the iasa bulletin.

autumn 2025



the latest news and research in the arabian peninsula. – issue #34

the iasa bulletin issue #34 autumn 2025

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The IASA Bulletin is an e-publication for members of the IASA. It is published twice a year, in spring and autumn. Past issues are posted on our website six months after publication.

The Bulletin depends on the good will of IASA members and correspondents to provide contributions. News, items of general interest, details of completed postgraduate research, forthcoming conferences, meetings and special events are welcome.

Please email: bulletin@theiasa.com

The opinions expressed in this publication are those of the authors of the articles. They do not purport to reflect the opinions or views of the IASA or its members.

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ISSN 2632-4954
Reg. Charity No. 1003272

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Letter from our Chair: Peter Magee

Dear IASA members,

Every few months, remarkable discoveries unveil new facets of Arabia's past, offering insights that were unfathomable just a few years ago. The work of Professor Ahmed al Jallad, from Ohio State University and an IASA trustee, on deciphering the enigmatic Dhofari script has garnered global attention. Despite the progress, his study concludes that there are still more questions than answers.

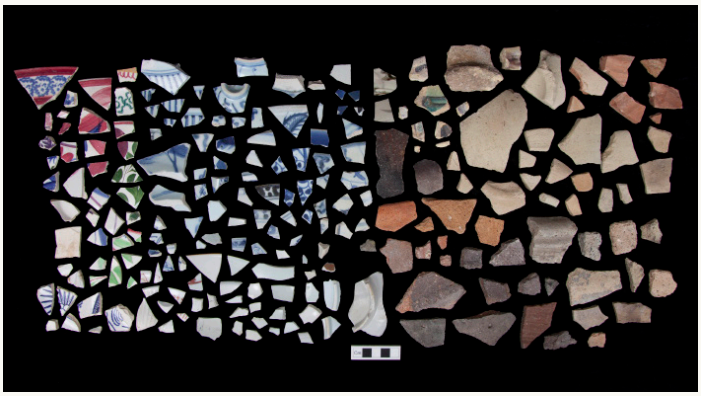
Recently, the announcement of 10,000-year-old building remains near Tabuk in Saudi Arabia has provided the earliest evidence of constructed architecture on the peninsula, indicating connections with the broader Pre-Pottery Neolithic world of the Near East.

In Bahrain, Dr. Salman al Mahari, Director General of Antiquities on Bahrain, and Professor Timothy Insoll, al-Qasimi Professor of African and Islamic Archaeology at the University of Exeter, and both IASA trustees, have uncovered early Christian remains at the site of Samahij. Meanwhile, excavations on the islands and coasts of Abu Dhabi, led by Noura al Hameli from the Department of Culture and Tourism Abu Dhabi and a member of the IASA Seminar Committee, continue to shed new light on the Neolithic and Paleolithic periods.

These and other groundbreaking discoveries will be showcased at the Seminar for Arabian Studies, which will take place at the Zayed National Museum in Abu Dhabi—the first time that the seminar is held in the Arab World. This public event promises to foster much discussion and debate, further invigorating the study of the Arabian Peninsula and captivating the imaginations of those that call Arabia home. We hope that you will be able to attend the Seminar, and look forward to seeing many of you there.

Best regards,

Peter Magee



About this edition

This is an exciting time to be the Editor of the IASA Bulletin. As our Chair Peter Magee has said, new discoveries and research are increasing our knowledge of the Arabian peninsula every year and it is one of the aims of IASA to disseminate that, not only through the Seminar for Arabian Studies, but also through this publication.

Another of the IASA aims is to support research itself through the awarding of grants and I'm delighted to be able to include grant reports from William Deadman, Lesley Gregoricka and Zoe van Liztenburg. It is partly thanks to you, the subscription-paying members, that we are able to award research grants - so if you know anyone who is not yet a member of the IASA, please encourage them to sign up so that we can continue to support research in the region.

I am very grateful to everyone who has contributed to the Bulletin and shared their discoveries and research. We have a bumper issue this autumn, with a broad number of countries being represented. I am very grateful to Research Editor Maria Gajewska for collecting and collating submissions.

I am also grateful to Book Review Editor Alexandra Hirst. There are a plethora of new publications on Arabia, however due to the volume of country news and research notices we will feature them in our next edition, along with more reviews. For now we have two reviews from G. Rex Smith.

You'll also find all the other regular features, and reports. We always grateful to Francis Owtram for his regular contribution on the British Library/Qatar Foundation Partnership.

Finally, thank you to Noel Brehony and Marylyn Whaymand for proofreading and other support during the production of this edition of the Bulletin. I hope you enjoy it, please do let me know if you have any comments or suggestions.

The next edition will be Spring 2026 and I do hope you will consider contributing to that. In the meantime, don't forget to follow us on social media.

Best wishes,
Carolyn Metkola
Editor

Image: Example of ceramic recovered from the late phase of the town's occupation at Al Zubarah, Qatar, (QIAH) , page 43



IASA News

Congratulations to IASA Trustee Professor Timothy Insoll FBA FSA FRAS who was awarded an OBE in the 2025 New Year's Honours List. The award recognises Professor Insoll's "services to Archaeology in Bahrain and UK/Bahrain relations" over the past twenty-five years.

Professor Insoll is currently Al Qasimi Professor of African and Islamic Archaeology and the founder and director of the University of Exeter's Centre for Islamic Archaeology in the Institute of Arab and Islamic Studies.

The OBE was awarded for Professor Insoll's services to archaeology in Bahrain and UK/Bahraini relations. He is the Honorary Archaeological Advisor to the Crown Prince and Prime Minister of Bahrain, Shaikh Salman bin Hamad Al-Khalifa.

Professor Insoll said: "I am delighted to be honoured in this way which I also see as recognition for all the effort of my friends and colleagues who have worked with me in Bahrain".

We at The IASA are equally delighted to see the award of this well-deserved honour to one of our Trustees.

The latest biographies of all of The IASA Trustees may be found on our website.

Photo (c) Professor Insoll.

Next IASA Lecture and AGM

The IASA AGM is scheduled to take place in February 2026, and will be followed by a lecture by Eric Staples on Ahmad ibn Mājid. Further details will be announced shortly.

Videos of past IASA lectures may be found on our YouTube channel.

Seminar for Arabian Studies

The Seminar for Arabian Studies, founded in 1968, is the only international forum that meets annually for the presentation of the latest academic research in the humanities on the Arabian Peninsula from the earliest times to the present day or, in the case of political and social history, to the end of the Ottoman Empire (1922).

Papers read at the Seminar are published in the Proceedings of the Seminar for Arabian Studies (PSAS), normally in time for the Seminar of the following year. The Proceedings therefore contain new research on Arabia and reports of new discoveries in the Peninsula in a wide range of disciplines.

From 12th – 14th December 2025, the 58th Seminar for Arabian Studies will take place in Abu Dhabi, to be hosted by the Zayed National Museum. This is the first time that the Seminar will be held in the Arabian Peninsula, which therefore represents a new turn in the Seminar's long history. It also explains why the Seminar will take place during the winter for the first time.

It is expected that around 90 papers will be delivered, ranging in date from the Paleo/Neolithic of the Arabian Peninsula to later Islamic times and covering all areas of Arabia. It is hoped that there will be Special Sessions on Bahrain; UAE archaeology; and epigraphy and that it will be possible to arrange visits to local archaeological sites for delegates.

The keynote lecture at this year's Seminar is expected to be delivered by Dr Steffen Terp-Laursen, of the Moesgaard Museum, Aarhus, Denmark on the topic of 'Dilmun and the Amorites'.

As always, everyone who is interested is cordially invited to participate in the Seminar, which will be in person and also be streamed online. Registration will open soon.

Further information at https://iasarabia.org/the-seminar/ and from the Seminar secretary, Kate Ayres-Kennet (seminar@theiasa.com).



Photo: Zayed National Museum, Abu Dhabi.

IASA Publications

IASA Monograph Series

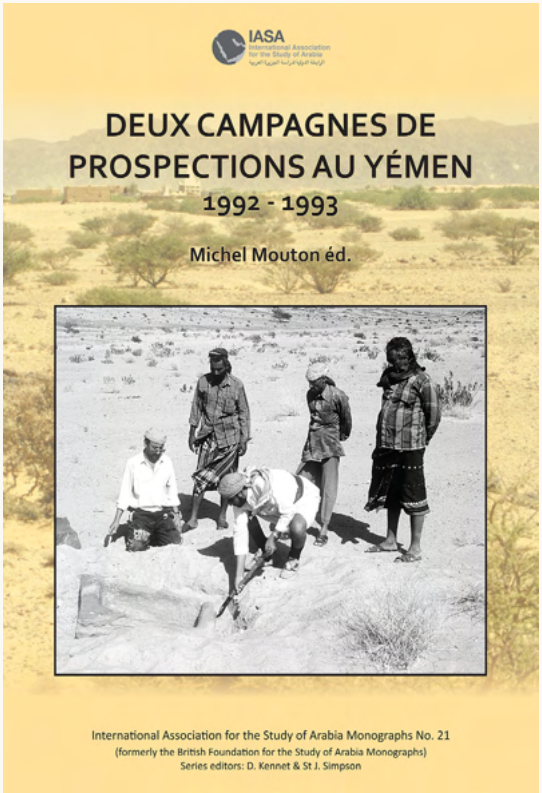
One of the core activities of the IASA is to contribute to the accessibility of research on the Arabian Peninsula, and this includes overseeing the publication of the monograph series originally begun by the Society for Arabian Studies. The series includes research-based studies, conference proceedings, archaeological excavation or survey reports, and MA or PhD theses where the contents mark an important synthesis or a significant addition to knowledge.

The monographs are edited by Derek Kennet and St John Simpson and published and distributed by Archaeopress. Twenty-one monographs have been published to date, covering a wide range of topics ranging from PhD theses on the prehistory of the Tihamah and star gazing in Oman to the proceedings of five conferences on the Red Sea and Death & Burial in Arabia.

After a break in publication (2019-2023), new volumes are now at various stages of preparation. It is hoped that the next to appear as the 22nd in the series will be Umm al-Quwain 2. A Neolithic settlement and graveyard in the United Arab Emirates, by Kevin Lidour and Sophie Méry. This volume comprises the final publication of the important French work at Umm al-Quwain 2, which is a Neolithic site situated on the edge of the mangrove lagoon in the emirate of Umm al-Quwain, United Arab Emirates.

A full list of Monographs may be found on our website: https://iasarabia.org/publications/

All titles can be ordered from Archaeopress at www.archaeopress.com. The editors are always keen to hear from potential contributors, who in the first instance should contact either: Dr St John Simpson: ssimpson@thebritishmuseum.ac.uk or Dr Derek Kennet: dkennet@uchicago.edu



The latest monograph: Deux campagnes de prospections au Yémen: 1992 – 1993 (IASA Monographs No. 21). Michel Mouton (ed.) ISBN 9781803279176.

IASA Publications

Proceedings of the Seminar for Arabian Studies

The latest volume of the Proceedings of the Seminar for Arabian Studies (PSAS 54) is now available. It brings together twenty papers presented at the 57th Seminar for Arabian Studies, held in Paris from 27 to 29 June 2024 at the Institut national d'histoire de l'art. This memorable event, hosted with the strong support of several French institutions and the International Association for the Study of Arabia, gathered more than 230 participants, the largest number in the Seminar's history.

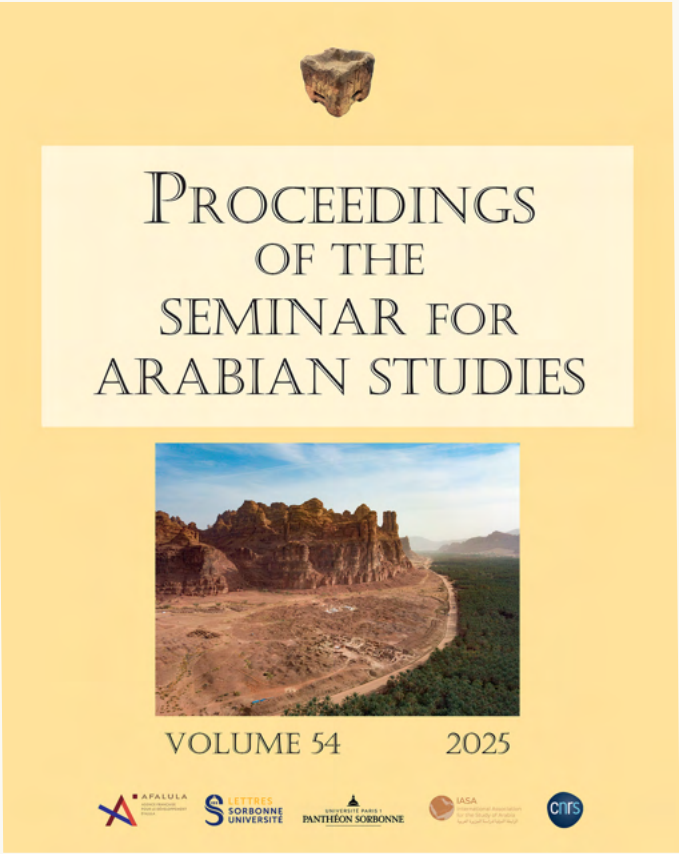
The programme was exceptionally rich, with eighty-eight papers and twenty posters covering a wide chronological and geographical spectrum. Notably, the 2024 meeting introduced new presentation formats and welcomed the return of a dedicated session on Ancient South Arabia, alongside contributions on heritage, community building, and the archaeology of north-west Arabia.

Two special sessions also marked the event: one on Zaydi governance in Yemen, the other on Late Antique Arabia (4th–8th centuries). The papers from the Special Session on Late Antique Arabia will be published in a Special Issue of Arabian Archaeology and Epigraphy.

Volume 54 of the Proceedings includes seventeen papers from the ordinary sessions and three from the special session on Zaydi governance in Yemen.

You can order Volume 54 from Archaeopress here: https://archaeopresspublishing.com/ojs/index.php/PSAS

Silvia Lischi
Editor



IASA Research Grants

The IASA began making awards to support research in the Arabian peninsula from 2013 and since then have benefitted from a generous donation from the IASA Patron, Valeria Piacentini.

These awards can make a real difference in sustaining current research and supporting a new generation of researchers. We attach great importance to disseminating the outcomes of research in the form of publications, contributions to conferences and inspiring exhibitions.

Recipients of awards are required to make full reports to the IASA and agree to give lectures organised by the IASA if asked, as well as writing shorter reports in our bi-annual bulletin to make outcomes known as widely as possible.
IASA grants are intended to support research in any academic area covered by the IASA's aims, which are to promote research relating to the Arabian Peninsula, in particular, its archaeology, art, culture, epigraphy, ethnography, geography, geology, history, languages, literature and natural history. Grants may be used to fund fieldwork, library or laboratory-based research or research support.

There are two types of research grant:
Small Research Grants: up to £500 (for all categories of researchers);
Main Research Grants: up to £1,000 (for post-doctoral research).

The deadline for application for grants is normally 31 May, with awards announced by the end of June. They are assessed by our Research Committee, which is chaired by Professor Robert Carter.

Grant Reports

Of Shells and (wo)men: an analysis of aquatic resources from Umm an-Nar and Wadi Suq domestic structures in the Wadi al Jizzi, Oman

Zoë van Litsenburg, Leiden University

The International Association for the Study of Arabia was kind enough to award me a Small Research Grant to conduct research in Oman as preparation for a future PhD trajectory regarding archaeological shells. This grant allowed me to travel to Oman to conduct the research and to buy the materials necessary for the project. This preliminary study was concerned with identifying areas for future research regarding molluscan remains as important components of the archaeological record. As a part of this, I conducted the analysis of shell material excavated at the site of Burj Huraiz.

In January of 2024 the Wadi al Jizzi Archaeological Project (WAJAP) excavated for its second season at the site of Burj Huraiz in the Al Batinah North Governate of Oman. Extensive surveys of the area had been conducted in the years before, with the goal of mapping an area that had previously largely been neglected in the archaeological research of Southeastern Arabia. While the oasis sites in the mountains and the settlements on the coast have been surveyed extensively, the Batinah piedmont had been considered not to have much in terms of archaeological remains. The WAJAP has been fundamental in changing this narrative, highlighting the importance of the landscape as a whole for prehistoric populations in Oman.

While Neolithic and Iron Age sites have also been found during the surveys (Düring, 2022), the

excavations focused on the Umm an-Nar and Wadi Suq structures. Over the two excavation seasons six structures have been excavated, of which two dated to the Umm an-Nar and four to the Wadi Suq period.



Figure 1: Umm an-Nar building at Burj Huraiz mid-excavation.

In the first excavation season it became clear that these domestic Bronze Age sites provide a unique perspective especially on Wadi Suq lifeways (Olijdam et al., 2025). A combination of straight-walled beakers and cups, as well as coarser storage jars were excavated from the buildings. Aside from ceramics, a large amount of shells were excavated from these contexts, as well as caprid remains that seemed to have been buried underneath the foundation of the building. Unfortunately, not enough collagen could be extracted from the remains to be able to say much more about this unique find. The analysis I conducted on the shell remains concluded that the most common species found at the Wadi Suq contexts at Burj Huraiz were of the giant mangrove whelk Terebralia palustris. The ubiquity of Terebralia in the Wadi Suq structures aligns with the narrative of the mangrove whelk being increasingly exploited during this period (cf. De Vreeze et al., 2024). The fragments found at the site align with the taphonomic markers as outlined in the article by de la Fortuna Müller García and Nebelsick on Terebralia morphology and taphonomy (Müller García & Nebelsick, 2024), suggesting mass consumption of the whelk. The nearest source of Terebralia is 20 kilometres from the site, at the Liwa mangrove. Shells that were likely not used for subsistence were also found, though in much smaller quantities. A few shells were found that show possible signs of perforation, showing that they might possibly have been altered for the purposes of personal adornment of some kind. One example from this structure is the Umbonium vestiarium. While these can be eaten, they display a variety of beautiful patterns on the outside, as well as a nacre interior. An oval aperture is located within the first whorl, allowing for the wearing of this shell with a cord passing through this aperture and the operculum, if it was indeed used as such.



Figure 2: Live terebralia specimen found at Liwa mangrove

Less malacological material was excavated in the Umm an-Nar buildings of the site. In general, there is much less evidence for the consumption of Terebralia during the earlier period, though it remains the dominant species. Instead of shells for consumption, the majority of shells from Umm an-Nar contexts are for purposes other than consumption. One notable example include Anadara shells packed with green malachite (Braekmans, 2024), similar to those found at other Bronze Age sites in Oman and beyond (eg. from the site of RJ-2, see Cleuziou, 2009).

In addition to the shells that were brought to Burj Huraiz by their Bronze Age inhabitants, a plethora of naturally occurring gastropods were collected for further study. Melanoides tuberculata and Zootecus insularis have been identified to be useful proxies for past climate reconstructions (Schmitt et al., 2024). M. tuberculata is a fresh water snail that can only occur in the presence of non-stagnant water. Oxygen isotopes from this shell can provide information on changes in the

temperature of ambient water and precipitation. Like M. tuberculata, oxygen isotopes of the terrestrial gastropod Z. insularis can be used to reconstruct levels of precipitation, though it is best used for its carbon isotopes to identify the dominance of C3 or C4 plants in the environment (Schmitt et al., 2022). The analysis of these gastropods is an exciting development for the archaeology of Arabia as it opens up many new avenues for research. It allows us to gain a more detailed insight into the conditions in which prehistoric people lived. The snails collected during this field season and the one before will hopefully be used for future isotopic study as part of a PhD trajectory. As these snails occur on most archaeological sites they offer useful proxies even if the preservation of botanical and zoological material in Oman often does not allow for this type of detailed study.

A Multi-Isotopic Approach to Examining Mobility and Social Reorganisation during the Bronze Age transition in Ras Al-Khaimah, UAE

Lesley A. Gregoricka, Leiden University

In December 2023 through January 2024, research funded in part by an IASA Main Research Grant was undertaken to identify Wadi Suq-period (ca. 2000-1600 BCE) teeth from the Shimal Necropolis in the Emirate of Ras Al Khaimah for isotopic sampling. Here, three different isotopes (strontium, oxygen, and carbon) from human teeth provide insight into the complexity of responses to climate change at the end of the third millennium BCE in the UAE. These results were presented at the 2024 Seminar for Arabian Studies, and a manuscript based on this research has been submitted to the American Journal of Biological Anthropology.

The site of Shimal remained continuously occupied over some two thousand years despite intense aridification around 2200-2000 BCE that marked the beginning of the Wadi Suq. Elsewhere across southeastern Arabia, such aridification brought with it a growing inability to maintain oasis agriculture, leading to the decline or abandonment of settlements and a breakdown in interregional exchange systems. Unsurprisingly, a substantial shift in funerary rituals followed, with more variable mortuary structures now dominated by individual interments or, less frequently, collective graves containing fewer numbers of individuals than in the previous Umm an-Nar period (ca. 2700-2000 BCE). Consequently, the once-wide geographic distribution of Umm an-Nar sites and tombs across the region shrunk considerably, becoming concentrated most visibly in Ras Al Khaimah. Shimal is the largest in a series of expansive second millienium cemeteries in the northern emirates.

Prior isotopic research on human dental enamel from the tombs at Shimal included the Umm an-Nar tomb Unar 1 as well as Wadi Suq tombs SH 95 and SH 103. This study expanded sample sizes from both periods, adding individuals from tombs Unar 2, SH 99, and SH 602. Enamel samples from these teeth were later analyzed in Summer 2024 for strontium, oxygen, and carbon isotope values.

Strontium isotope ratios from Umm an-Nar tombs Unar 1 and Unar 2 did not differ statistically from one another. However, Umm an-Nar ratios were significantly different from their slightly higher Wadi Suq counterparts, despite almost all individuals from both periods possessing local ratios.

Also notable was a site-wide increase in oxygen isotope values over time, as lower values from tomb Unar 1 differed significantly from those individuals interred in Unar 2 and Wadi Suq tombs (Figure 1). Subsequently, the water source(s) used by those interred in Unar 2 appear more closely aligned with those used during the later Wadi Suq period. However, a broader regional perspective on human oxygen values revealed a more complicated picture, as Umm an-Nar tombs from Umm an-Nar Island, Tell Abraq, Mowaihat, all shared similar values with Unar 2 and the Shimal Wadi Suq tombs.

Stable carbon isotope values between Unar 1, Unar 2, and the four Wadi Suq tombs did not differ statistically from one another, indicating that diet did not change considerably over time at Shimal despite climate change. Nevertheless, when comparing the carbon isotope values of the Shimal individuals to Umm an-Nar communities residing closer to the coast, those from Shimal demonstrated significantly lower carbon isotope values and reduced dietary variability, indicating that people from Shimal relied more on C3-based terrestrial resources, whether related to oasis agriculture or pastoral practices.

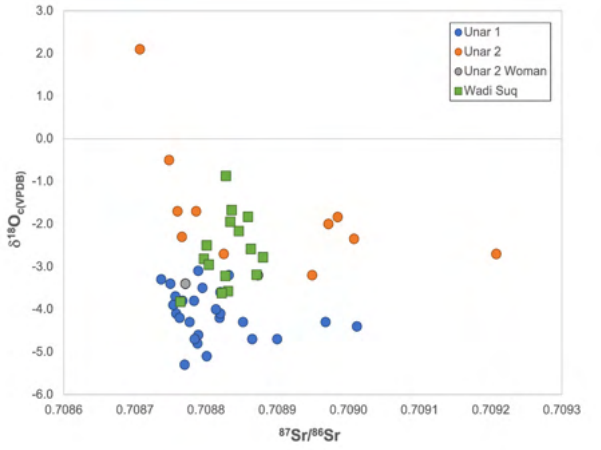


Figure 1. Scatterplot depicting strontium and oxygen isotope values from human dental enamel for Umm an-Nar and Wadi Suq individuals at Shimal. (scatterplot: L. Gregoricka)

Together, data from these three isotopes present a complex picture of the transition from the Umm an-Nar to the Wadi Suq. A significant increase in strontium isotope ratios over time, coupled with what we know about the lack of change in diet, indicates that at least some Wadi Suq individuals may have been interacting with slightly older geologic zones at young ages. This could be the result of community movement from elsewhere in southeastern Arabia northwards, perhaps in the form of climate refugees seeking out more permanent sources of ground water. This would be especially applicable to communities living in the interior of Oman in the foothills of the Hajar Mountains. This hypothesis is bolstered by the shift in oxygen isotope values over time, which could suggest that incoming groups may have initially consumed water from different sources in childhood before moving north, instead of prior interpretations of aridification driving changes to these values. Regardless, however, it should be stressed that because of relatively small sample sizes for the Wadi Suq period, all interpretations remain tentative, and more research is needed.

Mapping al-Qadisiyyah: surveying a famous Early Islamic conquest site at the edge of Arabia

Dr William Deadman, Postdoctoral Research Assistant, Endangered Archaeology in the Middle East and North Africa, Durham University

A recent remote sensing survey precisely located two historically significant sites on the fringe of the North Arabian Desert in Iraq (Figure 1) – al-Qadisiyyah and al-'Udhayb (Deadman et al. 2025). Both were central to an Arab-Sasanian battle in the Early Islamic conquests and formed part of the Darb Zubaydah Hajj pilgrimage route.

The Battle of al-Qadisiyyah was a decisive victory in the Early Islamic conquests, with the Muslim army defeating a much larger Sasanian force (Yusuf 1945). The battle has huge cultural significance to the Arab and Muslim world (Lewental 2014). The Darb Zubaydah is the Hajj pilgrimage route stretching between Kufa and Mecca. Across 1,300km of desert, its cleared pathways, pilgrim stations and water



Figure 1: al-Qadisiyyah survey area at the northern end of the Darb Zubaydah, on the edge of the North Arabian desert. Bing Aerial imagery © Microsoft 2025.

storage systems represent an incredible feat of construction (al-Rashid 1977). Abbasid Arab geographers list al-Qadisiyyah and al-'Udhayb as the first two stops, but by the 19th century they were no longer in use (Musil 1928).

This project aims to map and rapidly record these sites, combining drone photogrammetry and ground survey to augment our understanding of their military, religious and agricultural role in this historic landscape.

Methodology

Originally, a week of combined drone and field survey was planned for 2024, but the Gaza conflict made this impossible. Instead, two days of drone survey were carried out by an Iraqi operator, followed by one day of ground survey when travel became possible in February 2025. Two further days of drone survey followed the fieldwork.

Initial orthomosaics were generated and examined prior to the ground survey. With little time available, the fieldwork largely consisted of photographing the main features. Finds were photographed in the field but not collected. More precise photogrammetry was carried out afterwards to generate more precise orthomosaics and accurate DEMs. These were utilised to produce site plans and illustrations.

Results

Drone survey was carried out at five sites across the study area. Each was also recorded on the ground, along with nine other sites (Figure 2)
Al-Qadisiyyah, also known as Tell Mudheef al-Hassan (Directorate General of Antiquities 1976: map 110), is a 2-3m high, irregular tell. The low mound is ~27ha, but a settlement wall encloses a larger area of ~42ha (Figure 3).

Al-Qadisiyyah lies immediately behind the central section of an 8km trench running parallel to the desert-floodplain boundary. Approximately 35m wide, with a subtle ditch profile, it has eroded upcasts on both sides. The eastern upcast is more substantial, likely once a fortified rampart, standing up to 2m high and 26m wide (Figure 4, see page 18)

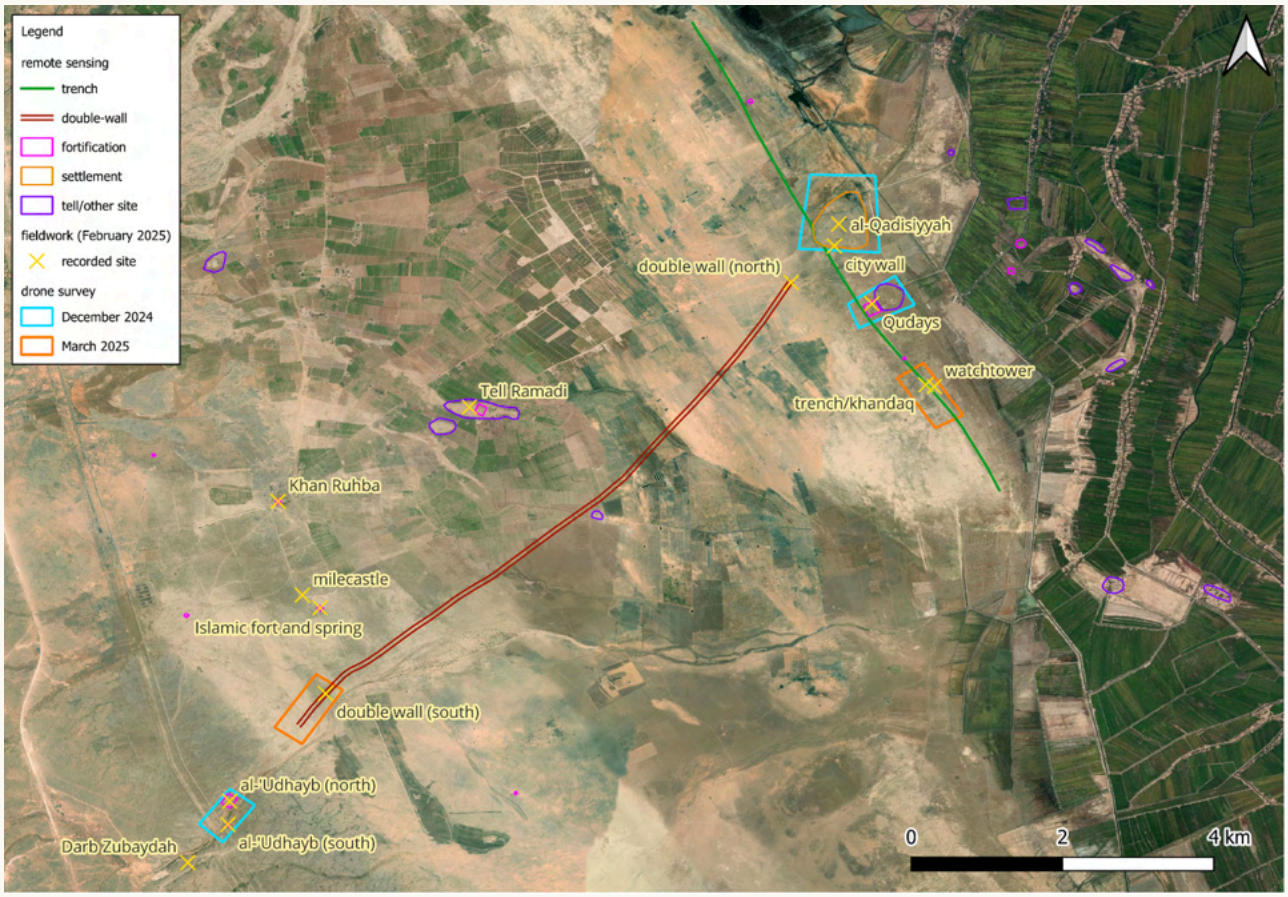


Fig.2 Recorded sites and areas covered by drone survey. Bing Aerial imagery © Microsoft 2025.

