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Transliteration

For further details on the submission of papers and the preparation of papers for publication, authors are requested to consult and follow the latest *Guidelines for Authors* which are available online at www.thebfsa.org/pdfs/PSAS_guidelines_authors_april2012.pdf.

Quotations, single words, and phrases from Arabic, or other languages written in non-Roman alphabets, are transliterated according to the systems set out below.

- Personal names, toponyms and other words which have entered English or French in a particular form, should be used in that form when they occur in an English or French sentence, unless they are part of a quotation in the original language, or of a correctly transliterated name or phrase. In the latter cases, they should be correctly transliterated, even when they occur in an English or French sentence.
- Names of sites, archaeological periods, types of pottery, which have entered archaeological usage in a particular form should be used in that form: Umm an-Nar, Julfar ware, etc. (and where appropriate the correctly transliterated form should be added in the first instance in any paper, see *Guidelines for Authors* for more details).

The transliteration systems are as follows:

(a) Arabic

ء	آ	ج	j	ذ	dh (dh)	ش	sh (sh)	ظ	z	ق	q	ن	n
ب	b	ح	h	ر	r	ص	s	ع	ʿ	ك	k	ه	h
ت	t	خ	kh (kh)	ز	z	ض	ḍ	غ	gh (gh)	ل	l	و	w
ث	th (th)	د	d	س	s	ط	t	ف	f	م	m	ي	y

- Vowels: a ī u ā ī ū. Diphthongs aw ay.
- Initial *hamzah* is omitted.
- *Alif maqṣūrah* is transliterated as ā.
- The *lām* of the article is not assimilated before the ‘sun letters’, thus *al-shams* not *ash-shams*.
- The *hamzat al-waṣl* of the article should be shown after vowels except after the preposition *li-*, as in the Arabic script, e.g. *wa-l-wazīr*, *fīl-bayt*, but *li-l-wazīr*.
- *Tā marbūṭah* (ة) should be rendered *-ah*, except in a construct: e.g. *birkah*, *zakāh*, and *birkat al-sibāḥah*, *zakāt al-ḥiṭr*.

(b) Ancient North and South Arabian

Consonants:

آ	b	t	ṭ	ḥ	g	ḡ	d	ḏ	r	z	s ¹	s ²	s ³	ṣ
ḏ	ṭ	z	ʿ	ḡ	f	q	k	l	m	n	h	w	y	

(c) **Other Semitic languages** appear in the transliteration systems outlined in the *Bulletin of the American Schools of Oriental Research* 226 (1986), p. 3.

(d) **Persian, Urdu, and Ottoman Turkish** as for Arabic with the additional letters transliterated according to the system in the *Encyclopaedia of Islam* (Third Edition) except that *z* is used instead of *zh*. These instructions are available online at www.brill.nl/AuthorsInstructions/EI3P.pdf with information about the transliteration of Persian, Ottoman Turkish, modern Turkish, and Urdu on p. 5 of this document.

Note on Fonts

Electronic versions of papers being submitted for publication should be submitted in **Times Semitic New** 12-point font if at all possible, with double-line spacing on A4-paper size and with 2.54 cm margins all round. This font set is available for free download from the The British Foundation for the Study of Arabia’s website (www.thebfsa.org/PSAS_guidelines.html) along with the recommended Greek font set, called TimesClassicGreek (tmsrr_1.ttf).

Editor's Foreword

The **Seminar for Arabian Studies** is the only international academic forum which meets annually for the presentation of research in the humanities on the Arabian Peninsula. It focuses on the fields of archaeology, architecture, art, epigraphy, ethnography, history, language, linguistics, literature, and numismatics from the earliest times to the present day.

A wide range of original and stimulating papers presented at the Seminar is published in the *Proceedings of the Seminar for Arabian Studies*, reflecting the dynamism and scope of this interdisciplinary event. The *Proceedings* present the cutting edge of new research on Arabia and include reports of new discoveries in the Peninsula. They are published each spring in time for the subsequent Seminar held in July. We hope you find the papers in this volume fascinating. We encourage you to recommend the volume to your academic institutions and colleagues and look forward to further stimulating and informative Seminars.

The Seminar in July 2011 comprised sessions on Palaeolithic and Neolithic Arabia; The Early Bronze Age and Bronze Age transformations in Arabia; late pre-Islamic Arabia; early Islamic and medieval Arabia; Islamic archaeology in Arabia; epigraphy and ancient Southern Arabia; and the literature and society of Arabia.

A full list of all papers presented at the Seminar in July 2011 is provided at the end of this volume, but it is worth highlighting the impressive geographical distribution and chronological range of these papers, most of which are published in this volume of the *Proceedings*, which also includes notes *in memoriam* on Walter Dostal (1928–2011), a constant and loyal supporter of the Seminar and one of the best-known representatives of the anthropological communities of Central Europe and the German-speaking countries in the last quarter of the twentieth century. He will be greatly missed.

At the July 2011 Seminar there were several papers about connections between Arabia and Africa, including a re-examination of the evidence for the Aterian in Arabia from the perspective of the Saharo-Arabian corridor; and on the ancient Egyptian cultural impact on north-west Arabia in the second and first millennium BC. On Arabia in general, topics included third-millennium fine grey wares found in eastern Arabia; obsidian circulation in prehistoric and early historic Arabia; early graffiti from the first centuries of Islam; and the traditional Arabic poem as ritual. On South Arabia, contributors provided new evidence on the goddess *ʿt(t)rm* and some remarks on the gender of deities; new perspectives on a group of expiatory texts on the Minaean confession of sins from Barāqish, which usefully help better to define certain social and religious aspects in the first millennium BC; and on the South Arabian contribution to the making of Umayyad iconography.

Papers about Bahrain covered topics that included pottery from Qalʿat al-Baḥrayn and Dilmun during the late Early Dilmun period (post-ʿIIcʿ); the fascinating ‘Tree of Life’ site; and settlement at al-Jaww from the late eighteenth century. Papers about Kuwait focused on Kāzimah and the early Islamic landscape in Kuwait Bay. Qatar has consistently been well represented in recent Seminar conferences with a dedicated focus session in 2009. In 2011 topics about Qatar covered an important ʿUbaid multi-occupational site at Raʿs ʿUshayriq in northern Qatar; a late Islamic palace, mosque, and tomb at al-Ruwayḍah; settlement at al-Furayḥah (also known as Freiha), north-west Qatar, from the mid-seventeenth century; eighteenth- and nineteenth-century rural settlement in northern Qatar; as well as an overview of new directions for the archaeology of Qatar.

Saudi Arabia was also very effectively represented. There were papers on the oasis of Taymāʿ in the second millennium BC; on Dūmat al-Jandal, the ancient Adummatu; an archaeological survey of the Farasan islands; and a delightful and informative paper on Medina’s first city wall.

On the Sultanate of Oman, the chronological breadth of coverage was substantial. There were papers on the Late Palaeolithic of the Najd plateau, Dhofar; and on Raʿs al-Ḥadd in the late fifth to third millennium BC. There were accounts about the Early Bronze Age funerary archaeological landscape of the western part of Jaʿalan region and of Wādī Ḥalfayn; the impact of Iron Age occupation on a Bronze Age archaeological landscape with results from excavations at Salūt; and on the prehistory and protohistory of the coastal fringes of the Wahiba Sands and Barr al-Ḥikmān. Topics also included the site of Mulayḥah (also known as Mleiha) where the discovery of luxury goods indicated the affluence of its inhabitants and their integration into long-distance trade networks with southern Mesopotamia, the Levant, and

the Indo-Pakistani area from the beginning of its occupation in the late third century BC; and another well-argued paper on the rediscovery of the Great Mosque of Qalhāt.

