Edited by Paul Yule
Late Antique Arabia
Zafār, Capital of Ḥimyar
Late Antique Arabia
Zafār, Capital of Ḥimyar

Rehabilitation of a ‘Decadent’ Society
Excavations of the
Ruprecht-Karls-Universität Heidelberg
1998–2010 in the Highland of the Yemen

2013
Harrassowitz Verlag · Wiesbaden
Printed with a grant from the Deutsche Forschungsgemeinschaft.
## Contents

Acknowledgements.................................................................................................................. XI
Foreword..................................................................................................................................... XIII
Editor’s foreword ........................................................................................................................ XVI
Abbreviations............................................................................................................................. XVII
The image base HeidICON......................................................................................................... XVIII
List of illustrations ...................................................................................................................... XIX
List of tables and graphs ........................................................................................................... XXI
Participants................................................................................................................................. XXVI

1. Introduction .......................................................................................................................... 1
   Scope ....................................................................................................................................... 1
   Environmental Setting ............................................................................................................ 2
   Ancient Highland Agriculture ................................................................................................ 3
   State of Research Relating to Ḥimyar and Zafār – a Chronicle ........................................... 5
      – Pre-modern Sources ......................................................................................................... 5
      – Modern Sources ............................................................................................................... 6
      – Related Field Projects .................................................................................................... 12
         – al-Baydāʾ/Ḫaṣṭ, Settlement ............................................................................................ 12
         – Damār/al-ʿAdla’, Settlement ......................................................................................... 12
         – Damār/Harābat al-ʿAḥgūr, Tomb KAHi ......................................................................... 13
         – Damār/Nafaq Baynūn Maftūh, Settlement .................................................................... 13
         – Damār/Hayd Ḩīrān, Tombs ............................................................................................. 13
         – Ḫadramawt/Qāniʾ, Settlement ...................................................................................... 13
         – Ṣaʿūdī Arabia/Naǧrān/Naǧrān, Settlement .................................................................... 14
         – Sultanate of Oman/Zafār Governorate/Hawr Rūrī, Settlement .................................. 16
         – Sultanate of Oman/Zafār Governorate/other Sites ..................................................... 16

2. Survey and Small Excavations .......................................................................................... 23
   Introductory Comments ........................................................................................................ 23
   Zafār, Overview ..................................................................................................................... 23
   Zafār/Ḥuṣn Raydān, Building z028 ...................................................................................... 25
   Zafār/Ḥuṣn Raydān, Eastern Flank, Test Trenches z149 and z175 ...................................... 26
   Zafār/Ḥuṣn Raydān, Eastern Flank, al-Suḥṭ ........................................................................ 26
   Zafār/Ḥuṣn Raydān, Southern Flank, Building Platform z178 ............................................ 26
   Zafār/Ḥuṣn Raydān, South-western Flank ......................................................................... 27
   Zafār South/Maǧannah, Cemetery z236 ............................................................................. 31
   Zafār South/al-Ǧirāḡir, Settlement Tell .............................................................................. 31
   Zafār South/al-ʿUwār, al-ʿAṣābi, Ruins .............................................................................. 31
   Zafār South/Maʾḏil al-Ṣaʿbānī, Irrigation Facility ................................................................. 31
   Zafār South/Ǧabūbat al-ʿAṣwar, Building Ruin z347 ................................................................ 32
   Zafār South/Ǧabūbat al-Ḥamrāʾ, Building Ruins z247 and z470 ..................................... 32
8.

VI Intrasite Analysis of Pottery

18. Plain and Cooking Wares

17. Amphorae

16. Other Glazed Wares

15. Red Polished South Asian (?) and Related Wares

14. Other Red Polished Ware, Aksumite, Himyarite or South Arabian (?)

13. Black Burnished Aksumite?

12. Micaceous Ware

11. Combed Decoration

10. Micaceous Ware

9. Black Burnished Aksumite?

8. Non-'Aqaba Imported Wares A–F

7. Late Roman Period Ribbed, 'Aqaba Type

6. Terra sigillata

5. Glazed Ware, Celadon

4. Other Glazed Wares

3. Red Polished South Asian (?) and Related Wares

2. Other Red Polished Ware, Aksumite, Himyarite or South Arabian (?)

1. Combed Decoration

b. Imported Fine Ware

1. Late Roman Period Ribbed, 'Aqaba Type

2–7. Non-'Aqaba Imported Wares A–F

8. Black Burnished Aksumite?

9. Micaceous Ware

10. Combed Decoration

a. Coarse Ware

1. Late Roman Period Ribbed, 'Aqaba Type

2–7. Non-'Aqaba Imported Wares A–F

8. Black Burnished Aksumite?

9. Micaceous Ware

10. Combed Decoration

b. Imported Fine Ware

11. Terra sigillata

12. Glazed Ware, Celadon

13. Other Glazed Wares

14. Red Polished South Asian (?) and Related Wares

15. Other Red Polished Ware, Aksumite, Himyarite or South Arabian (?)

16. Pseudo-prehistoric Ware

IV Locally Produced Pottery

17. Plain and Cooking Wares

18. Amphorae

19. Storage Vessels

20. Storage Jars

V Decoration and Handles of Locally Produced Pottery

VI Intrasite Analysis of Pottery

VII Comparison with the Pottery of al-Adla'
**Contents**

VIII Comparison with the Pottery from the Ğabal al-ʿAwd .............................................. 110

7. The Sculpture ........................................................................................................................... 125
   Relief Wall z502 of the Stone Building ................................................................................. 126
   Standing Crowned Relief Figures in the Stone Building ...................................................... 126
   Other Important Ḥimyarite Period Sculptures ..................................................................... 129

8. The Small Finds.......................................................................................................................... 145

