbles. Milky and brownish layer of weathering. D: c. 150, H(ext): 71, and 40, Th: 1-3, EVE: 40.

#### *Bowls and Cups with Abraded Designs*

GSC030.T4? (Figs 8.17b, 8.18g)

Rim fragment and 2 body fragments colourless. Late Roman cup. Outsplayed rim, cracked-off and left rough. Globular body. Wheel-cut decoration: hexagonal fields

with central oval facets. Shallow wheel-cut lines above. a) D: 110, H(ext): 60, Th: 1.5., EVE: 40; b) Dims: 26 x 42, Th: 1.5; c) Dims: 21 x 40, Th: 2.

Unprovenanced (Fig. 8.16p)

Body fragment, greenish. Globular vessel. Wheel-cut lines (short strokes) forming a double stroke lattice work below a double horizontal line. The resulting square is filled with an oval facet. Small bubbles. Milky patches of weathering. Dims: 35 x 44, Th: 1.5, EVE: 17 or 20.

Unprovenanced (Fig. 8.17c, 8.18d)

2 joining rim and body fragments, colourless. Late Roman cup. Outsplayed rim, cracked-off and ground smooth. Elongated globular body, decorated with criss-crossing abraded lines forming diamonds. Within the diamonds one abraded patch off-centre. Large bubbles. Milky weathering. D: 105, H(ext): 88, Th: 2, EVE: 80. Unprovenanced (Fig. 8.17d and e)

1 rim fragment, greenish/colourless. Globular vessel. Wheel-cut decoration: Crisscrossing double-lines forming diamonds with oval facets in the centre. Small bubbles. Milky weathering. Dims: 45 x 32, Th: 2, EVE: 20.

Possibly from same vessel, rim fragment, greenish. Bowl or Beaker. Late Roman outsplayed rim, cracked-off and ground smooth. Wheel-cut decoration: Criss-crossing lines, forming diamonds with centred wheel-cut facet. Wheel-cut lines in upper register. Small bubbles. Milky weathering. D: c.120, Th: 1.5, EVE: 20.

Unprovenanced (Fig. 8.17f)

Rim fragment, greenish. Globular beaker or bowl. Late Roman outsplayed rim, cracked-off and ground smooth. Wheel-cut lines creating rectangles with inscribed oval facet. Small bubbles. Milky weathering. D: 120, Th: 1.5, EVE: 40.

#### *Late Roman Undecorated Bowl with Outsplayed Rim*

Unprovenanced (Fig. 8.17g)

1 rim fragment, greenish. Late Roman beaker or bowl. Late Roman outsplayed rim, cracked-off and ground smooth. Milky layer of weathering. D: 110, H(ext): 35, Th: 2, EVE: 20.

Unprovenanced (Fig. 8.17h)

Rim fragment, blue-green. Globular vessel? Late Roman outsplayed rim, cracked-off (lip missing). Wheel-cut line below the rim. Thick layer of white and silver weathering. D: c.80, TH: 1, EVE: 20.

#### *Stemmed Lamps*

Unprovenanced (Fig. 8.17i)

Base fragment, olive green. Hollow stem of glass lamp. Flat base with pontil mark. Small bubbles. No weathering. D(base): 13, H(ext): 27, Th: 2, EVE: 40.

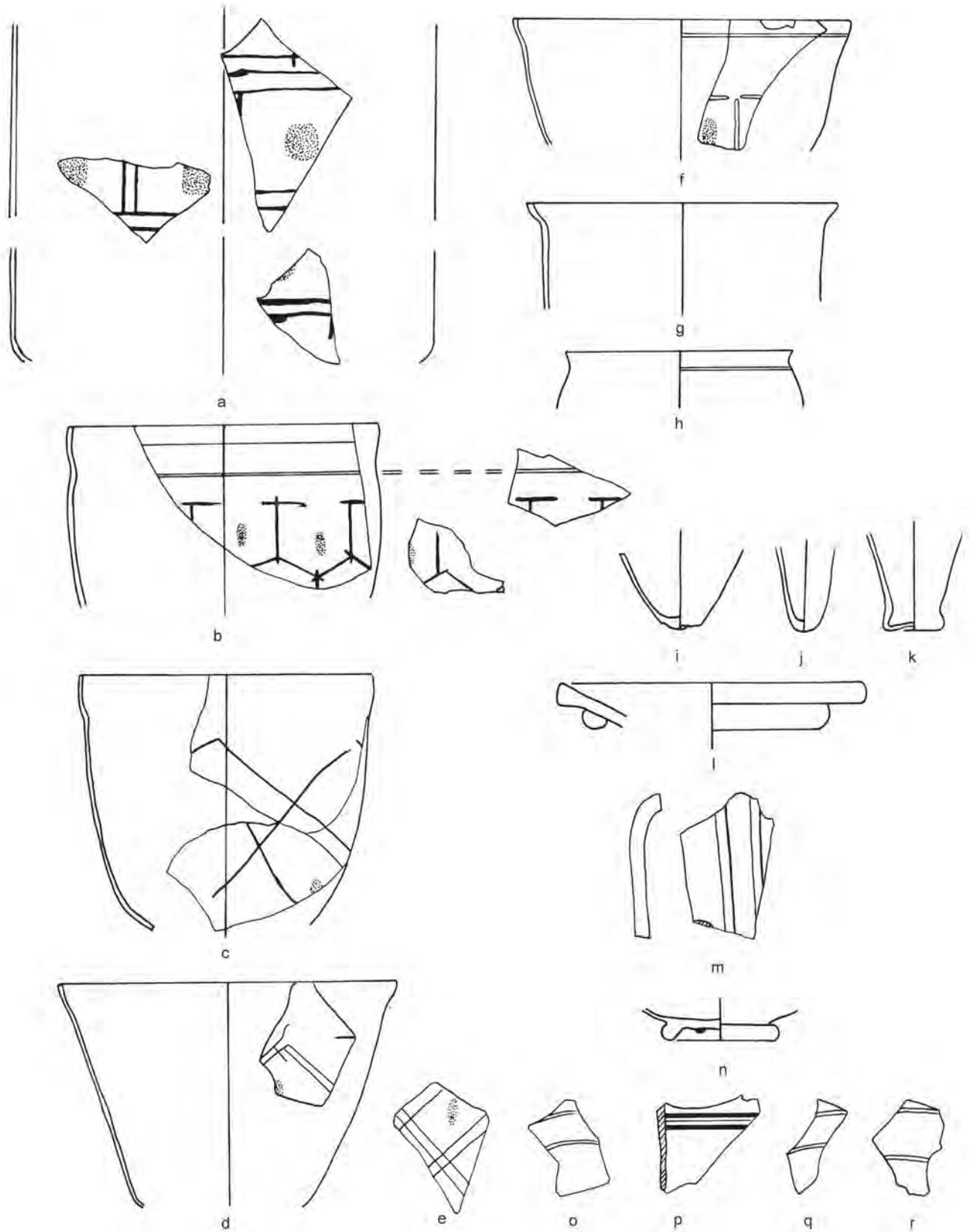


Figure 8.17. Vessel glass probably from Ayoub's excavations (iii). 1:2.



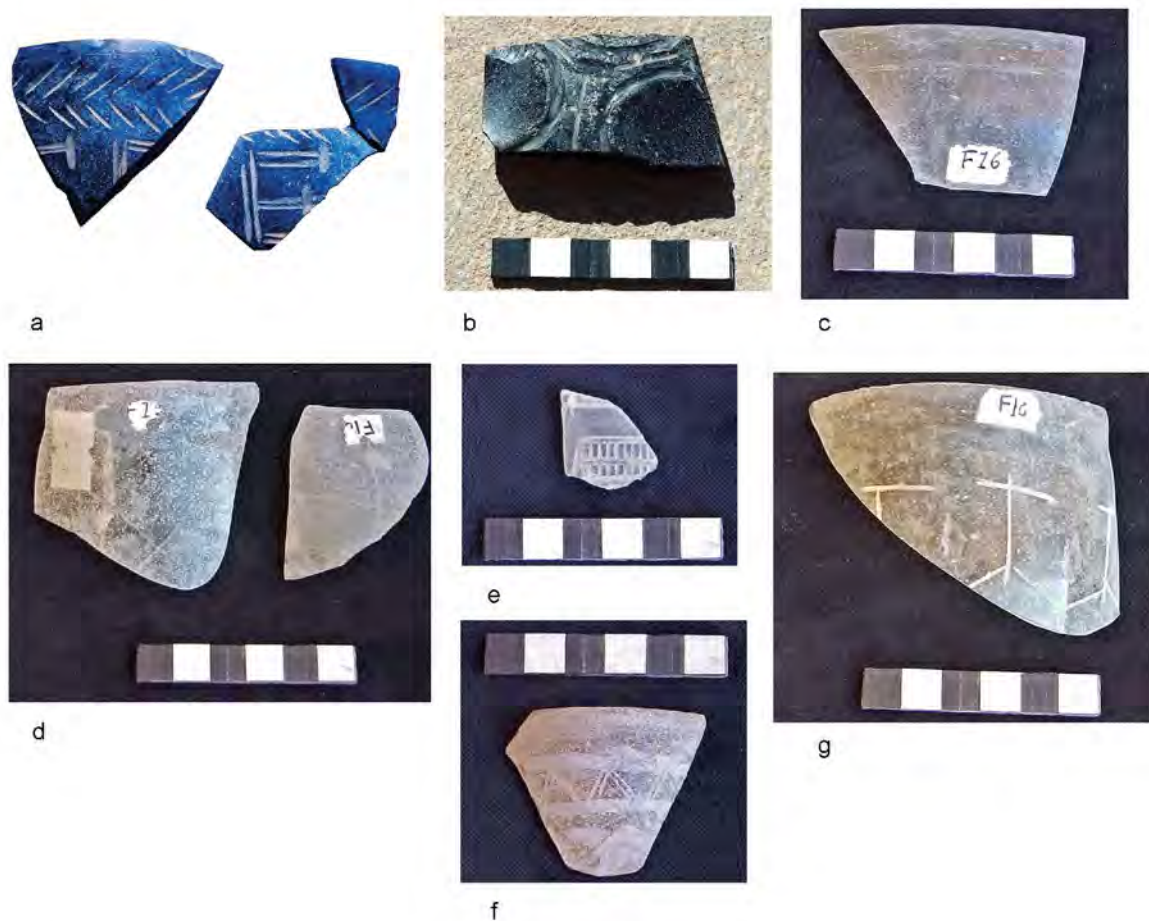


Figure 8.18. Vessel glass from Ayoub's excavations (iv). 1:2 (FP 2002).

**Unprovenanced (Fig. 8.17j)**

Base fragment, greenish. Hollow stem of glass lamp. Round slightly thickened base. No pontil mark. Small bubbles. White layer of weathering in places. D(base): 12, H(ext): 29, Th: 1, EVE: 40.

**Unprovenanced (Fig. 8.17k)**

Base fragment, yellowish. Base of hollowed stemmed lamp or small conical lamp. Flat base, conical body. Small bubbles. No weathering. D: 2, H(ext) 36, Th: 1, EVE: 40.

**Unprovenanced (Not illustrated)**

1 base fragment, colour? Flat base with slight conical body. Stemmed lamp. Black layer of weathering. D: 20, H(ext): 18, Th: 1.5, EVE: 20.

**Late Roman Bottle or Jug Rim**

**Unprovenanced (Fig. 8.17l)**

1 rim fragment, colourless. Late bottle. Everted fire-rounded rim with self-coloured trail. Small bubbles. No weathering. D: 110, H(ext): 16, Th: 4, EVE: 17.

**Large Jug or Bottle Handle**

**Unprovenanced (Fig. 8.17m)**

Possibly same vessel as previous entry. Handle fragment, colourless. Large Jug. Three stranded handle upper turn preserved. Many large bubbles. Milky weathering. H(ext): 51, W(ext): 32, Th: 9, EVE: 14–17.

**Undiagnostic Fragments**

**Tubular Base with Applied Skyblue Trail**

**Unprovenanced (Fig. 8.17n)**

1 base fragment, colourless. Tubular base ring with sky-blue opaque trail in the centre. Small bubbles. Milky weathering and pitting. D: 40–42, H(ext): 1, Th: 2, EVE: 14–20.

**Wheel-Cut Lines**

**Unprovenanced (Fig. 8.17o)**

Body fragment, greenish. Globular vessel. 2 concentric wheel-cut lines. Small bubbles. Milky weathering. Dims: 34 x 28, Th: 2, EVE: 20.

**Unprovenanced (Fig. 8.17p)**

Body fragment, greenish/colourless. Conical body. Bands of wheel-cut lines. Milky weathering.

No bubbles. Dims: 35 x 33, Th: 1, EVE: 20.

Unprovenanced (Fig. 8.17q)

Body fragment, colourless. Globular vessel. Wheel-cut decoration: 2 concentric wheel-cut lines. Small bubbles. Milky layer of weathering. Dims: 20 x 32, TH; 1.5, EVE: 20.

Unprovenanced (Fig. 8.17r)

Body fragment, greenish. Globular vessel. 2 concentric wheel-cut lines. Small bubbles. Milky weathering. Dims: 24 x 33, Th; 2, EVE: 20.

#### Unidentifiable Body Fragments

Unprovenanced

12 body fragments, colourless; 1 body fragment, greenish; 1 body fragment, greenish/colourless.

#### Chunk of Raw Glass

Unprovenanced

1 fragment, yellow brown, appearing black. Raw glass chunk? Chipped. No weathering. D: c. 200–220, Dims: 33 x 23, x 20.

Also from GSC030 (and already published in *AF 2*) are two sherds from different vessels (these are included as Fig. 8.12a).

## GLASS OBJECTS FROM SĀNIAT BIN HUWAYDĪ

By B. Hoffmann and C. Tagart

### Catalogue

#### Glass Bangles

GER011.T1 1 Glass bangle. (Fig. 8.19)

Fragment (34°), glass bangle. Conical brown translucent base with three applied trails (opaque yellow, S-twisted opaque white and brown and opaque light green. Matt layer of weathering on the inside. L: 7, D: c.70, D(int): 58, Th: 6. Typology: D3(2).e(b) Umayyad onwards.

GER011 (**grab**) Glass bangle. (Fig. 8.19)

Fragment (46°), glass bangle, found in general sharding. Triangular blue-green base with three applied trails: S-twisted opaque white and brown twist (both ends visible), opaque orange (end visible), S-twisted opaque white and brown twist (end visible). Matt surface. No weathering. L: 8, D: c.76, D(int): c.64, Th: 4.5. Typology: D3(2).e(b) Umayyad onwards.

GER011 (**grab**) Glass bangle. (Fig. 8.19)

Fragment (52°), glass bangle. D-shaped blue-green base with applied trails: Edge trail: opaque yellow with one light green S-twist. 2 central trails (S-twisted opaque yellow with thin opaque light green. Pattern muddled in places). Brown layer of weathering on the inside. L: 7, D: c.58, D(int): c.50, Th: 4. Typology: D3(2).e(1).(a) variant – Umayyad or Mamluk.

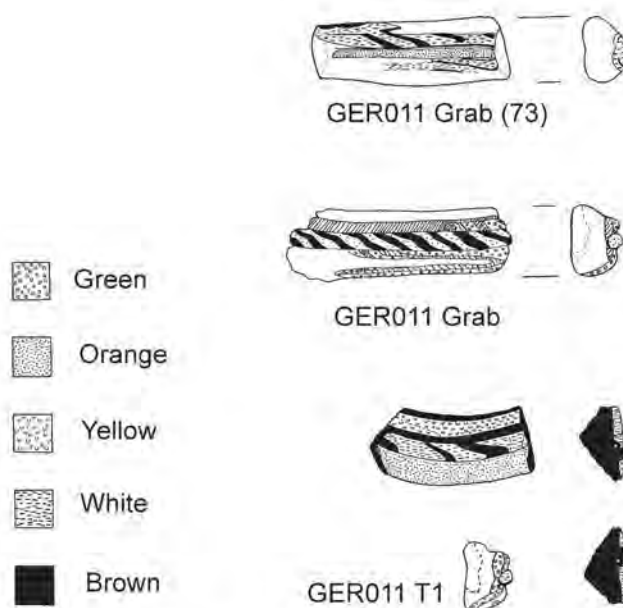


Figure 8.19. Glass bangles from Sāniat bin Huwaydī. 1:1.

## GLASS AND FAIENCE OBJECTS FROM OTHER CMD EXCAVATIONS

By **B. Hoffmann, C. Tagart with D. Mattingly**

A computer print-out in the CMD archive presents a rough catalogue produced in the early 1980s by the second author of 24 glass bangles from Old Jarma (11), Sāniat Jibrīl (10) and Zinkekrā, plus 4 unprovenanced examples, to add to the 3 reported from Sāniat bin Huwaydī above. Unfortunately, the print-out is missing some details and the entries are not reconstructable in full. A small group of these bangles and a glass pin were reviewed and described in detail by the first author in 2000 (forming the more detailed first part of the catalogue below). In the second part of the catalogue, the remaining entries from the lacunous 1980s print-out have been reconstructed as fully as possible. Figure 8.20 is a composite of 18 drawings from the CMD archive (plus a few illustrations by the first author) showing a selection of bangles (nos 1–6 from GER001 surface collection, no. 7 from GER001.65 (the *kashbah* in Old Jarma), no. 8 from ZIN002.13 39W, no. 9 from ZIN002.220, nos 10–19 from surface sherding around the excavations at GER002. Number 20 is a stone bangle, described in a later section of this finds report). Not all the bangles shown in the Figure can be correlated with the descriptions in the catalogue (in part no doubt because of the missing content on the print-out).

The faience bangle ZIN 002.013 (39W) can be added to the list of similar bangles from Sāniat Jibrīl and Jarma found during the survey work (Fazzān Survey no. 4, 57–58) and the FP excavations (no. 131 and 132). These can possibly be linked to a Late Roman bracelet from Carthage (Tatton-Brown 1994, 286 no. 61).

The group of bangles re-examined in 2000 included 3 Islamic polychrome glass bangles, 2 from Old Jarma and one from Zinkekrā. These bracelets cover a history of most of the last 1500 years and according to a number of Jarma residents very similar bangles are still worn by some families, complicating the differentiation of diverse groups. Using the typology and chronology suggested by Maud Spaer for the Palaestian material (Spaer 1992), several of the bangles are probably Mamluk (e.g. Fig. 8.20, nos 1, 2, 7), while those with the conical/D-shaped profiles and cable decoration have been popular since the Umayyad period (e.g. Fig. 8.20, nos 3–4, 6, 8).

Although some of the bangles have been collected from known Garamantian occupation sites and cemeteries, these were surface finds and need have no association with the active use of the Garamantian sites (though Old Jarma, of course, long continued in occupation into the Islamic era). If the glass bangles are primarily of Islamic date, then they constitute an important marker for Islamic activity in an area that has yielded comparatively little imported Islamic glazed pottery or vessel glass.

### Catalogue

#### Material Re-Examined in 2000

##### *Faience Bangle*

ZIN002.013 **39W** (Fig. 8.20, 8)

2 joining fragments. Faience bangle. Rectangular section with two horizontal lines on the outside. Glazing entirely removed. Pitted. On the inside brown layer of weathering(?). L: 7, D: c.68, D(int): c.58, Th: 4.5. 52°.

##### *Glass Bangles*

GER001.1 (**grab**) Glass bangle. (Fig. 8.20, no. 2)

Fragment. Greenish rectangular base with four applied trails: S-twisted opaque yellow and light green (stopped), opaque light green, two S-twisted opaque yellow and light green trails of differing width. Traces of weathering on the inside. L: 7, D: c.50 D(int): c.42, Th: 3.5. 32°. Typology: D2.e.1, probably Mamluk.

GER001.1 (**grab**) Glass bangle. (Fig. 8.20, no. 1)

Fragment. Greenish rectangular base with applied opaque light green trail. Upon trail application of pieces of layered glass: (opaque orange, yellow, brown, white, white, brown, white, brown, yellow, orange). Layer of weathering on the inside. L: 6–8, D: 64–70 D(int): c.60, Th: 1–3.5. 90°. Typology: D2.d.1, probably Mamluk.

ZIN002.013 **39W** Glass bangle (Fig. 8.20, no. 21).

Fragment. Rectangular brownish/colourless base with 4 applied threads in the centre (S-twisted opaque yellow and thin opaque orange, double opaque orange, and S-twisted opaque yellow and thin opaque orange). Matt appearance. No weathering. L: 5.4, D: c.58, D(int): c.50. 58°. Typology: D(2).e(1), probably Mamluk.

#### From 1980s Listing

##### *Glass Bangles*

GER001 **G**

Rounded oblong in section, slightly tapering, core translucent turquoise blue. 6% (of bangle circumference). D: 70, W: 3, Th: 5.

**GER001 G**

Plano-convex, near triangular profile, core colourless with blue-green tinge with marvered strip of opaque green and over this an opaque longitudinal coil. 7%. L: 70, W: 4.5, Th: 7.5.

**GER001 G**

Inverted cone section, with opaque brownish beige core, with 3 longitudinally flattened coils in opaque lemon yellow. 3%. L: 70, W: 6, Th: 8.

**GER001 G (Fig. 8.20, no. 4)**

Plano-convex in section, core blue-green colourless, groove by upper edge. 3 longitudinal coils of opaque yellow twisted with opaque blue-green. 10%. L: 70-80, W: 5.5, Th: 8.

**GER001 G (Fig. 8.20, no. 6)**

Plano-convex in section, core greenish yellow, with 3 longitudinal coils, 2 of translucent dark tan-brown, twisted with opaque yellow threads. 13%. L: 70, W: 4, Th: 5.5.

**GER001 G**

Core translucent dark orange-brown, 3 longitudinal coils, upper opaque green, middle opaque white. 35%. L: 80, W: 7, Th: 8.5.

**GER001 G (Fig. 8.20, no. 3)**

Plano-convex in section, core colourless, with blue tinge, 4 longitudinal coils of opaque white twisted regularly with fine thread. Very carefully made. L: 70, W: 6.5, Th: 9.

**GER001 G**

Rounded triangular section, with flat inner surface, core blue-green colourless, longitudinal band of bright opaque turquoise. 70%. L: 70, W: 8, Th: 8.

**GER001 G (Fig. 8.20, no. 5)**

Rounded oblong in section, core translucent orange-brown, longitudinal band of opaque green interspersed with broad vertical opaque stripes. Uneven fragment. 40%. L: 62, W: 3, Th: 5.5.

**GER001.1 unstratified**

Slightly tapering fragment, plano-convex core in colourless ice-blue, 4 longitudinal coils and edge of 5<sup>th</sup> on break - 3 in opaque twisted lemon yellow with threads in other colours. 10%. L: 60, W: 5, Th: 8.

**GER001.1 unstratified**

Plano-convex/oblong in section, core colourless with yellow-green tinge, longitudinal band of opaque green, with 3 striped vertical blobs side by side. 30%. L: 60, W: 4, Th: 6.

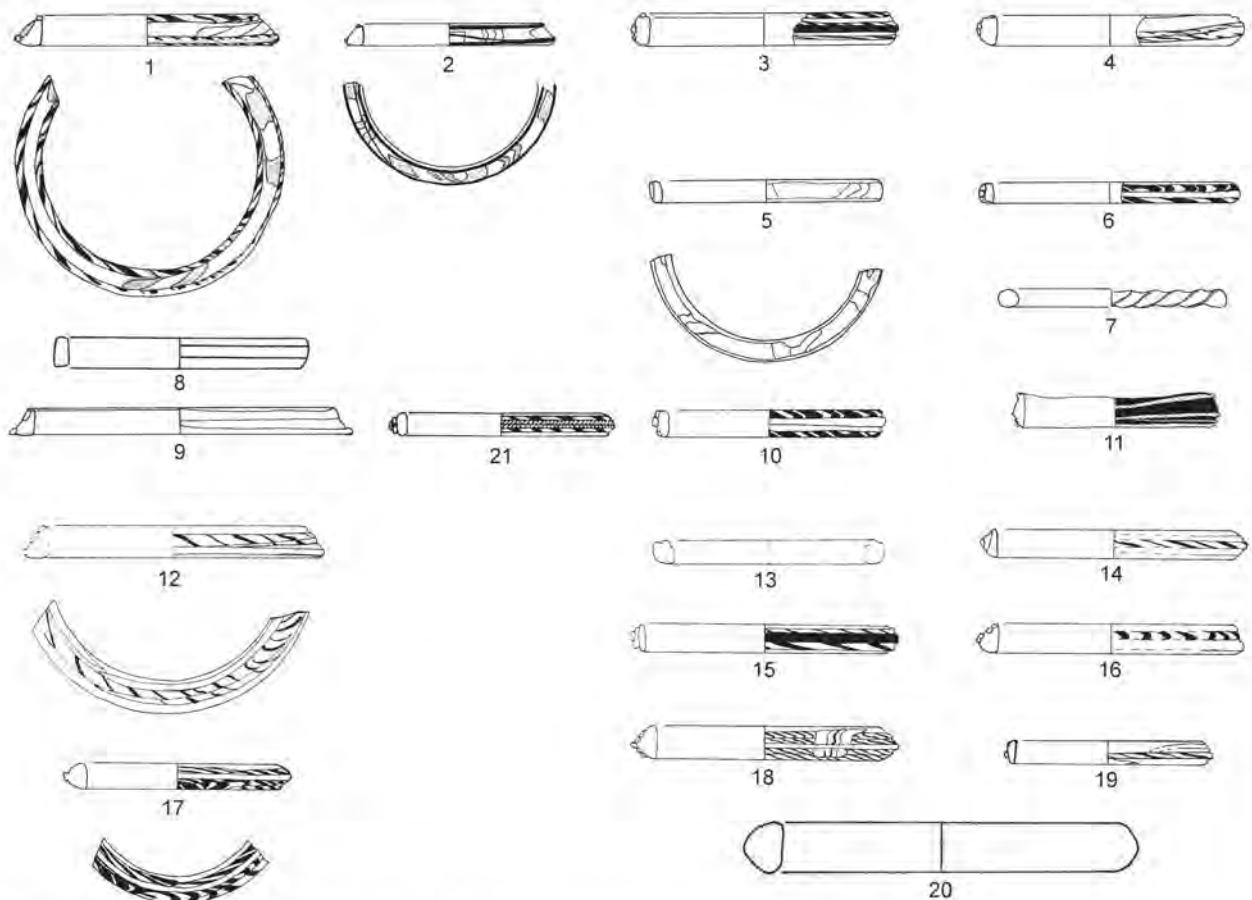


Figure 8.20. Glass bangles from other CMD excavations and surface collections. 1:2.

GER001.65 **unstratified** (Fig. 8.20, no. 7)

Fragment of glass bangle in dark blue-turquoise glass, twisted. 12%. L: 60–70, W: 5, Th: 4.5.

GER002 2 S

Plano-convex in section, core yellow colourless, band of dull opaque orange of uneven thickness in relief. 23%. L: 70, W: 4, Th: 7.5.

GER002 2 S

Rounded oblong in section, core yellow colourless, 2 longitudinal coils of transparent glass. 17%. L: 60, W: 4, Th: 7.

GER002 5 L & R 0–1

Plano-convex in section, core colourless with blue-green tinge, 3 longitudinal coils of opaque yellow twisted with aquamarine-green glass. 12%. L: 70, W: 5, Th: 8.

GER002 9 S

Plano-convex in section, core translucent dark blue/turquoise. No Dims.

GER002 24 S (Fig. 8.20, no.19)

Somewhat plano-convex in section, core translucent turquoise, longitudinal coil of opaque orange-yellow meeting diagonally, marvered. 15%. L: 55, W: 3, Th: 6.5.

GER002 28 S

Plano-convex (oval) in section, core opaque blue-green, streaks of yellow-green on surface. 10%. L: 70, W: 3.5, Th: 6.

GER002 32 S (Fig. 8.20, no. 17)

Rounded triangle in section, core translucent orange-brown, 2 coils of opaque pale orange-brown twisted unevenly and with band in relief over. 25%. L: 60–70, W: 5.5, Th: 6.5.

GER002 59 S (Fig. 8.20, no. 13)

Plano-convex in section, core opaque dark brown, longitudinal grooves on outer surface indicating lost coils. 10%. L: 66, W: 5, Th: 6.

GER002 64 S (Fig. 8.20, no. 11)

Plano-convex in section, core opaque black, 4 uneven longitudinal coils of opaque green twisted in relief. 15%. L: 55, W: 3, Th: 9.

GER002 73 G

Plano-convex in section, core colourless blue-green, longitudinal strip of opaque blue-green in relief, partially overlain by 2 longitudinal strips of twisted opaque yellow and aquamarine. L: 73, W: 6, Th: 8.

ZIN002.013 39W

Plano-convex in section, 2 fragments, core opaque blue-turquoise, heavily weathered. L: 60–70, W: 4, Th: 7–8.

ZIN002.220 (Fig. 8.20, no. 9)

Rounded triangle in section in section, 2 fragments, core translucent dark orange-brown, 2 longitudinal

coils, upper opaque aquamarine-green, marvered flat. 21%. L: 90, W: 6, Th: 6.

*Glass Pin*

GER002 Area 4 5/2 Pin head (Not illustrated)

Head and upper shaft of glass pin, blue-green. Head, circular and flattened, shaft straight and undecorated. D (head): 9, L: 14, Th (shaft): 3.

## BEADS FROM SĀNIAT BIN HUWAYDĪ

By C. Tagart and D. Mattingly

This section has been compiled from a partial typescript prepared by the first author in the 1980s, expanded and revised by the second author with reference to the original excavation records and the finds card index in the CMD archive. In general, the lack of fine sieving inhibited the retrieval of beads, though a number of necklace assemblages were encountered and more thoroughly collected both by CMD and Ayoub (Tables 8.4–8.5). Ayoub reported finding beads in various of his tombs (see Table 8.4), but gave almost no details of numbers and the material now in Jarra Museum corresponding to his catalogue numbers appears to have been imaginatively mixed in restringing beads for display at some point, so cannot be included here in detail. It is worth observing though that beadwork was probably far more important in the Sāniat bin Huwaydī cemetery than is apparent from the reported finds below – due equally to the fact that past robbing activity has probably targeted beadwork in the burials in particular and to the lack of sieving.

The different categories of beads are dealt with by type of material: faience, glass, carnelian, amazonite, other stone, ostrich eggshell (OES).

### Catalogue

#### Faience Beads

GER011.T33 Faience or glass bead (Fig. 8.21, no. 1) Large melon bead, very worn and chipped with abraded surfaces, turquoise colour and enamelled look suggest may have been faience? L: 8.5, W: 11, Wp: 6.

#### Glass Beads

*Eye Bead*

GER011.T33 Eye bead (Fig. 8.21, no. 2)

Circular bead with flattened ends and three flat composite 'eyes' of slightly different sizes applied to

Table 8.4. Occurrence of beads in burials reported by Ayoub (in most cases no details of numbers are given and some of his indications of material are contradictory).

Tomb	Glass	Carnelian	Amazonite	Other Stone	OES
A1.2	√	√	√	√	√
A1.3	√	√	√	√	
A1.6	8				2
A2.3	√	√	√		√
A2.4	√				√
A3.1	√		√		
A3.2	√				
A3.3	√				√

Table 8.5. Summary of beads recovered by CMD at Sāniat bin Huwaydī.

Tomb	Glass & faience	Carnelian	Amazonite	Other Stone	OES
T6					1
T15		2	16	1	
T20		1			
T25					290
T31		1			1
T33	24		1	1	1
T51		1	√		√
T54		1 + √	√		√

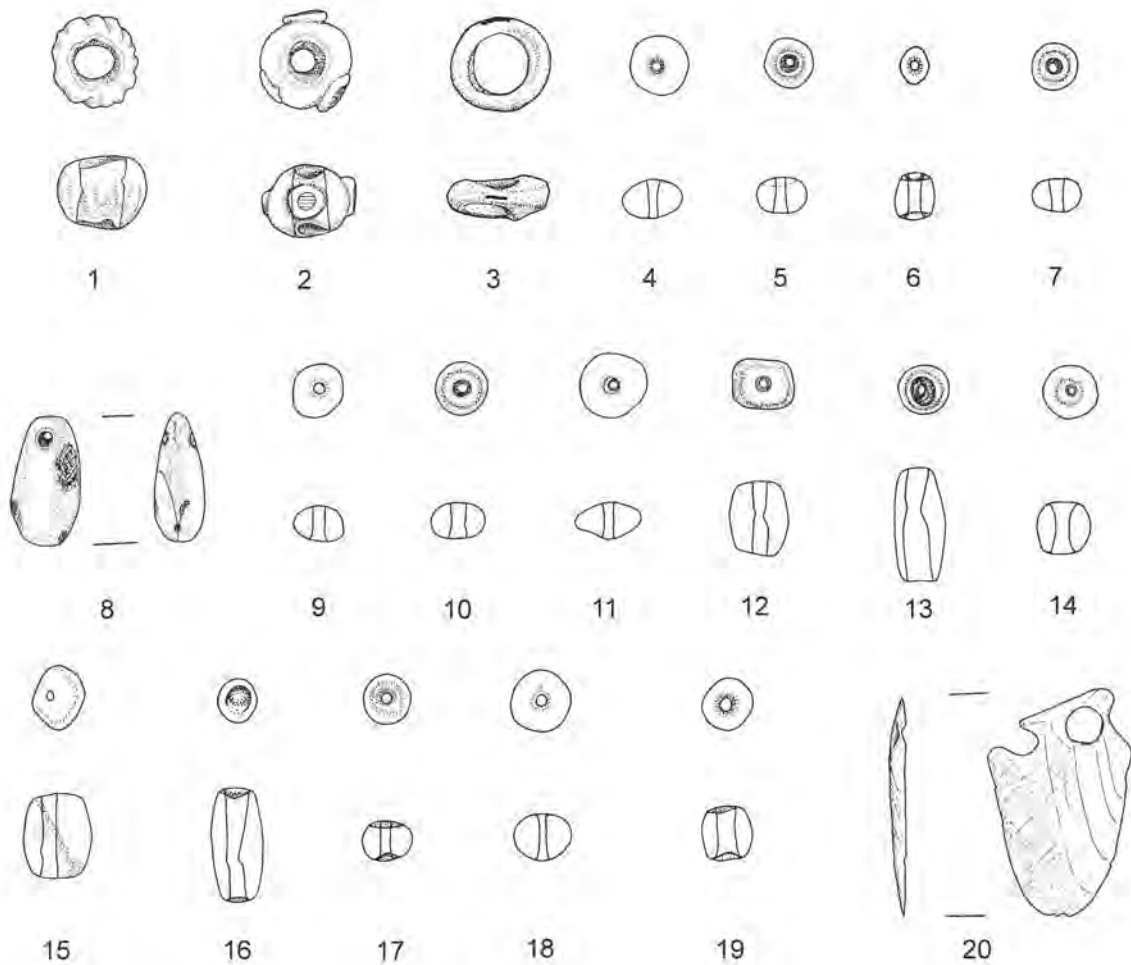


Figure 8.21. Beads and amulets from Sāniat bin Huwaydī. 1:1.

exterior. Dull brownish-grey colour with patches and streaks of dark brown, bosses are creamy white with brown specks and deep red spot in centre. L: 8.5, W: 12, Wp: 4–5.

#### *Other Glass Beads*

GER011.T33 Bead (Fig. 8.21, no. 3)

Flat circular glass bead or ring, thicker on one side, dark and opaque, but originally sea green? L: 3.5, W: 13.

GER011.T33 Bead

Circular glass bead with flattened ends, sea green, but weathered greyish brown L: 4.5, W: 6.

GER011.T33 15 beads

15 small oblate beads with flattened sides, weathered dark grey brown, but traces of colour suggest that originally more varied colour range. Average dimensions L: 3.5, W: 3.5, Wp: 1.5.

GER011.T33 Bead

Truncated cone-shaped bead in dark blue glass, with large perforation. L: 2.5, W: 4.5.

GER011.T33 4 beads

4 barrel shaped glass paste beads, dark red speckled with black. L: 3.5, W: 3.5, Wp: 1.5.

#### **Carnelian Beads**

GER011.T15 1 Bead (Fig. 8.21, no. 4)

Irregular oblate with flattened sides. Shiny translucent orange-brown carnelian. L: 5, W: 8, Wp: 1–1.5.

GER011.T15 1 Bead (Fig. 8.21, no. 5)

Irregular oblate with flattened and concave sides. Shiny translucent orange-brown carnelian, with speckled internal irregularities. L: 4, W: 6, Wp: 1.5–2.

GER011.T20 1 Bead (Fig. 8.21, no. 6)

Barrel-shaped, translucent shiny orange brown carnelian. L: 6, W: 5 x 3.4, Wp: 2–2.5.

GER011.T31 Bead (Fig. 8.21, no. 7)

Oblate, with flattened sides. Translucent, shiny orange-red carnelian. L: 4, W: 5, Wp: 1.5–2.

GER011.T54 Earring pendant (Fig. 8.21, no. 8)

Carnelian pendant from copper alloy earring. Deep orange brown colour. L: 5, W: 19 x 9, Wp: 2.5–4.5.

There are also excavation records indicating the collection of a carnelian bead from T51 and of additional carnelian beads in a necklace in T54, but no further information is preserved in the finds archive.

#### **Amazonite Beads**

GER011.T9 4 Bead (Fig. 8.21, no. 9)

Irregular oblate turquoise bead. L: 5, W: 7 x 6.5, Wp: 1.5.

GER011.T15 1 Bead (Fig. 8.21, no. 10)

Oblate bead, with flattened ends. Greenish turquoise. L: 5, W: 7, Wp: 2.

GER011.T15 1 Bead (Fig. 8.21, no. 11)

Very irregular lenticular form with flattened sides. Greenish turquoise colour, with mottled appearance. L: 4, W: 8.5 x 8, Wp: 2.5.

GER011.T15 2 15 beads (Fig. 8.21, no. 12–18)

Shapes vary from short flat rectangular prisms to long elliptical and barrel shapes. Perforations bored from both ends and frequently have left lips at imperfect joins. Dark to light greeny turquoise, with creamy veins and mottled areas. Typical examples are L: 10, W: 8.5 x 7, L: 14, W: 6.5 x 6, Wp: 1–3.

GER011.T33 Bead

Short annular, very worn and poor quality Amazonite bead.

GER011.T51 G Bead fragment

Very worn and weathered, deep turquoise, possibly amazonite. L: 7, W: 5.

There are also excavation records indicating the collection of additional amazonite beads from necklaces in T51 and T54, but no further information is preserved in the finds archive.

#### **Other Stone Beads**

GER011.T15 2 Bead (Fig. 8.21, no. 19)

Short barrel-shaped bead in dark brown-black stone. Heavy and slightly shiny when scratched. L: 6.5, W: 7, Wp: 2–3.

GER011.T33 Bead

Short oblate, dark blue-green stone with many flecks of light brown. L: 4.5, W: 6.

#### **Ostrich Eggshell Beads (OES)**

GER011.T25 5 290 OES beads

Annular and mostly identical. L: 2, W: 4, Wp: 1.5–2. Two of beads are dark brown-grey in colour (burnt or heat discoloured?), and one of these is slightly larger in size.

There are also excavation records indicating the collections of individual OES beads from T6 and T31, as well as larger numbers from necklaces in T51 (numbering 100s) and T54, but no further information is preserved in the finds archive.

#### **Shell Amulet**

GER011.T40 2 Shell pendant/amulet (Fig. 8.21, no. 20)

Fragment of mother of pearl shell, polished and pierced twice (first hole having broken). Evidently worn as an amulet. L: 19, W: 25, Th: 0.5.

## BEADS FROM ZINKEKRĀ, SĀNIAT JIBRĪL AND OLD JARMA

By B. Hoffmann, C. Tagart and D. Mattingly

The catalogue was prepared by the first author from material held in Newcastle, with additional material being added by the third author from the card index prepared for CMD by the second author. A total of over 400 beads have been recorded (to add to c.350+ from GER011), as indicated in Table 8.6. The largest assemblages have come from the most intensively excavated sites – those on the slopes of Zinkekrā (ZIN001–003), at Sāniat bin Huwaydī (GER011) and at Sāniat Jibrīl (GER002).

Sāniat Jibrīl was evidently a major production site for beads, though the total from the CMD excavations is far lower than we might expect given the scale of the surface collections that have been made there subsequently by the FP (see Chapter 3 for discussion). This can be attributed to a lack of attention to sieving in CMD's excavations. Bead recovery appears to have been considerably better at the Zinkekrā excavation sites. The higher numbers of finds at these sites may also be connected with bead production. Finds of grooved stones at GER002 and ZIN001.013 (late) attest to bead shaping and polishing activities (also attested by FP work at GER001); bead making is also attested at these sites by finds of partially worked beads in ostrich eggshell and stone beads that shattered during drilling of perforations. There are also some finds of glass rods and pellets that may have been intended for bead production and some glass splashes/glassy slag that may also

be evidence of glass working at GER002 and ZIN001–003.

It is no surprise to find that ostrich eggshell beads were the commonest type, followed by glass and then the various types of stone bead, including the semi-precious stones carnelian and amazonite. There was a long pre-Garamantian (Saharan) tradition of bead production in ostrich eggshell, carnelian and amazonite. Potentially early and Proto-urban Garamantian sites/contexts yielding carnelian bead finds include CHA005, CLF008, TIN001 and ZIN002, with finds from GER001 and GER002 more likely relating to the Classic Garamantian period. Amazonite beads also occur at some Zinkekrā sites, though not certainly in early contexts, but are more commonly associated with Classic Garamantian cemeteries (ZIN002.117, TWE001) and settlements (GER001, GER002). It is interesting that some of the glass beads appear to imitate the opaque turquoise colour of amazonite or (less commonly) the translucent red/orange tone of carnelian. The imported glass beads at Zinkekrā include Phoenician eye-beads, presumably acquired through trade with the Liby-phoenician cities of the Tripolitanian coast. Most of the glass beads at Zinkekrā relate to the latest phases of settlement there (latter centuries BC) or to the cemetery sites that continued into the Classic Garamantian period (1<sup>st</sup>–4<sup>th</sup> centuries AD). The material from GER001, GER002 and GER011 is in general Classic Garamantian. There is an important group of finds of cowrie shells, which may well have originated in Sub-Saharan contexts at this date.

Dimensions are given in mm in the same manner as in the previous section.

Table 8.6. Summary of beads and associated materials from sites excavated by CMD (Key: G/F = Glass, Faience; Ca = Carnelian; Am = Amazonite; Oth St = Other stone; St Ba = Stone bangle; OES = Ostrich eggshell; Sh/Bo = Other shell or bone; W = Wood; BG = Bead grinders).

Site	G/F	Ca	Am	Oth St	St Ba	OES	Sh/ Bo	W	BG
CHA005–007		2			1		1		
CLF008–010		1				1			
GER001	17	6	1	2	4	1	1	1	
GER002	14	4	5	1	1	13			105
GER011	24	6+	19+	2		295+			
TAG001				1		65			
TIN001	5	1		1	1				
TWE001	1		1	1		3			
ZIN001–003	131	5	6	19	5	82	5		1
Total	182	25+	32+	27	12	460+	7	1	106



**Catalogue**

**Faience Beads**

GER001.3 12 Bead, complete  
Large melon bead. Globular with uneven vertical incisions. Dull pale turquoise glaze on creamy white core. L: 11, W: 14, Wp: 6.

GER002 (4.3/1) [12.] Bead, complete  
Melon bead. Globular with vertical incisions. Large perforation along short axis. L: 7, W: 9, Wp: 2.5.

GER002 4 88 Bead, complete  
Melon bead. Globular with vertical incisions, speckly off white with remains of greeny turquoise enamel on one side. Large perforation along short axis. L: 16, W: 18.

GER002 51 S Bead, fragment  
Half melon bead. Globular with vertical incisions, creamy beige core with greeny turquoise enamel. Large perforation along short axis. L: 9, W: 12.

**Glass beads**

*Eye Bead (Turquoise, Blue and White Eyes)*  
ZIN001.034 (4) Bead, complete (Fig. 8.22, no. 1)  
Turquoise opaque with eyes (dark blue centres and white, dark blue and white rings). Wound? 6 eyes:

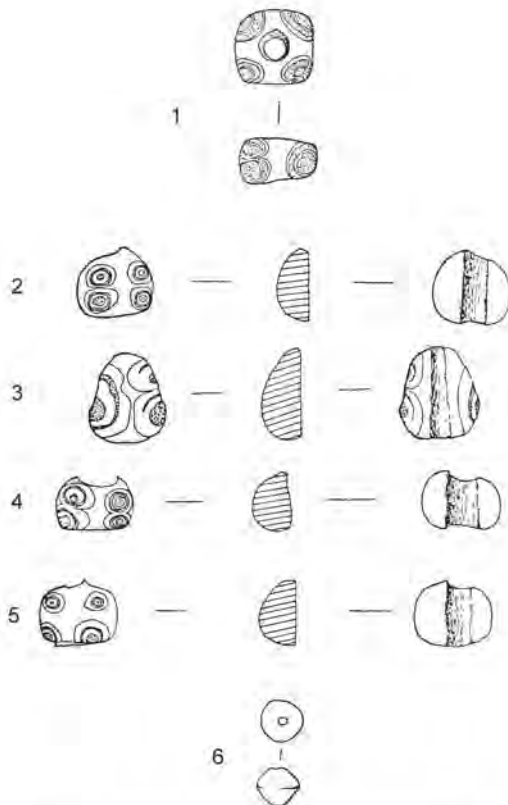


Figure 8.22. Glass beads from Zinkekrä excavations: 1–5. eye beads; 6. conical glass. 1:1.

alternating 2 small eyes on top of each other, one large eye. No weathering. L: 5, W: 8, Wp: 2.

ZIN001.094 (1) Bead, fragment 50%  
Speckled blueish turquoise body, eyes of ultramarine and opaque white evenly spaced round exterior. Ring bead. L: 7, W: 12.

ZIN002.008 (s) Bead, fragment 50%  
Half eye bead with bluish turquoise body, eyes of ultramarine and opaque white. L: 6, W: 9.