There were several papers about the United Arab Emirates: a Neolithic site in the Sharjah Emirate; excavations at Tell Abraq (Sharjah); the rise and ruin of Julfār al-Nudūd, Julfār, Ra's al-Khaimah, the only medieval port site and urban settlement on the Arabian shore of the lower Gulf between the fourteenth and sixteenth centuries AD; and the settlement patterns and foreign contacts of the Islamic period al-ʿAin oases. A major highlight at the Seminar was the delightful paper given by Saif bin Aboud Al-Bedwawi about *dibs* of Arabia, the date-syrup industry in the old Emirates, complete with samples for the audience to enjoy.

Topics of papers on Yemen included the Himyarite capital Ḍafar in al-Najd region with a focus on the latest centuries of the Himyarite empire (AD 270–525) and the late and post-Himyarite period (AD 525–632); the history of medieval Zabīd; fortified Islamic sites of the Dhamār basin in the central highlands; and Yemeni's opposition to Ottoman rule, a topic of interrelationships that has yet to be explored in more depth. There was also a commentary on Soqotri folk literature. Most intriguing and informative was a paper on the restoration of the mosques of Sāḥ and ʿAynāt in Wādī Ḥaḍramawt by Salma Samar Damluji.

This year, a stimulating topic, 'From the capital of Petra to the provincial city of Hegra: new insights on the Nabataeans', was the subject of the MBI Al Jaber Foundation Annual Lecture at the British Museum. It was given by Laïla Nehmé, a Nabataean specialist and epigrapher, who has been working in the Middle East for the last twenty-five years, and is a member of the team Mondes sémitiques of the Laboratoire 'Orient & Méditerranée' (Université Paris IV, Université Paris 1, École Pratique des Hautes Études). In 2008, a French-Saudi team began archaeological excavations at the site of Madā'in Šāliḥ, the former city of Hegra, in north-west Saudi Arabia. We anticipate that fascinating results of the excavations at Hegra will be presented at conferences of the Seminar in future years.

A special session on the Nabataeans was included in the Seminar programme in July 2011, resulting in a Special Supplement entitled *The Nabataeans in Focus: Current Archaeological Research at Petra. Papers from the Special Session of the Seminar for Arabian Studies held on 29 July 2011*, which has been edited most diligently by Laïla Nehmé and Lucy Wadeson. Lucy Wadeson is the G.A. Wainwright Postdoctoral Fellow at the Faculty of Oriental Studies, University of Oxford and the Director of the Funerary Topography of Petra Project (FTPP) and of the International al-Khubtha Tombs Project (IKTP) in Petra. The *Supplement* is testament to the notable expansion in Nabataean studies and the increased interest in Petra. Papers present the latest results of new projects and studies, which focus on little-studied aspects of Petra and Nabataean society.

The *Proceedings* appear on schedule as a result of intense and effective cooperation between the editorial and production team, the Editorial and Steering Committees, peer reviewers, and the many contributors to the volume. The energy of the authors and their efficient cooperation, which are to be applauded, have enabled the production schedule with its very tight deadlines to remain on track. This is particularly impressive when authors are often in the Middle East undertaking fieldwork in very remote locations. In addition, excitingly, Archaeopress is including some colour images in the *Proceedings* for the second year running. Another much welcomed development!

All papers are subject to rigorous peer review in order to maintain the highest academic standards and meet criteria laid down for publication, and therefore not all the papers that are offered are accepted for publication. We are indebted to a wide range of excellent expert peer reviewers. Their rigour, attention to detail, and enthusiasm means that the standard of the papers published is improving year by year. The *Proceedings* also benefit from the support of enthusiastic and diligent Editorial and Steering Committees, which provide an extended range of expertise and support. Apart from the Editorial Committee which includes professional academics of the highest standing in their respective fields, the editorial team includes our copy-editor, Helen Knox, whose attention to detail and cheerful and patient disposition cannot be faulted and is much appreciated. Paul Starkey has kindly continued to check any Arabic transliteration queries, for which many thanks. The professionalism and kindness of Rajka Makjanic of Archaeopress, who is always ready to sort out production issues with enthusiasm, are also really appreciated. The amount of time-consuming attention to detail and accuracy dedicated by the team cannot be overestimated, as previous editors of the *Proceedings* can also attest. As one example, over the last four years there has been considerable time and effort invested in providing as correct and consistent a transliteration of place and personal names as possible, as well as a really thorough provision of correct publication details for cited references: time and effort that has been well spent

Editor's Foreword

and should provide useful starting points for future research — for there is so much more waiting to be discovered about Arabia.

Dr Ardle MacMahon, the Secretary for the Seminar, and Lloyd Weeks, the Seminar Chairperson, also provide excellent logistical support. Thanks are also due to Guillaume Charloux for providing a delightful image of Qaṣr Mārid, the fortress dominating the palm grove and the ancient villages of Dūmat al-Jandal oasis (north-west Saudi Arabia) looking south, for the cover of this edition (©Dūmat al-Jandal Archaeological Project).

I am very pleased to announce that there has been an exciting new development which should be much appreciated by anyone researching aspects of Arabia that are covered by the Seminar. From February 2012, past papers that were published in the *Proceedings* are now available online through JSTOR. This followed discussions between Rob Carter and myself with Archaeopress: we are indebted to Dr David Davison of Archaeopress who made all the necessary arrangements and to Derek Kennet and Michael Macdonald for arranging their initial digitization. It is also possible to buy a CD-ROM containing the entire *Proceedings* up to 2007 as searchable PDF files. For details, please contact Archaeopress (bar@archaeopress.com).

Another important development is that from late 2012, the existing Seminar for Arabian Studies website will cease to operate. All Seminar-related information has been migrated onto the website of the newly established charitable organization, the British Foundation for the Study of Arabia (BFSA; www.thebfsa.org). All necessary information regarding the Seminar can be found on the relevant Seminar and Publications pages of the BFSA website, including the annually updated *Guidelines for Authors* and *Guidelines for Editors* and the Times Semitic New font that is used by most contributors to the *Proceedings*. From July 2012, the traditional 'slash' method for including symbols and diacriticals will no longer be used. Authors should note too that the recommended Greek font is also available online.

For more information about the Seminar for Arabian Studies please visit the website of The British Foundation for the Study of Arabia (BFSA) or contact: Dr Ardle MacMahon (Secretary), Seminar for Arabian Studies, The British Museum, c/o Department of the Middle East, Great Russell Street, London WC1B 3DG, UK. E-mail: seminar.arab@durham.ac.uk.