9. A Roman Period Inscription in South Arabia by Christian Marek ..................................... 163

10. Three Late Sabaic Inscriptions with Royal Names from Žafār by Walter Müller .............. 167

11. Charred Plant Remains by Manfred Rösch and Elske Fischer ......................................... 187

12. The Animal Remains by Margaretha and Hans-Peter Uerpmann .................................... 195

13. The Absolute Chronology by Paul Yule, Bernd Kromer, Kristina Franke ....................... 221
   14C Samples from Contexts in Zafār outside the Stone Building ........................................ 221
   14C Samples Stratigraphic Positions in the Stone Building ................................................ 222
   Chronology of the Stone Building Site ................................................................................ 225
   Chronology Outside the Stone Building Site ....................................................................... 227
   Other Synchronisms ............................................................................................................. 228

14. The Place-Names at Žafār ........................................................................................................ 233


16. Summary and Conclusions .................................................................................................... 239

17. Bibliography ............................................................................................................................ 255

18. Image Credits .......................................................................................................................... 273

19. Tables ........................................................................................................................................ 275
   19.I List of Sites at Žafār ......................................................................................................... 275
   19.II Excavation Operations in the Stone Building ................................................................. 286
   19.III Excavated Contexts in the Stone Building .................................................................... 294
   19.IV City Wall Contexts ......................................................................................................... 300
   19.V Type of finds which are appear in the database including the kinds of sculpture and relief motives ................................................................. 302

20. Index Names, Places, Things .................................................................................................. 303
Acknowledgements

The Ẓafār Project owes its origin to my friends Yusuf ʿAbdullāh (director of the General Organisation for Antiquities and Museums, GOAM) and Burkhard Vogt (then director of the Research Station of the DAI in Ṣanʿāʾ), who both in 1996 encouraged the undersigned to take up work in the Yemen. This idea would not have come to fruition without the staunch support of Werner Arnold, chair for Semitics of the Seminar for the Languages and Cultures of the Near East of Heidelberg University. From 2006, he proved a steady source of inspiration and represented our undertaking as an ambassador. With the expiry of Dr Yusuf’s tenure as director, his successors continued support of field seasons at the site. The actual site mapping began as Diplomarbeiten born by the students of the Institute for Spatial Information and Surveying Technology, University of Applied Sciences in Mainz (i3mainz) under the advisors Wolfgang Böhler and later Hartmut Müller. Nadia Ali (CNRS) made several keen observations regarding the relations to Coptic art, a sore topic up to now. Lena Krastel, in her diplomatic way, helped to ready the manuscript.

Different donors enabled our work at Ẓafār, the first being the fund for cultural preservation of the Foreign Office of the Federal Republic of Germany (Dept. 602) which got us on our feet and saw the project through critical times. In the year 2000, the Gerda Henkel Foundation provided partial support for the excavation for 3D scanning and supported a book on Ḥimyar as well which was designed to encourage interest in our topic. After a one-year award in 2000, the German Research Society (DFG) generously funded the project from 2005 to 2011. The Fritz Thyssen Foundation enabled our work from 2002 to 2004.

The DAI in Ṣanʿāʾ, represented first by Burkhard Vogt and later Iris Gerlach, facilitated our visits to the Yemen and provided hospitality for our crew at the research station. Over the years, the German embassy in Ṣanʿāʾ was a source of support and encouragement. The discussion of the place-names in Ẓafār developed out of discussions with Cornelia Ruppert.

We enjoyed the contractual support of GOAM for our mapping, excavation and development of museum resources. In terms of our contract, they permitted many requests allowing us to research and publish. I hold the copyright for most images.

Walter W. Müller and Peter Stein answered numerous questions regarding the transcription of names and of a more general nature as well. Alexander Sima edited the 220 musnad inscriptions (in press, submitted 2004). These and the excavated ones were presented to Norbert Nebes for publication, the former in the series Epigraphische Forschungen auf der Arabischen Halbinsel. Katharina Galor advised me in the conclusions about Jewish religious customs.

I thank Marianne Bergmann (Berlin), Robert Fleischer (Mainz), Marion Meyer (Vienna), Klaus Parlasca (Frankfurt/Main), Reinhard Stupperich (Heidelberg) for discussing the stylistic dating with me. In this dating question, one could hardly wish for a more articulate and stronger support.

It is fitting, an honour and a complement to be able to publish our expedition report in the Abhandlungen of the Deutsche Orient-Gesellschaft, which helps me reach my goal of integrating our Arabia research into the main body of ancient Near Eastern archaeology.

Felix Blocher kindly took on the arduous task of reading the manuscript and made numerous suggestions.

Curt Hilbrig, my excavation technician since 2008, did a great deal to debug the present work and its complex documentation. Our students gave generously of their time and talent to make our training excavations a success. Back in Heidelberg many discussions could be tested in our seminars together with Reinhard Stupperich – an
excellent classical archaeologist and a goldmine of information.

Reinhard Friedrich from the Harrassowitz Verlag made many valuable instructions with regard to the formatting of the text.

Finally, over the years the Zafāṛīs ceaselessly aided and abetted our work. We could always count on their endless generosity and good will. When I ask previous participants what aspect of the project they liked best, they usually choose the Zafāṛīs.

Heidelberg, January 2012
Paul Yule
Asking the author which of his archaeological projects he considers his best is like asking a mother to name her favourite child. The Ẓafār project is arguably my most successful one in terms of recognition: To judge from my colleagues’ reactions, it had a greater impact than my projects in India and Oman. In the case of all three subject areas, I was in the fortunate position of treading thematically on *terra incognita*. Obviously, if only a handful of experts are familiar with the sources relating to a given subject and it is peripheral to a university curriculum, this in itself limits the reception of such work. A degree of financial continuity and significant finds enabled me to continually refine and correct iteratively from season to season my documentation of Ẓafār and its history.

What compelled me to work on Ẓafār for 12 years? I was dissatisfied with the state of archaeological research for this period in Arabia, which has long been the domain of research mostly of excellent Qur’anic scholars from J. Wellhausen (1897) to F. Donner (1981, 1998) as well as epigraphers such as W. Müller (2001) and C. Robin (2006) – not archaeologists. In our sub-discipline interdisciplinary archaeological studies can and do rectify our written sources. Another reason is that there have been few detailed archaeological studies regarding the end of the pre-Islamic period. Instead there have been excellent learned ones about the ǧahalīyah, ridda and conquests of the new Islamic state which leave the material culture completely obscure – as if it did not exist or were unimportant.