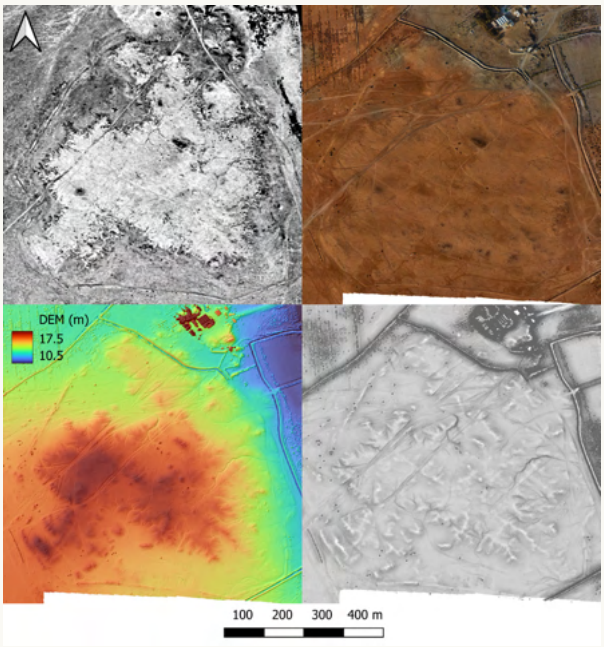


Fig. 3. KH9 imagery (courtesy of the USGS), drone orthomosaic, drone DEM and VAT plot of al-Qadisiyyah.

A large fort, almost certainly the historical site of Qudays, lies ~1km south of al-Qadisiyyah along the trench. It is low-lying and challenging to see on the ground. Aerial imagery reveals a clear 190m square plan, with a 50x60m internal building towards the rear.

Al-'Udhayb lies ~11km WSW of the battlefield sites. On the north bank of Wadi Talah is the main fort, the foundations of around a dozen smaller rectilinear buildings, and two large water cisterns. More building foundations lie on the other side of the road to the west. On the southern bank is a large rectangular brick structure ~30x23m and ~2.5m high. There are also two circular water storage ponds, ~32m and ~12m in diameter. Two square wells lie ~70m south of the main structure. Dozens of smaller rectilinear buildings foundations survive to the west and east (Figure 5).

Al-Qadisiyyah and al-'Udhayb are connected by a double-walled feature that stretches for almost 10km (Figure 2). A southern section was recorded in detail. Each earth walls stands to a maximum height of ~1m. In their current eroded state they are up to ~20m wide. It runs across the landscape in a gentle curve.

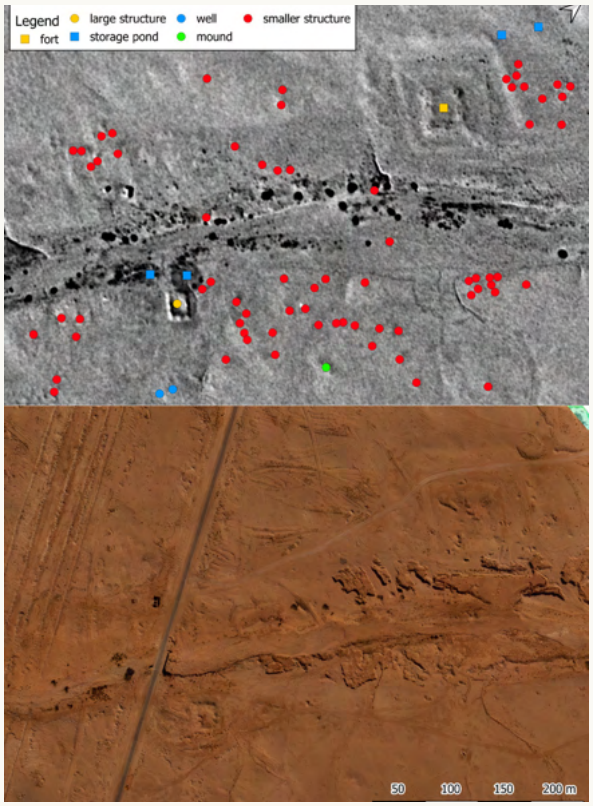


Fig. 5. Annotated KH9 and drone orthomosaic of al-'Udhayb.

Another large square structure at Tell Ramadi bears a clear resemblance to Qudays. Later Islamic forts at Khan Ruhba and Qasr Ruhaim may have formed part of the same network. A possible Sasanian milecastle near Qasr Ruhaim is associated with a large spring. The northernmost surviving stretch of the Darb Zubaydah desert path was also recorded, consisting of a cleared walkway, 20-30m wide, with stones piled in cairns on the verges.

Many of the sites yielded a similar assemblage of ceramics and green-blue glass. While the pottery needs to be studied in more detail, a preliminary analysis suggests an Early Islamic date, with perhaps small amounts of later material.

Tragically, many of these sites are in a very poor condition (Figure 6). Qudays was newly ploughed in 2024. A 5m-wide ditch has been dug through one of the best surviving sections of the defensive trench. Much of the double-wall has been flattened and incorporated into expanding arable farmland. The fort, rectangular building and wider landscape at al-'Udhayb was severely quarried during road building in the 1970s.

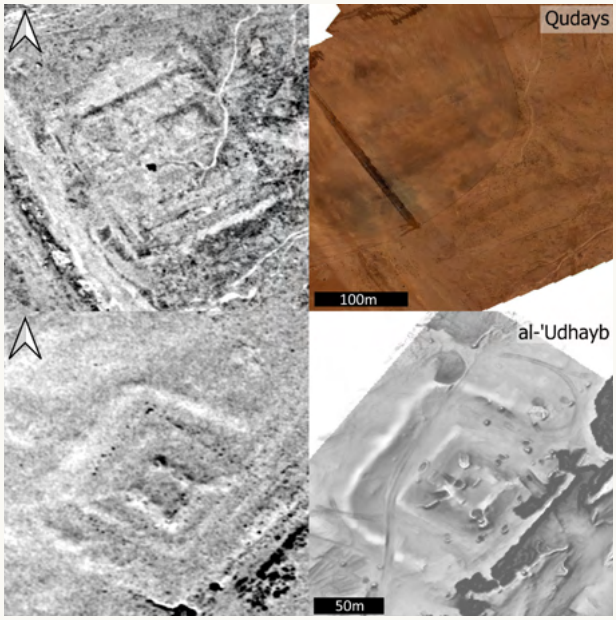


Fig. 6. KH9, drone orthomosaic and VAT plot of Qudays (above) and al-'Udhayb fort (below).

Discussion

This brief survey of these historic sites has done much to augment our understanding of this Sasanian and Early Islamic landscape. Clearly the area was heavily militarised during the Sasanian period, with a whole network of forts at the desert edge (Finster and Schmidt 2005). The trench/khandaq must certainly have played a major part in this system. It demonstrates a remarkable resemblance to the Gorgon Wall, the Sasanian northern frontier, which also consists of a substantial wall and ditch (Hopper 2017). What is less clear is whether the trench forms part of the *Khandaq Shapur*, built in the fourth century (Morley 2017), and if so whether further sections survive.

The double-wall between al-Qadisiyyah and al-'Udhayb is very different to the trench/khandaq. It could be a canal redirecting seasonal wadi flow or spring water. Ambitious water management systems are a signature of the Sasanian Empire (Lawrence & Wilkinson 2017). It may also have been built as part of the Darb Zubaydah – an elaborate pathway with walls to prevent desert sediments from obscuring the route. More detailed investigation is needed to firmly establish the feature's date and function.

The site of al-'Udhayb was clearly redeveloped as a pilgrim station during the Early Islamic period. The circular cisterns on the south bank match the *birkat* built all along the Darb Zubaydah. Moreover, the large rectangular structure resembles both medium-sized cisterns and larger buildings often associated with them. Moreover, the small structures at al-'Udhayb are similar to those observed at several DZ stations (al-Rashid 1977).

By combining drone photogrammetry and ground survey this project has augmented our understanding of the Sasanian/Early Islamic landscape of this historically significant region.

Clearly much more work needs to be done to record, date and interpret al-Qadisiyyah and al-'Udhayb within the wider landscape. Future survey is planned, but the accelerating pace of the destruction of this landscape is of major concern. Many of the sites have already been severely damaged and others are threatened. Hopefully this research will facilitate the protection of these globally significant sites.

Acknowledgements

Many thanks to IASA which funded this work, to the British Academy – which indirectly funded travel through the "landscapes of Tell Ramihiah" project – and to the Arcadia Foundation as the main funder of the EAMENA project. Thanks also to our friends and colleagues at the University of al-Qadisiyyah, University of Kufa and the SBAH that made this research possible.

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Fig. 4. Oblique drone photograph of the trench (looking north). Photo: Ali al-Gburi.

More detailed versions of these grant reports, and reports from previous years, may be found on our website.

Country Reports
Bahrain

Excavation of Maqaba burial mounds No.1 in the Tylos period, Bahrain 2017-2025

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Fig. 1 Whole view of Maqaba burial mound No.1 (from west) by Mashaal Waleed Alshamsi

Thirteen groups of mounded tombs from the Tylos period have been identified in the northern part of Bahrain's main island. One such group, the Maqaba Burial Mounds, consists of at least seven mounds. Mound No. 1 is located slightly to the southwest of the site and is surrounded by bank-like mounds to the west and south. It is approximately 60 metres in diameter and 3 metres in height.

Maqaba Mound No. 1 consists of at least one hundred small mounds, each measuring between 4 and 10 metres in diameter and between 1 and 2 metres in height. These small mounds overlap and combine to form a larger mound measuring approximately 60 metres in diameter and 3 metres in height. Each small mound is covered in stones and contains a burial facility, such as a rectangular, plastered, coffin-shaped grave with a capstone. At least one body was buried in each grave. Therefore, the entire mound would have held the remains of at least 100 people, who may have belonged to the same family or clan in Tylos society.

After six years of excavations, we obtained a number of results, ten of which are described below.

1. We carried out radiocarbon dating on four coffin-type plaster graves. Maqaba Burial Mound No. 1 was constructed between the middle of the 2nd century BCE and the second half of the 1st century CE, as determined by radiocarbon dating. This period includes dates around 50 BCE to 50 CE for glazed bowls found in the graves.

2. In terms of the vertical construction of the tombs, there are at least two layers. The first layer comprises burial facilities constructed on the bedrock. The second layer is built inside the already constructed mound.

3. The layout of the burial facility is designed around an as yet undiscovered central coffin.

4. The upper rim of the grave is built in a horizontal position so that it is approximately the same height as the base of the mound's covering stone.

5. Offering a glazed pottery bowl over an upside-down grave is a common Tylos funerary ritual. We found that there are at least three ways to perform this ritual, placed on the capstone, on the edge of the grave, and in the mound above the capstone. In each case, the bowl contains ashes. How the bowl containing the ashes was placed upside down remains a mystery.

6. It is thought that the body was placed on a screen-like mat made of organic materials in the form of rods and lowered into the coffin by suspension for burial. A carbonized stick-like structure was found under the body of F-0080.

7. Once the body had been placed in the grave chamber, a cloth was stretched over it before the capstone was placed on top and nailed into position. This was confirmed in F-0072 in 2024

8. As for the bodies, we know that some, but not many burial goods were found in the graves of the three men that were undisturbed.

9. Some infant bodies are accompanied by trinkets, while others are not. We believe that the presence or absence of trinkets may be a factor in determining gender.

10. Itahashi conducted carbon and oxygen isotope analysis of human tooth enamel from Maqaba. The oxygen (δ18O) and carbon (δ13C) isotope ratios of structural carbonates in the tooth enamel of 12 humans and one animal excavated from Maqaba burial mound No. 1 were measured to estimate the place of drinking water intake and eating habits during childhood when the teeth were formed. The results of the analysis suggest that the individuals' birthplace can be assumed to be in an area between southern Syria and north-eastern Turkey. However, more samples are needed to confirm their origins.



Fig. 2. Burial mounds covered by stones in Maqaba No.1

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Applying a proteomics method for estimating sex of people buried at DS3 Cemetery, Bahrain

Caitlin Bonham Smith, Ella Patrick, Martin Middleditch, George Guo, Natalie dos Remedios and Judith Littleton

In 1985-1986 the Bahrain Directorate of Antiquities excavated the DS3 cemetery, a large mound site used over the Tylos period. The late Tylos burials at DS3 (400-622 CE) are important for understanding the Sasanian period in Bahrain, which is less well known archaeologically. While the norm at DS3 was for single interments, several mound chambers contain many individuals: for example, 73(18) with 149 people and 83(5) with 86 individuals, with most being children. These outlier tombs are distinguished by the large number of burials with a disproportionate number of subadults. Understanding the demography, including the sex distribution, of people buried in the outlier mounds may hold the clues to their unusual formation.

Given that sex estimation in subadults is challenging from osteological analysis alone, and that these remains are comingled, demographic analysis of the people buried within these outliers is challenging. While it is possible to use DNA-based methods to determine biological sex, this is expensive, and previous aDNA work in Bahrain from the Tylos period has demonstrated the difficulty in obtaining successful results (Martiniano et al., 2024).

However, proteomics often succeeds past the point of DNA preservation and can be used to estimate biological sex from human dental enamel (Hendy, 2021). Extracting and analyzing the isoforms of amelogenin, a protein found in enamel, can indicate an individual's sex (Stewart et al., 2017). The different isoforms are coded on either the AMELX gene (X chromosome) or the AMELY gene (Y chromosome), depending on a person's biological sex. We used a modified version of the Stewart et al. (2017) method for preparing enamel samples for analysis of the amelogenin-dervied peptides (Figure 1).

Most studies using this method have focused on teeth from temperate regions, with generally

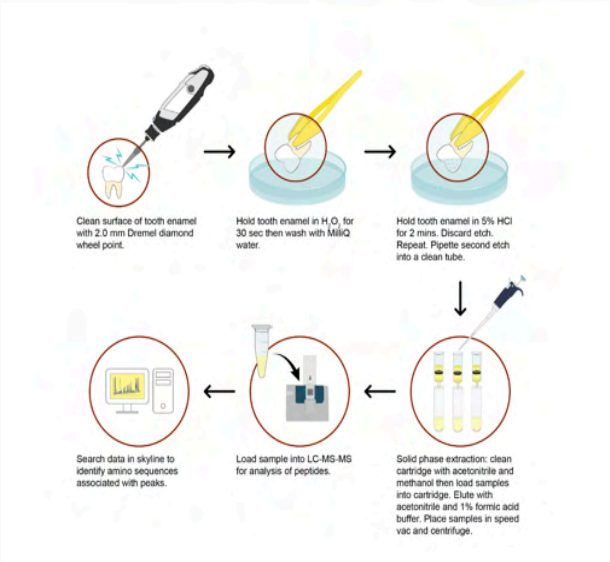


Fig. 1. Modified Stewart et al. (2017) method for preparing samples. Figure created by Ella Patrick and Seline McNamee.

excellent preservation (e.g., England, Russia, and mountainous South America). Warmer environments can accelerate the degradation of teeth and their proteins (Kendall et al., 2018). The particularly poor preservation of proteins has been noted in the Arabian Peninsula due to particular environmental conditions (e.g., Gregoricka 2011; Maat, 1993; Smith, 2023). Given concerns over preservation and the impact of diagenesis, we decided to perform a pilot study to test the application of this method of sex estimation for people buried in Bahrain at DS3.

We used this method on 40 teeth from individuals buried at DS3. While our preliminary results using a PRM (Parallel Reaction Monitoring) method were mostly successful, instances of individuals with low signals for AMELX were confounding. We wondered if diagenetic factors could lead to either missing the AMELY signal in individuals with low overall signal intensity or cause ambiguity in the assignment of individuals with very weak AMELY signals. Since then, we have utilized a SWATH-MS workflow to enhance data acquisition, including addressing unexpected degradation forms. Our work is ongoing, but the preliminary results suggest that this is a more robust method

for assigning sex from amelogenin isoforms in degraded dental enamel, such as teeth recovered from archaeological contexts in the Arabian Peninsula. Out of the 40 teeth analysed, 17 are confirmed to be from male individuals and 23 from females. Further work and additional sampling are required to create more comprehensive chamber profiles in the future.

We are actively engaged in isotopic and proteomic analysis of human and faunal remains from Bahrain in collaboration with the Bahrain Authority for Culture and Antiquities. We want to thank Dr. Salman Almahari and the staff of BACA and the Bahrain National Museum. We acknowledge funding from the Faculty Research and Development Fund, The Faculty of Arts, University of Auckland and the Platform Research and Development Fund, Faculty of Science, University of Auckland. To contact us please email j.littleton@auckland.ac.nz.

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Oman

The Salūt and Bisya Archaeological Mission. A new multi-disciplinary project in the heart of Oman

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A. Zerboni, Department of Earth Sciences A. Desio – University of Milan

After a hiatus of a few years, coinciding with the conclusion of the activities of the Italian Mission to Oman (IMTO) and the COVID-19 outbreak, a new research project was launched by the University of Milan (Prof. Andrea. Zerboni) around the ancient oasis of Salūt, near Bisya (Fig. 1, below).

The Salūt and Bisya Archaeological Mission (SBAM), operating under the aegis of the Ministry of Heritage and Culture of the Sultanate of Oman and supported by the Italian Ministry for Foreign Affairs and International Cooperation, builds upon the previous investigations carried out by the writers within the scope of the IMTO, intending to complete the investigation of a few selected contexts while collecting geomorphological, hydroclimatic, and archaeological data that can fill the gaps in our understanding of the diachronic evolution of this key oasis of central Oman.

Despite only short research trips being carried out so far (2022-2024), relevant results have been achieved.



Fig. 1 The Iron Age site of Husn+Qaryat Salūt at the core of the research area, aerial view from the east. (Photo S. Bizzarri).

A new type of grave was identified, a few specimens of which are scattered along the slopes of Jabal Salūt, the hill closing the Salūt plain to the northeast (Fig. 2).



Fig. 2 One of the investigated "Boulder Graves" located along the western slopes of Jabal Salūt, with the site visible in the background. (Photo M. Degli Esposti).

These graves, labelled "Boulder Graves", comprise a large natural boulder abutted by one or more unhewn stone walls defining the burial chambers (Fig.3) (Degli Esposti et al. forthcoming).

The discovery of human remains during the most recent campaign confirmed their funerary function. This new type of grave, known from other sites in SE Arabia, represents, nevertheless, an addition to the diversevariegated typology of funerary monuments visible inside the Park of the Archaeological Sites of Bisya and Salūt (Fig. 4). These graves can be dated to the Late Iron Age, or rather the Late Pre-Islamic / Samad period.



Fig. 3 Aerial view of Boulder Grave 4, with the two excavated chambers (a to the right of the boulder, b to the left). View from the northwest. (Photo M. Degli Esposti).

At a broader scale, the SBAM project entailed a survey of the open channels, aflāj, and abandoned field systems (Figs. 5,6) to obtain a picture of historic water management and agricultural use of the land, which can possibly provide insight into the ancient landscape. The survey extended along the plain of Wadi Sayfham upstream until the village of Wadi Quraiyat and along the plain of Wadi Bahla downstream of Bisya, until halfway to Ma'murah.



Fig. 4 Two Wadi Suq graves excavated and partially restored for public access on Jabal Salūt. (Photo S. Bizzarri).

The course of the abandoned Wadi Salūt, running from near Jabrīn to the Salūt plain, was also surveyed, the total covered area thus reaching around 78.000 square meters. Some of the abandoned aflāj are possibly going to be the subject of cleaning, restoration and preservation, considering the ongoing procedure to obtain the admission of a larger area in the UNESCO World Heritage list. The evidence of several dried-out aflāaj confirms the general trend of water tables being depleted and then lowered by the intensive use of modern engine-powered pumps. At the same time, it speaks of groundwater being at a more easily reachable depth until quite recently, although at the end of a progressive lowering that



Fig. 5 An abandoned farm along Wadi Bhhala, south of Bisya. (Photo S. Bizzarri).

started around the end of the third millennium BC and continued till today, as evidenced by SBAM and IMTO research in the area (Degli Esposti, Cremaschi and Zerboni 2025).



Fig. 6 The abandoned oasis inside Bisya, once served by one of the dried-out aflaj. (Photo S. Bizzarri).

Connected with the intention to strengthen a candidature to the UNESCO list is also the survey of rock art sites in the area (see Degli Esposti Cremaschi and Zerboni 2020; Zerboni et al. 2021), as well as at other sites such as Wadi Tanūf and Hasan Bin Ṣalt (Fig. 7), to assess their state of preservation and scientific potential.



Fig. 7 Survey and minimal test-trenching at Hasan Bin Salt. (Photo M. Degli Esposti).

The SBAM is now set to pursue other tasks over the next few years, in close cooperation with local authorities. Central will be the reconstruction of other aspects of the Iron Age occupation in the area that can integrate the results from the extensive excavation of Salūt (e.g. Avanzini and Degli Esposti 2028), with a specific focus on the agricultural use of the plain surrounding the site and the funerary landscape of the period, still little known and overshadowed by the prominence of more ancient burials, several of which have already been investigated (e.g. Degli Esposti et al. 2021).

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The "HERDS iN Oman" Project: Exploring the Neolithic in Al-Khashbah, Oman

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Maria Pia Maiorano (Czech Academy of Sciences)
Elena Maini (Sapienza University of Rome)
Joseph Harris (University of Chicago)
Jakez Moreau (Paul Valéry University Montpellier [3])
Paige Paulsen (Dartmouth College)

While archaeologists in Oman have identified and dated many Neolithic sites along the coast—from Musandam all the way to Salalah—very few sites have been documented in the interior of Oman, and none have been extensively investigated. The "HERDS iN Oman" Project (Human Environmental Resilience and Desert Subsistence in Neolithic Oman) was formed in 2024 by Maria Pia Maiorano and Lucas Proctor to explore the nature of Middle and Late Neolithic lifeways in the interior of Northern Oman through survey and excavation in the Ash-Sharqiyah North. The project has three objectives: 1) to excavate and record the KHS Al-Khashbah Neolithic complex, 2) to reconstruct the subsistence and lifeways of people during these times, and 3) to understand the role of mobility and settlement in the Neolithic as resilient strategies during periods of changing environmental, technological, and social conditions from the 6th to 4th millennia BCE. The KHS site complex was first identified as part of the German Archaeological Mission to Al-Khashbah in 2022 and represents a unique opportunity to reconstruct how prehistoric peoples of the region lived.

During the inaugural 2024–2025 field season, the HERDS team conducted a program of digital mapping and excavation at the KHS-A site, located northeast of the oasis of Al-Khashbah in the Wilayat Al-Mudhaybi. KHS-A is a ca. 4 ha site located on a relict terrace overlooking Wadi Samad and consists of preserved stone circles, fireplaces, and lithic scatters. The site is ideally situated for easy access to water and tool-stone sources and provides an excellent field of view over the wide alluvial fan of the wadi. Preliminary walkovers and test excavations in 2022–2023 revealed evidence for extensive Neolithic occupation, including in situ sub-surface deposits and preserved charcoal suitable for radiocarbon dating. Subsequent pilot excavations in 2022–2023 focused on KHS-A Areas 1 and 13 to test the preservation potential of the site and recover material suitable for radiocarbon dating and lithic analysis. These excavations resulted in the identification of shallow, but

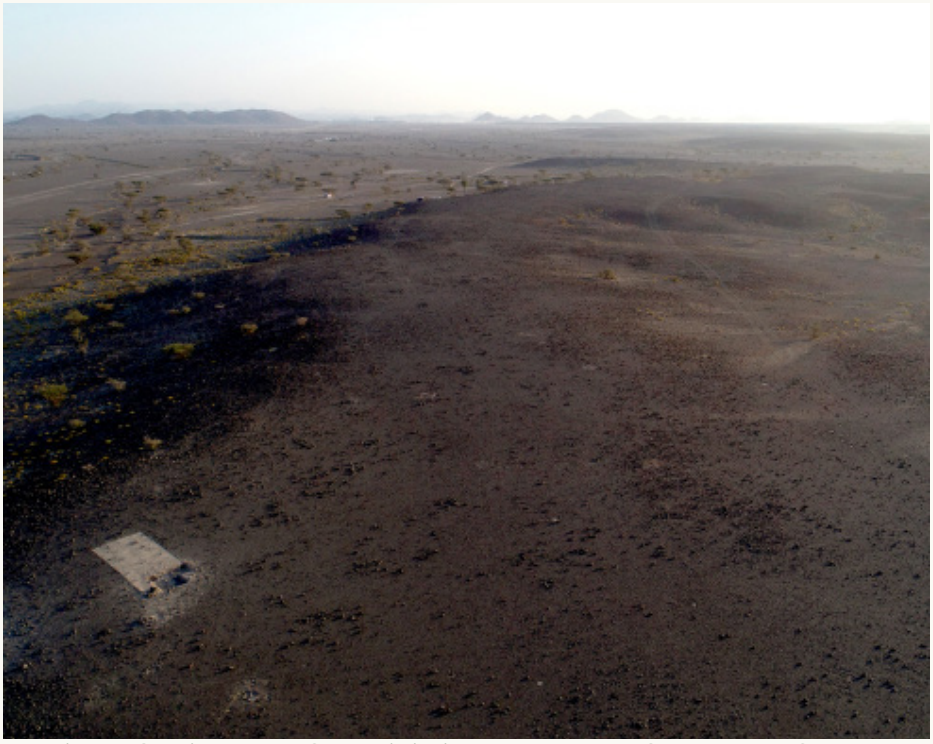


Figure 1: Overview of the KHS-A Neolithic site near Al-Khashbah, Oman (photo: P. Creamer)

well-stratified anthropogenic deposits under a thin desert pavement dating to the sixth and fifth millennium BCE (Maiorano et al. 2025).

In 2024–2025, Areas 1 and 13 were further explored, and new excavation areas were opened in Areas 11, 16, and 54. GPS aided digital mapping of the site by Petra Creamer and Paige Paulsen significantly expanded the site's estimated extent from an initial size of ca. 5000 m2 to over 4 ha and tested thermographic methods for identifying subsurface features. Excavations in Area 13 allowed for the definition of five occupational phases, containing a sequence of successive fireplace construction, posthole features, and stratified charcoal lenses dating to the mid-6th millennium BCE. The presence of closely spaced, overlapping stone-lined fireplaces in this area suggests rapid rebuilding or reuse of the area, perhaps seasonally or annually. An adjacent trench (Area 11) was opened to the north of 13 in December 2024, resulting in the identification of a further subsurface fireplace and a caprid mandible. In KHS-A-1, an expansion of the initial test sounding from 2022 confirmed the presence of preserved ash pits and fire features below the surface associated with early 4th millennium activity. A posthole with an adjacent grinding stone was recorded in KHS-A-16, suggesting structural components. Finally, a test sounding placed in the southern lobe of the terrace, KHS-A-54, yielded limited subsurface preservation despite abundant surface lithics.



Figure 2: Surface lithics collection at KHS-A (photo: HERDS Project)

Ongoing analyses of the stratified chipped stone industry from KHS-A by Maria Pia Maiorano and Joseph Harris suggest a highly expedient and informal local industry at the site, with varied core reduction strategies on locally sourced radiolarite from outcrops identified nearby at other sites in the KHS complex. Tools included notched pieces, denticulates, borers, scaled pieces, and broken biface points. Excavations also yielded several types of marine shell beads (e.g., Polinices mammilla, Conus sp., etc.) at various stages of manipulation, suggesting on-site shell bead production and a relatively broad range of site-based activities.



Fig. 3: Excavations in KHS-A Area 13 (Photo: HERDS Project)

Local subsistence and environmental conditions are being studied at the site through a comprehensive environmental archaeology sampling program. While the presence of domestic animals at the site has not yet been confirmed, zooarchaeological analysis by Elena Maini has identified the presence of caprid remains, including a mandible with intact molars and incisors. These finds are crucial for investigating one of the HERDS Project's key research questions: whether domesticated animals were present in the interior of Oman during the 6th millennium BCE. Burned bone fragments, some of which were concentrated in ash pits in area 13, may indicate food processing or ritual activities and will be further studied to distinguish wild from domestic taxa. Meanwhile, archaeobotanical analysis by Lucas Proctor and Jakez Moreau have documented the presence of both local acacia woodland species and non-local wood remains—grey mangrove (Avicennia marina)—providing further evidence of connections with coastal Oman.