ZIN002.011 (1) Bead, fragment c.50% (Fig. 8.22, no. 2)  
Turquoise opaque with 2 double eyes (dark blue centres and white, dark blue and white rings above each other). Wound. L: 10, W: 10, Wp: 3.

ZIN002.011 (1) Bead, fragment c.50% (Fig. 8.22, no. 3)  
Turquoise opaque with 1 double eye and 1 large eye. Wound. L: 12, W: 11, Wp: 2.

ZIN002.011 (1) Bead, fragment c.50% (Fig. 8.22, no. 4)  
Turquoise opaque with 2 double eyes (dark blue centres and white, dark blue and white rings above each other). Wound. Tiny bubbles. No weathering. L: 7, W: 10, Wp: 3.

ZIN002.013 (1) Bead, fragment c.50%. (Fig. 8.22, no. 5)  
Turquoise opaque glass with one eye (dark blue centre and white, dark blue and white rings). Wound. Small bubbles throughout. No weathering. L: 4.5, W: 8, Wp: 4.

ZIN002.013 (13) Bead, fragment c.50%  
Turquoise opaque glass with eyes (dark blue centres and white, dark blue and white rings). 2 sets of small double eyes. Wound?. No weathering. L: 7, W: 9, Wp: 2.

ZIN002.013 (200) Bead, fragment 50%  
Bluish-turquoise with pairs of opaque white and ultramarine blue eyes at even intervals. Plano-convex bead. L: 6, W: 9.

An additional 5 fragments of eye beads were recovered from ZIN001.068 (A), ZIN002.011 (G) x 2, ZIN002.013 (34); ZIN002.039 (8).

*Other Glass Beads*

GER001 (grab) Bead, complete  
Cylindrical, translucent claret red, with dulled and pitted surface. L: 15, W: 10, Wp: 2.

GER001 C Bead, complete  
Opaque, bright cobalt blue exterior on greenish interior, globular. L: 8, W: 8.

GER001 C Bead, complete  
Long-cylindrical, with flattish surfaces, worn clear green glass. L: 8, W: 6.

- GER001 C Beads, complete  
Two ring beads, a) clear pale aquamarine glass. L: 4, W: 11, b) dull opaque green L: 4, W: 6.5.
- GER001.1 S Bead, fragment  
Globular, with flattened ends and large perforation hole, L: 9, W: 14.
- GER001.1 S Bead, fragment  
Globular, with flattened ends, in translucent turquoise-blue, L: 9, W: 13.
- GER001.1 17 Bead, complete  
Ring bead with large perforation hole, in opaque yellowish brown glass L: 6, W: 12.
- GER001.3 1 Bead, fragment  
Plano-convex section ring bead, dull creamy yellow opaque (weathered). L: 3-4, W: 9.
- GER001.3 7 Bead, fragment  
Plano-convex section ring bead fragment, creamy yellow opaque. L: 4-5, W: 10.
- GER001.3 106 Bead, complete  
Tiny ring bead fragment, opaque creamy white. L: 1.5, W: 4.
- GER001.3 168 Bead, fragment  
Ring bead fragment, dull greenish-yellow. L: 5, W: 13, Wp: 6.
- GER001.3 169 Bead, fragment  
Plano-convex section ring bead fragment, originally dark blue, but weathered opaque. L: 5, W: 15.
- GER001.3 201 Bead, fragment  
Globular bead, with flattened sides and large perforation hole, translucent dark green. L: 6, W: 13, Wp: 5-6.5.
- GER001.4 176 Bead, fragment  
Plano-convex ring bead, opaque sky blue. L: 3-4, W: 15.
- GER001.4 201 Bead, fragment  
Ring bead, greenish creamy opaque glass. L: 1.5, W: 4.5.
- GER001.65 **grab** Beads  
Two cylindrical beads, a) opaque lime green. L: 6.5, W: 5; b) broken lengthways, pinkish red clear glass with opaque white core. L: 9.5, W: 5.5.
- GER002 (**grab**) Bead, complete  
Dark green translucent. Hexagonal cross-section. Drawn. Perforation along long axis. Matt surface. L: 7, W: 5, Wp: 2.
- GER002 (**grab**) Bead, fragment *c.*50%  
Opaque turquoise. Drawn. Short cylindrical. Blue-green/Greenish transparent core, with opaque turquoise outer casing (imitating amazonite?). No weathering. L: 8, W: 8, Wp: 1.
- GER002 2 11 Bead, complete  
Ring bead, pale cobalt blue. L: 2, W: 4.5.
- GER002 2 13 Bead, fragment  
Ring bead, translucent sea green with black impurities, rough pitted surface. L: 6, W: 16.
- GER002 5 S Bead, complete  
Globular bead in pale green translucent glass, very weathered, irregular pitted surface. L: 9, W: 8.
- GER002 4 5/4 Bead, fragment *c.*50%  
Dark red translucent glass with opaque white and yellow inlays. Barrel-shaped. 3 wavy lines inlaid (marvered in?) with thin yellow and white opaque glass. Narrow perforation along long axis. Small bubbles. White layer of weathering. L: 11, W: 8, Wp: 2.
- GER002 4 22 Bead, fragment  
Globular bead in sea green bubbly translucent glass. L: 6, W: 6.
- GER002 9 S Bead, complete  
Small, globular bead in sea green translucent glass. L: 3, W: 3.5.
- GER002 47 S Bead, complete  
Small, ring bead in dull greeny turquoise glass. L: 2, W: 4.
- GER002 112 S Pendant, fragment  
Broken fragment of pendant, pierced laterally in top, in dull dark turquoise glass. L: 23, W: 16, Th: 4.
- GER002 121 S Bead, complete  
Roughly cylindrical bead with rough worn surfaces, opaque bluish green glass. L: 9, W: 6.
- TIN001 A2 2 Bead, complete  
Disc bead with convex edges, opaque banana-yellow glass. L: 2, W: 4.
- TIN001 A2 7 Bead, fragment  
Ring bead with convex edges, bluish green, slightly bubbly glass. L: 6, W: 11.
- TIN001 A21 7 Bead, fragment  
Cylindrical translucent in dark blue glass, opaque white blobs on edge.
- TIN001 B7 S Bead, complete  
Globular bead with flattened ends, bubbly translucent sea blue glass. L: 11, W: 13.
- TIN001 B12 4 Bead, complete  
Globular bead, bubbly translucent sea blue glass. L: 6, W: 8.
- TWE001 (2/1) Bead, fragment *c.*50%  
Dark blue translucent. Globular. Wound? Small perforation along the short axis. White layer of weathering. L: 6, W: 6 W(perf.): 1.
- TWE001 (2/1) Bead, fragment *c.*50%  
Dark blue translucent. Globular. Wound? Small perforation along the short axis. White layer of weathering. Chipped at the perforation. L: 5, W: *c.*4 W(perf.): 1.
- TWE001 (2/1) Bead, fragment *c.*50%  
Ring bead, weathered opaque black. No dimensions.

- ZIN001.034 1 Bead, complete  
Ring bead, dark blue-turquoise. L: 2, W: 6.
- ZIN001.034 (3) Bead, complete  
Blue-green translucent. Globular. Wound? Small perforation along short axis. Surface dull with small scale pitting. L: 4, W: 7, Wp: 2.
- ZIN001.034 (3) Bead, complete  
Dark blue translucent. Globular. Wound? Small perforation along the short axis. No weathering. L: 4, W: 8, Wp: 2.
- ZIN001.034 (3) Bead, fragment c.40%  
Dark blue translucent. Elongated barrel-shaped bead. Perforation along long axis. Light pitting on the surface. L(ext): 20, W: 10, Wp: 2.
- ZIN001.034 4 Bead, fragment  
Pale ultramarine translucent. Elongated barrel-shaped bead. Perforation along long axis. L: 20, W: 8.
- ZIN001.034 4 Bead, fragment  
Pale ultramarine translucent, globular bead. L: 5, W: 9.
- ZIN001.034 4 Bead, fragment  
Pale sea green, dulled, globular. L: 4, W: 8.
- ZIN001.039 G Bead, fragment  
Ring bead in bubbly pale ultramarine. L: 5, W: 10.
- ZIN001.039 2 Bead, fragment  
Fragment of large globular bead in bubbly pale blue glass. W: 16.
- ZIN001.039 7 Bead, fragment  
Globular bead in bubbly aquamarine. No dimensions.
- ZIN001.039 8 Bead, fragment  
Ring bead in translucent dark blue. No dimensions.
- ZIN001.060 1 Bead, fragments  
Fragments of 3 beads (2 globular and 1 cylindrical) in blue green glass. No dimensions.
- ZIN001.060 3 Bead, fragment  
Globular bead in bubbly dark blue-turquoise glass. No dimensions.
- ZIN001.062 AG Beads  
2 ring beads (1 fragmentary) in translucent pale cobalt blue. a) L: 5, W: 9; b) L: 5.
- ZIN001.063 2 Bead, complete  
Half plano-convex ring bead, in bubbly turquoise glass. L: 5, W: 9.
- ZIN001.068 A Bead, complete  
Ring bead of opaque dark blue glass. L: 2, W: 5.
- ZIN001.070 1 Bead, fragment  
Tiny fragment of dark blue glass bead.
- ZIN001.070 2 Bead, complete  
Cylindrical, pale transparent greeny blue glass bead. L: 3, W: 3.
- ZIN001.071 1 Bead, complete  
Ring bead of banana-yellow opaque glass, large perforation hole. L: 5, W: 11
- ZIN001.071 1 Bead, complete  
Small barrel shaped bead in Prussian blue glass. L: 5, W: 3.
- ZIN001.071 1 Bead, fragment  
Large, globular bead of light Prussian blue translucent glass. L: 16.
- ZIN001.071 2 Bead, complete  
Small globular bead of translucent pale ultramarine glass. L: 5, W 8.
- ZIN001.071 3 Bead, fragment  
Fragmentary bead in good quality turquoise green glass. No dimensions.
- ZIN001.071 4 Beads, fragments  
2 beads in opaque turquoise glass. a) globular. L: 7, W: 10; b) no shape or dimensions recorded.
- ZIN001.075 1 Beads, complete  
3 intact beads. a) globular, translucent blue. L: 7, W: 4; b) globular, translucent ultramarine blue. L: 8, W: 4; c) uneven, globular bead in opaque greeny turquoise. L: 7, W: 9.
- ZIN001.075 1 Beads, fragments  
5 Fragmentary beads. a) elongated biconical in translucent ultramarine blue. L: 22, W: 8; b) ring bead in dark greenish turquoise. L: 3, W: 8; c) globular, in dark greenish turquoise. No dimensions; d) globular, in pale greenish turquoise. No dimensions; e) Biconical in pale greenish turquoise. L: 9, W: 3.
- ZIN001.094 1 Beads, complete  
2 ring beads. a) Translucent pale ultramarine. L: 4, W: 7, b) tiny ring bead of opaque greeny turquoise glass. No dimensions.
- ZIN001.094 1 Beads, fragments  
3 fragmentary beads. a-b) globular in bubbly translucent ultramarine glass. L: 7, W: 11; c) tiny fragment in ultramarine glass.
- ZIN002 (grab) Bead, fragments  
2 fragments of truncated cylindrical beads: a) translucent green glass L: 9, W: 8; b) dull blue green opaque glass, no dimensions.
- ZIN002.008 (grab) Bead, fragment c.50%  
Ring bead, in pale blue glass. L: 5, W: 7.
- ZIN002.008 (grab) Bead, fragment c.50%  
Ring bead, in pale blue glass. No dimensions.
- ZIN002.011 (grab) Beads, complete  
2 globular beads, a) pale blue. L: 6: W: 6, b) dark turquoise. L: 5, W: 7.
- ZIN002.011 (grab) Bead, complete  
Truncated cylindrical bead, sea green. L: 4: W: 4
- ZIN002.011 (grab) Bead, complete.  
Ring bead in dark turquoise. L: 2, W: 6
- ZIN002.011 (1) Bead, complete (Fig. 8.22, no 6)  
Colourless, with milky weathering. Biconical form. L: 5, W: 2.5-6, Wp: c.1.

- ZIN002.011 (1) Bead, fragment *c.*25%  
Blue-green translucent. Globular. Wound? Perforation along short axis. Tiny bubbles. No weathering. L: 8, W: *c.*14, Wp: *c.*3.
- ZIN002.011 (1) Bead, fragment *c.*50%  
Dark blue green translucent. Globular. Wound. Small perforation along short axis. L: 4, W: 8, Wp: 2.5.
- ZIN002.011 (1) Bead, complete  
Blue-green, translucent. Globular. Wound? Perforation along short axis. Tiny bubbles. Surface matt in places. L: 3, W: 6.5, Wp: 2.5.
- ZIN002.011 (1) Bead, fragment *c.*50%  
Turquoise, opaque glass. Globular bead. Perforation along short axis. Tiny bubbles. Matt layer of weathering. L: 5, W: 8, Wp: 3.
- ZIN002.011 (1) Bead, fragment *c.*30%  
Turquoise, opaque glass. Globular bead. Perforation along the short axis. One large bubble, cut open by the perforation. L: 6, W: 10, Wp: 3.
- ZIN002.011 1 Beads, fragments  
Fragments of another 7 beads.
- ZIN002.011 (10) Bead, fragment *c.*50%  
Dark blue translucent. Globular. Wound? Small perforation. No weathering. L: 7 W(max): 14, Wp: 2?
- ZIN002.011 (10) Bead, complete  
Dark blue opaque. Long-cylindrical, slightly conical. Wound? Small perforation along long axis. L: 15, W: 6–8, Wp: 2.
- ZIN002.011 11 Bead, fragments  
2 fragmentary globular beads, both blue-turquoise, a) L: 6, W: 7, b) no dimensions.
- ZIN002.011 (14) Bead, fragment *c.*50%  
Opaque turquoise. Wound. Globular. Opaque turquoise throughout. Perforation along the short axis. Bubbles on the inside. White layer of weathering in the perforation. No weathering on the outside. L: 5, W: 8, Wp: 1.5.
- ZIN002.011 (14) Bead, fragment *c.*50%  
Turquoise opaque glass. Globular bead. Perforation along short axis. Many tiny bubbles, making the glass appear opaque. L: 12, W: 16, Wp: 2.5.
- ZIN002.011 (14) Bead, fragment *c.*50%  
Bead, fragment *c.*50%. Turquoise glass, opaque. Globular. Wound? Small to medium sized bubbles. Medium, sized perforation. L: 5, W: 9, Wp: 2.
- ZIN002.011 (26) Bead, complete  
Dark blue opaque. Globular. Wound? Small perforation. White layer of weathering. L: 5 W(max): 7, Wp: 2.
- ZIN002.013 (1) Bead, complete  
Dark blue, transparent. Segmental bead, two unequal segments (or 2 fused beads). Perforation decreases throughout the bead. Grey layer of weathering. Heat deformation on one side. L: 9 W: 9, Wp: 2.3–0.5.
- ZIN002.013 (1) Bead, complete  
Dark blue translucent. Globular. Wound. Large perforation along the short axis. Grey layer of weathering. L: 7, W: 8, Wp: 2.
- ZIN002.013 (1) Bead, complete  
Dark blue translucent. Globular. Wound. Perforation slightly off-centre. Grey layer of weathering in places. L: 5, W: 9–10, Wp: 2.
- ZIN002.013 (1) Bead, complete  
Dark blue translucent. Globular. Wound. Perforation slightly off-centre. No weathering. L: 3, W: 5, Wp: 1.
- ZIN002.013 32 Beads  
2 globular beads in pale blue turquoise glass; a) complete L: 6, W: 7; b) larger than a), but fragmentary.
- ZIN002.013 34 Bead, complete  
Tiny ring bead of opaque blue glass. D: 2.5.
- ZIN002.013 38 (E) Bead, near complete  
Elongated barrel bead of dark red glass (unless carnelian?). L: 20, W: 6.
- ZIN002.013 39 (W) Pendant  
Irregular peanut-shaped pendant in bubbly transparent green glass. L: 14, W: 7.
- ZIN002.013 39 (W) Beads, complete  
Pair of fused disc beads in translucent blue green glass. L: 3 + 3, W: 6.
- ZIN002.013 39 (W) Beads, fragments  
3 more fragmentary beads in blue-green ultramarine glass. No dimensions.
- ZIN002.013 39 (W) Bead, fragment  
Half large globular bead in bright blue-turquoise glass. L: 7, W: 14.
- ZIN002.013 44 Beads, complete  
4 small glass beads with skeleton 44. a) barrel-shaped in ultramarine. L: 5, W: 5; b) ring bead in dark opaque ultramarine glass. L: 3, W: 5; c) ring bead in amythyst translucent glass. L: 3, W: 5; d) globular in amythyst translucent glass. L: 5, W: 6.
- ZIN002.013 104 Bead, complete  
Small ring bead in opaque turquoise and cobalt blue glass. L: 1, W: 3.
- ZIN002.013 105 Bead, complete  
Ring bead in cobalt blue glass. L: 4, W: 9.
- ZIN002.013 115 Bead, complete  
Ring bead in opaque bubbly green blue glass. L: 2, W: 7.
- ZIN002.013 170 Bead, fragment  
Globular bead in bubbly turquoise blue glass. L: 4, W: 4.
- ZIN002.013 171 Bead, complete  
Ring bead in opaque speckly grey glass. L: 1.5, W: 6.
- ZIN002.013 200 Bead, complete  
Globular, with flattened ends, shiny ultramarine with small bubbles. L: 4, W: 7.

- ZIN002.117 Bead, fragment *c.*40%  
Dark blue green translucent. Globular. Wound? Small perforation. L: 7 W(max): 14, Wp: 3.
- ZIN002.119 Bead, complete  
Tiny biconical bead in sea green bubbly glass. L: 4, W: 3.
- ZIN002.119 Beads, fragments  
3 fragmentary beads in sea green bubbly glass. a-b) ring beads. L: 6, W: 10; c) globular D: 12.
- ZIN002.120 Beads, complete  
4 beads. a) globular in translucent aquamarine blue. Wound? L: 7, W: 12; b) globular in translucent Prussian blue. L: 8, W: 11; c) ring bead in Prussian blue, irregular. L: 3, W: 7; d) globular, dark turquoise. L: 5, W: 6.
- ZIN002.125 W Bead, fragment  
Cylindrical bead in pale bubbly aquamarine. D: 10.
- ZIN002.128 G Bead, fragment  
Globular bead in translucent turquoise. L: 6; W: 6.
- ZIN002.129 G Bead, complete  
Globular wound bead in pale green bubbly glass. L: 7, W: 12.
- ZIN002.132 W Bead, fragment  
Uneven globular bead, worn and chipped surface, greenish blue glass. No dimensions.
- ZIN002.173 Beads, complete  
9 small glass beads. a-e) 5 turquoise beads D: 2; f-h) 3 greeny-turquoise irregular beads, no dimensions; i) irregular pale aquamarine blue bead, no dimensions.
- ZIN002.209 E Bead, complete  
Barrel-shaped bead of glass (or frit?) speckled greeny brown. L: 7, W: 7.
- ZIN002.213 Bead, complete  
Globular bead in bubbly sea green glass. L: 5, W: 6.
- ZIN002.217 5 Beads, complete  
2 irregular globular beads in shiny transparent sea blue glass. a) L: 9, W: 14; b) L: 10, W: 14.
- ZIN002.220 Bead, complete  
Small globular, bright blue-turquoise. L: 3, W: 5
- ZIN003.102 S Bead, fragment *c.*50%  
Globular bead in translucent bubbly green blue glass. L: 6, W: 12.
- ZIN003.105 (3/3) Bead, fragment *c.*30%  
Dark blue green translucent. Globular. Wound? Small perforation. L(ext): 9 W(max): 18, Wp: 4.
- ZIN003.105 (3/3) Bead, complete  
Dark blue opaque. Globular. Wound? Small perforation. Grey layer of weathering. L: 5, W: 6, Wp: 3.

*Material Associated with Glass Working and Bead Making?*

- GER001.001 10 Slag  
8 fragments of slag with glazed surface. Either from bronze or glass working. Dims: 12 x 19 x 12; 22 x 20

x 5; 23 x 19 x 9; 18 x 17 x 10; 12 x 21 x 8; 9 x 13 x 8; 12 x 13 x 6; 13 x 13 x 8; 14 x 12 x 8.

GER001.001 (16) Slag or glass splash  
Fragment of slag with glazed surface. Either from bronze or glass working. Dims: 22 x 28, Th: 9.

ZIN002 (grab from slope?) Glass pellets  
3 blobs of dull opaque blue green glass and 2 circular pieces cut from a rod of glass. No dimensions.

ZIN002 (grab from slope?) Glass pellets  
2 cylindrical blobs and 1 elongated piece, all of dull opaque greenish turquoise glass. No dimensions.

ZIN011 1 Slag  
Blue-turquoise slag, with traces of reddish deposit on surface.

ZIN011 1 Glass pellet  
Cylindrical blank, no perforation, opaque apple green glass.

**Carnelian beads**

CHA005 S 1 Bead, complete  
Ring bead with rough pitted surface, dark reddish orange. Perforation drilled from both ends. L: 6, W: 10, Wp: 2-3.

CHA005 K 2 Bead, fragment  
Barrel shape, translucent orange red. L: 5.

CLF008 40 2 Bead, complete  
Elongated biconical bead in poor quality carnelian, with faults and impurities, pale reddish-orange. L: 28, W: 9.

GER001.001 (2) Bead, fragment *c.*15%  
Carnelian, pale pinkish red. Globular bead, perforation along short axis. L: 12 W(max): *c.*18, Wp: 2.

GER001.001 (12) Bead, complete  
Carnelian. Globular bead. Perforation along short axis. L: 7, W: 10 4, Wp: 4.

GER001.001 14 Bead, fragment *c.*20%  
Carnelian. Elongated biconical bead. Perforation along long axis. L(ext): 12, W: (ext): 15 Wp: 2.

GER001.003 (1) Bead, fragment?  
Piece of carnelian. Chipped and cracked. Dims: 15 x 22 x 12.

GER001.3 69 Earring pendant? complete  
Pendant shaped, flat on main surface, chipped and uneven, small perforation at one end. Colour varies from translucent colourless-brilliant blotchy orange. L: 12, W: 5-8, Wp: 1.

GER001.3 163 Bead, complete  
Carnelian bead in colourless-reddish orange, blotchy. L: 5, W: 2 x 3.5.

GER002 (4.1/9) Bead, complete  
Carnelian. Elongated biconical bead. Perforation along long axis. Chipped along perforation at one end. L: 21, W: 12, Wp: 2.

**GER002 7 1 Bead, complete**

Circular with flattened ends, orangey-red carnelian. L: 6, W: 4, Wp: 1.

**GER002 8 (s) Bead, fragment**

Half a carnelian ring bead, pale reddish orange. L: 4, W: 7.

**GER002 8 1 Bead, complete**

Carnelian ring bead, with small perforation hole, slightly irregular shape, reddish orange stone with darker impurities. L: 5, W: 9.

**TIN001 A2 2 Bead, complete**

Cylindrical, translucent reddish orange. L: 6, W: 4, Wp: 1.

**ZIN001.71 1 Bead, complete**

Ring bead of translucent reddish orange. W: 7.

**ZIN002.011 1 Bead, fragment**

Milky carnelian. Short cylindrical. Slightly biconical perforation along short axis. Chipped at the edge. L: 5, W: 9.5, Wp: 2.

**ZIN173 (grab) Bead, complete**

Cylindrical, short carnelian bead in translucent reddish orange. L: 5, W: 3.

**ZIN280 (6) Bead, complete.**

Carnelian. Barrel-shaped, narrow perforation along long axis. L: 5 W(max): 4, Wp: 1.

**Other Fragments of Carnelian****GER001.3 12**

Chipped and worked fragment, impossible to determine shape.

**GER001.3 12**

Unworked lump. Dims: 20 x 13 x 13.

**GER001.4 206**

6 worked lithics in translucent orangey-red to orangey-brown stone. Looks like debris from carnelian processing.

**GER002 (grab)**

Two lumps of carnelian, with signs of working on one face, edges sharp.

**GER002 4 1**

Indeterminate lump of carnelian, orangey red with many faults and impurities. Dims: 25 x 17 x 7.

**ZIN002.013**

A worked lump of translucent reddish orange carnelian. Dims: 22 x 12 x 3.

**Amazonite Beads****GER001.001 (14) Bead, fragment c.30%**

Amazonite. Globular bead. Perforation along short axis. Cracks in surface. L: 7, W: c.8, Wp: 1.

**GER002 4 26 Bead, fragment**

Circular bead in shiny turquoise amazonite with off-white streaks, perforation drilled from one end (flared). L: 5, W: 7.

**GER002 4 35 Pendant, unfinished?**

Pendant-shaped piece of rough worked amazonite, pierced by small perforation at one end. L: 12, W: 7 max.

**GER002 4 120 Bead, unfinished?**

Half a ring bead that appears to have broken during perforation (hole does not go right through). L: 4, W: 7.

**GER002 7 2 Bead, unfinished?**

Rough worked fragment of amazonite that appears to have broken during perforation (hole does not go right through). Bright greeny turquoise streaked with white L: 10, W: 9 x 5.

**GER002 62 S Bead, fragment**

Ring bead in in greenish turquoise amazonite. L: 5, W: 8.

**TWE001 (2/1) Bead, fragment c.10%**

Amazonite. Short cylindrical bead. Perforation along the long axis. L: 5, W: 6, Wp: 1.

**ZIN001.39 G Bead, fragment**

Tiny fragment of cylindrical amazonite bead, no dimensions.

**ZIN002.011 (1) Bead, complete**

Amazonite. Short cylindrical bead. Perforation along short axis. L: 1, W: 5, Wp: 2.

**ZIN002.011 (1) Bead, complete**

Amazonite. Elongated biconical bead with rectangular cross-section. Perforation along the long axis. Polished. L: 8, W: 7 x 3, Wp: 1.

**ZIN002.011 (1) Bead or pendant, complete**

Lentoid shaped large bead or pendant, with two flattened ends, longitudinal perforation drilled from both ends. L: 25, W: 23, Wp: 2-4.

**ZIN002.011 (1) Bead (unfinished), fragment c.30%**

Amazonite. Elongated biconical bead with rectangular cross-section. Perforation along the long axis. Perforation incomplete. One side polished. Second side of biconical bead not finished. L: 9, W(ext): 7, Wp: 1.

**ZIN117 Bead, fragment c.50%**

Amazonite. Elongated biconical bead with rectangular cross-section. Perforation along the long axis. L: 10, W: 7, W(ext): 2, Wp: 1.

**ZIN002.209 (grab) Bead, complete**

Small biconical bead of pale greeny amazonite. L: 8, W: 5.

**Other Fragments of Amazonite**

GER002 (5.s) small fragment of amazonite. Dims: 4 x 9 x 2.

TWE001 (2/1) 11 small fragments of amazonite. Dims: i) 8 x 7 x 6; ii) 8 x 5 x 6; iii) 10 x 4 x 8; iv) 9 x 6 x 7; v) 8 x 4 x 5; vi) 7 x 7 x 5; vii) 8 x 7 x 3; viii) 8 x 3 x 4; ix) 9 x 1 x 4; x) 7 x 3 x 2; xi) 8 x 4 x 4.

ZIN119

Piece of unworked amazonite.

**Other Stone Beads**

CHA005 AV V Bead, complete

Circular with two flattened ends, rough pitted surface, slightly translucent and shiny bluish-white. Perforation bored from both ends. L: 12, W: 8.

GER001.1 12 Bead, complete

Circular with flattened ends, smooth deep bluish-red, with orange veins and blotches (agate?). L: 8, W: 10.

GER001.3 26 Pendant, complete

Irregular pendant, pierced near top corner, in dull black stone (though where chipped by perforation has shiny black appearance). Dims: 16 x 8 x 3.

GER002 (grab) Bead, complete

Cylindrical bead in translucent pinkish grey stone, flaring perforation drilled from both ends. L: 10, W: 7.

TIN001 A2 2 Bead, complete

Barrel-shaped, translucent white, with streak of opaque white. L: 8, W: 7, Wp: 1–2.

TWE001 (2/1) Bead, fragment c. 50%

Jet? Globular bead. Perforation along short axis. Wide layer of weathering. L: 4, W: 7, Wp: 2.

ZIN001.034 (1) Bead, complete

Jet? Short cylindrical bead. Perforation along short axis. Wide layer of weathering. L: 1.5, W: 6, Wp: 1.

ZIN001.039 1 Beads, complete

Two beads in creamy off-white or greyish white stone. a) Circular bead with flattened ends, perforation drilled from both ends. L: 8, W: 11; b) Hexagonal, irregular bead, with large perforation. L: 5, W: 12.

ZIN001.039 2 Bead, complete

Irregular disc bead in dark greyish-beige stone. L: 1.5, W: 7.

ZIN001.039 8 Beads, complete

Two disc beads in greyish-creamy stone, with chipping at angular edges and central perforation. a) and b) L: 1–2, W: 6–7.

ZIN002.011 (s) Beads, complete

Two thin disc beads in a dark grey stone. a) and b) L: 1, W: 6.

ZIN001.068 12 Bead, complete

This disc bead in grey stone, noticeably smooth on one surface. L: 1, W: 7.

ZIN001.071 1 Bead, complete

Annular bead with flattened ends in opaque white stone with orangey veins. L: 5, W: 7, Wp: 2.

ZIN002.011 1 Beads, complete

Two short cylindrical beads in greyish limestone or variety? a) Off-white with greyish inclusion. Slightly biconical perforation along short axis. L: 4–6, W: 10, Wp: 2; b) L: 7, W: 10.

ZIN002.013 19 Bead, damaged on one side

Greyish beige ore, black shiny exterior. Short cylindrical bead. Perforation from both ends along short axis. L: 5, W: 9, Wp: 4.

ZIN002.013 (39W) Bead, complete

Cylindrical bead with thickened ends. Oval section. Longitudinal crack. L: 15, Th: 2 at upper end W: 6–8 W(int): 3.2–4.

ZIN002.013 42 Bead, worn on one side

Cylindrical bead in dark grey stone. L: 7, W: 7.

ZIN002.209 E Bead, complete

Irregular cylindrical bead in opaque creamy offwhite stone, parallel horizontal lines on exterior. L: 13, W: 10.

ZIN003.105 4/2 Bead, complete

Annular bead in dull pinkish grey stone, perforation bored from both ends. L: 7, W: 11, Wp: 4.

ZIN119 Bead, complete

Cylindrical bead in translucent/opaque streaky white stone.

ZIN285 6 Pendant, complete

Rough lozenge-shaped pendant in dull brownish red stone, flecked with mica. Perforation hole towards one corner. Smooth and worn, with rounded edges. L: 6, W: 21 x 18, Wp: 3.

**Ostrich Eggshell Beads**

GER001.001 (17) Bead, complete

Ring bead. L: 5, W: 11, Wp: 6.

GER001.065 Bead, complete

Short cylindrical. perforation along short axis. L: 1, W: 6, Wp: 1.

GER002 220 S Bead, complete

Worn, creamy disc bead. L: 2, W: 9.

GER002 4 3/1 Bead, unfinished

Roughly rectangular fragment of semi-perforated OES.

GER002 4 5/2 2 Beads, unfinished

Rectangular rough-outs with large perforation along short axis. i) L: 0.3, W: 14–15, Wp: 1; ii) L: 0.6, W: 10–13 W (perf): 1.

GER002 7 43 Beads, complete

9 OES disc beads, with somewhat angular edges. W: 5–7.

TAG001 3 Beads, complete

String of 65 OES disc beads. L: 1, W: 4

TAG001 4 Bead, complete.

Short cylindrical. Perforation along short axis. L: 1, W: 4 Wp: 1.

TWE001 (2/1) 3 Beads, complete

Short cylindrical. Perforation along short axis. i) L: 1, W: 4, Wp: 1; ii) L: 2, W: 4, Wp: 1; iii) L: 1.5, W: 4, Wp: 1.4.

**ZIN001 Top Bead, unfinished?**

Disc bead with uneven chipped edges. L: 1, W: 8

ZIN001.037 (grab) Bead, complete. Short cylindrical.

Perforation along short axis. L: 1.5, W: 3, Wp: 1.

ZIN002.039 G Beads, complete

3 OES disc beads. D: 2–4.

ZIN001.039 1 Bead, unfinished?

Perforated disc, edges chipped round, but not smoothed and polished. L: 2, W: 10.

ZIN001.039 1 Bead, complete

Disc bead. L: 1, W: 4

ZIN001.039 8 Pendant, unfinished?

Tear-drop or plectrum shaped piece of OES, unpierced.

Looks like prepared blank for a pendant or amulet.

Smoothed edges. L: 28, W: 19 (max), Th: 2.

ZIN001.039 8 Beads, complete

3 OES disc beads. D: 5.

ZIN001.051 1 Bead, complete

Disc bead. L: 1.5, W: 8.

ZIN001.066 3 Beads, complete

2 disc beads. W: 8.

ZIN001.068 2 Bead, complete

2 disc beads. a) L: 1.5, W: 5; b) L: 1, W: 8.

ZIN001.068 8 Bead, complete

Single disc bead.

ZIN001.071 6 Bead, complete

Disc bead. L: 1.5, W: 4.

ZIN002.011 (grab) Beads, complete

11 disc beads of various sizes.

ZIN002.011 (1) Bead, complete

Short cylindrical bead. Ends and inside of cylinder uneven. Polished. L: 7, W: 13, Wp: 8.

ZIN002.011 (1) Bead, complete

Short, biconical bead. Tiny perforation along long axis. L: 3, W: 3–4 Wp: 0.5–1.

ZIN002.011 (1) 16 Beads, complete

Short, biconical beads. Perforation along short axis. i)

L: 1, W: 2.5, Wp: 1; ii) L: 1, W: 4, Wp: 1; iii) L: 1, W:

2.8, Wp: 1; iv) L: 1, W: 3 Wp: 1.5; v) L: 1, W: 4, Wp:

1.5; vi) L: 1, W: 4.5, Wp: 1.5; vii) L: 1, W: 4, Wp: 2; viii)

L: 1, W: 4.5, Wp: 2; ix) L: 1, W: 4–4.5, Wp: 2; x) L: 1,

W: 4.2, Wp: 2.5; xi) L: 1, W: 3.5, Wp: 2; xii) L: 1, W: 5,

Wp: 2; xiii) L: 1, W: 6, Wp: 1.8; xiv) L: 1.1, W: 5, Wp:

1; xv) L: 1, W: 7, Wp: 1.5; xvi) L: 1, W: 9, Wp: 2.

ZIN002.011 (14) 6 Beads

Short cylindrical. Perforation along short axis. i) L: 1,

W: 9, Wp: 2; ii) L: 1, W: 9, Wp: 3; iii) L: 1, W: 9, Wp:

4; iv) L: 1, W: 10, Wp: 4; v) L: 1, W: 9, Wp: 3; vi) L:

1, W: 9, Wp: 2.

ZIN002.011 (14) 6 Beads, 5 complete, 1 chipped

Short cylindrical. Perforation along short axis. i) L: 1,

W: 9, Wp: 2.5 chipped; ii) L: 1, W: 10, Wp: 2.9; iii) L:

1, W: 9, Wp: 2; iv) L: 1, W: 9, Wp: 2; v) L: 1, W: 9,

Wp: 2; vi) L: 1 W: 9, Wp: 2.

ZIN002.013 1 Bead, complete

Ring bead with concave inner surface. OES? L: 2,

W: 5.

ZIN002.013 (1) 5 Beads, 4 complete

Short cylindrical. Perforation along short axis. i)

fragment: L: 0.5, W: 10, Wp: 3; ii) L: 0.5, W: 3, Wp:

1; iii) L: 2, W: 4 Wp: 2; iv) L: 1, W: 7, Wp: 2; v) L: 2,

W: 8.5, Wp: 1.

ZIN002.013 34 Bead, complete

W: 3.

ZIN002.013 31 Bead, complete

Smooth edged disc bead. L: 1.5, W: 6.

ZIN002.013 36 Bead, complete

Disc bead. L: 1.5, W: 4.5.

ZIN002.013 37 Bead, complete

Disc bead. W: 4.

ZIN002.013 39 bis Bead, complete

Disc bead. L: 1.5, W: 6.5.

ZIN002.013 42 Bead, complete

Disc bead. L: 1, W: 9.

ZIN002.013 48E Bead, complete

Disc bead. L: 1.5, W: 4.

ZIN002.013 108 Beads, complete

Two tiny disc beads. L: 1, W: 5.

ZIN002.013 114 Bead, complete

Disc bead. L: 1.5, W: 4.5.

ZIN002.013 200 Bead, complete

Disc bead. L: 1, W: 3.5.

ZIN002.013 209 Bead, complete

Disc bead. L: 1, W: 3.5.

ZIN002.120 Bead, complete

Tiny disc bead.

ZIN002.173 G Bead, complete

Disc bead. L: 1.5, W: 5.

ZIN002.209 G Bead, complete

Disc bead. L: 1.5, W: 6.

ZIN002.220 S Bead, complete

Disc bead, chipped. W: 7.

*Other OES Fragments, Rough Shapes etc.*

GER002 G

Rough-cut unperforated rectangle of OES.

GER002 35 S.

Rough-cut unperforated rectangle of OES.

GER002 8 1

4 OES circular unperforated rough outs (D: 11–16)

– either for beads or counters.

ZIN001.048 S

Rough-cut unperforated rectangle of OES.



**Other Shell Beads**

GER001.3 1 Pierced shell

Pierced shell, worn smooth. L: 15, W: 10.

ZIN002.011 1 Pierced shell

Biconical pierced creamy white shell. L: 5, W: 4.

ZIN002.011 1 Cowrie, fragment

Probable fragment of cowrie shell.

ZIN002.013 1 Cowrie, fragment

Fragment of broken cowrie shell. L: 15, W: 7.

ZIN002.013 105 Cowrie, fragment

Fragment of broken cowrie shell, worn smooth. L: 24.

ZIN003.105 414 Cowrie, complete

Pierced cowrie shell, edges worn smooth, possibly worn as earring or amulet? Dims: 16 x 11 x 6.

**Bone Bead**

CHA007 S Bead, fragment

Greyish ring bead evidently made of bone (unless this was ivory?). Large perforation. L: 6, W: 8.

**Wooden Beads**

GER001.1 5 Bead, fragment

Circular bead, worn smooth, has been broken and mended, flaky black deposit on surface. L:10, W: 14.

ZIN173 (grab) Wooden pendant?

Half of a broken creamy coloured wood item, lathe-turned to form an acorn-shaped object, with a narrow cylindrical join at the top and a small nipple at the base (somewhat like a spinning top or a spindle in shape, but much smaller). Broken at top and split longitudinally. L: 15, W: 10.

**BEAD GRINDERS****By F. Cole**

A bead grinder is a tool used to shape and polish chipped and perforated bead-blanks in the final stages of bead manufacture. Bead grinders are expedient tools made from a range of abrasive materials including locally-occurring sandstone or limestone, and on occasion, ceramic potsherds. Characterised by their diagnostic semi-circular or 'U'-shaped grooves, they are irregular in form, but their size is usually restricted to enable them to fit comfortably into the hand (Cole in Mattingly 2007, 478).

The use of grooved tools to shape beads has been attested to in ethnographic studies across Africa for nearly a century (Bleek 1928 and Dunn 1931, cited in Woodhouse 1997). In comparison, the attribution and identification of bead grinders in the archaeological literature has been much less consistent, with publication of items with 'grooves of unknown or debatable purpose' still occurring today (Berger and Berger 2000; Stordeur *et al.* 1997). Language may also be a factor contributing to the continued misidentification of these tools: much of the literature on bead grinders is written in French, and the tools are referred to as *pierres à rainure*, a term which can be applied to all grooved stone artefacts, including sharpening-stones, grinding-stones and small items of artistic or inscriptional nature (Camps-Fabrer 1966; Lhote 1943; 1982; Stordeur *et al.* 1997). Bead grinders (*pierres à rainure*) are illustrated in Camps-Fabrer and Stordeur *et al.*, but the link between the tools themselves and bead manufacture is not made in the publications.

Secure confirmation of the identification of these tools as bead grinders, in an archaeological context, was made in the Pan-grave cemetery of the Second Intermediate Period (approximately 1700–1550 BC), at Hierakonpolis, Egypt. The grave-find of the remains of a beaded leather bag containing flint micro-drills; chipped carnelian fragments; polished carnelian 'cobbles'; and three grooved sandstone bead grinders, has been published as a 'bead-maker's tool-kit' (Friedman 2001). The discovery of the micro-drills and bead grinders together is unusual. Lhote commented on the difficulty of confirming the identity of bead grinders, pointing out that the drills and rough-outs/blanks were commonly found together in craft or production-based sites, while the potential

bead grinders tended to be found in domestic areas. He hypothesised a possible gendered activity separation between men drilling the beads and women polishing them. Whether or not this was true, there certainly seems to be a case for a division of labour between production and domestic zones in Gāo, Niger (Lhote 1943).

Opinion is divided between whether the tools were used to shape beads one at a time or in groups. They could also serve to 'calibrate' strings of beads which had already been roughly shaped on a flat stone (Lhote 1982; Savary 1967). The tool-kit from Hierakonpolis would appear to indicate that individual stone beads were shaped this way, even if ostrich eggshell beads were more commonly finished after having been strung. Microwear analysis on ostrich eggshell beads from the tombs in Wādī Tanzūft, has demonstrated that the beads were definitely shaped and/or polished

with abrasive stone (Cristiani and Lemorini 2002), but whether they were finished individually or in groups may have depended upon the intended final shape of the bead (see ostrich eggshell bead profiles in *AF 2*, and *AF 4* forthcoming).

Bead grinders have been identified in Late Pastoral assemblages in Algeria (Camps-Fabrer 1966), Late Pastoral and Second Intermediate Period Egypt (Berger and Berger 2000; Friedman 2001), the "Pottery Neolithic" phase at Gāo and Arlit in Niger (Lhote 1943; 1982) and in the early levels at Zinkekrā (Daniels 1968a). The two examples from the PPNA (Pre-Pottery Neolithic A) site of Jerf al-Ahmar, Syria came from a domestic assemblage, and have grooves on one side, and incised motifs on the reverse (Stordeur *et al.* 1997). Bead grinders were also common site finds at the Classic Garamantian settlements surveyed by the FP (*AF 2*) and CMD.

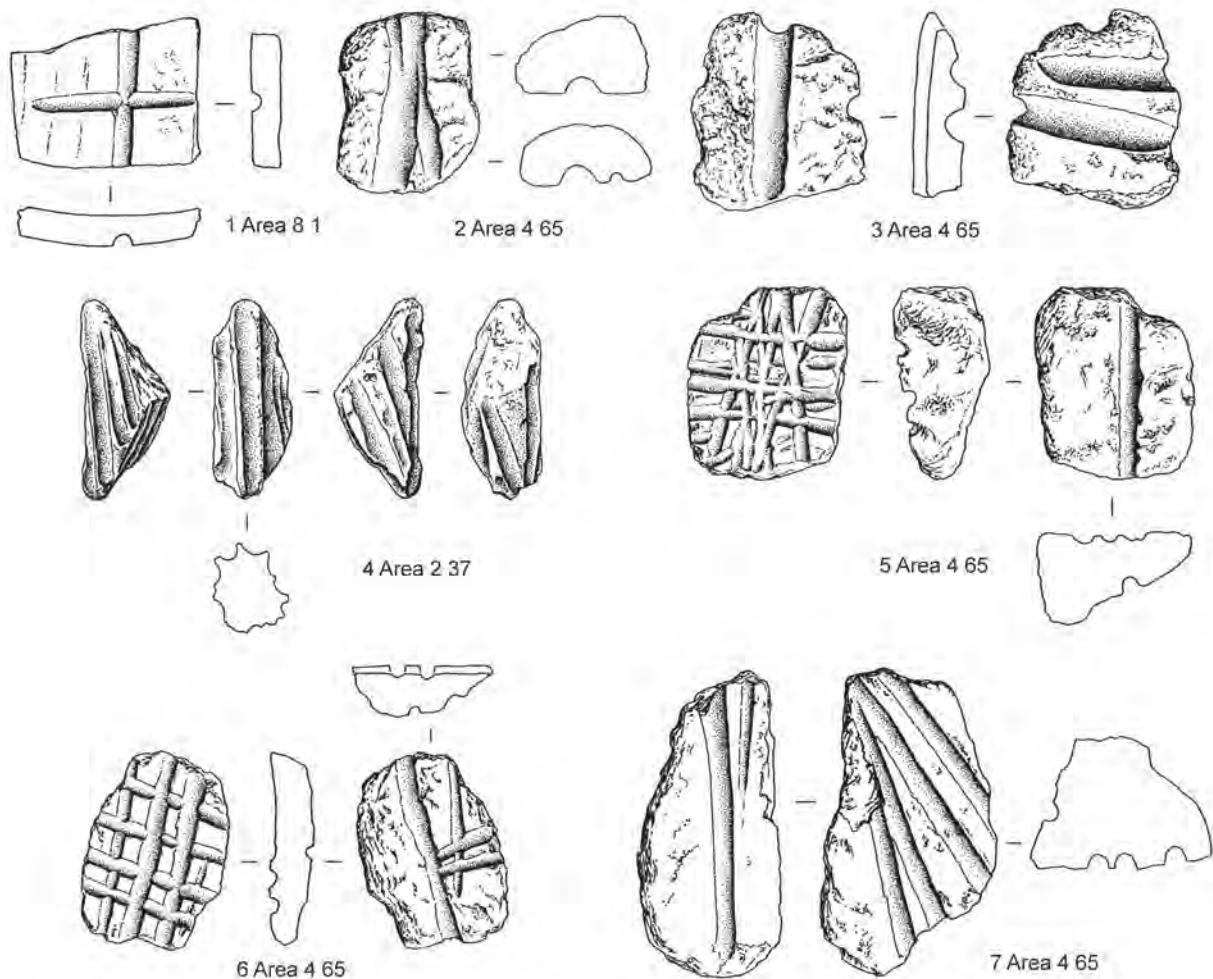


Figure 8.23. Bead grinders from Sāniat Jibrīl (GER002) (i). 1-3.