In addition, from the very beginning of my Arabia research I wanted a structural change in the research so that the newness of our work there be recognised internationally *vis à vis* main stream Near Eastern and Classical archaeology. A second goal was sustained, responsible site study and monitoring complemented by open access data dissemination and project transparency. However, in 2010 political instability in our host country ended our project. The internet enabled the dissemination of my studies and images alternative to Eurocentric conventional publication, which is available to most of our colleagues in the host country, but only in a limited way. Now much of our documentation is available to all, gratis and free from the extraneous pressures of interest groups within the field of Arabian archaeology. ‘Real-time dissemination’ means that results appear in the internet weeks after the conclusion of the work instead of manifest waiting queues up to eight years with my conventional publications.

Until now there has been little articulate art historical method; for better and for worse, the main emphasis in our subdiscipline has dwelt on the cataloguing of finds. Texts, ancient and modern studies which channelled can characterise our period as decadent require explanation. It is hoped that the newly excavated finds will influence such old-fashioned value prejudice. No contemporary excavated site lies in the area near Ẓafār except Qāniʾ (Sedov 1992) some 500 km away in Ḥaḍramawt. Situated 60 km to the north, Maṣnaʿat Māriya has been surveyed, but not yet excavated. The Ǧabal al-ʿAwd, a scant 25 air km to the south-east, dates to the early Ḥimyarite period. These sites are known from a few reports and tell us little about Ẓafār or its cultural context. All of these factors affected my site choice.

Significantly, the Ḥimyarite tribal confederacy carried out the first political-military unification of Arabia. Their regnal calendar begins in 110 BC (de Blois 1990) with the commencement of the early period. From 270 to 525 the empire follows (Yule 2007a: 10). Thereafter, we refer to the late/post period (525 to the 2nd ¼ of the 7th cent. CE). The present study accents the last segments of Old South Arabian (OSA) or Ḥimyarite period archaeology and history. Only rarely does our subject require me to delve into the pre-Ḥimyarite regional history, because at Ẓafār for these periods archaeological sources still remain unknown.
If not otherwise specified, the dates cited below are CE formulations. “?200” and “c. 200” reflect respectively lesser and greater certainty.

Three emphases formed our project strategy: mapping, development of museum resources and excavation. Cases in which we did not reach our cultural resource management and research objectives stem from the lack of success of our research group in attracting more funding and the instability of the infrastructure in the Yemen which hosts the project. We underestimated the amount of time required for most field operations: The mapping of more than 140 ha took far more time than we ever imagined: nine seasons of survey and evaluation. During the course of the project new and important aspects emerged, such as the mapping of al-Šugāg and Maʿğil al-Šaʿbānī. The underestimating holds also for reading the data for publication. Initial lack of a clear and simple relational database format resulted in frequent redesigning of the database and slowed down the evaluation which nourished final publication. These data encompass the archaeological contexts, operations, artefacts, photos, pottery raw drawings, final drawings and other aspects which we publish, for example in the image bank HeidICON (see below). Particularly time-consuming were the verification of all aspects of the documentation of the campaigns 2004, 2006 and 2007. Our campaigns were characterised by a lack of time and manpower resources, despite a generous financing.

Although we were allowed to export human and animal bones, a few metallic and pottery specimens, such requests proved time-consuming, nerve-wracking, bureaucratic and expensive. Thus, analyses of glass or other interesting materials which are standard in today’s archaeological reports are lacking in this one. When GOAM mistakenly sent us radiocarbon samples from other expeditions instead of ours’, we had a nice opportunity to chat with our colleagues and attempt exchange.

The visibly declining state of preservation of the ruins at Zafār as a result of the elements and anthropogenic influence before our eyes conditioned our field strategy: We first mapped and registered its sites in order to recognise shape, position and size of the antique cityscape. From the start, surface sampling of individual finds proved a strategy likely to be of little use. We turned to topographic mapping, analysis by means of a QuickBird satellite image and excavation. After our preliminary reports appeared, we changed a few of the site designations and added others. The conservation of the Stone Building site dominated the final campaign consuming precious resources.

Fortunately, the Zafār project followed my research of the 1980s and early 1990s devoted to late pre-Islamic central Oman, which provided a relevant historical perspective with the eastern side of the Arabian Peninsula beginning a few centuries earlier. Zafār confronted me with a disturbed stratigraphy and sources other than those that the historian would prefer.

The following chapters themselves can be quickly previewed. After describing the textual and visual resources available to the reader regarding Zafār, Chap. 1 of this excavation report begins with a sketch of the environment of the Highlands which influences the development of the Ḥimyarite epoch. A number of projects dealing with this age require comment. Without these the net newness of the present study cannot be ascertained. This state of research also catalogues diachronically the main operations at our site. Chap. 2 goes into greater detail on smaller Ḥimyarite contexts which we investigated. Chap. 3 articulates the diachronic development of the Stone Building Site – our main excavation. The city defences are described in Chap. 4. Chap. 5 summarises the Ḥimyarite graves and tombs which complements the discussion on architecture. The discussion of the pottery in Chap. 6 appears provides the basic data (see below). Two and three-dimensional sculpture come to bear in Chap. 7. The better dated context of the eastern courtyard wall of the Stone Building forms the basis of this discussion. Time and space allow discussion of only the most significant examples, the rest being simply reproduced in the image base HeidICON. Chap. 8 summarises the small finds, that is, glass, metal, stone and other materials. In Chap. 9 a Greek inscription of the Roman period from the site museum forms an ex-
ception to the rule of publishing only finds from the excavation. Surface and excavated inscriptions appear in Chap. 10. Chap. 11 and 12 summarise the botanical and zoological remains mostly from the Stone Building site. This leads up to the absolute chronology which now can appear in Chap. 13, building on the explanation of the stratigraphy set down in the discussion of the Stone Building in Chap. 3. At the beginning of our work, no-one had written much about the local place-names, which gave impetus to Chap. 14.