The initial results from KHS-A attest to the site's outstanding research potential. Early evidence suggests that KHS-A was an important, repeatedly visited location where mobile Neolithic communities engaged in resource collection and production activities. Future field campaigns by the HERDS team will continue to investigate the Neolithic occupational history of KHS-A and the broader Al-Khashbah area with the goal of reconstructing local subsistence practices and the periodicity of site visitation.

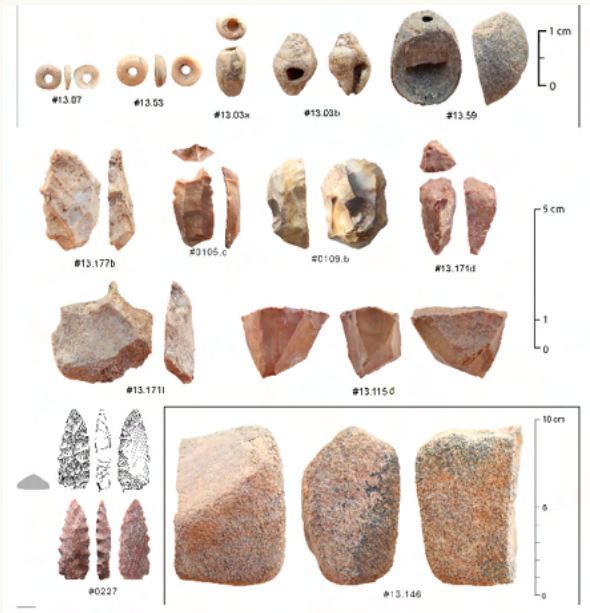


Fig. 4: A selection of representative tools and shell beads from KHS-A Area 13 Photo credit: Maiorano.

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University of Bologna Excavations at HD-7: first radiocarbon results from the Early Bronze Age necropolis in Ra's al-Hadd (Sultanate of Oman)

Francesca Barchiesi, Maurizio Cattani (University of Bologna)

This note reports the first radiocarbon dates from the Bronze Age necropolis of HD-7 at Ra's al-Hadd (Sultanate of Oman), obtained thanks to a Small Research Grant from the International Association for the Study of Arabia (IASA, 2024). After an unsuccessful attempt to verify the presence of collagen in human bones, preference was given to charcoal samples from key points in the archaeological stratigraphy. Four charcoal samples - selected from two cairn clusters that have been the focus of our recent work - were pretreated and graphitised at the BRAVHO 14C Lab (University of Bologna) and measured by AMS at the Curt-Engelhorn-Zentrum Archäometrie/MAMS (Mannheim).

Given the modest sample size and the character of the HD-7 funerary record, we do not claim to establish a definitive absolute chronology for the necropolis. The problems associated with the re-use of tombs in eastern Arabia are well known to specialists; post-depositional disturbance and generally poor preservation further complicate interpretation. Rather than seeking final results, our aims were, first, to assess their concordance with interpretations derived from architecture and artefacts and, second, to outline a sampling methodology for an expanded programme. Moreover, these initial dates posed a genuine methodological challenge, as the selection and preparation of samples encountered numerous difficulties.

The HD-7 necropolis and recent fieldwork

The site of HD-7 is a well-known funerary landscape in the Ra's al-Hadd area. For background and further details, readers are referred to the bibliography below, which includes both previous contributions by the Italian and French missions, as well as the most recent IASA Bulletin reports from the latest campaigns of the University of Bologna.

South-eastern Arabia has an impressively rich funerary record from prehistory, particularly during the Early Bronze Age (c. 3200-2000 BC).

Our investigation of new tombs in the HD-7 necropolis contributes to a broader regional discussion concerning a potential local variant of the commonly termed 'Hafit tomb' model, characterised here by low height and the use of white beach-rock to delineate the structure's outer perimeter (Figs. 1-2). A distinctive feature of HD-7, among the many cemeteries of this period, is the presence of a contemporary settlement only a few hundred metres away. Indeed, the abundance of funerary evidence is inversely proportional to the number of securely identified Hafit settlements to date - Hili 8 (UAE) and, in Oman, Bat, Khashabah and HD-6/Ra's al-Hadd. Access to data from HD-6 alongside material from HD-10 and HD-7 offers an exceptional opportunity for historical and archaeological reconstruction.



Fig. 1. Tomb 1 of HD-7 group 2, 2025 excavation campaign.



Fig. 2. Tomb 5 of HD-7 group 12, 2025 excavation campaign.

Bone sampling and analytical constraints

Despite submitting ten bone samples to the Bone BRAVHO 14C Lab, none proved datable. In each

case, collagen yields were below the laboratory's acceptance criteria or the percentage carbon was too low to permit reliable graphitisation and AMS measurement. In the only case where collagen could be isolated, the carbon mass remained insufficient for target preparation. These outcomes are consistent with the severe diagenesis observed on site and the generally poor state of preservation of the HD-7 bone assemblage. As a result, the present dating programme necessarily focused on charcoal.

Age Determination by Radiocarbon (14C)

C14-ages are normalized to $\delta^{13}C = -25‰$ (Stuiver & Polach, 1977) and calibrated using the dataset IntCal20 and software SwissCal (ETH-Zürich). Calibration graphs are generated using the software OxCal v4.4.

The radiocarbon analysis undertaken between 2024 and 2025 by the BRAVHO 14C Lab and MAMS yielded the following calibrated ranges (95% probability):

- MAMS 80231: cal BC 2868-2584;
- MAMS 80232: cal BC 2864-2636;
- MAMS 80233: cal BC 2463-2299;
- MAMS 80234: cal BC 2856-2576.

					Calibrated Ages					
Lab Nr MAMS	Sample Name	^{14}C Age [yr BP]	±	δ13C AMS [‰]	Probability 68%	Probability 95%	C:N	C [%]	Collagen [%]	Material
80231	BRA-9126	4130	19	-23.5	cal BC 2853-2632	cal BC 2868-2584	0.0	0.0	0.0	graphite
80232	BRA-9129	4142	20	-23.6	cal BC 2864-2636	cal BC 2872-2627	0.0	0.0	0.0	graphite
80233	BRA-9130	3893	19	-22.2	cal BC 2456-2346	cal BC 2463-2299	0.0	0.0	0.0	graphite
80234	BRA-9137	4107	19	-23.6	cal BC 2843-2583	cal BC 2856-2576	0.0	0.0	0.0	graphite

Tab. 1. List of the dating results of four charcoal samples.

The three older determinations cluster in the mid-third millennium BC, while one falls decisively into its later quarter. Taken together, they strongly support the view - already intimated by architecture and finds - that HD-7's funerary activity began early in the third millennium BC and continued for several centuries, with at least part of the sequence overlapping the classic Umm an-Nar horizon.

Although these are the first four determinations, their internal coherence is encouraging.
The outlier sample MAMS 80233 extends the time-depth into the 25th-24th centuries BC. This data sits comfortably alongside the presence of Umm an-Nar pottery around HD-7.12 Tomb 2 and the architectural distinctiveness of that structure compared to the more 'Hafit-like' cairns (Fig. 3).



Fig. 3. Tomb 5 of HD-7 group 12, 2025 excavation campaign

Implications and next steps

In strategic terms, the new radiocarbon results serve the immediate purpose required at this stage: they provide chronological anchors within the relative stratigraphic sequence and indicate that HD-7 was in use for much of the third millennium BC. We are also prioritising cross-links with the settlement record at HD-6 and HD-5, where temporal overlap is analytically crucial.

Final remarks

We wish to record our sincere thanks to the IASA, whose Small Research Grant (2024) made these radiocarbon dates possible. We are equally grateful to the Ministry of Heritage and Tourism of the Sultanate of Oman for continued support and permissions, and to our laboratory partners at the BRAVHO 14C Lab (University of Bologna) directed by Prof. Sahra Talamo, and at the Curt-Engelhorn-Zentrum Archäometrie/MAMS (Mannheim) for their expertise and collaboration.

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Archaeogeophysical Investigation of Early Bronze- and Iron Age Water Management Structures at Bisya, Oman

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The area around the oasis of Bisya is known for the high density of Early Bronze Age (EBA) and Iron Age (IA) archaeological remains, which have been intensively investigated since 2010 by Italian (IMTO) and French (FAMCO) archaeological projects. Within the framework of the Pre-Doc Award of Leipzig University, we conducted a first small-scale archaeogeophysical field survey in collaboration with FAMCO in January 2025. The objectives of this initial campaign included (1) exchanges with potential project partners and local authorities and (2) geophysical tests measurements in areas with known archaeological remains in order to calibrate several geophysical methods according to the type of remains investigated. This study aims to focus in particular on protohistoric structures related to water management and irrigation systems (including ditches, channels and aflaj). Geomagnetics and Ground Penetrating Radar (GPR) surveys were conducted at several archaeological sites in the Bisya area: ST-2 tower, Al Dhabi 2 and 5, Fell (a site recently discovered by Martin Sauvage) and above one falaj system located in the northern part of Bisya oasis. These calibration and test measurements provide the basis for a transferable methodological framework for archaeogeophysical surveys applicable to other archaeological sites in Oman.

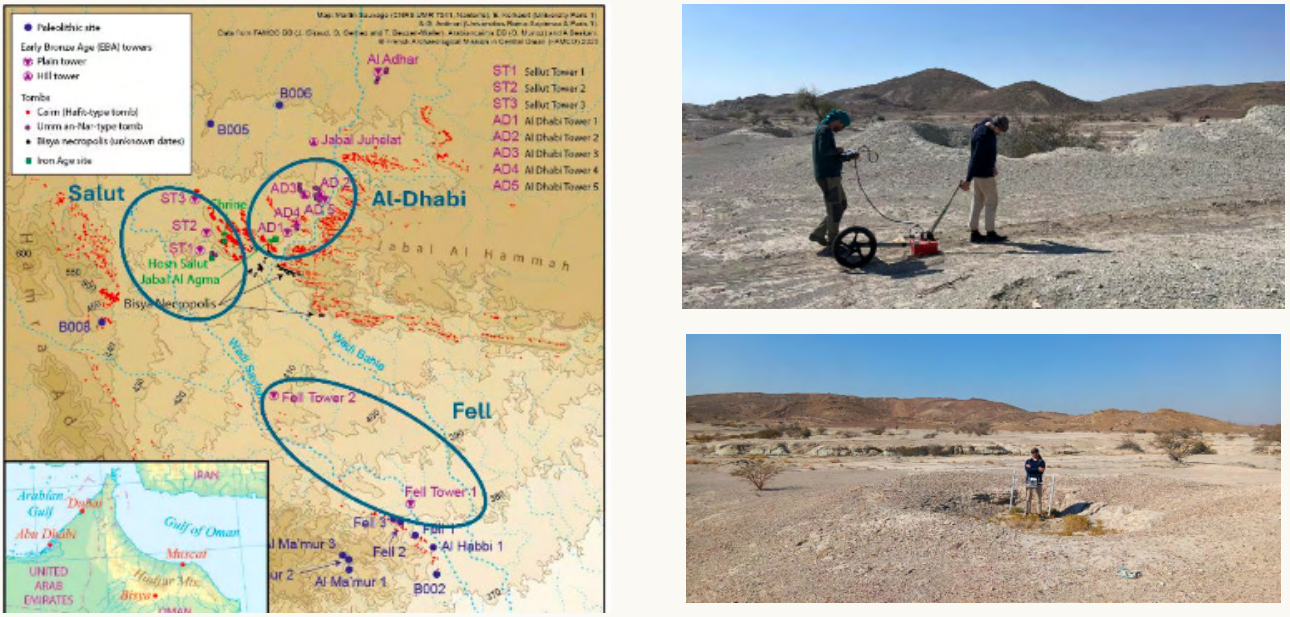


Figure 1: General overview of the Bisya area in central Oman with a more detailed view of the study areas of Salut, Al Dhabi and Fell selected for geophysical survey, and location of the archaeological sites. Modified after M. Sauvage/FAMCO 2025 (left). Geophysical field methods GPR (top) and Fluxgate Geomagnetics (bottom right).

To the west of Bisya, the Early Bronze Age (EBA) monumental building of Salut ST-2 (so- called 'tower') was selected for instrument calibration because of the presence of already excavated and dated ditches. The building consists of an outer stone wall roughly 2.5–3.5 m wide, enclosing a mudbrick wall and a central well. To the exterior, the building is surrounded by two concentric ditches and a well. Two profiles were measured: P1, aligned north–south in a former excavation trench outside the building, and P2, west-east across the building. Despite partial backfilling, uneven terrain, and vegetation, anomalies corresponding to a well and ditches outside the building were identified, as well as a strong magnetic anomaly inside the building, confirming the presence of a central water well (Fig.2). These results show the successful calibration of the instruments and demonstrated the suitability of both methods for detecting subtle subsurface features.

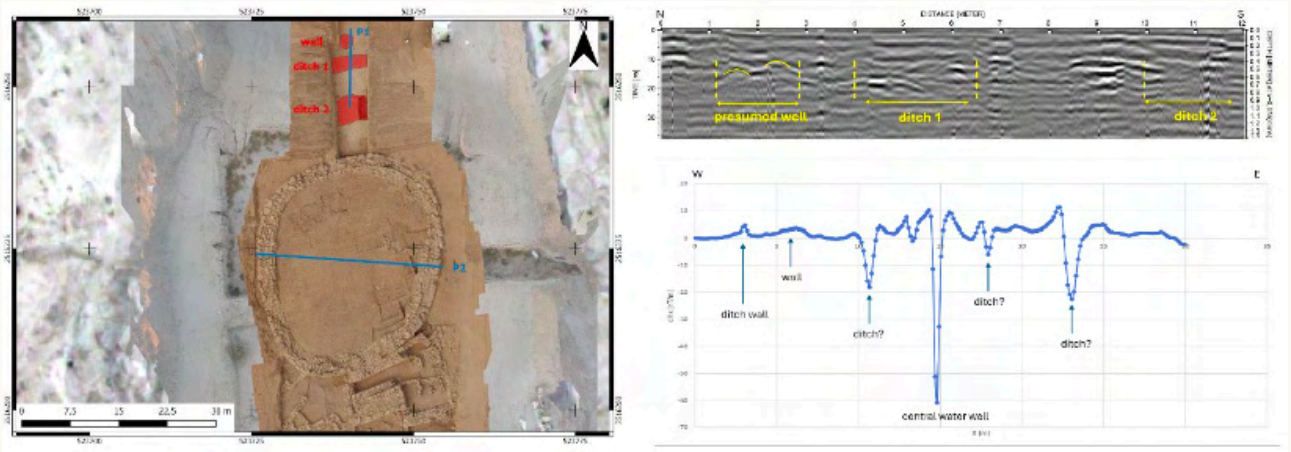


Figure 2: EBA building ST2 with outer elliptical ditches, enclosed wall structures and the former excavation trench to the north (left). GPR result P1 showing a presumed well and two ditch structures (upper right) and magnetic result of P2 indicating the central water well as strong magnetic anomaly corresponding to its backfill (bottom right).

Al Dhabi area

Located on the eastern part of Bisya, Al Dhabi is an archaeological complex offering substantial evidence for EBA settlement. Our geophysical surveys focused on two elements: an oval-shaped structure located in the alluvial plain (AD5) and a likely "natural" accumulation, where palaoesols were already identified via a test sounding. AD5 is an oval-shaped structure located on the Holocene fluvial terrace, which was initially identified by satellite images (Google Earth) and orthophotos. On the flat surface, only a darker ring could be seen and no built structure was identifiable. The magnetic results show a clear anomaly with gradients exceeding 700 nT/m delineating the structure against surrounding silty deposits (Fig.3). The anomaly is also evident in 2D GPR profiles, where the structure appears as a reflection of increased amplitude. Test excavations realized by the FAMCO team revealed a ditch structure dug into cemented alluvial deposits (calcrete), later backfilled with silty-clay material. The reference soil profile that was excavated near AD2, is unaffected by wadi floods and provided data on undisturbed soils and paleosols. It served as calibration for GPR velocity calculations.

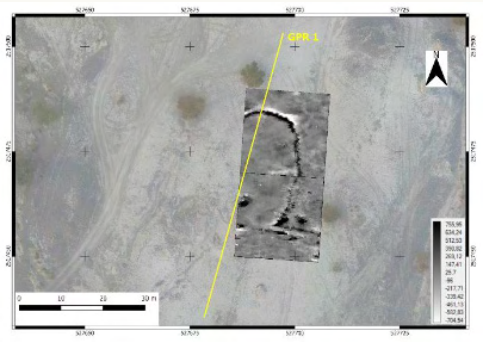






Figure 3 :Al Dhabi 5 3D geomagnetic survey showing an oval structure due to the high contrast between the dug ditch filled with brown-orange clay/silt material and the surrounding floodplain material (left). Field measurements (right).

Fell area

On the south-east part of Bisya, at Fell 2, geomagnetic surveys were conducted in a sector where an extended network of potential irrigation channels and ditches were identified via satellite imaging. The results obtained by geomagnetic surveys provide a robust confirmation of the presence of a circular structure, shaped as a double concentric ring anomaly, as well as a square structure (Fig. 4). The resolution of the latter was lower due to limited contrast with surrounding sediments. Test soundings were conducted by FAMCO after the geomagnetic survey to provide direct archaeological evidence, revealing a network of interconnected channels cut into calcrete. The 3D GPR survey enabled us to detect a channel traceable from approximately 0.8 m to 1.6 m depth. These findings underscore the value of integrating a back-and-forth procedure that combines geophysics data with archaeological soundings to reconstruct efficiently site layouts.

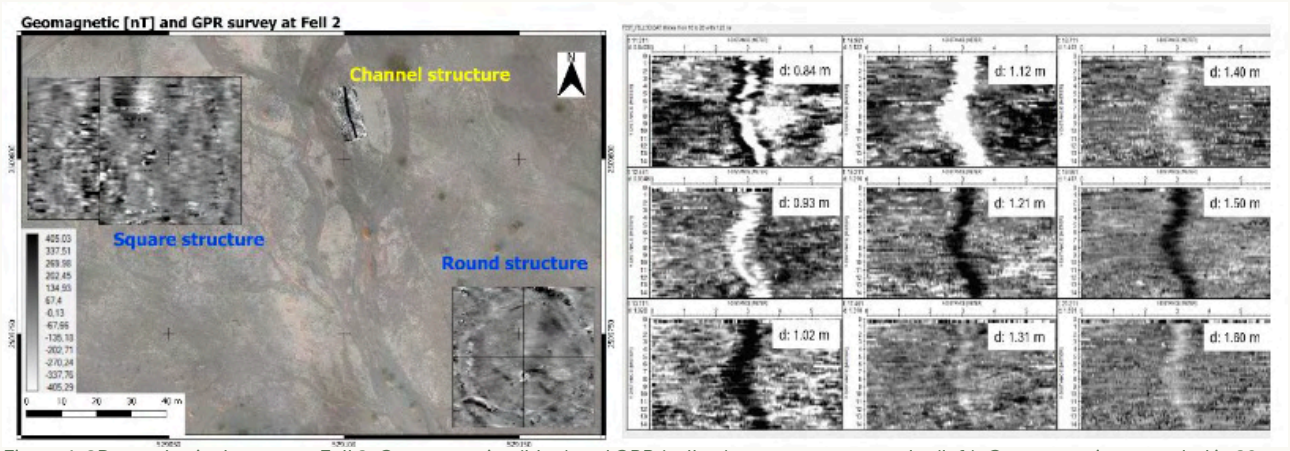


Figure 4: 3D-geophysical survey at Fell 2. Geomagnetics (blue) and GPR (yellow) measurement results (left). Geomagnetics recorded in 20 x 20 m grids. Detailed GPR results of the channel structure at multiple depth (right).

Falaj system

Aflaj systems are central to understanding long-term water management in drylands. Falaj daudi underground galleries, dug out with a slight slope (on average about 2%), that tap groundwater from an aquifer (rocky or alluvial) and channel the water flow to the surface, sometimes several kilometres away from the point of capture. These systems are characterized by closely spaced access wells (shafts) along the underground channel. One shaft was examined with the gradiometer, which resolved the structure of the excavated access well but due to the shallow penetration depth of the gradiometer, no information on the deeper falaj channel could be obtained. However, GPR achieved greater depth and made it possible to identify the presumed cavity of the channel, visible as reflection hyperbolas and tilted sedimentary layers. Resolution was reduced by the attenuating properties of silty floodplain deposits, indicating that methods such as electrical resistivity tomography are more suitable for deeper imaging in this area.

Conclusion

The results of these initial investigations demonstrate that geophysical methods are effective in detecting both hypothesized and previously documented hydraulic structures within the archaeological context of Bisya. In combination with archaeological data, they yield a better understanding of water management in this region during protohistoric periods. The archaeogeophysical approach developed here provides a transferable methodological framework applicable to other sites in Oman. In conjunction with remote sensing and complementary geophysical techniques, the analysis of hydraulic structures establishes a robust basis for advancing the study of ancient water management in Bisya.

From Funerary Evidence to Cultural Identity : KR-N1 Necropolis in Khor Rori (Dhofar, Sultanate of Oman)

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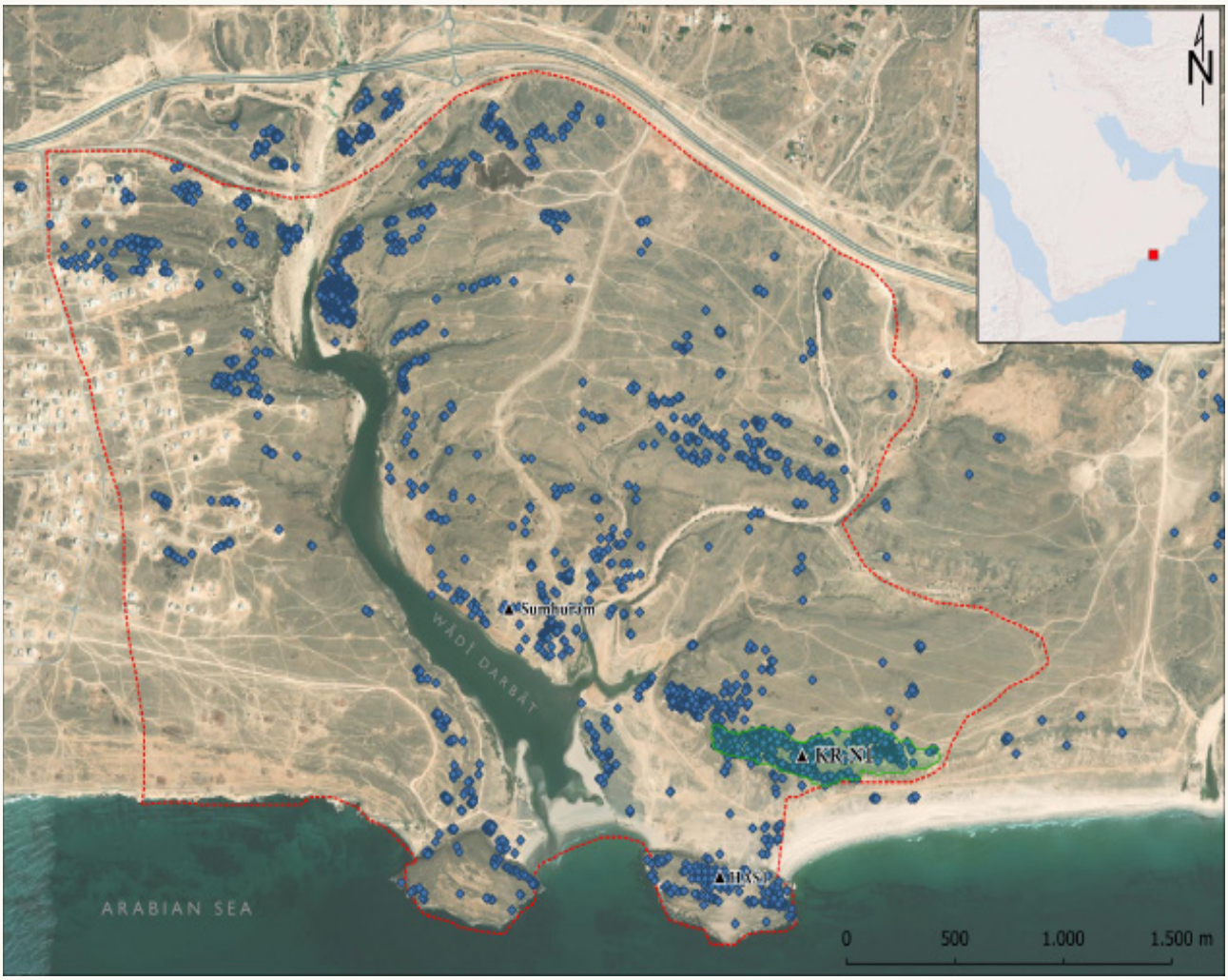


Fig. 1. Map of the Khor Rori area. The inset (top left) shows its location within the Arabian Peninsula. The red dashed line marks the UNESCO-protected boundary, while blue diamonds indicate sites identified by the DHOMIAP Project. Major sites are highlighted, including the KR-N1 necropolis, whose extent is shaded in green.

Just half a kilometre from the windswept headland of Inqitat, and within sight of the ancient South Arabian outpost of Sumhūram, lies the Iron Age necropolis of KR-N1, one of Dhofar's most unique archaeological sites (Lischi and Vangeli 2022, Brandolini et al. 2020). Covering 23 hectares, the necropolis comprises around 700 funerary monuments, including single and multiple dolmenic cists, stone cairns, and multiple graves. Together, these structures testify to a sophisticated mortuary tradition that spanned the entire Iron Age.

Over recent seasons, systematic excavations and bioanthropological analyses have begun to unlock the stories concealed within these megalithic tombs. For the first time, it has become possible to outline the funerary structures and rituals of the Dhofar Coastal Culture (Lischi 2019, 2023), the original inhabitants of the area from the early first

millennium BC, a community of semi-nomadic coastal dwellers whose lifeways, health, and mobility are now being reconstructed step by step.

The most common structures in KR-N1 are the so-called dolmenic cists, constructed with upright megaliths and capped with heavy stone slabs. The scale of these structures demonstrates significant investment in labour and funerary space, as their construction would have required the coordinated efforts of several individuals at multiple stages. Excavations have revealed human remains in various states of preservation, alongside rare but significant artefacts such as copper/bronze fish-hooks, marine shells, and chipped stone tools.

Osteoarchaeological studies have already provided important insights. In one grave, the remains of three individuals were identified. One skull displays a circular fracture, possibly inflicted by an axe, raising questions about violence, conflict, or ritualised practices. Evidence of infection, together with evidence of nutritional stress visible in the teeth, point to the health challenges and dietary constraints of life in a marginal yet resourceful coastal environment. The deliberate clustering of skulls within certain tombs, often separated from the rest of the skeletons, suggests the existence of complex rituals involving multiple stages performed over a prolonged period of time. These practices offer valuable insights into the symbolic world of a community that harmonised maritime livelihood with pastoral mobility between the coast and the mountains of Dhofar.

Mobility and identity

The Dhofar Coastal Culture did not emerge in isolation, but as a population deeply rooted in the surrounding environment and embedded in the wider socio-cultural fabric of Dhofar (Lischi 2019, 2023). Over the last decade, research has increasingly moved away from the earlier model that regarded the region merely as a periphery of the South Arabian kingdoms. Evidence now permits us to reconstruct, from at least the Early Iron Age onwards, a more complex palimpsest of various human groups that populated the region. While closely adapted to specific environmental niches, these groups, tentatively called the Dhofar Coastal and Inland Cultures, were also deeply interconnected and shared areas of passage and interaction. Understanding these local cultures is fundamental to the history of Dhofar and beyond, completing and balancing the role of the South Arabians, who eventually inserted themselves as an additional cultural force through the foundation of outposts such as Sumhūram, ʔanūn, and Andhūr.

In addition to uncovering the ritualistic aspects, the purpose of our research, supported recently by a small research grant from the International Association for the Study of Arabia, is precisely to understand how the Dhofar Coastal Culture interacted with its environment and, crucially, to determine the characteristics of their mobility. KR-N1, in fact, demonstrates the long-term presence of communities that forged a distinctive cultural identity rooted in mobility, adaptability, and complementary knowledge of pastoralism and maritime activities.



Fig. 2. PhD student Vittoria Bianchi, recipient of the IASA Small Research Grant, conducting isotope analyses in the laboratory.

A protected legacy for the future

The KR-N1 necropolis at Khor Rori is a fragile archaeological landscape that has been safeguarded thanks to the foresight of the Ministry of Heritage and Tourism of Oman. By including the site within the UNESCO World Heritage framework in 2000, the Ministry ensured its full

preservation for generations to come. This decisive act of protection has enabled the DHOMIAP Project to investigate the site using the most advanced methods, and it will continue to provide unparalleled opportunities for future study.

What is now emerging is not only the story of the tombs themselves, but also the human dimension of the people who built them and were buried inside. Through the integrated efforts of archaeology and bioanthropology, we are beginning to reconstruct in detail who these individuals were, their lifestyle, their health, their mobility, and their struggles. For the present-day inhabitants of Dhofar, these findings provide a more precise and intimate picture of their ancestors, strengthening cultural identity and forging a tangible link across the millennia.



Fig 3 (Right) One of the best-preserved dolmenic cists prior to archaeological investigation, with the Inqitat promontory visible in the background.