The CMD excavations at Sāniat Jibrīl (GER 002) recovered more than 100 bead grinders of sandstone, shale and ceramic, with a further 43 sandstone specimens recovered during the FP survey at the same site (published in *AF 2*). A total of 21 examples from the CMD assemblage are catalogued here. The bead grinders at Sāniat Jibrīl were found in deposits with fragments of worked ostrich eggshell, carnelian and amazonite, and it is likely the grinders were used to shape all three materials. CMD associated these tools with textile manufacture at the time of their excavation.

The most unusual feature of the GER002 assemblage is the relatively large number of grooves per tool, with a single specimen having 17 grooves. While the majority of bead grinders found by excavation and survey by the FP have five grooves or more, this would appear to be unusual in the regional context. The largest number of grooves noted on a bead grinder from outside the CMD/FP assemblages is six, seen on the Tāssīlī n'Azjar specimen (Savary 1967). Of the remaining bead grinders in works discussed above, the largest number of grooves noted was three. It is unclear whether the number of grooves per tool may be related to the degree and intensity of use and activity at Sāniat Jibrīl, but the sheer number of bead grinders alone attests to the scale of bead production taking place at the site.

A sample of the 105 bead grinders excavated by CMD at Sāniat Jibrīl was relocated in the Jarma store and is described below. All dimensions are maximal measurements of cardinal axes of irregular blocks. A selection of these were drawn by David Hopkins in 2002 (Fig. 8.23) and complement a larger number of drawn examples by Miriam Daniels in the CMD archive (mounted together as Fig. 8.24). Where possible we have identified the illustrations with the descriptions, though not all match. Nonetheless, it was thought worthwhile to illustrate as broad a range as possible of these interesting artefacts. There is a further example from Zinkekrā (Fig. 1.49) and additional examples were published in *AF 2* (Mattingly 2007, 478–80; see above, Chapter 3 and Fig. 3.82 for a discussion of beadmaking at GER002).

## Catalogue

GER002 8 1 Bead grinder, ceramic (Fig. 8.23, no. 1)  
L: 7.5, W: 5.2, Th: 1.0. Complete. Irregular rectangular. Red/Black fabric with green/cream slip. (Probably Tripolitanian Amphora sherd). Slip worn at one side. 2 grooves. Worked slip side only.

GER002 (grab) Bead grinder, sandstone  
L: 3.9, W: 3.0, Th: 1.9. Complete. Irregular triangular. Red/orange medium grain. Light weathering 17 grooves.

GER002 2 37 Bead grinder, sandstone (Fig. 8.23, no. 4)  
L: 7.8, W: 3.3, Th: 3.2. Complete. Irregular conical. Yellow/grey coarse grain, tip burnt. Light weathering. 10 grooves.

There are two further bead grinders from this context illustrated on Fig. 8.24, nos 3 and 5).

GER002 4 11 Bead grinder, sandstone  
L: 6.3, W: 6.2, Th: 2.6. Incomplete. Flattened rounded. Yellow coarse grain. Light weathering. 5 grooves.

There are three further bead grinders from this context illustrated on Fig. 8.24, nos 6, 7 and 21).

GER002 4 39 Bead grinder, shale (Fig. 8.24, no. 8)  
L: 4.1, W: 2.9, Th: 2.0. Incomplete. Irregular rectangular. White fine grain. Light weathering. 11 grooves.

There is a further bead grinder from this context illustrated on Fig. 8.24, no. 11).

GER002 4 65 Bead grinder, sandstone  
L: 7.5, W: 6.2, Th: 3.0. Irregular rectangular. Yellow/Grey coarse grain. Light weathering. 4 grooves.

GER002 4 65 Bead grinder, sandstone (Fig. 8.23, no. 5)  
L: 7.2, W: 6.1, Th: 3.7. Complete. Irregular wedge shaped. Creamy white fine grain. Light weathering. 17 grooves.

GER002 4 65 Bead grinder, sandstone (Fig. 8.23, no. 7)  
L: 12, W: 7.2, Th: 5.4. Complete. Irregular conical. Light weathering. 5 grooves.

GER002 4 65 Bead grinder, sandstone  
L: 7.3, W: 5.1, Th: 2.9. Complete. Irregular rounded. Yellow/white coarse grain. Light weathering. 2 grooves. Worked one side only.

GER002 4 65 Bead grinder, shale? (Fig. 8.23, no. 2)  
L: 6.6, W: 4.9, Th: 3.0. Incomplete. Irregular conical. White/cream fine grain. Light weathering. 2 grooves. Worked one side only.

GER002 4 65 Bead grinder, sandstone (Fig. 8.23, no. 3)  
L: 7.9, W: 7.0, Th: 2.1. Incomplete. Irregular rectangular. Creamy white coarse grain. Light weathering. 3 grooves.

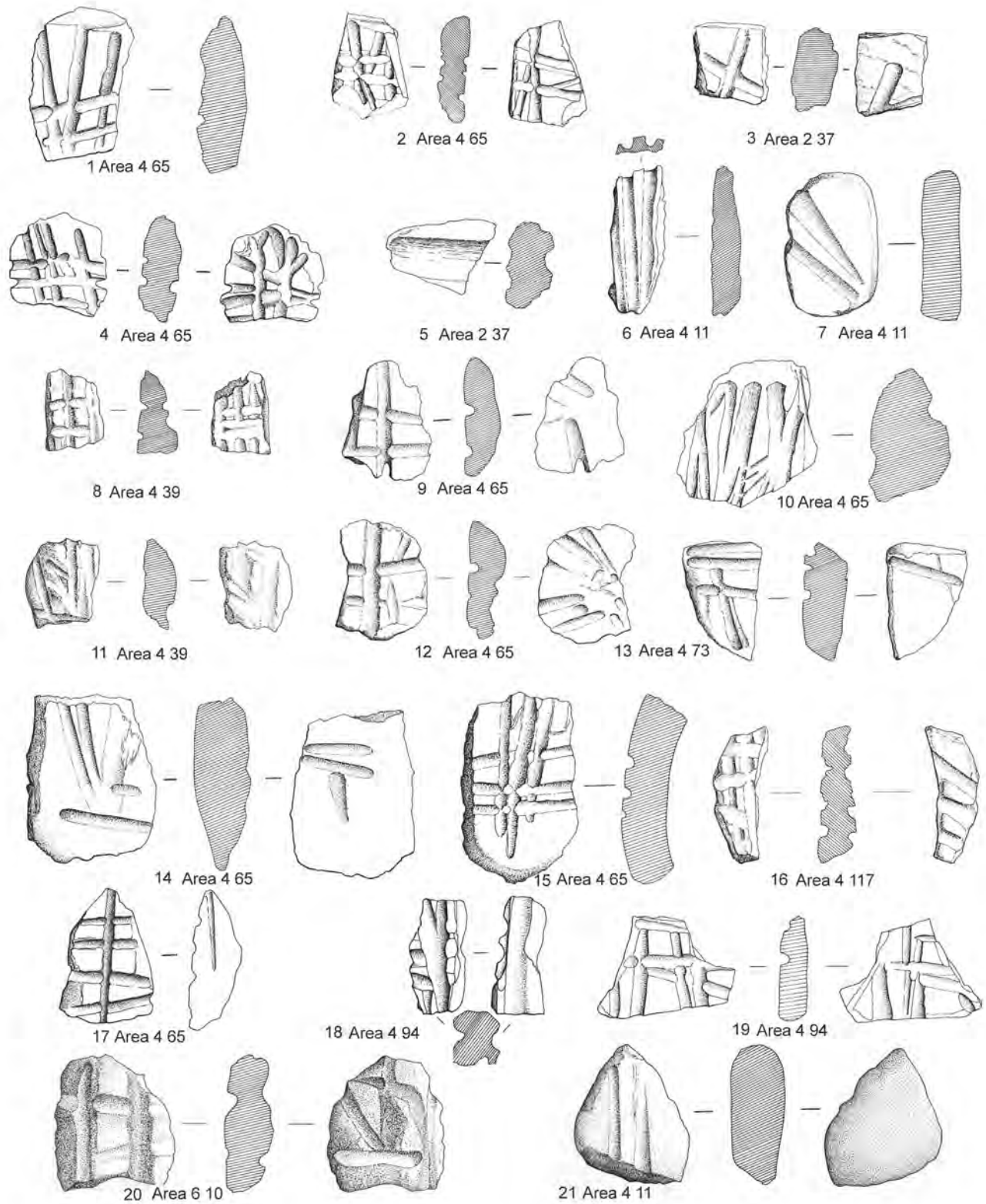


Figure 8.24. Bead grinders from Sāniat Jibrīl (ii). 1:3.

GER002 4 65 Bead grinder, sandstone

L: 6.3, W: 6.2, Th: 3.3. Incomplete. Irregular triangular. Light weathering. 3 grooves.

GER002 4 65 Bead grinder, sandstone

L: 7.2, W: 6.9, Th: 3.9. Complete. Irregular rectangular. Creamy white medium grain. Light weathering. 13 grooves.

GER002 4 65 Bead grinder, sandstone

L: 7.2, W: 7.2, Th: 3.7. Complete. Flattened triangular. Creamy white medium grain. Light weathering. 9 grooves.

GER002 4 65 Bead grinder, sandstone (Fig. 8.24, no. 4)

L: 5.4, W: 4.9, Th: 1.4. Incomplete. Flattened rounded. Yellow/pink medium grain, banded with red/pink coarse grain. Light weathering. 10+ grooves.

GER002 4 65 Bead grinder, sandstone

L: 4.2, W: 4.2, Th: 1.5. Incomplete. Flattened rounded. Pink/grey coarse grain. Light weathering. 3 grooves. Worked one side only.

GER002 4 65 Bead grinder, sandstone (Fig. 8.23, no. 6)

L: 7.8, W: 5.4, Th: 1.7. Complete. Irregular rectangular. Yellow with pink flecks, medium grain. Light weathering. 12 grooves.

GER002 4 65 Bead grinder, sandstone

L: 6.9, W: 4.9, Th: 2.0. Complete. Flattened rounded. Yellow/white medium grain. Light weathering. 10 grooves.

GER002 4 65 Bead grinder, sandstone

L: 10.0, W: 7.0, Th: 3.9. Complete. Flattened ovoid. Yellow/pink banded, coarse grain. Light weathering. 4 grooves. Worked one side only.

GER002 4 65 Bead grinder, sandstone

L: 6.1 W: 4.9 Th: 2.1. Incomplete. Irregular conical. Yellow/white medium grain. Light weathering. 5 grooves.

There are eight further bead grinders from this context illustrated on Fig. 8.24, nos 1, 2, 9, 10, 12, 14, 15 and 17).

There are additional bead grinders illustrated on Fig. 8.24 from the following contexts, 4 73 (no. 13), 4 94 (nos 18–19), 4 117 (no. 16) and 6 10 (no. 20)

## STONE RINGS OR BANGLES

By C. Tagart, B. Hoffmann and D. Mattingly

These are of a size to have served as arm rings or bangles, though other uses cannot be excluded.

### Catalogue

CLF010 6 4 Ring fragment

Fragment of stone ring in greyish white limestone, with flattish underside and top and convex sides. L: 70, W: 14, Th: 13 (D: not clear).

GER001 B

Plano-convex section, with slightly concave inner surface, in greenish-grey speckled stone with flecks of mica. Longitudinal groove on inner surface and traces of light grooves on outer edge. L: 85, W: 0.12, Th: 15.

GER001 C Ring fragments

3 fragments of stone rings, all in greenish grey soapstone. a) with ridge on internal surface. L: 14, W: 23, Th: 20; b) slightly convex internal surface, faint vertical grooves. L: 10, W: 15, Th: 18; c) fine scratch marks on interior surface. L: 85, W: 11, Th: 9.

GER002 55 S Ring fragment

Plano-convex, almost triangular in section, longitudinal grooves on inner surface, greenish grey stone flecked with mica. L: 10, W: 12, Th: 19.

TIN001 A21 3 Ring fragment

Very worn in off-white greyish sandstone, flattish lower surface, otherwise roughly circular in section. L: 80, W: 14, Th: 13.

ZIN001.64 2 Bangle. 46° arc (Fig. 8.20, no. 20)

Fragment. White slightly banded stone (alabaster?). Bangle. D-section. Slightly scratched. L: 12.5, D: 106, D(int): 84, Th: 11.

ZIN001.67 CL Ring fragment

Oval section with flattened upper and lower surfaces marked with parallel scratch marks, outer and inner surfaces smooth with a few scratch marks, opaque greenish-creamy colour. L: 10, W: 12, Th: 8.

ZIN001.8 8 Ring fragment

Plano-convex in section, opaque translucent creamy white stone. L: 8, W: 9, Th: 13.

ZIN117 (grab) Bangle fragment

Plano-convex fragment of ring in fine translucent off-white stone (alabaster?). A few short parallel scratch marks on outer surface. L: 10, W: 14, Th: 21.

ZIN002.013 1 Ring

Fairly smooth, dull brownish-maroon stone, outer surface flattish, inner surface has diagonal, parallel scratch marks. Ext. D: 80, W: 10, Th: 9.

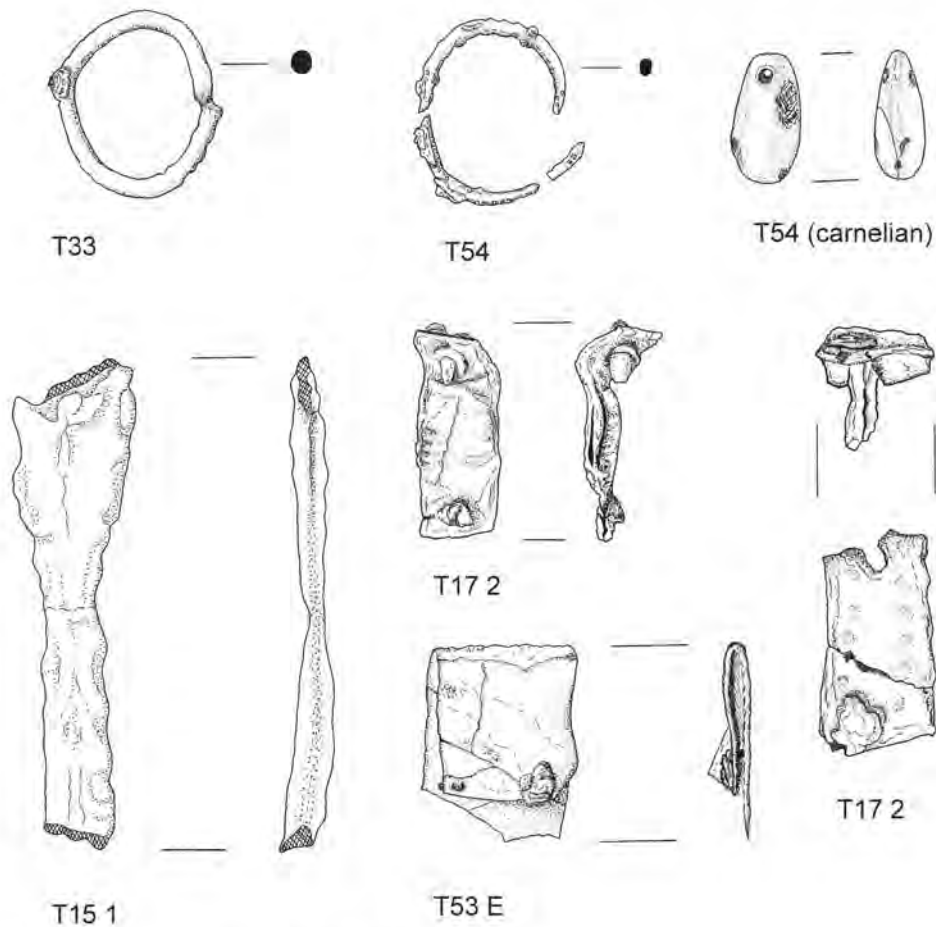


Figure 8.25. Metal artefacts from Sāniat bin Huwaydī. 1:1

## METAL ARTEFACTS FROM SĀNIAT BIN HUWAYDĪ

By C. Tagart and D. Mattingly

The relatively small quantity of metal grave goods, even in the unrobbed tombs, is striking and seems to relate to specific social choices. Similar patterns have been observed in the DMP excavations of burials since 2007 (Mattingly *et al.* 2007; 2008, 2009). There are occasional finger rings, an earring, a few examples of the enigmatic rivetted plates/strips (cf. Mattingly 2007, 467–68 – perhaps for use as connectors or strengtheners for wooden articles, leather or textiles) and a couple of heavily corroded iron artefacts. There is no doubt that by the Classic period, Garamantian society was consuming considerable quantities of metalwork – as the productive evidence from Sāniat Jibrīl (GER002) in the next section demonstrates. But, in general, Garamantian funerary ritual did not place great emphasis on such goods.

## Catalogue

### Copper Alloy Objects

GER011.T9 4 Copper alloy ring

Broken in 3 places and badly corroded. D: 10, W: 3, Th: 3.

GER011.T17 2 Copper alloy rivetted plate (Fig. 8.25, centre)

Thin and roughly oblong with a nail at each end, 2 rows of small raised bosses, upper 5, lower 6. L: 29, W: 14, Th: 2.5.

GER011.T17 2 Copper alloy rivetted plate (Fig. 8.25, bottom right)

Oblong plate with rivet at each end and circular washers on one side. Very corroded. L: 30, W: 10, Th: 3.

GER011.T33 Copper alloy pennisular ring (Fig. 8.25)

Finger ring? Uneven, lump on one side, slightly flattened inside surface. Cf. Dechelette 1914, 1322. D: 24, Th: 3.

GER011.T53 E Copper alloy strip (Fig. 8.25)

Probable belt- or strap-end, for use with leather or textile. Square-cut strip bent over on itself and joined

with two nails – one with head missing, one with shank missing. Very thin, broken and corroded. L: 19, W: 25, Th: 3.

GER011.T54 Copper alloy earring (Fig. 8.25)

Copper alloy ring broken in 3 pieces, pennisular or hook type. D: 25, Th: 1.5. Associated with pierced carnelian pendant stone (chipped on one side) found with it. L: 19, W: 9, Th: 5. Found by skull, so probably safe to interpret as earring.

#### Iron Objects

GER011.T15 1 Iron blade/knife (Fig. 8.25)

Two conjoining fragments of a corroded, long, flat implement, spatula-like at one end. L: 66, W: 8–17, Th: 2–5.

GER011.T16 1 Two iron nails

Two ferrous artefacts, oblong section, headless. L: 35, W: 5, Th: 3.

GER011 Tr 7 Iron fragments

Too corroded and broken to identify form or function.

## METAL ARTEFACTS FROM OTHER CMD EXCAVATIONS

By C. Tagart and D. Mattingly

Sāniat Jibrīl (GER002) is the most prolific Garamantian site for metal artefacts. This was already demonstrated in terms of the surface survey evidence presented in *AF 2* (Mattingly 2007, 448–69) and clearly relates to its function as a metalworking site. Many of the fragments recorded below appear to be offcuts or broken pieces that may have been collected together for recycling. Copper alloy sheet and copper alloy rivetted plates/strips are common finds and may have been a major product of the site. The fact that quite a number of finds come from stratified levels in the CMD excavations suggests that his building complex was directly involved in the productive process – a point also supported by the existence here of a number of hearths.

The contrast with Zinkekrā is interesting, given the extent of the excavations carried out there. Comparatively few metal artefacts were recovered, almost all of them in unstratified contexts. This emphasises the rarity of metal in the Early and Proto-urban phases (we should remember that absence in rubbish deposits may in part reflect recycling of valuable raw material). In view of the importance of establishing when the Garamantes first adopted metallurgical technology, the lack of stratified finds from early levels at Zinkekrā is disappointing and must leave this an open question for the time being.

#### The Coins

The coins do not appear to have been cleaned or (with the exception of a 20<sup>th</sup>-century issue) identified, but such information as was recoverable from the CMD archive is presented here in view of the overall rarity of coins in Fazzān. A total of 12 was presented in *AF 2* (Mattingly 2007, 463–64, 9 from GER002 and 3 from GER001), of which half were silver denarii and high copper alloy issues. The 12 additional ‘coins’ presented here include one modern issue and 11 copper alloy specimens (10 from GER002 and 1 from GER001). In view of the abundant evidence for metallurgical activity of Sāniat Jibrīl (GER002) it is possible that coinage from the Roman world was used there as a source of raw metal, rather than as a medium of exchange.

## Catalogue

### Coins

#### GER001.001 (grab)

Small copper alloy coin, green in appearance and with weathered deposits adhering. D: 19.

#### GER002 G [CMD SF 49]

About half a clipped copper alloy coin, heavy green corrosion products. D: 29, Th: 4.

#### GER002 G [CMD SF 49]

Two copper alloy coins, heavily corroded products. D: 19.

#### GER002 u/s [CMD SF 60]

Copper alloy coin. D: 19.

#### GER002 59 S

Copper alloy coin. D: 27.

#### GER002 2 67 [CMD SF 48]

Copper alloy coin, heavily corroded. D: 30, Th: 3.

#### GER002 4 17 [CMD SF 27]

Copper alloy coin. D: 20.

#### GER002 7 1 [CMD SF 45]

Copper alloy coin, or disc, with slight ridge 2mm in from outer edge on one side. D: 20.

#### GER002 7 2 [CMD SF 11]

Roughly circular copper alloy disc (coin?), heavy corrosion. D: 15.

#### GER002 7 72 [CMD SF 41]

Copper alloy coin of disc, with slight protuberance on one edge (possibly corrosion). D: 19, Th: 2.

#### GER027 5

Modern coin of Idris I.

### Copper Alloy Artefacts

#### GER001. C

Thin washer (or bead?), one corner bent up. D: 13-15, Th: 1.

#### GER001. C

Small disc, perhaps pendant, with perforation by one edge and concentric circles of punched dimples on surface. D: 21, Th: 1.

#### GER001 G (or possibly GER002 4 1/9)

2 fragments of copper alloy bracelet with incised geometric decoration (lines and chevrons). Triangular section. L: 65, W: 7, Th: 5.

#### GER001.3 12

Copper alloy strip fragment. Th: 1.

#### GER001.3 110

Heavily corroded copper alloy square-section rod. L: 42, W: 10, Th: 10.

#### GER002 G

9 small fragments of copper alloy, 6 thin rods, 1 tiny sphere and 2 strips.

#### GER002 G

Copper alloy bracelet, 2 fragments possibly from different items, with vertical ribbing to create segmented look. D: not possible to estimate, but looks quite small.

#### GER002 [CMD SF 52]

Section of thin copper alloy rod or pin, with square section and tapering to one end. L: 25, W: 4, Th: 4.

#### GER002 unstratified (Fig. 8.26. no. 1)

Copper alloy disc segment 25 %. D: 80, Th: 1.

#### GER002 unstratified (Fig. 8.26. no. 2)

Copper alloy ring segment, bent rod with circular section. Bracelet? 33 %. D: 75, Th: 6.

#### GER002 unstratified (Fig. 8.26. no. 3)

2 small fragments of copper alloy sheet, 35 x 27 x 1 and 33 x 30 x 1.

#### GER002 unstratified

Irregular copper alloy sheet (roughly hexagonal) with central perforation. Unfinished artefact? L: 20, W: 20, Th: 1.

#### GER002 29 5

Several fragments of copper alloy strip (one with a rivet in place), crumpled up and heavily corroded.

#### GER002 57 S

Copper alloy stud or nail, with mushroom-shaped head and broken shaft. L: 10, D head: 10, Th: 1-2.

#### GER002 59 5

2 distinct copper alloy objects. a) Length of circular section rod, broken at each end and decorated with rows of punched circles running length of shaft. L: 18, Th: 6; b) 2 pieces of strip, joined by a rivet at one end. L (largest strip): 16, W: 12, Th: 1.5, rivet L: 19, Th: 2-3.

#### GER002 62 S

Copper alloy stud or nail, with mushroom-shaped head and twisted shaft. L: 9, D head: 9, Th: 1.

#### GER002 64 S

Copper alloy strip, broken at one end and rolled tightly at other. L: 12, W: 9, Th: 2.

#### GER002 117 S

Copper alloy tapering pin or nail, broken at both ends. L: 19, Th: 3.

#### GER002 1 S

Thin oblong-section rod of copper alloy, tapering and bent at more pointed end. Nail? L: 37, W: 3, Th: 2.

#### GER002 2 13 (Fig. 8.26. no. 4)

2 joining pieces of copper alloy rod with slightly flattened circular cross section. L: 35, Th: 7.

#### GER002 2 38 [CMD SF 28]

Fragment of copper alloy, tapering towards one end. Blade? L: 42, W: 12, Th: 9.

#### GER002 2 38 [CMD SF 29]

Heavily corroded copper alloy object, roughly oval. L: 22, W: 17, Th: 14.



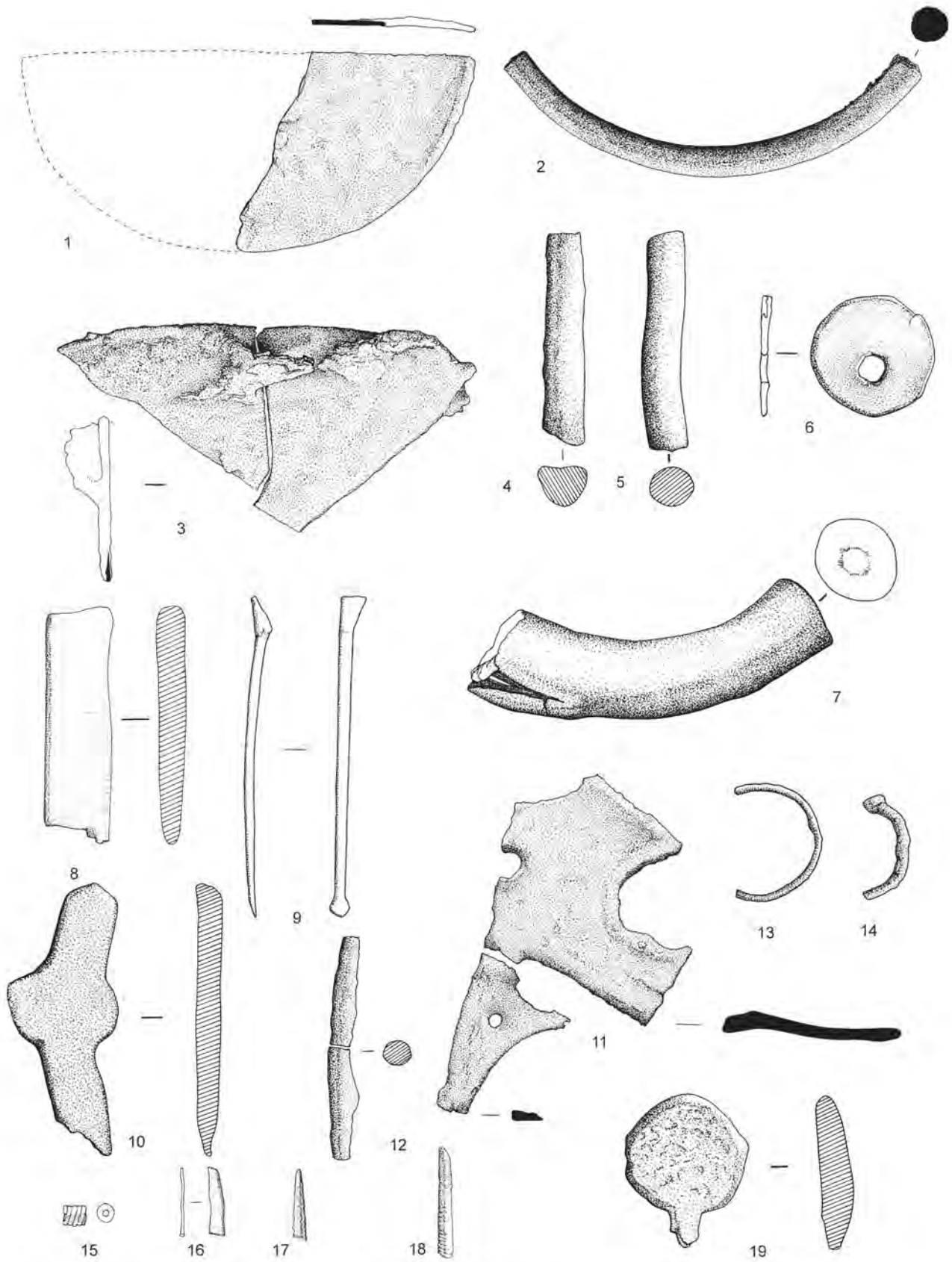


Figure 8.26. Copper alloy artefacts from other CMD excavations, primarily Sāniat Jibrīl. 1:1

- GER002 2 43 [CMD SF 26]  
Heavily corroded copper alloy hollow cylinder of uncertain purpose. L: 31, W: 25, Th: 19.
- GER002 2 76 [CMD SF 54]  
Copper alloy strip with perforation at one end. L: 22, W: 14, Th: 1.
- GER002 4 11 [CMD SF 1]  
Copper alloy strip fragment. L: 15, W: 6, Th: 2.
- GER002 4 11 [CMD SF 2]  
Irregular copper alloy sheet fragment, L: 21, W: 20, Th: 1.
- GER002 4 11 [CMD SF 3]  
Tapering copper alloy oblong-section rod. Possibly shafting end of a broken blade? L: 32, W: 12, Th: 4.
- GER002 4 26 [CMD SF 13]  
Diagonally folded copper alloy square sheet. L: 28, W: 24, Th: 1.
- GER002 4 26 [CMD SF 17]  
Oval-section lump of copper alloy. L: 13, W: 9, Th: 6.
- GER002 4 26 [CMD SF 18]  
Irregular fragment copper alloy sheet, with cut out elements and traces of two perforation holes. L: 34, W: 34, Th: 2.
- GER002 4 26 [CMD SF 25] (Fig. 8.26. no. 6)  
Copper alloy washer (or bead). D: 20, Th: 1.
- GER002 4 30 [CMD SF 34] (Fig. 8.26. no. 5)  
Copper alloy rod with circular section, slightly tapering to one end. Nail? L: 36, Th: 7.
- GER002 4 37 [CMD SF 14]  
Irregular fragment of copper alloy sheet – offcut? L: 17, W: 15, Th: 1.
- GER002 4 84 [CMD SF 32] (Fig. 8.26. no. 7)  
Fragment of thick copper alloy ring (arm ring or heavy bracelet?). D: 100, Th: 14.
- GER002 4 101  
Irregular fragment of copper alloy sheet, L: 34, W: 30, Th: 1.
- GER002 6 9 [CMD SF 19]  
Fragment of copper alloy rod of tapering circular section, L: 15, W: 8, Th: 9.
- GER002 7 S [CMD SF 161]  
Fragment of copper alloy rod, with circular section? Heavily corroded. L: 28, Th: 7.
- GER002 7 S [CMD SF 62] (Fig. 8.26. no. 8)  
Fragment of copper alloy strip, with 3 bosses (rivets?) arranged in triangle on one side. L: 37, W: 11, Th: 5.
- GER002 7 S [CMD SF 63] (Fig. 8.26. no. 9)  
Copper alloy object, thin oblong rod with angled protrusions at either end. Looks like a small toilet implement, with probes. L: 55, W: 3, Th: 2.
- GER002 7 1 [CMD SF 31]  
Wedge-shaped tapering copper alloy strip. L: 178, W: 9 (max), Th: 2.
- GER002 7 1 [CMD SF 43]  
Thin, slightly tapered circular-section copper alloy rod. Pin or nail? L: 42, Th: 3.
- GER002 7 1 [CMD SF 44] (Fig. 8.26. no. 10)  
Copper alloy object, somewhat corroded, amorphous shape. L: 46, W: 20 (max), Th: 6.
- GER002 7 S2 [CMD SF 5] (Fig. 8.26. no. 19)  
Heavily corroded copper alloy dished fragment, with a protruding 'lug'. Purpose uncertain. L: 17, W: 13 (max), Th: 5.
- GER002 7 2 [CMD SF 6]  
Copper alloy strip, broken along one edge. L: 6, W: 7, Th: 1.
- GER002 7 2 [CMD SF 7]  
Amorphous lump of copper alloy, heavily corroded. L: 17, W: 11, Th: 6.
- GER002 7 2 [CMD SF 36]  
Thin tube (half cylinder) of copper alloy, split in half lengthways. L: 27, D: 11.
- GER002 7 9 [CMD SF 23]  
Hook-shaped fragment of copper alloy. Part of brooch or piece of jewellery? L: 21, W: 5, Th: 1.
- GER002 7 20 [CMD SF 22] (Fig. 8.26. no. 11)  
Irregular copper alloy sheet fragment (offcut), with perforation and trace of washer. L: 27, W: max), Th: 2.
- GER002 7 44 [CMD SF 37]  
Fragment of copper alloy curved rod, circular section, but flattened interior face. Bracelet fragment? D: c.50+, Th: 5.
- GER002 7 55 [CMD SF 47]  
Copper alloy strip with single circular perforation near one end. L: 20, W: 15, Th: 0.5.
- GER002 7 55 [CMD SF 53]  
Copper alloy sheet fragment with rough edges. L: 20, W: 9, Th: 2.
- GER002 7 S [CMD SF 46]  
6 fragments of copper alloy, a) solid rectilinear lump, with rounded edges. L: 22, W: 17, Th: 10; b–f) fragments of a folded copper alloy sheet (perhaps used as an edge binding?). L: 40, W: 26 (folded in half), Th: 1.
- GER002 8 S [CMD SF 64] (Fig. 8.26. no. 12)  
2 joining fragments of thin, tapering, circular copper alloy rod. Nail or pin. L: 37, Th: 4.
- GER002 8 S [CMD SF 65]  
Small fragment of copper alloy strip. L: 15, W: 13, Th: 1.5.
- GER002 8 S [CMD SF 66] (Fig. 8.26. no. 13)  
Fragment of copper alloy ring 66%. Large for finger ring? D: 20, Th: 2.

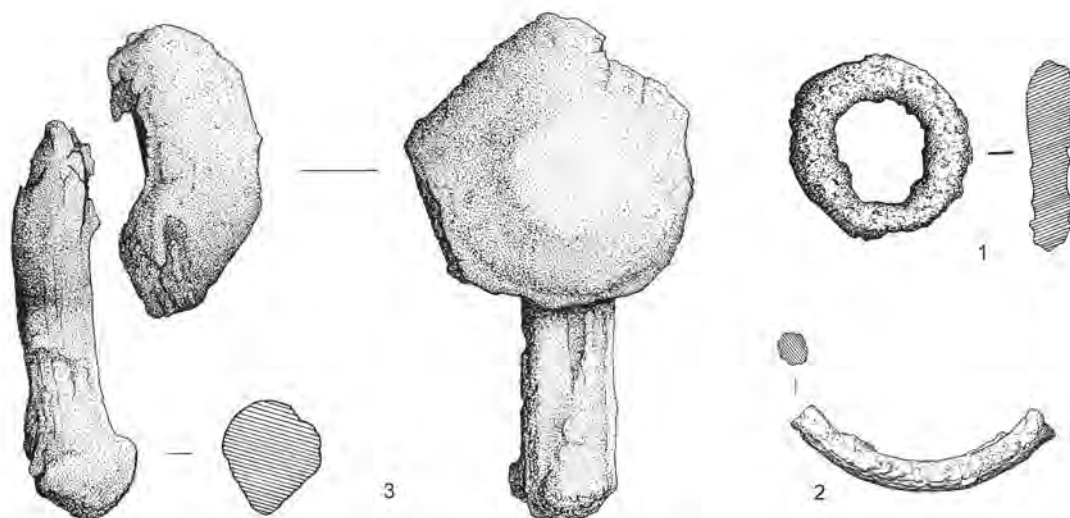


Figure 8.27. Iron artefacts from other CMD excavations, primarily Sāniat Jibrīl. 1:1

GER002 8 S [CMD SF 67] (Fig. 8.26. no. 14)

Fragment of copper alloy finger ring 50%, with trace of bezel or boss at one end. D: 15, Th: 2.

GER002 8 S [CMD SF 68]

Copper alloy sheet offcut. L: 16, W: 16, Th: 1.

GER002 8 1

Dished circular copper alloy disc with central perforation. Distorted washer? D: 12, Th: 2.

GER002 8 1

Irregular offcut of copper alloy sheet. L: 52, W: 22 (max), Th: 2.

GER002 8 1

Elongated, oval rivet plate in copper alloy, with hole at each end and rivet intact in one. Heavily corroded surface. L: 34, W: 13, Th: 1, rivet: L: 10, Th: 3.

GER002 8 1

Irregular offcut of copper alloy sheet. L: 32, W: 24 (max), Th: 2.

GER002 8 1

Irregular fragment of copper alloy sheet? L: 26, W: 3.

GER002 8 1

Copper alloy washer, bent and broken. D: 10, Th: 1.

GER002 8 3

2 fragments of copper alloy. a) circular section rod. L: 15, Th: 4; b) Thin circular rod or pin. L: 16, Th: 2.

ZIN002 slope gen

The following items appear to have been surface finds from somewhere on the south slopes. Lump of copper alloy, possibly part of a handle? L: 21, W: 13, Th: 10.

ZIN002 slope gen

Fragment of folded copper alloy sheet. L: 16, W: 12, Th: 1.

ZIN002 slope gen

Folded over copper alloy strip, with 2 perforated holes. Rivet plate? L: 23, W: 12, Th: 0.5.

ZIN002 slope gen

2 fragments of copper alloy implement. a) tapering rod, hollow at one end. L: 21; b) wedge-shaped fragment. Uncertain function.

ZIN002.11 S (Fig. 8.26. no. 15)

Small cylindrical coil of copper alloy wire – possible spring for brooch plate? L: 5, D: 3.

ZIN002.119 (Fig. 8.26. nos 16–17)

2 fragments of tapering thin copper alloy rods (one circular section, other oblong). Nails or pins? a) L: 19, W: 4, Th: 2; b) 20, Th: 3–4.

ZIN002.125 E [CMD SF 1364] (Fig. 8.26. no. 18)

Fragment of copper alloy rod, broken at one end and tapering to point at other. Nail or pin? L: 29, Th: 3–4.

**Ferrous Objects**

CHA005 S 1

Iron pin, with one sharp and one rounded end and cross section varying from square to round. L: 98, W: 4.

GER001.1 9 (Fig. 8.27. no. 1)

Iron ring. D: 47, Th: 11 (max).

GER001.3 169

Iron nail (?), square section to pointed shaft/ L: 38, W: 20 (max).

GER002 2 11 (Fig. 8.27. no. 2)

Iron ring, circular in section, tapering towards one end. D: c.55, Th: 5.

GER002 2 33 [CMD SF 24]

Iron knife blade, heavily corroded, tapering towards one end. L: 63, W: 22, Th: 6.

GER002 2 55 [CMD SF 35]

Wedge-shaped iron fragment of uncertain purpose, heavily corroded. L: 46, W: 21 (max) Th: 10.

GER002 4 13 [CMD SF 9]

Iron nail with a copper alloy head (and perhaps core?).

L: 30+, W shaft: 5, W head: 9.

GER002 4 26 [CMD SF 38]

Lump of iron, with some copper alloy adhering. L: 29, W: 14, Th: 10.

GER002 4 92 [CMD SF 39]

Heavily corroded iron fragment. L: 50, Th: 8.

GER002 7 78 [CMD SF 25] (Fig. 8.27. no. 3)

2 fragments of iron object, disc shaped head and oblong-section shaft. Twisted and broken apart. Head D: 34, Th: 16, Shaft L: 53, W: 13, Th: 7.

TIN001 A2 8

3 joining iron fragments, forming wedge-shaped strip. L: 32, W: 8, Th: 6.

#### Metal Slag

GER001.3 11; GER001.3 102; GER001.3 152; GER001.3 176; GER001.3 200; GER002 4 116 (Fe slag with charcoal adhering); ZIN001.068 2; ZIN001.71 7 (metal or glass?); ZIN002.129.

## STONE ARTEFACTS FROM SĀNIAT BIN HUWAYDĪ

By C. Tagart and D. Mattingly

The inclusion of small pieces of stone in a number of the burials is significant, especially in the case of pumice, which must have been brought from somewhere outside immediate vicinity of Jarma – though conceivably from a Saharan volcanic area, rather than from near the Mediterranean. Traces of ochre and ‘chalk’ blocks are also suggestive of selection of unusual stones for inclusion.

No detailed records or drawings could be found in the archive relating to the larger saddle querns found by CMD in several of his excavated burials (for example, T15 and T17), though photographs are given in Chapter 5 of the most likely pieces in the Jarma Museum (see Fig. 5.129). Entries in the catalogue have been prepared from these photographs. These large oval saddle querns of late 1<sup>st</sup>-century AD date can be compared with a thicker and narrower lunate variant of the saddle quern recovered in some of Ayoub's excavated tombs of 2<sup>nd</sup>-century date (Fig. 5.21). Again, rough catalogue entries have been prepared from the photographs.

### Catalogue

GER011.T1 13 Pumice stone (Fig. 8.28)

Small fragment, worn smooth.

GER011.T9 J Pumice stone (Fig. 8.28)

Small fragment, smooth.

GER011.T52 G Pumice stone (Fig. 8.28)

Small fragment, worn smooth

GER011.T15 Q ‘Chalk’ lump/rubber (Fig. 8.28)

Broken into three pieces, worn on 2 surfaces.

GER011.T17 BJ ‘Chalk’ lump/rubber (Fig. 8.28)

Broken into two pieces, worn on 1 surface at least.

GER011.T42 G ‘Chalk’ lump/rubber (Fig. 8.28)

Broken into three pieces, worn smooth on underside.

GER011.T52 P ‘Chalk’ lump/rubber (Fig. 8.28)

Broken into three pieces, but do not fit together.

GER011.T53 J ‘Chalk’ lump/rubber (Fig. 8.28)

Large rubber, broken across one side.

GER011.T53 K Fine grained stone rubber (Fig. 8.28)

Worn on at least 2 surfaces.

GER011.T53 L Stone rubber (Fig. 8.29)

Soft sandstone, worn on tip and underside, traces of red ochre.

GER011.A2.1 A81 Saddle quern

Lunate saddle quern. L: 500, W: 150, Th: 60.

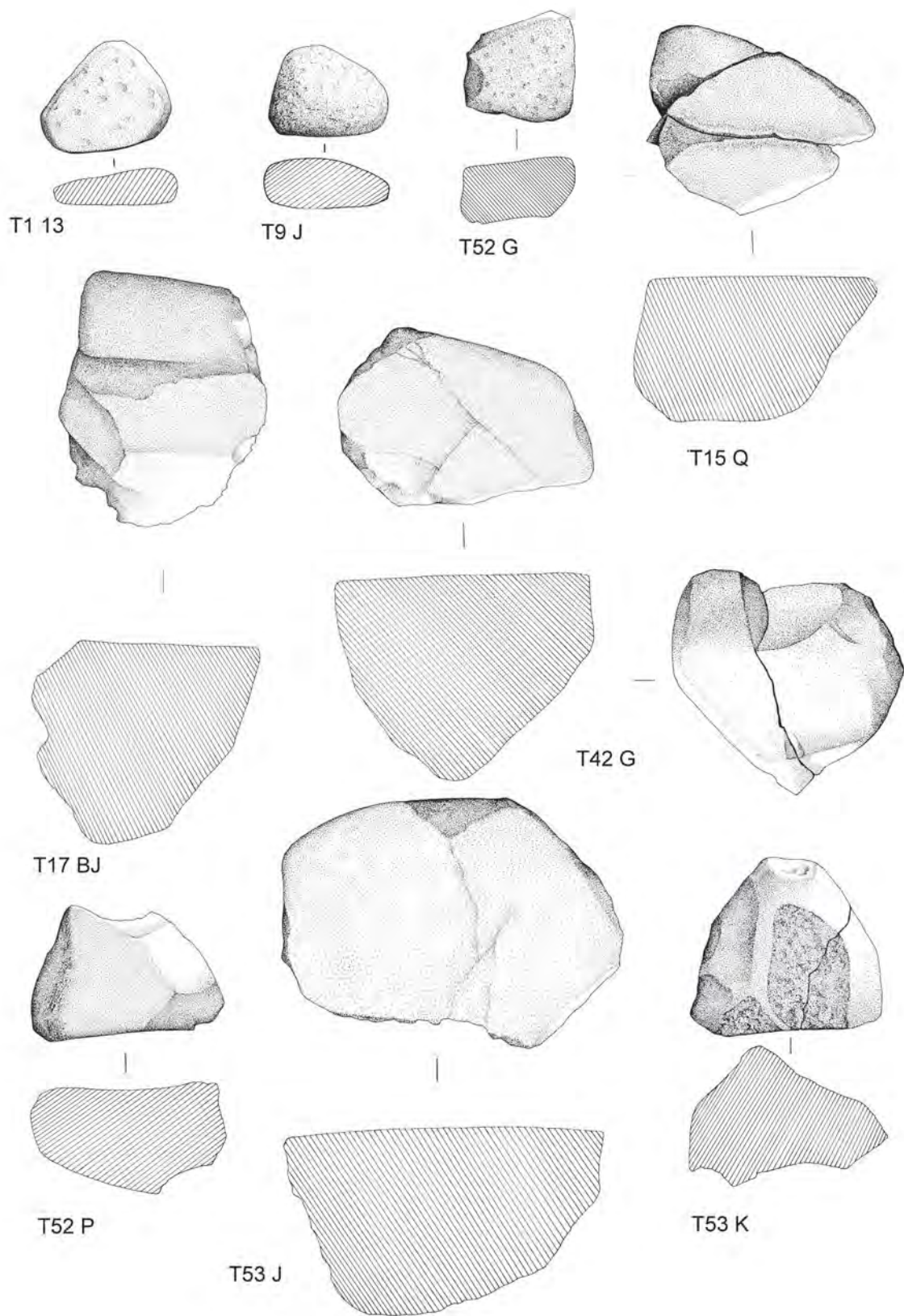


Figure 8.28. Stone rubbers and grinders from Sāniat bin Huwaydī (i). 1:3.