The text is rounded off in Chap. 15 with a discussion of the conservation measures which we undertook at the site and brief mention of the stone identifications. The net result of the excavation is synthesized in brief fashion in Chap. 16. The remaining bibliography and indices support the documentation.

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Sabaic</th>
<th>Arabic</th>
<th>Sabaic</th>
</tr>
</thead>
<tbody>
<tr>
<td>' (except when initial)</td>
<td>ʾ</td>
<td>ʾ</td>
<td>ʾ</td>
</tr>
</tbody>
</table>
| b | b | s | s
t | t | š | š
| f | f | q | q
| ʿ | ʿ | w | w
| h | h | d | d
| h | h | t | t
| m | m | w | w
| y | y | g | g

Vowels diphthongs
ā, ī, ū, a, i, u, aw, ay
Arabic ʾa; at (construct state)
ʾ (Arabic article), al- and ʾl- (even before the antero-palatals)

Table 0.1. System of Transliteration of Semitic Characters.
Editor’s Foreword

With great pleasure the Deutsche Orient-Gesellschaft presents hereby a volume from the pen of Paul Yule. Like hardly any other, Paul worked archaeologically in the most diverse areas of the Near East, in addition to the Indian Subcontinent. For years he devoted himself to the Persian-Arabian Gulf and the Arabian Peninsula. More than 15 years ago he turned his attention to Zafar, capital of the Himyarite Empire. This centre dominated Arabia from the late 3rd to the 6th centuries and is one of the last expressions of Old South Arabian Culture just prior to the coming of Islam.

The fieldwork had three emphases: topographic recording and mapping, development of a site museum and excavations. The most elaborate and difficult contribution was the mapping conceived as the basis for further research. The intention was to document the preservation of the ruins which worsened continuously over the years. Numerous surface finds found their way into museums in the Yemen and elsewhere. They remain, however, strays in need of a context. Excavation was to remedy this problem.

By means of twelve field seasons, financed by different financial sources Paul and his teams succeeded in illuminating many aspects of old Zafar and assembling them into a greater whole. Typically, Paul made use of state of the art investigative methods so that natural science, epigraphic and other aspects came to fruition.

Happily, an established philological institution, namely the chair for Semitics of the Seminar for the Languages and Cultures of the Near East of Heidelberg University, has been Paul’s long-term academic base.

Today not only has the chronology become far more secure – the years of difficult debates regarding Old South Arabian chronology have lapsed – but also stylistic attributions of sculpture, information regarding historical geography and a ceramic sequence have taken on a clearer profile.

The Board of Directors of the DOG unanimously agreed that a publication of the Zafar project in book form would motivate others and awaken interest in ancient Yemen to enable an overview at least one of the most important archaeological sites and serve as a scale for future research in this difficult milieu.

We thank the Deutsche Forschungsgemeinschaft not only for its support over several years, but also for subvention for the production of this elaborate volume. We also thank the Harrassowitz Verlag for their professional support of the printing.

Halle (Saale), 21 January 2013
Felix Blocher
Secretary of the Deutsche Orient-Gesellschaft
Abbreviations

DSP  Damar Survey Project, Chicago University Oriental Institute
GOAM  General Organisation for Archaeology and Museums
LS  lower surface
lz  Laufzettel, i.e. serial find slips of the Heidelberg expedition
op  excavation activity
prof.  profile drawing in HeidICON
sf  small finds
us  upper surface
UTM  universal transverse mercator
z  Ẓafār project number
zm  Ẓafār Museum inventory number
ZVM  Ẓafār Virtual Museum http://zafar.iwr.uni-heidelberg.de

Period names:
late/post Ḥimyarite period  525 – 2nd ¼ 7th cent. CE
empire period  c. 270 – 525 CE
early Ḥimyarite period  110 BCE – c. 270 CE
The images published herein suffice to illustrate the text, but are a mere fraction of the total of 25,000 drawings, and photos (52 GB) which arose during the course of our work. Opening any excavation report on Arabia, one has the impression that there cannot be enough photos to document the many aspects of the fieldwork. By mid 2010 3000 selected images in the internet image-base became available. At the time of publication this lies at c. 4700. Once you have entered the HeidICON pool (http://heidicon.ub.uni-heidelberg.de/pool/zafar) SKVO “Zafar/ Yemen”) the images can be searched by means of key words. These can be viewed and downloaded gratis from the HeidICON project of the Heidelberg University Library These resources complement selected writings of the author regarding Arabia stored in the document server (http://archiv.ub.uni-heidelberg.de/propyleumdok/yule) which contains the preliminary reports in searchable digital form.

Table 0.1 shows the sorting principles and key words. If a photo number is known, one can search by means of it or just by a key word. Whatever is to be searched you enter into the search window in the upper left in the HeidICON mask. Examples in Table 0.1 include for instance, jewellery, small find, sculpture, or team. Some objects are listed in a special sense: Museum refers to the on-site museum at Zafar. ‘Lot’ is a group of objects that are photographed together, most often sculpture or glass fragments.