A conservation and valorisation plan for Wādī Banī Khālid

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Introduction

Since 2019, the University of Naples L'Orientale project at Wādī Banī Khālid is conducting archaeological research under the patronage of the Italian Ministry of Foreign Affairs and International Cooperation and the Oman Ministry of Heritage and Tourism (MHT).



Fig. 1. Aerial view of WBK1, from the east (©University of Naples L'Orientale)

Conservation and fruition strategies at WBK1

WBK1 is a key site of the Iron Age landscape of Wādī Banī Khālid. The fortified settlement covers an area of ca. 200 x 100m. Its fortification, made of large wadi pebbles, is well preserved along most of the perimeter, reaching up to 2m high. Marked by 11 towers, the walls protect a dense arrangement of dwellings, mostly preserved in their foundation courses.

Consolidation of excavated structures

Twelve structures were excavated during field seasons 2019-2024 (towers and dwellings). All of them share similar features: wadi pebbles walls and usage of compacted mud as pavements. Thus, the first conservation strategies addressed the protection of the foundation walls (through the construction of adjoining retaining walls) and the mud floor. For the latter, a strategy already used elsewhere (Dūmat al-Jandal, Saudi Arabia) was adopted. A mixture of gum arabic (10%) and water was applied in three different cycles in order to obtain a natural consolidation of the mud: since mud is permeable to water, the gum arabic has been absorbed by the floors. A first test was conducted in 2022 and it demonstrates that still in 2024 the floor presents at least one centimetre of compacted soil where the gum arabic is still in situ.



Fig. 2 The result of the 2022 test in 2024. Up, consolidated floor; down, unexcavated floor (©University of Naples L'Orientale)

The access to the site

Following successful floor conservation, since 2023 the project team have been working on designing safe access which would allow visitors to reach the site. Located on a high natural hill characterised by a sliding surface covered by loose materials, a staircase was created along the north-western corner of the fortifications. This was constructed with local materials – large wadi pebbles, with an infill of small stones – and designed to follow the natural slope. Once the staircase reaches the fortification walls, it connects directly with the inner pathways.



Fig. 3. The access staircase, view from the west (©University of Naples L'Orientale)

Visitor pathways

Based on the need to guide the visitor towards both the excavation areas (where the buildings' architecture can be appreciated) and the most outstanding viewpoints of Wādī Banī Khālid, the pathways run towards the inner area of WBK1 and, side by side, along the inner side of the fortification walls. Once again, the pathways were created with local materials: two rows of small wadi pebbles are used to define a safe corridor. The stones are laid on the surface of the site, in order to not modify any plausible archaeological level (although the surface of the site is mainly characterised by a thin layer of compacted windblown sand and loose, small, fragmented stones sealing the archaeological layers).



Fig. 4. The building of the visitor pathways following the wall's perimeter (©University of Naples L'Orientale)



Fig. 6: The avatar inside WBK1 is looking at the Digital Museum (©University of Naples L'Orientale)

A digital valorisation for Wādī Banī Khālid

In accordance with the MHT, the establishment of a local museum (antiquarium) is currently under consideration. In parallel, a digital strategy for heritage valorisation has been defined, which encompasses the creation of a dedicated website and, more significantly, a digital museum including both the WBK1 site and the physical museum.

The Digital Museum as a Gaming Platform

The virtual museum is an interactive environment where 3D-modelled objects, panels and pictures are displayed. The source data were processed through photogrammetry to generate high-resolution polygonal models. The workflow employed Blender in the initial modelling phase and Unreal Engine for advanced rendering and visual refinement. The adoption of Digital Elevation Models (DEM) enabled the integration of field-collected topographic data into the digital environment, ensuring a realistic reconstruction of the landscape. Dynamic lighting, atmospheric variations, and environmental simulations further enhanced the reconstruction, achieving a degree of fidelity and immersion that echoes the original natural setting of the archaeological site.

Artefacts of various kinds have been placed in the virtual environment where visitors can actively interact with them: enlarging them, rotating them 360° and accessing technical and descriptive data sheets, which include contextual and analytical information about the archaeological finds. This interactive mode of access allows the artefacts to be embedded within a narrative structure, where exploration follows the logic of storytelling and gamification, making the learning process both memorable and playful.

This workflow also supports interactive functions such as stand-point visual navigation, simulating the physical exploration of the site. The gaming platform was therefore conceived as both educational and entertaining, enabling players to explore the virtual reconstruction of the WBK1 site, the museum, and its surrounding landscape. Through an avatar, players navigate a sequence of stages structured around narrative gameplay.

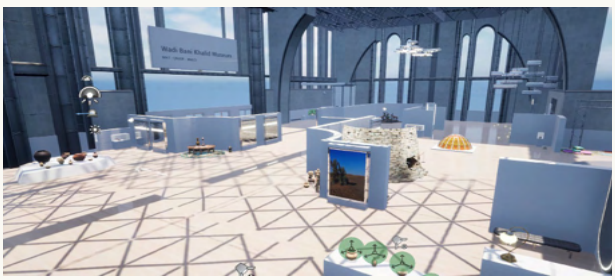


Fig. 7: A scene inside the Digital Museum in standpoint visual navigation

Acknowledgments
We would like to express our thanks to the Italian Ministry of Foreign Affairs and International Cooperation for supporting the project as well as to all the Colleagues of the Ministry of Heritage and Tourism. We are particularly grateful to the people of Wādī Banī Khālid, especially to our friend Mohammad al-Nadhiri.

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The second excavation season to Shokur: a multi-period fortified settlement between desert and mountains

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Fig. 1: General view of the excavation area from the south

The Shokur settlement is located on the western slopes of the Jebel Al Abyad Mountain range, on the wide plain of Wadi Dhank south of the village of Dhank. The mound is located on the edge of an alluvial area and extends over a low terrace of natural origin.

As can be clearly seen from aerial photographs and a survey of the settlement area, it is a village surrounded by three walls, the outermost of which appears to be a boundary wall, possibly connected to a drainage system and protection against flooding and overflowing wadis. The other two appear to be large, terraced walls in what must have been the highest central area of the settlement.

The exploratory trench set up in the south-eastern sector of the settlement was initially 40 metres long and 20 metres wide. However, the considerable amount of ceramic material recovered led us to reduce its width to 10 metres. Only close to the outermost fortification wall did we continue digging for 20 metres. The trench, called Trench A, was divided into three excavation sectors, 1, 2, and 3, corresponding to the three wall circuits and the terraces they delimited. Sector 3 includes the outermost fortification wall, which was built in two phases, the first about one and a half metres wide and supported by a second wall two and a half metres wide with a total thickness of four metres. This wall is made of large wadi boulders, in some cases held together with mortar. The foundation is composed of much stronger stones. Its height reaches one and a half metres, and its function may have been related to protection from natural events such as wadi overflow or flooding in the area.

This outer wall surrounds the entire settlement and appears to connect to the second wall to the north. In any case, it refers to the subsequent expansion of the settlement. The rooms near the outer wall are clearly identifiable in their configuration because they are better protected from flooding and therefore have better preserved perimeter walls. We can count at least three of them arranged in an east/west direction, very close to each other and separated from the boundary wall by a sort of corridor.

Sector 2 is characterised by a steep slope due to the terraces located below the tallest tower. At least two large walls have been identified, built to terrace the lower areas by creating mud brick floors. The three terraced walls are parallel to the tower and at a modular distance from each other from north to south. Very narrow spaces have also been identified between the terraces, probably dating from a later period and consisting of mud brick walls alternating with stones. Sector 1 includes the tower wall, which is thought to be the original core of the settlement, whose foundations may date back to the middle of the third millennium, as evidenced by some painted fragments. Most of the archaeological finds unearthed during the excavation are fragments of pottery and stone tools, as mentioned at the beginning. As for the thousands of pottery fragments, we can say that almost all of them belong to the typical phases of the early Iron Age, in particular the Iron Age II, although we can recognise a significant presence of material referring to the late Iron Age.



Fig. 2: The tower of the Shokur settlement under excavation

The excavation activities of the second research season focused on the area already investigated last year, which was labelled ‘Area A’. This was extended by 10 metres by 6 metres to the east in the southern and northern portions, corresponding to sectors III and II. In Sector III, the focus of the investigation was on improving our understanding of the interior spaces and their architectural features, with the aim of interpreting their functions. At the same time, in Sector II, the primary objective involved excavating the tower, which was the original core of the settlement and has now been exposed for 20 metres.

Preliminary work in Sector II included the removal of a massive clay collapse exposed last year, corresponding to the tower’s mudbrick elevation, which was installed on a stone structure. Subsequently, in the northeastern section of Sector II, Area A was extended by 10 x 6 meters. As expected, the excavation here also revealed a massive collapse of mudbrick and stone, particularly concentrated in the eastern portion.

This is the part where the tower is at its lowest point, while its maximum height is preserved in the centre, consisting of six rows of stones excavated so far, approximately 1.60 meters high. The removal of both the clay and stone collapses exposed an incredibly well-preserved trampled floor made of mudbrick, which is still perfectly recognizable in some places. This brickwork runs

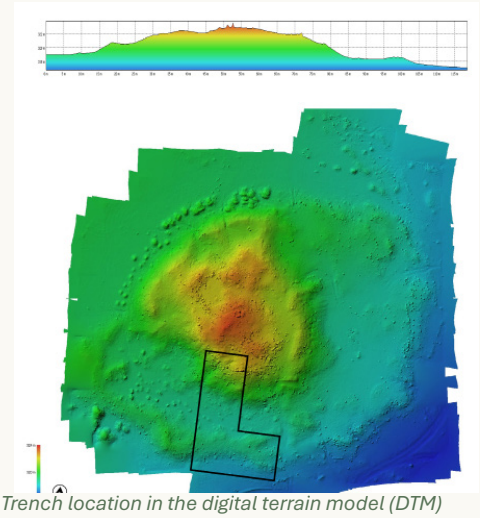


Fig. 3: Trench location in the digital terrain model (DTM)

around the tower in a circular pattern, interspersed with six pits, each 30 to 40 cm wide and containing charcoal residues, with only one measuring approximately 15 cm in diameter. The tower's antiquity and occupation are confirmed both architecturally by the presence of several squared stone blocks typical of the Umm an-Nar phase, and by the large quantity of ceramic fragments attributable to the full Wadi Suq phase, characterized by black-painted geometric decorations. The spaces enclosed by the large external walls were used for production and storage. This use is reflected in the enormous quantity of stone tools found (primarily anvils and millstones), as well as large ceramic fragments belonging to large jars used for food preservation.



Fig: 4: Some examples of Wadi Suq pottery from the Sector II

Early Bronze Age Landscapes and Land Use: new research by the Bat Archaeological Project

Jennifer Swerida & Robert Bryant

The Bat Archaeological Project (BAP) is beginning a new phase of research that looks beyond the boundaries of individual sites to investigate how Bronze Age communities interacted with the full range of landscapes surrounding the UNESCO World Heritage Site of Bat in northwestern Oman (Figure 1, next page). Supported by the Beatrice de Cardi Award from the Society of Antiquaries of London, this project seeks to understand how Early Bronze Age (EBA; ca. 3200-2000 BCE) groups used oases, basins, and piedmont zones together as part of broader strategies of settlement, mobility, and agropastoralism.

Oases have long stood at the center of narratives about emerging complexity in southeast Arabia (Figure 2 below). During the Hafit (3200-2700 BCE) and Umm an-Nar (2700-2000 BCE) periods, people in this region tapped groundwater and cultivated date palms to create lush ecological niches that supported agriculture, settlement, craft production, and regional exchange. The importance of oasis environments to developing sedentary lifeways and new forms of social organization is an important and ongoing subject of study (e.g., Beuzen-Waller et al. 2018; Jean et al. 2023; Schmidt et al. 2025).

Yet recent work shows that oases were only one component of a diverse land use system. Excavations by BAP at Rakhat al-Madrh, a basin 7.5 km upstream from Bat and adjacent to the

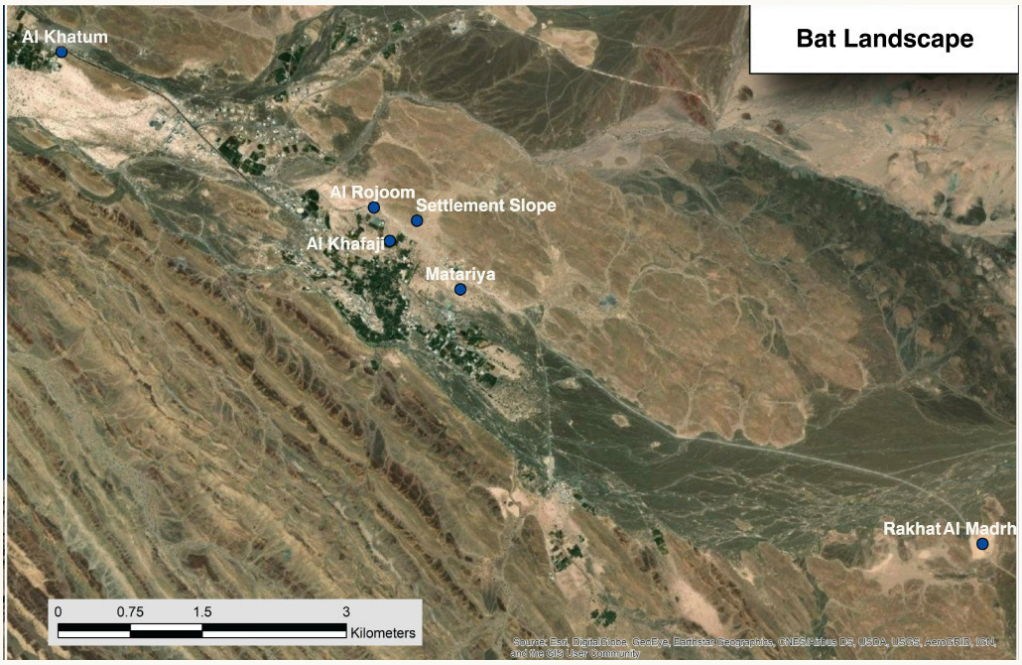


Fig 1: Map of the Bat landscape indicating the locations of sites in the Bat oasis and its close surroundings.

Wadi al-Hijr (see Figure 1), revealed that EBA groups also invested in landscapes disconnected from groundwater reserves (Figure 3). Rakhat al-Madrh collects and retains water following rainfall or flood events, creating a temporary wetland environment (Figure 4). Excavations in and beneath four Umm an-Nar period structures indicate that the site supported agropastoralism and opportunistic barley, wheat, and date palm cultivation (Swerida et al. 2024; 2025). These findings demonstrate that seasonal basins could serve as productive settings for temporary settlement and subsistence alongside more permanent oasis zones.

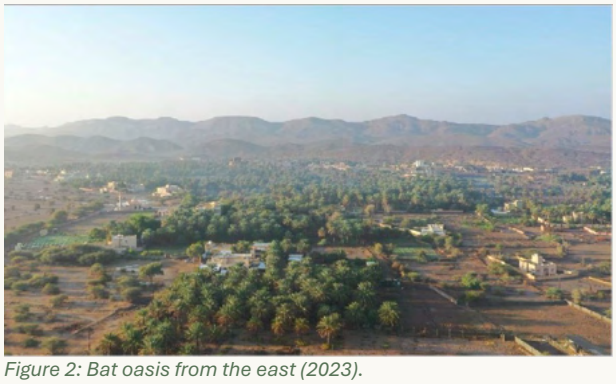


Figure 2: Bat oasis from the east (2023).

This discovery has prompted a new line of investigation: how did EBA groups balance their use of oases and other landforms across the arid Bat region? Were Rakhat al-Madrh and other sites like it seasonal stations, extensions of oasis-based communities, or independent loci of activity? And how did mobility, seasonal rhythms, and human-non/human interactions transform these spaces into cultural landscapes?

The new BAP research will address these questions through regional survey and multi-proxy analysis of the Wadi al-Hijr and its surroundings. Building directly on results from Rakhat al-Madrh, the project will integrate new sites and landscapes into the regional settlement pattern. By comparing oasis and more environmentally ephemeral sites within a single research framework, BAP will evaluate their respective roles in supporting EBA communities.

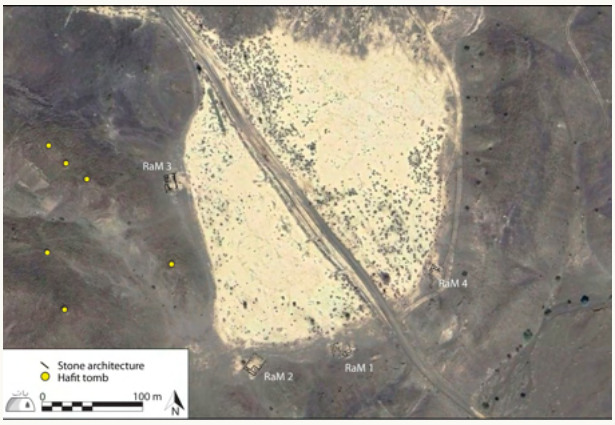


Figure 3: Map of the Rakhat al-Madrh basin indicating the location of archaeological features.

Three themes guide this research. First, the project will clarify how ephemeral sites like basins fit into the wider settlement system of the Bat region.

Second, it will explore the role of mobility and seasonality in structuring activity across different ecological zones. Finally, it will investigate human-non/human relationships, showing how EBA groups managed water, soils, plants, and animals to create sustainable niches in an arid landscape.

This work has implications that extend across southeast Arabia. Paleoclimate proxies suggest that during the EBA, stable and locally favorable conditions coincided with population growth and new settlement strategies. While oases likely anchored this process, sites like Rakhat al-Madrh demonstrate that people also drew on ephemeral wetlands and other marginal zones. By situating these overlooked settings within the wider history of settlement in the Hajar piedmont, BAP will offer a more nuanced picture of human resilience, adaptation, and innovation in one of Oman's most significant archaeological landscapes.

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Fig. 4: Rakhat al-Madrh basin following a flood (2022).

Qatar

Comparative Analysis of Late Islamic Ceramics from Qatar: Toward a Unified Typology and Terminology

Agnieszka Magdalena Bystroń (Qatar Museums Authority)

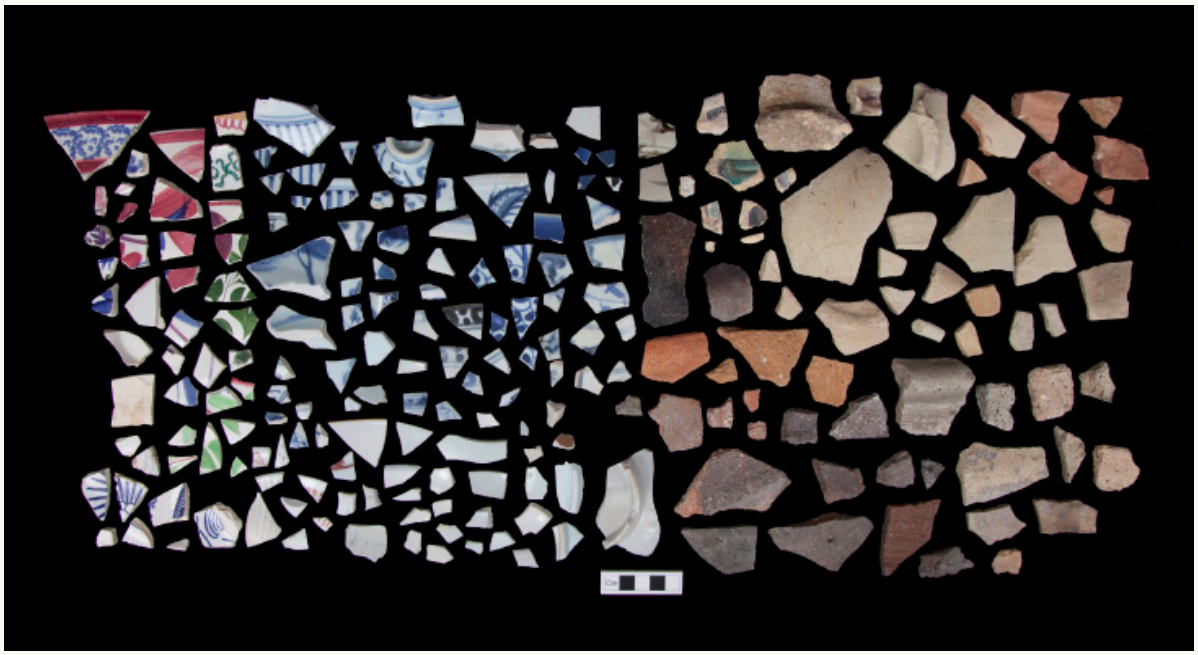


Fig. 1: Example of ceramic recovered from the late phase of the town's occupation at Al Zubarah, Qatar, (QIAH)

The study focuses on the comparative analysis of Late Islamic ceramic assemblages recovered through archaeological excavations and surface collections across the Qatar Peninsula. Drawing on data from ten published archaeological sites—Al Huwailah, Al Khor, Al Zubarah, Doha, Fuwairit, Fraiha, Ras Abaruk, Rubayga, Ruwaida, and Zekrit—the research highlights significant variation in the depth and scope of ceramic analysis, ranging from preliminary reports to advanced specialist studies.

Over the past decades, these assemblages have been recorded by various archaeological missions and ceramic specialists, resulting in a heterogeneous body of data that differs in classification systems, terminology, and analytical approaches. When considered collectively, the material represents a substantial corpus of Late Islamic ceramics, with strong potential for comparative study alongside regional assemblages from the broader Gulf and Arabian Peninsula. However, persistent research questions remain unresolved for various reasons, e.g., the lack of a unified typological and terminological framework.

Addressing this gap, the primary aim of the study is twofold: first, to undertake a comparative typological analysis of the ceramic wares and reference collections from Qatari sites; second, to work toward a standardized system of classification and terminology, initially for Qatar and ultimately for the wider Gulf region.

A further objective for 2024-2025 involves the analysis and publication of previously unstudied ceramic material from Al Zubarah, specifically focusing on the site's decline and eventual abandonment, encompassing Phases 4 through 1.

Excavations at Ain Mohammed North and Mesaika A

Robert Carter (Qatar Museums Authority)



Fig. 1 Decorated bone spindle whorls from Mesaika A.

A third season of excavations took place in February-March 2025 at two Abbasid period sites in north Qatar, Ain Mohammed North B and Mesaika A, jointly funded by the Qatar Research, Development and Innovation Council (QRDI) and Qatar Museums. Excavations had taken place there previously in 2022 and 2023. These two were chosen for excavation from more than 30 sites that can be broadly dated to the 7th-9th centuries CE in Qatar, most of which are concentrated in the north of the peninsula. Before excavation, the disposition of collapsed remains indicated that both contained complex agglomerations of architecture, unlike the majority of contemporary sites in Qatar, which consisted of dispersed scatters and alignments of small buildings. The excavations revealed that neither site was a typical settlement, and that both contained highly regular planned architecture, with repeated room units and installations (platforms and basins with carefully made drainage channels leading to external sumps), and attached courtyards. The working hypothesis is that these were purpose-build manufacturing centres, probably for the production of textiles, which are associated with Qatar in the Early Islamic historical texts. Weaving tools found at the sites include spindle whorls and copper alloy rods that may be spindles, while the basins may have been used for soaking and rinsing fleeces, yarn or fabric. The outflow sumps were filled with a greyish mineral-rich deposit, perhaps ashes or salts used for washing wool, or mordants used in dyeing yarn. These sediments will be analyzed. The other material culture of the two sites mostly consists of ceramics from southern Iraq, the Iranian coast and perhaps the northern Oman Peninsula, and abundant fragmentary glass, mainly small bottles. The ceramics date both sites to the late 8th and/or early 9th centuries CE.



Fig. 2 Plan of Ain Mohammed North B, Phase 2 (grey) and Phase 3 (black).

Hazm Meshash Fahad Cemetery excavation

Ferhan Sakal (Qatar Museums Authority)



Fragments of a painted Ubaid bowl from Hazm Meshash Fahad cemetery

Hazm Meshash Fahad (Heritage Area 419), located near Qatar's western coast between Ras Abrouq and Al Zubarah, is a newly discovered Neolithic cemetery containing over 30 burial cairns. The site was first recorded in 2011 and has been systematically excavated since early 2025 by the Archaeology Department of Qatar Museums Authority. The preliminary results show that the site features two burial types: larger circular cairns and smaller oval cairns.

The circular cairns, most of which were plundered, yielded artifacts such as fragments of a painted Ubaid bowl, linking the site to southern Mesopotamia during the 6th to 5th millennium BCE, as well as conus shell beads. The oval cairns, which were undisturbed but not well preserved, contained contracted burials along with adornments like beads made of shell and soft stone.

This site reveals complex mortuary practices and promises new insights into Qatar's prehistoric societies. The excavation is part of Qatar Museums Authority's collaboration with Sidra Medicine. This multidisciplinary project, funded by the Qatar National Research Fund (ARG Grant No. ARG01-0508-230094), involves experts from Qatar Museums, Sidra Medicine, Tor Vergata University of Rome (Italy), CNR Italy, Sapienza University of Rome (Italy), Middle East Technical University (Turkey), and the University of Pau and the Adour Region (France). It combines archaeological, morphological, and molecular analyses to deepen our understanding of prehistoric Qatari societies from the Neolithic to the Late Pre-Islamic period.

Saudi Arabia

Archaeological mission of Thaj : The Funerary Project

Dr Marie Laguardia
Postdoctoral Fellow within the Jaussen & Savignac programme
UMR 7041 ArScAn-OrAM

The Archaeological Mission of Thaj focuses on the largest known pre-Islamic settlement in north-eastern Arabia. Located at the crossroads of important trans-Arabian caravan routes, Thaj was a major trading hub connecting the Indus Valley, Mesopotamia, South Arabia and the Mediterranean from the Hellenistic period to Late Antiquity (4th/3rd century BCE- 3rd/4th century CE). The site consists of a large, fortified city covering c. 40 hectares, suburbs outside the city walls and a vast necropolis of more than 1000 tumuli (Fig. 1). Known since the early 20th century, the site had only been explored and excavated to a limited extent before the establishment of the Thaj



Figure 1. Aerial photograph of the southern necropolis © Archaeological Mission of Thaj, 2024.

Archaeological Mission in 2015, led by the CNRS, Leiden University (Netherlands) and the Saudi Commission for Tourism and National Heritage (SCTH). The mission, co-directed by Jérôme Rohmer (UMR 8167 Orient et Méditerranée) and Ibrahim al-Mshabi (Saudi Heritage Commission), was the first large-scale study programme of the site. It took place over five excavation campaigns (2016-2019) and four seasons of specialized study and survey (2018-2020, 2022), which led to major advances in understanding the site and its environment. As part of the mission, an intensive study of the necropolis was carried out, resulting in a PhD thesis written by the author, titled Funerary Practices in Northeastern Arabia: the Necropolis of Thaj from the Iron Age to late Antiquity (Panthéon-Sorbonne University). The thesis enabled the identification of six major phases in the necropolis, unevenly represented but attesting to the long period of use of the site.

Since 2024, a new ambitious project was launched to extend the study of the Thaj necropolis. The Thaj Funerary Project is led by the Saudi Ministry of Culture (Heritage Commission) and the 'OrAM' research team of the ArScAn laboratory (CNRS, UMR 7041), along with the support of the French Ministry of Europe and Foreign Affairs (MEAE), the French Embassy in Saudi Arabia, and the French Research Centre for the Arabian Peninsula in Kuwait (CEFREPA). This agreement marks the beginning of five more years of Saudi-French fruitful collaboration at the Thaj site (Fig. 2).



Figure 2. The co-directors of the Archaeological Mission of Thaj, Norah Al-Qahtani and Marie Laguardia © Archaeological Mission of Thaj, 2024.]

The project aims to provide a comprehensive understanding of the long necropolis occupation by considering the evolution of the funerary practices, characterizing the health and lifestyle of the individuals and defining the society and culture of the population. A multidisciplinary and collaborative approach is adopted, focused on the

excavation of tumulus tombs, regional surveys and specialized studies such as the analysis of human bones, pottery, botanical and faunal remains.



Figure 3. Tumuli excavated during the 2024 campaign ©Archaeological Mission of Thaj, 2024.

An initial excavation campaign was carried out during autumn 2024 under the co-direction of Marie Laguardia (UMR 7041 ArScAn-OrAM/Jaussen & Savignac programme) and Norah Al-Qahtani (Saudi Heritage Commission). The team, which includes French and Saudi archaeologists, worked closely together on three excavation areas (Fig. 3). The overall objective of the campaign was to target a group of tombs in close proximity to one another in order to understand their construction techniques and spatial organization within the necropolis. Three tombs were chosen at the southernmost edge of the necropolis, providing an insight into the architectural diversity of these structures. The tumuli can be characterized as either small, low mounds (Fig. 4) or monumental mounds nearly 5 m high (Fig. 3). Several phases of construction have been observed illustrating the intention to reuse and preserve the tombs over time. The link maintained between the living population and their dead is also evident in the many pottery deposits unearthed at different tumulus levels, often associated with botanical and faunal remains.

As tombs provide a promising archaeological context for reconstructing and better understanding the way of life of past populations, surveys were conducted around Thaj to identify other potential burials. This data will be analyzed with GIS software to create a regional map showing the location of archaeological remains.



Figure 4. Excavation of tumulus no. 789 conducted by the Saudi-French team © Archaeological Mission of Thaj, 2024.