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Iron Age impact on a Bronze Age archaeological landscape: results from the Italian Mission to Oman excavations at Salūt, Sultanate of Oman

MICHELE DEGLI ESPOSTI & CARL PHILLIPS

Summary

The excavation of an Early Bronze Age third-millennium tower near the Iron Age site of Salūt (near Wādī Bahlā³), has revealed a significant reoccupation with extensive building activity dating from the first millennium BC, focused upon the tower's central well. The evidence from the excavation of the tower can be combined with data from the site of Salūt itself, where two dismantled Bronze Age tombs were covered by Iron Age buildings. A survey of the area around Salūt has revealed more Iron Age sites in close proximity to Early Bronze Age sites as well as the reuse of Bronze Age tombs. Following the presentation of data we will explore to what extent they indicate a significant change in settlement pattern and land use. The apparent gap in occupation, which is evident for much of the second millennium BC, will also be highlighted and possible explanations considered. The paper will provide a detailed account of the Bronze–Iron Age settlement history, from a specific part of Oman, for future comparison with other parts of south-east Arabia.

Keywords: Bronze Age, Iron Age, central Oman, Salūt, settlement patterns

Introduction

The archaeological site of Salūt (N 22° 51' 0" E 57° 12' 0"), located on the Wādī Sayfam and approximately 25 km south of Bahlā³, has long been recognized as an important Iron Age site. First identified in the early 1970s by the Harvard Survey (Humphries 1974: 51–52, figs 8–10), John Wilkinson outlined its historical role, according to Omani tradition, in his detailed study of water and tribal settlement (Wilkinson 1977). Since 2004 the site has been the focus of an extensive excavation and restoration project conducted by the University of Pisa's Italian Mission to Oman (IMTO) in cooperation with the Office of the Adviser to His Majesty the Sultan for Cultural Affairs.¹ The aims of the project are firmly

rooted in the study of the Iron Age, from *c.* 1300 to 300 BC and how Salūt contributes towards a broader view of the Iron Age in Oman and adjacent regions. While this has been the major research objective, it is difficult to ignore the Bronze Age archaeological landscape in which the site lies nestled. Inevitably the extent to which the previous Bronze Age landscape was changed by natural events and subsequent human intervention needs to be considered (Fig. 1).

Archaeological surveys conducted by Harvard University indicated that the Wādī Bahlā³ and Wādī Sayfam are rich in Bronze Age sites, especially in the area near Bisyah. Several large circular towers built around low rock outcrops or on the alluvial plain, and the distinct profile of tombs along the crests of adjacent mountains, all form part of a Bronze Age archaeological landscape that dates back to the beginning of the third millennium BC. The Iron Age site of Salūt occupies a prominent position on an isolated hilltop between two branches of the wadi and it is therefore hardly surprising to find that the hilltop was used as the location for at least two Early Bronze Age tombs, which thus formed part of

¹ Some of the issues discussed when this paper was presented at the 2011 Seminar have been omitted in light of excavations conducted shortly thereafter in November/December 2011. We have maintained the conclusions that we consider to be still valid, based on the results obtained from excavations at Salūt and ST1, and hope that new data, which call into question the presence of a second-millennium gap in occupation, can be presented at the 2012 Seminar.

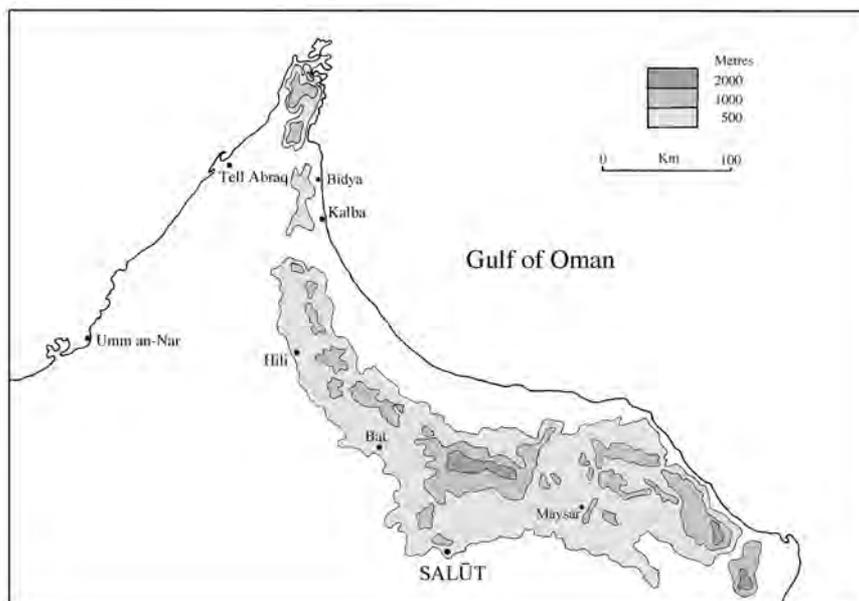


FIGURE 1. A map showing the location of Salūt and other sites mentioned in the text.

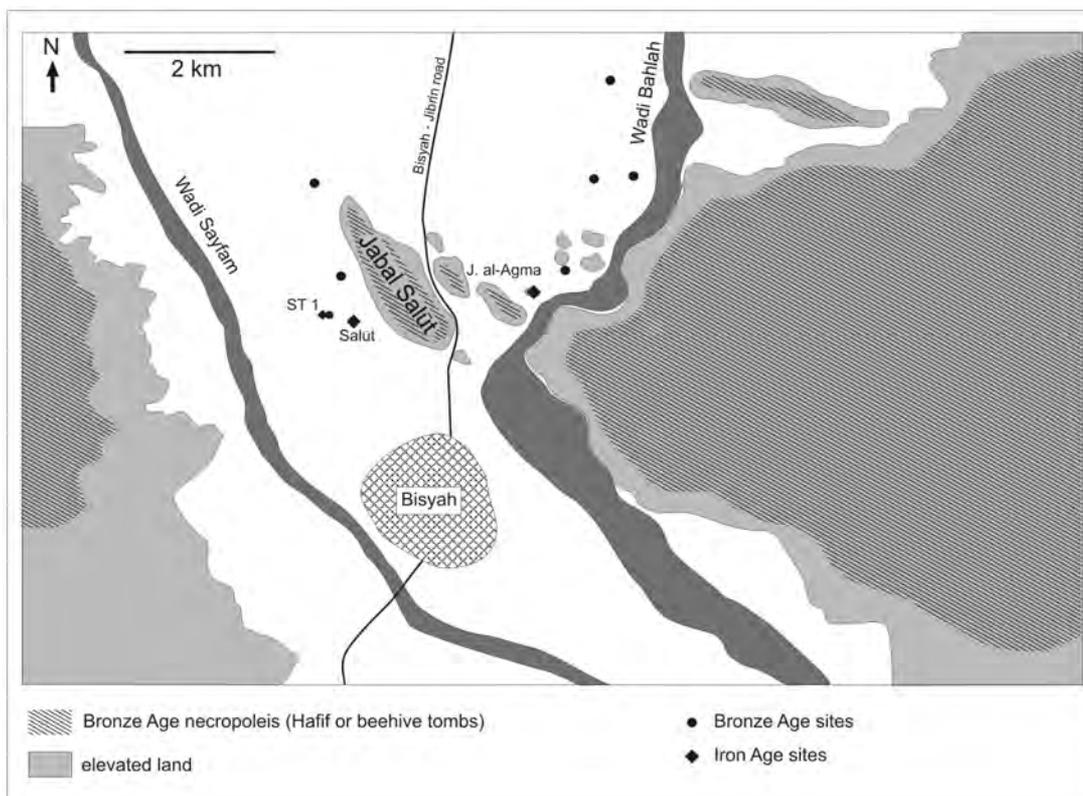


FIGURE 2. A map of the Salūt area showing the main archaeological features.

the Bronze Age archaeological landscape. Not far from Salūt, two Bronze Age circular towers are visible on the surface of the alluvial plain and a third is located further to the north-west (Fig. 2), while a large number of Bronze Age tombs are visible along the top of Jabal Salūt/Jabal Sebekhi just 350 m east of Salūt. The Bronze Age tower nearest Salūt is *c.*300 m north-west of the Iron Age site, and the excavation of this tower, started in November 2010, provides abundant evidence of reoccupation during the Iron Age.