Commonplace abbreviations which we use include these for photos of the excavation and its artefacts:

lz04–001 in op400–024
lz=Laufzettel, artefacts or artefact lots are cited by the year and number of their serialised find slips

op400–025a
An excavation operation is cited by its operation number.

pz400–091
An excavated context is cited in a photo by its pz number.

z097
A house, building, wall or floor is cited by its context number.

z400–401
excavation z400, context 401 in the main excavation landscapes may include several contexts: Marib

A particular category of find, a place, period, material etc. can be retrieved.

z_asabi3 Zafar, al-ʿAṣabī, image 3
z_e01 Zafar, east side, image 1
z_s01 Zafar, south side, image 1
z_w01 Zafar, west side, image 1

The Image Base HeidICON and Text Server Propyleum-DOK
<table>
<thead>
<tr>
<th>Title/Object</th>
<th>Detail/Element</th>
<th>Artist/Author</th>
<th>Location/Building</th>
<th>Inventory Number/Shelf Mark</th>
<th>Description</th>
<th>Material/Technique</th>
<th>Size/Measurements</th>
<th>Site of Discovery</th>
<th>Context of Discovery</th>
<th>Epoch</th>
<th>Locale/Systematic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>jewellery</td>
<td>bangle</td>
<td>photographer</td>
<td>Aden</td>
<td>zm...</td>
<td>kind of ornament</td>
<td>organic: bone</td>
<td>drawing</td>
<td>z...</td>
<td>bronze age</td>
<td>pz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bead</td>
<td></td>
<td>al-Aksud</td>
<td>z...</td>
<td>or decoration eg.: anchor</td>
<td>organic: wood</td>
<td>photo</td>
<td></td>
<td>Himyarite late/post</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pendant</td>
<td></td>
<td>al-Aridh</td>
<td>z...</td>
<td>architecture i</td>
<td>organic: charcoal</td>
<td>poster</td>
<td></td>
<td>Himyarite</td>
<td>z...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Asabi</td>
<td>z...</td>
<td>architecture ii</td>
<td>organic: grain</td>
<td>map</td>
<td></td>
<td>Qatabanian</td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Awar</td>
<td></td>
<td>architecture iii</td>
<td>organic: seed</td>
<td>plan</td>
<td></td>
<td>recent (20th c.)</td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Azafah</td>
<td></td>
<td>bird &amp; reel</td>
<td>organic: botanical</td>
<td>video</td>
<td></td>
<td>(17-19th c.)</td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Dahah</td>
<td></td>
<td>beard &amp; face</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Gawh</td>
<td></td>
<td>bird</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Gharigeh</td>
<td></td>
<td>boid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Ghawd</td>
<td></td>
<td>bucranium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Giragir</td>
<td></td>
<td>caprid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Gus</td>
<td></td>
<td>cervid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Hadih</td>
<td></td>
<td>lot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Hamari</td>
<td></td>
<td>curly hair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Hanna</td>
<td></td>
<td>coagd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Il</td>
<td></td>
<td>face</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Ir</td>
<td></td>
<td>fantastic animal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Lagiyah</td>
<td></td>
<td>feathers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Mamlakah</td>
<td></td>
<td>feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Mdarratayn</td>
<td></td>
<td>figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Mirrat</td>
<td></td>
<td>floral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Mudharrag</td>
<td></td>
<td>garment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Qism</td>
<td></td>
<td>geometric pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Salm</td>
<td></td>
<td>goblet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Shaghag</td>
<td></td>
<td>grapes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Sirr</td>
<td></td>
<td>grapes vines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Suchil</td>
<td></td>
<td>griffen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Uqlah</td>
<td></td>
<td>gutter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>al-Umar</td>
<td></td>
<td>hand holding object</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Abyad al-Ghayl</td>
<td></td>
<td>hand with mirror</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Awam</td>
<td></td>
<td>hand with wreath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Baghadi</td>
<td></td>
<td>head</td>
<td>Hercules</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Daras</td>
<td></td>
<td>hipposaem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dhi Asham</td>
<td></td>
<td>horse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dhi Shu</td>
<td></td>
<td>human</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gabub</td>
<td></td>
<td>hunter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mira</td>
<td></td>
<td>interlace</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sculpture</td>
<td>relief</td>
<td>carver</td>
<td>Yafir</td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(bas-relief)</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sculpture</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(high relief)</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vessel</td>
<td>cup</td>
<td>potter</td>
<td>Yafir</td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>fragment</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>jag</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pot</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>storage vessel</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>varia</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>architecture</td>
<td>ashlar block</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>capital</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>column</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>conservation</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>gasser</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>isometric</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mortise</td>
<td></td>
<td></td>
<td></td>
<td>organic: bone</td>
<td>organic: bone</td>
<td></td>
<td></td>
<td></td>
<td>cz...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title/object</td>
<td>Detail/element</td>
<td>Artist/author</td>
<td>Location/building</td>
<td>Inventory number/shelf mark</td>
<td>Description</td>
<td>Material/technique</td>
<td>Size/measurements</td>
<td>Site of discovery</td>
<td>Context of discovery</td>
<td>Epoch</td>
<td>Locale systematic</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>script inscription mason mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>context dendrogram magnetometer overview plan profile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>landscape map overview reconstruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>charcoal plant remains</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>museum plan poster sign overview</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>village House villager</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>team name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cemetery overview plan profile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 0.2 Sorting system of HeidICON-Ẓafār/Yemen.
List of figures