The work begun in the Thaj necropolis is now adding to our knowledge of the funerary context in northeastern Arabia during Antiquity. The new data collected adds to the existing corpus and provides a better understanding of the interaction between the living and the dead during centuries of occupation. By applying a multiscalar approach, from bones to the necropolis, the funerary data make it possible to examine the social organization and cultural identity of the Thaj population and, on a broader context, to study the conditions of development and settlement in northeastern Arabia from the Iron Age to Late Antiquity.

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UAE
Abu Dhabi

متحف التاريخ الطبيعي أبوظبي
Natural History Museum
Abu Dhabi

The Natural History Museum Abu Dhabi (NHMAD) is dedicated to charting a sustainable path toward the future while becoming a leading resource for understanding the natural history of the Arabian Peninsula within a global context.

Most museums want visitors to take time over exhibits but very few offer a journey that begins at the point when time itself began. The exhibits and collections of the Natural History Museum Abu Dhabi span 13.8 billion years, from the Big Bang to the environmental challenges that we face today.

The museum draws its strength from a talented team and a rapidly growing collection, which is further enriched through international collaborations and technological innovation. Research, education, and public engagement form the core of the museum's work, inspiring both staff and visitors through the creative exploration of natural history. NHMAD also seeks to foster scientific literacy and inspire future generations to connect with the natural world. Located within the dynamic Saadiyat Cultural District, the museum's core values of connecting cultures and inspiring creative discovery will engage audiences and spark journeys of exploration into the natural world.



Mark Beech







The York Archaeological Excavations in the Hili Archaeological Park: Season 2

Colleen Morgan (University of York), Ali Abdu Rahman Al Meqbali (Department of Culture and Tourism, Abu Dhabi), Daniel Eddisford (Durham University)



The University of York and the Department for Culture and Tourism Abu Dhabi (DCT) collaborative project at Hili Archaeological Park returned for a very successful second season in January – February 2024. The research focused on two areas: Hili-16 and Hili-3.

The most substantial work was the re-excavation and detailed recording of Hili-16, a site previously investigated in 1988/89 but left poorly understood. The Season 2 team successfully clarified the complex stratification and architecture, identifying three major phases of occupation. Excavations beneath the main mudbrick building revealed the remains of an Early Bronze Age occupation. This included cut features, unexcavated surfaces left in situ, and the traces of post-built structures, suggesting simple structures predated the more substantial mudbrick structure. The material from this phase was characterised by fragmented mudbrick, groundstone, and domestic pottery, indicating intense activity before the main construction.

The core achievement of Season 2 was the complete exposure and mapping of a substantial Early Bronze Age mudbrick structure. While the 1988/89 work had only exposed three poorly defined walls, the current project located and recorded 12 additional walls, revealing the full extent of the building. These walls enclosed at least eight rooms. The team investigated the construction sequence, and it was determined that the entire building was constructed in a single, phase. The walls of the building were constructed in shallow foundation cuts, then thick mudbrick packing (approximately 0.30 meters deep) was deposited within the rooms, which was then sealed by carefully placed paving stones. Overlying the collapsed and abandoned Bronze Age structure were features associated with later use of the site, during the Iron Age. These included channels, pits, and postholes cut into the earlier deposits, confirming the long-term historical significance of this location.

To broaden the understanding of the EBA landscape beyond the central cluster of

monumental and domestic sites, test trenches were placed at Hili-3, located to the south of the park. While no architecture was found, the excavation confirmed intensive use of the landscape, including extensive earthworks, cut features, and a significant assemblage of Bronze Age domestic pottery. This suggests that the peripheral areas of the park were actively used during the Bronze Age, pointing to an intensively occupied landscape across the entire park area.

There was a successful programme of outreach, with a large site visit from the Department of Culture and Tourism, and there were frequent site tours from visitors. Updates regarding the project were available on TikTok, which gathered a great deal of interest amongst the primarily Emerati audience. Funded by the CHANSE Transforming data rE-use in ARCHaeology (TETRARCHS) project, the team worked with Dr Cobi Van Tonder, a practice-led researcher and interdisciplinary artist who used sound she gathered during the excavation to create a new microtonal composition titled “Vertical Time.”



This work will continue into post excavation, examining finds from current and previous immersive visualisations of the buildings revealed through excavation.

This project was made possible by a generous grant from the Beatrice de Cardi Awards, which are administered by the Society of Antiquaries of London. The excavation team would like to extend their sincere thanks to all of the members of the DCT who supported this project and worked with us during the excavations.

Planting the seeds for archaeobotanical research in the Emirate of Abu Dhabi

Filipe Costa Vaz (DCT – Abu Dhabi)

Despite its intrinsic value and potential for understanding past human occupations in any area (particularly in semi-arid environments where plant resources are limited), systematic archaeobotanical sampling and analyses remain inconsistent in the Arabian Peninsula. This is in stark contrast to other parts of SW Asia, where such research is often much more developed. Furthermore, the few available publications of this kind in the region have been conducted by researchers based at western universities and research centers.

n the Emirate of Abu Dhabi, Archaeobotanical research was pioneered by Serge Cleuziou and Lorenzo Costantini in 1980, focusing on the study of seeds, fruits, charcoal, and plant impressions recovered from the Bronze Age site of Hili 8 (Cleziou & Constantini, 1980). Later, most of the few archaeobotany publications in the Emirate have focused on sporadic finds of date palms and other paleobotanical evidence at several archaeological sites. The most notable was the discovery of one of the earliest evidence for date consumption in the Arabian Peninsula, found on the site of Dalma 11, Dalma Island, dating back to the fifth to sixth millennium BCE (Beech & Shepherd, 2001). Another significant example was identified in a burial pit at Hili Tomb N, in Al Ain, dated to the end of the Umm an-Nar period (Méry & Tengberg, 2009). This represents not only the earliest evidence of a foodstuff prepared with date palms but also one of the few instances of their presence in a funerary context in the Ancient Middle East. Also notable was G. Willcox’s (1995) study on the plant impressions from Umm an-Nar Island. However, even though these were extraordinary findings, they were still occasional, as no systematic sampling was conducted during the excavations.

Considering these promising results, 45 years after the first publication of its kind, DCT's Historic Environment Archaeology Section has initiated an ambitious strategy to promote and develop archaeobotanical research in the Emirate of Abu Dhabi over the coming years, based on four main pillars.

The first, and probably the most important, was the employment of an archaeobotanist, the first permanently based in Arabia. This process was finalized in January 2024, with the hiring of the author of this short notice.



Fig. 1 – Rumeilah's Archaeobotany laboratory in Al Ain, Abu Dhabi.

The second step was the establishment of a fully functional archaeobotany laboratory – also the first in the Arabian Peninsula - in DCT's facilities in Al Ain (Fig. 1).

In addition to the laboratory indoor spaces, equipped with state-of-the-art microscopic equipment and storage, an outside storage area and a custom-designed flotation system (Fig. 2) were also built to efficiently process and store large quantities of archaeobotanical samples using the most suitable methods.



Fig. 2 – Flotation and sample storage area.

The third step was the creation of archaeobotanical guidelines and protocols for sampling, recovery, and study of paleobotanical remains found in all archaeological projects in the Emirate – whether performed internally or through external researchers. In brief, these guidelines mandate the following:

- A standard volume of at least 10 liters of sediment will be collected in geotextile bags (Fig. 3) from every undisturbed stratigraphic unit excavated in every archaeological excavation project in the Emirate, regardless of its framework (research or rescue). Additional samples may be collected on a case-by-case basis, depending on the type and size of the context.



Fig. 3 – On-site sediment sampling of an archaeological feature.

- Sediment containing in situ evidence of charcoal, such as fireplaces, kilns, or charcoal/ashy features, will be collected in their entirety. However, larger and clearly visible charcoal fragments should be handpicked and stored in small containers to prevent fragmentation.

- The processing of all of these samples will be centralized at DCT's Archaeology Section's Archaeobotanical laboratory facilities in Rumeilah, Al Ain, to ensure they are dealt with using the most appropriate methods (flotation, dry sieving, etc.) and in a standardized manner.

With this regulatory and infrastructural framework in place, we plan to investigate fuelwood selection and fire practices across various archaeological contexts, including functional, domestic, and ritual settings, in the years to come. This research will take place at more than a dozen sites, spanning multiple chronological periods and ecological environments, not only in inland areas but also along the coast and in marine contexts.

Additionally, we aim to gather new data on agricultural practices and food consumption

habits, particularly among Bronze and Iron Age communities, in relation to the aflaj irrigation systems of the Al Ain region, which would significantly enhance our somewhat limited understanding of these important archaeological landscapes.

This strategy will not only focus on archaeobotany - which is only a small part of environmental archaeology research. Our ultimate aim is to further expand our capacity to obtain, process, and study large assemblages of paleoenvironmental data, which will enable us to better understand the contexts in which these past communities lived in the region. To achieve this, we aim to establish collaborations with multiple national and international institutions and researchers. This will include obtaining data from zooarchaeology, anthropology, organic residue analysis, geoarchaeology, phytoliths, sedimentary DNA and ancient DNA analysis (Fig. 4), and environmental data from several marine and land cores already obtained and yet to be obtained from ongoing projects.



Fig. 4 – Dr. Mohamed Almarri, Mohammed Bin Rashid Univ. of Medicine and Health Sciences, sampling for sedimentary DNA analysis in Hili 14 (Al Ain).

However, this strategy only makes sense from a scientific perspective if integrated into a unified effort aimed at advancing environmental archaeology and, by extension, archaeology in the UAE and the region. We are committed to fostering collaboration with colleagues working in other Emirates and in the area, recognizing that cooperation is essential in achieving a broader understanding of the shared environmental and archaeological history of the region. Therefore, we warmly and respectfully welcome the archaeological community working in other emirates to reach out to us for collaboration.

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Excavations at the dispersed Christian monastery on Sir Bani Yas Island, Abu Dhabi, UAE

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The 7th-8th century church and monastery on Sir Bani Yas Island (Abu Dhabi Emirate, UAE) comprise the first Christian site ever identified in the UAE, and one of only two found to date. Discovered in 1992, the church and surrounding monastic enclosure were excavated between 1993-1996 and 2009-2011, with additional shorter seasons of test pitting carried out subsequently. The wider monastic landscape also comprises at least six houses to the north and north-west, interpreted

as part of a dispersed monastic settlement due to similarities in dating, material culture, style and construction techniques between these structures and the church and communal monastery, as well as the existence of precedent for such arrangements described in written sources from the period (Gajewska et al forthcoming). Unlike the church and communal monastery, none of these courtyard houses comprising a dispersed monastery have been excavated since 1996, until a new project was launched by DCT Abu Dhabi in 2025. Between 13.01-20.02.2025, the team excavated two courtyard houses: SBY0014, which had been partially excavated in the past, and SBY0011, which had been identified through the wall remains visible on the surface but never excavated (fig. 1).



Fig. 1. The dispersed monastery on Sir Bani Yas Island, with courtyard houses SBY0011 and SBY0014 marked in red.

Excavations revealed the partial plans of two houses set within walled external courtyards. They exhibit notable architectural similarities, including the setting of the house in the SW corner of the courtyard wall, the presence of separate cooking spaces and water cisterns, and H-shaped entrances to the compound (figs 2-3). These features find parallels at both other courtyard houses excavated in the 1990s and the communal monastic dormitories attached to the church compound, attesting to a degree of similarities which likely expresses a shared idea of a monastic dwelling.

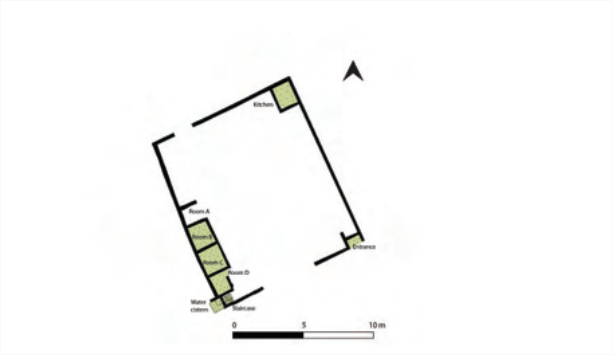


Fig. 2. SBY0011 – schematic plan.

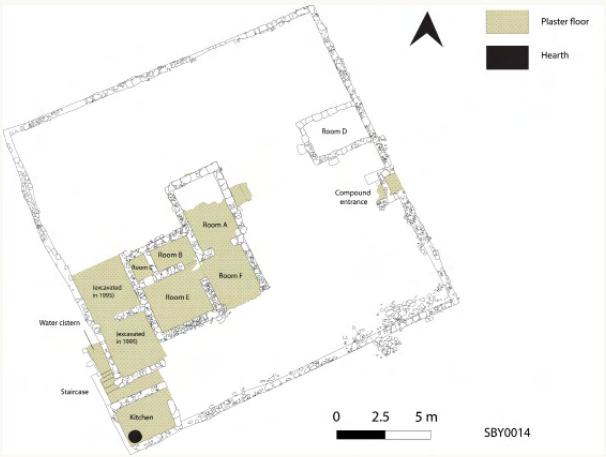


Fig. 3. SBY0014 – plan.

The standout find of this season was a plaster cross plaque, 27 x 17 x 2 cm, found in the external courtyard of SBY0014. While decorated plaster (or stucco, following Agnieszka Lic's use of the terms in her work on Eastern Arabian Christian plaster and stucco – Lic 2017: 151, n1), including multiple pieces with crosses, has been found at the church before, this is the first time a cross motif, or indeed stucco of any kind, has been identified at one of the courtyard houses. As such, this is the first piece of concrete proof that the inhabitants of one of the courtyard houses were Christian (which is congruent with our current interpretation of a dispersed monastery, though it does not preclude alternative readings of the site).

The analysis of the material from the sites is ongoing, including C14 dating and archaeobotanical analysis, as well as aDNA identification from plaster samples.



Fig. 4. The Sir Bani Yas cross plaque (©Hélène David-Cuny).

Preliminary charcoal identification, carried out by Lucas Proctor and Filipe Vaz, has revealed a piece of carbonized reed (Arundo/Phragmites type) adhering to a piece of plastered stone. This is the first direct piece of evidence for the use of organic material in construction at any of the Sir Bani Yas monastic sites. As such, it gives important clues to the architectural techniques employed on site. Pieces of plaster with elongated impressions have previously been found at the church, and it is plausible that these impressions were made by reeds (rather than e.g., by palm fronds).

SBY0011 also yielded a small, nearly complete turquoise jug (fig. 5). This belongs to the Alkaline-Glazed tradition (ALGAZ), which comprises one of the most common pottery classes found at the monastery (Carter 2008). However, the piece is unique first, as the first near-complete pot ever found at SBY and, more to the point, because the form appears to be unprecedented in the region (Seth Priestman and Jerzy Oleksiak, personal comment).



Fig. 5. Near-complete alkaline-glazed, turquoise jug from SBY0011 (©Héléne David-Cuny).

The architectural remains are exceptionally well preserved. Both courtyard houses were built of local stone, primarily limestone or calcareous sandstone, with some beach rock, tufa and tabular flint, bound with plaster mortar and mud mortar. The size of the stone blocks used in construction varied widely, from roughly hewn blocks up to 0.5 x 0.5 m to small, pebble-sized stones bound with large quantities of mud mortar. The walls and floors were thickly plastered in white. Features such as steps, door posts and door jambs are preserved in situ. At SBY0014, walls sometimes collapsed in one fell swoop, preserving additional features such as the width and height of doorways and plaster-lined, rectangular niches set within walls.



Fig. 6. SBY0014, orthomosaic. Note the pattern of wall collapse.



Fig. 7. Preserved staircase leading to a water cistern at SBY0011.

Post-excavation analyses are still ongoing. The DCT will return to the site in 2026, to finish excavating SBY0011 and SBY0014, with more work on other parts of the dispersed monastery planned for the following years.



Fig. 8. Doorway with plastered doorjambs, SBY0014.

Acknowledgements: the authors wish to thank the DCT Abu Dhabi for facilitating our work, especially our colleagues from the Archaeology Section: Ahmed Abdallah El Hag El Faki, who joined us at the beginning of the season, Noura Al Hameli, head of the Archaeological Research Unit – Al-Dhafra and Abu Dhabi, and Dr Richard Cuttler, Head of Archaeology. We also thank Felipe Andres Gutierrez and Ola Mohd Shaker from the DCT for their assistance with site stabilization and conservation; Abdallah Salem al Yammahi (DCT) for his drone survey; Drs Filipe Vaz (DCT) and Lucas Proctor for their work on charcoal identification, and Drs Seth Priestman and Jerzy Oleksiak for their opinions on aspects of the ceramic assemblage. We are grateful to Hélène David-Cuny for her illustrations. Finally, thanks are due to our site assistants: Rashed Ali, Manauwar Ray Sadan, Hari Kumar Dangol, Arshad Gul Meena and Sidadarth Mohanan Dev, as well as to members of Sir Bani Yas Island management (Inspire Integrated), especially Sony Xavier and Jamhela Alvarez, and of Barari Natural Resources – Sir Bani Yas, especially Engineer Nabeel, for all their help and support.

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Dubai

Research contributions of the Department of Antiquities, Dubai Culture and Arts Authority (2024 – 2025)

Eng. Bader Mohamed Al Ali, Director of Antiquities Department, Dubai Culture and Arts Authority

Dubai Culture & Arts Authority (Dubai Culture) is an established body in the Government of Dubai and the Emirate's custodian of art, culture, heritage and literature. It was launched on March 8, 2008, by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President & Prime Minister and Ruler of Dubai. The Authority is committed to enriching the cultural scene of the emirate, firmly rooted in the heritage of the United Arab Emirates. In this spirit, Dubai Culture promotes the identification, preservation, awareness, and respect for heritage sites and resources, with the overarching aim of positioning Dubai as a global center for culture[1].

Under the umbrella of Dubai Culture, the Department of Antiquities supports the Authority's efforts to preserve Dubai's tangible cultural heritage by its active participation in the excavation, documentation, conservation and publication of the numerous archaeological sites in the Emirate of Dubai. Archaeological surveys undertaken over the years have uncovered over 23 significant archaeological sites in Dubai from the lower Paleolithic (1,500,000-300,000 BC) to the late Islamic eras (17th - 19th century AD).[2] At the forefront stands the important archaeological site of Saruq al-Hadid which has a long history from Neolithic periods to the early Islamic era. It was a major industrial and metallurgy production center during the Iron Age, and the associated site of Al Ashoosh in the 3rd millennium BC. Here at Saruq al-Hadid, the department of Antiquities has been leading several important research projects[3] in collaboration with international teams including the University of Sydney and Sanisera Archaeology Institute focusing their efforts on two important areas of the site including the excavation and archaeological research in Saruq 74 (Figure 1) and Saruq 53, the latter which revealed an impressive hoard consisting of over 100 artefacts, mostly copper-alloy vessels and tools[5].

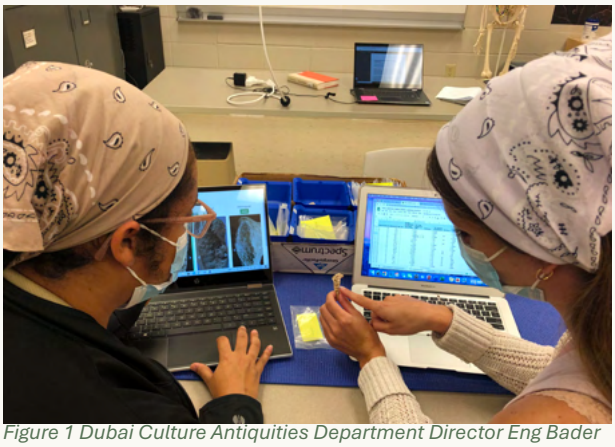


Figure 1 Dubai Culture Antiquities Department Director Eng Bader Al Ali with Dr. Mansour Boraik (expert) and Mariam Al Suwaidi (Chief archaeologist) observing the ancient well excavated in Saruq 7

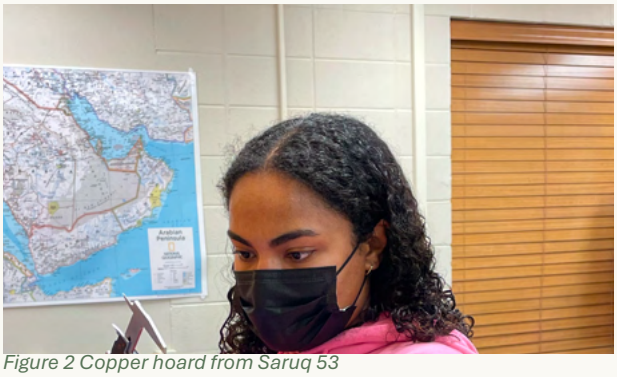


Figure 2 Copper hoard from Saruq 53

Geophysical surveys of the Saruq al-Hadid and Al Ashoosh sites by the collaborative efforts of Dubai Culture and Khalifa University teams have resulted in the presence of identifiable anomalies representing potential archaeological features, artefacts and excavation zones[6].

Contemporary to Saruq al-Hadid, the Al Qusais archaeological site (1400 – 750 BC) comprises a large settlement and cemetery complex. Archaeological excavations and research projects at Al Qusais in the previous years as well as in the last year by the Dubai Culture Antiquities

Department in collaboration with international experts have revealed in total nearly 267 simple graves and two communal graves dating between the 2nd and 1st millennium BC in addition to metal weapons, pottery, jewellery, and bronze models of snakes.[7]

Similarly, the archaeological site of Margham (1300 – 600 BC) is an Iron Age period funerary site and comprises a unique semi-circular-shaped cairn (Figure 4).



Figure 4 Dubai Culture archaeologists Dr. Mansour Boraik and Hassan Zein studying the Margham cairn burial

Excavations by the Antiquities department at Dubai Culture revealed a skeleton surrounded by several funerary goods, including a softstone spouted bowl, flint and quartz lithics, and a small cup made of bronze, in addition to 10 bronze arrowheads.[8] [9]

The Hatta Archaeological Landscape in the Emirate of Dubai holds a coveted position on the UNESCO World Heritage Site Tentative Lists. The mountainous areas to the east and southeast of Hatta town embody a unique archaeological landscape witnessing the continuous presence of human life in the region from the Hafit period to the late Islamic era[10]. As part of the Jabal Al Yamh Research Project, the Antiquities Department team has discovered a necropolis of over 70 Hafit, Umm an-Nar, Wad Suq and Iron Age tombs, some of which have been excavated, studied and restored.[11] Dubai Culture projects have also focused on understanding the Late Islamic period settlements in Hatta, primarily the archaeological survey and excavation of the Islamic village (Figure 5) and Wadi Jeema[12] as well as the survey, excavation and research of the important Suhaila cultural landscape area.



Figure 5 Aerial photo of a restored structure in Islamic village - Hatta, Dubai

The Suhaila archaeological sites comprise sixteen well-preserved late Islamic villages that include stone dwellings, animal enclosures, and extensive agricultural terraces, all constructed with locally available limestone and carefully adapted to the rugged topography.[13] (Figure 6)



Figure 6 Restored late Islamic period house in Suhaila 2

Twelve buildings have presently been uncovered that include several residences, a palace, caravanserai or Al Khan, a mosque and a marketplace.[14] (Figure 7, next page)
Representing Islamic era archaeology in Dubai, Jumeirah is considered one of the most important sites in the UAE and dates to the golden period of Islam during the Umayyad and Abbasid eras (8th – 13th century AD), then reoccupied in the late Islamic period.



Figure 7 View of the Jumeirah archaeological site

The Dubai Culture Antiquities Department team in joint collaboration with the Polish Academy of Sciences has undertaken scientific research and 3D documentation survey of some of the buildings at Jumeirah 1 and 2 archaeological sites and will continue its planned excavation and study of Jumeirah 3.[15] The Jumeirah archaeological site is currently open to the public and future plans to develop the site through a concept and detailed design phase are in the works.

In addition to archaeological excavations and documentation, the Antiquities Department at Dubai Culture through its conservation team initiatives is leading the preservation and restoration of pottery, metal and other significant artefacts that have been excavated from Dubai's archaeological sites (Figure 8). The conservators from the Antiquities department also focus on the survey and condition assessment of discovered structures in archaeological sites and have scheduled restoration and maintenance plans based on intervention priorities.

Looking towards the future of archaeological research and public outreach, the Dubai Culture Antiquities Department is channeling its efforts in the use of Augmented Reality (AR) and Artificial Intelligence (AI) to enhance our knowledge of



Figure 8 Mechanical cleaning process of a metal artefact by the Dubai Culture Antiquities Department

Dubai's archaeology sites as well as visitor experience. Dubai Culture was the recent recipient of the prestigious winner certificate at the AI for Good Global Summit 2025 presented by the International Telecommunication Union in Geneva, Switzerland. The award was for use case titled "AI-Enhanced Detection and Prediction at Saruq al-Hadid Archaeological Site" under the category of Smart home/Cities.[16] In the same vein as future strategy, Dubai Culture Antiquities Department is also venturing into the use of Augmented Reality to develop an immersive, accessible and historically informed AR experience that brings to life Dubai's key archaeological sites that will serve both researchers and general visitors in future.

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Ras Al-Khaimah

New field research at Shimal, Ras Al-Khaimah (U.A.E.)

Lloyd Weeks (University of New England), Hala Shankhour, Ahmed Alteneiji & Christian Velde (Department of Antiquities and Museums, Ras al Khaimah)

Shimal is one of the most important archaeological sites in Ras Al Khaimah and the UAE. Since it is the largest concentration of megalithic tombs in Southeast Arabia, the Government of Ras Al Khaimah places strong emphasis on protecting and managing the site and supporting scientific research within the national cultural heritage framework. The site was included on the UAE Tentative List for World Heritage in 2020, and the government is currently leading efforts to prepare the nomination file. The Department of Antiquities and Museums collaborate closely with local entities and international partners to develop the nomination and submit it to UNESCO. These efforts reflect the Emirate's vision to safeguard its heritage, advance knowledge, and strengthen its global recognition through sustainable and integrated conservation practices.

Since 2023, the Department of Antiquities and Museums has been collaborating with archaeologists from Australia, the United Kingdom, the United States of America and Germany to undertake new fieldwork at the late prehistoric site of Shimal. This collaboration plays a key role in strengthening international research on the region's ancient history.

Our research aims to explore changes in social organisation, subsistence, mobility, environment, and cultural contact and exchange in the second millennium BCE.

This was a period of major change in southeastern Arabia that has been described as "collapse and transformation" (Cleuziou and Tosi 2020: 411). It witnessed an apparent decline in the scale and distribution of sedentary settlement during the Middle Bronze Age (MBA, c. 2000-1600 BCE) and Late Bronze Age (LBA, c. 1600-1300 BCE), before the first steps in the re-expansion of settlement in the early Iron Age from c. 1300 BCE.

The site was first excavated in the 1980s by a German team. So far, we have conducted two 6-week field seasons at Shimal, in 2023/2024. Our research has incorporated excavation and post-excavation analyses, geoarchaeological and geomorphological studies (led by Adrian Parker and Susanne Lindauer), and the first stages of a programme of strontium isoscape mapping to explore human and animal mobility (led by Lesley Gregoricka).



Figure 1. Dr Amanda Dusting in Trench A.

Across the first two seasons, we have opened a total of six trenches to explore aspects of Shimal's remains. Trenches A, B and E targeted shell-rich midden deposits built up against and above a substantial stone perimeter wall that was constructed around the settlement core. These excavations have demonstrated that the wall was of a very substantial size, standing more than 2 metres high in places, with multiple phases of construction during the LBA and subsequent midden deposition during the early Iron Age.

Trench C targeted another long stone wall, heavily robbed out, in the northern part of central Shimal, revealing a shallow shell midden deposit dated to the MBA by associated pottery. The evidence

tentatively supports an MBA construction date for the wall itself, as no later pottery was recovered from the excavations.



Figure 2. Dr Caitlin D'Gluyas in Trench E.

Trench D targeted a house structure inside the walled area of the site, demonstrating its construction and use during the early Iron Age (Iron I period) c. 1200 BCE.

Trench F targeted a large mound beneath the historic Shimal watch tower, adjacent to the modern-day palm gardens, which was suspected to have been built up from (or to conceal) prehistoric settlement remains. However, excavations demonstrated that the mound was built during the Islamic period, and local Julfar pottery was the only material retrieved in significant amounts.



Figure 3. Dr Çemre Üstünkaya processing flotation samples from Shimal.

Our excavations produced important assemblages of ceramics and small finds that help to establish the relative and absolute chronology of different parts of the site, and the activities that were undertaken there, as well as links with contemporary settlements in the wider region. These assemblages are currently under study, but preliminary analyses show not only well-stratified LBA and Iron I period ceramic assemblages, but also evidence for metalworking in the form of crucibles and copper-base artefacts.

Additionally, the excavations produced large samples of plant and animal remains that are critical to understanding the past environment of the site and the subsistence of its inhabitants. The shell remains are showing distinctive changes through time in the proportions of different species, especially giant mangrove whelks (Terebralia palustris) and rock oysters (Saccostrea cucullata) that may reflect changing environmental contexts and/or cultural preferences.

Our research at Shimal is planned to continue in November and December 2025.



Figure 4. Ms Emma Hunt, Ms Nadia Arrighi and Dr Melanie Fillios processing excavated shell from Shimal.

Acknowledgements

Sincere thanks to our hard-working collaborators and team members: Caitlin D'Gluyas, Amanda Dusting, Guy Hazell, Adrian Parker, Susanne Lindauer, Lesley Gregoricka, Melanie Fillios, Nadia Arrighi, Emma Hunt, Çemre Üstünkaya, Nathan Wright, Hélène David-Cuny and Beatrix Ye.