Based on the results of excavations at Salūt and the nearby Bronze Age tower, two clear examples can thus be provided where Iron Age occupation impacted upon the earlier Bronze Age landscape: at Salūt the Iron Age occupation completely covered the remains of Bronze Age tombs, while the Bronze Age tower was at least partially reoccupied in the Iron Age. In chronological terms, however, this otherwise simple scenario is made more problematic by the absence of any remains that can be dated to the period following *c.*2000 BC (i.e. the end of the Early Bronze Age/Umm an-Nar period) — when the tower appears to have been completely abandoned — and the beginning of the Iron Age *c.*1300 BC. This gap in occupation coincides with the so-called Wadi Suq culture and appears not unusual in the settlement history of south-east Arabia. This phenomenon will be discussed further in relation to the data presented below.

Bronze Age tombs at Salūt

At the highest point on the hill of Salūt, approximately 20 m above the surrounding plain, the partial remains of two adjacent large circular structures were uncovered. Their foundations lie directly on the bedrock and are buried beneath later Iron Age deposits, which in turn had been disturbed by more recent occupation of the site (Fig. 3). The plan of these structures is far from complete and while the remaining parts of the southernmost tomb (Structure 33) were completely revealed, the other tomb (Structure 39), which is probably more complete, lies largely buried beneath an Iron Age building which it would be inappropriate to remove. Structure 33 comprises the remains of four concentric walls that form an arc which, when complete, would have formed a circular structure with a maximum diameter of approximately 12 m (Fig. 4). Of Structure 39, only about one quarter was unearthed, comprising three concentric walls which in this case would have described a maximum diameter of *c.*13 m. The curved walls are built of large stones with

smaller angular stones filling the space between the walls.

The circular plan and method of construction, especially the concentric nature of the walls, present a striking resemblance to the plan of some Early Bronze Age tombs. Perhaps the best example with which the plan can be compared is a tomb excavated some years ago at Tawi Silaim (Ṭawī Sulaym) (de Cardi, Doe & Roskams 1977: 20, fig. 2). The remains are also similar to the arrangement of concentric walls that form the structure of the characteristic ‘beehive’ tombs that are frequently found on hilltops and ridges, including those seen in the area surrounding Salūt. It is not surprising, therefore, that the best comparison is found nearby on Jabal Bū Rzuz in Wādī Bahlā’ where a similar tomb (Tomb 4) was excavated by Birmingham University and the Hajar Project (Orchard & Orchard 2006: 148, pl. 16). Tomb 4 is described as comprising two concentric walls, surrounded by a plinth, which enclose a central rectangular cist. It must be added, however, that if the remains excavated at Salūt represent the foundations of two such tombs, as seems likely, they are extremely large examples. The combination of size and location on top of the hill would have made them highly visible and entirely consistent, therefore, with the siting of these monuments that form such a distinctive element of the Bronze Age landscape.

If the remains described above are part of the foundations for two tombs, then the date of construction would likely have been prior to the middle of the third millennium BC. Around this time the earlier Hafit (Ḥafīt) or beehive tombs appear to have been replaced with tombs of the Umm an-Nar type. The latter were more usually built on the plains, in contrast to the hilltop locations of the earlier tombs, and several tombs of this type are known from the area of Bisayah, a short distance south of Salūt.

It is of some importance that the sparse remains of two human burials were found in close proximity to one of the tombs at Salūt. Both burials were severely disturbed and only a few bones from each had survived. In one case, however, there was a sufficient amount of preserved long bones to show that the body was in a flexed position. In addition, a number of associated grave-goods were recovered. These include a collection of carnelian beads and a white stone mace-head (Avanzini & Phillips 2010: 97, fig. 7). It is hoped that the study of these finds might provide a clearer indication for the date of these two burials; for the moment all that can be said is that they are clearly pre-Iron Age.

Presumably the Bronze Age tombs at Salūt remained a prominent feature until the Iron Age when, if not