Frontispiece Zafar/al-Ǧaḥw in 1970 (above) and in 2010 (below) viewed to the north.
1.1 Natural space divisions of South Arabia.
1.2 Precipitation in South Arabia.
1.3 Geology of the area around Zafar, 1:250.000.
1.4 False-colour QuickBird satellite image of Zafar and its area (the rectangle shows the general site plan, Folio 1), recorded 01.04.2004.
1.5 Map of Arabia, 4th–5th centuries CE.
1.6 Map of the main Old South Arabian towns.
1.7 Map of places cited (Tactical Pilotage Chart, sheet K-6A, edition 3-GSGS).
1.8 2000, view of the magazine of the site museum with the finds dumped on the floor in places to a depth of 1 m.
2.1 Schematic map of present-day Zafar.
2.2 Plan of the Ḥuṣn Raydān, state 26.03.2008.
2.3 Sketch plan and cross section of structure z028 on the Ḥuṣn Raydān.
2.4 Feature z175 toward the north-west.
2.5 View of the Ḥuṣn Raydān toward the south-west, centre debris field al-Suḫt.
2.6 Stone plan and profiled view of structure z178.
2.7 Structure z178 after excavation of 2002 viewed toward the south.
2.8 Plan and x-ray views of the subterranean chambers in al-Ǧaḥw.
2.9 Above left: plan, below: x-ray view of the mosque and chamber, z070 & z071.
2.10 Above: inside chamber z096 to the north-east.
2.11a,b Below: plan and profile view of chamber z096.
2.12 Plan and profile view of chamber z067.
2.13 Left: inside chamber z067 to the south-west.
2.14 Right: inside chamber z067 to the south-east.
2.15 Plan, profile and cross sections of gallery z066. The east-north-east–west-south-west part of the structure in the south is recent.
2.16a,b Reliefs cut onto the piers at the northern end of the gallery z066, on the southern faces respectively of the a) western and b) eastern flanks.
2.17 Tombs and graves in Zafar plotted on a QuickBird satellite image (01.01.2004).
2.18 Left: plan of the overlapping of the pavements z380, z422 and the walls z378 and z379.
2.19 Right: site z300: centre above: wall z370, centre below: trench z391 toward the north-west.
2.20 Site z300: east profile.
2.21 Site z300: chamber z374, east profile.
2.22 Zafar/al-Ǧirāǧir toward the east.
2.23 Zafar/Maʿgil al-Šaʿ bānī: panorama view of the reservoir to the east-north-east.
2.24 Zafar/Maʿgil al-Šaʿ bānī: plan and north-north-east cross-section through the reservoir.
2.25 Upper left: Zafar/Ǧabūbat al-Aswar, z347: plan.
2.27 Lower left: Zafar/Ǧabūbat al-Ḥamrāʾ, z247 toward south.
2.28 Lower right: Zafar/Ǧabūbat al-Ḥamrāʾ, z470: plan.
2.29 Zafar/Wādī al-Ḫāf: stone profile of the dam z326 toward the south-east.
2.30 Zafar/Wādī al-Ḫāf: plan.
XXII List of figures

2.31 Ţafār/al-Danān, toward the west.
2.32‒5 Ibb Governorate/Di al-Šawla’, site 1, rock images.
2.36a,b Ibb Governorate/Di al-Šawla’, site 2, rock images.
3.2 Stone Building: stone plan and that of the excavation z300, April 2009.
3.3 Stone Building and z300: height plan. The blue dashed lines show removed contexts and operations, April 2009.
3.4 Stone Building and z300: context plan, April 2009, see detail Fig 3.6.
3.5 Detail, post-State II buildings and debris. State III (dark grey) is earlier than IV (middle grey). V (light grey) is the latest.
3.6 Stone Building: plan of the excavation operations, op400–001–038.
3.7 Stone Building: plan of the excavation operations, op400–039–059.
3.8 Stone Building: plan of the excavation operations, op400–060–092.
3.9 Stone Building: plan of the excavation operations, op500–001–017.
3.11 Stone Building: plan of the excavation operations, op600 and op700.
3.12 South-western slope of the Ḥuṣn Raydān, south-eastern profile.
3.13 Stone Building: five profile views of debris and features.
3.14 Stone Building: profile drawing of the eastern courtyard wall and plan, photo: Fig. 7.1.
3.15 Stone Building: profile drawing of the northern interior courtyard wall.
3.16 Stone Building: profile drawing of the western courtyard wall.
3.17 Stone Building toward the south-west, 2009.
3.18 Spoil terraces of the Stone Building site.
3.19 Stone Building site: relative chronology (for the absolute chronology cf. Table 13.6).
3.20 Stone Building: plan of the ,mason marks’.
3.21 ‘Mason marks’ from the Stone Building. Class 1: 1: C5n, 2: P3ne, 3: O7w, 4: G15s; class 2: 5: E18s; 6: C10w, 7: B22w, 8: B17s; class 3: 9: Q7n, 10: U5w; miscellaneous: 11: AQ7se, 12: E13m. The direction north is above.
4.1 Plan of the city defences. Table 19.1 lists the different contexts.
4.2 Position of the city gates and their names superimposed on a QuickBird satellite image.
5.1 Representative investigated tombs: 1 z066, 2 al-‘Arāfah ar1, 3 al-Nizah, Zubb/Ǧarf Asʿad, 4 z091, 5 z211, 6 z213, 7 z213, 8 z255, 9 zg07, 10 zg11.
5.2 Ḥimyarite period cemetery, Ţafār zc01, plan.
5.3 Ḥimyarite period cemetery, Ţafār zc01, toward the west.
5.4 Ḥimyarite period cemetery, Ţafār zc01, toward the south.
5.5 Ǧarf Asʿad toward the west.
5.6 Steps leading to Ǧarf Asʿad.
5.7 Toward the west, entrance.
5.8 Interior view of room 1 toward the north-east.
5.9 Plan and cross-sections of Ǧarf Asʿad near al-Nizhah, 14°16′40.1″N, 44°15′16.2″E.
6.1 Imported pottery, Ţafār and comparisons, 1–5 no scale.
6.2 Dipinti on ʿAqaba type amphorae. 1: lz10–014, 2: lz08–530, 3: zm920 (left, dipinto not enhanced).
6.3 Imported (nos. 1–11) and locally produced (12–17) pottery from Ţafār.
6.4 Pottery from Ţafār, plain, cooking.
6.5 Pottery from Ţafār, amphorae, storage vessels.
6.6 Pottery from Ţafār, storage vessels.
6.7 Pottery from Ţafār, storage vessels, storage jars.
List of figures