Recent Publication

Weeks, L., C. D'Gluyas, A. Dusting, G. Hazell, A. Parker, S. Lindauer, L. Gregoricka, M. Fillios, N. Arrighi, Ç. Üstünkaya, N. Wright and H. David-Cuny. In Press. A new programme of field research at Shimal, Ras Al Khaimah: Exploring cultural adaptations during the second millennium BCE. In Zayed National Museum (ed.), Advances in UAE Archaeology – Proceedings of Abu Dhabi's Archaeology Conference 2024. Oxford and Abu Dhabi: Archaeopress and Zayed National Museum.

Al Jazeera Al Hamra: Archaeological Research, Conservation, and Community Engagement in a Unique Gulf Settlement

Hala Shankhour, Agnieszka Dolatowska (Department of Antiquities and Museums, Ras al Khaimah)

Al Jazeera Al Hamra represents an exceptional case within the heritage landscape of the United Arab Emirates. It is the only place in the country where an entire coastal settlement has survived in its original form, preserving the fabric of traditional architecture. The site comprises approximately 550 courtyard houses, eleven mosques, a souk, and elements of defensive architecture, including a fort and watchtowers, all reflecting the socio-economic framework of a community whose livelihood was closely tied to maritime resources, particularly pearling. This level of preservation allows scholars and visitors alike to gain a vivid impression of the appearance and functioning of such villages along the Arabian Gulf coast in the period preceding the discovery of oil. The earliest known written reference to Al Jazeera Al Hamra dates to 1756, but recent archaeological investigations indicate that the settlement may have been occupied 150–200 years earlier than the documentary record suggests.

The ongoing project at Al Jazeera Al Hamra has a twofold purpose: to investigate the past of this remarkable site and to safeguard its authenticity for future generations. Archaeological research provides the essential foundation for conservation and restoration, ensuring that all interventions are firmly rooted in evidence. Initially, the approach was based on analyzing the original materials and identifying and documenting their physical properties to carefully select compatible materials for restoration, ensuring that conservation practice replicates the physical and chemical characteristics of the original fabric. This rigorous approach was one of the reasons why the site was included on the UNESCO World Heritage Tentative List in 2020.

The wider vision is to present Al Jazeera Al Hamra as an open-air museum through the integration of the Department of Antiquities and Museums' efforts in preserving its archaeological fabric and cultural heritage, and Sheikh Saud bin Saqr Al Qasimi Foundation's efforts in activating the site through educational and cultural programs, as well as to share knowledge through traditional crafts, public lectures, intergenerational dialogue, and cultural and art events held in the village and the Majlis. In this way, Al Jazeera Al Hamra becomes not only a heritage site, but also a living platform for preserving and sharing culture.

The archaeological and architectural study of Al Jazeera Al Hamra precedes and informs every conservation intervention. Detailed historic building records are prepared in line with contemporary heritage standards, producing a meticulous baseline record of the state of preservation before any restoration occurs. These records integrate traditional field drawings, measured surveys, and state-of-the-art technologies such as 3D photogrammetry and, in selected cases, LiDAR scanning. Archaeological excavations and watching briefs have complemented documentation by exposing stratigraphy associated with both domestic spaces and public architecture. Scientific analyses concentrate on materials that illuminate the adaptation of the settlement to its maritime environment. Studies of marine shells, ceramics, and mortars provide quantitative evidence of resource exploitation, trade connections, and building practices. Parallel efforts involve collecting oral testimonies among members of the Al Za'ab tribe, which enrich historical interpretation with living memory and intangible heritage. Together, these methods allow for multi-layered insights into the settlement's cultural ecology.

Research to date has reshaped understanding of the settlement's historical development. Excavations within the Friday Mosque on the

island's western side have yielded significant data on the religious architecture of the community. Investigations of the market (the souq) area have revealed earlier phases of commercial activity and extended the known chronology of urban organization. Radiocarbon dating situates settlement in Al Jazeera Al Hamra as early as the turn of the sixteenth to seventeenth centuries, significantly earlier than suggested by surviving textual sources. Furthermore, the results also point to a possible occupational hiatus in the settlement's history, most likely associated with a change in the resident tribe.

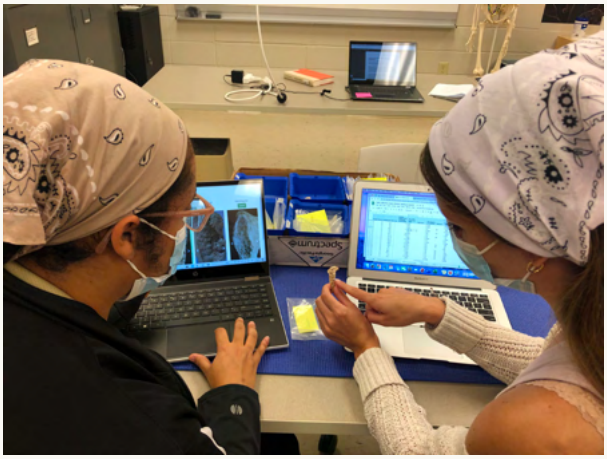


Figure 1: Members of the archaeological team engaged in photographic documentation

Another strand of research has examined the introduction and growing ubiquity of cement from the mid-twentieth century, a radical shift in construction techniques that ultimately altered the visual and structural character of traditional architecture. Documenting this transition has proven central not only to understanding changes in architectural practice, but also to defining which aspects of authenticity should be preserved or restored in current conservation. These findings shed light on how traditional Gulf settlements balance continuity with innovation, adapting to external influences while preserving their established spatial and social structures.

The conservation work at Al Jazeera Al Hamra follows a balanced approach, relying on the use of traditional techniques and original materials whenever possible, while applying limited and carefully considered interventions depending on the condition of each building. This approach aims to ensure the authenticity, structural stability, and sustainability of the historic urban fabric, in that way allowing for safe and long-term reuse.



Figure 2: Restoration works on a traditional coral stone house in AlJazeera Al Hamra



Figure 3 : Conservation of a coral stone structure in Al Jazeera Al Hamra

The project, led by the Government of Ras Al Khaimah, aims to strengthen Al Jazeera Al Hamra's role within the cultural fabric of Ras Al Khaimah and the United Arab Emirates by linking heritage protection with sustainable development, education, and community engagement. It reflects a long-term commitment to continue conservation efforts while bringing life back to the village, enhancing its cultural and touristic role, and establishing it as an active space for cultural exchange.

Figure 4 : Overview of Al Jazeera al Hamra Heritage village (see below))



Figure 4 : Overview of Al Jazeera al Hamra Heritage village (see above)

Investigating the Evolving Coastal Landscape of Ras al-Khaimah: New Research Between Shimal and Julfar

Adrian Parker (Oxford Brookes University), David Thomas (University of Oxford), Hala Shankhour, Christian Velde, Ahmed Obaid Alteneiji (Department of Antiquities and Museums, Government of Ras al-Khaimah)

The coastal plain of northern Ras al-Khaimah, extending from Shimal to Julfar, represents one of the most important settlement zones in Southeast Arabia. Archaeological evidence demonstrates continuous occupation in this region from the Bronze Age through to the modern era. However, this long history of human activity has taken place within a landscape subject to major geomorphological transformations. Since the Bronze Age, the coastline has advanced seawards by at least three kilometres, driven by the combined effects of sediment deposition, the formation of spits and barrier systems, lagoon infilling, and aeolian reworking. These processes have profoundly influenced the positioning, development, and eventual relocation of key centres of settlement.

The settlement of Shimal, situated at the foot of the Ru'us al-Jibal mountains, illustrates the early significance of this landscape. Occupied from the Hafit Period (3200–2600 BC) through to the 19th century, Shimal is notable for containing the largest megalithic cemetery of the Wadi Suq period (2000–1600 BC) and the largest Umm an-Nar tombs documented in Southeast Arabia. Evidence from shell middens further attests to the close integration of coastal and marine resources within local subsistence strategies, while its location suggests a possible role as a harbour or point of exchange.

In later centuries, Julfar developed as a major urban and commercial centre of the Gulf during the fourteenth and fifteenth centuries AD. Archaeological work has demonstrated that this expansion was preceded by earlier occupation at Kush, now located over two kilometres inland. The subsequent shift of settlement to al-Mataf and al-Nudud on coastal sand bars reflects the reorganisation of the shoreline, the silting up of lagoons, and the development of new navigable

channels. These geomorphological changes not only altered the settlement pattern but also conditioned the emergence of Julfar as a regional maritime hub.

Despite the acknowledged importance of this region, the evolutionary history and chronology of the Shimal–Julfar coastal plain remain poorly understood. To address this, a collaborative project between Oxford Brookes University and the Department of Antiquities and Museums of the Government of Ras Al Khaimah has been initiated. This research will employ an integrated geomorphological and palaeoenvironmental approach, including detailed field survey, borehole drilling programme, sediment analysis, chronology, and archaeological contextualisation, in order to reconstruct the long-term development of the coastal landscape and its implications for human settlement.

The outcomes of this project will contribute to a more precise understanding of landscape change in northern Ras al-Khaimah and provide an essential framework for interpreting the archaeological record. Moreover, the results will inform heritage management strategies, ensuring that evidence of past environments and settlement histories is preserved in the face of ongoing development pressures.

This collaboration holds particular value for Ras Al Khaimah, as it supports local efforts to document and protect the Emirate's dynamic coastal heritage, to deepen the understanding of settlement development through time, and to integrate scientific research into long-term planning and conservation.

The first phase of the project, including fieldwork and sampling, has been completed, and the results will be further developed in 2026.



Figure 1 – Prof. Parker and Prof. Thomas during field sampling, Julfar – Ras al Khaimah

Jazirat al Hulaylah – Study of Finds from a 7th – 8th century CE Town in Ras al-Khaimah Supported by the Zayed National Museum

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New work has begun to reassess the finds from the early Islamic period (7th – 8th century CE) occupation of Jazirat al-Hulaylah supported by the Department of Antiquities and Museums of the Government of Ras al Khaimah (RAK-DAM) and the Zayed National Museum (ZNM). Jazirat al-Hulaylah (JHU) is a coastal settlement situated 10km north of Ras al-Khaimah town on an 8km long, low-lying, barrier island separated from the mainland by sabkh mudflats and a lagoon with the town of Rams to the south. Across the island, there are several zones of ancient settlement. A general survey undertaken in 1991 mapped the main areas of finds concentration (Kennet 1994). A Japanese team from Kanazawa University completed four seasons of excavation at JHU in 1994, 1995, 1997 and 1998 (Sasaki 1995; 1996; Sasaki & Sasaki 1996; 1998; 2000). Artefactual and environmental finds from this investigation contained within 156 full crates (55 litre capacity each), form the subject of the present investigation. Work by the Japanese team focused on four main areas (Areas A-D). Areas B and C produced finds that are contemporary with the occupation of the port city of Julfar during the later Middle Islamic period (14th to 16th centuries). Area A, in the centre of the island produced limited and ephemeral evidence for occupation in the 9th and 10th centuries. However, the archaeological materials from Area A are comparatively limited and they are overlain by thick occupation also dated to the Julfar period horizon.

Of the four areas that were investigated, it is the findings from Site D that mark Jazirat al-Hulaylah out as a site of major importance within the region. Area D is located at the very southern tip of the island. The area is mostly flat and featureless apart from a series of low shell middens and mounds, at least 40 of which were mapped by the Japanese team. Excavation focused on three main zones within Area D: Mounds 2 and 3, which were partially excavated down to natural and a large open zone: Flat Area 1, where a 30 x 20m trench was opened. From the 1991 survey, it was estimated that there are up 42.9ha of early Islamic period occupation representing a sizable coastal town (Kennet 1994: 171). Ceramic finds from Area D are already widely recognised, from the existing Japanese publications, as the hallmark assemblage (or regional type site), for occupation covering the first century of occupation after the Islamic conquest. An initial scoping study and reporting on the collection, which includes over 1.5 metric tons of ceramics, was undertaken in 2024 with the assistance of Hessa Alhaili and Fatema Alshehhi. The study was supported staff from RAK-DAM and ZNM including notably H.E Ahmed al-Teneiji, Hala Shankhour, Annissa Gultom and Ismail Draz, and Dr. Peter Magee, Emma Thompson and Nurul Iman Binti Rusli. Further detailed recording of the material from Area D will be undertaken in 2025.

Bioarchaeology at Shimal in Ras Al Khaimah

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In 2018, we launched a joint project with Quinnipiac University, the University of South Alabama, and the Department of Antiquities and Museums of Ras Al Khaimah, to systematically study human health and biology in the Umm an-Nar (2700-2000 BCE) and Wadi Suq (2000-1600

BCE) periods in Ras Al Khaimah.

An initial report on our first year of programming as part of a National Science Foundation Research Experiences for Undergraduates (NSF-REU) grant was included in the Spring 2021 Bulletin. Since that time, we have trained 14 more students in bioarchaeological research with a focus on Tombs Unar 1 and Unar 2 (currently housed at the University of South Alabama, USA). Two additional students collected data in Ras Al Khaimah (RAK) with a focus on Unar 1 and Wadi Suq tombs.

In Year 2 of the NSF-REU (Summer 2021), student research projects focused on aspects of skeletal age estimation and health in younger individuals. First, a variety of measurements of the basilar part of the occipital bone from infants found that fetuses were included in these large communal tombs, and that their inclusion was similar to that found in other tombs in the region (Orkin et al., 2022). Another project employed a new technique called Transition Analysis 3 for aging individuals into older age categories that was not possible until recently. They found that people of all ages were interred in the Umm an-Nar tombs at Shimal, including people aged well into their 70s and 80s (Bolster et al., 2022, 2024). Finally, the discovery of relatively high rates of a chronic stress indicator (cribra orbitalia) indicated some anemia or Vitamin C/D deficiencies in young children living at Shimal in the Early Bronze Age, similar to others in the region (Kaul et al., 2022).

In Year 3 of the NSF-REU (Summer 2022), student projects examined daily activity patterns using bioarchaeological techniques. Entheseal changes (alterations at muscle attachment sites) examined on the proximal and distal humerus, as well as on the radius, suggested that people were variably using their arms to engage in laborious activities such as oasis agriculture and constructing monumental tombs (Smith-Escudero et al., 2023; under review). A second project focused on the knee joint found more osteoarthritis in people interred in Unar 2, suggesting some differentiation in activities with Unar 1, but both tombs had significantly fewer bony alterations than those from Tell Abraq, where these changes were associated with fishing (Cabañas et al., 2023). A third project analyzed squatting facet presence and morphology on the talus and distal tibia, followed by imaging these bones using a micro-CT scanner for future analysis of the relationship between squatting facets and trabecular bone orientation (Allen et al., 2023). A final project found a few individuals with mild bony alterations to their ear canals, called external auditory exostoses, that may be associated with pearl diving (Hull et al., 2023).

In the fourth year of the grant, we traveled with students from the U.S. to RAK in order to continue work on skeletons from Unar 1 still curated in RAK, and to begin bioarchaeological study of skeletons from the Wadi Suq tombs. Here, minimum number of individuals (MNI) calculations for tomb Unar 1 were updated, resulting in a total of 459 left petrous parts relative to the 411 left petrous parts recorded in Tomb Unar 2. A clear preservation difference between left and right sides of the skeleton as part of MNI calculations throughout the skeleton demonstrated that these individuals may have initially been placed on their right sides, as bones on the right side that came into contact with a limestone tomb floor became more highly degraded over time (Gregoricka et al., 2025). The MNI in Wadi Suq tombs was also calculated by counting petrous parts from one side of the body, but was considerably smaller (SH 95:2, SH 99: 12, SH 103: 33, and SH 602:16) than in Umm an-Nar tombs.

For more information, including downloadable conference posters and published papers, please visit our website. You can also watch digital stories summarizing the research of our REU student fellows (in English and with Arabic subtitles) on our YouTube channel.

Umm al Quwain

The Abraq Research Project: updates from Tell Abraq and Abraq 2 (Umm al Quwain)

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Figure 1 Zenithal view of Tell Abraq (North to the right). The area investigated by the IAMUQ is highlighted (original picture, F. Borgi).

Between October and November 2024, the Italian Archaeological Mission in Umm al Quwain (IAMUQ) completed the sixth field season of the Abraq Research Project, continuing the fruitful collaboration with the Tourism and Archaeology Department of UAQ under the aegis of its chairman, Sheikh Majid bin Saud Al Mualla.

Works at Tell Abraq (Fig. 1) led to the discovery of several new buildings (Fig. 2, next page) and a new room (Room 6) belonging to the original layout of the impressive edifice labelled Building I (with "Building Ia" identifying this early layout). Based on the analysis of additional radiocarbon dates, the construction of this building can now be better placed around 1350/1300 BC, a period for which no similar structure is known in Southeast Arabia (Degli Esposti and Pellegrino, in press). Building I was hit by a large fire shortly after construction (ibid), which led to its restructuring.

During the last field season, some evidence emerged potentially placing the re-configured Building I in the same phase as the extensive platform and staircase system that occupied the eastern flank of the mound between c. 1300-1100 BC (Degli Esposti et al. 2025). The complete extension of the monumental, plaster-coated staircase that apparently led from mid-way along the slope to the top of the site (Fig. 3, next page) was revealed. It starts from a hardened surface, pierced by several postholes, that abuts against the reconstructed southern wall of Building I, obliterating the former Room 6.

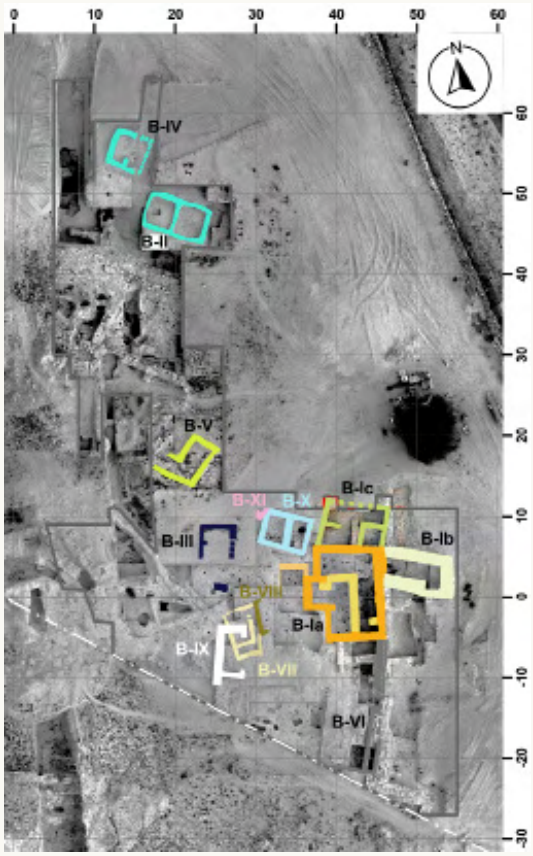


Figure 2 A sketch showing the buildings identified so far by the IAMUQ in the eastern part of Tell Abraq (M. Degli Esposti).



Figure 3 View of the eastern slope of Tell Abraq during the 2024 field season. In the centre, the monumental staircase is partially buried beneath Building VII.

Completely different is the nature of a series of features unearthed near the southern limit of IAMUQ's excavation. Three large pits, belonging to at least three phases, can be interpreted as sunken furnaces or ovens (Fig. 4). The latest of them is lined by a small stone wall. All include a lower infill comprising ash and charcoal, and the first two were backfilled with dumped potsherds. No pottery waste was, however, identified, ruling out the possibility that these features could be pottery kilns. The pottery points to an Iron Age II date, confirmed by a radiocarbon date obtained from charcoal collected inside the pits.



Figure 4 An Iron Age II, stone-lined oven (?) cutting two earlier ones, backfilled with potsherds (photo M. Degli Esposti).

While no new grave was identified at Tell Abraq (see Degli Esposti et al. 2025), the restart of investigations at the nearby necropolis of Abraq 2 (Fig. 5) led to the discovery of a new underground grave, at the bottom of which the only human bodies which had not been looted were found. The few grave goods that could be safely associated with the four skeletons can only indicate a general date within the Iron Age I or II periods, pending the results of radiocarbon dating.



Figure 5 Aerial view of the densely packed graves at Abraq 2 during the 2024 field season (photo F. Borgi).

Overall, the IAMUQ excavations at Tell Abraq, although not yet reaching the deepest and most ancient contexts, are revealing an unexpected architectural richness, with several small buildings discovered so far, to which another one will likely be added during the 2025 season (its corner was found at the end of the 2024 season). The chronological sequence is also being populated with evidence from periods previously little, if at all, recorded. The best example of this is arguably the poorly- preserved small shrine dated to the PIR period (Degli Esposti et al. 2025). The works conducted at Abraq 2, in the meantime, are providing data about a necropolis of subterranean

and semi-subterranean graves displaying an unprecedented density and peculiar connections between the graves. Despite the scarcity of in-situ primary deposition, their accurate anthropological study will shed light on the ancient population living at Tell Abraq, with specific reference to the Iron Age. This data will be considered alongside previous results obtained from the study of the buried remains discovered in the Umm an Nār tomb excavated at Tell Abraq itself, but also from more recent works of the IAMUQ at Tell Abraq itself (Sasanian period graves), Ed Dur (likewise), and Siniya (Late antique and Middle Islamic graves) (Degli Esposti et al, in press). This diachronic dataset is expected to provide an overview of the UAQ population spanning from the Bronze Age to the pre-modern era.

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Yemen

Protecting the Rock Art of Soqotra Island, Yemen

Julian Van Rensburg, Royal Botanic Garden Edinburgh



The Soqotra Archipelago has an extremely rich corpus of rock art that can be found throughout the islands, yet many of these sites are poorly documented and have no conservation and protection measures in place. With the real threat of conflict-related immigration driving uncontrolled development in the face of a lack of formal heritage infrastructure, damage to these sites, and others, has already occurred. Indeed, Soqotra’s rock art is in dire peril, and increasing development pressures, vandalism, looting, poor tourist management, and climate change are all taking their toll on this finite and highly vulnerable resource.

To address this, the Protecting the Rock Art of Soqotra Island, Yemen Project run by the Royal Botanic Garden Edinburgh (RBGE), in collaboration with the General Organization of Antiquities and Museums of Yemen (GOAM), Environmental Protection Agency (EPA), and funded by the Aliph Foundation was initiated. The aims of this project were to develop documentation, protection, and community management planning initiatives that would lead to the protection and conservation of these sites, while also enhancing livelihoods to benefit local communities and ensure sustainable conservation and protection outcomes.

This project focused on two major sites, the parietal art in Hoq Cave and the open-air petroglyph site of Eriosh. The aims were twofold: firstly to undertake a comprehensive study of these sites that would serve as a blueprint for putting in place measures to manage, protect, and preserve similar rock art sites throughout the island. Secondly, to train local heritage practitioners

and teams from the General Organization of Antiquities and Museums of Yemen (GOAM) on the documentation of rock art, as well as to promote Soqotra's rock art on a national and international scale. Overall, the ultimate aims were to ensure the long-term protection and conservation of these sites as well as to create long-term income generation for the local community.



During this project the Soqotri team of women and men were trained to use a Total Station and the GIS software QGIS. This training covered use of these tools for mapping and analysis of the rock art sites, providing the team with the necessary skills to effectively collect and manage geospatial data.

In addition, photography training sessions for rock art documentation and photogrammetry were carried out to capture high resolution



photogrammetric details of the rock art for integration into a geodatabase that allowed for the rock art to be accurately mapped, and facilitated spatial and comparative analysis.

During the documentation of these rock art sites, the Soqotri team, alongside GOAM, EPA, and local communities, undertook a formal threat assessment to identify different short and long-term threats and develop amelioration and monitoring measures. This has allowed for co-constructed management plans to be drafted for Erisoh and Hoq Cave, while also providing communities with the knowledge and information to identify threats, opportunities and establish tourist management and protection measures to reduce damage through over-visitation and physical damage via uncontrolled access and lack of awareness.



Jordan

A rapid field survey east of Bayir, Jordan Yemen

Michael Fradley, Andrew Wilson, Robert Bewley, Firas Bqain & Mansour Alka'abneh



Figure 1. A looted cairn identified west of the central Roman military camp. Photo: Michael Fradley.

From the 30 September to the 2 October 2025 a small team undertook a brief survey of Roman military sites running from Bayir in the west to a temporary military camp nearly 120 km to the east near the border with Saudi Arabia, following existing dirt tracks across this area. The expedition team was made up of staff from the University of Oxford's Endangered Archaeology in the Middle East and North Africa project (EAMENA), the Council for British Research in the Levant (CBRL) and the Aerial Photographic Archive for Archaeology in the Middle East (APAAME), alongside a representative of the Jordanian Department of Antiquities and two professional guides.

The central aim of the field project was to investigate three Roman temporary camps that had previously been identified on satellite imagery running in an easterly direction from Bayir in southern Jordan (Fradley et al. 2023). As the camps were spaced nearly equidistant and running in a relatively straight line in the direction of Dumat al-Jandal it was hypothesised that they are marching camps that may have formed part of an unrecorded campaign to secure the Nabatean kingdom when it was annexed under the Roman emperor Trajan in 106 CE after the death of Rabbel II Soter, the last Nabatean king. The camp sites had been photographed from the air by the APAAME project in 2022 and 2023, and the current ground survey was planned to build on this by assessing the form of the camps on the ground and rapidly recording any surface finds visible to validate the proposed chronology. The results of investigating the camps will be published in the future, but the expedition also enabled a brief exploration of the landscape east of Bayir that has been the subject of only limited archaeological study in the past and which will be discussed in this report to encourage further investigation.

The landscape encountered was broadly one of sands overlying limestone with flint banding, with a surface crust of varying combinations of highly degraded basalt pebbles, flint nodules and fragments, and limestone pebbles. Topographically the region is made up of low-valley plains around wadi systems feeding into an eastward watershed running eventually into the Wadi Sirhan, and with

occasional outcrops of limestone hills. While the region is very arid, many of the wadi systems can support vegetation even at the end of a dry summer season, and a low density of farmed goat, sheep and camel herds.

The region had previously been subject to a systematic remote-sensing survey by the EAMENA project, but apart from the Roman temporary camps very few visible archaeological structures were identified, particularly when compared to regions to the north, east and south. A single possible cairn was identified on satellite imagery close to the central Roman camp and a short detour from the survey route. A hole visible in the centre of the cairn on satellite imagery suggested it may have been looted, and this was confirmed on the ground, with limestone capping stones cast aside and the central chamber empty. Two possible cairns of a similar type were also identified in the Wadi Ukhaydir system roughly 21 km ESE of Bayir. This wadi system was notable in that it was able to sustain large swathes of juniper and other vegetation.

Finally, a limestone cliff face with a visible cave opening alongside the Wadi as Su'r around 8 km ESE of Bayir was investigated. The cave opening was largely infilled and had been regularly used to pen livestock, and three smaller openings were observed at the back of the visible cave opening.



Figure 2. A view of the inscribed cliff face and cave on the western side of the Wadi as Su'r. Photo: Michael Fradley.

A range of Thamudic and some Arabic inscriptions were observed for a c. 30 m length of the soft limestone cliff face to the north of the cave, as well as on some boulders on the ground. Elements of these inscriptions were rapidly photographed, but a more comprehensive recording programme is needed, particularly given the susceptibility of the soft limestone to erosion. The occurrence of the site in this location is not completely unexpected, given how close it is to the nearby (previously) documented inscriptions around Bayir. However, several exposed wadi limestone cliffs and possible cliff caves were seen but not inspected in several locations across the fieldwork route across this region, are observable on satellite imagery, and would be high potential targets for future survey.



Figure 3. A detail of an inscription on a stone at the base of the cliff face. Photo: Michael Fradley.

Fradley, M., Wilson, A., Finlayson, B. & Bewley R. (2023). A lost campaign? New evidence of Roman temporary camps in northern Arabia. Antiquity 97(393): e15. https://doi.org/10.15184/aqy.2023.50

Research Notices & Work in Progress

Dilmun seal workshops?

Flemming Højlund

Dilmun stamp seals were deeply integrated into the politics of the Dilmun kingdom. Their shape imitated the headdress of Mesopotamian and probably Dilmun kings (figs. 1-2). The royal headdress embodied magically the divine powers that in the first place made possible the wielding of authority. By modelling the Dilmun seals in the shape of the royal crown, the seal was invested with the king's and ultimately with the gods' authority and thereby legitimized the king's right to rule (Højlund 2000). The ubiquitous four dotted circles on the seal reverse may be a sign of the political power of the Dilmun royal dynasty (Laursen 2017 p.393).



Fig. 1. Head of a Neo-Sumerian prince from Uruk with royal headdress (Amiet 1977, no. 387).



Fig. 2. Dilmun type seal (Højlund & Abu Laban, 2016 fig. 700; Photo: H. David-Cuny).

The present writer has argued that all stages of the production of Dilmun seals (procurement of raw material, cutting the seal shape, drilling the hole, decoration of the obverse, drilling the four dotted circles, "glazing" the seal) were in the hands of professional craftsmen with the exception of the carving of the three lines on the reverse of the seal. These three lines are so irregular and crudely executed (fig. 3) that they must have been made by non-professionals, possibly by the intended seal owners as a sign of allegiance to the king (Højlund 2024).



Fig. 3. Dilmun type seal (Højlund & Abu Laban 2016, fig. 711; Photo: H. David-Cuny).

Seal carving was a craft that would have demanded years of apprenticeship and extensive experience. For a relatively small population such as Dilmun's, only a few such specialists would have been necessary - and indeed sustainable. It is argued here that the homogeneity of the seals in a large region encompassing Kuwait and Bahrain, in particular their shape and reverse decoration, indicates that these specialists were attached to an institution that maintained centralized control over their production and distribution (cf. Brumfiel & Earle 1987 p. 5-6). If seals had been produced in multiple independent workshops, i.e. if production and distribution had been controlled directly by the craftsmen and had been influenced by their idiosyncrasies and the customer's wishes, as suggested by Olijdam & David-Cuny (2018 p. 411), a greater degree of morphological and stylistic variation would likely have emerged.