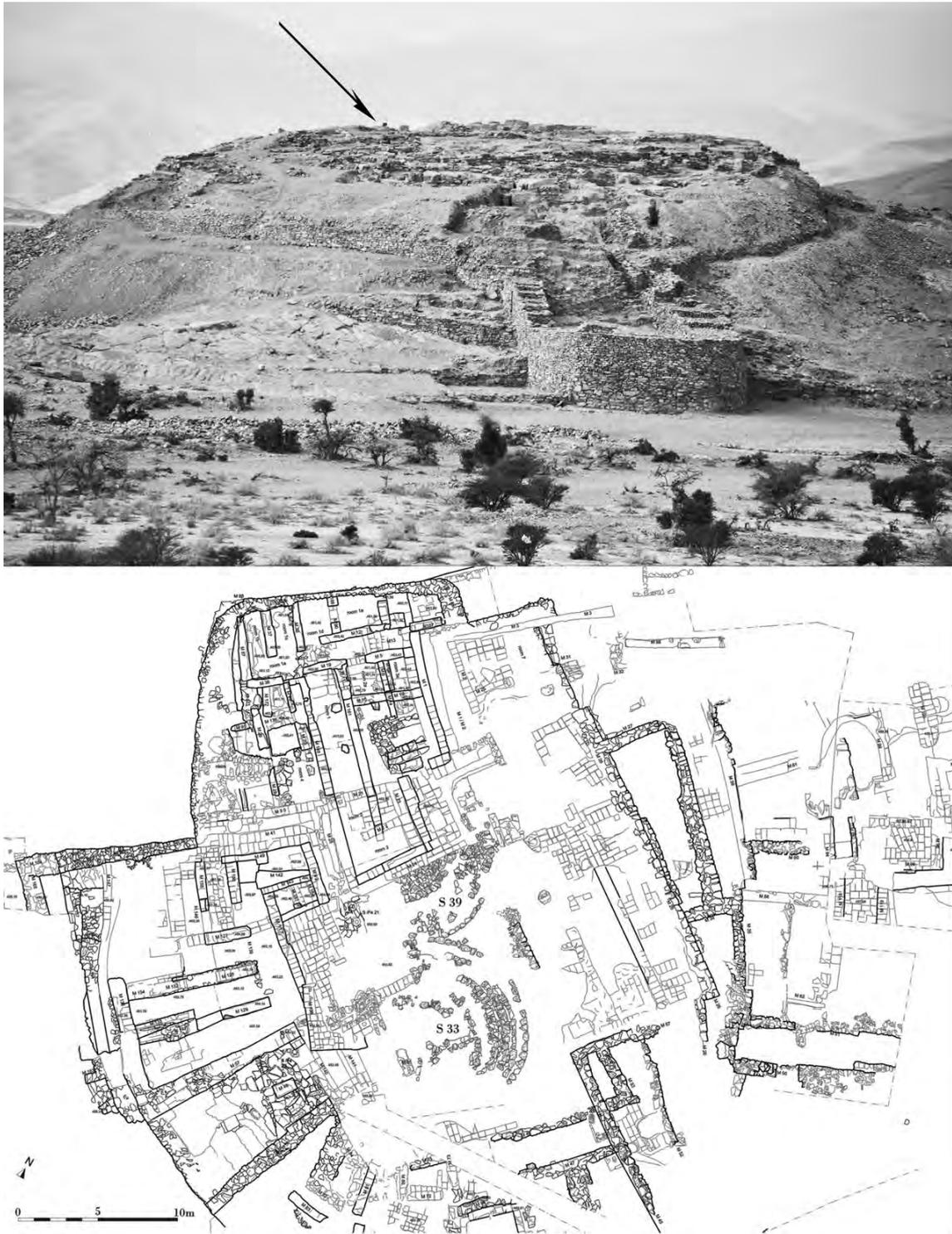


FIGURE 3. Above: *The location of the Bronze Age tombs on top of the hill of Salūt;*
below: *a general plan of the subsequent Iron Age occupation.*

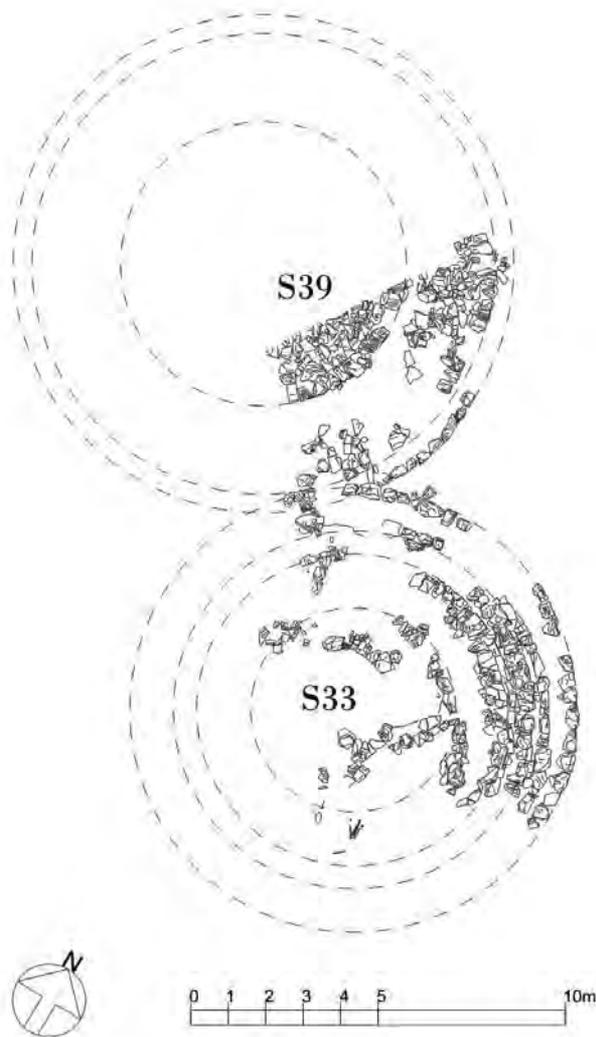


FIGURE 4. A plan of the Bronze Age tombs with the reconstructed diameter.

already in a state of disrepair like many of the tombs seen on the mountain ridge east of Salūt, they were razed to the ground and covered by Iron Age foundations. Having occupied such a prominent position within the surrounding Bronze Age landscape, it is hardly surprising that a few artefacts from this earlier period should also be found at the site in clear Iron Age contexts — objects derived perhaps from tombs located on the site or picked up from the surrounding plain and mountains and brought to the site. An example of Bronze Age materials being reused in the Iron Age is provided by several blocks of ashlar masonry that originally formed part of the facade of an Umm an-Nar tomb (c.2500–2000 BC). These have

been found at Salūt among the debris of collapsed Iron Age walls.

Additional Bronze Age finds at Salūt include six fragments of soft-stone vessels, all recovered from Iron Age or later contexts. Three of the vessels (Fig. 5/1–3) can best be dated to the Early Bronze Age or third millennium BC and a further three (Fig. 5/4–6) to the Middle Bronze Age (c.2000–1600 BC). The vessel shown in Figure 5/1 is perhaps the oldest of the vessels, as suggested by its decoration of a single line of excised chevrons. Vessels with this style of decoration are relatively rare in south-east Arabia and it has been suggested that they were possibly imported from Iran some time around the middle of the third millennium BC (David & Phillips 2008). The example from Salūt is all the more exotic in that the stone from which it is made is a dark red colour, and differs from the black-grey coloured soft stone that is more usual and which was used for the remaining five vessels. Two of the vessels (Fig. 5/2–3) can best be compared with what David has defined as ‘Umm an-Nar style’ and the remaining three (Fig. 5/4–6) with ‘Wadi Suq style’ (David 1996).

Iron Age reoccupation of a Bronze Age tower

Located 300 m north-east of Salūt, an Early Bronze Age circular tower was visible on the surface. As described above, this is the closest of three comparable monuments found in this specific area. The site was not mentioned in the report by the Harvard Survey (Hastings, Humphries & Meadow 1975), but was later included as ‘Building 5’ in the survey conducted by Birmingham University and the Hajar Project (Orchard & Orchard 2006: 158, pl. 6/d). Following its inclusion in the plans for an archaeological park at Salūt, the Italian Mission to Oman (IMTO) started the excavation of the tower in November 2010, and in order to distinguish it from the Iron Age site of Salūt it has been given the site code ST1 (Salūt Tower 1) (Fig. 6).

The excavations have revealed the basic stratigraphy of the site and entirely uncovered the tower’s ring-wall, down to the foundations, which rest on a cement-hard calcareous surface, the top of a ‘caliche’ deposit that previously lay buried beneath more recent alluvial and gravel deposits. The circular wall is devoid of any external features and comprises a structure built of large limestone blocks, possibly roughly shaped in some cases. Two straight walls, which were tentatively considered contemporary with the tower when first seen on the