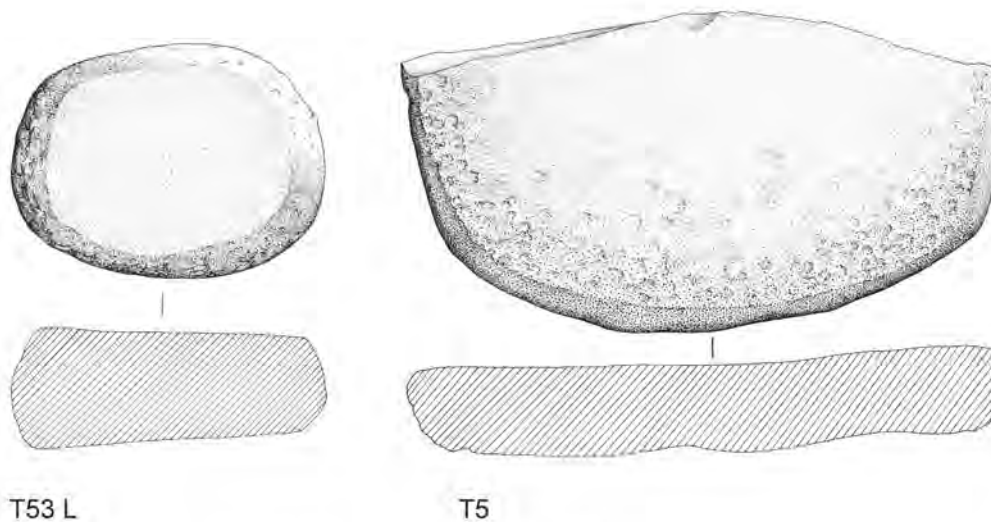


Figure 8.29. Stone rubbers and grinders from Sāniat bin Huwaydī (ii). 1:3.

**GER011.A2.2 A82 Saddle quern**

Lunate saddle quern and rubber. L: 480, W: 150, Th: 60.

**GER011.A2.3 Saddle quern**

Lunate saddle quern. L: 480, W: 160, Th: 20–60.

**GER011.T5 Saddle quern (Fig. 8.29)**

Sandstone, worn on upper surface. L: 80+, W: 160, Th: 24.

**GER011.T15 I Saddle quern**

Oval sandstone/limestone saddle quern, tapering slightly to one end, chipped. L: 450, W: 300, Th: 30.

**GER011.T17 R Saddle quern**

Oval red sandstone, damaged, saddle quern, tapering slightly to one end. L: 460, W: 280, Th: 35.

**GER011.T42 F Saddle quern**

Sharly tapered oval saddle quern, in vesicular basalt. L: 550, W: 300, Th: 30.

**GER011.T53 I Saddle quern**

Oval sandstone/limestone saddle quern, tapering slightly to one end, chipped. L: 550, W: 310, Th: 25.

## STONE ARTEFACTS AND UNUSUAL STONE OCCURRENCES FROM OTHER SITES

By C Tagart, D. Mattingly and B. Hoffmann

A number of saddle querns and rubbers and pounders/grinders were described and illustrated by CMD from Zinkekrā (Daniels 1968a) and are illustrated in Chapter 1 (see Figs 1.12–1.13, 1.24, 1.40–1.42, 1.49–1.53, 1.59, 1.68 above). In addition, there were quite a number of quern stone fragments and pounders found at Sāniat Jibrīl, and many of these were drawn at the time, though no detailed records about them survive in the archive (a selection are illustrated above in Chapter 3, Fig. 3.88). For a general summary of the types of stone artefacts encountered, see the report by Holly Parton in *AF 2* (Mattingly 2007, 493–99). A more detailed study of the material from Old Jarma will appear in *AF 4*. Of particular interest is the fact that rotary quern technology was evidently introduced into the region by the 2<sup>nd</sup> century AD (see Fig. 3.86 for some of the querns from GER002 and Fig. 3.87 for a drawn example of the typical Garamantian rotary quern).

## Catalogue

### Miscellaneous Stone Artefacts

CLF008 53 1 Worked stone

Dark brown-grey sandstone shaped implement, with squarish end and broken off neck. Unknown function. Dims: 20 x 17 x 18.

**GER001 C Stone weight?**

Longitudinally pierced stone block with flat bottom. Possibly too small to have been a loomweight. L: 45, W: 42.

**GER001 C Stone bowl, fragment**

Part of the raised foot and floor of a worked stone bowl or basin. Only small fragment. Dull whitish, creamy stone.

**Mica Fragments**

CHA005 (B.9) 1 fragment of mica. Dims: 11 x 14.

GER001.003 (169) 3 small fragments of mica. i) Dims: 11 x 26; ii) Dims: 31 x 7; iii) Dims: 9 x 23.

GER002 (**grab**) Four large fragments of mica. 2 with flecks of mortar or natron adhering. i) Dims: 63 x 62; ii) Dims: 25 x 32; iii) Dims: 64 x 60; iv) Dims: 45 x 48.

## MISCELLANEOUS MATERIALS FROM SĀNIAT BIN HUWAYDĪ

By C. Tagart

**Catalogue****GER011.T13 3 Leather**

Crumbly leather fragments.

**GER011.T17 A Silver threads**

No further information recorded.

**GER011.T18 2 Decorated gourd (Fig. 8.30)**

Fragment of gourd with incised (pyro-engraved?) geometric design of diagonal lines and cross hatching. L: 25, W: 8.5, Th: 2.

**GER011.T17 BK Amphora bung (Fig. 8.30)**

Ceramic disc coated with thick lime plaster layer.

**GER011.T17 BI Amphora bung (Fig. 8.30)**

Thick lime plaster bung.

**GER011.T17 BL Plaster (decorative) (Fig. 8.30)**

Thin piece of plaster with decoration in sand relief. Possibly sheered-off top surface of a plaster bung for an amphora?

## ITEMS IN MISCELLANEOUS MATERIALS FROM CMD EXCAVATIONS

By C. Tagart and D. Mattingly

**Catalogue****Ivory or Bone****GER002 surface Ivory plaque? (Fig. 8.30)**

Small bone or ivory plaque broken into three strips. There is a shallow circle recessed in the centre of the plaque, with an incompleated cone-shaped perforation at its centre. Purpose unknown, but presumably this broke in manufacture. L 32, W: 32, Th: 4.

**GER002 4 5 Ivory handle (Fig. 8.30)**

Part of an ivory or bone handle, with a square section, tapering to a point at one end, broken at other. A long section of the shaft is decorated with incised spiralling grooves, between two rings left in relief. L: 45, W: 7 x 5.

**Wooden Items****ZIN002.013 39 (W) Wooden toggle**

Small wooden 'toggle', long cylinder worked with sharp implement to leave end rings standing proud. L: 16, D: 6.

**ZIN001.071 2 Wooden handle**

Lathe-turned handle, carved to form segmented sections along length. There is a pierced hole in one end by which it might be joined to another component. L: 43, D: 8.

**ZIN002.013 Headrests**

See above Chapter 6 (esp. Figs 6.17 and 6.20) for a description of the wooden headrests recorded from this cemetery.

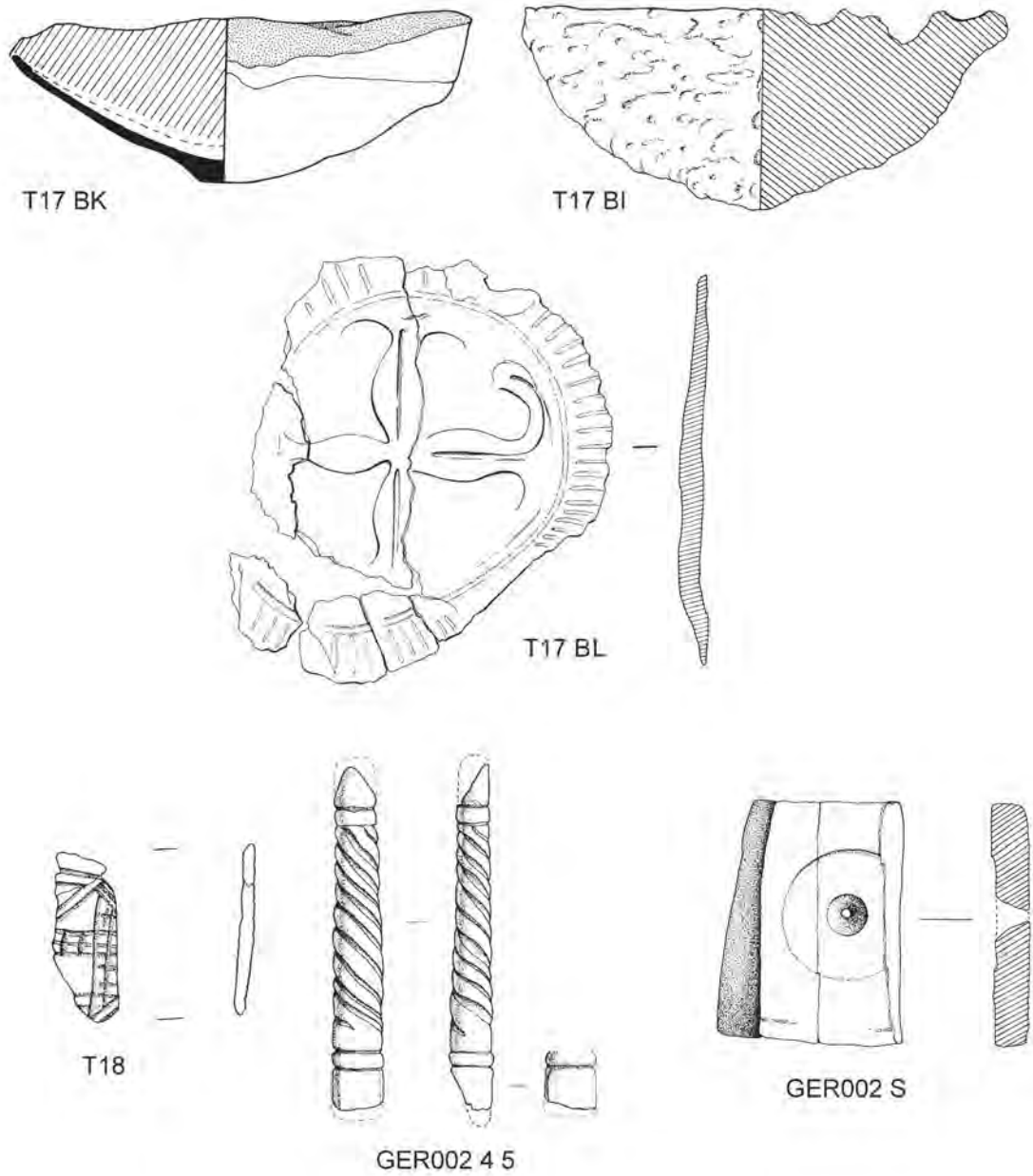


Figure 8.30. Artefacts in miscellaneous materials from Sāniat bin Huwaydī and Sāniat Jibrīl: Tomb 17 BK, Tomb 17 BI, Tomb 17 BC, 1:2. Tomb 18 and GER002 4 5 and GER002 S, 1:1.





Figure 8.31. Textiles from GSC030.T4. 1:1 (FP 2002).

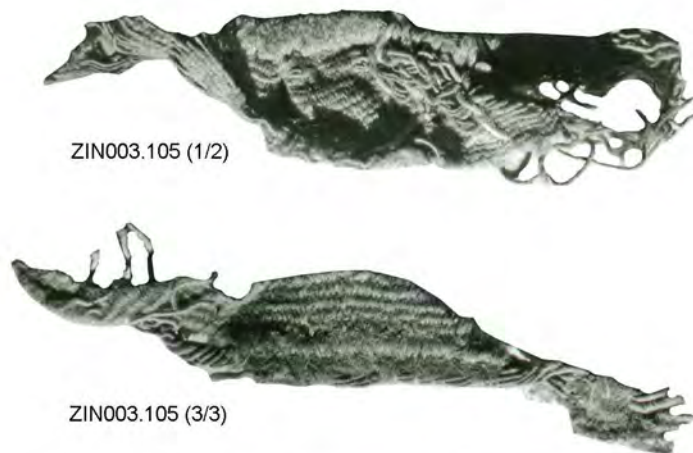


Figure 8.32. Textiles from ZIN003.105: a) Level 1/2; b) Level 3/3. 1:1 (CMD 1967, montage FP).

## TEXTILES FROM ZINKEKRĀ

By J. P. Wild

[Editor's note: Some exceptionally richly coloured woven textiles were discovered by the Italian excavators of the Royal Cemetery (GSC030, see Fig. 6.23d). Two fragments of textile recovered from GSC030.T4 by Ayoub are on display in Jarma Museum and are illustrated here for completeness (Fig. 8.31). The finely woven woolen fragments from GSC030.T4 were not studied by J.P. Wild, but evidently contained a dyed red strip along one edge. The following note found in the CMD archive concerns two small scraps from the Zinkekrā excavations, but it is important for the technological observations about the possibility of a sophisticated local weaving tradition.]

### The Zinkekrā Textile Fragments

Two fragments of textile were retrieved from one of the large rectangular mudbrick buildings (ZIN003.105) on the south side of the Zinkekrā hill. The building has commonly been assumed to be Roman, though a radiocarbon date from the west end of this building appears to indicate earlier occupation (2490±70 BP = 795–410 calibrated).

### Catalogue

#### Fragment 1. ZIN003.105 (1/2)

A heavily worn fragment of moderately fine plain-weave with one surviving selvedge and traces of mending. Undyed (Fig. 8.32, upper).

System (1) warp, pairs *c.* 10 pairs per cm, singles *c.* 12 per cm, strong Z-spun, length 8 cm.

System (2) weft, singles, *c.* 40 per cm, very weak Z(?) -spun, length 3 cm.

Next to the selvedge (see below) come 8 pairs of warp-threads, but the main body of the cloth appears to be in plain weave over single warp threads. There is an isolated warp-pair in the main cloth, which may be accidental, but the pairs adjacent to the selvedge are presumably deliberate.

The *selvedge* (6 cm long) is plain woven over two groups of warp-threads, the outer consisting of 14 threads, the inner of at least 11, and perhaps as many as 14, threads. The groups are not plied. Although the selvedge is plain woven, some weft-threads (but not all) appear to have made an additional journey round the warp-groups of the selvedge (see Fig. 8.33, no. 1). Unfortunately, the wear on the selvedge makes it impossible to be precise about the detail. The technique

was designed to reinforce the edge and may have caused the regular puckering, which is visible along the edge of the cloth.

The *stitching* on the cloth was almost certainly a repair rather than embroidery (Fig. 8.33, no. 2). The yarn is a weak Z-spun, thicker than the yarns in the web and lighter in colour. The sewing was carefully done to hold together the bare warp of a small patch (*c.* 2 cm<sup>2</sup>) against the selvedge where the weft had been stripped off. It anchors the thick selvedge to the main cloth in at least three places. The technique is interlocked running stitch. The *fibre* is wool.

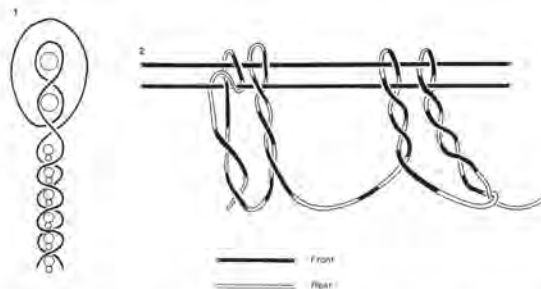


Figure 8.33. ZIN003.105, textile weaving and stitching details.

#### Fragment 2. ZIN003.105 (3/3)

A small strip of worn plain-weave textile with one selvedge surviving and one cut (?) edge. Undyed (Fig. 8.32, lower).

System (1) warp, singles, 7 per cm, strong Z-spun, length 9 cm.

System (2) weft, singles, *c.* 30–35 per cm, very weak Z(?) -spun, length 1.5 cm.

Both yarns are similar to those of the previous fragment, but noticeably coarser.

The *selvedge* is plain woven round two groups of warp threads, both consisting of 7 threads, S-plied together. It is heavily abraded, but at one point the weft appears to make an additional journey round both warp-groups as in the previous fragment. The *fibre* is wool.

### Discussion

A number of features about the textiles described above require comment: the Z-spin of the yarns, the selvedges, the warp-pairs in the web of fragment 1. None of these is remarkable in itself, and it must be emphasised that it is the archaeological context and dating of this material that gives it its importance.

In the lands bordering the East Mediterranean yarns were regularly spun to the left (S-spun) in the period before the Arab conquest (Wild 1970,

44–45). The only exceptions to this rule appear to be cotton fabrics, which often contain Z-spun yarns and certain specially fine purple-dyed wool yarns. The Arabs seem to have preferred to spin to the right (Z), but even after the Arab conquest, S-spun linen was common in Egypt.

Since the fragments from Zinkekrā are pre-Roman or Early Roman in date (as the evidence suggests), it is interesting to find that the Garamantes had an independent spinning tradition. The Z-spin, so popular in the 10<sup>th</sup>-century AD textiles from Ghirza (Wild 1984, 302–03), is thus as likely to spring from native Libyan tradition as to represent an imported Arab technique.

The reinforced selvages over two warp-threads have no exact parallel to my knowledge. Some weft-threads make additional journeys round the warp-groups – a feature again paralleled in the material from Ghirza (Wild 1984, 291–94, textiles nos 4 and 33). Is it coincidental that the warp-groups contain 7 and 14 threads – the magic number. Some Roman linens from Palestine have a wrapped plain-weave selvedge over 3 warp-cords, but the wrapping thread is distinct from the weft and often coloured (Yadin 1963, 200, with further literature).

The paired warp in the web of Fragment 1 (acting as an extra strengthening to the edge of the cloth) is unusual but requires no special comment.

If the fragments from Zinkekrā had no context, I should have no hesitation in regarding them as the product of the same textile milieu as the 10<sup>th</sup>-century AD textiles from Ghirza. But if their greater antiquity is assured, then they are evidence of a firmly rooted local textile tradition. [This conclusion is now reinforced by discoveries of further textile fragments by the Desert Migrations Project, Mattingly *et al.* 2007; 2008].

### Fibres

Two examples of preserved cordage were recorded by C. Tagart.

#### CLF010 5 Twisted fibre

Fibre or animal hair (most likely wool), S-spun and S-twisted as double strand. Two main thicknesses noted: 1 and 2 mm.

#### ZIN001-003 grab (1971)

Piece of string, possibly flax, 6 strands divided into pairs, each pair twisted together anticlockwise, then 3 pairs twisted together clockwise to form cord. L: 42, Th: 2.

## POTTERY WITH IMPRESSED MATTING DECORATION

By J. P. Wild

A number of pottery sherds with decoration in the form of impressed matting was examined. It is likely that this style of pottery decoration dates predominantly, but not exclusively, to the latter centuries BC.

### Impression on Body Sherd of Jar: GSC006

A clearly defined impression of a coarse fabric in plain-weave covers the whole outer surface of the body of the sherd, ending on a line at the base of the neck. The impression was made by a single application of a single piece of fairly stiff fabric, traces of which are also visible on the edge of the everted rim.

System (1) warp (invisible), 5 per cm, L: at least 7 cm.

System (2) weft, c.12 per cm.

There is no ascertainable spin in the weft. The fabric is coarse and may be made of a rough plant-fibre, perhaps palm. A mat?

### List of Sites and Contexts with Impressed Matting Sherds

#### Old Jarma

GER001.001 contexts (7, 9, 20), GER001.002, GER001.003 (32, 63, 102, 113, 200, 211), GER001.004 (12, 15, 16, 17, 19, 28, 91, 149, 184, 195, 196, 197, 200, 201).

#### Sāniat Jibrīl

GER002, 1 (1, 7), GER002, 2 (12, 76), GER002, 3 (2, 3), GER002, 4 (1, 2, 4, 5, 11, 48, 55, 63, 65, 74, 101, 108), GER002, 5 (2, 3, 4), GER002, 6 (2, 9, 12, 14, 22, 23, 24, 53, 94), GER002, 7 (2).

#### Waṭwāt and Jarma Escarpment sites

UAT004, 005, 008 (1), 010, 012, 016

GSC003, 004, 005, 006, 008 (2), 012 (9), 030.

#### Zinkekrā sites

ZIN001.039 (7), ZIN001.60 (4), ZIN001.70 (1), ZIN001.83 (9), ZIN002.011 (1, 5, 8, 12, 14, 25, 26), ZIN002.012, ZIN002.013 (34, 39, 40, 56, 100, 104, 105, 106, 107, 108, 109, 111, 113, 114, 115), ZIN002.119, ZIN002.120, ZIN002.280 (7, 8), ZIN002.283, ZIN002.286, ZIN002.295, ZIN003.006 (9), ZIN025 (1), ZIN109 (9, 11).

#### al-Khara'iq and al-Fjayj sites

CHA001

FJJ005 (11), 006 (1, 4, 9).

## 9. PALAEOECONOMIC STUDIES

By M. van der Veen and B. Westley

### INTRODUCTION

This chapter presents two contributions relating to the Garamantian palaeo-economy, with studies on the plant remains from Zinkekrā and a brief report on animal bones recovered from the CMD excavations at Zinkekrā, Old Jarma and Sāniat Jibrīl.

### PLANT REMAINS FROM ZINKEKRĀ – EARLY EVIDENCE FOR OASIS AGRICULTURE

By M. van der Veen

#### Introduction

This section provides a summary of a study originally published in *Libyan Studies* (Van der Veen 1992b) with the addition of two sections (based on Van der Veen 2007). The evidence from Fazzān represents some of the earliest evidence for crop production in North Africa outside the Nile Valley in Egypt, even though the presence of domesticated animals (cattle and sheep/goat) has now been recorded for a series of sites across the Sahara from at least 4000 BC (Barich 1987; Clark 1978; Grant 2006; Muzzolini 1989). Present evidence suggests that during the mid-Holocene wet phase the Sahara was occupied by pastoralists who led a transhumant life with their animals and relied on wild grasses and other wild plants for their plant food intake. Increasing aridity from c.3000 BC onwards led to a movement of people towards more favourable regions, such as the Nile Valley in the east, the Mediterranean coastal plain in the north, the tropical savanna in the south, and into the oases (Mercuri and Garcea 2007; Muzzolini 1989; Wendorf and Schild 1980; Van der Veen 1995; Wasylkova 1992). In these oases crop production must have developed (cf. Mattingly 2003, 342–54).

There is some historical evidence for agriculture in the Sahara in the form of Herodotus's account of the Libyans living in that region. Writing around

450 BC, Herodotus narrates how travelling through the Sahara he found people living in the desert, in isolated settlements clustered around springs, living on the produce of fruit trees (date palms), agriculture (probably cereals), and cattle:

I have now mentioned all the pastoral tribes along the Libyan coast. Up country further to the south lies the region where wild beasts are found, and beyond that there is a great belt of sand ... along this belt, separated from one another by about ten days' journey, are little hills formed of lumps of salt, and from the top of each gushes a spring of cold, sweet water. Men live in the neighbourhood of these springs ... Again at the same distance to the west is a salt-hill and spring, just as before, with date palms of the fruit-bearing kind, as in the other oases; and here live the Garamantes, a very numerous tribe of people, who spread soil over the salt to sow their seed in . . . and it is amongst them that the cattle are found which walk backwards as they graze. (Herodotus, *Histories* 4.183)

Archaeological evidence from the work of CMD and more recently the FP now provides a substantial dossier of information about the Garamantes (Daniels 1968a; 1969a; 1970a; 1970b; 1973a; 1977a; 1989; Mattingly 2003; 2007).

Survey work and excavations at Zinkekrā have identified habitation and burial sites on the slopes and top of this hill. The earlier occupation was concentrated on the top of the spur and on the northern slope; later buildings were recovered on the southern slope (see above Chapter 1). Occupation at Zinkekrā started in the first half of the 1<sup>st</sup> millennium BC (see below) and, though perhaps reduced after the 4<sup>th</sup> century BC, at the time when occupation started at *Garama*, some occupation continued on both the southern and northern slopes into the latter centuries BC at least (Daniels 1968a).

During the excavations it was found that many of the occupation levels in and outside the buildings consisted of organic debris, such as animal dung,

palm wood and leaves, knotted loops of twine, charcoal, ash, burnt date stones, and small amounts of animal bone. The presence of thick layers of dung was, in fact, mentioned frequently in the excavation reports. Small samples of these organic deposits were collected for future study. It proved impossible to have these samples analysed at the time, but renewed interest in the results of the Garamantes project in the light of later work in Tripolitania (the Ghirza and the UNESCO Libyan Valleys Projects; Jones and Barker 1980; Barker and Jones 1984; Barker *et al.* 1996a; Brogan and Smith 1984; Van der Veen 1981; 1984; 1985; Dore and Van der Veen 1986) meant that these samples were 'rediscovered' and offered to the writer. The

results provide important insights into the state of agricultural production in the Sahara during the 1st millennium BC and are now complemented by further studies by the FP (Pelling 2005; 2008).

### Contextual Information

The samples come from three separate areas (Fig. 9.1): first of all from the top of the escarpment (ZIN001). Here a series of huts were sampled. These were built in dry stone walling with additional timber structures. Some of them were quite substantial. They consisted of rooms and yards or pens, and contained several hearths or fireplaces. The interiors were all filled with

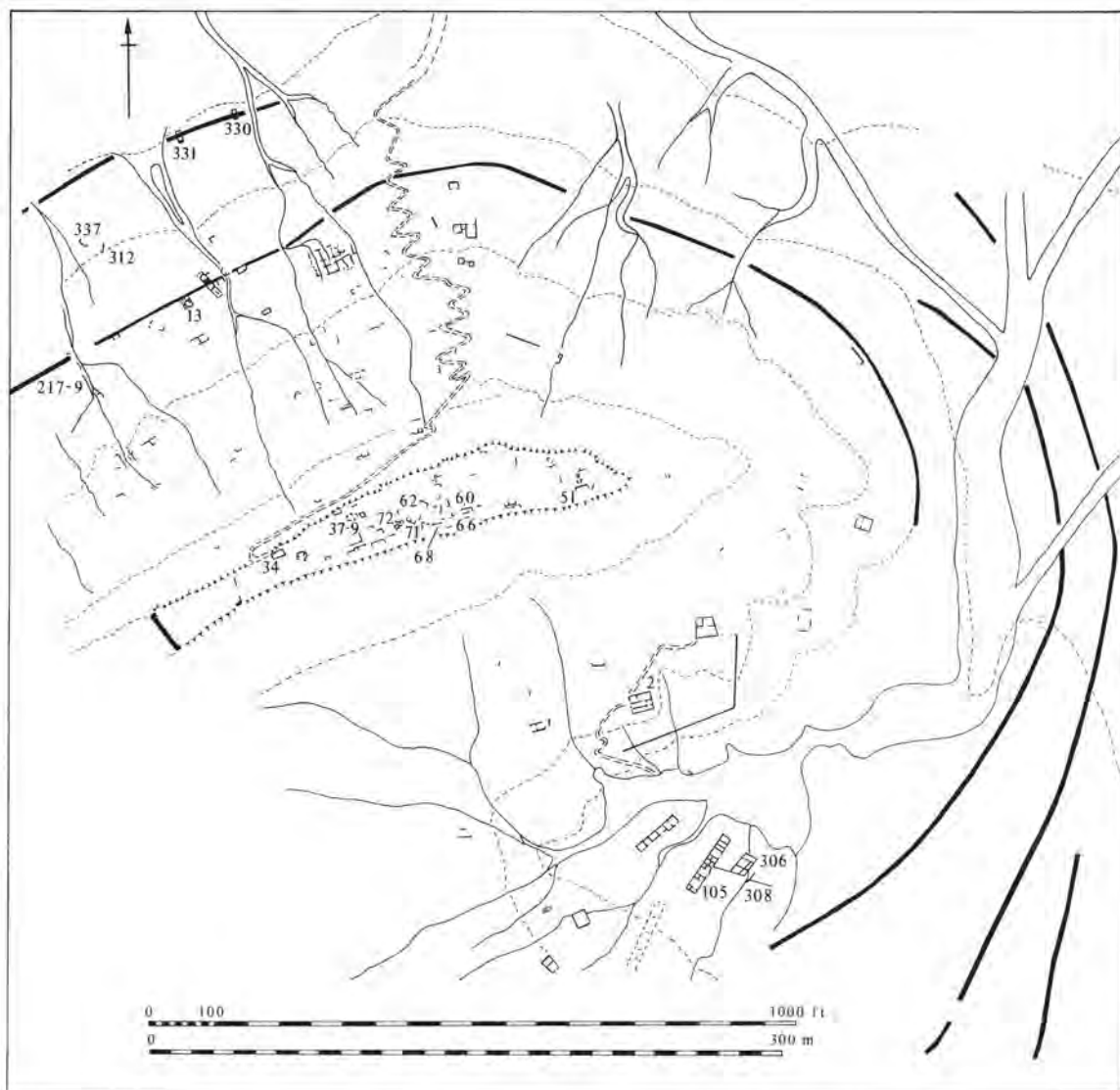


Figure 9.1. Location plan showing sites from which samples obtained.

dung, collapsed roofing material (palm?) and occupation refuse. Building 34 (Daniels 1968a, 162) was a house built from large stone blocks. Only hand-picked material (i.e. date stones) was available from this context. Building 37/39 (Daniels 1968a, 166) was a complex of two or more rooms of which fragments have survived. The interior was filled with a thick layer of occupation debris. Hand-picked date stones were available from hut 37. One sample from the material on the floor of Room 39 has been analysed. Building 51 (Daniels 1968a, 171) was a small structure situated in the south-east corner of the promontory. All the other buildings (60, 62, 66, 68, 71, and 72; Daniels 1968a, 173) may have formed a small village, or complex of huts and shelters, perched on the south side of the promontory top (for the archaeological context, see further Chapter 1 above). A total of 21 samples has been analysed from these contexts.

The second area from which samples have been analysed is the northern slope of the escarpment (ZIN002): here two large trenches were excavated at Site 13 (ZIN002.013) across the north terrace wall, as well as smaller trenches across the north medial mound. At Site 13 (Daniels 1968a, 122) the earliest evidence consisted of pit-hearths scooped into the hillside, surrounded and eventually sealed by a thick layer of dung and debris (Daniels 1968a, 141). Later dry stone wall huts were constructed with their upper parts and roofs probably made of palm fronds. These buildings filled up with thick layers of ash, dung and domestic refuse. Later still a terrace wall was built overlying these buildings. Against this terrace wall layers of dung, ash and hillwash accumulated. A total of 17 samples has been analysed from these contexts.

Site 217/9 (Daniels 1968a, 160) formed another hut complex behind the terrace wall, while Sites 312 and 337 represented circular depressions, possibly hut platforms, in between the terrace wall and the north medial mound. All were associated with the characteristic dung and occupation debris. Sites 330 and 331 represented trenches cut across the north medial mound. The samples originated from occupation layers found underneath the mound. Site 311 was a pit dug into the hillslope, north of the north medial mound. Seven samples in total have been analysed from these contexts.

Thirdly, a few samples have been analysed from the buildings on the southern slope (ZIN003). House 2 was one of those excavated by Caputo (Pace *et al.* 1951, 130–40) and is constructed

in well-cut, dressed stone (Daniels 1968a, 183). The samples came from layers of organic material accumulated against the building. They may represent hillwash. Site 105 (Daniels 1968a, 189) lay further down the slope, near the escarpment foot. It was a rectangular, mudbrick building subdivided into a series of rooms. Sites 306 and 308 (Daniels 1968a, 193) formed an eastern wing to building 105. The samples came from hearths and floor levels associated with these buildings, but may have pre-dated them. Eight samples have been analysed.

The coarse pottery and other objects found at Zinkekrā cannot provide a close dating framework, unless accompanied by imported wares. These do not occur in any quantity until the 1<sup>st</sup> century AD. Consequently, the dating of the settlement relied on a series of radiocarbon dates. Since the publication of the 1992 paper, these have been recalibrated and re-published in *AF 2* and are reprinted above in Chapter 1 (Table 1.5). The results confirm that the occupation at Zinkekrā and its associated botanical assemblage dates to the first half of the 1<sup>st</sup> millennium BC (c.900 – 400 cal BC).

## Botanical Analysis

### Methods

The samples were collected from occupation levels, hearths, and rubbish deposits associated with the buildings. No systematic or other specific sampling strategy was applied, but samples are available from many of the excavated structures. The sample size was usually a ‘small plastic bag’ full of material. The actual sample sizes are given in Table 9.1. In several cases hand-picked material was also present. No form of sieving was applied on site. The material was literally scooped up, bagged, and brought back to England, where it was put into store. When the material was assessed for analysis, it became clear that most of the plant remains in the samples were not charred, as is frequently the case in archaeological deposits, but were preserved in desiccated form, evidence of the extreme aridity of the region. In some samples the material was in fairly good condition, but in many others the plant remains appeared fragile. It was decided not to apply water flotation, a method commonly used to separate charred plant remains from the mineral matter in the samples, as it was feared that contact with water might damage the desiccated remains. The samples were, instead,

Table 9.1. Sample volumes. Pressure of time meant that in some cases only part of a sample was analysed (indicated by symbol \*)

Spur Top ZIN001	Size	Northern Slope ZIN002	Size	Southern Slope ZIN003	Size
60-1	400 ml	217/9	250 ml	105-W	?
60-6	175 ml	311-4	100 ml	105-Y	50 ml
62-3*	1000ml (1/4 sorted)	330	150 ml	105-Z	150 ml
62-8	250 ml	331-2	100 ml	105	handpicked
62-8A	300 ml	312-2	30 ml	306-AA	125 ml
62-9*	400 ml (1/2 sorted)	337-A	350 ml	308-AB	125 ml
62-9A	350 ml	337-hearth	200 ml	2-U	150 ml
66-3	350 ml	13-10	handpicked	2-V	300 ml
68-2	600 ml	13-N	100 ml		
68-9	50 ml	13-12	150 ml		
68-11	150 ml	13-13	150 ml		
34-3+4	handpicked	13-I	200 ml		
37-1+2	handpicked	13-J	250 ml		
39-1	150 ml	13-H	350 ml		
51-1	handpicked	13-K	150 ml		
71-2	200 ml	13-R	250 ml		
71-3	200 ml	13-M	200 ml		
71-4	250 ml	13-L	150 ml		
71-8	50 ml	13-33	50 ml		
72-2*	600 ml (1/2 sorted)	13-39	25 ml		<b>TOTAL</b>
72-5	50 ml	13-O	200 ml		<b>9905 ml sediment sorted</b>
		13-4	handpicked		<b>9966 seeds identified</b>
		13-Q	50 ml		<b>mean density of seeds:</b>
		13-109	25 ml		<b>c. 1000 seeds per 1 litre</b>

dry-sieved through a 0.5 mm mesh sieve to remove fine dust particles, and subsequently, hand-sorted under the microscope using 15x magnification. As no satisfactory separation of the organic and mineral matter had taken place, the sorting of the samples was an extremely time-consuming process, but the importance of extracting all available material intact was felt to justify this.

The seeds and fruits were identified with the help of the writer's reference collection of modern seeds, the plant collections at the Herbarium of the Royal Botanic Gardens, Kew, the *Flora of Libya* (Ali and Jafri 1976) and the *Flora of Iraq* (Townsend and Guest 1966-). Magnifications of up to 50x were used for the

identifications. The results of the analysis, by mode of preservation, are given in Tables 9.2–9.4 for desiccated remains and Tables 9.5–9.6 for carbonized remains. Nomenclature follows the *Flora of Libya*. Approximate English common names are given where possible.

The samples were extremely rich in plant remains: a total of 9,966, mainly desiccated, items has been identified, representing a density of 1 seed per 1 ml of sediment, or c.1000 seeds per litre. The plant remains include cereal grains, cereal chaff, remains of fruits, trees and shrubs, and herbaceous plants. The results have been grouped in these four categories in Tables 9.2–9.6 and their identifications will be discussed below in this order.







Table 9.2. Desiccated seeds and fruits from the spur top sites: ZIN001 (cont.)

CONTEXT:	34	37	39	51	71	71	71	71	72	72	60	60	62	62	62	62	62	62	62	62	66	68	68	68	68
LAYER/SAMPLE:	3+4	1+2	1	1	2	3	4	6	2*	5	1	6	3*	8	8A	9*	9A	3	2	3	2	9	11		
<i>Apium graveolens</i> L. (wild celery), fruits	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Anethum graveolens</i> L. (dill), fruits	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
cf. <i>Foeniculum vulgare</i> Mill. (fennel), fruits	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Heliotropeum</i> cf. <i>europaeum</i> L., nutlets	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asphodelus tenuifolius</i> Cav., seeds	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Phragmites australis</i> (Cav.) Trin. ex Steud., culmnode	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hordeum spontaneum</i> C. Koch, rachis node	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
cf. <i>Hordeum spontaneum</i> C. Koch, caryopses	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Dactyloctenium aegyptium</i> (L.) P. Beauv., seeds	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Phalaris</i> cf. <i>minor</i> Retz., seeds	.	.	1	.	1	2	2	2	1	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.
<i>Panicum turgidum</i> Forsk., upper floret/caryopsis	.	.	3	.	2	4	2	3	3	.	1	.	3	3	4	3	.	.	.	.	.	.	.	.	1
cf. <i>Setaria</i> sp., upper floret	.	.	1	.	2	2	1	.	.	.	.	.	1	2	.	3	2	.	.	.	.	.	.	.	.
Gramineae, tribe Paniceae indet., upper floret	.	.	.	.	1	2	2	1	1	.	1	5	.	5	3	7	.	3	9	.	.	.	.	.	.
Gramineae, tribe Paniceae indet., spikelet	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.	.	.	.	.
<i>Pennisetum divisum</i> (Forsk. ex Gmel.) Henr., bristles	.	.	7	.	1	4	7	1	1	1	.	.	.	3	2	1	.	1	.	.	.	.	.	.	.
<i>Pennisetum</i> sp., caryopsis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Eleocharis</i> cf. <i>caribaea</i> (Rottb.) Blake, achene	.	.	.	.	.	3	1	.	.	.	.	2	.	2	.	1	2	18	2	.	.	.	.	.	.
<i>Cyperus</i> cf. <i>laevigatus</i> L., achene	.	.	8	.	12	42	7	30	2	2	8	1	29	5	10	5	442	9	.	.	.	.	.	.	2
Indeterminate	.	.	3	.	6	8	3	9	1	1	4	1	5	1	7	3	1	8	.	.	.	.	.	.	.
<b>TOTAL</b>	<b>10</b>	<b>10</b>	<b>292</b>	<b>1428</b>	<b>232</b>	<b>333</b>	<b>289</b>	<b>128</b>	<b>484</b>	<b>28</b>	<b>72</b>	<b>196</b>	<b>63</b>	<b>412</b>	<b>125</b>	<b>696</b>	<b>293</b>	<b>558</b>	<b>269</b>	<b>11</b>	<b>50</b>	<b>11</b>	<b>50</b>	<b>11</b>	<b>50</b>







Table 9.4. Desiccated seeds and fruits from the southern slope sites: ZIN003, plus the overall site total of desiccated remains.

	SITE: 105	105	105	306	308	2	2	Total
LAYER/SAMPLE:	Y	Z		AA	AB	U	V	DES
<b>CEREAL GRAIN</b>								
Triticum dicoccum Schübl. (emmer wheat)	.	.	.	.	.	.	.	563
Triticum sp. (wheat)	..	..	..	.	.	.	..	4
Hordeum vulgare L. emend. (six-row, hulled barley)	..	..	..	1	.	1	..	61
<b>CEREAL CHAFF</b>								
Triticum dicoccum, glume bases	..	.	.	10	.	2	2	2080
Triticum dicoccum, rachis internodes	.	.	.	.	.	.	..	618
Triticum dicoccum, basal nodes	.	.	.	.	.	.	.	9
Triticum dicoccum, lemma/palea	.	.	.	.	.	.	.	50
Triticum dicoccum, awn fragments	..	..	..	.	.	.	..	12
Triticum aestivum L. (bread wheat), rachis nodes	..	..	..	.	.	.	..	9
Hordeum vulgare, rachis nodes	..	..	..	5	..	3	2	512
Hordeum vulgare, basal nodes	..	..	..	.	.	.	..	3
Hordeum vulgare, lemma bases	.	.	.	.	.	.	..	6
Hordeum vulgare, hulls (lemma/palea)	.	.	.	.	.	1	..	16
Hordeum vulgare, awn fragments	1	.	.	.	.	.	..	1
Cerealia, rachis internodes	..	..	..	.	.	.	1	67
Cerealia, culm nodes	..	..	..	.	.	.	..	100
Cerealia, culm bases	..	..	..	.	.	.	..	12
<b>FRUITS, TREES, AND SHRUBS</b>								
Phoenix dactylifera L. (date palm), fruits/stones	2	.	11	7	.	14	14	690
Phoenix dactylifera, perianths of fruits	1	.	..	6	.	8	4	502
Phoenix dactylifera, rachillae/strands	.	.	.	.	.	1	..	29
Phoenix dactylifera, female flowers	.	.	.	.	.	1	4	13
Phoenix dactylifera, male flowers	..	..	..	.	.	4	5	86
Phoenix dactylifera, detached anthers	.	.	.	.	.	2	2	38
Phoenix dactylifera, detached embryos	.	.	.	.	.	.	..	12
Ficus carica L. (fig), seeds	.	.	7	13	1	8	8	374
Vitis vinifera L. (grape), pips	1	..	62	4	1	1	4	224
Vitis vinifera L. (grape), stalk	.	..	..	4	.	.	1	11
Rhus tripartita (Ucra) Grande (sumach), fruits	..	..	..	1	..	1	..	23
Citrullus colocynthis (L.) Schrad.(bitter apple), seeds	..	..	..	.	.	.	..	28
Tamarix sp. (tamarisk), leaf shoots	.	.	.	.	.	1	..	91
<b>HERBACEOUS PLANTS</b>								
Polygonaceae indet., seeds	.	.	.	.	.	.	.	1
Aizoon hispanicum L., seeds	.	.	.	.	.	2	1	198
Portulaca oleracea L. (purslane), seeds	.	.	.	1	.	.	..	5

Table 9.4. Desiccated seeds and fruits from the southern slope sites: ZIN003, plus the overall site total of desiccated remains. (cont.)