That seals, in addition to those in Bahrain, were also produced in Kuwait, on the island of Failaka, seems clear after stamp seal Styles IB and II have been shown to be local Failaka variants, exceedingly rare in Bahrain (Højlund & Abu-Laban 2016 p. 133). Failaka may have counted its inhabitants in hundreds rather than thousands, so a single seal cutter could easily have supplied the whole island. It is therefore worth considering whether the different stamp seal styles, IA, IB, II and III identified in the Failaka seal corpus (Kjærum 1980. David-Cuny & Azpeitia 2012. David-Cuny & Neyme 2016), correspond to different 'hands', perhaps generations within one family of seal cutters. Exactly where the cutting of seals took place on Failaka is unknown, as the excavations in Tell F3 and Tell F6 have so far produced no relevant evidence, neither is a doubtful seal blank found at Al Khidr sufficient evidence for a workshop as proposed by Olijdam & David-Cuny (2018 p. 412-418).

It may be assumed that seal making took place within the site of Qala'at al-Bahrain in Bahrain, the capital of Dilmun, but a single unfinished stamp seal of Arabian Gulf type (Kjærum 1997 p. 34, fig. 86) is hardly enough to locate a workshop in Excavation 519 in the centre of Qala'at al-Bahrain (contra Olijdam & David-Cuny 2018 p. 415).

A handful of soft stone fragments with traces of sawing or cutting were found in Excavation 520 at the northern city wall, distributed over an area of c. 12 x 24 m (Højlund & Andersen 1994 p. 394, figs. 1978-1984), testifying to soft stone working in the vicinity, but the exact location for this activity is unknown. Spread out in the same wide area within Excavation 520 were also two bead blanks, a broken bead, and four stamp seal blanks, all of soft stone, mostly without any safe dating context. Three of the seal blanks are rather atypical, but according to Kjærum they may possibly belong to the Arabian Gulf type of Period IIa (1994 figs. 1751-1753). The fourth is a prismatic blank where the drilling has gone wrong and the item reworked into a pendant, from a context with a very wide dating (Periods Ib-IIc) (Kjærum 1994 fig. 1755). Besides, there was a fourth seal from a Period IIc context, the only one which appears to have dimensions as a Dilmun-type seal. The seal itself has disappeared and is only known from a photograph of its back side (Kjærum 1994 fig. 1754). Rather than a blank it shows a seal where the white glaze has worn off except on the inside of the perforation and on the concave edge of the seal, typically the last places for the glaze to remain because here the surface was protected from wear. In addition, the lower right part of the seal looks like it has been broken.

In conclusion, the limited evidence for stamp seal production around or in Excavation 520 dates to period IIa and the idea of a seal producing workshop in this place that continued for several hundred years as proposed by Olijdam & David-Cuny (2018 p. 413) does not seem warranted. There is no material evidence, neither in Bahrain nor on Failaka, for a seal producing workshop belonging to periods IIb-c, i.e. the period in which the Dilmun type stamp seals with the defining three parallel lines and the four circles on the back were produced. In accordance with the hypothesis that stamp seal production in periods IIb-c was under royal authority (Højlund 1989 p. 49-50), it is suggested that such workshops should be located near public buildings at Qala'at al-Bahrain (i.e. near Excavations 518-519) and in Tell F6 on Failaka.

Acknowledgement
I am grateful to Hélène David-Cuny for sharing her insightful observations on Dilmun seals with me

and for photographing the 108 seals found during the 2012-2017 Kuwaiti-Danish excavations in Tell F3 and Tell F6 on Failaka.

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New insights about food-processing and subsistence strategies of the medieval harbour city of Qalhât (Oman)

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Recently, a paper was published in Archaeological Research in Asia about food-processing activities and subsistence strategies set up for feeding the urban population of the harbour city of Qalhât, informed by the study of zooarchaeological (mammals and birds), archaeo-ichtyological (fishes) and archaeobotanical (seeds/fruits) remains from a twin houses' building (B94, 13th-16th c. CE) (Dabrowski et al 2024). Indeed, since only limited textual sources are available for this period, taking such material into consideration offers a unique opportunity to obtain information about the food-processing activities and supplying strategies for feeding a whole urban population during the medieval period in Arabia.

The analysis of more than 5500 mammal and bird bone remains highlights the large predominance of sheep/goat followed by chicken (as bones and eggshell) with some cut marks, especially on

lamb bones, thus providing direct evidence for their consumption. Other mammals were also identified, such as cattle, equids, dogs, cats, gazelle and cormorant. The study of almost 20000 fish bones and scales shows the great diversity of taxa exploited from the sea, with abundance of pelagic fish, among which the tuna family is dominant. We can also notice the high presence of seabreams, sharks and some dolphinfish and sailfish, as well as other pelagic fish. Additionally, more than 350 botanical remains were studied, including mostly cereals (Asian rice, free-threshing wheat, finger millet, hulled barley) and fruits (date, jujube, grape, pomegranate), but also, in very minor proportions, pulses (mung bean and cowpea) and condiments (black pepper and celery); in addition, 130 clusters of rice grains have been found in the northern house, probably from fire destruction layers, composed either only of rice grains, mixed with rice chaff and weeds, or with split mung bean.

Cross-referencing these data allows us to identify a set of food-processing activities and thus, the function of some rooms inside the twin houses' building. First, the northern house seems to have been the locus of various food-processing activities, including scaling and cutting fish (maybe linked to the gutter), preparation of plant and animal meat products for meals (courtyard D) or plant food storage (room A), either consumed by the inhabitants or sold through the shop attested on the western side of the building. In the southern house, other activities have taken place, such as harvest cleaning (courtyard I), date syrup production with the madbasa (rooms B and R) and dumping at the end of occupation (rooms M and P). The diverse composition of the fish assemblage suggests also that different suppliers were involved or that the house specialized in different fishing areas than to the northern house. More generally, various products must have been brought, processed and consumed in different ways inside the building: for example, only the meatier sections were brought into the building with lesser ones being discarded probably just after the slaughter outside; fishes may have been salted for preservation (basins in room A); most of the cultivated plants (cereals, pulses, fruits, condiments) correspond to accidental losses during meal preparations or direct waste thrown to the fire for elimination (courtyard D).

The nature and management of agropastoral systems have been reconstructed thanks to the composition of faunal and botanical assemblages. The simultaneous presence of dates, fruit trees and annual crops (cereals, condiments) seem to reflect the vertical composition of oasis date palm gardens with date palms as the upper level, fruit trees the intermediate level and annual and perennial crops below or aside. Evidence of goat/sheep accompanied with cattle and equids constitute the animal component of this agropastoral system, providing meat, dairy, wool, manure and labour. These agropastoral systems, likely located at the mouth of the Wadi Hilm, were insufficient to feed the entire urban population. Other date palm gardens along the Wadi Hilm, its tributaries, or at a regional scale (e.g., fruits from Thîby mentioned by Ibn Battuta) must therefore be considered.

Specific herding management such as lambing may have been set up, possibly linked with dairy production but, as the building is not a breeding farm, it can also correspond to evidence of high-social status products consumed or sold inside.

To finish, the harbour population of Qalhât relied also on its relations to the sea for ensuring its subsistence. The diverse fish assemblage and the focus on big tuna and other pelagic fish testifies to the high skills of the sailors and the control of navigation techniques. Pelagic taxa must have been captured offshore with the help of large boats such as the traditional dhow. The great diversity of demersal fishes (king soldier breams and emperors), in lesser proportions, clearly indicates the exploitation of inshore waters as well. Moreover, the presence of several foreign plant products (Asian rice, finger millet, mung bean, cowpea, black pepper) seems to indicate the importation of such products through maritime trade networks from the Indian subcontinent, possibly also eastern Africa for finger millet and cowpea, although we must also consider the hypothesis of local cultivation for some of them.

To sum up, several bioarchaeological analyses on the assemblage from the twin houses' building

(B94) in the harbour city of Qalhât, in relation with archaeological structures, allows us to identify several crop-processing activities (scaling, cutting and salting fishes, cleaning of crop harvests, production of date syrup, consumption) related to the function of rooms in the building. The food supplying systems involved oasis agropastoral systems situated near the site, on the banks of the Wadi Hilm upstream and at a regional scale; specific herding management such as lambing may have also take place to obtain dairy products or high-quality meat. Fishing coastal and offshore strategies allowed the exploitation of diversified marine environments and maritime trade to obtain tropical plant products though regional trade networks. Other types of analyses (shell, wood charcoal, strontium isotopic) are required and other sectors of the city need to be investigated to better understand the subsistence strategies set up during the medieval period for feeding the urban population of Qalhât.

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19th and 20th Century European Style Ceramic Imports in the United Arab Emirates

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3. Independent Researcher, USA
4. University of Bonn, Germany

Mass-produced, factory-made ceramics emerge as one of the products of the industrial revolution starting in northwest Europe in the latter half of the 18th century. During the 19th century, they began to be exported across the globe. Substantial quantities arrived in the Gulf region primarily via the British Administration in India and the port of Bombay. The majority were carried first to the coast of southern Iran and especially the port of Bushehr, from where they were redistributed via local carriers to the coastal towns of the southern Gulf (Otte & Priestman 2022). They arrived alongside a wide range of other manufactured products such as enamelled tin vessels, paraffin lamps and small firearms. The opening up of a new market in Arabia is mirrored by similar and contemporary developments in Southeast Asia, the Caribbean, Australia and elsewhere. Yet the economy and cultural setting they entered into in Arabia was of course specific to the region. One of the questions we wish to address is the way that the meanings attached to objects may have been transformed, perhaps even subtly subverted in a departure from the top-down perspective often connected with the narrative of globalisation.



The current project brought together a group of specialists with differing perspectives on global ceramic trade in the late pre-modern period.



Seth Priestman works on a range of ceramics from the post Iron Age to the 20th century in the Gulf region and Indian Ocean world. Nigel Jeffries is the senior specialist in medieval and later ceramics for the Museum of London Archaeology, responsible for processing the vast quantities of pottery resulting from commercial development across the ancient industrial capital of the UK and with a particular interest in British pottery made and used c. 1740–1945. Jaap Otte is a collector and specialist working especially on Dutch and other European manufactured wares found in the Middle East and Southeast Asia. Gen Mitsuishi has previously undertaken work on Julfar Ware ceramics from Ras al-Khaimah and is currently researching late Medieval German stoneware in Germany. Our project was developed with support from the Zayed National Museum Research Awards under the title of 'exploring the interpretative value of 19th-20th century European factory-made ceramics in the UAE through collections-based research'.

Drawing on the inspiration of an earlier study of ceramics from the National Museum of Qatar (Carter 2011), the aim of our project was to catalogue and record a large and representative sample of complete pieces of European and European style pottery of the 19th and 20th centuries from the United Arab Emirates. These often survive as heirloom objects that were passed down through several generations before being incorporated into the museum collections as donations and commercial acquisitions since the 1970s. The objects themselves are often stamped with a factory and sometimes a distributors mark that provides information on the dating and country the objects came from. The pottery is mostly made from a fine refined white or red earthenware with bright and intricate decoration that was either hand painted or applied with transfer prints of sponge cut designs. The individual patterns were very often copied between countries and manufacturers. Previous study of heirloom objects and archaeological examples from across Arabia indicates that there is some regional variation in the products most commonly used and this relates in part to differing spheres of geopolitical influence. For example, Italian colonies in the southern Red Sea region seem to be connected with a particular influx of Italian manufactured wares in South Arabia. Whereas products in the Gulf region are dominated by those from the UK and northwest Europe.

In total, it was possible to document 165 European vessels – largely from the Netherlands, Italy, France, Great Britain and Germany – their Japanese and Chinese imitations and Indian stoneware of the c. mid 19th to mid-20th century housed in collections from Ras al-Khaimah and Umm al-Quwain (Table 1). This represents a substantial increase on the largest previous study undertaken, which recorded 45 objects from the National Museum of Qatar (Carter 2011). All objects were photographed and described in detail. A presentation on the study was delivered at Abu Dhabi's Archaeology Conference at the Louvre Abu Dhabi on the 28th November 2024. A full catalogue of the material and our discussion and analyse of the collections has been prepared for publication and will appear in the AD Conference Proceedings in 2025.

Location	Number of objects
RAK-DAM port store	93
Ras al-Khaimah National Museum	12
Umm al-Quwain National Museum	43
Falaj Al Mualla Fort, Umm Al Quwain	17
Total	**165**

Table 1. Collections catalogued: number of objects fully catalogued by heritage setting

Amongst the pieces recorded, one object perhaps exemplifies the entangled nature of global ceramic production, distribution networks and the agency of consumers in this trade. A brown transfer-printed plate carries a moon and star pattern clearly manufactured for a Middle Eastern export market. The object itself was produced by Pountney and Co. Ltd in the late 19th century in the port city of Bristol on the west coast of England. A secondary print mark affixed during its manufacture on the rim underside indicates that the consignment was pre-ordered in bulk by Abdol Gani Haji Sakoor, a wholesaler in Bombay operating under the British India Administration Royal Coat of Arms. A household in what is now the UAE may have appreciated the plate for its appropriate decoration and as a status symbol on which to offer food to guests.



Our work on the project would not have been possible without the generous support of the Zayed National Museum Research Award. We are particularly grateful to Peter Magee and Emma Thompson, Robert Carter and Willem Floor for their support of our work. Study of the object collections was undertaken in September 2024. In Ras al-Khaimah this was generously facilitated by Ahmed al-Tanaiji, Annissa Gultom and Christian Velde. Our work was assisted by Omar Dheeb Farajallah, Hessa Hasan Alhaili, Fatema Mohammed Alshehhi and Miryam Lehlaili. In Umm al-Quwain our study would not have been possible without the generous assistance of Rania Hussein Kannouma.



The landscape of settling and farming around the springs in the Iraqi western desert

Jaafar Jotheri (University of Al-Qadisiyah, Iraq)

My team and I have recently published a paper in Archaeopress entitled 'Irrigation Systems in the Iraqi Western Desert: Abu Jir Springs Line as a Case Study,' for which the fieldwork costs were covered by the IASA research grant fund in 2024. The paper focuses on the twelve forts that have been catalogued, including Abu Ghar, Nabaa, Al-Qsair, Ayn-Sayed, Shallal, Aqlah, Al-Rahabah, Madhlum, Al-Ukhaidir, Bani Muqatil, Al-Aqiser, and Al-Bardwil. Additional fortresses are referenced in historical records and maps, but are no longer extant due to demolition linked to urban development or deterioration of construction materials. Each fortress varies in size, design, building materials, era, and intended purpose. Five main functions for constructing these fortresses near the Abu Jir Springs line can be identified: military, agricultural, trading, rest, and religious purposes. Militarily, fortresses and trenches were built by southern Mesopotamian authorities between the floodplain and the western desert to safeguard towns and farmers against attacks from nomadic groups in the desert. Agriculturally, property owners constructed forts on their estates to store harvested crops securely, as well as for residential purposes. Some locations served as

trading hubs, facilitating exchanges between farmers and nomadic shepherds, typically involving livestock and agricultural goods. Certain fortresses were also used by rulers or affluent families for recreation, hunting, or recuperation. For religious uses, East Syriac Christians established fortresses for worship in remote regions near caves and springs. Examples include Christian Al-Rahabah, Al-Aqiser, and Al-Bardwil forts during the early first millennium A.D., which corresponded to their period of Christian expansion in the region.



Desert fortresses are observed across the Arabian Peninsula, serving roles such as temporary resting places, centres of settlement, trade, religious activities, military functions, and border security.

Many oases, roads, religious sites, and trading centres in deserts connecting Mesopotamia, the Levant, Mecca, and Yemen are accompanied by fortresses due to frequent travel among these areas. Larger springs and significant agricultural tracts necessitated advanced water management systems, such as those found in feudal estates. However, several notable landscape features associated with these springs have been documented, including fortresses or settlements. Communities often connected springs to increase water availability for irrigation. When establishing connections between springs was not feasible, qanat-style irrigation systems were constructed. Secondary or tertiary canals branching from farms frequently form comb-like, parallel patterns, while long canals from springs to farms create broom-shaped layouts. Springs could support either single or multiple farms, depending on capacity. Due to the terrain, most springs irrigated lower elevations through gravity-fed systems, although some could distribute water to surrounding areas. Not all canals fulfilled their intended role; at times, canals were dug but remained unconnected to arable land due to unsuitable topography or lack of soil fertility. Some springs produced surplus water, resulting in excess flow into valleys, rivers, or lakes.



Historic Carved Doors: Research and Exhibition Project Updates

Janet Marion Purdy, PhD

It is my pleasure to share this brief update about my ongoing fieldwork and research on historic and ornamentally carved doors from Africa, Southwest Asia, and the Indian Ocean world as part of an exciting collaboration with Art Mill Museum and Qatar Museums. I am currently serving as a research and curatorial consultant for Qatar Museums, to document and contextualize the museum's collection of historic doors and doorframes. The collection is comprised of a fairly narrow range of styles and ages (primarily middle-to late-twentieth century) but represents a previously unknown and important link in the regional connections and movement of artisans, commissions, and decorative trends for the doors I have been studying for the last decade.

Our Doha-based team collaborated with heritage experts from Aga Khan Trust for Culture in Afghanistan who oversaw the cleaning and restoration considerations for the heritage collection. Their photogrammetry experts also created 3D scans of each individual door. One of the doors we studied together in January and February is now on view in the National Museum of Qatar with new gallery texts (Fig 1).



Fig 1 Historic door installed in the National Museum of Qatar. All photos by the author, June 2025.

An additional and exciting element of this project aligned with the announcement in February 2025 by Qatar Museums and the city of Venice that Qatar will build a permanent national pavilion at the Venice Biennale, marking its new place in the iconic international exhibition space. The State of Qatar is only the third nation to secure a permanent building in the coveted Giardini della Biennale in the last 50 years. Qatar will be the first Gulf nation with a Giardini pavilion. Saudi Arabia and the United Arab Emirates pavilions are located in the Arsenale.

This is Qatar's first time ever presenting at the Biennale Architettura (Venice Architecture Biennale, May 10—November 23, 2025), an international exhibition showcasing architectural works from around the world, and held in Venice, Italy, every other year. Because the new pavilion would not be completed in time for the 2025 edition, Qatar is represented instead with two exhibitions timed to run the duration of the Biennale.

This includes *Beyti Betyak. My Home is Your Home. La Mia Casa.*, curated by Aurélien Lemonier and Sean Anderson, and installed on the second floor of the stunning ACP-Palazzo Franchetti as a temporary venue in San Marco for this year's edition. *Beyti Betyak* features significant works of modern and contemporary architecture to explore meanings of hospitality within the architecture, urbanism and landscape designs of the Middle East, South Asia, and North Africa regions (MENASA). The exhibition was commissioned by Her Excellency Sheikha al Mayassa bint Ahmad bin Kalifa al Thani, chairperson of Qatar Museums – Art Mill Museum.

I worked with the curatorial teams to select and display three doors from the Qatar Museums collection within that exhibition as examples of regional architectural design and to showcase related historical and cultural meanings. Two massive carved wooden doors from Bahrain or

Qatar are featured in “The Making of Doha” gallery (Fig 2). A late-nineteenth-century door featuring Arabic inscriptions on the panels would have once stood as a public-facing marker at the entrance to a middle-class family home. The designs and materials reflect elements that were typically found and valued on doors throughout the Swahili coast of eastern Africa. Throughout the region, epigraphic additions to doors and gateways, including Qur’anic verses, function as protective blessings and provide a moment to honor God as one passes from the public to a private space (Fig 3 detail). The latch bolt, *mazlaaj*, is a traditional wooden device constructed with several interlocking elements.

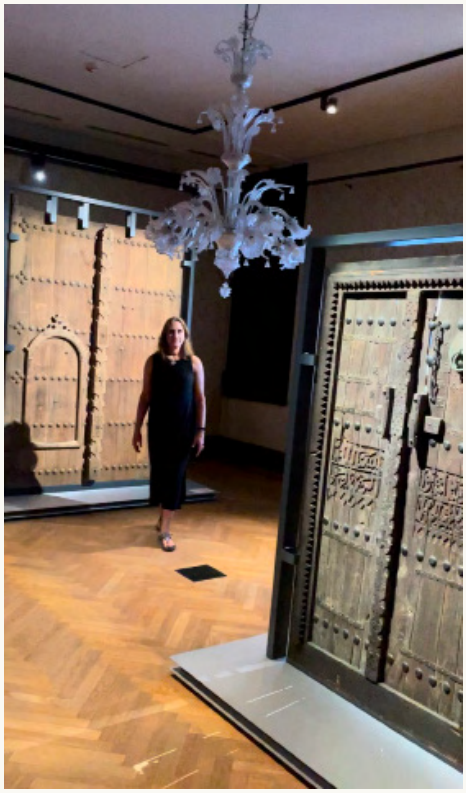


Fig 2 Historic doors installed at Qatar Museums exhibition in Venice Biennale Architettura 2025, Beyti Betyak. My Home is Your Home. La Mia Casa.

The larger door in this gallery is a typical example from an entrance or gate to an upper-class family home in the region, and includes a wicket door, or *farkhat al bab*, a classic design feature employed throughout the Arabian peninsula and western Indian Ocean world. The ornamentally carved center post, or *enf*, is decorated with motifs that are popular throughout the Swahili coast and Oman. The door panels are left plain but feature sturdy rounded iron dhow nails which serve as a protective addition to the doorway. In this gallery there is a short video presentation that includes a map, summaries of my research, field photography, and other contributions to the contextualization of the historic Qatari doors, as well as a compilation of oral history interviews from key figures in this project, and highlights of my explanations about specific design features on the doors. (Fig 4)



Fig 3 Detail of carved inscriptions and mazlaaj lock, Qatar Museums exhibition in Venice Biennale Architettura 2025.



Fig 4 Detail of video installation and farkhat al bab. Qatar Museums exhibition in Venice Biennale Architettura 2025.

An early-twentieth-century lacquer painted door is installed in “The Art of Gardens” gallery to serve as an excellent example of the artistic exchange throughout the Gulf region. A wealthy individual imported this door to elevate vernacular architectural design and interior spaces in Qatar and to advertise his access to external trade and cultural networks. It features the typical layered motifs of songbirds and blooming florals that were popular during the Qajar period in Persia, where it was certainly created. (Fig 5)



Fig 5 Lacquer painted door from Qajar installed at Qatar Museums exhibition in Venice Biennale Architettura 2025, Beyti Betyak. My Home is Your Home. La Mia Casa.

I continue to conduct fieldwork throughout the Arabian Peninsula as part of this work with Qatar Museums and to support my larger, ongoing research about the movement and exchange of ideas, people, and designs across the broader region. Highlights include oral history interviews with an eighth-generation carver in Muharraq, Bahrain; two solo drives across the Kingdom of Saudi Arabia (Fig 6, Fig 7) to visit historic sites and trading towns (Trip 1: Riyadh-Buraydah-Hail-Al Ula-Madinah; Trip 2: Jeddah-Al Bahah-Abha-Zahran Al Janub-Najran); and a solo drive around the State of Qatar to visit port sites and royal compounds.

As an art historian with passion for and expertise in these historic arts of Africa, the Arab world, and the Indian Ocean world, it is truly an honor and joy to collaborate on these exhibition projects



Fig 6 Decorative door installed at Zahran al Janub, Kingdom of Saudi Arabia. Photo by the author, May 2025.



Fig 7 Carved door displayed in Harat al-Yemen, Al Balad District, Historic Jeddah, Kindom of Saudi Arabia, courtesy of Saudi Arabia's Ministry of Culture. Photo by the author, May 2025.

and ongoing research projects with my talented colleagues from Qatar, Afghanistan, Australia, Italy, France, Bahrain, Saudi Arabia, Yemen, and beyond.

Jagged Bells

Manfred Boelke

Description

When flying over Harrat Rahat and Harat Kishb at low altitude (300-400 m) with Google Earth, bell-shaped structures with striking prongs appear repeatedly alongside many other prehistoric relics (Figure 1). They vary in size and also have a different number of prongs. Some of them are so clear that one is inclined to think they are contemporary structures, but most of them appear to be ancient and are criss-crossed by vehicle tracks, footpaths and former watercourses. A total of more than 1600 sites have been located so far.



Figure 1

Based on their external characteristics, I have named these structures 'Zackenglocke' (Jagged Bell) and they can be divided into three groups (Figure 2). The mayority of the finds belong to

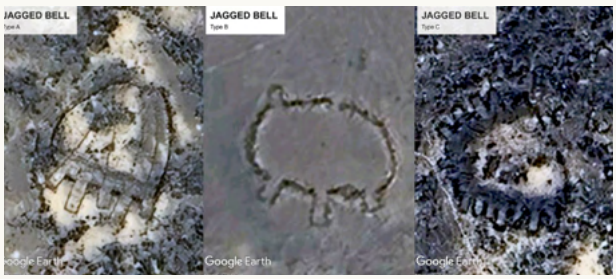


Figure 2

group A and are distributed across the entire Rahat. They all follow an identical design (Figure 3) and, with a few exceptions, almost all point in the same direction. A few of them are folded across the east-west axis and turned upside down, so to speak (Figure 4). Type B is distributed from the central Rahat eastwards to Harrat Kishb, while type C is limited to the southern part of the Rahat (Figure 5). The smallest jagged bells are only

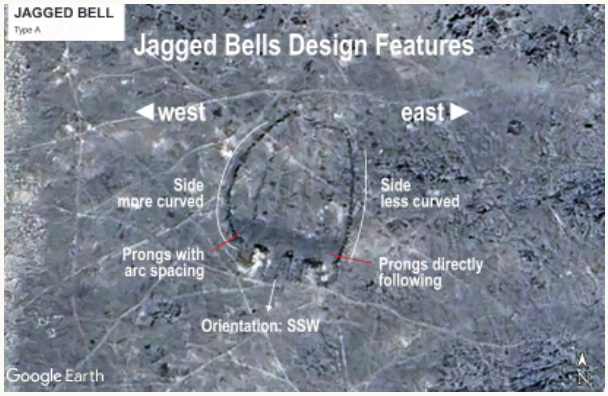


Figure 3

about five metres wide, while the largest jagged formation marked to date has a width of about 88 metres (Google Earth measurements). The number of prongs varies greatly, ranging from just one to more than twenty.

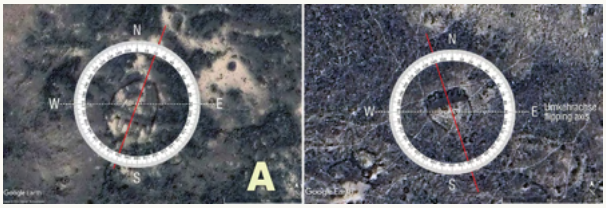


Figure 4

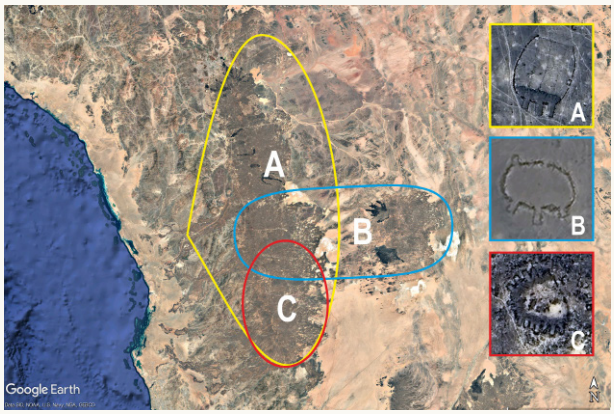


Figure 5

The jagged bells certainly need further archaeological research. This article aims to make them known to a wider circle of researchers who may be able to add to existing knowledge on the subject.

Considerations:

• It is implausible that these are simple construction sites and that the conspicuous spikes were created by a bulldozer The fact that the orientation of the structures follows a clear pattern argues against a construction site. Most of

them point to the south-southwest. Construction sites would be adapted to local requirements in terms of their orientation. There is also no evidence of any other earthworks in the area, such as access roads.

• This predominantly consistent orientation is also implausible for enclosures and gathering points for livestock.

• It is also not plausible that the jagged bells are oriented towards Mecca and that the individual prongs represent prayer niches (mihrab). Then there would be no variants oriented toward the north or northwest, which also have up to twenty or more prongs in all directions.

• A ritual purpose from pre-Islamic times is more likely. The often repetitive orientation of pre-Islamic open-air sanctuaries is well documented in Arabia and throughout the Middle East.

More information and a KMZ file for download are available on the author's website: https://archaeoland.eu/en/arabia-en/saudi-arabia/jagged-bells

About the author:

Manfred Boelke is a German independent researcher who has been intensively involved in the satellite image-based search for prehistoric relics for almost two decades. After high-resolution satellite images became accessible to everyone on the internet, he began to engage in online archaeology. Since then, he has been searching for archaeological finds, focusing on the Middle East and North Africa. Among the successes of his work was the discovery of previously unknown desert kites in the central and western Sahara, which he published as a co-author with Olivier Barge and others.

The Impact of Heritage Tourism on Local Communities: The Case of Saudi Arabia

Sara Sampieri, Effat University

Saudi Arabia has developed a policy of economic diversification through Saudi Vision 2030. The program also includes the revival of tourism through the development of the sector starting in 2019. Thus, in 2023, the country reached 12th place in the world in terms of the number of arrivals and in 2024, it totalled 100 million visitors. Tourism development has generated economic benefits due to the high spending power of a select target audience of tourists and has created new infrastructure and jobs. Still, it has also brought about new challenges. The interest in emerging travel destinations, sustainable development plans for heritage sites (such as Al Ula and Diriyah), and recent tourism results motivated a European researcher to lead a research project in this specific area.