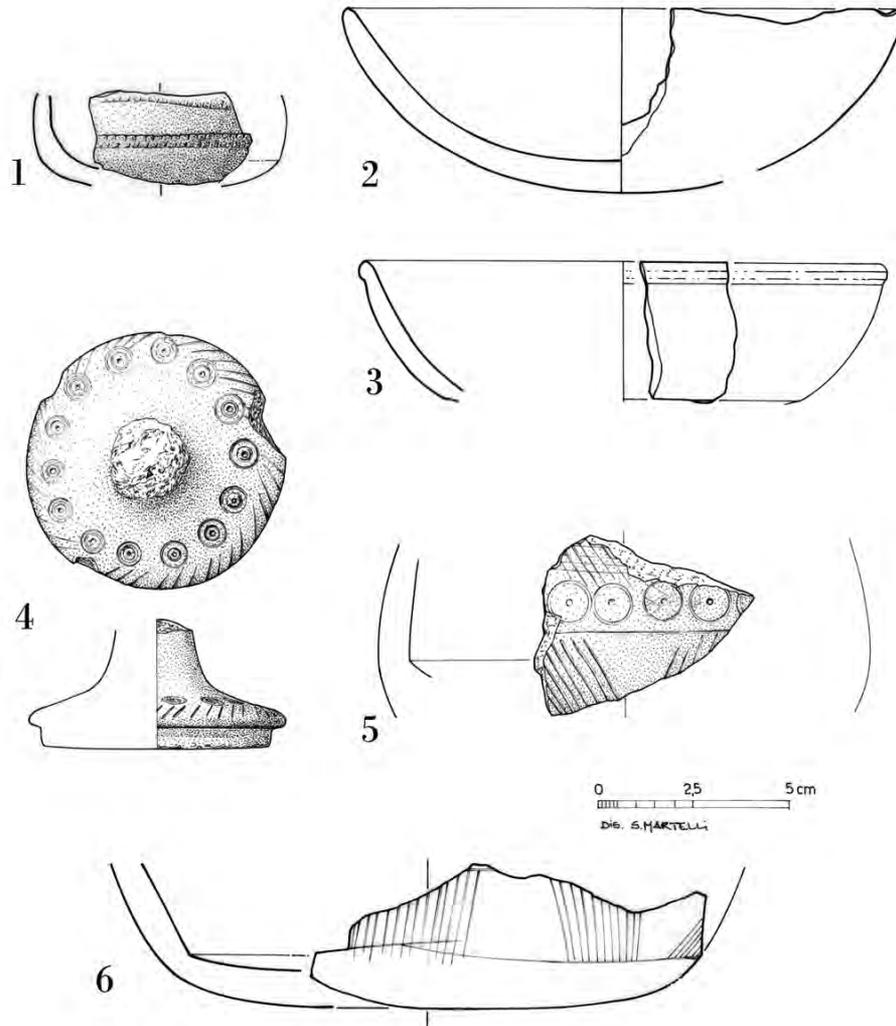


FIGURE 5. Bronze Age stone vessels from Iron Age contexts at Salūt.

surface, turned out to be much later and built of stones plundered from the tower wall. These walls can now be dated to the Islamic period.

Two major features of the original Early Bronze Age layout were uncovered during the excavation: a well located in the centre of the tower, and a large ditch around the outside of the tower. In an exposed section through the ditch, the inner face nearest the tower is stone-lined while on top of the opposite outer edge of the ditch, another stone structure still remains to be excavated.

These two features are a recurrent characteristic of the third-millennium Bronze Age towers that have been excavated in south-east Arabia. A well, located near the

centre of the tower, has been recorded at Hīlī 1 (Frifelt 1975: 370, fig. 3), Hīlī 8 (Cleuziou 1989: 64, pls 11–12), Tell Abraq (Potts 1997: 66), Kalbah (Eddisford & Phillips 2009: 117, fig. 7), Bāt (Frifelt 1976: 64, fig. 3), and Maysar (Weisgerber 1981: 199, fig. 26). Large ditches surrounding the tower have likewise been recorded at Bidya 2 (al-Tikriti 1989: 108, pl. 78), Hīlī 8 (Cleuziou 1989: 65, pls 11–15), and Kalbah (Eddisford & Phillips 2009: 116, fig. 6/b; 117, fig. 7). These excavated examples suffice to show that these two features are common throughout south-east Arabia.

The excavations at ST1 have provided a large amount of pottery and a few varied finds of Early Bronze Age

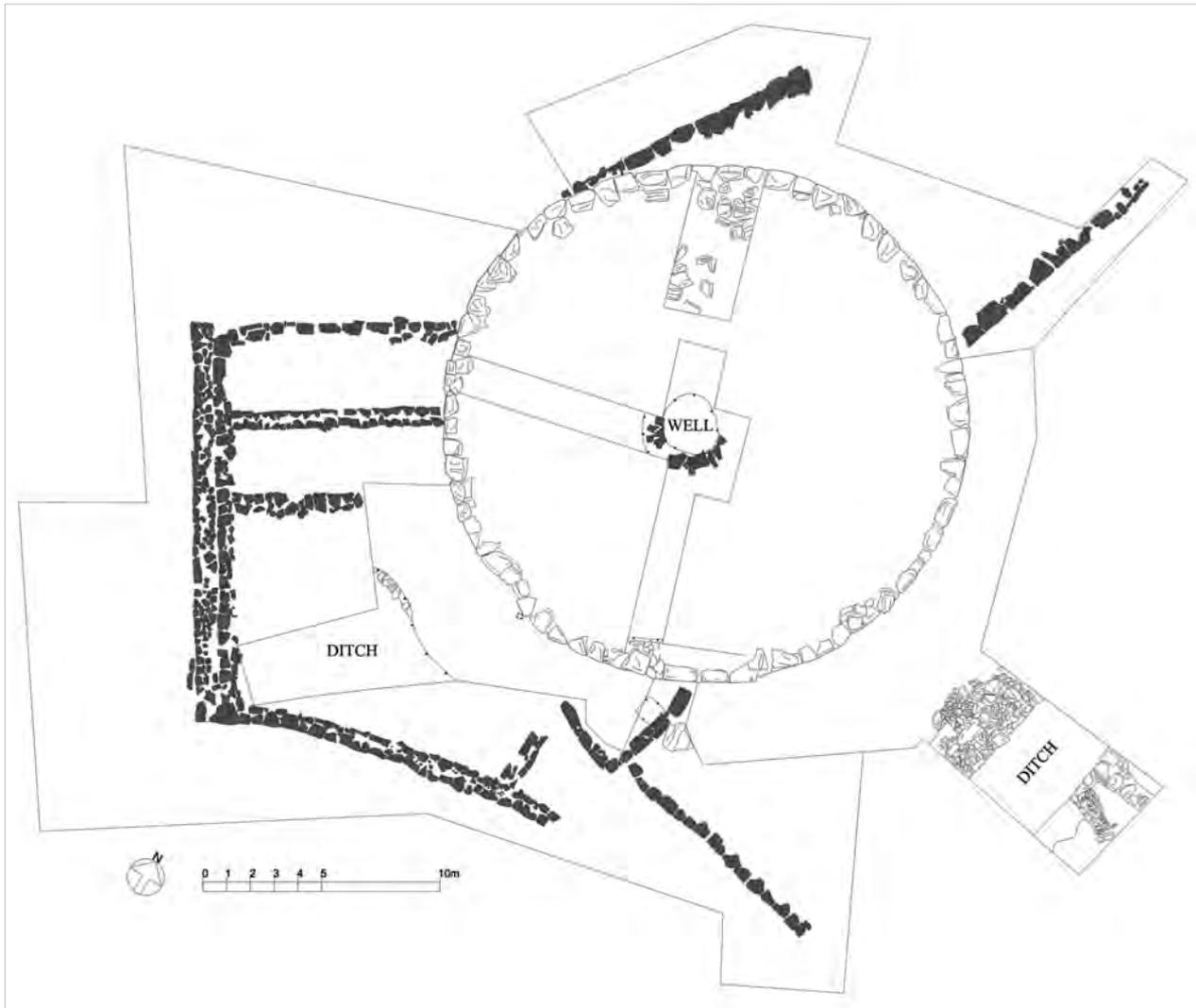


FIGURE 6. *A general plan of ST1 after the second season of excavation (February–March 2011). Later walls are in dark grey.*

date. At this preliminary stage in the excavation and study of the site, the pottery assemblage appears to be consistent with shapes and decorative patterns that are typical of the latter half of the third millennium BC. The presence of imported Indus pottery, notably black-slipped jars, is also consistent with this date as are a few soft-stone vessels (Fig. 7) that can be compared with David's Umm an-Nar style (David 1996: 32). On the basis of these finds and their contexts it is not yet possible to say how early the tower was built, but it was clearly occupied towards the end of the third millennium BC. Significantly, however, no pottery or objects dating from the early second

millennium BC or Wadi Suq period have been found. On the basis of the archaeological evidence, there therefore appears to be a considerable hiatus at the site until it was reoccupied, perhaps in *c.*1300 BC, as indicated by the Iron Age pottery from ST1, which includes examples of all the diagnostic types found in the earliest dated levels at Salūt (Phillips 2010: 75–76, figs 4–5).