6.8 Locally produced vessel decoration from Ṣafār.
6.9 Rim forms of storage jars and storage vessels.
7.1 3D scan of the eastern wall and its reliefs, z502 and z607. Drawing: Fig. 3.14.
7.2 Detail of the four relief registers, z502.
7.3 Rectified photo of the Himyarite crowned figure, z607.
7.4 Avers of the gold coin of the Aksumite king Kaleb.
7.5 The Himyarite relief fragments lz09−376 and 398 from context z702 superimposed on a drawing of relief z607.
7.6 Early Byzantine ivory diptych of Boethius, 487 CE, Museum Civico Christiana.
7.7 Himyarite relief depiction of a moustached frontal face from op400−169 (lz07−192).
7.8 Detail of an effaced Himyarite period relief in the eastern courtyard wall, z502.
7.9 Himyarite period relief depiction of woman with her hands on her bosom and frontal bull head excavated from op700−001 (lz09−164).
7.10 Himyarite period relief depiction of sphinx and horses from the debris on pavement z413 deriving ultimately from the eastern courtyard wall, z502 (lz09−375).
7.11a-d Head of figure A, 3D scan.
7.12a-d Head of figure B, 3D scan.
7.13 Left: architecture I relief (zm0677).
7.14 Right: architecture II relief (lz03−067.3).
7.15 Left: architecture III relief (lz09−078).
7.16 Right: panel (zm0673).
7.17 Himyarite period reliefs as found inside operation op400−025a.
7.18 Anthropomorphic relief from operation op400−025a (lz07−361).
7.19 Plan and section of the slag deposit op400−025a.
7.20 Himyarite period bull’s head from operation op400−025a (lz07−362).
7.21 Himyarite period relief showing a leonine head from operation op400−091 (lz04−091).
7.22 Himyarite period fragmentary garmented figure from operation op400−013a (lz04−108).
7.23 Himyarite period alabaster (calcite) relief in the Ẓafār Museum magazine tendered by villagers for sale to GOAM, no zm number.
7.24 Himyarite period relief interlace (vine) relief fragment from op north 1 (lz08−065.002).
7.25 Himyarite period relief depiction of a woman wearing a Persian gown and bearing a bundle of branches with the left hand (lz04−004).
7.26 Himyarite period relief in which the branch attribute is recognisable (lz09−130.001).
7.27 Himyarite period relief depiction of ladies holding pomegranates from op500−020. The detail right shows the cross-section (lz04−173).
7.28a,b Himyarite period relief depiction of ladies holding pomegranates from the house of Muhammad ʿAlī Ašwal in Bayt al-Ašwal. Length c. 60 cm.
7.29 Late/post Himyarite period fragmentary relief of a vulture currently in the village of Ḥaddat Ġulays.
7.30a,b Photo and roll-out of a late/post Himyarite period column, from the Wādī al-Saʿ ylah in Ṣanʿ ā‘. Height 1.47 m.
8.1 Selected glass remains from the Stone Building.
8.2 Metallic artefacts nos. 5−7, 10, 11 from the Stone Building.
8.3 Stone vessels and lamps mostly from the Stone Building.
8.4 Seals, beads mostly from the Stone Building.
9.1 Inscription zm2021 from the Ẓafār Site Museum.
10.1 Inscriptions from the Stone Building.
10.2 Inscriptions from the Stone Building.
10.3 Inscriptions from the Stone Building.
10.4 Inscriptions from the Stone Building.
10.5 Inscriptions from the Stone Building.
10.6 Inscriptions from the Stone Building (except no. 5).
10.7 Inscriptions from the Stone Building.
10.8 Inscriptions from the Stone Building.
10.9 Inscriptions from the Stone Building.
10.10 Inscriptions from the Stone Building.
10.11 Inscriptions from the Stone Building.
10.12 Inscriptions from the Stone Building.
10.13 Inscription from “Ẓafār South”.
10.14 Inscription from “al- Aṣabī South”.
10.15 Inscriptions from “al- Aṣabī South” and “al-Gusr”.
11 Botanical remains from the Stone Building. The bar in each photo corresponds to 1 mm.
11.1 Avena (oats), grain.
11.2 Camelina sativa (gold of pleasure), seed.
11.3 Coronilla (scorpion vetch), seed.
11.4 Echinochloa crus-galli (cockspur), grain.
11.5 Triticum (glume wheat), grain.
11.6 Triticum (glume wheat), spikelet.
11.7 Triticum (glume wheat), spikelet, different state of preservation than 6.
11.8 Hordeum vulgare (hulled more-rowed barley), grain, dorsal and ventral sides.
11.9 Lens culinaris (lentil), seed, two views.
11.10 Linum usitatissimum (flax), seed.
11.11 Prunus dulcis (almond), fruit stone fragment.
11.12 Phoenix dactylifera (date), seed fragment.
11.13 Sesamum indicum (sesame), seed.
11.14 Triticum aestivum/durum (naked wheat), grain, ventral from the side and dorsal.
11.15 Triticum monococcum (einkorn), spikelet.
11.16 Vitis vinifera (common grape vine), pip.
12.1 Differential representation of body-part among the bone finds from the Stone Building and from the cemetery zc01.
12.2 First phalanges of horse (or mule?) and donkey from the Stone Building at Zafār.
12.3 Log-size indices (LSIM) for early cattle from Yemen (Zafār, Barʿān, Raybun), the Gulf-Area (Qalat 519) and the Levant (Hesban) based on the standard created by Manhardt (1998). The length-measurements contained in this standard were excluded for the calculation of the Zafār Indices (see text).
13.1 Plan of the 14C samples from the Stone Building and z300.
13.2 Marginally drafted and pecked masonry in the courtyard of the Stone Building.
13.3 Marginally drafted and pecked masonry from Baraquish.
14.1 Place-names in and around Zafār.
Folio 1 Map of the ruins of present-day Zafār, 2008 (DIN A2).