SITE:	105	105	105	306	308	2	2	Total
LAYER/SAMPLE:	Y	Z		AA	AB	U	V	DES
Caryophyllaceae indet., seeds	.	.	.	.	.	.	.	4
Chenopodium murale L., seeds	.	.	.	4	.	.	.	29
Chenopodium sp., seeds	.	.	.	.	.	.	.	1
Chenopodiaceae, leaf tip	.	.	.	.	.	.	1	4
Cornulaca monacantha Del., utricles	.	.	.	.	.	1	1	42
Reseda lutea L., seeds	.	.	.	.	.	.	1	90
Reseda alba/villosa, seeds	.	.	.	.	.	.	1	10
Medicago cf. laciniata Mill., pod fragment	.	.	.	.	.	.	.	1
Euphorbia granulata Forsk., seeds	.	.	.	.	.	.	.	6
Euphorbia granulata Forsk., capsule fragments	.	.	.	.	.	.	.	12
Apium graveolens L. (wild celery), fruits	.	.	.	.	.	1	4	7
Anethum graveolens L. (dill), fruits	.	.	.	1	.	.	.	1
cf. Foeniculum vulgare Mill. (fennel), fruits	.	.	.	.	1	.	.	1
Heliotropeum cf. europaeum L., nutlets	.	.	.	.	.	.	.	2
Asphodelus tenuifolius Cav., seeds	.	.	.	.	.	.	.	1
Phragmites australis (Cav.) Trin. ex Steud., culmnode	.	.	.	.	.	.	.	1
Hordeum spontaneum C. Koch, rachis node	.	.	.	.	.	.	.	1
cf. Hordeum spontaneum C. Koch, caryopses	.	1	.	.	.	.	.	2
Dactyloctenium aegyptium (L.) P. Beauv., seeds	.	.	.	.	.	.	.	1
Phalaris cf. minor Retz., seeds	.	.	.	.	.	.	.	10
Panicum turgidum Forsk., upper floret/caryopsis	.	.	.	.	.	.	.	33
cf. Setaria sp., upper floret	.	.	.	.	.	.	.	14
Gramineae, tribe Paniceae indet., upper floret	.	.	.	2	.	2	3	53
Gramineae, tribe Paniceae indet., spikelet	.	.	.	.	.	.	.	2
Pennisetum divisum (Forsk. ex Gmel.) Henr., bristles	.	.	.	.	.	1	3	32
Pennisetum sp., caryopsis	.	.	.	.	.	.	.	2
Eleocharis cf. caribaea (Rottb.) Blake, achene	.	.	.	.	.	1	.	33
Cyperus cf. laevigatus L., achene	.	.	.	1	.	1	2	682
indeterminate	1	1	.	7	7	7	10	301
<b>TOTAL</b>	<b>6</b>	<b>2</b>	<b>80</b>	<b>67</b>	<b>10</b>	<b>64</b>	<b>74</b>	<b>7826</b>











*Cereal Grain*

With the exception of samples 51/1, 337/hearth and 105/W most of the samples contained only very small numbers of cereal grains. Most of the desiccated grains were in a poor state of preservation, being very shrivelled, fragmented, or both. A few of the wheat grains showed the

clear dorsal ridge and pointed ends characteristic of emmer wheat, *Triticum dicoccum* (Fig. 9.2, nos 1–2), but the others could only be identified as wheat grains, *Triticum* sp. Sample 51/1 consisted of a large number of complete emmer spikelets, with the grain still enclosed by the glumes and the rachis internodes still attached to the base of the spikelet (Fig. 9.2, nos 3–4). The barley grains in

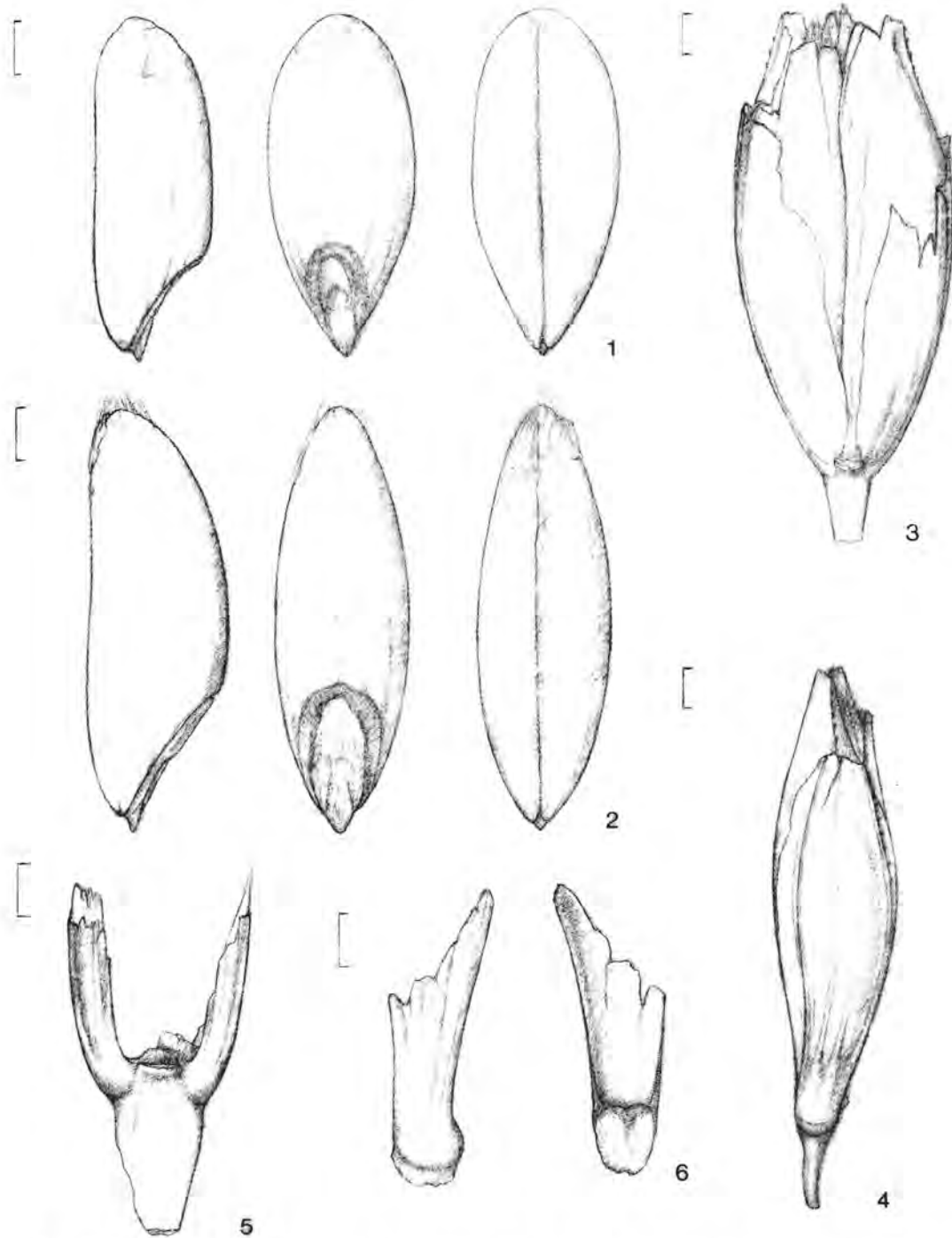


Figure 9.2. *Triticum dicoccum* (emmer wheat): 1. grain (carb. 71–4); 2. grain (des. 51–1); 3 and 4. complete spikelet (des. 51–1); 5. spikelet fork (des. 62–9); 6. glume base (des. 72–2). (des. = desiccated; carb. = carbonised). Scale is 1mm.

samples 337/hearth and 105/W were all charred. In many cases the hulls (lemma and palea) were still attached to the grain, some showing spicules (teeth) on the inner lateral nerves (Fig. 9.3, no. 2). Most of the grains also showed parallel ridges on the dorsal surface and possessed an angular

cross-section, all characteristics of hulled barley. The ratio of central to lateral grains was 1:1.6, which indicates that we are dealing with six-row barley, *Hordeum vulgare* (the ratio of central to lateral grains is 1:0 in two-row barley and 1:2 in six-row barley).

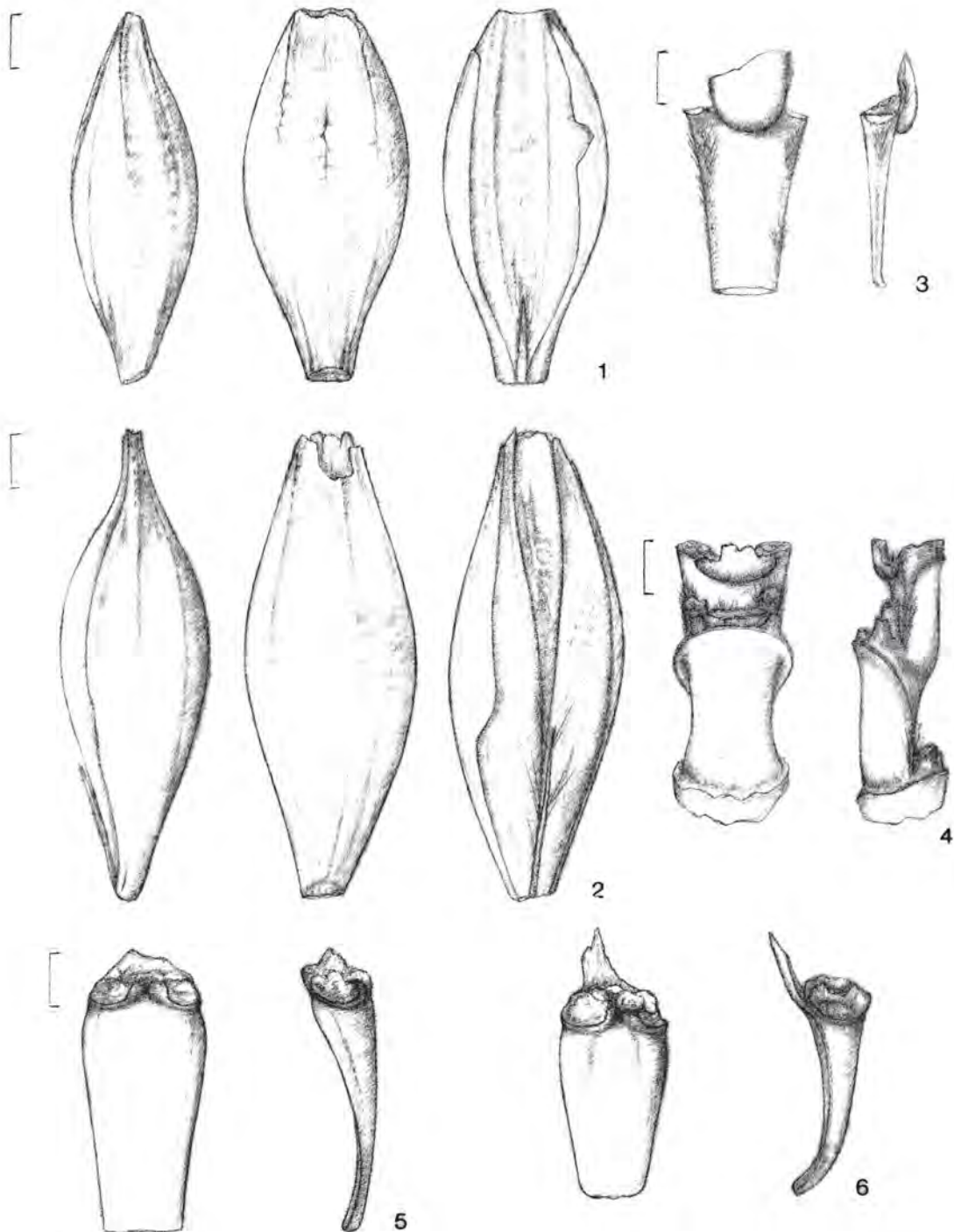


Figure 9.3. *Hordeum vulgare* (barley): 1. grain (carb. 105-W); 2. grain (des. 51-1); 3 and 4. rachis internodes (des. 62-9); *Triticum aestivum* (bread wheat): 5 and 6. rachis internodes (des. 72-2). (des. = desiccated; carb. = carbonised). Scale is 1mm.

### Cereal Chaff

Fragments of cereal chaff were the most common category of plant remains found, making up 40 percent of the total. More than half of them were glume bases of *Triticum dicoccum* (emmer). The venation pattern on the glume bases showed a strongly developed primary keel, a fairly prominent secondary 'keel', and poorly developed tertiary veins (Fig. 9.2). The angle between the glume faces on either side of the primary keel was equal or less than 90 degrees, and distinct, but obtuse, at the secondary 'keel'. In several cases the rachis internode was still attached to the spikelet base, forming the characteristic spikelet fork. In sample 62/9 the light chaff fragments of emmer (lemma/palea and awn fragments) were found associated with the heavier chaff fragments like glume bases and rachis internodes. A large number of rachis internodes of barley was found (Fig. 9.3), as well as some of the barley hulls (lemma/palea, and lemma bases). The fact that some basal nodes of both wheat and barley were present indicates that the cereal ears were harvested by cutting below the ear, rather than by 'plucking' the ears (Hillman 1981). A small number of rachis internodes of a free-threshing wheat were found. They were shield-shaped and some showed very faint longitudinal lines near the outer edge of the convex face of the internode. At the top, immediately below the point of glume insertion, they had no lumps, but merely a thin inconspicuous ridge (Fig. 9.3, nos 5–6). These features are characteristic of bread wheat, *Triticum aestivum* (Hillman, pers. comm.). Some cereal straw fragments were also present: culm nodes and culm bases, although the latter could also belong to a large grass.

### Fruits and Trees

This category is dominated by the remains of the date palm, *Phoenix dactylifera*. A total of 1,109 date stones was found. In some cases, in fact, the entire fruit, very dried and shrivelled, was still present (Fig. 9.4). In addition to the fruits and stones a very large number (547) of the perianths of the fruits were found (showing two whorles of three perianth segments, imbricate), as well as fragments of the strands (rhachillae) which bear the flowers and later the fruit. Some of the rhachillae fragments were still attached to the perianths (Fig. 9.4, no. 5). It would appear that, in addition to the rhachillae of female inflorescences,

also fragments of male inflorescences are present, as some fragments are rather thin, more zig-zag in shape, and with rather short distances between the flowers. The most surprising find was the presence of the flowers of the date palm. Both female and male flowers were found, in addition to some loose anthers (Fig. 9.4, nos 7–9). The interpretation of their presence will be discussed below. In some samples the detached embryos of the date stones were found (Fig. 9.4, no. 4).

The remains of two other fruits were found: seeds of figs, *Ficus carica*, and pips of grapes, *Vitis vinifera* (Fig. 9.5, nos 1 and 9). The number of fig seeds (436) is rather low considering that one fig can contain up to 2,000 seeds. The fruits of two wild plants have been grouped in this category: the fruits of sumach, *Rhus tripartitus*, a spiny shrub with twisted branches and edible green or red fruits the size of a pea, and the seeds of bitter apple, *Citrullus colocynthis*, a prostrate creeper with round yellow fruits the size of small apples (Fig. 9.5, no 2). The seeds are similar to those of watermelon, but they have a smoother surface, are much smaller (c.7 mm long, 5 mm wide, and 1.5 mm thick), and the grooves do not reach the base of the seeds. They are brown or pale buff in colour. The last species in this category is the tamarisk tree, *Tamarix* sp. The small, alternate, scale-like leaves with the characteristic pitted surface (Fig. 9.5, no. 10) were found mainly in context 62/9. The different species of this genus are very difficult to identify and the presence of leaves alone is insufficient for an identification to species level.

### Herbaceous Plants

A total of 24 species of herbaceous plants was identified. The commonest seeds were those of a sedge. The achenes were flat on one side, rounded on the other, obovate, apiculate, and minutely papillose. They were most similar to *Cyperus laevigatus* (sedge). Two other species of the family of Cyperaceae were present. The achenes of one of them were biconvex and obovate, with a small disk which would have supported a style base. They were reddish brown in colour. They looked most similar to *Eleocharis caribaea* (spike-rush), although the modern achenes of this species are black. The third species in this family was *Cladium mariscus* (great fen sedge). Also very common were the seeds of *Aizoon hispanicum*, *Reseda lutea* (mignonette), *Reseda alba/villosa* (mignonette), and *Chenopodium murale*

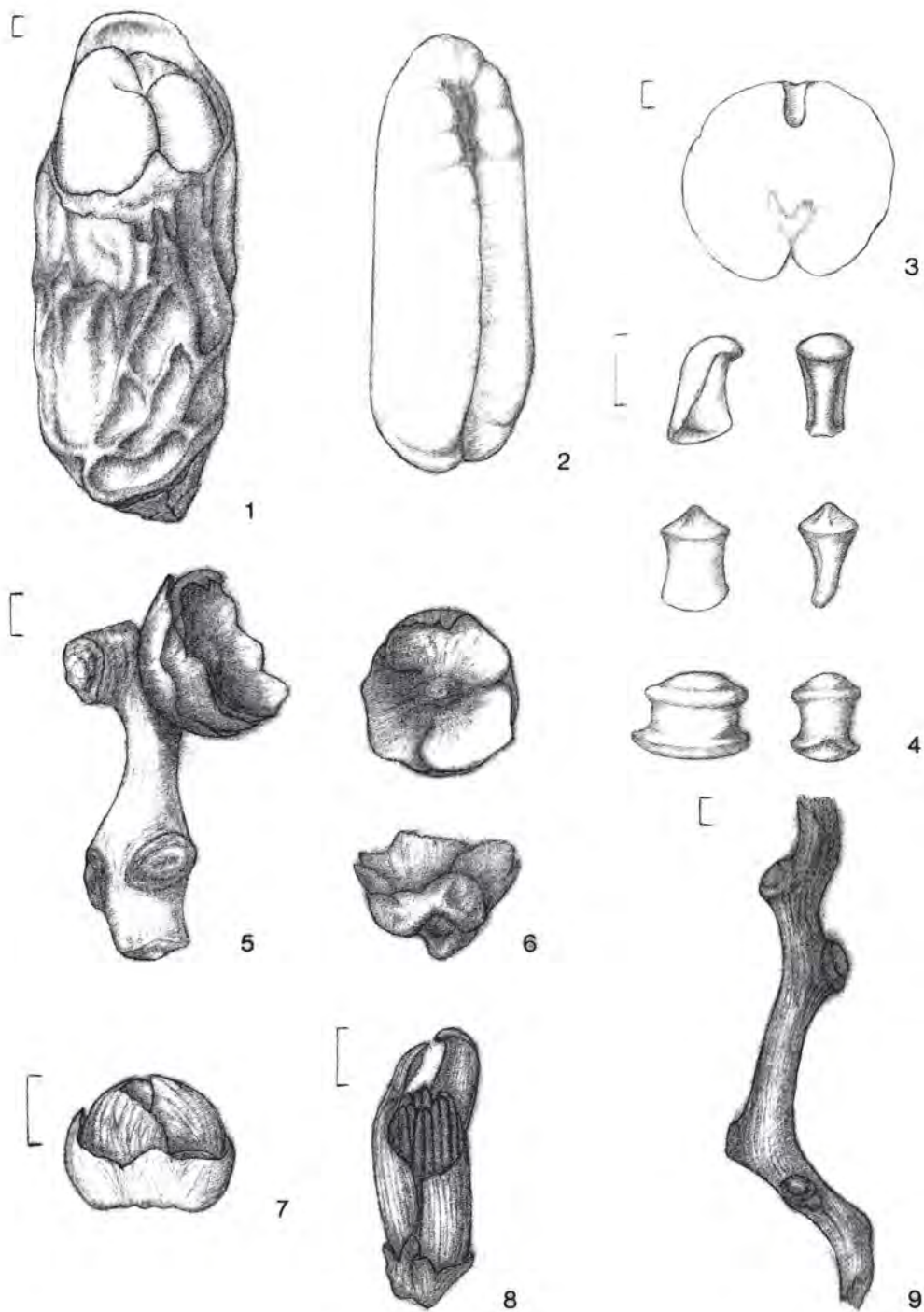


Figure 9.4. *Phoenix dactylifera* (date): 1. whole fruit showing stone (des. 71-6); 2. stone (des. 71-6); 3. cross-section showing position of embryo (des. 105-3/3); 4. embryos, top row (des. 105-3/3), bottom two rows (carb. 62-8); 5. rhachilla with perianth of fruit attached (des. 337-hearth); 6. perianth of fruit (des. 337-hearth); 7. female flower (carb. 337-hearth); 8. male flower showing anthers (carb. 337-hearth); 9. rhachilla (possibly of male inflorescence) (des. 62-8). (des. = desiccated; carb. = carbonised). Scale is 1 mm.

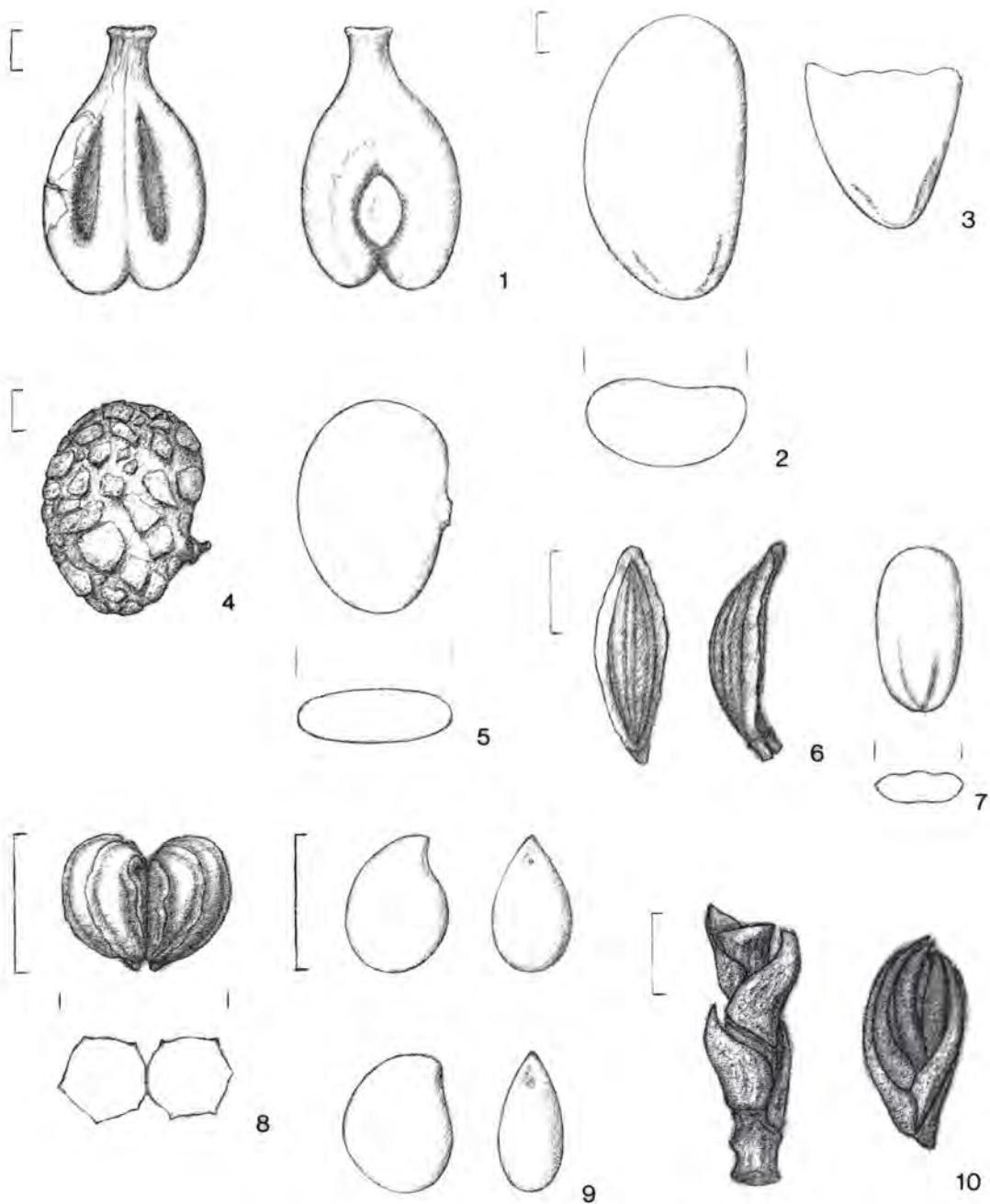


Figure 9.5. *Vitis vinifera* (grape): 1. pip (carb. 337-hearth); *Citrullus colocynthis* (bitter apple): 2. seed (des. 72-2); 3. seed (des. 13-K); *Rhus tripartita*: 4. seed with testa (des. 62-9A); 5. seed without testa (des. 62-3); *Anethum graveolens* (dill): 6. seed (carb. 309-AB); cf. *Foeniculum vulgare* (fennel): 7. seed (carb. 308-AB); *Apium graveolens* (celery): 8. seeds (carb. 66-3); *Ficus carica* (fig): 9. seeds, top row (carb. 337-hearth), bottom row (des. 337-hearth); *Tamarix* sp. (tamarisk): 10. leaf shoots (des. 62-9). (des. = desiccated; carb. = carbonised). Scale is 1 mm.



(nettle-leaved goosefoot), all common weeds in desert regions. A number of different grasses was identified: *Phalaris minor* (lesser canary grass), a tall annual grass and weed of cultivation; *Phragmites australis* (common reed), a perennial reed-like grass of water edges and marshland; *Hordeum spontaneum* (wild barley), the ancestor of the cultivated barleys; *Dactyloctenium aegyptium* (Egyptian finger-grass), an annual grass of the tropics and subtropics; *Panicum turgidum* (millet), a perennial desert grass forming low, dense bushes; and *Pennisetum divisum* (millet), a desert grass of similar habit and habitat to the previous species. The bristles of the spikelets of this species can be distinguished from those of *Cenchrus ciliaris* by the degree of fusion at the base. In *Cenchrus* the inner bristles are flattened and ciliate in the lower half; in *Pennisetum divisum* the bristles are all slender and scabrid. In the samples only those of *Pennisetum* were found. Many of the upper florets of the Paniceae tribe could not be identified to genus level, but those with a rugose upper lemma were classified as cf. *Setaria* sp. (millet).

Fairly common were the utricles of *Cornulaca monacantha*, a small desert shrub with short leaves which taper from a clasping base to a rigid spine. The utricles are laterally compressed, the seed is placed vertically within it and has a spiral embryo. Present in only small numbers were *Portulaca oleracea* (purslane), *Euphorbia granulata* (spurge), *Medicago laciniata* (medick), *Asphodelus tenuifolius* (asphodel), and *Heliotropium* cf. *europaeum* (heliotrope). The nutlets of this last species could not be satisfactorily distinguished from those of *H. villosum* or *H. undulatum*. Finally, the fruits of three aromatic herbs were present: *Apium graveolens* (wild celery), *Anethum graveolens* (dill), and possibly *Foeniculum vulgare* (fennel) (Fig. 9.5, nos 6–8).

### Sample Composition

After the harvest the cereal crop goes through a series of processing stages in order to separate the grain from the chaff and arable weeds and produce a clean product ready for milling and bread/porridge making. First of all, the harvest is threshed to break up the straw and chaff and release the grain. Then the crop is winnowed to remove light chaff, straw and light weed seeds. Coarse sieving takes place to remove large weed heads, large weed seeds, straw fragments and unthreshed ears. Fine sieving removes the small weed seeds.

Each of these processing stages creates a product and a by-product which can be identified by their varying proportions of grains, chaff, straw and weed seeds. Some of these are relatively long-lived and may be found in the archaeological record. By calculating the relative quantities of the major sample constituents (that is, grain, chaff, weeds) one can assess which crop processing stages are represented by the samples. It has been suggested that the difference between arable producer and consumer sites is likely to lie in the presence or absence of the by-products from the early stages of crop processing (winnowing and coarse sieving; Hillman 1981; 1984; Jones 1984). On producer sites the entire crop processing sequence takes place. In contrast, consumer settlements will obtain their grain in fully processed or semi-clean state. On these sites the early processing by-products are absent. This picture can, of course, be complicated by the import of straw and chaff for fuel, fodder or bedding.

With the exception of samples 51/1, 337/hearth and 105/W all samples contain the by-products of the various processing stages. They contain many more emmer glume bases than emmer grains and represent the dehusking residues of emmer. Dehusking usually takes place immediately before fine sieving. The number of barley rachis nodes is considerably larger than that of barley grains, suggesting we are dealing with either winnowing or coarse sieving by-products. The number of bread wheat remains was too small to allow a reliable calculation. It is difficult to assess the exact number of weed seeds in the samples, as not all the wild plants listed in the tables need have originated from the arable fields. Some may have grown in and around the settlement itself. Taking this into account, most samples contain many more weed seeds than cereal grains, suggesting they represent sieving by-products.

To conclude, most samples contain the by-products of the various crop processing stages, and both early and late stages are represented. This suggests that the inhabitants of Zinkekra produced the cereal crops themselves, and that they were not imported from elsewhere. For the likely cultivation methods, see below. The only exception are samples 51/1, 337/hearth and 105/W. Sample 51/1 contained a large number of desiccated complete emmer spikelets and some barley grain. It may represent a grain store or seed corn. Samples 337/hearth and 105/W both contained a large number of charred barley

grains. The number of barley rachis internodes in the same samples is high, suggesting that we are dealing with unprocessed barley, i.e. a store of barley ears which caught fire.

The fact that the by-products of both wheat and barley were mixed and that the by-products of both early and late stages were mixed, would suggest that these were combined and stored for use as fodder and possibly for fuel. The ubiquity of dung in the samples would corroborate this suggestion. In several samples, especially 66/3, the plant material might already have passed through the digestive tract of livestock before finding its way into the archaeological deposits. Analysis of cow-dung and sheep droppings has proved that many seeds can pass through the digestive tract of these animals without damage (Bottema 1984; Miller and Smart 1984).

#### Modes of Preservation

While most of the plant remains were preserved in desiccated form, some 20 percent of the material was charred (Table 9.7 and Fig. 9.6). There are marked differences between the two modes of preservation, with the charred assemblage containing proportionally less chaff, fruits and weed seeds, and fewer species overall. Most of the barley grains are preserved through charring, as are some 25 percent of the barley rachis nodes, but as this represents the remains of just one sample, we

are probably dealing with the accidental burning of a cache of barley, as mentioned above. It is worth noting here that the glume bases of emmer wheat are not charred, implying that dehusking probably took place without parching the spikelets. While it has frequently been assumed that the presence of charred glume bases on European sites is the result of the parching of the spikelets prior to dehusking, experiments carried out by Meurers-Balke and Luning (1992), have shown that parching is not, in fact, an essential prerequisite for glume wheat dehusking, something Hillman (1981, 154) also recognised. Date stones are commonly charred and these most likely represent 'casual' fuel (that is, discarded in a fire). The large numbers of charred remains of several herbaceous plants, *Anethum graveolens*, *Portulaca oleracea*, *Chenopodium murale* and *Chenopodium* sp., may be due to chance; they are mostly found in one sample only.

#### Discussion

##### Cereal Crops

The remains of three cereal crops were found at Zinkekrā: *Triticum dicoccum* (emmer wheat), *Triticum aestivum* (bread wheat), and *Hordeum vulgare* (hulled six-row barley). No cereal crops of African origin (e.g. sorghum, millet) were found. Emmer wheat (a glume wheat) and barley

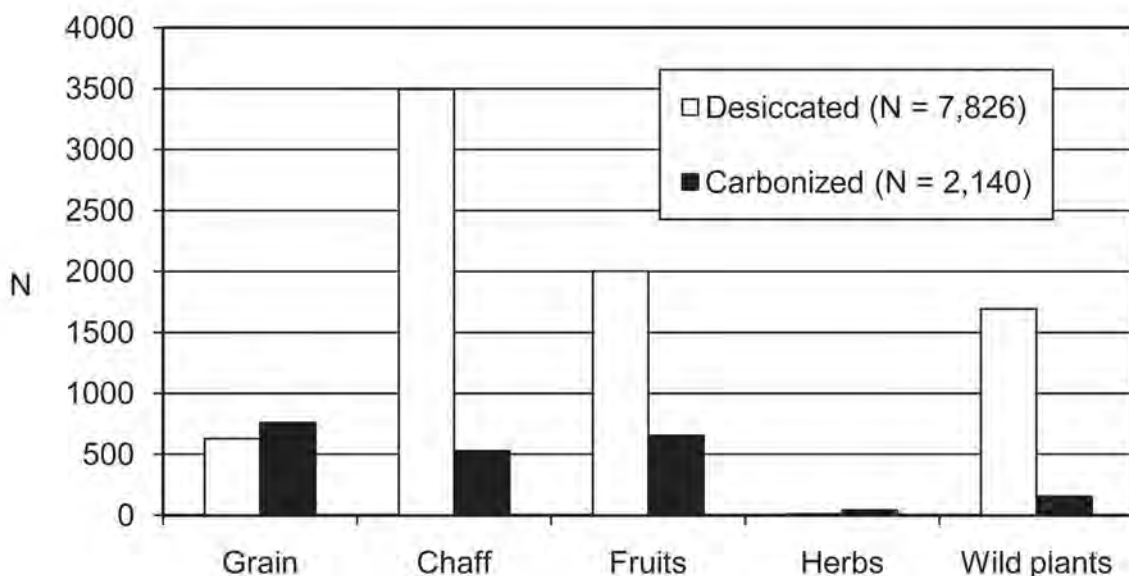


Figure 9.6. Number of identifications by mode of preservation and plant category.

Table 9.7. Total number of items for the most common species by mode of preservation and relative proportion of carbonized preservation (calculated only where  $N \geq 20$ ).

	Zinkekrä		
	N des	N car	% car
<b>CEREAL GRAIN</b>			
<i>Hordeum vulgare</i> L.	61	733	92
<i>Triticum dicoccum</i> Schübl.	563	2	0.4
<b>CEREAL CHAFF</b>			
<i>Triticum dicoccum</i> , glume bases	2,080	93	4
<i>Triticum dicoccum</i> , rachis internodes	618	6	1
<i>Hordeum vulgare</i> , rachis nodes	515	168	25
<i>Cerealia</i> indet., rachis nodes	67	0	0
<i>Cerealia</i> indet., culm nodes	100	11	10
<b>FRUITS</b>			
<i>Phoenix dactylifera</i> L., stones	690	419	38
<i>Phoenix dactylifera</i> L., perianths	502	45	8
<i>Phoenix dactylifera</i> , rachillae/strands	29	0	0
<i>Phoenix dactylifera</i> , male flowers	86	31	27
<i>Vitis vinifera</i> L., pips	224	13	6
<i>Vitis vinifera</i> , stalks	11	1	-
<i>Ficus carica</i> L., seeds	374	62	14
<i>Rhus tripartita</i> (Ucria) Grande, seeds	23	0	0
<b>CONDIMENTS</b>			
<i>Apium graveolens</i> L., seeds	7	3	-
<i>Anethum graveolens</i> L., seeds	1	40	98
<b>WILD PLANTS</b>			
<i>Aizoon</i> cf. <i>hispanicum</i> L., seeds	198	5	3
<i>Portulaca oleracea</i> L., seeds	5	34	87
<i>Chenopodium murale</i> L., seeds	29	22	43
<i>Chenopodium</i> sp., seeds	1	14	-
<i>Comulaca monacantha</i> Del., utricles	42	1	2
<i>Reseda lutea</i> , seeds	90	1	1
<i>Tamarix</i> sp., leaf shoots	91	2	2
<i>Citrullus colocynthis</i> (L.) Schrad., seeds	28	1	3
<i>Phalaris</i> sp., seeds	10	14	58
<i>Panicum turgidum</i> Forsk., seeds	33	2	6
<i>Pennisetum divisum</i> (Forsk. Ex Gmel.) Henr., bristles	32	0	0
<i>Eleocharis</i> sp., seeds	33	0	0
<i>Cyperus</i> cf. <i>laevigatus</i> L., seeds	682	4	0.6
Indeterminate	301	38	11
<b>TOTAL ASSEMBLAGE</b>	<b>7,826</b>	<b>2,140</b>	<b>22%</b>

were amongst the earliest cereals cultivated in the Near East and remained the principal cereal crops for most of the prehistoric period. Free-threshing wheat came into cultivation not much later, but appears initially to have been secondary in importance to emmer. By the beginning of the 1<sup>st</sup> millennium BC, however, many Near Eastern and Mediterranean sites show a prevalence of free-threshing wheat (Zohary and Hopf 1988). In western Europe this change from glume wheats to free-threshing ones took place in the early 1st millennium AD. Little information is available from North Africa, but in the Nile Valley it is thought that emmer was replaced by naked durum wheat towards the end of the 1st millennium BC (Zohary and Hopf 1988). By the 1<sup>st</sup> century AD durum wheat was the principal wheat in Egypt (Cappers 2006; Van der Veen 2001; Van der Veen and Tabinor 2007).

Until the late 1980s the archaeobotanical remains of tetraploid and hexaploid naked wheats could not be distinguished from one another (Van Zeist 1976), but it was commonly assumed that the free-threshing wheat of the Near East and the Mediterranean was the tetraploid wheat *Triticum durum*, as durum wheat is adapted to Mediterranean environments (Zohary and Hopf 1988). In contrast, the hexaploid wheat *Triticum aestivum* thrives in cooler and more continental parts of Europe and western Asia, and the archaeobotanical finds of free-threshing wheats in western Europe have usually been identified as belonging to *Triticum aestivum* (Zohary and Hopf 1988).

Now that identification criteria for separating the rachis remains of tetraploid and hexaploid free-threshing wheats have been developed (Hillman *et al.* 1996; Jacomet 1987) it will be possible to trace the history of these two species in more detail. New research may indicate that the attribution of durum wheat to the Near East and Mediterranean and bread wheat to western Europe was too simplistic a proposition. The presence of *Triticum aestivum* in the samples from Zinkekrā forms important evidence for our understanding of the history of this species. Few other records are available from North Africa, but both *Triticum durum* and *Triticum aestivum* (identified on the basis of their rachis internode morphology) have been found in Classic Garamantian deposits at Jarma (Pelling 2008) and in the Roman-period settlements in the pre-desert of Tripolitania, north-west Libya (Van der Veen 1984; Van der Veen 1995; Van der Veen *et al.* 1996).

It is very difficult to assess the relative importance of different wheat crops from archaeobotanical remains, as the crop processing sequence for glume wheats, such as emmer, varies from that of the free-threshing cereals, such as bread wheat and barley. The dehusking of glume wheat spikelets produces the characteristic glume bases which are found, often in large numbers, in archaeobotanical samples. The remains of bread wheat and barley are commonly underrepresented in the archaeological record, as the papery glumes of these crops survive only in exceptional circumstances when exposed to fire, while the rachis internodes are removed at an early stage and rarely come into contact with fire. As most of the plant remains at Zinkekrā were preserved in desiccated form, the differential exposure to and survival in a fire cannot explain the very small number of remains of bread wheat compared to the large numbers of remains of emmer wheat. The small number of bread wheat rachis internodes compared to those of barley suggests that bread wheat may only have played a minor role in the arable economy.

Bread wheat is a more demanding crop to grow than either emmer or barley, which are both more drought resistant than bread wheat. But, as the name suggests, bread wheat has better bread-making qualities due to its high gluten content. A list of cultivated crops in Fazzān from 1910 mentions both six-row barley and bread wheat (Durand and Baratte 1910), and both are still grown in the desert oases today (El-Sharkawy and Sgaier 1975a/b). Sorghum and two different types of millet were also cultivated in 1910 (Durand and Baratte 1910). These central African species allow a second harvest of cereals each year as they can be grown as summer crops after the harvest of wheat and barley. At the time the Zinkekrā samples were analysed, it was not known exactly when these central African species were first introduced into North Africa. No evidence for them was found at Zinkekrā, but sorghum was already known to have been cultivated at Zuwīla, 240 km south-east of Zinkekrā during the 9<sup>th</sup> century AD (Mauny 1978; see also Pelling 2008, for the results of more recent analyses that have now identified these crops at Old Jarma).

#### *Fruit Crops and Other Food Plants*

The three fruit crops found were *Phoenix dactylifera* (date palm), *Ficus carica* (fig), and *Vitis vinifera* (grape vine). Date palms are a

characteristic feature of desert oases and the presence of very large numbers of date stones came as no surprise. What was unusual, however, was the presence of the flowers of the date palm. While the female flowers, when unpollinated, may persist on the strands and could have fallen off only when the strands with mature fruits were brought up to the settlement, the presence of male flowers cannot be so easily explained. Date palms have separate male and female trees. In palm groves one usually finds one male tree to about 50 female trees (Lötschert and Beese 1983; Harrison *et al.* 1985). The setting of fruit is often improved by artificial pollination, which can be achieved by shaking male inflorescences into the female trees as soon as the flowers have opened, or by cutting off the male inflorescences and fixing them onto the female tree, near the flowers.

The date palms at Zinkekrā will have grown in the wadi; the virtual absence of rainfall in Fazzān would have made it impossible for date palms to grow on the escarpment itself. Date palms need a fairly regular supply of water and grow in oases, along rivers, and are often cultivated under irrigation. The male flowers could, therefore, not have been accidentally blown into the occupation deposits on top of the spur; they must have been deliberately brought up there. A number of possible explanations can be put forward: it is possible that the strands with male flowers were still attached to the female ones when the mature fruits were harvested and brought up to the settlement. If this were the case it would be evidence for the practice of artificial pollination of the date palms. However, it is questionable whether the male flowers could be in such a good state of preservation if they had been exposed to the sun and wind for a period of five to six months before being buried in the archaeological deposits; they would probably have withered and fallen off long before the ripening of the fruits. It is also possible that the male inflorescences were cut on purpose for decorative and/or ceremonial purposes. No historical references about such practices are known to the writer, but further research is necessary. Townsend and Guest (1966-) do mention that the flowers and pollen of the date palm are eaten. Another explanation is that they are there accidentally. When the palm fronds were cut for roofing material some strands with male flowers could accidentally have been cut off as well, and have been carried up to the settlement incorporated in the roofing material. Palm fronds

were extensively used for the roofs and walls of simple huts, and for artefacts such as baskets.

The other two fruit remains found were those of figs and grapes, *Ficus carica* and *Vitis vinifera*. They both belong to the oldest group of fruit trees cultivated around the Mediterranean. The grape vine thrives in characteristically Mediterranean environments, but can tolerate cooler conditions and succeeds in parts of central Europe and western Asia (Zohary and Hopf 1988). The presence of both species at Zinkekrā is remarkable, but especially so for the grape vine which is a difficult crop to grow successfully. Vines are rather susceptible to dry winds, heat, and drought. Both species could, of course, have been imported from the coastal region as dried fruits. Both were, however, recorded as growing in Fazzān in 1910 (Durand and Baratte 1910), and Lyon noted during his travels in Fazzān (1812–20) that almost every garden had a vine, and that the figs from the area were small, but good (Lyon 1821; see also Mattingly 2003, 353 for modern vines in site of Zinkekrā). They were usually grown in the shade of the palm trees within irrigated gardens, and this practice could well be very old.

It is not known whether the fruits of *Rhus tripartita* were used in any way by the Garamantes. This species is closely related to *Rhus coriaria*, the sumach tree. The leaves of the latter produce a dye and the fruits are used medicinally. The roots and bark of *R. tripartita* are used in tanning leather (Keith 1965). The shrub is today rapidly disappearing in Libya as it is cut in large quantities for the manufacture of charcoal (Keith 1965). In some Near Eastern countries the dried fruits of *R. coriaria* are powdered and the red powder is used as a condiment on grilled meat (Townsend and Guest 1966-). The fact that at Zinkekrā the fruits were found in many different contexts, combined with the fact that it is extremely unlikely that the tree grew on top of the escarpment, would suggest that the fruits were purposely collected and used. (The fruits of this species were incorrectly identified as belonging to *R. coriaria* in Hunt *et al.* 1987).

The fruits of the bitter apple, *Citrullus colocynthis*, may also have been collected. The plant is commonly found in desert areas. It has a thick perennial root high in water content and long leaf shoots trailing over the surface. The fruits are the size of small apples, green, and later yellow in colour, with a skin like melons. The spongy pulp of the fruit is extremely bitter and

poisonous, but is widely used in the Near East for medicinal purposes (e.g. as a purgative). Fatal cases of poisoning from an overdose of colocynth have been recorded (Townsend and Guest 1966-; Zohary 1982). The roasted seeds are used as a famine food by bedouin (Keith 1965; Zohary 1982). Whether the Garamantes used the medicinal qualities of the colocynth is difficult to establish. The plants could probably have grown on Zinkekrā itself, which means that the seeds could have been blown into the archaeological deposits.

Four other species may have been used as food plants: *Portulaca oleracea* is a small weed, the leaves of which can be used in salads. The plant is sometimes cultivated as a pot herb (purslane). *Apium graveolens* is a tall herb (up to 1 m), characteristic of damp places. The plant (celery) is widely cultivated today. The roots and leaves are eaten as vegetables, while the seeds are used for flavouring. *Anethum graveolens* (dill) is usually cultivated in gardens, but is also found as an escape from cultivation and as a weed amongst crops. It is cultivated for its fruit (seed) and leaves, which are used for flavouring foods. The fruits are used medicinally as a carminative (Ali and Jafri 1976; Zohary 1982). *Foeniculum vulgare* (fennel) resembles dill in many respects. Its leaves and fruits are used for flavouring, the oil extracted from the leaves is used in confectionary, condiments etc., and its fruits are, like dill, used as a carminative. All four species mentioned here are recorded as cultivated in Fazzān in 1910 (Durand and Baratte 1910).

#### Wild Plants

All the species listed in this category are found in Fazzān today. Some of them probably grew as arable weeds in the wheat and barley fields, others are more likely to have grown around the settlement itself. *Reseda lutea*, *Reseda alba/villosa*, and *Chenopodium murale* are all tall (60–80 cm) weeds frequently found in arable fields. *Euphorbia granulata* has also been recorded in fields and gardens. *Aizoon hispanicum* is a low succulent plant, common in wadi beds. *Heliotropium* is often found near buildings and along roads, but also occurs in fields. *Medicago laciniata* and *Asphodelus tenuifolius* are commonly found in desert regions, in sandy places and on silt.

*Phalaris minor*, *Hordeum spontaneum*, *Dactyloctenium aegyptium*, *Setaria* sp., and the other grasses of the Paniceae tribe are all common

arable weeds. *Pennisetum divisum* and *Panicum turgidum* are both grasses of sand deserts. They are part of the natural vegetation of the area and are today not recorded as arable weeds. They could well have grown on the top of the escarpment of Zinkekrā as they are very drought resistant. They form dense, almost woody bushes and are grazed by camels and goats, although the amount of leaf matter they provide is small. *Cornulaca monacantha* is another typical desert bush, also grazed by animals.

*Phragmites australis* (common reed) is a water plant growing in swamps, marshy areas, and along river banks. The stems of the reeds are of great importance for the construction of matting, roofing, walls, etc. The inhabitants of Zinkekrā could well have collected this important raw material from some distance. There was a perennial spring at Jarma itself, and today in the area around Jarma small lakes are formed after heavy rainfall, which take a long time to go down (Daniels, pers. comm.). It is quite likely that the reeds came from the Jarma area, c.3.5 km from Zinkekrā.

Three species of the sedge family were present: *Cyperus* cf. *laevigatus*, *Eleocharis* cf. *caribaea*, and *Cladium mariscus*, the first one in very large quantities. All three require a fair amount of water and are normally found near wadis, ditches, springs and marshes. They could all have grown as weeds in arable fields, provided there was enough water. They may have occurred as weeds in irrigated gardens. Two of them are rather low plants, *Eleocharis* 3–25 cm tall and *Cyperus* 5–45 cm, which would suggest that if they did grow as arable weeds, the cereal culms must have been harvested low down. Most of the seeds came from one context, 66/3. They were incorporated in large lumps of dung-like material and they could have been eaten by livestock. The animals could either have grazed on the sedges growing on the wadi floor, or have eaten them as part of fodder, which was a mixture of the by-products of crop processing (straw, chaff, and weed seeds). If they grew on the wadi floor their presence would suggest that the water table in the wadi was relatively high during most of the year.

A few samples contained leaves of the tamarisk tree, *Tamarix* sp. The plants of this genus are quick growing, deep rooted, drought resistant, and salt-tolerant trees and shrubs (Townsend and Guest 1966-). They grow in most deep wadis of the desert and on river banks. Their wood is used as building material in areas where timber is scarce, and forms

a common source of fuel. The branches and leaves are sometimes eaten by livestock. The Garamantes probably used this tree for all these purposes.

### *Cultivation Regime*

Today all crops in Fazzān are grown under irrigation as the region receives virtually no rainfall. At Sabhā, the modern capital of Fazzān, the mean annual rainfall figure is 9 mm, and the region can experience as much as 300 percent variation in annual precipitation (Allan *et al.* 1973). During the summer it is very hot (temperatures up to 49° C have been recorded at Sabhā), while in winter temperatures below 10° C are common and temperatures below freezing not uncommon (Allan *et al.* 1973). The minimum annual precipitation required for cereal crop production is 200 mm, far more than is available in Fazzān. Consequently, crops are grown using subterranean water, tapped from artesian aquifers as well as from the general water table, though some of the water is of poor quality (Allan *et al.* 1973). The use of modern equipment in well-digging and water-lifting in the oases makes the present-day farming methods difficult to compare with prehistoric ones, but many illustrative descriptions of traditional farming methods in these oasis gardens are available from 19<sup>th</sup>-century travellers:

We entered the fine plantation at Brak [in Wādī ash-Shāfī], enlivened by the bleating of sheep and goats. Here, in small fields where corn is cultivated, the ground is thickly incrustated with salt and soda. (Barth 1857, 147).

The gardens are entirely cultivated by the paddle or hoe, and parcelled out into squares of about three feet, having little channels to them, for the purpose of irrigation. Much dung is used, and the sandy soil of old gardens almost assumes the appearance of earth. (Lyon 1821, 277).