At its highest point, the stone-built perimeter wall of the tower currently stands *c.*2 m above its base. The surviving stratigraphy inside the tower indicates that it was built around a mound that rises a little more than 1 m above the surrounding caliche level, presumably

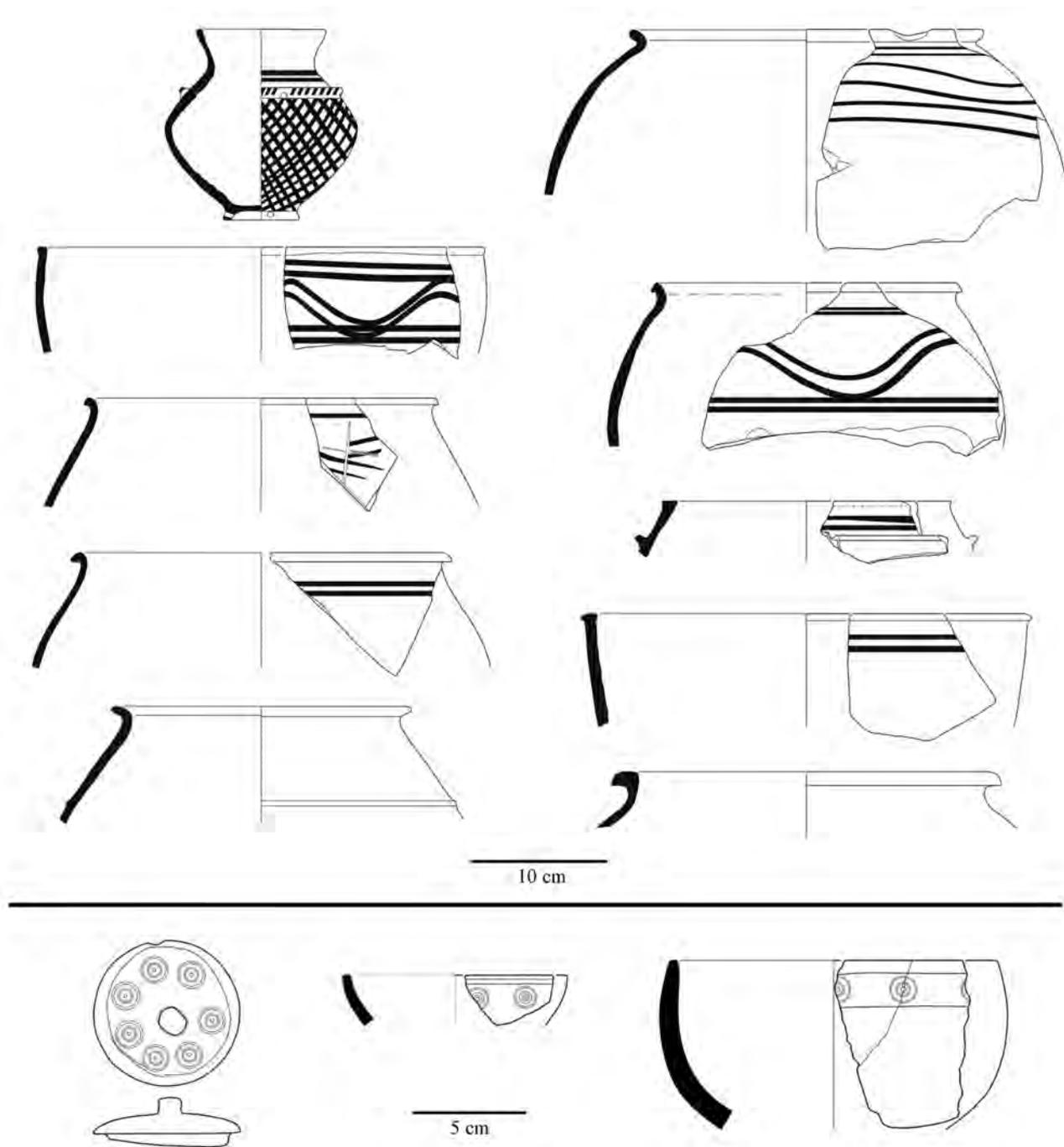


FIGURE 7. Bronze Age pottery and stone vessels from sealed contexts at ST1.

exploited as a core for the tower structure and thus reducing the transport of large amounts of soil. On top of this original core, only a few tens of centimetres of stratigraphy have survived and this includes an uppermost aeolian sand deposit, which is a recent accumulation. It is possible that the original height of the tower was lowered considerably in Iron Age times and this would account for the loss of stratigraphy. Alternatively the height of the tower could have been reduced at some point between its apparent abandonment in *c.*2000 BC and the Iron Age reoccupation. Either way, a significant reshuffling of materials took place so that very few Early Bronze Age sherds were retrieved from these layers. Iron Age pottery was, however, relatively abundant. The general lack of more ancient material can perhaps best be attributed to cleaning operations conducted during the Iron Age occupation of the tower. This interpretation is supported by the evidence gained during the excavation of the well located towards the centre of the tower.

The reuse of the tower's original Early Bronze Age well

The well comprised a cylindrical shaft, almost 1.75 m in diameter, dug through the caliche. What remains of the shaft was not lined. It must be borne in mind, however, that if the height of the tower has at some time been significantly reduced then the upper part of the well would also have been removed, and it is therefore not possible to say whether or not its upper part was lined, as is the case at other excavated Bronze Age tower sites referred to above. It is also possible that the dimensions of the original well were increased by recutting in the Iron Age: this is impossible to ascertain, although such an event would account for the well's dimensions, which are larger than the comparable Bronze Age wells that rarely exceed a diameter of 1.40 m. The partial remains of a stone-built well head were, however, present and preserved for about one half of the circumference (Fig. 8). That this was built



FIGURE 8. *The remains of the Iron Age well head and the shaft of the central well at ST1.*



FIGURE 9. *Dumped Iron Age pottery inside the well.*

during the Iron Age is clearly shown by the fact that only Iron Age sherds were found in the fill of its shallow foundation trench. Even more conclusive of Iron Age use was a dumped layer of Iron Age pottery found inside the well at a depth of approximately 7 m from the present surface (Fig. 9). This dumped material probably marks the end of the well's use and there were no indications of any post-Iron Age use.