Tables, Graphs
0.1 System of transliteration of Semitic Characters.
0.2 Sorting system of HeidICON–Zafār/Yemen.
1.1 Description of landscape types in the Yemen, 1992–93.
3.1 The plans of the excavation operations in the Stone Building ordered by year.
3.2 Total number and percent of all excavated find-lots ordered by debris layer.
3.3 Mason marks from the Stone Building.
4.1 Summary of the names of the gates of Zafār listed in al-Iklīl giving the name of orientation for the gates.
6.1 Proportion of the shapes sampled from Zafār by category.
6.2 Frequency of recorded pottery forms at Zafār including imports.
6.3 Major rim shapes and kinds of inclusions in storage vessels arranged according to frequency (=Fig 6.9).
6.4 Intrisite analysis of pottery shapes.
6.5 Ware groups from the Gabal al-ʿAwd.
6.6 Al-ʿAwd morphological categories (sample: Zech 2008: Taf. 1–82) compared with such attributes from Zafār.
7.1 Main categories of relief motifs excavated from Zafār, mostly from the Stone Building. To view examples, the reader is referred to the image bank, HeidICON.
11.1 Frequencies of recovered plant remains.
12.1 Taxonomic list for the animal remains from Zafār (Yemen)-Excavations 1998–2009.
12.2 Radiocarbon dates on animal bone-finds from the Stone Building.
12.3. Osteometry of chicken finds from Zafār.
12.4 Osteometry of the cat bones from Zafār.
12.5 Osteometry of the horse bones from Zafār.
12.6 Osteometry of the donkey bones from Zafār.
12.7 Skeletal parts of camels (Dromedarius) found at Zafār.
12.8 Osteometry of dromedary remains from Zafār.
12.9 Skeletal parts of cattle (Bos) found at Zafār.
12.10 Osteometry of Cattle (Bos) from Zafār.
12.11 Slaughtering ages of cattle (Bos) at Zafār.
12.12 Osteometry of sheep (Ovis) and goats (Capra) from Zafār.
12.13 Osteometry of the Nubian ibex from Zafār.
12.14 Osteometry of wild (?) canid remains from Zafār.
12.15 List of abbreviations used for measurements.
13.1 Thirty-six 14C determinations are available for Zafār ordered in stratigraphic groups. The dates are calibrated to one and two standard deviations with OxCal version 4.0 (findspots Fig. 13.1).
13.2a Radiocarbon data graphic from outside the Stone Building.
13.2b Radiocarbon data graphic from the Stone Building ordered as in Table 14.1.
13.3 Calibrated datings from the Stone Building ordered according to the debris level, the stratigraphically deepest appear below in the table.
13.4 Averaged calibrated datings from the Stone Building ordered stratigraphically by debris layer.
13.5 Proposed chronology for the states of the Stone Building site (graphic representation: Fig. 3.19).
14.1 List of place-names in and around Zafār written in local dialect.
19.I List of sites at Zafār.
19.II Excavation operations in the Stone Building.
19.III Excavated contexts in the Stone Building and in z300.
19.IV The city wall contexts.
19.V Types of finds which are appear in the database including the kinds of sculpture and relief motifs.
Participants

1998
Celia Bergoffen
Ṣaliḥ ud-Dīn
ʿAli ʿAbdul Kawī
Manfred Klein
Rainer Krahe
ʿAbdul Razaik
Tawfīq Taḥud-Dīn
Paul Yule

2000
Charlotte Bank
Ṣaliḥ ud-Dīn
Bettina Hamm
Thomas Hamm
Manuel Hofmann
ʿAli Abdal Kawī
Matthias Lang
ʿAmīn al-Mawrī
Katherin Sachsenberg
Thomas Schupp
Karsten Thiele
Carsten Witzel
Paul Yule

2002
Ḫālid al-ʿĀnsī
Pascal Garn
Jens Gutperle
ʿAli Abdal Kawī
Mechthild Kolb
Petra Krebs
Markus Roth
ʿIsa ʿAli al-Šaʿ bani
Ahmed ʿĀrāmī
Alexander Sima
Paul Yule

2003
Ḫālid al-ʿĀnsī
Ṣaliḥ ud-Dīn
Frank Krämer
Martin Mayer
Simone Mühl
Renate Rechmann
Baṣīr al-Samī
Markus Schicht
Christian Weides
Paul Yule

2004
Ḫālid al-ʿĀnsī
Corinna Borchert
Michel Blumenroth
Burkart Dähne
Anja Dreiser
Kristina Franke
Cornelius Meyer
ʿAli al-Naqīb
Ṣaliḥ al-Numayrī
Elke Schmidgen-Hager
Paul Yule

2005
Ḫālid al-ʿĀnsī
Nils Carstensen
ʿAli ʿAbdul-Karīm al-Ḥakīm
Mechthild Kolb
Christoph Rusch
Holger Schwarzer
ʿIsa ʿAli al-Šaʿ bani
Paul Yule

2006
Ḫālid al-ʿĀnsī
Rafīq Mḥd al-ʿĀrāmī
Alexander Darus
Kristina Franke
Michaela Fritz
Julia Glag
ʿAli ʿAbdul-Karīm al-Ḥakīm
Manfred Rösch
Cornelia Ruppert
Regina Uhl
Paul Yule
2007
Ḫālid al-ʿAnsī
Nabīl Shāliḥ al-ʿAšwal
Kristina Franke
Martin Gruber
ʿAlī ʿAbdul-Karīm al-Ḥakīm
Jonas Hohenadel
Joel Orrin
Cornelia Ruppert
ʿIsa ʿAlī al-Ša’bāni
Irene Steuer-Siegmond
Anna-Maria Ungelenk
Hans-Jürgen Welz
Paul Yule

2008
Ḫālid al-ʿAnsī
Rafīq Mḥd al-ʿArāmī
Ingo Buchmann
Johanna Greska
Elske Fischer
Martin Gruber
Jens Gutperle
ʿAlī Abdul-Karīm al-Ḥakīm
Curt Hilbrig
Sharlyn Huillier
Fath ʿAlī al-Ǧulob
ʿAbdu Tawāb Miṣraqī
Tobias Schröder
Stella Tomasi
Carmen Wiener-Steiner
Paul Yule

2009
Rafīq Mḥd al-ʿArāmī
Dorothea Blome
Našwan Hussain Ḍaban
ʿAlī Abdul-Karīm al-Ḥakīm
Curt Hilbrig
Kathryn Kelley
Elisabeth Monamy
Michael Pfinner
Fuād Mḥd al-Qašīm
Irene Steuer-Siegmond
Christine Veidt
Hans-Jürgen Welz
David Wenge
Paul Yule

2010
Martine Brucker
ʿAlī Abdul-Karīm al-Ḥakīm
Curt Hilbrig
Jörg Lindenbeck
Rašīd Ṭabit al-NDAR
Fuād Mḥd al-Qašīm
David Wenge
Paul Yule