Starting from this scenario, exploratory research promoted by the Effat University of Jeddah investigated the impact of heritage tourism on local communities, using Al Balad as a case study. Often, tourism is focused on customers behaviour, but in this case, the research



Figure 1-2. View from Al Balad (Source:



Figure 2. View from Al Balad (Source: Author).

highlighted the other side of the coin, analysing the perspectives of the hosts.

The first phase of the project started in October 2024 and finished in August 2025. After the literature review, data were collected through a mixed-methods approach. A survey comprising 22 multiple-choice questionnaires, both in Arabic and English, was administered at the Al Balad UNESCO World Heritage Site to a total of 131 individuals (74 citizens, 53 workers, and 4 members of the institution). Additionally, nine interviews, each comprising 16 semi-structured, open-ended questions were conducted with a purposive sample of nine individuals (eight residents and one director) between January and April 2025.

The research was authorised and supported by the Jeddah Historic District (JHD), an organisation of the Saudi Ministry. A group of six volunteer researchers supported the three researchers involved in the project during the collection and the codification process, observing how Saudis are not yet familiar with social science empirical investigation, looking curious and surprised by the presence of researchers in the place.



Figure 2. Mr. Hani Al Quattani (Jeddah Historic District) is supporting the researchers in establishing their first contact with the residents (Source: Author).

The results confirm the stakeholders' perception of an increase in sustainable tourism development and the importance of heritage conservation. However, discrepancies look evident. In fact, while citizens, residents and workers are more focused on job opportunities, the institutions pay attention to facilitating investments and improving infrastructure. Furthermore, there is a lack of awareness about the possibility of a public-private partnership between the residents and the institutions. Finally, residents and workers are concerned about the distribution of benefits, particularly about the principles of equity and justice, and feel a limitation in local community engagement in the decision-making process. It is the effect of the positionality of the different stakeholders who are expecting other advantages from the promotion of the heritage site and desire to play a crucial role in its management.

Consequently, different perspectives of the members of the local community about the delicate balance between heritage conservation and tourism development represent a problem. For this reason, the second phase of the research will focus on defining "Actionable Pathways for Community Engagement", with the support of an international team.

Special thanks to the Jeddah Historic District, Ministry of Culture of the Kingdom of Saudi Arabia the co-investigators, Prof. Mady Mohamed and Prof. Mohammed Bagader, and the following individuals who have also played an essential role

in supporting the research: Haya Alhussein, Danya Alsharif, Samira Amer, Hannan Idris, Jena Hariri, Dena Shehadah, Joudi Bathallath, Chiara Cei, Hani Quattan, Maha Zedan, and Agustín Martínez Peláez.

Informed consent was obtained from all individual participants included in the study. The questionnaire and methodology for this study were approved by the Human Research Ethics Committee of Effat University (Ethics approval RCI_REC/21.Jan.2025/7.1.Exp.11).

The Diwan of the Beasts

Dr. Sayed Ismail A. AlBehbehani

I have initiated the project The Diwan of the Beasts, which aims to collect and annotate all references to the main large animals mentioned and described in pre-Islamic Arabic poetry.

This collection shall be presented in a series of books, each a collection of poetry covering one or two animals. As such, they can be organised this way:
Book One: Diwan of the Arabian/Asiatic Lion
Two: Diwan of the Arabian Leopard and the Asiatic Cheetah (single volume)
Three: The Arabian Oryx
Four: The Arabian Gazelles (single volume)
Five: The Arabian Wolf
Six: The Arabian Foxes and The Stripped Hyena (single volume)

The motivation for this work is largely to spread awareness of the cultural importance of these animals. All of these species are facing extinction (or are already extinct from the Peninsula).

Currently, two books are being prepared: one about the oryx and another covering the Leopard and Cheetah. The oryx book has poetry collections from around 109 poets. Some have one piece of poetry to their names; others have more numerous collections of poetry pertaining to the oryx. Some pieces are dozens of verses long, in other cases, they are just one stanza.

Significantly less poetry is available for the leopard and the cheetah. Hence, I decided to push the parameters of time to contain poetic references up to the transition period between the Umayyad and Abbasid eras.

Although the collection of poetry on the oryx, leopard and cheetah is almost done, the



annotation phase is not yet started. Other books in the series are yet to start. I foresee that each book needs an introduction. Each poet in the collected works also needs to be introduced and put into context. Then, each poetry line should be explained in the notes (at the bottom of the page), especially with regards to explanation of rare and difficult terms and meaning. I also perceive that the work should have a conservationist appeal throughout.

This rather ambitious project needs support, both in terms of money and the expertise working on it if it shall ever see light.

I have been led onto this area of interest largely through my background in studying early Arab and Islamic history. I have a Masters degree in history (Oxford Brookes University, Oxford, UK) and a PhD in Arab and Islamic Studies (Institute of Arab and Islamic Studies, University of Exeter, Exeter, UK). In both degrees, the main theses revolved around the communities and religions of Arabia in Late Antiquity. I currently work at the Arabic Islamic Science Museum at the Sheikh Abdullah Al Salem Cultural Centre (Kuwait). Previously, I have published two books, one on endangered animals

in Jahili poetry (وحوش القصيدة), the other on biological evolutionary thought in Islamicate science and philosophy (استباق أصل الأنواع).





New Publication

The Archaeology and History of Fujairah: Human Presence in the Environment.

By Michele Ziolkowski
With a contribution on ancient metallurgy by Lloyd Weeks.

Publisher:
Fujairah Tourism and Antiquities Department &
Motivate Media Group. 2024
ISBN - 978 1 86063 568 7

The Archaeology and History of Fujairah is the second book in the 'Natural History of Fujairah' series. It follows the chronology of the Emirate from the Palaeolithic to the mid-twentieth century.

It is the first comprehensive examination of Fujairah's rich archaeological heritage. From stone tools to burial cairns, fortifications to villages and rock art, this study is a must-have for students, archaeologists and anyone interested in the history of Fujairah and the United Arab Emirates.

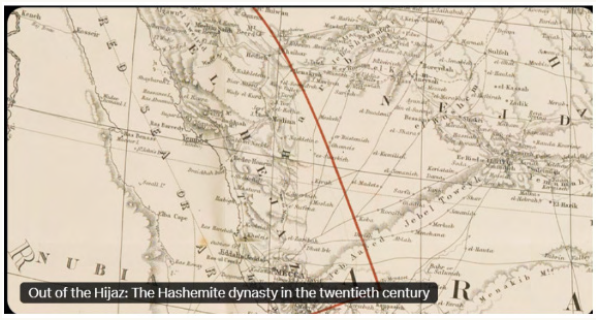


British Library/Qatar Foundation Partnership

The Partnership celebrated the 10th anniversary of the Qatar Digital Library (QDL) in 2024 and is now delivering Phase 4 with extensive digitisation of the India Office Records IOR/P. The Partnership's primary focus is the digitisation of the India Office Records and Private Papers collections that relate to Gulf history. Also in scope are the British Library's Arabic scientific manuscripts and Arabic shellac discs collections. The digitised records are made freely available on the QDL, alongside extensive metadata, including enhanced catalogue descriptions and contextualising articles on relevant topics. This metadata is all published in both English and Arabic, making the QDL a fully bilingual resource. Digitising the collections and translating the metadata opens them to new and wider audiences, increasing understanding of the region's history and heritage.

A notable feature of the QDL is a section of Expert Articles written by Partnership staff on areas of the Arabian Peninsula to introduce and contextualise the relevant archives focussing on a particular theme, personality or incident. Here are highlights of articles as well as some short films published in 2025.

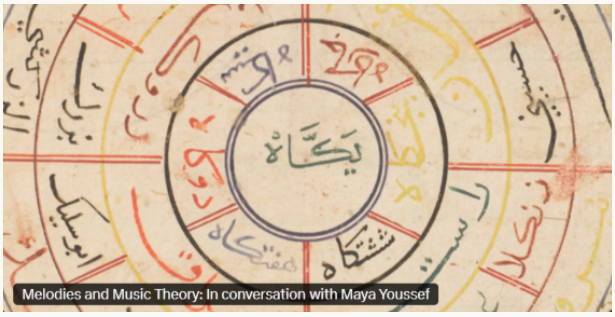
Explore the Hashemite dynasty in the 20th century and their entanglement with British imperial strategy.



Our new short film Pirates or Patriots reveals how Britain used the label 'piracy' to justify 19th-century military campaigns along the so-called "Pirate Coast" . Dive deeper into the fascinating world of maps on the QDL.



Musician Maya Youssef joined our colleague Jenny Norton-Wright to decode a rare and enigmatic work of musical theory. Watch the film and explore the manuscript on the QDL.



Discover the history of independent Arab recording companies in the 'shellac era'; and the surprising connections between them. Other topics covered include a two part finding aid on sources on oil in Bahrain, Kuwait, Qatar and Iran and oil in Saudi Arabia, Iraq, Oman and UAE.

Other popular features of the QDL portal are the tips for searching by theme, period and type and the glossary. Do keep in touch with the BLQFP on X at @blqatar.

Conferences and Events

Red Sea Conference 12: Exploring the Red Sea Shores

The Saudi Museums Commission and Heritage Commission, in conjunction with the Society for Red Sea Studies, are pleased to announce that the next Red Sea Conference will be held in Jeddah from 9 to 12 April 2026. This edition continues a long tradition of conferences on Red Sea studies that began in 2002 and is now in its twelfth edition.

'Exploring the Red Sea shores' is the name under which this edition will be held. The call for papers sought submissions of original research proposals exploring the cultural, historical and environmental dimensions of the Red Sea region. The conference offers five travel grants to researchers, prioritising those who come from the Red Sea region and who may need financial support.

For more information please write to the following email address: rsm.info@moc.gov.sa.

Sir Richard F. Burton: 8th International Conference

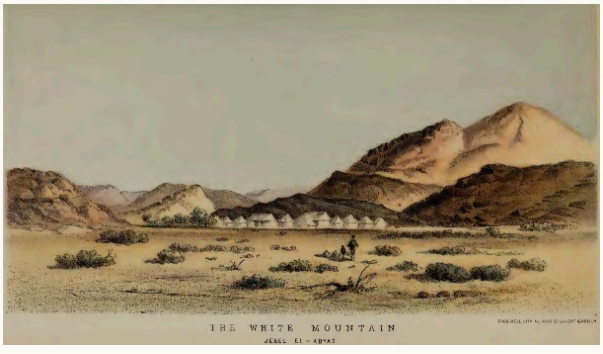
The first series of conferences dedicated to the memory of Sir Richard Burton started in the 1920's, but fizzled out after the fifth edition just before the Second World War. A new cycle began in 2015, the 125th anniversary of Burton's death in the then Austro-Hungarian city of Trieste, appropriately enough in Trieste itself. Initially conceived as a bi-annual event, the conferences have been held annually since 2021, each one in a different city connected to Sir Richard Burton's life: Torquay, his birthplace, Tunis - his final visit the Arab world, Vienna, Dublin and, in 2025, Tangier, where Burton hoped in vain to be appointed British Ambassador to Morocco.

Over the years, speakers from the UK, Italy, France, Tunisia, the United States, South America, Slovenia, India and Ireland have presented their thoughts and research on a wide variety of Burton-related topics from the Thousand Nights and A Nights (better known as The Arabian Nights) to the Sufi influences on his mystical poem The Kasidah, from his last journey in search of an original manuscript of The Perfumed Garden of to his Book of the Sword, from his observations on the war between Brazil, Uruguay and Argentina, and Paraguay to "Translation and Disguise in Burton's Pilgrimage to Mecca and Medina". While there is always a serious academic tone to the conferences, there are light-hearted moments too, with readings from the Kama Sutra, story-telling from The Nights and other Burton translations, and a selection of music the Burtons might have enjoyed.

As mentioned above, the 2025 conference (the eighth in the present series) will be held in Tangier, at the American Legation in the heart of the medina on Friday 24th October. For further information about this and future conferences, please contact: mickwalton@libero.it.

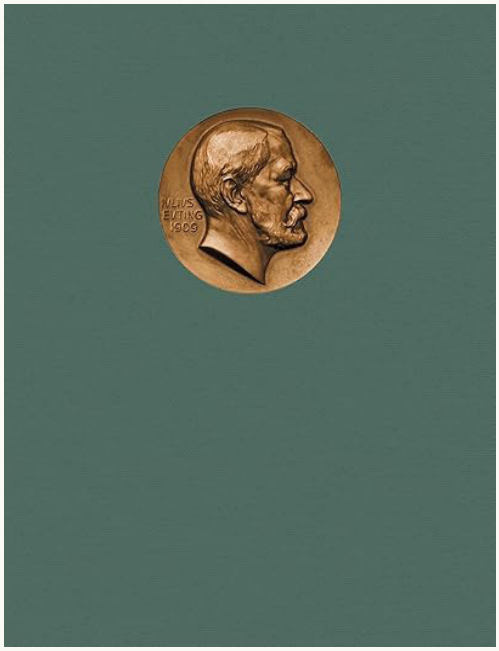
Two illustrations from Sir Richard Burton's The Land of Midian





Book Reviews

Edited by Alexandra Hirst



Julius Euting: Diary of a Journey through Inner Arabia, 1883-1884.

First English edition of *Tagbuch einer Reise in Inner-Arabien*. Translated by Christopher Metcalf. Introduced, edited and annotated by William Facey and Michael C.A Macdonald. London: Arabian Publishing, 2025. 2 vols. xxv + 314 pp., xxv + 365 pp., illustrated. Hardback. £120.

'WHAT NEXT, ONE WONDERS? A translation of Euting's *Tagbuch*? One very much hopes so.' These were the final words of my 2023 review of William Facey's *Charles Huber Frances Greatest Arabian Explorer* (Arabian Publishing, 2022). All our hopes have been realised. A triumvirate of scholars – Christopher Metcalf, German-English bilingual classicist and ancient near-eastern linguist, William Facey, historian, publisher and museum planner, and Michael Macdonald, world authority on the inscriptions and culture Euting himself sought to return from the depths of Arabia to Europe – have banded together to bring to light the extensive diaries of Julius Euting, the nineteenth-century Semitist-explorer of northern Arabia.

Julius Euting (1839-1913) was born in Stuttgart, the son of a civil servant, and showed early academic promise in Greek and Hebrew in his local Gymnasium. He was quickly drawn to the languages of Arabic and the ancient Near East. In 1868, he was appointed a librarian in the Tübingen University Library and remained a librarian for the whole of his career. He developed a keen desire to travel and his interest in Semitic epigraphy, particularly Mandaean MSS, Phoenician, Punic and Aramaic inscriptions, took him to Tunis, Carthage, Asia Minor and Constantinople. In 1872, shortly after the Franco-Prussian war, the result of which brought Alsace-Lorraine into the newly unified Germany, he was appointed under-librarian in the Kaiserliche Universitäts- und Landesbibliotek zu Strassburg, where he was to remain for the rest of his career. In 1880, he was appointed honorary professor there where he was a popular and entertaining lecturer. He was showered with academic honours in his lifetime. Together with Charles Huber, he was the first person to attempt a systematic record of the ancient North Arabian inscriptions.

Volume one of the book under review contains full biographies of Euting and Huber, his fellow-traveller on the 1883-84 expedition to North Arabia, an account of Euting the traveller and his *Tagebuch*. It discusses in some detail the relationship between the two who are described as 'silent adversaries'. It is interesting to note that Huber's *Journal* never once mentions Euting and the struggle for possession of the immensely important Taymā stele (now in the Louvre) is related at some length. The translation then covers the details of the journey from Euting's diary

beginning in August 1883 in Damascus through to the arrival in Hāil in October of the same year. Volume two deals with the journey from Hāil, leaving in November 1883, to Taymā, al-Hajr, al-Ulā and finally al-Wajh in April 1884. Enno Littmann, the eminent German Semitist, edited this volume of the diary and it contains a preface penned by him.

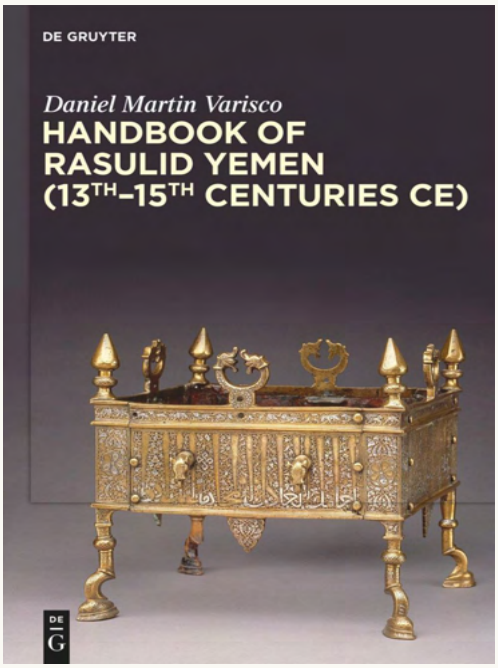
It is not easy here to escape comparisons with the writings of Euting's travelling companion Huber from the word go. But these are not the dry notes of Huber, the scientific explorer: we are now dealing with a very human traveller who, full of curiosity, kept his search for inscriptions to the fore. Despite his inferior colloquial Arabic and because of his keen nose for inscriptions, Euting was also determined to scrutinise the everyday persons he came across, humble bedouins and influential princes, and to describe them and the Arabian material culture he found was theirs. To reinforce his descriptions, Euting, an excellent artist, scattered throughout his diary drawings and sketches which are beautifully reproduced throughout the volumes under review. He even shows a sense of humour, as everyone and everything around him interests him. He is generally respectful to his Arab hosts and contacts, though his inner thoughts are sometimes revealed and are less tolerant. The diary throws much light on his relationship with the very French Huber (the latter who incidentally did not even deign to mention Euting at all in his reports of their expedition) and he is generally correct and respectful towards him.

The linguistic pedant in me compels me to bring to notice one or two points which were picked up in the text: vol. 1, p. 101. Euting's 'aqqāl (the rope securing headgear) appears strange, the singular in colloquial Arabic and *fuṣḥā* must be *'iqāl* rather than **'aqāl*; p. 184 and 185, read Qaṣr al-Dab'; and p. 188, note 155, read 'Asīr; vol. 2, p. 216, note 17 – this must read *duriba fī tūmā*.

It is sad that Euting should have shown such a lack of interest in falconry which surely must have been a very important cultural, and indeed economic, facet of life in nineteenth-century Arabia. Here too there would appear to be a different approach to falconry from that found further south: the long note 108 of p. 48 of volume two indicates a glove, rather than the *mangala*, the muff-like object in vogue in much of the Peninsula. J.J. Hess, Littmann's colleague, in his comments in this note does not seem aware of the technical term 'jess', or at least the German equivalent thereof, and 'little leather band' looks rather comical. A *burqa'/burga'* is called a 'hood' in English.

These two beautiful green volumes come in an equally beautiful green box. The paper is of exquisite quality, allowing for the reproduction of Euting's splendid drawings and sketches which grace almost every page of the volumes taken straight from the original journal. The notes of the editors are on occasions lengthy, though always learned, and all, whatever their length, completely relevant. These wonderful volumes will, it is to be hoped, allow Euting to take his rightful place among such European greats of Arabian travel as Niebuhr, Burckhardt, Burton, Palgrave, Doughty, Bell and Philby. So too the triumvirate mentioned above: what a splendid translation, what erudite annotations!

By G. Rex Smith



Handbook of Rasulid Yemen (13th - 15th centuries CE)

Daniel Martin Varisco.
Berlin and Boston: De Gruyter, 2025.
xiii + 480 pp.
Maps, 3. Appendices, 3. Tables, 23.
Illustrations, 4. Bibliography and Index.
Hardback and eBook,
£146.50. Hardback ISBN
978-3-11-159462-0
E-book ISBN: 783111595078
ISBN: 987-1-911487-85-2

'ALL YOU WISH TO KNOW about the Rasulids' might well be the marketing slogan appropriate for this new volume from the pen of Professor Daniel Varisco, the undoubted doyen of Yemeni studies. This veritable encyclopaedia of the Rasulid dynasty includes seven chapters and three appendices as follows: the geography of Rasulid Yemen; two history chapters on the Ayyubids, the Rasulids and the Tahirids, and the Rasulids and the Zaydis; a translation of a Mamluk author writing on the Rasulids; gifts and their role in diplomacy; Rasulid ports, ships and the seasons; weights and measures; and appendices on Rasulid gazetteers, trade through the port of Aden and texts attributed to Rasulid sultans. There are three maps, a massive bibliography divided into Arabic and Western sources, and the volume ends with a comprehensive index.

The author's geographical survey of the Rasulid realm (Chapter One) literally covers all the ground of the Rasulid realms. A most important inclusion, this is essential in this context when we find the Zaydis in the northern highlands of Yemen, and we need to assess as far as possible just what the Ayyubids who preceded them had included among their conquests and how the Rasulids had expanded their influence in southern Yemen. In Chapters Two and Three, he firstly takes us back to Ayyubid times and chronicles events right through to the Tahirids, l local Yemeni shaikhs, who were finally to oust the Rasulids after the latters' battering from tribal rebellions, and their financial woes, as their later rulers failed to match up to the brilliance of their forebears. The insistence that the second Rasulid sultan, al-Muzaffar 'Umar, was the builder of an indigenous Yemen, as opposed to a foreign invader, is of great importance and is clearly expressed. The biographies of the Rasulid sultans are excellent and draw in personal details and their literary prowess, as well as their ability to manage the affairs of state. After the historical chapters, the administration (of some sophistication!), the military and Rasulid society are all dealt with with great authority.

One constant theme runs through the volume: the great importance of the interaction between the Rasulids and their contemporaries in Egypt and Syria, the Mamluks. Chapter Four really reinforces this important fact with a fully annotated translation of what the Mamluk writer Ibn Fadl Allāh al-'Umarī had to say of the Rasulids in his *Masālik al-abṣār*.

Varisco quite rightly devotes a whole chapter to the practice of presenting gifts in diplomacy in the 7 th /13 th to the 9 th /15 th -century Mediterranean sea and Indian ocean region. Lists of gifts – as interesting as they are long – are provided, and the impact of diplomacy on the

Rasulid state in their dealings with Egypt, East Africa, India and China.

Outstanding is the author's chapter on all things maritime. We have a truly comprehensive study of all the Rasulid ports from the Tihāmah coast on the Red Sea to Dhofar (Zafār) on the south-eastern coast in present-day Oman. The major port was of course Aden, rightfully dealt with in particular detail, with its highly sophisticated port administration; this was where the wealth of the state was collected, the fruit of the enormously flourishing trade in the area at the time and the subject of Appendix B.

Varisco is brave enough to tackle – and with some gusto – the very difficult subject of the weights and measures of the Rasulid state. Brushing aside the immense complications of the subject in the context of the medieval Islamic world and translating directly from the 13th-century administrative treatise the *Nūr*, the author, in clear, and sometimes in tabular, form, clarifies the issue of how the Rasulids regulated their markets, their agriculture and their fisheries, all of course part of their extremely sophisticated administration.

The three Appendices and the Bibliography bring the volume to a close. If the latter catalogue of books and MSS pertinent to the subject of the Rasulids in Yemen lacks a single work, I would very much like to know what!

I hope it does not appear churlish to make one or two points which appear to me as I read the work: p. 38, note 37 and *passim*, *al-Faṣl al-mazīd* should read *al-Fadl al-mazīd*; p. 172, table, *fahd* should perhaps be translated 'cheetah', an animal trained for the hunt; p. 281, note 46, should not al-Jibla read Dhū Jibla? Also, p. 350, Khanfar to Wādī Abyan, this is certainly in the southern coastal area east of Aden, for Khanfar Rock is a known geographical feature in the region. Wādī Abyan is, however, a real mystery. The fertile area is of course very well known, though I can think of no wadi so named.

The reviewer runs out of superlatives! This is a well-produced volume written by the eminently authoritative scholar in the field who lays before us what we may wish to know about the long-lived medieval Yemeni dynasty. It must surely too leave hints here and there of where future research might be directed. It is the *sine qua non* for anyone approaching this dynasty which, we recall, took power in Yemen almost by chance and produced such excellent literature and architecture along the way. The erudition, the sheer breadth and depth of the volume, the attention to detail are breathtaking.

By G. Rex Smith

Lives Remembered

Werner Daum



Photo by RomanDeckert CC BY-SA 4.0

Werner Daum (14 July 1943 – 12 July 2025) was a German diplomat and author, who specialised in the cultural history of Yemen, Sudan and the Arabian Peninsula.

As a member of the Foreign Service of the Federal Republic of Germany, in the 1970s he worked for three years in Sana'a (then in the Yemeni Arab Republic, or North Yemen) and in Aden (People's Democratic Republic of Yemen or South Yemen). This spell in Yemen had a huge effect on him, and would lead to a body of research which culminated in him writing or editing several books on his retirement from the diplomatic service.

He was appointed Ambassador to Albania when the Embassy was reopened in 1987 and, a few days before his death there in July, recounted how on 2nd July 1990 he had opened up the Embassy to 3,200 Albanians who were seeking asylum from the communist regime. He admitted that he had acted alone and without the support of his government, and for this he is fondly remembered by many people in Albania. From 1992 to 1995, he was Head of the Human Rights Department in the German mission in Geneva, and from 1996 to 2000 Ambassador to Sudan.

In 1999 *Im Land der Königin von Saba. Kunstschätze aus dem antiken Jemen* was published. This was the catalogue of the exhibition at the State Museum of Ethnology, Munich, authored by him, which featured the collection that he had donation to the museum. He wrote many other books and articles on the cultural history of south Arabia, Sudan or Yemen, with a special interest in the pre-Islamic history of Yemen. For a time he taught Early Islamic history at the University of Pavia. He occasionally attended the Seminar for Arabian Studies and was a contributor to PSAS and the IASA (previously BFSA) Bulletin.

Werner Daum died on 12 July 2025 in Kavaje, Albania. He was visiting the country for the unveiling of a statue to Josef Budo, a young man who died in the anti-communist uprising in 1990. He was 82 years old.

We are grateful to Professor Doris Behrens-Abouseif, Research Professor at SOAS, (Professor Emerita), specialised in Islamic art and culture in Egypt and Syria, who has let us share her recollection of Daum written for the Journal of the British Yemeni Society.

"I first met Werner Daum in 1980s Munich, where I lived with my husband, Gerhard Behrens. At that time, Werner, the diplomat who had become an expert on Yemen, was working on the memorable Yemen exhibition, which was a huge success.

During his time in Yemen, Werner acquired a remarkable collection of Yemeni traditional jewellery; I was myself interested in traditional jewellery of the Arab world and had a collection from Egypt and other Arab countries, which was modest in comparison to his. When Werner decided to donate his collection to the Museum für Völkerkunde ("Museum of Ethnography"), now the Museum Fünf Kontinente ("Five Continents Museum"), in Munich, the museum director asked me to assess it. It was quite an experience to see

this amazing and dazzling collection which was beyond my expectations and anything I knew about Arab traditional jewellery. Werner told me that he used to travel extensively in the villages in search of collectible items. He acquired masterpieces in complete sets in pristine condition. He was later very disappointed by the way the museum treated the collection, disregarding their agreement to consult him whenever items were exhibited or published. I had great sympathy for his concerns.

After we moved to London in 2000, we met him again as a diplomat in this country; after he returned to Germany he would get in touch when he visited London. We were always impressed by his unique, unconventional and undiplomatic way of expressing his political views – and acting accordingly – although his views were not always in alignment with the official German positions, for which he had to pay a price but willingly dealt with the consequences. Because of his strong beliefs and straightforwardness, he could be undiplomatic in his social environment, as well. My husband and I thought this was part of his charm and originality and we held him in high esteem. He was erudite; his scholarly interests in the arts and culture of the Arab world led to many encounters in lectures and other academic events, and sometimes he consulted me about objects of his interest. His curiosity and interest in other cultures were not confined to the Arab world; after his death, I learned that he was as passionately interested in Albania where he had been stationed as diplomat. What a character! He surely leaves a big void. I will miss him."

Noel Brehony, IASA Trustee and Editor of the Journal of the British Yemeni Society, adds:
"Professor Dr. Werner Daum who was a former Deputy Head of Mission at the German embassy in Sana'a, and, subsequently, chargé d'Affaires en pied in Aden, was well known to readers of this journal and particularly to its editors. As Professor Doris mentions part of his charm was his honest, straightforward and often undiplomatic comments to the editors. When we did something right, he praised us and when he thought we or our contributors had erred he would also let us know with advice on how to do better. It was always exhilarating, and his motives were to help make Yemeni arts and culture better understood. In email sent to me on his current research on Yemen in January 2025 he wrote:
"I concentrate on those very few subjects, where I have material that is not available anywhere, realities that nobody has consciously seen, i.e. notes concerning anthropologically observed rituals and customs of a religious (non-Islamic) nature, that I have witnessed, but that have since died out. They allow not only a glimpse into the intellectual world of the Yemeni people, as it has been for the last several thousand years, but, taken together, make the reconstruction of their ancient (popular) religion and world-view possible. I have almost completed the reconstruction of the pre-Islamic religion of Yemen, as observed from such rituals that have survived to more or less the present day (more precisely: until a generation or so ago). Nobody else could do this research, even if there was no war, and generous funding available."

By Carolyn Metkola, with contributions from Professor Doris Behrens-Abouseif and Noel Brehony