Corn and barley are sown in October and November and reaped in March and April during which time, and until the last month, the crops are watered twice a week, with much labour, by means of small channels cut from the reservoirs of the wells. (Lyon 1821, 275).

In the gardens wheat, barley, ghusub, ghafouly, the flax plant, common vegetables and flowers

... are cultivated, with the noble date palm overshadowing all. Every garden has its well, or wells. Sweet water is scarce. (Richardson 1848, vol. 2, 345).

Herodotus's description of the Garamantes is not all that dissimilar to the description of oasis gardens by these 19<sup>th</sup>-century travellers. He mentions the spring, the salt, and the palm trees, all amidst the desert sand. His reference to the placing of soil (also translated as humus) onto the salt may point to the artificial build-up of soil in oasis gardens by the addition of manure or dung, as described above by Lyon. He does not, however, explicitly mention the practice of irrigation. While the present evidence suggests that the environmental conditions by the beginning of the 1<sup>st</sup> millennium BC were similar to those of today, minor fluctuations in the degree of aridity are likely to have occurred. Nevertheless, even an increase of 300 percent in the present rainfall figure would not allow crops to be cultivated without the use of subterranean water.

It will never be possible to pinpoint the exact location of the arable fields or gardens of the inhabitants of Zinkekrā, but they must have been situated somewhere on the wadi floor. The occurrence of reed and sedges in the samples points to the presence of standing water in the vicinity of Zinkekrā. Today, artesian water is abundantly present in the Wādī ash-Shāfī, and to a lesser extent in the Wādī al-Ajāl. There is a perennial spring at the old town of Garama, and small lakes form in the wadi floor after rare outbursts of heavy rainfall (Allan *et al.* 1973). At the time of the Garamantes there may still have been enough water close to the wadi surface to grow crops without irrigation.

Survey work in the wadi has, in fact, recovered the presence of hundreds of foggaras, underground water channels running from the escarpment to the wadi centre; in one place as many as 60 could be counted along a 6 km stretch (Daniels 1970b). The purpose of these channels was undoubtedly to tap water from the aquifers in the escarpment and channel it towards the lower lying parts of the wadi, where it will have irrigated the fields, gardens, and palm groves (Wilson and Mattingly 2003). The foggaras are now securely identified as Garamantian in date, but probably not as early as the main phase of occupation on Zinkekrā.

An Arab writer (Al-Ya'qubi) mentions the cultivation of dhurra (probably *Sorghum bicolor*,

race durra) in Zawila (=Zuwīla) in Fazzān (c. 240 km south-east of Zinkekrā; Mauny 1978). Sorghum (*Sorghum bicolor*) and pearl millet (*Pennisetum glaucum*) are typical African crops, which, being summer crops, can only be cultivated in the Sahara with the aid of irrigation. These crops were first cultivated in the savanna zone south of the Sahara where annual rainfall is c.300 mm or more, and later (we do not know when) introduced into parts of the southern Sahara. The first occurrence of sorghum (*Sorghum bicolor*, race bicolor) in the Nile Valley is associated with the appearance of a new irrigation technique, that is the *saqia* or water wheel in the Meroitic period (AD 1–550; Clapham and Rowley-Conwy 2007; Rowley-

Conwy 1989). The introduction of the water wheel, an important agricultural innovation allowing much larger areas to be irrigated, may be related to the introduction of summer crops (Rowley-Conwy 1989; Watson 1983). The introduction of the foggaras in the Sahara may also have been linked to the introduction of the two-cropping system, and the more recently examined botanical samples from the excavations at Jarma have started to provide clear evidence for the introduction of these crops (*Pennisetum* and *Sorghum*) by the Classic Garamantian phase (1<sup>st</sup> – 4<sup>th</sup> centuries AD, see now Pelling 2008, 57–58). Their absence from the Zinkekrā samples is significant as regards Garamantian agriculture of the Early and Proto-Urban phases.

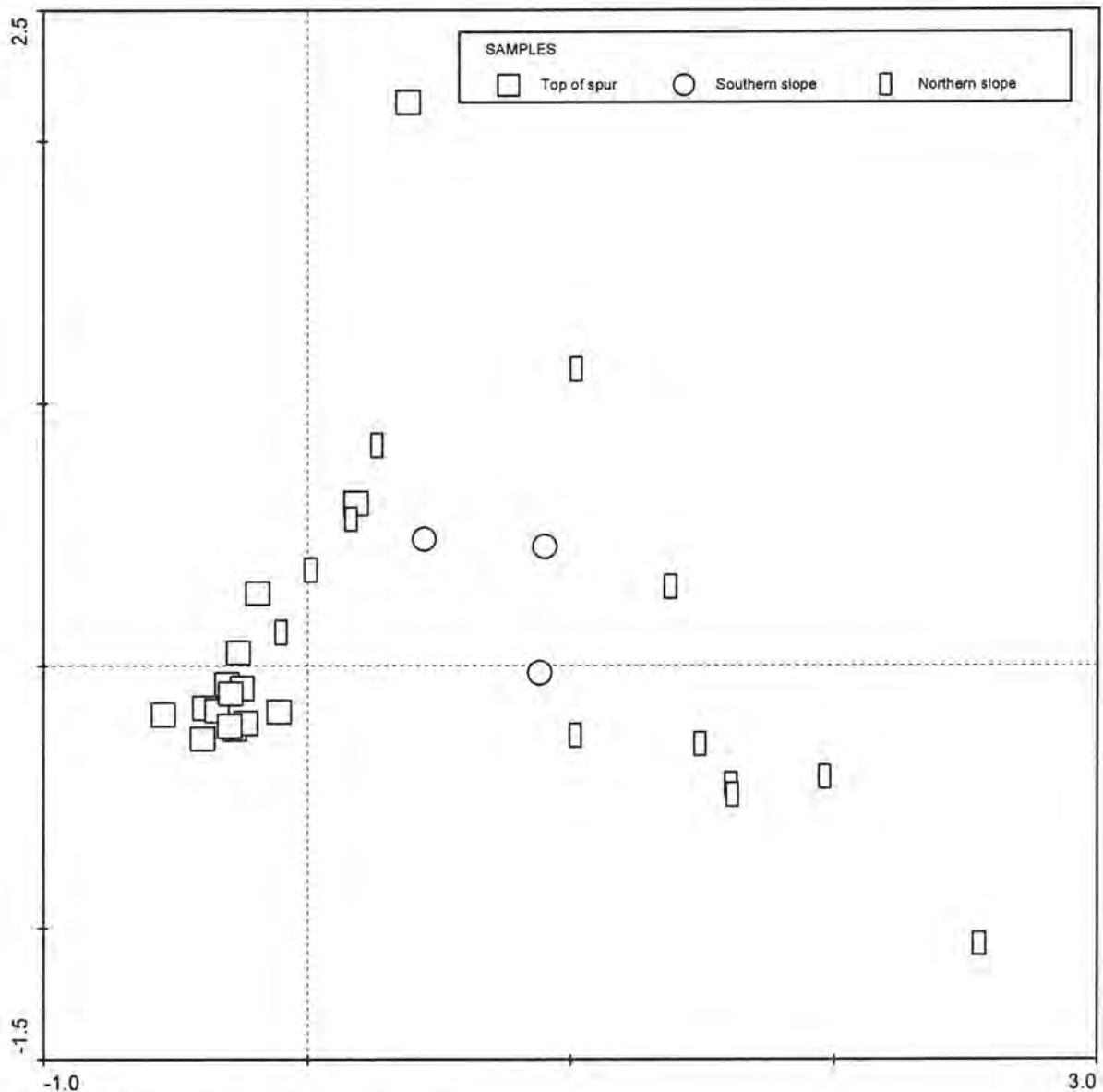


Figure 9.7. Correspondence analysis; sample plot.



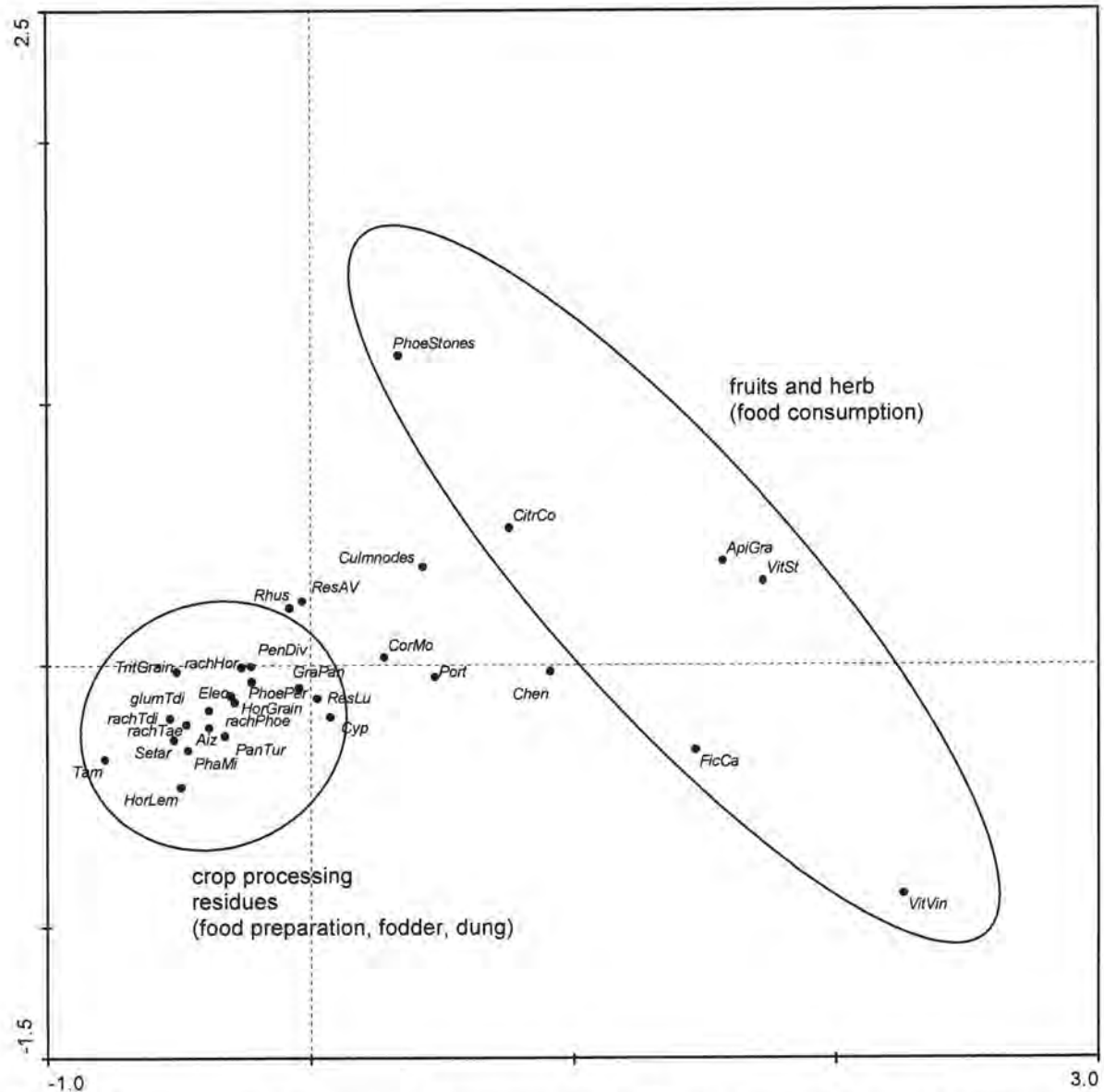


Figure 9.8. Correspondence analysis; species plot. Abbreviations used: Aiz = *Aizoon hispanicum*; ApiGra = *Apium graveolens*; Chen = *Chenopodium murale*; CitrCo = *Citrullus colocynthis*; CorMo = *Cornulaca monacantha*; culmnodes = *Cerealia culm nodes*; Cyp = *Cyperus cf. laevigatus*; Eleo = *Eleocharis cf. caribaea*; FicCa = *Ficus carica*; glumTdi = *Triticum dicoccum*, glume bases; GraPan = Gramineae, tribe Paniceae indet.; HorGrain = *Hordeum vulgare*, grain; HorLem = *Hordeum vulgare*, lemma bases; PanTur = *Panicum turgidum*; PenDiv = *Pennisetum divisum*; PhaMi = *Phalaris cf. minor*; PhoePer = *Phoenix dactylifera*, perianths; PhoeStones = *Phoenix dactylifera*, fruits stones; Port = *Portulaca oleracea*; rachHor = *Hordeum vulgare*, rachis internodes; rachPhoe = *Phoenix dactylifera*, rhachillae; rachTae = *Triticum aestivum*, rachis internodes; rachTdi = *Triticum dicoccum*, rachis internodes; ResAV = *Reseda alba/villosa*; ResLu = *Reseda lutea*; Rhus = *Rhus tripartita*; Setar = *Setaria sp.*; Tam = *Tamarix sp.*, leaf shoots; TritGrain = *Triticum dicoccum* grain; VitSt = *Vitis vinifera*, stalk; VitVin = *Vitis vinifera*, pips.

### Food Preparation and Consumption

The plant remains not only offer information about the nature of early agriculture, they may also be explored for evidence of food preparation and/or consumption practices. A correspondence analysis (CANOCO 4.5; Ter Braak and Šmilauer 2002) was carried out to determine whether there was any spatial variation in the types of plant remains

deposited at the top and slopes of the spur, and whether particular associations of plants were present at these different locations. In all three areas the samples derive from refuse deposits taken from rooms, huts and pens built with dry stone walling and timber. One outlier (containing lots of dung) was removed, leaving a dataset of 31 samples and 33 species (three samples only have 40 items each). The sample plot (Fig. 9.7)

shows on the horizontal axis a separation into two groups: the samples from the top of the spur plot primarily on the left, those from the two slopes on the right. Figure 9.8 shows the corresponding species plot, and indicates that the top of the spur is characterised by crop processing residues: chaff (both glume bases of emmer and rachis of barley), date processing residue (rhachillae and perianths of *Phoenix dactylifera*), small amounts of cereal grain, and weed/wild seeds. The samples from the two slopes are characterised by proportionally more fruits (grape, fig, date, as well as colocynth) and one herb (celery, *Apium graveolens*).

This suggests that food preparation, including the dehusking of the emmer spikelets prior to the consumption of the grain, may have taken place in and around the accommodation on the top of the spur. As noted in Chapter 1, there were abundant rock-cut or rock-worn mortars on the top of the plateau, suggestive of intensive food processing here. Other interpretations of this material are possible. The abundant dung fragments in the samples, some of which contained glume bases of emmer wheat and seeds of *Eleocharis* and *Cyperus*, suggest that animals were kept on top of the spur. The plant material in these samples thus probably also represents fodder given to these animals, as well as their dung. Since these remains are not charred, they do not represent dung used as fuel. In contrast, the samples from the northern and southern slopes contain proportionally less cereal remains, suggesting that less cereal processing took place here, and fewer animals were housed here. The slope samples are dominated by fruit stones, suggestive of the casual discard of leftovers from the table or of snack foods. Interestingly, one herb, celery, was amongst them. This may be down to chance (only very few seeds of this plant were found), but may also point to the use of celery seeds as a condiment at the table (sprinkled on food rather than added during the cooking process) or consumed after a meal to clear the palate (Van der Veen 2007).

### Conclusion

The botanical assemblage from Zinkekrā has produced conclusive evidence for the existence of Garamantian agriculture in Fazzān during the first half of the 1<sup>st</sup> millennium BC. The crops grown were largely Near Eastern cultigens such as emmer wheat, *Triticum dicoccum*, bread wheat, *Triticum aestivum*, barley, *Hordeum vulgare*, dates, *Phoenix*

*dactylifera*, grapes, *Vitis vinifera*, and figs, *Ficus carica*. Of these crops the date palm is the only cultigen which might be native to Africa, although the available archaeological evidence suggests that its domestication first took place in the Near East (Zohary and Hopf 1988, 150).

The diet of cereals and fruits was probably supplemented by some green vegetables such as celery, *Apium graveolens*, and purslane, *Portulaca oleracea*. The fruits of celery, *Apium graveolens*, dill, *Anethum graveolens*, fennel, *Foeniculum vulgare* and sumach, *Rhus tripartita* may have been used as condiments, while those of bitter apple, *Citrullus colocynthis*, could have been used for medicinal purposes. The seeds of this last species may also have been eaten. The only category of plant food noted by its absence is that of the pulses. These were cultivated as early as the cereals in the Near East, but have not been found at Zinkekrā. It is not clear whether this is related to the preservation conditions or reflects a true absence. They are present in Classic Garamantian deposits at Old Jarma in small quantities (Pelling 2008, 59–60).

The wild plants present in the samples are the same as those found in the region today, suggesting that the climate and vegetation at that time were broadly similar to those of today, although the degree of vegetation cover may well have decreased considerably with time due to continuous human occupation. The present evidence indicates that the Garamantes had succeeded in developing a successful agricultural regime based on a variety of crops, despite the very harsh climatic conditions.

The presence of date palms, cereals, fruits, vegetables and herbs with some water-loving wild plants such as *Cyperus*, *Eleocharis*, *Cladium* and *Phragmites*, combined with Herodotus's description of the Garamantes is suggestive of a cultivation regime like that of medieval and more recent oasis gardens, with the palm trees providing the necessary shade for the other crops. The plant remains from Zinkekrā thus offer some of the earliest evidence for oasis agriculture in North Africa. The further evolution of Garamantian agriculture can be traced through the FP excavations at the Classic Garamantian site of Jarma (see Pelling 2008 and her forthcoming *AF 4* report).

As the following brief note shows, the available evidence shows that the vegetable diet was complemented by milk and meat of cattle, sheep and goat and pig, with a range of other animals also represented.

## ANIMAL BONES FROM THE CMD EXCAVATIONS

By B. Westley

[Editor's note: It is clear that CMD attempted to have a full and detailed report compiled on the animal bones from his excavations, but there is no trace in the archive of a final text having been delivered to him. This short report dating to February 1966 and written by Betty Westley (who was not the person commissioned to produce the larger one) was located among his papers. It relates only to the initial excavations at the 9<sup>th</sup> century BC – 1<sup>st</sup> century AD site of Zinkekrā (ZIN001–003), trial trenching at the 1<sup>st</sup> – 4<sup>th</sup> century Garamantian site of Sāniat Jibrīl (GER002) and some minor work on the buildings excavated by Ayoub at Jarma (GER001.001–004), which broadly fall within the date range 2<sup>nd</sup> – 4<sup>th</sup> century AD. CMD incorporated elements of this report into his initial Zinkekrā study (Daniels 1968a), but in the absence of a fuller report on the later excavations, it seems valuable to publish the entire extant report. It marks a small addition to the limited amount of published data on Garamantian animal husbandry and subsistence strategies (Alhaique 2006; Grant 2006; Mattingly et al. 2000a, 230–32)].

### Overall Summary

The sample is dominated numerically by ovicaprines, but there is an impressive representation of cattle, with smaller numbers of pig, horse/donkey and camel (Table 9.8). There are two bird bones, but numerous fragments of ostrich eggshell. The ovicaprines are of quite large stature, about the size of modern examples, and probably included both sheep and goat, though the sample here is relatively small. The pigs are certainly domestic, of an average sort, rather small. The cattle are large compared with the usual Iron Age north-west European 'Celtic ox', but certainly not larger than an average modern breed. The equid material includes a certain donkey maxilla from Zinkekrā, but the identity of the 'horse' teeth fragments from Sāniat Jibrīl is not clear as cheek teeth are much the same size in horses and asses.

Human remains were also noted in the samples from all three sites. Most interesting in this context was the presence of two infant burials at Sāniat Jibrīl (area 4, 5/2), one of a 36 month old, the other a pair of twins possibly neonate or foetal.

Table 9.8. List of animal bones identified by species.

Species	No of fragments
Ovicaprines	251
Bos	161
Sus	9
Equid	3
Camel	1 (+ 1 possible)
Bird	2
Unidentified	50
Total	478

### Catalogue (arranged by site)

#### Old Jarma (GER001)

- GER001.001 (1)  
Bos, 3 fragments (tarsals, phalanx).
- GER001.001 (6)  
Sheep/goat, 1 atlas.  
Bos, 1 molar
- GER001.001 (8)  
Sheep/goat, 7 fragments. A fairly large type.
- GER001.001 (9)  
Human, 1 phalanx (tarsal).
- GER001.001 (10)  
Bos, 8 fragments.
- GER001.001 (11)  
Sheep/goat, 4 fragments.
- GER001.001 (14)  
Eggshell, ostrich.
- GER001.001 (16)  
Eggshell, ostrich.
- GER001.004 (8)  
Sheep/goat, 5 fragments, burnt.  
Bos (probable), 3 fragments, burnt.
- GER001.004 (11)  
Sheep/goat, 4 fragments.
- GER001.004 (12)  
Sheep/goat, 2 fragments. A large type.  
Bos, 5 small fragments.
- GER001.004 (14)  
Sheep/goat 3 fragments.  
Bos, 2 fragments.
- GER001.004 (15)  
Bos, 7 fragments, burnt.
- GER001.004 (16)  
Sheep/goat, 4 fragments.  
Bos, 7 fragments (some young vertebrae).  
Several indeterminate.

GER001.004 (17)

Bos, 1 phalanx.

GER001.004 (19)

Sheep/goat, 8 fragments, mostly burnt.

Bos, 12 fragments mostly burnt.

Some indeterminate fragments.

GER001.004 (28)

Sheep/goat, 4 fragments.

Bos, 1 fragment.

GER001.004 (30)

Sheep/goat, 3 fragments.

Bos, 6 fragments, a large animal.

An indeterminate atlas (not sheep/goat or bos, too small for camel, possibly antelope).

GER001.004 (30/1)

Sheep/goat, 2 fragments.

Pig, 3 fragments (2 mandible fragments, 1 phalanx, average).

A second indeterminate atlas (possibly antelope).

GER001.004 (30/2)

Sheep/goat, 3 fragments.

An indeterminate vertebra fragment. Large. Possibly camel.

GER001.004 (33)

Sheep/goat, 2 mandibles, quite large, with teeth. 2 years.

3 long bone shaft fragments.

Bos, 1 vertebra, large.

### Saniat Jibril (GER002)

GER002 Area 1 (2)

Horse, 1 upper molar. Adult.

Pig, maxilla fragment with teeth. About 2 years.

GER002 Area 1 (4)

Camel, 1 complete phalanx. 1 caudal vertebra (probably camel).

GER002 Area 3 (2/2)

Pig, 1 maxilla fragment, about 2 years old. 1 tush.

Average size, a small domestic breed.

GER002 Area 4 (1)

Horse, 1 upper molar. Cf Area 1 (2) above.

GER002 Area 4 (1/4/5)

Pig, maxilla fragment. About 2 years.

GER002 Area 4 (1/8)

Sheep/goat, 2 astragali. 2 animals.

GER002 Area 4 (1/9)

Pig, 1 lower incisor.

GER002 Area 5/2

Sheep/goat, 4 ovicaprid fragments – femur, orbit, vertebra and 3<sup>rd</sup> phalanx.

Human, 3 infant burials (two neonates together, twins?

Third almost complete, 36 months).

Ostrich, shell fragments of a large egg.

### Zinkekra (ZIN001003)

ZIN002.011 General

Sheep/goat, 7 fragments.

Bos, 2 shaft splinters, large.

Human, 2 skull fragments, 1 molar, 1 femur fragment (the latter of a 6–8 year old child).

ZIN002.011 (1)

Sheep/goat, 4 fragments, including 2 mandibles, 2 years.

Bos, 7 fragments, including teeth, about 2 years.

ZIN002.011 (3)

Sheep/goat, 5 fragments, including 2 mandibles, about 2 years.

Bos, 8 fragments, young, fairly large. About 2 years.

ZIN002.011 (8)

Sheep/goat, 3 fragments.

ZIN002.011 (10)

Sheep/goat, 9 fragments.

Bos, 8 fragments (1 tibia is young).

Pig, orbital fragment. A large suid.

ZIN002.011 (11)

Sheep/goat, horncore tip, weathered. Probably goat. 1 mandible, 1 radius.

Bos, 2 fragments, both young. Tooth and metatarsal.

ZIN002.011 (13)

Sheep/goat, 1 incisor.

ZIN002.011 (17)

Sheep/goat, 3 fragments.

Bos, 2 horncores. One is large, resembles a modern type. The other is about the size of *Bos longifrons*.

ZIN002.011 (20)

Sheep/goat, 9 fragments.

Bos, 10 long-bone splinters, but probably bos.

ZIN002.011 (22)

Sheep/goat, 1 humerus fragment.

ZIN002.011 (23)

Equid, premaxilla, with tooth roots. Very small, probably ass.

ZIN002.011 (24)

Sheep/goat, 1 fragment.

Bos, 9 small fragments, mostly skull.

ZIN002.011 (25)

Sheep/goat, 20 fragments, relating to at least 3 animals. 1 small horncore, sheep (?) – budding. Maxilla with teeth, about 2 years.

ZIN002.011 (26)

Bos, 4 fragments, including scapula. A small type.

ZIN002.011 (30)

Sheep/goat, 1 metatarsal fragment.

Bos, 1 tooth.

Human, 1 molar, with large holes (decay).

ZIN002.011 (31)

Sheep/goat, 1 fragment.

Bos, 3 fragments.

ZIN002.011 (34)

Sheep/goat, 4 fragments.

ZIN002.013 (1)

Sheep/goat, 10 fragments.

Bos, 1 fragment.

ZIN002.013 (5)

Sheep/goat, 1 scapula, young animal.

ZIN002.013 (6)

Sheep/goat, 1 fragment.

Bos, vertebra, young animal.

ZIN002.013 (13)

Sheep/goat, 3 fragments.

Bos, 3 fragments.

ZIN002.013 (14)

Sheep/goat, 4 fragments.

Bos, 5 fragments.

ZIN002.013 (15)

Sheep/goat, 1 molar.

ZIN002.013 (17)

Sheep/goat, 3 fragments.

Bos, 1 fragment.

ZIN002.013 (21)

Sheep/goat, 3 fragments.

Bos, 10 fragments.

ZIN002.013 (23)

Sheep/goat, 3 fragments.

ZIN002.013 (24)

Sheep/goat, 4 fragments.

Bos, 4 fragments.

ZIN001.034 (1)

Sheep/goat, 8 fragments.

1 fragment ostrich eggshell.

ZIN001.034 (3)

Sheep/goat, 58 fragments, mostly shaft splinters.

Bos, 11 fragments, including 1 complete astragalus, average size, rather larger than *Bos longifrons*.

Bird, 1 skull fragment, about size of *Gallus domesticus*.

ZIN001.034 (4)

Sheep/goat, 14 fragments.

Bos, 6 fragments.

ZIN001.037 (1)

Sheep/goat, 7 fragments.

Bos, 3 fragments.

1 fragment ostrich eggshell.

ZIN001.037 (2)

3 fragments ostrich eggshell.

ZIN003.105 (3/3)

Sheep/goat, 2 fragments.

ZIN003.105 (3/5)

Bos, 3 fragments (doubtful).

ZIN003.105 (5/2)

Bird, 1 indeterminate. About fowl size.

ZIN003.109 (11)

Human, mandible, minus teeth. Age indeterminate.

#### Salt and Sweet Water Gastropods

GER001.1 2: *Conidae*.

GER002 (4) 3/1 *Cypraeidae*.

ZIN003.105 4/4: *Cypraea*.

ZIN002.013 1: *Cypraea*; *Conidae*.

ZIN002.011 13: *Conidae*.

ZIN002.011 17: *Conidae*.





Figure 10.2. 'Made in Fazzan': a) pyro-engraved gourd; b) copper alloy bell; c) multi-coloured woven textile; d) carnelian and glass bead necklace; e) painted late Garamantian vase (all finds from DMP work).

These are found on both habitation and cemetery sites and clearly influenced in equal measure the material culture of the living and the nature of funerary ritual and offerings. With the goods came a variety of technologies – building materials (including the use of mudbrick and dressed stone architecture) and manufacturing techniques (textile production, bead making, metallurgy, pottery, salt and, perhaps, glass making), along with changes in food processing (rotary querns replacing mortars and saddle querns), and changes in social customs. However, it must be stressed again that the Garamantes were

not passive receptors of goods and technologies originating outside their territory. As we have seen, they were a highly productive society, both in terms of agricultural produce, manufactured goods and the exploitation of the human and natural resources of the central Saharan zone (Fig. 10.2).

The work of CMD has dramatically illuminated these themes and allows us to reflect in greater detail on the similarities and differences in the cultural and eco-factual assemblages of Early, Proto-Urban, Classic and Late Garamantian phases (Chapters 8–9).

## THE EARLY GARAMANTIAN PERIOD (1000 – 500 BC)

The earliest settlements of the Garamantes were fortified sites along the escarpment edge on the south side of the Wādī al-Ajāl (Chapters 1–2). These sites bore clear affinities with the material culture of the preceding Late Pastoral (final Neolithic) phase. The type site is Zinkekrā, scene of CMD's most intensive early work, a defended promontory site, difficult of access. In comparison with the occupation sites of the earlier phases of the Pastoral period, the site appears to have been occupied for sustained periods and to have had defensive potential. This suggests a process of increasing sedentarisation and protection of resources, perhaps in relation to access to pasture and water resources in an increasingly hyper-arid landscape.

If the settlement was permanently occupied, rather than serving as a refuge chiefly at times of crisis, water would have been a crucial resource. It could have been carried in every day from wells on the oasis floor, possibly at some distance from the site. However, it seems more likely that the selection of the site (and others like it) was occasioned in the first place by the presence of an active spring. Although no trace of this can now be seen, it could be buried beneath the extensive hill-wash deposits on the steep escarpments. Sporadic gypsum crystals found in archaeological levels on the north side suggest the presence of a springline that dried up at some point in the 1<sup>st</sup> millennium BC (Drake *et al.* 2004).

The first occupation at Zinkekrā consisted of hearths dug into the plateau top and hillside, associated with Late Pastoral (Neolithic) material culture, and probably dated around *c.* 1100–900 BC. These hearths were succeeded by an Early Garamantian phase of occupation (*c.* 1000–500 BC) with rough stone-built (or stone-footed) oval huts, whose upper walls were perhaps made of mud and organic materials, and roofed with a thatching of palm fronds. Most of these structures were of simple form, comprising one or two oval or sub-rectangular rooms, sometimes with small enclosures associated (perhaps for animals). It is not clear whether the natural defensive potential of the site was augmented in the Early Garamantian occupation phases by the construction of walls and embankments, though stratigraphically and structurally the extant defensive features seem to fit better with the Proto-Urban phases.

The large quantities of animal dung found within the huts and enclosures indicate that animals were kept close by their owners. There is no discernible separation between dwelling space and animal shelter, and given that it can get very cold at night in the desert winter, it is possible that people may have slept in the same space with their animals for warmth. Even on the steep slopes of Zinkekrā, the same combinations of huts with hearths and deposits of occupation debris and animal droppings are found. The botanical remains from the occupation levels provide unequivocal evidence for the early uptake of a fully evolved agricultural package (Chapter 9). The AMS dates allow us to say only that by some point early in the 1<sup>st</sup> millennium BC, the Garamantes were engaged in irrigated cultivation of the date palm and a range of Nilo-Mediterranean crops. The discovery of a date stone dating to *c.* 1400–1300 BC from the Wādī Tanzzūft, some 400 km further south-west of Zinkekrā, suggests that the ultimate origins of agriculture in the central Sahara were slightly earlier (di Lernia and Manzi 2002, 174–75, 282–83). The Tanzzūft cultivation of date palms should have followed on rather than preceded the earliest cultivation in the Wādī al-Ajāl. We would posit that the Late Pastoral/Early Garamantian agricultural transition will one day also be identifiable in the Wādī al-Ajāl at around 1400–1300 BC.

The detailed analysis of the nature of the botanical deposits has identified a greater emphasis on crop processing on the flat plateau top of the Zinkekrā spur, with more consumption of fruits on the escarpment sites. The top of the spur is indeed pock-marked with shallow mortars cut in the living rock that must have related to such intensive processing activity.

The earliest agriculture at Zinkekrā probably preceded by several centuries the arrival of the foggara irrigation technology in the region (Wilson 2006). There are strong reasons to believe that the foggara was not introduced into the Western Egyptian desert before the mid-5<sup>th</sup> century BC and that it was transferred by stages from there to Fazzān. If this is correct, then the early cultivation was either based on gardens irrigated by small wells near the centre of the valley some 1–2 km north of Zinkekrā or on spring-fed gardens close to the foot of the scarp (of which there is no visible trace). From this, it seems most plausible that the location of early Garamantian settlement was more strongly correlated with defensible positions and water sources than with cultivable land, suggesting



that this was an era of increasing competition for resources.

The Early Garamantian material culture combined the use of stone tools (notably points and scrapers that continued the Late Pastoral tradition) with a limited range of handmade wares in distinctive local fabrics. Indeed the so-called Zinkekrā fabric has rarely been found on other Garamantian escarpment sites, though the forms are readily paralleled. There is thus evidence of localised production of ceramics, but growing cultural coherence among the escarpment settlement inhabitants. This pattern of material usage seems to illustrate the transition from pastoral communities to the agricultural Garamantes.

### THE PROTO-URBAN GARAMANTIAN PERIOD (500 – 1 BC)

The Proto-Urban phase at Zinkekrā appears to have been marked initially by a continuation of relatively simple occupation units on the spur top and slopes in association with the construction of a sequence of defensive walls and enclosing terrace walls. The most impressive of the defensive walls on the spur were of sophisticated design and striking appearance. While the lower enclosure walls doubtless had a defensive function, they could also have served as animal enclosures, keeping things in as well as out.

Subsequently, probably after 300 BC, a series of mudbrick buildings was constructed on the lower slopes, while the summit of the hill was progressively abandoned. The latest buildings appear to have been a number of well-built rectangular houses of mudbrick on dressed ashlar footing walls, whose occupation runs up to perhaps AD 100. Both the use of mudbrick and the ashlar masonry were techniques imported either from the direction of the Mediterranean world or the Nile Valley. Given the other evidence we have for long-range cultural contacts, there is no case for imagining independent invention here.

There is little information on the finds within these mudbrick buildings, but the absence of references to animal dung in them suggests a greater separation between people and animals, consonant with the by now less overtly pastoral nature of Proto-Urban Garamantian society and the increasing importance of agriculture.

The material culture of Zinkekrā in the Proto-Urban period continued to be dominated by

handmade pottery, some wooden vessels, and lightweight organic materials (wood, leather, matting, etc.). The site has yielded very few imports (with the exception of a handful of Phoenician eye-beads and other glass beads), and in this it contrasts with the contemporary escarpment site at Tinda, nearer the western end of the Wādī al-Ajāl (Chapter 2). Tinda is paradoxical in that, despite its rich material culture, there is no evidence there for the appearance of more sophisticated mudbrick buildings and simple one- or two-room oval huts remained the norm there in the Proto-Urban phase. An appreciable quantity of Punic imported pottery suggests strong trading relations with the Liby-phoenician emporia of the coast.

Quite why Zinkekrā should look so progressive in architectural terms, but so conservative in artefactual character is not entirely clear (and other escarpment sites examined by CMD seem to conform more with the pattern at Zinkekrā than with Tinda). The progressive abandonment of Zinkekrā in the second half of the 1<sup>st</sup> millennium BC was no doubt related to the emergence of Jarma as a new centre (from as early as the 4<sup>th</sup> century BC onwards), as the emphasis of the settlement pattern moved from defended escarpment sites to settlements dispersed along the oasis floor. Jarma certainly had access to a similar range of imports as Tinda. This change in settlement location must reflect increasingly secure conditions in the wadi, and a further impetus towards intensive irrigated agriculture (made possible by the introduction of foggara irrigation technology in the second half of the 1<sup>st</sup> millennium BC).

### THE CLASSIC GARAMANTIAN PERIOD (AD 1 – 400)

By the Classic Garamantian period, activity at Zinkekrā was restricted to burials and funeral rituals. The latest phases of building may have related to funerary or religious activity on the south slope, but these structures were soon eclipsed by the growth of large cemeteries both here and near the foot of the north scarp. The series of burials excavated by CMD at ZIN002.013 was notable for the absence of ceramic finds and appear to be among the earliest examples of a nucleated escarpment cemetery (probably dating to the latter centuries BC). More generally, the surface finds from robbed burials around Zinkekrā hill included numerous imports of amphorae, fine pottery and

glassware. This material spans the period between the 1<sup>st</sup> and 5<sup>th</sup> centuries AD.

The Classic Garamantian settlement pattern greatly expanded with the construction of numerous village sites in the centre of the valley. The oasis centre site of Sāniat Jibrīl gives an indication of what the new dispersed settlement pattern looked like, with rectangular mudbrick houses of some complexity (Chapter 3). These buildings had some affinities with the mudbrick structures of the last phase of occupation on the lower slopes of Zinkekrā, but were now commonly constructed in an undefended setting. The settlement at Sāniat Jibrīl was extensive and highly organised, with buildings on a considerable scale and involving architectural complexity. Although there are some resemblances with individual buildings at Zinkekrā, the overall impression of these nucleated oasis-centre sites is very different. This was now a society based on mudbrick towns and villages. In taking Sāniat Jibrīl as a type site for undefended oasis-floor settlements, we must remember that it may have been a satellite settlement (though not a contiguous suburb) of the Garamantian capital of Jarma, and it is therefore possible that some of the features may be a result of the site's proximity to the Garamantian centre of power. Only future work at other sites can determine whether it is representative of oasis-centre settlements throughout the wadi. The range of imported pottery, amphorae and glass found during survey work at other oasis-centre sites suggests that the settlement at Sāniat Jibrīl was not exceptional in terms of its access to a range of imported material culture. What is particularly distinctive about Sāniat Jibrīl is the abundant evidence for production, especially of jewellery (in the form of ostrich eggshell beads, carnelian and amazonite beads), textiles and metalwork. The processing of semi-precious stones here seems to reflect the control by Jarma of distant resources within Garamantian territory; the carnelian probably came from a source in northern Fazzān, and the amazonite from the northern Tibesti (AF 1, 356–8).

The earliest datable stratified levels at Sāniat Jibrīl contained imported Italian Sigillata vessels of c. AD 50–80. However, there seems to have been an earlier, underlying phase and surface finds from the site include some Punic material dating to the latter centuries BC. The area excavated by CMD underwent its main development in the later 1<sup>st</sup> century AD. The structures show three main

structural phases, with alterations within them, dating from c. AD 50/80 to the mid 2<sup>nd</sup> century; the mid 2<sup>nd</sup> century to the end of the 3<sup>rd</sup> century, and the 4<sup>th</sup> century. Sporadic activity after the 4<sup>th</sup> century is attested but not datable. There is little imported material that need be later than the end of the 4<sup>th</sup> century. The chronology of what appears to be a similar oasis-centre settlement at Sāniat Sulaymān Krayda, seems to be similar, also spanning the late 1<sup>st</sup> to 4<sup>th</sup> centuries AD (Chapter 4).

The finds assemblage from Sāniat Jibrīl reveals a significant proportion of imported material culture – amphorae for olive oil, wine and fish products, fine tablewares, wheelmade coarse pottery, and glass vessels. These were found in all the structures excavated, suggesting that they were not restricted to a narrow elite in Garamantian society. From the excavated evidence it seems improbable that the settlement consisted entirely of elite residences and the occurrence of similar imports on a range of other sites investigated by survey tells against such an interpretation. The imports built up markedly at some point in the later 1<sup>st</sup> century AD – the earliest datable wares are Neronian or Flavian – and this would seem to correspond with the picture that can be drawn from literary sources. After the Garamantes intervened on the side of Oea in a territorial conflict with Lepcis Magna in AD 68–69 (Tacitus, *Hist.* 4.50), reprisals by Rome, including expeditions to Fazzān under Valerius Festus (Tacitus, *Hist.* 4.50) and Septimius/Suellius Flaccus (Ptolemy, *Geog.* I.8), seem to have ushered in a phase of co-operation rather than conflict that lasted largely until the frontier troubles of the Severan period in the early 3<sup>rd</sup> century (Mattingly 2003, 84–85). We hear also from Ptolemy (*Geog.* I.8) of an expedition to the Garamantes by Julius Maternus which went four months southwards from Jarma with the Garamantian king, to Agisymba where rhinoceros were found, probably Lake Chad. A series of coins of Domitian issued between AD 83 and 85 show a rhinoceros, and Martial celebrates Domitian's exhibition of a rhinoceros in the Colosseum in his *Liber de Spectaculis* (Buttrey 2007; Mattingly 2003, 85).

Alongside the imported pottery, there is a mass of evidence for continuing and evolving traditions of handmade pottery production. The range of handmade forms (and the predominant Berber Red Fabric) is quite distinct from the assemblage represented at Zinkekrā. The globular, everted rim jars are a particularly distinctive group, with

some morphological affinities with sub-Saharan products of the Lake Chad area (Gatto 2006, 238–40). It is thus possible that ‘migrants’ from the Sub-Saharan zone introduced some of the repertoire of ceramic forms, though this is an aspect that requires further work with well-dated assemblages. It is an important reminder, however, that movements of material culture were complex and not simply north to south.

New technologies and crops and animals also reached the central Sahara in this period, no doubt along the same routes as the trade goods. Sorghum, pearl millet and cotton came from the Sub-Saharan zone, while the domestic fowl, camels and pigs appear for the first time from the north or north-east. The Neolithic saddle quern was replaced or supplemented in the Fazzān by the rotary quern, which first appeared in the late 1<sup>st</sup> century AD and seems to have replaced the saddle quern entirely by the 3<sup>rd</sup> century AD. This technology undoubtedly came to Fazzān from the Roman Mediterranean world, as must the warp-weighted loom, since loomweights first appear around the same time, in the late 1<sup>st</sup> century AD. The assemblage of loom weights and spindle whorls from Sāniat Jibrīl provides important evidence for textile manufacture among the Garamantes. Interestingly, the warp-weighted loom persisted in the Fazzān through the 4th century AD, whereas in the Mediterranean it was largely replaced by the vertical two-bar loom by the end of the 1<sup>st</sup> century AD, and so loomweights are generally lacking in Mediterranean contexts after this (Wild 2007, 471). There is thus a parallel here between Fazzān and areas of Northern Europe, especially Scandinavia, outside the Roman world, where the warp-weighted loom also survived into the middle ages. There are further hints in the CMD-excavated assemblages that the Garamantes were experimenting with wheelmade pottery and glass production or glass-making, though in both these instances, further work is needed to refine our knowledge.

There is a possibility too that modes of cultural behaviour may also have been transmitted with the increased contact between the Garamantes and the Roman world. Certainly, there seems to have been a ready adoption by the Garamantes of the paraphernalia of Mediterranean feasting and drinking. The architecture of the mausolea and the small *aedicula* structure at Sāniat Jibrīl certainly reflect Mediterranean influences (Chapters 3 and

6). Less certain is the possibility that Roman architectural forms were being incorporated in Garamantian domestic architecture. In phases II and III at Sāniat Jibrīl, several of the rooms have distinctive U-shaped settings in mudbrick, around three sides of the room leaving the entrance clear. Two hypotheses have been proposed for their interpretation (cf. *AF* 1, 166–7). While the first author of this section prefers the view that these were multi-purpose social and functional spaces in buildings used for general domestic and potentially specialised manufacturing purposes, the second author is more struck by the possible parallels with the arrangement of the Roman *triclinium*. In favour of this view is the fact that the U-shaped features only appear in Garamantian architecture once trading contact with the Roman world was already well developed. However, these U-features are not the equivalent of high couches for reclining on, but very low raised platforms for sitting or kneeling on. There is certainly evidence to suggest that some manufacturing activity was carried out at times around these features and several feature central hearths and querns set into them. The room sizes are also generally quite small and space-constrained in comparison with Roman *triclinia*.

It is appropriate to see the U-shaped settings as a seating arrangement, potentially associated with a range of daily activities from working, cooking, eating, drinking and socialising. However, we should remain cautious about making an explicit link with the Roman dining room, representing a Garamantian appropriation of the *triclinium* idea. There seems to be a different conception of the use of space here from the Roman dining room even though the architectural format looks similar in plan. This question will be treated in greater detail in the discussion of Garamantian domestic architecture in *AF* 4, in the context of similar features from houses at Jarma.

The cemetery of Sāniat bin Huwaydī (Chapter 5) was in use at very much the same time as the occupation at the nearby site of Sāniat Jibrīl. Again, mudbrick was used as a building material for the structure of the tombs, and the roofing of chambers showed that the principle of the corbelled dome was understood, even if only applied to roof relatively narrow spaces. The exterior appearance of the monuments incorporated a range of circular and rectangular forms, including stepped structures. The burials

show a strong orientation with the rising and setting sun, with offering tables and stelae commonly placed against either the east or west side of the monument. Many of the burials, especially the later tombs from the upper levels of the cemetery, had been systematically robbed in antiquity (probably in early Islamic times). However, many of the lowest layer of tombs were preserved intact and provide remarkable insights into Garamantian funerary rites and grave assemblages. From the surviving traces of finds within robbed burials of later date, it is clear that the basic characteristics of the early funerary assemblages were continued in the periods where we have less pristine preservation of assemblages.

The intact grave assemblages displayed an extraordinary range of imports, and there were notable quantities of imported amphorae, finewares, faience and glasswares in individual tombs. Indeed, the grave goods were dominated by imported materials. It is difficult to assess change over time because of the heavier robbing of later phases, but the larger tomb sizes in the earlier periods supports the impression that there were more grave goods in the tombs of Phase I (late 1<sup>st</sup>/early 2<sup>nd</sup> centuries) than in later phases.

In Phase I (the late 1<sup>st</sup>/early 2<sup>nd</sup> century AD), the amphorae were mainly Tripolitanian, and certainly carried oil and wine and perhaps fish products. There were comparatively rare finds of the first half of the 1<sup>st</sup> century AD, suggesting limited trade in the Augustan and Julio-Claudian periods. The finewares were dominated by Italian Sigillata, indeed from a restricted number of potters mainly based in Pisa. The date of these forms, c. AD 50–80, narrows the date at which trade with the cities of the Tripolitanian coast really took off. Given the links between the Garamantes and Oea that are implied by the events of AD 68–69, it is possible that there was already something afoot in the late 60s, but the overall character of the assemblage favours a Flavian expansion of contacts after the military expedition of AD 70. The presence of identical vessels (especially Dragendorff form 18 dishes) not only with the same potters' stamps, but also with the same graffiti in cursive Latin, probably merchants' marks, suggests that these vessels arrived in large batches and that they were kept together until their deposition in the tombs. The assemblages from several closely adjacent tombs contain such similar ceramic assemblages

that they may well relate to consignments of goods purchased from a single trader by an extended family group.