Further evidence indicates that during the Iron Age a wide pit was dug against the outer wall on the southern side of the tower. The material retrieved from the pit comprised exclusively Iron Age sherds. This lends some slender evidence in favour of an Iron Age date for some of the peripheral features built around the outside of the tower, which include several stone walls that possibly define a series of small enclosures or terraces. For the building of these walls it is clear that some of the stone came from the tower's dismantled wall. Unfortunately, at this stage in the excavations, the stratigraphical data relating to these walls are far from conclusive, due to the shallow depth of associated deposits that have undergone continuous reworking by wind and water action.

Bronze and Iron Age settlement patterns at Salūt

As stated at the beginning of this paper, the Early Bronze Age tower (ST1) located near Salūt is only one of a

number of similar towers found nearby in Wādī Bahlā' and the vicinity of Bsyah. It would appear most probable that the tower is, therefore, just one component in a more extensive local settlement pattern. The characteristics of the wider settlement pattern have been the subject of much debate (Potts 1997; Orchard 2000) and it is hoped that the empirical data obtained from the ongoing excavations at ST1 will contribute to this discussion.

Along with the Bronze Age towers, the numerous Bronze Age tombs on the hills near Salūt would appear to indicate, therefore, a considerably large population. The visibility of the tombs, however, could be misleading and more chronological controls are needed to illustrate the contemporaneity or otherwise of settlements and adjacent cemeteries, whether the latter were composed of Hafit or beehive tombs or Umm an-Nar tombs.

From the hilltop site of Salūt, it has been shown how the Iron Age occupation impacted on the Early Bronze Age (i.e. third millennium BC) landscape by the removal of at least two large tombs from the landscape and presumably also the erasure of a nearby Umm al-Nar tomb, as shown by the reuse of its characteristic white ashlar masonry.

As well as the destruction of some Early Bronze Age monuments, it is clear that there was a reuse in Iron Age times of the Bronze Age tower, ST1 (Fig. 10). The reoccupation of ST1 is of some importance if, as seems probable, the purpose was connected with the water supply and probably the agricultural use of adjacent



FIGURE 10. *A general view of ST1 from the south, at the end of the second season of excavation (February–March 2011) campaign.*

land. This is important considering that such evidence was previously lacking from the immediate surroundings of Salūt. To date there is no evidence for contemporary land-use patterns, and despite the impressive size of the building and/or fortification, and whatever its originally intended function, the initial construction surely involved a massive communal effort requiring the presence of a not negligible population. The possible settlement identified as ‘Salut 2’ in 2005 (Avanzini, Sedov & Condoluci 2005) seems only to represent the accumulation of soil derived from repeated field levelling, rather than a true archaeological mound; the retrieval of Iron Age sherds on this location would, therefore, be indicative perhaps of the widespread exploitation of the area for agricultural purposes rather than the site of some ancient buildings.

A second substantial Iron Age site was, however, located on Jabal Agma some 500 m from the village of al-Dhabi, in Wādī Bahlāʾ (Phillips, Condoluci & Degli Esposti 2010). Although unexcavated, the site revealed numerous stone-built walls and provided a significant

collection of diagnostic sherds. Located just 2.5 km from Salūt, the site stands close to the southernmost of five large Bronze Age structures distributed nearby along the course of Wādī Bahlāʾ.

In contrast with the Bronze Age, a noticeable omission in the survey data is funerary remains (tombs and/or graves) that clearly represent new Iron Age constructions. The frequency with which Iron Age pottery is found near the Early Bronze Age Hafit or beehive tombs clearly suggests, however, that many of these were reused in the Iron Age. It appears, therefore, that reuse was a prevalent and acceptable attitude of Iron Age people towards older remains visible in their surroundings. This appears true for the tombs on Jabal Salūt, as well as for the Bronze Age tower, ST1. In both cases partial dismantling and reuse of the original structures can be envisaged. The only example in which we can be sure that ancient structures (namely tombs) were completely dismantled is that of the two circular structures on top of the hill of Salūt, when the Iron Age site was first established there.

The second-millennium BC gap

In the introduction it was stated that the Early Bronze Age tower, ST1, was abandoned at the end of the third millennium BC only to be reoccupied at the beginning of the Iron Age in *c.*1300 BC. It needs to be emphasized that so far the extensive excavation at ST1 has not produced any pottery or other artefact which can be dated to the so-called Wadi Suq or Middle to Late Bronze Age periods which, however sub-divided, coincide with this gap in occupation. Likewise, at Salūt, where excavations have been even more intensive, the earliest Iron Age occupation covers the razed Early Bronze Age tombs and there is no physical representation of the intervening period apart from the three soft-stone vessel fragments, referred to above, which are clearly not from primary contexts.

Some of the excavated Early Bronze Age towers such as Hilī 8 give clear evidence of having remained occupied, if only partially, in the early second millennium BC (Cleuziou 1989), while at least two towers, Tell Abra and Kalba 4, provide evidence for continuous occupation throughout the second millennium and Middle and Late Bronze Age, and well into the following Iron Age (Potts 1990; 1991; Eddisford & Phillips 2009). In most cases, however, comparable evidence is lacking, either from single sites or survey data. For example, survey data collected from predominantly village sites in the Wādī ʿAndām suggest a considerably lower density of pottery and sites in the period between the Umm an-Nar and Iron Age periods (al-Jahwari 2009: 130, table 2).

Orchard and Stanger (1999: 100) have suggested that in the Bisayah area the perceived gap in occupation might be due to settlement shift ‘and that in some cases might provide the key to the location of, for example, currently absent second-millennium BC remains’. They do in fact suggest that the abandonment of third-millennium sites in the Bisayah area might be a result of soil salinization and the inhabitants relocating to the plain surrounding Salūt. This now appears unlikely, as shown by the results obtained from the IMTO excavations, unless there are some additional unidentified factors that have erased the second-millennium remains, which could have been quite ephemeral when compared with the massive nature of the Early Bronze Age towers and Iron Age fortifications.

If Salūt and the contemporary Iron Age site of Jabal al-Agma are representative of a trend in settlement relocation, then it is to be noted that both sites are generally located a short distance downstream from the nearby Early Bronze Age towers and this could be significant. It has been suggested that this could reflect the development of new irrigation technology, namely the introduction of the *falaj* (pl. *aflāj*). The plain surrounding Salūt and the fields surrounding Jabal al-Agma have until recent times been irrigated by this method. So far, however, there is no conclusive evidence that proves the existence of a *falaj* at either site during the Iron Age period.

Conclusions

Based on the excavations at Salūt and ST1, there was clearly a substantial occupation in the Early Bronze Age. This occupation started as early as the beginning of the third millennium BC, as suggested by the density of Hafit or beehive tombs visible on the surrounding high ground. Settlement persisted until the end of the third millennium BC as indicated by the pottery and other finds retrieved from the excavations at ST1. And while there is some slender evidence for a shift in settlement location, it appears that some of the same locations occupied in the Early Bronze Age were resettled in the Iron Age. The number of locations suitable for settlement, in particular agriculture, are quite limited and it is thus far from surprising that some of these areas should be reoccupied, if indeed they did not continue to be occupied throughout. The ¹⁴C chronology obtained for the beginning of the Iron Age occupation at Salūt indicates that this can be placed comfortably in the thirteenth century BC and perhaps even earlier. This, however, does nothing to hide the fact that the currently available archaeological evidence shows a significant gap in occupation from *c.*2000 to *c.*1300 BC and this must be further investigated.

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