Some early African Red Slip ware (ARS) forms appear in the pottery assemblage from the Phase I burials, but ARS really came to dominate the finewares of Phase II, when the proportions of Italian and South Gaulish Sigillata were much reduced. They continued in Phase III along with Tripolitanian Red Slip ware (TRS), though the quantity of ceramics (at least those that have survived robbing) were less overall.

The quantity of glassware found in some of the tombs is at first sight surprising, especially given the challenge of transporting it intact across the Sahara on the backs of pack animals, and in some tombs glass vessels outnumber table pottery. The funerary assemblage can be usefully compared with the material from settlement sites such as Sāniat Jibrīl and with the wider distribution pattern of Mediterranean glassware (see Hoffman's discussion in Chapter 8). An interesting observation here is that if anything the quality of the imported glassware increased over time, with some exceptionally high quality items from the Royal Cemetery, dating to the 4<sup>th</sup>–6<sup>th</sup> centuries AD.

Cumulatively, the imports force us to reassess the scale and importance of Garamantian trade with the Roman world (cf. *AF* 1, 355–62); the particular value of the assemblages presented in this volume is that they give an insight into the range and quantities present on particular sites, and show that they were not restricted to elite burials, but are found in non-elite graves and on settlement sites as well.

There was a smaller range of imported coarseware/cookware in the tombs at Sāniat bin Huwaydī than at the settlement of Sāniat Jibrīl, reflecting a distinctive process of selection of vessels for funerary ritual involving drinking accoutrements (jugs, flagons and pitchers). On the other hand, the quantities of amphorae fragments, fine tablewares and wheelmade coarseware imports found at sites such as Sāniat Jibrīl shows that the range of imported goods represented in the tomb assemblages were not simply exotic items limited to funerary ritual, but had become an integral part of the material culture of normal Garamantian daily life. The deliberate chipping, or 'ritual killing' of vessels deposited in graves does however mark out their treatment as special during the funerary ritual.

## THE LATE GARAMANTIAN PERIOD (AD 400 – 700)

None of the tombs at Sāniat bin Huwaydī was necessarily later than the mid 4<sup>th</sup> century AD, though some could go into the 5<sup>th</sup> century. Some of the date ranges for lamps start in the 4<sup>th</sup> or mid 4<sup>th</sup> and go into the 5<sup>th</sup>, but need not be later than mid 4<sup>th</sup> century. This might reflect a decline in imports after the raids of the Austuriani in AD 363, and the seismic events of the mid 360s, which affected the Tripolitanian cities at the termini of the trans-Saharan routes (see Mattingly 1995). There may have been repercussions in the settlement pattern of the Wādī al-Ajāl also in the Late Garamantian period, perhaps with the abandonment of some of the undefended oasis-centre sites in favour of other villages that were now fortified with mudbrick castle-like structures (*qsur*) as conditions became less secure. It is interesting that the two examples of major lesions (probably battle wounds) noted on skulls both seem to relate to the Late Garamantian Royal Cemetery (Chapter 7 above). Whether these individuals were really kings or simply members of the upper echelon of Garamantian society, it is apparent that, even for such exalted individuals, life could be marked by violent combat. However, it is clear that some contact was maintained with the Mediterranean zone well beyond the 4<sup>th</sup> century, albeit that it is difficult to assess from CMD's data the generality or the scale of these interactions.

Thus, although the cemetery at Sāniat bin Huwaydī seems to have gone out of use at some time between the mid 4<sup>th</sup> – 5<sup>th</sup> century AD, it is clear that imports to the Fazzān did not cease altogether, though they did perhaps change subtly in character and provenance. The excavations by Ayoub and CMD at the Royal Cemetery revealed tombs of the 5<sup>th</sup> – 6<sup>th</sup> centuries with rich assemblages including many imports (Chapter 6). Particularly striking are the luxury glass vessels, among which are facet-cut pieces and those with Greek inscriptions, of probably eastern Mediterranean or Egyptian origin. It is possible that some of the latter material arrived along the desert trade routes from the Nile Valley via the oases of Egypt's Western Desert, and may reflect some re-orientation of the trading contacts back to the routes to the Nile Valley, as the shorter

north-south routes to the Mediterranean became less important with the decline of the Tripolitanian cities in the 4<sup>th</sup> century. It is a reasonable hypothesis that while goods from the Late Roman/Byzantine world continued to arrive, they were now fewer in quantity, and correspondingly higher in quality, suggesting deliberate selection of choice high-quality items.

One of the contributions of survey and excavation at Tāqallit and the Royal Cemetery is the realisation that the circular and rectangular, stepped, stone-built escarpment tombs there were covered in mud plaster, and they would therefore have looked externally similar to those at Sāniat bin Huwaydī. The differences in construction thus relate largely to the availability of materials (stone at the escarpment edge, mud in the oasis floor), rather than differences in the conception or design, and this goes some way to reduce the initially bewildering variety of tomb types in the region (see Mattingly 2003, 188–220).

The social make-up of Garamantian society was evidently complex and diverse (see also Liverani 2006a), a point reinforced by the study of human remains from burials excavated by CMD (Chapter 7). We can recognise the presence of elements of both Berber (Mediterranean) African and Sub-Saharan groupings within the human bone assemblage. The picture needs amplification with a larger sample of well-excavated and intact burials. We have resisted over-interpreting the material derived from CMD's excavations at this stage. The study of Garamantian funerary practices and of the human remains from burials is a main focus of the Desert Migrations project (Mattingly *et al.* 2007; 2008; 2009) and will be much further developed in the context of that work.

In their totality, the excavations by CMD at a range of settlement and cemetery sites along the Wādī al-Ajāl provide us with an extraordinarily rich, and sometimes startling, view of the emergence and development of Garamantian society, its architecture, material culture, and economy. This picture is complemented and enhanced by his excavations at the Garamantian capital of Jarma itself, and further developed by more recent excavations there by the FP, and these will form the subject of the fourth volume in this series.

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5. **Excavations at Sidi Khrebish Benghazi (Berenice). Volume III, part 2: The Lamps.** (Supplement to *Libya Antiqua V*, vol. III.2). By D. M. Bailey. 1985. ix + 194 pp, 19 figs, 39 pls. Arabic summary: 3 pp. Published in collaboration with the Department of Antiquities and Ministry of Teaching and Education, Tripoli.
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3. **Excavations at Sidi Khrebish Benghazi (Berenice). Volume II, Economic Life at Berenice, Sculptures and Terracottas, Amphoras and Plain Wares.** (Supplement to *Libya Antiqua V*, vol. II). Edited by J. A. Lloyd with contributions from G. W. W. Barker, A. Wheeler, D. Webley, A. Bonanno and J. A. Riley. 1979. vi + 467 pp, 153 figs, 43 pls. Arabic summary: 19 pp. Published in collaboration with the Department of Antiquities and Ministry of Teaching and Education, Tripoli. *Out of print.*
2. **Excavations at Sidi Khrebish Benghazi (Berenice). Volume I, Buildings, Coins, Inscriptions, Architectural Decoration.** (Supplement to *Libya Antiqua V*, vol. I). Edited by J. A. Lloyd with contributions by J. M. Reynolds, R. M. Reece, F. Sear, P. Kenrick. 1977. xxx + 311 pp, 71 figs, 32 pls. Arabic summary: 120 pp. Published in collaboration with the Department of Antiquities and Ministry of Teaching and Education, Tripoli.
1. **Libyan Studies: Select Papers of the late R. G. Goodchild: collected articles from 1949–1967.** Edited by J. M. Reynolds. 1976. xxii + 345 pp, 96 pls, index.



السلع المستوردة (أنظر الفصل 6) من بينها أنية زجاجية رقيقة منها مزدانة برسومات جميلة ويحمل بعضها كتابات يونانية ربما جاءت من شرق حوض البحر الابيض المتوسط أو من بلاد مصر. وهنا يبرز امامنا احتمال مجيء بعض السلع المتأخرة إلى المنطقة كان من وادي النيل عن الطريق الصحراوي مرورا بواحات صحراء مصر الغربية. لعل هذا المسار يعكس التوجه الجديد الذي فرضته الظروف بإعادة توجيه الاتصال التجاري مع بلاد وادي النيل عن طريق القوافل القديم باعتبار أن الطرق التجارية القصيرة (شمال - جنوب) صارت أقل أهمية مع تدهور الأوضاع الامنية في المدن الطرابلسية إبان القرن الميلادي الرابع. ويعد هذا الافتراض معقولا تمشيا مع إستمرارية وصول منتجات العهد الروماني المتأخر والعهد البيزنطي إلى المنطقة والتي رغم قلة كمياتها إلا أنها ذات نوعيات رقيقة الامر الذي يوحي ببذل جهود في إنتقاء أجود الانواع من تلك السلع.

ومن بين الموضوعات التي أثارها أعمال المسح و الحفريات في موقع (تاكلليت) و في المقبرة الملكية، التأكد من أن قبور المنحدرات بمختلف أنواعها سواء كانت دائرية أو مستطيلة أو مدرجة كانت جميعها مغطاة بالجص وهي تبدو مماثلة لتلك التي عثر عليها في سانية بن هويدى. من هنا فإنه يمكننا القول بان إختلافات البناء كانت في الاعم الاغلب بسبب ما يتوفر من مواد بناء (الحجارة عند حافة المنحدر والطين في الواحات) اكثر من كونه إختلاف في الافكار أو في التصاميم، وهذا التفسير يخفف حدة الاستغراب حيال تباين أنماط قبور المنطقة.

اما التركيبة السكانية للمجتمع الجرمنتي فيكتنفها التعقيد والاختلاف وهذا الجانب تأكد من خلال دراسة بقايا الموتى في القبور التي نقب عنها دانيلز (أنظر الفصل 7). من خلال دراسة العظام البشرية تعرفنا على وجود عناصر تنتمي لجماعات من البربر (سكان حوض البحر الابيض المتوسط) ومن بلاد أفريقيا جنوب الصحراء. ولكي تكتمل الصورة نحتاج إلى المزيد من الحفريات على المدافن السليمة التي لم تنبش من قبل وتحليل نماذج من عينات الهياكل الكاملة بالقبور. حتى هذه المرحلة لازلنا نتحفظ على نشر أية تفسيرات يمكن ان يخلص إليها من خلال بقايا الموتى التي أكتشفها (دانيلز) في حفرياته. هذا و يذكر أن دراسة الممارسات الجنائزية للجرمنت ولبقايا العظام البشرية في القبور تعد من أهم موضوعات مشروع هجرات الصحراء، وستظفي مثل هذه الدراسات المزيد من الاهمية على المشروع المذكور.

وعلى العموم فإن حفريات واعمال (دانيلز) سواء في سلسلة المواقع الاستيطانية او في المقابر على طول وادي الحياة (الآجال) تعد مصدرا مهما يزودنا بمعلومات غنية عن ظهور وتطور المجتمع الجرمنتي من خلال العمارة والمواد والسلع الثقافية والاقتصادية، و تعززت هذه الصورة وأكتملت بحفرياته التي أجراها في جرمة عاصمة الجرمننت نفسها، و فيما بعد من خلال الحفريات الحديثة التي تمت ضمن مشروع فزان، وكل هذه الاعمال ستكون موضوع المجلد الرابع من سلسلة آثار فزان.

من إنتاج حوض البحر الابيض المتوسط(أنظر الفصل 8). كذلك من الملاحظات المهمة هنا تتبع تطور أنواع المصنوعات الزجاجية المستوردة على مر الزمن آخذين في الاعتبار وجود نوعية من الزجاج المستورد على درجة استثنائية رفيعة عثر عليها في المقبرة الملكية التي تعود إلى الفترة من القرن الرابع وحتى القرن السادس بعد الميلاد.

وبالنظر إلى تراكم السلع المستوردة، فإننا مضطرين إلى إعادة تقييم معدل و أهمية النشاط التجارى بين الجرمنت والعالم الروماني. ولعل الخاصية المميزة التي تحظى بها السلع المستوردة موضوع هذا المجلد أنها تعطينا فكرة عن سلسلة التشكيلات التي عثر عليها في المواقع الاستيطانية وتظهر لنا كذلك بان تلك المواد المستوردة لم تكن حكرا على مدافن النخبة من المجتمع فقط بل إنها وجدت ايضا في قبور العامة من أفراد المجتمع العاديين.

من ناحية أخرى عثر على كميات أقل من الفخار الخشن و آنية الطهى المستورد في سانية بن هويدى مقارنة بتلك التي عثر عليها في سانية جبريل مما يشير بوجود اسلوب تم إتخاذه لأختيار الأنية لممارسة بعض الطقوس الجنائزية بما فيها مستلزمات الشراب (الاباريق والكؤوس وغيرها). هذا وأن ما وجد بسانية جبريل من كميات كسر الامفورات و آنية الموائد الصقيلة و الفخاريات الخشنة المصنوعة بالعجلة خارج المنطقة تؤكد بانه ليس كل ما عثر عليه بالقبور يخص الممارسات الجنائزية بل تضمنت أيضا مقتنيات كانت للاستعمال اليومي. إن التشظية المتعمدة (طقوس الاعدام) التي كانت تعامل بها الأنية المودعة في القبور كانت تمارس أثناء تأدية الطقوس الجنائزية الخاصة بالدفن.

#### الفترة الجرمنتية المتأخرة (400 - 700م):

رغم أنه لا توجد قبور بسانية بن هويدى يعود تاريخها إلى ما بعد نصف القرن الرابع للميلاد إلا أنه هناك إحتمال بوجود بعض القبور ترقى الى القرن الخامس الميلادى. إذ تبين أن المدة الزمنية للمصاييح تتراوح بين القرن الرابع الميلادى والقرن الخامس الميلادى، ولعل هذه الحالة تعزى إلى تدهور حركة الاستيراد عقب غارات قبائل الاوستريان عام 362 وإلى الزلزال الذى وقع في العقد السادس من القرن الميلادى الرابع وضرب المدن الطرابلسية التي كانت بمثابة الموانئ التي تنتهى عندها طرق القوافل القادمة من الصحراء. فمن الأرجح أن هذه الاحداث قد هزت عوامل الاستقرار بوادى الحياة (الأجال) إبان الفترة الجرمنتية المتأخرة، وقد أدت هذه الاوضاع إلى قيام بعض السكان بهجر الواحات الغير حصينة والتحول إلى القرى المنيعه والمحصنة بأبنية تشبه القلاع مشيدة بقوالب الطين والمعروفة محليا باسم القصور وذلك إستجابة لدواعى تدهور الظروف الامنية و إنتشار شعور عدم الاطمئنان في المنطقة، و لكن حسبما تفيدنا بعض الادلة الاثرية ظل التواصل التجارى مع منطقة حوض البحر الابيض المتوسط خلال القرن الرابع الميلادى.

هذا ورغم إحتمال توقف إستعمال سانية بن هويدى في فترة ما بين منتصف القرن الرابع- القرن الخامس الميلاديين، إلا أن الواردات إلى منطقة فزان لم تتوقف بكل تأكيد مع إحتمال حدوث تغيير في نوعية تلك الواردات وفي مصدرها القادمة منه. لقد أسفرت الحفريات التي اجراها كل من (أيوب) و (دانيلز) بالمقبرة الملكية عن ظهور للضوء قبور تعود إلى القرنين الخامس و السادس الميلاديين، غنية بالمقتنيات الجنائزية التي تحتوى على الكثير من

شروق وغروب الشمس مع وجود موائد القرابين والمسلات التي كانت توضع في العادة إما في مواجهة الشرق أو الغرب على جانبي الضريح. هذا ويلاحظ أن الكثير من المدافن خصوصا المتأخرة منها والكائنة في المستويات العليا قد نبشت في العصور القديمة وربما في مطلع العصور الوسطى أيضا، بينما قبور الطبقات السفلى ظلت سليمة دونما أى مساس وهى التى أمدتنا بالكثير من الشواهد على طقوس الدفن لدى الجرمنت وذلك من خلال المقتنيات الجنائزية المحفوظة بها. ومن خلال البقايا التي سلمت من أيادى نابشي قبور العصور المتأخرة تعرفنا على أن الخصائص الأساسية للمظاهر الجنائزية المبكرة ظلت مستعملة بصورة متواصلة حتى في العصور المتأخرة.

لقد زدتنا مجموعات الاثاث الجنائزى التي لم تتعرض للنش بتشكيلات غير عادية من المواد المستوردة جلها تمثل في الامفورات والاباريق والأنية الصقيلة والمشغولات الزجاجية وكلها وجدت في مدافن الافراد، والملاحظ هنا أن أغلبية مقتنيات المقابر من الادوات المستوردة، ولكن بسبب ما أصابها من دمار جراء الاعتداء عليها صار من الصعب تقييم التغيرات التي طرأت على المظاهر الجنائزية، بيد أن القبور الاكبر حجما التي تعود إلى عصور أقدم تعزز الانطباع السائد بشأن وجود الكثير من أثاث القبور في مدافن المرحلة الاولى (اواخر القرن الاول ومطلع القرن الثاني الميلادي) اكثر مما أصبحت عليه في القرون اللاحقة. ففي المرحلة الاولى (اواخر القرن الاول ومطلع القرن الثاني الميلادي) كانت الامفورات الطرابلسية هي السائدة بين فخاريات تلك الفترة بمنطقة جرمة. ومن المؤكد أنها كانت تستخدم في حفظ ونقل الزيت والخمور وكذلك السمك. ويلاحظ أن النذرة النسبية في المواد المستوردة خلال النصف الاول من القرن الاول الميلادي توحى بمحدودية العلاقة التجارية في عهدى اغسطس ويوليوس كلاوديوس، وكان أغلب الفخار المصقول من نوع التيرا سيجيلاتا الايطالية بل انها تعود إلى نوعية معينة من إنتاج فخارين أغلبهم يزاولون صناعاتهم قرب (بيزا) وترجع هذه النوعية من الفخار إلى الفترة من عام 50م - 80م، ولعل مرد قصر هذه المدة يعود إلى خمود حركة التجارة مع مدن منطقة طرابلس الساحلية عموما. ولكن بالنظر إلى العلاقة الخاصة التي تربط الجرمنتيين بمدينة أويا بسبب احداث عام 68 و 69 بعد الميلاد كانت هناك علائق تجارية متميزة بين الطرفين. على كل حال فإن العلاقات بين الجرمنت ومنطقة طرابلس عموما قد تطورت بعد الحملة العسكرية عام 70م، فوجود آنية مطابقة للطبق نوع (دراجيندوف 18) والتي لم تحمل فقط أختام نفس الفخارين بل احتفظت ببعض الكتابات اللاتينية التي ربما تخص بعض ملاحظات التجار، مما يوحي بأن تلك الأنية وصلت بكميات كبيرة وأنه تم الاحتفاظ بها إلى حين إيداعها القبور.

هذا وأن المجموعات الفخارية الاخرى التي عثر عليها في عدة قبور مجاورة قد أحتوت مواد فخارية مماثلة ربما جاءت بكميات سلع تم شراءها على يد تاجر واحد ينتمي إلى عائلة كبيرة. كما عثر على بعض أشكال الفخار الافريقي الاحمر المصقول (ARS) ضمن مجموعات فخارية تعود إلى المرحلة الاولى. و لو أن هذه النوعية من الفخار سيطرت على الفخار المصقول خلال المرحلة الثانية عندما تقلصت المنتجات الفخارية القادمة من إيطاليا و من جنوب بلاد الغال بشكل ملحوظ.

وكانت كميات المصنوعات الزجاجية التي عثر عليها في بعض القبور مدهشة لأول وهلة خصوصا عندما نتذكر انها نقلت عبر الصحراء على ظهور الحيوانات دون تعرضها للضرر. وفي بعض القبور لاحظنا ان كميات الزجاج تفوق المصنوعات الفخارية مما يسمح لنا بعقد مقارنات مع غيرها من أثاث القبور التي أحتوت مصنوعات زجاجية

إستخدام العجلة. إن مجموعة الأشكال الفخارية المصنوعة يدويا (الفخار البربرى الاحمر السائد) تعد تشكيلة متميزة بين المجموعات الفخارية في زنككرة، كما أن الجرار الكروية ذات الحافة المقلوبة تعتبر مجموعة متميزة بصورة خاصة هي الاخرى، وهى ذات علاقة مورفولوجية بمنتجات منطقة بحيرة تشاد جنوب الصحراء. ومن هنا من الممكن القول بقيام مهاجرون من مناطق جنوب الصحراء بجلب بعض الأتية الفخارية، غير أن هذا الرأى لايزال في حاجة إلى المزيد من الدراسة، إذ أن حركة التنقل بمثل هذه المواد لم تكن سهلة.

وعلاوة على ما تقدم نشير إلى أن هناك تقنيات جديدة وحاصلات وحيوانات جديدة وصلت وسط الصحراء خلال الفترة الكلاسيكية من تاريخ الجرمنت، فبدون شك أن بعض حاصلات جنوب الصحراء مثل الذرة والدخان واللؤلؤ والقطن قد وصلت جرمة عبر طرق القوافل، بينما قدمت طيور الدجاج المحلى والجمال والخنازير لأول مرة إلى المنطقة قادمة من الشمال ومن الشمال الشرق. وتم خلال تلك الفترة إستبدال حجارة الطحن اليدوية في منطقة فزان بالرحى الدوارة (المجرشة) التى انتشرت في كامل ارجاء المنطقة بحلول القرن الثالث بعد الميلاد. ولاريب في ان هذه التقنية قد جاءت من حوض البحر المتوسط و إضافة إلى إستخدام ثقالة الغزل التي ظهرت بالمنطقة في أواخر القرن الميلادى الاول. إن العثور على مشدات الغزل والمغازل في سانية جبريل يعطينا دليلا قويا على ذبوع صناعة النسيج في أوساط المجتمع الجرمنتى. ومن المفيد أن نشير إلى إستعمال ثقالات الغزل ظلت مستعملة طوال القرن الرابع الميلادى بينما أستبدلت في حوض البحر الابيض المتوسط بطريقة الغزل المعتمد على قضيبين عموديين متوازيين في حوالي القرن الاول للميلاد الامر الذى ادى إلى إختفاء ثقالات الغزل من بلدان حوض المتوسط بعد القرن الاول للميلاد. زد على ذلك هناك دلائل على أن الجرمنت انتجوا الفخار بإستعمال العجلة إضافة إلى إنتاج أو تصنيع الزجاج.

كذلك هناك إحتمالية إنتقال بعض السلوكيات الثقافية مع تزايد العلاقات الجرمنتية بالعالم الرومانى. فهناك دلائل تؤكد أن الجرمنت تبناوا إستعمال بعض الادوات المستعملة في حفلات الشراب التي كانت سائدة في حوض البحر الابيض المتوسط. كما أن عمارة الاضرحة وبعض المباني الاخرى التي عثر عليها في سانية جبريل تعكس بكل تأكيد تأثيرات حوض البحر الابيض المتوسط في هذا المجال ( أنظر الفصل 3 و 6 )، و لو أننا لسنا متاكدين من إحتمالية دمج بعض عناصر العمارة الرومانية في العمارة المحلية الجرمنتية. لقد لاحظنا في المرحلة الثانية والمرحلة الثالثة من تاريخ سانية جبريل وجود عدة غرف يأخذ شكلها حرف (U) اللاتيني مبنية بقوالب الطين من ثلاث جهات فيما تركت الجهة الرابعة دون بناء. ويتمثل التفسير الحالى لهذه الظاهرة في أن هناك عدة أغراض وظيفية وإجتماعية لهذه الطريقة من البناء كانت تمارس في فضاءات المباني مثل ممارسة الشئون المنزلية أو مزاوله بعض الصناعات. ولا شك في وجود دليل يوحى بقيام بعض الانشطة الصناعية كانت تزاوول يوميا في تلك الفضاءات، خاصة وأن هناك عدة مواقد وحجارة طحن وجدت في تلك الاماكن.

وشهد موقع سانية بن هويدى (أنظر الفصل 5) إستيطاننا تزامن مع إستيطان موقع سانية جبريل. ونلاحظ في موقع سانية بن هويدى هذه تكرار إستعمال قوالب الطين في تشييد القبور، وأستعمل في تسقيف الغرف القباب المطلقة ولو أن اقتصر التسقيف بهذا النوع على الفضاءات الضيقة فقط. وتميز المظهر الخارجى لمباني الموقع المذكور بوجود أشكال هندسية مستطيلة ومستديرة إضافة إلى إستخدام التدرج في الابنية. وكانت طرق الدفن تتبع



هذا وخلال الفترة الكلاسيكية من الحضارة الجرمنية شهدت الانشاءات المعمارية ثلاث مراحل مختلفة يمكن إيجازها فيمايلي:

- المرحلة الاولى/ من 50-80م وحتى منتصف القرن الثاني الميلادي.
- المرحلة الثانية / من منتصف القرن الثاني الميلادي وحتى نهاية القرن الثالث الميلادي.
- المرحلة الثالثة / القرن الرابع الميلادي.

هذا وقد تم تتبع المظاهر المعمارية التي شهدتها المنطقة بعد القرن الميلادي الرابع، إلا أنه لم يتم تاريخها بعد. كما أنه لم يعثر إلا على القليل من المواد المستوردة بعد نهاية القرن الرابع للميلاد. و من خلال دراستنا لبعض المواقع الأخرى تبين وجود تسلسل تاريخي متماثل بين مواقع الاستيطان المتشابهة بالواحات كما هو الحال في سانية سليمان كريدة، وهي الظاهرة التي سادت بداية من نهاية القرن الميلادي الاول وحتى القرن الميلادي الرابع (أنظر الفصل 4).

إن اللقى الأثرية المكتشفة بسانية جبريل تؤكد على مدى كثرة المواد المستوردة من أمفورات لحفظ الزيت و النبيذ ومنتجات الاسماك، إضافة إلى أدوات المائدة و المطبخ و أنية الزجاج، فقد عثر على هذه البقايا أثناء الحفريات وفي كافة انحاء الموقع الامر الذي يوحي بأن تلك المواد لم يكن إستعمالها مقتصرًا على نخبة معينة من المجتمع الجرمني، إذ أنه من خلال الشواهد الأثرية يتبين لنا أنه من المستبعد إحتواء هذه المستوطنة على النخبة من السكان فقط، ومما يؤكد هذا التفسير ظهور مواد مستوردة أخرى للضوء في مجموعة من المواقع التي تناولتها المسوحات الأثرية. والجدير بالذكر إزداد الواردات بشكل ملحوظ خلال فترة معينة من أواخر القرن الميلادي الاول، وكانت أولى النوعيات الفخارية المبكرة تعود إلى العهد النيروني و العهد الفلافي (نسبة للإمبراطور نيرون والإمبراطور فلافيوس – القرن الاول الميلادي). وهذا التأريخ يمكن موافقته بالكتابات التاريخية التي تطرقت إلى تلك الفترة. فبعد ما وقف الجرمنونيون في صف أويا في صراعها مع لبدية على الحدود عام 68 و 69 بعد الميلاد، قامت روما بالانتقام من جرمة بتسيير حملات على فزان بقيادة ( فاليريوس فيستوس وسبتيموس / سوليسيوس فلاكوس). و لكن يبدو أن تلك الحملات أحدثت نوع من التعاون بين الطرفين أستمر لمرحلة طويلة كان أثره أكبر من تأثير الصراع السياسي الذي أستمر حتى العهد السيويري عندما شهدت مناطق الحدود الجنوبية للإمبراطورية الرومانية إضطرابات كثيرة في مطلع القرن الثالث بعد الميلاد. وسمعا ايضا من (بطليموس) عن حملة تم توجيهها إلى الجرمنيت بقيادة (جوليوس ماترينوس) التي بعدما وصلت جرمة واصلت سيرها لمدة أربعة أشهر جنوبا مصحوبة بالملك الجرمني إلى أن وصلت منطقة (أجيسايما Agisymba)- وهي ما يعتقد أنها بحيرة تشاد اليوم – حيث يوجد حيوان وحيد القرن. وتجدر الإشارة إلى أن مجموعة من العملة النقدية صدرت أيام (دوميتيان Domitian) بين عامي 83 و 85 طبع عليها صورة حيوان وحيد القرن.

بالعودة إلى الفخار، بإعتباره من أهم البقايا التي يعول عليها في تاريخ المواقع الأثرية، فإن من خلال عدة دلائل بمنطقة الدراسة نستطيع القول بأن الكثير من الاماكن قد شهدت تواصل في إنتاج الفخار المحلي المصنوع يدويا دون

### الفترة الكلاسيكية (001 - 400 م):

يلاحظ مع بداية الفترة الكلاسيكية من تاريخ الجرمنت أن موقع زنكرة قد صار مكانا للدفن ولممارسة بعض الطقوس الجنائزية. ولعل آخر مراحل البناء في هذا الموقع تتمثل في أبنية على المنحدر الجنوبي لجبل زنكرة، غير أن تلك تلك المباني سرعان ما اختفت بتزايد عدد المقابر سواء في هذا الجانب من الجبل أو بالقرب من سفح الجبل من ناحيته الشمالية. وقد أتصفت مجموعة المدافن التي نقب عنها - دانيلز - (ZIN 002.013) بإفتقارها التام للمصنوعات الخزفية، وتبدو أنها من بين الامثلة المبكرة من المقابر الجبلية (ربما تعود إلى القرون الأخيرة قبل الميلاد)، ولكن عموما نجد أن اللقى التي التقت من على السطح وهي في جلها تعود الى قبور نبشت في وقت سابق كانت عبارة عن كسر لجرار مستوردة وبعض الأنية المصنوعة من الفخار المصقول والمزجج وكلها آنية أستمر تداولها طيلة الفترة من بداية القرن الاول للميلاد وحتى القرن الخامس الميلادي. لقد تميزت مظاهر الاستيطان الجرمنتي خلال الفترة الكلاسيكية بالتوسع الكبير في إقامة القرى وسط الوادي ويمكن أخذ موقع سانية جبريل كواحة بالوادي نموذجا يدلنا على ما كانت عليه مظاهر إنتشار الاستيطان حينئذ بما تميز به من منازل مستطيلة الشكل غير بسيطة التخطيط مبنية بقوالب الطين (أنظر الفصل 3). وهذا النوع من الابنية له علاقة بمنازل قوالب الطين المشيدة على المنحدرات السفلى لجبل زنكرة إبان التاريخ المتأخر لهذه المستوطنة وهذه المباني المتأخرة ليست ذات طابع دفاعي. وفي سانية جبريل كانت مظاهر الاستيطان كثيفة ورفيعة التنظيم تميزت بالمباني الكبيرة التي أستخدم في بعضها جانب من العناصر المعمارية الدقيقة. وبالرغم من وجود بعض الجوانب المشتركة بينها وبين مباني زنكرة إلا ان الانطباع العام لمواقع واحات وسط الوادي مختلف بشكل كبير تجاوبا مع تغير طبيعة المجتمع. إذ أصبح المجتمع في ذلك الوقت مجتمعا مستقرا في قرى وبلدات ذات أبنية مشيدة من قوالب الطين. وتعتبر سانية جبريل نموذجا لهذا النوع من الواحات الذي لم تستخدم أية تحصينات حولها، وفي هذا الاطار علينا وضع احتمال قيام عدة مستوطنات حول العاصمة جرمة وذلك إستفادة من قرب تلك المواقع من مركز قوة عاصمة الجرمنت، ولكن يبقى ان نقول ان العمل الأثرى في المستقبل هو الذي سيؤكد ما إذا كانت جرمة المدينة المثل التي التفت حوله القرى قديما أم لا. من ناحية أخرى نلاحظ أن سلسلة الفخار المستورد والجرار والزجاج الذي عثر عليها أثناء اعمال المسح في سانية جبريل لم يكن إستثنائيا غير ان الشيء المميز لهذا الموقع هو وفرة مواد تم إنتاجها محليا خصوصا الحلي (التي جاءت على أشكال خرز من قشر بيض النعام وخرز العقيق الاحمر والامازوتايث) إضافة إلى بعض النسيج والمشغولات المعدنية. إن تداول مايشبه الاحجار الكريمة في هذا الموقع يمكن ان نعتبره مؤشر على إتساع رقعة سيطرة الجرمنت على المنطقة وتحكمها في بعض مواقع مصادر تلك المصنوعات، فالعقيق الاحمر قد يكون مصدره شمال فزان أما الامازوتايث فمن الممكن أن يكون من شمال جبال تيبستي. لقد احتوى مستوى الطبقات المبكرة بسانية جبريل و التي تم التعرف على تواريخها، أحنوى على آنية مستوردة من نوع التيرا سيجيلاتا التي تعود في تاريخها إلى الفترة ما بين عام 50 م، و80 م تقريبا، ومع هذا يبدو انه كانت هناك نماذج تعود إلى فترة أسبق من ذلك التاريخ، فالطبقات التي سبقت ذلك التاريخ واللقى التي التقت من على السطح بالموقع أحتوت على بعض البقايا البونيقية التي تعود إلى القرون المتأخرة قبل الميلاد. ويذكر أن الاماكن التي نقب عنها (دانيلز) كانت قد شهدت تطورا رئيسيا في أواخر القرن الاول بعد الميلاد.

كان لها دور دفاعي دونما أى شك مع إحصائية إستخدامها أيضا لحفظ بعض الحيوانات. وفي فترة لاحقة وربما كان ذلك بعد عام 300 ق.م تم تشييد مباني من قوالب الطين على السفوح الدنيا للجبل وذلك خلال فترة شهدت على ما يبدو نزوح متواصل من قمة الجبل. ولعل آخر الابنية في هذه النواحي من الجبل تمثلت في عدد من المنازل ذات الشكل المستطيل مشيدة على نحو جيد من جدران من قوالب الطين المستقرة على قواعد حجرية مربعة الشكل والتي أستمر سكانها حتى نهاية القرن الاول بعد الميلاد. وتجدر الاشارة هنا إلى ان إستعمال كل من قوالب الطين والحجارة المربعة يعني إستعمال تقنيات مستوردة إما من عالم المتوسط أو من وادي النيل. هذا و بالنظر إلى عدة شواهد تدلنا على مدى طول العلاقات الثقافية المتواصلة بين تلك الانحاء من العالم القديم فإنه لا مجال للخوض في إحصائية وجود إبتكار صرف يخص هذه المنطقة. من ناحية أخرى نشير إلى أنه لم نستخلص من البقايا الاثرية التي عثرنا عليها في مباني قوالب الطين إلا معلومات بسيطة ليست كافية لاعطاء صورة مفصلة عنها، ولو أن غياب الروث الحيواني فيها يوحي بوجود فواصل بين أماكن السكن وأماكن الاحتفاظ بالحيوانات وهذا بدوره يوحي بتواصل تخلي المجتمع الجرمنتي بمظاهر العناية بالحيوان التي هي السمة الغالبة للفترة الرعوية و التوجه الى تبني مظاهر المجتمع الزراعي.

أما منتجات موقع زنكرة خلال هذه الفترة فقد تمثلت في إنتاج الفخار المصنوع يدويا إضافة إلى بعض الآنية الخشبية وبعض المصنوعات الخفيفة الأخرى (من مواد مختلفة مثل الجلد و الخشب و الحصر - الصمار-) في نفس الوقت لم يمدنا الموقع ذاته إلا بالقليل من المواد المستوردة (حفنة من الخرز الفينيقي و الخرز الزجاجي)، وهذا يتعارض مع وضعية المستوطنة الجبلية المعاصرة لزنكرة المسماة تيندا (Tenda) الكائنة عند الطرف الغربي لوادي الحياة (الأجال) (انظر الفصل 2)، فموقع تيندا هذا يعد مفارقة تشد الانتباه، فبالرغم من ثراه بالمواد الاثرية إلا أنه يفتقر لآثار مباني معقدة المشيدة بالقوالب الطينية، فكل ما هنالك مجرد بقايا أكواخ بسيطة تأخذ الشكل البيضاوي من غرفة أو غرفتين. و لكن من خلال الكمية المعتبرة التي عثرنا عليها من الفخار البونيقي المستورد، نستطيع أن نشير إلى نشوء علاقة تجارية قوية بين مواقع الجرمنت والموانئ الفينيقي - ليبية على الساحل.

إن سبب تقدم المظاهر المعمارية في زنكرة والمستوى المتواضع الذي عثرنا عليه من المصنوعات لم نتوصل إليه على نحو كامل لحد الآن (وهذه الظاهرة نشاهدها في الكثير من المواقع التي تعرض إليها دانيلز بالمسح والتنقيب بإستثناء موقع تيندا). من جانب آخر يمكن وعلى نحو لا يرقى لأدنى شك أن نفس تزايد نزوح السكان عن موقع زنكرة في منتصف الالفية الاخيرة قبل الميلاد مرده إلى قيام مدينة جرمة كمركز حضارى بالمنطقة (غالبا ما يعود ذلك إلى بداية القرن الرابع قبل الميلاد فصاعدا). و هذا التوجه يؤكد تحول مظاهر الاستيطان من قرى صغيرة محصنة على قمم المرتفعات إلى واحات أنتشرت على طول الوادي، ولا شك في ان جرمة شهدت يومئذ نشاط إستيرادي بالمستوى الذي شهدته قرية تيندا. كما ان تغير مواقع الاستقرار بالنحو الذي مر يؤكد تزايد ظروف توفر الأمان بالوادي مع موجة التوجه نحو ممارسة الزراعة بالرى المكثف بالوادي التي يمكن أن يعزى إليها إستعمال تقنية الري المعروفة بنظام الفقارات الذي جاء إلى المنطقة خلال النصف الثاني من الالفية الاخيرة قبل الميلاد.

بالمواقد وغيرها من آثار الفترة الرعوية. كما تجدر الإشارة إلى أن البقايا العضوية من مختلف طبقات الاستيطان تزودنا بدليل قاطع على ممارسة السكان النشاط الزراعي (أنظر فصل 9). إن التواريخ المتوصل إليها عن طريق تحاليل كربون 14 المشع (A.M.S) لا تسمح لنا بتأكيد أي فترة من الألفية الأخيرة قبل الميلاد التي بدأ الجرمنتيون فيها ممارسة الزراعة المرورية المتعلقة بالنخيل ومجموعة الحاصلات المعروفة تحت مصطلح النيلو متوسطي (Nilo-Mediterranean). إن العثور على نوى البلح الذي يعود إلى 1400 - 1300 سنة قبل الميلاد في وادي تانزوفت (Tanzuft) على بعد نحو 400 كم جنوب غرب زنكرة، يوحي بأن الأصول الأولى للزراعة في وسط الصحراء تعود إلى فترة أسبق من التاريخ المذكور، فزراعة وادي تانزوفت السالف الذكر بنخيل البلح لا بد وأنها تلت ممارسة الزراعة في وادي الحياة (الأجال) ولم تسبقه و من هنا من الممكن أن نفترض أن أواخر الفترة الرعوية ومطلع العصر الحجري كانت مرحلة إنتقالية من الحياة الرعوية المتنقلة إلى الحياة الزراعية المستقرة. هذا وأكدت التحاليل الدقيقة التي أجريت على طبيعة الرسوبيات العضوية معرفتنا بالطعام الذي كان يستهلكه سكان الجبل والمتمثل في غلال الفاكهة كما أن بعض آثار أدوات الطحن بينت لنا أن أولئك السكان عرفوا إستهلاك أنواع معينة من الحبوب.

ومن المحتمل أن الزراعة المبكرة عند جبل زنكرة قد مورست لعدة قرون قبل قدوم تقنية الري بنظام الفقارات إلى المنطقة. إذ إن هناك أسباب قوية تدعونا إلى الاعتقاد بأن هذا النوع من الري قد جاء إلى منطقة فزان من صحراء مصر الغربية قبل منتصف القرن الخامس قبل الميلاد. وإذا ما صار هذا الافتراض يقينا فإن النشاط الزراعي الذي سبق ذلك التاريخ قد تمثل في مزارع صغيرة تروى إما بأبار سطحية بالقرب من بطن الوادي (على بعد 1 - 2 كم) من جبل زنكرة أو مزارع تروى بعين ماء قرب قدم الجبل (لا توجد آثار مرئية لها اليوم) ومن هنا فإنه على الأرجح أن يكون موقع الاستيطان الجرمنتي المبكر كان ذو علاقة بطبيعة الدفاع عن المنطقة وعن مصادر المياه أكثر من كونه مرتبنا بالانشطة الزراعية، مما يوحي بأن فترة نشأة موقع زنكرة الاستيطاني كانت تشهد حالة متزايدة من التنافس على المياه و على مصادر الحياة الأخرى.

ويلاحظ أن الأدوات التي أستعملها الجرمنتيون الأوائل كانت أدوات حجرية (خصوصا المستدقات و المقاشط) وهو يبين استمرار الحياة الثقافية لفترة الرعاة فضلا عن بعض الفخاريات ذات الصنع المحلي. وفي واقع الأمر فإن الصناعات المعروفة بصناعات زنكرة قلما تتوفر في مواقع الجرمننت الأخرى على قمم المرتفعات الأمر الذي يوحي بتمحور الصناعات الفخارية في مواقع إنتاجها، رغم وجود مظاهر التماثل بين مستوطنات المنطقة ككل. كما أن طريقة إستعمال بعض المصنوعات تلقى بعض الضوء على المرحلة الانتقالية التي شهدتها مجتمعات تلك المواقع من جماعات تمارس مهنة الرعي إلى مجتمعات زراعية مستقرة زمن الجرمننت.

#### الفترة التي سبقت التوسع العمراني الجرمنتي (500-001 قبل الميلاد):

استمرت أعمال التوسع العمراني خلال المرحلة الأولى من هذه الفترة على شكل بناء وحدات سكنية بسيطة على قمة المرتفع وعلى المنحدرات مع وجود آثار لبنية ذات طبيعة دفاعية كالاسوار والحوائط والاسيجة على المساطب، وكانت أهم الاسوار الدفاعية قد شيدت حول القمة إذ تميزت بتصميمها المعقد والملفت للنظر. كما أن أسوار الاسيجة

### المرحلة الجرمنتية المبكرة (1000 ق م – 500 ق م) .

تمثلت المستوطنات الجرمنتية المبكرة في قرى منيعة شيدت على قمم المرتفعات عند الناحية الجنوبية من وادي الحياة (أنظر الفصلين 1 و 2) وقد أظهرت جميع مواقع هذه المرحلة من خلال البقايا الاثرية صلة وثيقة بجوانب ثقافية تنتمي إلى الفترة الرعوية المتأخرة (نهاية العصر الحجري الحديث). و يمكن اعتبار موقع زنكرة من المواقع التي ينتمي أصل نشاته إلى تلك الفترة. وهو ذات الموقع الذي شهد الأعمال الاولية المكثفة التي أجراها (دانيلز) باعتباره موقعاً حصيناً يصعب الوصول إليه. وبمقارنته بالمواقع الاستيطانية الأخرى التي تعود إلى مراحل تاريخية أسبق عاصرت فترة الرعاة، نلاحظ أن موقع زنكرة قد أستوطن خلال مرحلة صارت فيها الحاجة إلى المواقع الحصينة وظهور توجه بدأ يسود في تلك الازمنة ألا وهو الشروع في التحصين والدفاع عن مناطق الرعي ومصادر المياه تمشياً مع تزايد تصحر تلك الارعاء.

من ناحية أخرى، نجد أن في حالة دوام إستيطان هذا الموقع ونعني هنا موقع زنكرة أكثر من كونه كموقع منبع يلتجأ إليه في حال الازمات، فلا بد وأن كان أمر توفير المياه كان سهلاً يسيراً، و من هنا يمكن القول بأن طريقة توفير المياه كان عن طريق نقلها يومياً من الآبار الموجودة أسفل الجبل والتي كانت على بعد مسافة معينة من الموقع. ولكن من الأرجح أن إختيار هذا المكان (وغيره من الاماكن الشبيهة) مرده إلى وجود عين مياه جارية بالجوار، ورغم عدم وجود ما يدل على ذلك اليوم إلا أنه من المحتمل أنها أرتفعت تحت الترسبات الهائلة التي أنحدرت من الجبل. علماً بأنه عثر على بقايا مواد جصية في مستويات أثرية معينة في الجانب الشمالي من الجبل، الامر الذي يوحي بوجود مسار عين مياه جفت في فترة ما خلال الالفية الاخيرة قبل الميلاد.

لقد تمثل الاستيطان الاول لجبل زنكرة في مواقع حفرت على سطح قمة الجبل وعلى جوانبه، و قد احتفظت تلك المواقع ببعض البقايا الاثرية التي تخص الفترة الرعوية المتأخرة (العصر الحجري الحديث) من الممكن تأريخها إلى زمن يتراوح بين 1100 ق.م و 900 ق.م. وقد دأب سكان العهد الجرمنتي المبكر إلى إستخدامها فيما بين 1000 ق.م و 500 ق.م مع إضافة بعض الاكواخ المشيدة بشكل بدائي من الحجارة (أو فضاءات مبلطة بالحجارة) على شكل بيضاوى مع إحتمال إستعمال الطين وبعض المواد العضوية في بناء الحوائط العليا المسقوفة بظفائر سعف النخيل . وكما تقدم تتسم هذه الاكواخ بالبساطة وعادة ما تتكون من غرفة واحدة أو غرفتين بعضها يأخذ الشكل الشبه المستطيل ويلحق ببعض تلك الاكواخ أسجة صغيرة المساحة (ربما كانت مخصصة لحفظ الحيوانات). هذا ويلاحظ أنه خلال تلك المرحلة لم يكن من الواضح قيام السكان بزيادة الامكانيات الطبيعية لحصانة الموقع عن طريق بناء بعض الجدران و العوارض، رغم أنه من حيث وجهة نظر التدرج الطبقي والانشائي يؤكد تزامن التوسع في الانشاءات الدفاعية مع المراحل التي سبقت التوسع العمراني الذي شهده الموقع.

إن الكميات الكبيرة التي عثر عليها من روث الحيوانات في أكواخ الموقع وفي الاسيجة هناك تؤكد عادة إحتفاظ السكان بحيواناتهم في أماكن قريبة منهم، بل بالنظر إلى عدم وجود فواصل يمكن مشاهدتها بين اماكن السكن وأماكن حفظ الحيوانات، ويحكم البرودة الشديدة التي تتصف بها ليالي الصحراء فإنه من المحتمل قيام السكان زمنئذ بالنوم في نفس المكان مع حيواناتهم طلباً للدفء. ويذكر أن منحدرات جبل زنكرة احتفظت ببقايا نفس الاكواخ المرتبطة

- 1- المرحلة الجرمنية المبكرة من 1000 سنة قبل الميلاد إلى 501 ق م.
- 2- المرحلة الموالية للمرحلة الجرمنية المبكرة من 500 إلى 1 ق م.
- 3- المرحلة الجرمنية الكلاسيكية من عام 1 م إلى 400 م.
- 4- الجرمنية المتأخرة من 401 م وحتى 700 م.

تناول هذا المجلد قد حفريات (تشارلز داينلز) إضافة إلى تطرقه لمواد تلك الحفريات بصورة أكثر دقة من أي دراسة أجريت على العالم الجرمني. هذه وقد إنبتق عن هذه الدراسة فكرة التأثر بعوامل حركة السفر والتنقل جنوباً وشمالاً، فقد تأثر المجتمع الجرمني بشكل كبير بثقافة مجتمعات جنوب الصحراء ومجتمعات شمال الصحراء ولو أن الدراسة أظهرت عدة جوانب من المظاهر الذاتية للحضارة الجرمنية باعتبار أن الجرمنيت إعتدوا على منتجات فزان بصورة مضاهية أن لم تكن أكبر من إعتادهم على المنتجات المستوردة. فتاريخهم يحكي بجلاء ظهورهم في زمن مبكر كدولة صحراوية لعبت دور رئيسي في ربط الدول الإفريقية جنوب الصحراء بالحضارة الكلاسيكية لحوض البحر الأبيض المتوسط وهذا يعد ضمناً المزيد من المعرفة لتاريخ أفريقيا ككل.

فمنذ مطلع الألف الأول قبل الميلاد شهدت مناطق وسط الصحراء بفزان سلسلة من التغيرات الكبيرة أثرت على وضعية وأشكال الإستقرار في تلك الربوع من بينها وصول بعض الحاصلات إلى المنطقة ومظاهر إستئناس الحيوان وظهور تقنيات زراعية جديدة وبزوغ دولة الجرمنت. ويذكر أنه بداية من القرون الأخيرة قبل الميلاد وحتى القرن الرابع أو الخامس بعد الميلاد كان هناك تدفق كبير من سلع حوض البحر الأبيض المتوسط التي تحمل دلالات على مدى ازدهار التجارة رغم طول المسافة بين فزان وحوض البحر المتوسط. وقد عثر على الكثير من تلك السلع سواء في المواقع السكنية أو في المقابر ولاشك في أنه كان لها دور متعادل كمعادل للإستعمال اليومي وللإستخدام الجنائزي كمعادن تمارس من خلالها بعض الطقوس والقربان. ومع تلك السلع قدمت تقنيات متنوعة من مواد بناء (بما فيها إستعمال قوالب الطين وعناصر العمارة من الحجارة المكسوة بالبلاط) وتقنيات التصنيع (مثل إنتاج النسيج وصناعة الخرز والمعادن والفخار وإنتاج الملح وربما صناعة الزجاج) إضافة إلى قدوم طرق إعداد الطعام (مثل إستعمال المطاحن الدوارة بدلاً من الهاون وحجارة الطحن اليدوي)، إضافة إلى ما أسفرت عليه تلك العلاقة من تغير في العادات الإجتماعية. ومع هذا فإنه من الضرورة أن نشدد مجدداً على أن الجرمنت لم يكونوا مجتمعاً إيجابياً يستقبل كل السلع والتقنيات التي منشأها خارج بلادهم.

وكما رأينا فقد كان مجتمعاً ذو إنتاجية عالية سواء من ناحية الإنتاج الزراعي أو من ناحية إنتاج السلع الصناعية و إستغلال المصادر البشرية و الطبيعية لمناطق وسط الصحراء.

لقد ألفت أعمال (تشارلز داينلز) الكثير من الضوء حول هذه الافكار، و سمحت لنا بالتركيز بصورة أكثر تفصيلاً على أوجه التشابه والاختلاف في الجوانب الثقافية و الاقتصادية من خلال المكتشفات الاثرية المتعلقة بكامل المراحل التاريخية لحضارة الجرمنت (أنظر الفصلين 8 و 9).

### المكتشفات الأثرية:

يتطرق الجزء الأول من المجلد إلى التقارير الطبقيّة (للحفريات) و ملخصات وصفية عن المواقع التي تم الحفر فيها على يد (تشارلز دانيلز). – أنظر الفصول من (1 إلى 6)، وحينما أتاحت الفرصة فإن المكتشفات المهمة من الخزف (وفي أقل الأحوال عينات) من كل موقع تم التطرق لها في محلها من نص الفصل الذي يخصها وتمت مناقشة تلك المكتشفات وعلاقتها بالتسلسل التاريخي للموقع ككل. من ناحية أخرى تم تصنيف نفس المكتشفات وفقاً للأنواع الموجودة- يلاحظ أن الفخار وصف بالإستعانة بما تم التوصل إليه من نتائج دراسات مشروع فزان – والتي إنتهى إليها (دانيلز) و(هايز) (المنشورة في مجلد آثار فزان 2) لقد زودتنا المواقع التي حفر فيها دانيلز معلومات مهمة عن آثار الجرمنت وتحديداً فيما يخص نوعية الموقع و الفترات الزمنية. وتجدر الإشارة إلى أن الخصائص الخزفية للمكتشفات الفخارية التي تعود إلى الزمن الجرمنتي المبكر أو إلى زمن أسبق من ذلك عندما أستوطن الجرمنت جبل زنكرة، يمكن مقارنتها بمثيلاتها المأخوذة من موقع تيندا والتي تعود إلى فترة متأخرة نسبياً أو إلى فخاريات العصر الجرمنتي الكلاسيكي بسانية جبريل أو بمجموعات الأثاث الجنائزي في سانية بن هويدي.

وهناك جانب أخرى تم تناوله في الفصول 7 و 8 و 9 تمثل في دراسة عظام بشرية وغيرها من مواد أخرى ذات علاقة بجوانب ثقافية مثل (الزجاج، والخرز، والمعادن، والحجارة، والخشب، والنسيج... إلخ)، إضافة إلى دراسة مظاهر الإقتصاد القديم (مثل دراسة البقايا العضوية وعظام الحيوانات). ويذكر أن موقع سانية بن هويدي تعد حالة خاصة بسبب ماحظيت به من عدد القبور التي إحتضت بكميات كبيرة من الأثاث الجنائزي الغير ممسوس. أما المواد الغير فخارية فقد تم حصرها في قوائم وصنفت بشئ من التفصيل مع المكتشفات الفخارية في الفصل 5. إضافة إلى وضعها وفقاً لنوعيتها في الفصل 8.

تتمتع مجموعات المكتشفات من مواقع الجرمنت بأهمية خاصة من عدة جوانب وأن أمر إستعراضها سيشكل أهمية كبيرة بالنسبة للمتخصصين في آثار الصحراء بل أهميتها تجذب كذلك إنتباه العلماء الذين يعملون في شمال وجنوب الصحراء بحكم إرتباط تلك الآثار بمنطقة ربطت عبر الصحراء الشمال بالجنوب في عصور ما قبل الإسلام. علما بأن المجموعات الأثرية التي إكتشفها دانيلز (إضافة إلى مكتشفات أيوب) تشكل الجانب الأكبر في معروضات متحف جرمة.

### ملخص عن حفريات دانيلز:

بناءً على الآراء العلمية التي تم طرحها في مجلد فزان 1 أو مجلد فزان 2 تم تقسيم العصر الجرمنتي على النحو التالي:

القائمة بشأن المباني التي سبق التنقيب عنها إضافة إلى مسح تفصيلي لسانية جبريل و إلتقاط الكثير من القطع الأثرية المبينة في (الفصل3). كذلك اجري مسح مبدئي للمقابر الجرامنتية بوادي الاجال للقطاع الممتد من القصير الى إخليف.

#### - الزيارة العاشرة: الموسم الرئيس السادس للعمل الميداني 1977.

تقرر في هذا الموسم تركيز الجهود على مقبرة سانية بن هويدي (GER011) وذلك كمحاولة لإيجاد تفسيرات لبعض المسائل التي لم تتم الإجابة خلال موسم 1973. فأنصب العمل على المقابر المبكرة. وكان قد تم تفريغ ثلاثة قبور كانت على أطراف المقبرة في وقت ما قبل عام 1972 حيث تم التعرف على انها من النوع المبكر، ومسحها وقياسها وتصويرها فوتوغرافياً. ولوحظ في موقع مرتفع تكدست فيه الرمال تكومت على قبور من فترة مبكرة حيث تم حصر ستة قبور أخرى أجريت عليها حفريات، وقد كانت جميعها غنية بالأثاث الجنائزي بإستثناء قبر واحد منها. وتأخذ هذه القبور الشكل المستطيل بأحجام متفاوتة تصل إلى 5x4 م. مع وجود حفرة مستطيلة (باستثناء قبر واحد بحفرة مربعة) تحت كل منها حيث يسجى الميت. و من الخارج يتكون القبر من بناء من قوالب الطين بإرتفاع متر واحد تقريباً وبقمة مسطحة تقريباً. ولوحظ أن تلك القبور تأخذ أما الناحية الشرقية أو الغربية وعادة ماتوجد مائدة قرابين كبيرة عند الناحية المتجه إليها القبر، إضافة إلى نصب حجري، وكلاهما صبغا بطبقة حمراء. في هذه القبور عثر على المزيد من الأنية الفخارية (جرار تخزين محلية الصنع ذات قاعده كبيرة مستديرة إضافة إلى جرار مستوردة) وهي في معظم الأحوال ماتوضع بجانب مائدة القرابين. وكما أسلفنا هناك العديد من القبور التي لم يتم نبشها وهي غنية بالأثاث الجنائزي بما فيها الأمفورات المستوردة والأنية الفخارية الصقيلة والزجاجية المستوردة من حوض البحر الأبيض المتوسط (أنظر القبور 42-51-52-53) ويبدو أن تاريخ إستعمال المقبرة تحديداً في أواخر القرن الميلادي الأول وهو الزمن الذي تم فيه وضع الأثاث الجنائزي الثري بالقبور الكبيرة. وعندما غطت أكوام الرمال القبور المبكرة إرتفع مستوى الأرض وتم وضع قبور أخرى إستمرت حتى القرن الميلادي الخامس سواء كان بوضع القبور المتأخرة على الأولى وإستغلال الفجوات الكائنة بين القبور القديمة، إضافة إلى إستغلال أطراف المقبرة القديمة. تم حفر مجسات لمعرفة حدود المقبرة و تخريطها أيضاً بعد المسوحات، وتعد هذه المقبرة ذات أهمية إستثنائية لتسليط الكثير من الأضواء على مراسم الدفن وثقافة الأثاث الجنائزي لدى الجرمنت (أنظر فصل5). إضافة إلى ذلك شمل موسم عمل 1977 إجراء مسح مكثف بالمنطقة المجاورة لمرتفع سانية سليمان كريدة (GER027) وتم إختيار موقع من المنطقة الممسوحة أجريت فيه حفرة تجريبية اسفرت عن إكتشاف عدة غرف تخص مبنى مشيد من قوالب الطين وإحتوت على الكثير من بقايا الإستهيطان، حيث تم إكتشاف عدد كبير من كسر الأمفورات المستوردة إضافة إلى كسر من الفخار المحلي مشابهة لتلك التي عثر عليها في موقعي جرمة وسانية جبريل. أن الكميات الكبيرة من المواد المستوردة سواء كانت تلك التي ألتقطت من على سطح أو التي أكتشفت أثناء أعمال الحفر تشير إلى أن المبنى يعود إلى فترة زمنية قديمة وأن المرتفع المجاور هو موقع إستيطاني آخر يمثل واحة أو قرية جرمنتية (أنظر فصل4).



بسيط وموقد وجميعها كان محاطاً إما بسياج جداري أو بطوق من الحجر، أما المرحلة الثانية فيحتمل أنها لم تعقب المرحلة الأولى مباشرة ورغم استعمال نفس مدرجات المنحدر إلا أن بقايا آخر مستوى إستيطاني بالكهوف والأكواخ تحتفظ بنفس المخطط الذي كانت عليه بالمرحلة الأولى ولوحظ كذلك كوم كبير من الحصى والحجارة الصغيرة التي تم تجميعها أو تكوينها في بعض الأماكن بين المرحلة الإستيطانية الأولى والمرحلة الثانية، هذا وتم تحديد موقع إستيطاني آخر على المنحدر يمتد على لسان جرفي يعلو المقبرة الهرمية المعروفة الخرائق (CHA001) الذي تم التعرف عليه أول مرة في عام 1959م. وكان قد تم إجراء مسح لأغلب مواقع مقبرة الخرائق السابقة الذكر المرموز لها بـ (CH007-CH003) وامتدت فترة إستيطان تلك المواقع من بداية الفترة الجرمانية المبكرة حتى العصور الحديثة التي تمثلت في قرية توارق مهجورة حالياً شيدت على أثار الجرمن، وفي موقع القصير الجرفي (LEK001-002) تم إجراء مسح مفصل مشياً على الأقدام وإعداد خريط مبدئية وتدوينات بعض المعلومات الأولية للموقع وقد أسفرت هذه الأعمال عن الحصول على بيانات لأول مراحل سكن هذا الموقع ويذكر أنه تم تنقيب وتخريط وتدوين ما تم إكتشافه في قرية زنكرة على قمة المرتفع (ZIN001.070.75) الذي كان قد تم مسحه لأول مرة في عام 1967. (تم تلخيص جميع الحفريات التي أجريت على مواقع الإستيطان بالمنحدر في الفصلين 1،2).

في عام 1973 تركز العمل الأثري في مدافن الجرمن على موقع سانية بن هويدي (GER011) حيث تم إختيار جزء صغير من حافة المقبرة إضافة إلى أكثر من 45 قبر منفصل. وجميع هذه المواقع تم التنقيب عنها بإستثناء إثنان منها- أكدت بأنها تعود إلى القرن الثالث الميلادي أو إلى مابعد - قد لاحظنا أن جميع تلك المدافن بإستثناء النذر القليل منها قد تم نبشها أو سرقتها. ويذكر أن الموقع الذي تم تنقيبه يتكون من طبقتين من القبور. وقد تبين أن الطبقة السفلى من القبور كانت متكونة من بناءات مربعة الشكل من قوالب كبيرة من الطين وهي مكتملة الشكل غير أنها في الغالب تضررت من تدخل قبور متأخرة عليها وتم التنقيب عن إثنين منها وكلاهما تعرضا للهدم منذ فترة طويلة إلا أنهما لم يتم سرقتها وتم في القبر 15 العثور على ثلاث أمفورات، إبريق بمقضبين، مبخرة، مصباح وعدد ثمان صحاف أوصحون من الفخار الصقيل الإيطالي الصنع، إضافة إلى أداة طحن وقطعة مطاط وعدد قليل من الخرز ذو اللون الأزرق الغامق. أما القبر 17 فقد أحتوى على المزيد من الأثاث الجنائزي تمثل في أداة طحن وقطعة مطاط ومبخرة وعدد إحدى عشر أمفورة علاوة على بقايا زجاجية وخزفية يحتمل أنها تخص عدد خمسة صحون زجاجية وتسعة صحون مصرية خزفية زد على ذلك عدد 31 صحنا من الفخار الأحمر المصقول ذو الصنع الإيطالي. ومن ضمن ما عثر عليه من الأثاث الجنائزية هذه أنية فخارية مختومة أغلب الظن صنعت في بيزا إبان منتصف أو أواخر القرن الأول الميلادي، (أنظر الفصل5). هذا ويذكر أن وجود المدافن في مخلفات إستيطان الجزء الشمالي من جبل زنكرة قد تم التطرق إليه في حفريات 1967 (ZIN002.013). وفي عام 1973 تم مسح وتنظيف مساحة كبيرة بهدف التنقيب عن عدد لا بأس به من القبور. غير أنه مجرد خمس قبور أخرى تم إكتشافها زيادة عن القبور الأولى التي تم إكتشافها عام 1967. إضافة إلى بعض الهياكل البشرية المتضررة. ولوحظ أن في معظم الحالات عثر على بقايا خشبية تخص مساند الرأس إلا أنها في حالة سيئة يتعذر معها إعادة ترميمها. هذا وقد توفرت الفرصة إلى إكتشاف مدافن فردية جرمانية في موقعي الخرائق وإخليف (جميع هذه المدافن تم النظر إليها بالفصل6). كان إسبوع كاملاً من مدة العمل تم في موقع سانية جبريل (GER002) وخصص لتفسير بعض المسائل

### - الزيارة الثامنة: الموسم الرئيسي الرابع للعمل الميداني 1971

تمثل الهدف الأول لهذا الموسم في معرفة التاريخ ومدى الإستيطان وطبيعته في سانية جبريل (GER002) وقد أسفرت أعمال هذا الموسم عن إستكشاف مجمع إنشائي بجدار خارجي يرتبط بمبنى مجاور وقد أسفرت دراسة هذا المجمع عن التعرف على ثلاثة أبنية رئيسية تعود إلى فترات تاريخية مختلفة. إهتدينا إليها بما تم إكتشافه من كسر فخار مستورد وذلك حسب الإتي: فترة تعود إلى أواخر القرن الميلادي الأول ومطلع القرن الميلادي الثاني، الفترة الثانية تعود إلى منتصف القرن الثاني وحتى مطلع القرن الثالث بعد الميلاد. أما المرحلة الثالثة والأخيرة فتعود إلى القرنين الرابع والخامس الميلاديين ولكن يبقى إجراء المزيد من الحفريات سيزودنا بالكثير من المعلومات عن العمارة المحلية أبان الزمن الكلاسيكي لمملكة الجرمنت بما فيها العمارة المحلية المتمثلة البناء بالقوالب الطينية التقليدية إضافة إلى أدلة وشواهد عن النشاط الصناعي بالموقع 5 (أنظر فصل3).

كما أجريت مسوحات ميدانية في الجزء الشرقي من الوادي ومعظم ما أكتشف خلال ذلك المسح عبارة عن حقول كبيرة فسيحة توجد على بعض الضفاف المنخفضة. كما تم البحث في المنطقة المجاورة لقصر لاركو (LAR001-009) حيث تم إكتشاف إستيطان جديد على المنحدر (LEK001-2) وتم كذلك مسح عدد من المقابر بمنطقة قصر الوادي، علاوة على ذلك تم التعرف على بعض المستوطنات الأخرى المثيلة في توش (TWE021) وفي إخليف (CLF001-0032,008-010).

### - الزيارة التاسعة: الموسم الرئيسي الخامس للعمل الميداني 1973.

سبق وأن تم التطرق لمرتفع إخليف (CLF008-010) في موسم عام 1969 (أنظر ماسبق). وتم في هذا الموسم مسح وتخريط الجانب الغربي من المرتفع وقاعدته على نحو مفصل، كما تم التنقيب في مواقع مختارة (أنظر فصل 2). وقد لوحظ أنه في بعض الحالات حدوث تآكل أدى إلى إزالة آثار الإستيطان، غير أن معظم المدرجات والمساحات بالمنحدر إحتفظت ببعض المواقد والرماد وفضلات الحيوانات وبعض آثار الأشجار مثل النخيل وغيره شبيهه بطبقات إستيطان موقع زككرة ولو أن منحدرات إخليف أقل عمقاً. كما إكتشف القليل من الكسر الفخارية وهي في عمومها تتشابه بالأنواع الفخارية التي عثر عليها في زككرة، كذلك تم التنقيب في بعض المواقع بالجانب الشرقي أسفرت عن نتائج مثيلة في الجانب الغربي. من ناحية أخرى عثر على السطح العلوي للجبل على سلسلة من الأكواخ المشيدة بجدران من الحجارة و ببعض الكهوف التجويفية حيث أجريت مجسات مبدئية عليها. وقد لوحظ أن ترسبات مواد الإسيطان أكثر تعمقاً من غيرها من الترسبات التي عثر عليها سواء في الجانب الشرقي أو الجاني الغربي إضافة إلى سطح المرتفع من ناحية الشرقية.

في مرتفع تيندا (TIN001) قرب واحة أوباري الحديثة تم إجراء مسح لمساحة تبلغ نصف أو ثلثي كامل الموقع مع القيام ببعض الحفريات في بعض الأماكن من الموقع وقد أسفرت النتائج على أن الإسيطان توزع على مرحلتين. الأولى كانت قبل وصول الفخار الروماني إلى وادي الحياة (الآجال) إبان القرون الأخيرة قبل الميلاد. تمثلت مظاهر الإسيطان في خلال هذه الفترة من مدرجات صغيرة تم إستحداثها على جانب المنحدر كل منها يحتوي على مخبا

نفس السنة، وكانت جميع المباني بإستثناء واحد منها قد شيدت من قوالب مشنبة من الطين وتم وضعها بصورة محكمة، وكان أكبر مبنى ZIN003.105 بحجم 5.25×20م، وتم تقسيمه من الوسط إلى ثلاثة غرف وهي الأخرى مقسمة كذلك وخضعت إلى تعديلات لاحقة. أما المباني الأخران ZIN003.102-103 فيحتوي كل منهما على غرفتين فيما تأكد أن المبنى ZIN003.100-101E-101W كان يحتوي على ثلاثة مساكن كل مسكن بغرفتين. وهناك مجمع آخر مرتبط بموقع ZIN003.105، رمزنا إليه بالرمز ZIN003.306.08 غير أنه لم يتم التنقيب إلا في جزء بسيط منه. هذا وأنه لم يعثر إلا على جزء يسير من الكسر الفخارية في هذه المباني ولم يتم التأكد من تاريخها ولكن يعود تاريخ تحويل منطقة هذه المباني إلى مقبرة تعود إلى أواخر القرن الميلادي الأول علاوة على ذلك فإنه تم إجراء مسح والنقاط اللقى الأثرية في مقابر ومواقع الإستهيطان بالجانب الشرقي من الوادي وفي كافة مقابر الجبل التي تم مسحها ميدانياً وذلك في مساحة بلغ طولها 7 كيلومتراً شملت قصر وطوط والمقبرة الملكية (أنظر فزان2).

#### - الزيارة السادسة: مسح المواقع الجنوبية بوادي برجوج والجفرة وزويلة 1968.

يلاحظ أن خطة عمل موسم عام 1968 قد تم تعديلها في آخر لحظة إستفادة من فرصة العمل مع بعثة أخرى كانت تستكشف الجزء الجنوبي من فزان. إذ أن الإستعانة ببعض الأثريين في البعثة أتاح لدى (دانيلز) فرصة تحقيق الأمل الطويل في الحصول على فرصة إستكشاف مناطق وادي برجوج و وادي الناموس والمناطق المجاورة لحواضر العصور الإسلامية بفزان مثل مرزق وتراغن وزويلة (أنظر فزان2).

#### - الزيارة السابعة: الموسم الثالث من العمل الميداني الموسع 1969

تركز العمل خلال هذا الموسم على إجراء حفريات في جرمة مع إجراء مسح مكثف في منطقة موقع سانية جبريل. كما تقرر يومئذ إجراء مسح كامل للمباني القائمة المشيدة من قوالب الطين والتي تعود في تاريخها إلى جرمة زمن العصور الوسطى (GER001) بمساحة 8 هكتارات تقريباً. لقد تم تلخيص ذلك المسح في مجلد أثار فزان 2 وسيتم نشره بتفصيل أكثر في أثار فزان4.

وحتى يتم إعداد خطة كاملة عن موقع سانية جبريل الكائن على بعد 300 متر من جرمة تم إجراء مسح سطحي عبر الهضبة التي يأتي فوقها الموقع. كذلك أجريت المزيد من العمليات في زنكرة بزيادة توسعة مسوحات عام 1967، حيث تم إعادة مسح بأكثر دقة المباني والأماكن الكائنة إلى الجنوب (نحو 17 هكتار) والتي تم مسحها عام 1967، وتم إضافتها إلى خريطة أدق، وهذا العمل أستكمل الأعمال الموسعة الخاصة بالمقابر الكبرى وبالناحية الغربية لمسطبة الجدار في المنحدرات الشمالية للجبل علاوة على الجدران الخارجية بالأجزاء الشمالية والشرقية. زد على هذه المسوحات الميدانية أجريت مسوحات تم خلالها إتقاط بعض اللقى الأثرية وتوثيقها فوتوغرافياً وتسجيلها.

أن الموقع في تيندا على وجه الخصوص مماثل لزنكرة رغم كبر حجمه الذي يصل إلى 20 هكتار نسبة لزنكرة (أنظر فصل 2).

#### - الزيارة الخامسة: الموسم الثاني للحفريات الموسعة 1967 .

تركز العمل في هذا الموسم على حصن جبل زنكرة حيث تم التنقيب في 23 موقع سكن وتم مسح خمسة مواقع أخرى. ويذكر أن إختيار أماكن الاستيطان تلك قد تم في ثلاثة أماكن هي: المنحدرات الشمالية والمنطقة المتدرجة للجبل، وعلى القمة، والسهل المنبسط جنوباً. تركز العمل في المنحدر الشمالي لزنكرة على الموقع (ZIN002.013) حيث يوجد موقعين واحد بحجم 14.1م×1.8م والأخر 4.8×4.2م تمت تهيئتهما على نحو دقيق في الطبقة الصخرية (3-4 أمتار أسفل السطح الحالي للموقع). وأسفر العمل هنا على الحصول على تسلسل معقد لمستويات إستيطانية مختلفة. كما أنه وهناك ثماني مواقع أخرى:-120-125-204-209-213-217-218 (ZIN002.119) تم هي الأخرى البحث فيها عند المنحدرات الشمالية بعضها لها علاقة بمسطبة الجدار الكائنة عند قدم الجبل وبعضها يتمثل في مساطب تم تسويتها في الجبل لإقامة مباني عليها (أنظر الفصل 1). وتم العثور خارج جدار المسطبة السالفة الذكر على مدفنين (ZIN002.013 و T45)، ومن خلال وضعيتهما يبدو جلياً أنهما يعودان إلى فترة تاريخية جاءت بعد بناء الجدار، إلا أن لم تعرف الفارق الزمني بينهما، وتجدر الإشارة إلى أن الجمجمة في المدفنين تم إسنادها إلى مسند رأس خشبي لمزيد المعلومات عن المدفنين (أنظر فصل 6)، أما عن البقايا الفخارية فلم يعثر على أي شيء منها. كما أنه من المهم الإشارة إلى أن التنقيب في الأماكن الخمسة التي تم إختيارها على قمة جبل زنكرة قد أسفر عن ظهور أكواخ فردية أو مجموعة من الملاحيء (ZIN001:39-51-60-61) وجزء من قرية صغيرة (ZIN001.70-75)، علماً بأن التنقيب في المنحدرات الشمالية التي كانت غنية ببقايا روث الحيوانات كما عثر على آثار بناء هناك. وقد لاحظنا في مواقع زنكرة ثلاثة (70-75 و ZIN001.39,51) فتحات منحوتة في الصخر وحفر لتثبيت ما يشبه دعائم خشبية مما يوحي بعودة تلك البقايا تاريخياً إلى فترة ما قبل التاريخ. وفي حالات أخرى وخصوصاً في مجمع المخابيء (39) توجد دلائل واضحة على إقامة تقسيمات جدارية من الخشب متزامنة مع جدران منخفضة شيدت من حجارة (يلاحظ أن الأجزاء العليا منها كانت من خشب). وبإتمام التنقيبات في موقع 39 إكتشفنا عدة مواقد ذات أرضية مدكوكة أولها يعود إلى تاريخ يسبق البناء ذاته، كما تبين أن الموقع 70-75 يخص جزء من قرية صغيرة ذات أكواخ شيدت من الحجارة أو من الحجارة وفروع الأشجار معاً. وتشير سماكة مستويات النفايات وتداخل التعديلات إلى كثافة النشاط الإستيطاني للمكان وكان آخر شيء عثرنا عليه هو جرة من الفخار الأسود المصقول التي ربما تعود إلى العصر الروماني. وبصرف النظر عن هذه الكسرة فإن جميع الكسر الفخارية المكتشفة كانت أنية صنعت فعلياً باليد. ويلاحظ أن أقصى موقع في غربى قمة الجبل تم التنقيب عنه هو الموقع (ZIN900.0) وهو يقع في أضيق جزء على القمة وذلك بمسافة قليلة خلف الجدار الدفاعي القائم المشيد من الحجارة. حيث عثرنا على بقايا لجدار مبكر به مدخل وحصن واحد على الأقل يبرز عن مستوى الجدار. وأمام الجدار المبكر كانت هناك محاولة لأحدث خندق دفاعي بعرض العنق الطبيعي الفاصل، ويذكر أنه في موسم عام 1965 عثر على خمسة مباني مستطيلة مشيدة من قوالب الطين عند الضفة الجنوبية للمرتفع، وتم التنقيب عنها في

ويذكر أنه تم إجراء المزيد من الحفريات على مباني الجرمنت من تلك التي سبق وأن نقيبها (أيوب) في جرمة القديمة وذلك بهدف التعرف على طبيعة وضعيتها على نحو دقيق وعلى تاريخها وماهيتها. وكان أفضل موقع تم إختياره لمزيد من الحفريات GER001.1 موقع (سيتم النشر عنه بصورة أوسع في أثار فزان 4).

كما تقرر البدء في مهمة وضع تسلسل تاريخي لأنواع الفخار الجرمنتي، وتكمن أهمية إعداد سلسلة الأنواع في تحديد تواريخ كل موقع جرمنتي. هذا ومن المهام التي تم تحديدها هي إختيار المكان الأنسب الذي يقدم تسلسل طبقي غير متقطع بداية من الحديث ورجوعاً إلى مستويات العهد الروماني وماقبل العهد الروماني مباشرة. فتم الحفر فيه على نحو طولي وتم خلال هذا العصر الكشف على كمية غير قليلة من الفخار وغيرها من المواد الأثرية على مختلف المستويات، علماً بأن هذه المهمة لم تنفذ بشكل تام على يد دانييلز بل كانت من المهام الأساسية لمشروع فزان الذي تناول دراسة جرمة القديمة خلال السنوات من 1997 وحتى 2001.

ومن المفيد هنا ذكر أن من بين الأعمال الأثرية التي تم القيام بها في جرمة هو مسح وتسجيل أجزاء من البقايا الأثرية التي تعود في تاريخها إلى العصور الوسطى، ونشير إلى أن من بين الأثار التي تعود إلى تلك العصور مسجدين تمت إزالتها أيام حفريات (أيوب) عندما كان يستهدف التنقيب على المستويات السفلى من الموقع، وهنا أدركنا ضرورة تسجيل أهم المواقع التي تعود إلى تلك الفترة بإعتبار أن جرمة كانت إحدى المراكز الرئيسية على طريق القوافل الرابطة تشاد بطرابلس لنقل السلع التجارية والعبيد، وتعتبر القصبه (مقر الحاكم) التي تعود إلى تلك العصور من المباني التي لاتزال تحت وطنة تهديد الإنهيار.

ومن بين الأعمال التي أجريت محاولة تحديد أفران لصناعة الفخار التي أشار إليها (أيوب) في مزرعة حديثة يطلق عليها (سائية جبريل) قرب جرمة القديمة. وكان من المؤمل إكتشاف عينات من الفخار المنتج محلياً مع بعض الفخاريات المستوردة من نفس التاريخ ... ولكن تبين أن تلك الأفران ما هي إلا بقايا لمواقد حدادة وفي إطار هذا البحث عثر على بقايا لأربعة أو خمسة مباني مستقلة وتم إستحداث أربع مجسات تجريبية (أنظر فصل 3) وقد أسفرت تلك المحاولات على التأكد من أن هذا الموقع (سائية جبريل) تعود إلى القرون الأولى بعد الميلاد. هذا وقد تم إضافة منطقة الفجيج ليشملها المسح الذي أجرى لبضعة كيلومترات على ضمن مواقع تمركزها المقابر في زكرة ووطوط تمثلت في (أنظر أثار فزان جزء 2).

وإستكمالاً للأعمال الأثرية التي أجريت في موقع ضريح توش (TWE001) خلال موسم شتاء 1962-1963 تم إحداث مجس في المنطقة القاعدية للضريح للتأكد ما إذا يوجد مجال دفن تحت الضريح أم لا كما جرت عادة الدفن التي وقفنا عليها في العديد من القبور بالوادي. فتم حفر ذلك المجس بعمق زاد عن 1.30م من القاعدة الصلبة وصولاً إلى ماتحت التربة السطحية حيث تبين بعد التحري عدم وجود مجال للدفن. تم أجرى مسح بذات الموقع وبموقع الفقار، كما تم مجدداً مسح ضريح قصر ووطوط وضريح جرمة، وفي نفس إطار المسوحات المبدئية تم إجراء بضعة مسوحات في بعض المواقع الأخرى من الوادي فتم العثور على أماكن إستيطان في موقع تيندا (TIN001) وفي موقع إخليف (CLF008-010) حيث تم التعرف على بقايا إستيطان مبكر مماثل لما عثر عليه في زكرة. ويذكر

فكانت نتيجة تلك الزيارة إكتشاف مقبرتين (ELH001-002) بالسريير الرملي بالقرب من الحطية إلى الغرب من واحة الغريفة وقد أسفر ذلك الإكتشاف عن العثور على كميات كبيرة من بقايا قوالب الطين الخاصة بقبور هرمية الشكل، ومن المعلوم أن هذا النوع من القبور قد تم تعرف عليه فقط عند قدم المنحدر بموقع الخرائق، ومع هذا لم يقوما بإجراء حفريات عليها فأقتصر العمل على الإكتشافين المذكورين ومسح بعض الأثار البارزة سطحياً في موقع (TAG001)، من ناحية أخرى أكتشف (دانيلز) مجموعة من الأضرحة (قد تخص مقبرة) تبعد بمسافة قليلة إلى الشرق من قرية توش (TWE001) حيث تم العثور على ثلاثة أضرحة بمصاطبها وتم التنقيب عنها (أنظر فصل 6). كما تم التنقيب في ضريح آخر عند الفقار (FUG001) إلا أن بقايا البناء تمت الإشارة إليها في زيارة سابقة ولكن دون إجراء التنقيبات عنها. وخلال هذه الزيارة اجريت حفرة بالموقع المذكور بمساعدة السيد أيوب. كما تجدر الإشارة إلى أن حفرة كان قد بدأ في تنفيذها بالقبور رقم 5 بالمقبرة الملكية (GSC030) تحت إشراف السيد أيوب قبيل وصول كل من (دانيلز) والسيد (أبان ريتشموند) إلى المنطقة في شهر الكانون (ديسمبر) 1962. وقد تحصل (دانيلز) على إذن لإكمال ذلك الموقع. ورغم أن القبر تم نبشه إلا أنه أحتوى على كميات من الفخار والزجاج المصنع، التي يمكن الإعتماد عليها في تحديد تاريخ الموقع بأنه يعود إلى الفترة الرومانية (أنظر فصل 6) هذا وقد تمت زيارة موقع زنكرة (ZIN001-003) مرة أخرى ولكن لم يتم إجراء أي عمل ميداني هناك.

#### - الزيارة الرابعة / 1965 أول موسم عمل ميداني منظم:

وتمثل الهدف الرئيسي لهذه الزيارة تحديد وإيجاد دليل لأول إستيطان جرمنتي في منطقة جرمة. ويبدو أن البناء المحصن الكائن في أعلى المرتفع المعروف بجبل زنكرة - على بعد بضعة كيلومترات جنوب غرب جرمة - كان المكان الأنسب لمثل ذلك الإستيطان (ZIN001-003). وإشتمل العمل في هذه الزيارة على القيام بمسح أثري ابتداء من قاعدة الجبل إلى قمته، والقيام بحفريات في مواقع مختارة هناك (أنظر فصل 1). ومن خمس مواقع أختيرت كعينات للتنقيب فيها كان هناك إثنان على قمة الجبل: ZIN001.037 و ZIN001-34 وإثنان على الحواف الشمالية للجبل: ZIN002.013 و ZIN002.11 وموقع واحد عند قدم الجبل من الناحية الجنوبية (ZIN003.105) وقد تبين أن أول نشاط إستيطاني تمثل في مواقع مفتوحة تم حفرها في جانب الجبل وعثر بجانبها على كسر من فخار محروق بزخرفة تعود إلى الأنماط الزخرفية التي تعود إلى العصر الحجري الحديث، كما عثر قرب تلك المواقع المفتوحة على بعض العظام ومكاشط من حجر الصوان. وظهرت ملاحىء و مواقع تنتمي إلى تاريخ لاحق، وفي المرحلة الأخيرة عثر على بعض المباني شيدت بأساسات من حجارة غير مهذبة تعلوها جدران مكونة من قوالب طينية خشنة وأرضيات مبلطة بنفس القوالب. كذلك عثر على كميات كبيرة من الكسر الفخارية والعظام والأدوات الصوانية و أدوات الرحي والمدقات والمواد العضوية والروث والخرز إضافة إلى العثور على إناء واحد مستورد ليس من النوعيات المعروفة كالتسيجيلاتا أو الفخار الإفريقي الأحمر المصقول. وكان من الواضح من خلال المقارنة بين الكميات التي عثر عليها في هذه المواقع الخمس وبين تلك التي عثر عليها في جرمة وفي سانية جبريل وفي غيرها من المقابر أن موقع زنكرة لم يكن مشغولاً بعدما بدأت أولى شحنات السلع الرومانية في الوصول إلى الوادي خلال القرن الأول قبل الميلاد.

مجسات طبقية كمحاولة منه لوضع تسلسل تاريخي بدلائل أثرية. وفي مقبرة سانية بن هويدي (GER011) أعد (دانيلز) سجلات مفصلة لمجموعة من المكتشفات الأثرية بمتحف سبها علاوة على الحفريات التي أجراها بنفسه هناك للتحقق من تفسيرات (أيوب) دون المساس بأعمال الأخير.

### مواسم أعمال (دانيلز) من عام 1958 وحتى عام 1977

#### -الزيارة الأولى 1958-

يبدو أن موسم عام 1958 قد تم ترتيبه من قبل السيدة (ألوين بروغان) والسيد (ديفيد سميث) في السنة التي أعقبت إتمام حفريتهما في قرزة بمناطق مادون الصحراء الليبية. وكان ذلك الموسم مجرد جولة لزيارة المواقع الرومانية الرئيسية في منطقة مادون الصحراء بطرابلس إضافة إلى زيارة وادي الحياة (الأجال) ومرزق وادري وسبها من فزان. ولم تستغرق جولة وادي الحياة (الأجال) إلا بضعة أيام من 28-4-1958 وحتى 30-4-1958 وأقتصرت على المواقع الرئيسية التي أشارت إليها البعثة الإيطالية في ثلاثينيات القرن الماضي (جرمة القديمة-GER001) ضريح وطوط والمواقع المحيطة به (UAT001-003) وزنكرة (ZIN001-003) وتاكلليت (TAG001) وغيرها من مقابر منحدر وادي الحياة (الأجال) موقع قصر لاركو (LAR001) علاوة على القصر الضخم في ناحية فجيح (FJJ056) ولم يقوموا بأية حفريات في تلك الجولة. فيما ركز (دانيلز) على توثيق المواقع فوئوغرافيا مع تدوين بعض الملاحظات عليها ورسم خرائط لها. ويبدو من الواقع أن تلك الجولة قد زادت من رغبة (دانيلز) في العمل في تلك الربوع وصارت تلك الزيارة الاستطلاعية بمثابة الأساس لأعماله المستقبلية هناك.

#### - الزيارة الثانية 1959 -

عاد (دانيلز) إلى فزان عام 1959 وذلك في إطار موسم علمي في ليبيا على حساب جامعة دورهام. وقد رأى (دانيلز) جلياً أنها الفرصة المناسبة لأجراء أعمال أثرية مبدئية تمهيداً للقيام بعمل يتجسد في مشروع أثري متكامل. وكان تركيزه الرئيسي هو البحث في مقبرتي تاكليت (TAG001) والخرائق (CHA001) فرسم (دانيلز) خلال هذه الزيارة خريطة مبدئية لموقع مقبرة تاكليت تبين القبور المدرجة أصلاً، وسجل عينات كثيرة من الأثاث الجنائزي الجرمنتي (موائد تقديم القرابين وبعض المسلات) بالموقع. كما قام بالتنقيب في عدد قليل من القبور البسيطة (أنظر الفصل 6) كما قام بمسح مقبرة الخرائق التي تحتوي على قبور هرمية إلا أنه لم يجر أية حفريات فيها. ومع هذا يبدو أن عدد من المواقع الأخرى قد تكرر زيارتها خلال هذه الجولة، حيث نجد أن (دانيلز) قد تطرق بالوصف إلى عدد من المباني المحصنة (القصور) كما قام بتصوير بعضها ولكن بدون أية أبحاث ميدانية.

#### -الزيارة الثالثة 1962 - 1963-

في موسم شتاء 1962-1963 قام السيد (أيوب) عن مصلحة الآثار بدعوة كل من (دانيلز) والسيد (أيان ريشموند) لقضاء أسبوعين ونصف في وادي الحياة (الأجال) لإجراء أبحاث على مواقع جديدة والقيام بحفريات محدودة فيها.

### نبذة عن حياة وعمل تشارلز دانيلز:

ولد الفقيه تشارلز دانيلز في 1932/08/10 وعين مساعد مشرف لمتحف الآثار بجامعة نيوكسل وهو المنصب الذي ظل يعمل فيه حتى عام 1973 عندما عين على منصب محاضر، وأنهى مرحلة عمله في عام 1996 كأستاذ محاضر إضافة إلى عمله كمسئول بمتحف الآثار المذكور ورئيس القسم، ويعود تاريخ أول إتصاله بالجنوب الليبي إلى عام 1958 عندما قام بأول رحلة إلى فزان، وتمثل عمله على حضارة الجرمنت في إجراء سلسلة من عشرة مواسم عمل توزعت على الـ 20 السنة الموالية. ووافاه الأجل المحتوم عام 1996 عن عمر يناهز الثلاثة وستين عاماً.

والتقارير التي تم تجميعها هنا كانت نتاج لحجم عمل غير عادي من الأبحاث والدراسات، والذي يجعلها أكثر أهمية هو أننا لا نجد إلا القليل من الأبحاث المماثلة التي تم إجراؤها في أي مكان آخر من الصحراء أو في منطقة المغرب من تلك المتعلقة بشؤون سكان تلك الربوع قديماً، كما أن التقارير هي الأخرى غير معتادة بلغة تسلسل وكميات وقيمة الموارد المستوردة التي وصلت وسط الصحراء من عالم البحر الأبيض المتوسط الروماني زمنئذ (أنظر الفصول 3 و 5 و 6 و 8). زد على ذلك ما ضمته هذه التقارير من معلومات حيوية حول مدى سمو تطور مواد الثقافة المحلية والتي يمكن تعريفها بالثقافة الجرمنية على مدى 1500 سنة (أنظر الفصول 1 و 3 و 5 و 6 و 8). لقد تبينت أهمية دراسة حضارة الجرمنت خلال السنوات العشر الأخيرة بصورة أكبر كبادرة ثقافية في الصحراء بسبب إصدار سلسلة (أثار فزان). هذا وقد تم تصنيف تقارير هذا الجزء من السلسلة المذكورة على الأساس التالي: المقابر المبكرة على المنحدرات، قرى الواحات المركزية، المقابر، والمكتشفات، وليس على أساس التسلسل التاريخي .

ومن المعروف أن (دانيلز) لم يكن أول من درس مواقع الجرمنت، إذ سبقته إلى ذلك أعمال الإيطاليين في ثلاثينيات القرن الماضي. وبعد الحرب العالمية الثانية مباشرة، حيث كانت منطقة فزان يومئذ تحت الحماية الفرنسية، تم إجراء بعض الأعمال المحدودة على الآثار هناك من قبل فرق فرنسية. وعندما عين خبير الآثار السوداني (محمد أيوب) كمراقب أثار فزان عام 1961 قام بسلسلة من الحفريات على مواقع الجرمنت طوال ذلك العقد (عقد الستينيات)، وبعض من تلك الحفريات تمت بشكل موسع رغم عدم تحري الدقة العلمية فيها. لقد توصل السيد (أيوب) إلى معلومات أولية عن التسلسل الطبقي ولكن يبدو أنه لم يشرف بشكل مباشر على الحفارين كما أنه لم يعد سجلات مفصلة أثناء أعمال الحفر. ولقد طلب مراراً وتكراراً من خبراء أثار إنجليز مثل (الوين بروغان) أو (أيان ريتشموند) فيما بعد مساعدته بالخبرات. هذا ومن الواضح أن الزيارات التي قام بها (دانيلز) في أواخر الخمسينيات كان لها دور في ترشيحه للعمل بفزان وساهمت أيضاً في مساعدة كل من السيدة بروغان (Brogan) ، والسيد ريتشمورد (Richmord) للعمل بجد في سبيل تأمين تمويل له.

لاشك في أن هذا المجلد يعتبر محاولة لأنقاذ المعلومات المتعلقة بحفريات (أيوب) علاوة على (دانيلز) الذي بذل قصارى جهده من أجل مساعدة (أيوب) ولكن يبقى أن نقول أنه ونعني هنا السيد (أيوب) قد أتخذ عدة خطوات من أجل الخروج بمعلومات ذات قيمة من خلال حفريات موسعة تم إجراؤها على يد عمالة غير مدربة تعوزها المتابعة المباشرة، وفي هذا الإطار قام (دانيلز) بتتبع حفريات (أيوب) في جرمة القديمة (GER001) باستخدام



آثار فزان

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