*Paul A. Yule, Michela Gaudiello, Stephan Blum, Jannick Hammes*

# *What's in a Hut Tomb? Cemetery Mapping in Eastern Oman 2017–2023, Preliminary Report*

*Zeitschrift für Orient-Archäologie Bd. 17 (2024), 272–315*

*https://doi.org/10.34780/90054g74*

*Herausgebende Institution / Publisher:*
*Deutsches Archäologisches Institut*

# IMPRESSUM

**Zeitschrift für Orient-Archäologie**
erscheint seit 2008/*published since 2008*

ZOrA 17, 2024 • 320 Seiten/*pages* mit 254 Abbildungen/*illustrations*

**Herausgeber/*Editors***
Margarete van Ess • Simone Mühl
Deutsches Archäologisches Institut
Orient-Abteilung
Podbielskiallee 69–71
14195 Berlin
Deutschland
www.dainst.org

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Alle für die Zeitschrift für Orient-Archäologie eingereichten Beiträge werden einem doppelblinden Peer-Review-Verfahren durch internationale Fachgutachterinnen und -gutachter unterzogen./*All articles submitted to the Zeitschrift für Orient-Archäologie are reviewed by international experts in a double-blind peer review process.*

**Indizierung/*Indexing***
Die Zeitschrift für Orient-Archäologie ist indiziert im/*The Zeitschrift für Orient-Archäologie is indexed in the* European Reference Index for the Humanities and Social Sciences ERIH PLUS.

**Redaktion und Layout/*Editing and Typesetting***
Gesamtverantwortliche Redaktion/*Publishing editor*:
Deutsches Archäologisches Institut, Orient-Abteilung, Berlin (https://www.dainst.org/dai-standorte/orient-abteilung/wer-wir-sind/organisation/redaktion), redaktion.orient@dainst.de
Für Manuskripteinreichungen siehe/*For manuscript submission, see*: https://publications.dainst.org/journals/zora/about/submissions
Redaktion/*Editing*: Christina Ullmann, Anja Fügert, Julius Kardaetz (DAI, Orient-Abteilung)
Arabische Übersetzung/*Arabic Translation*: Hala Attoura, Tübingen
Satz/*Typesetting*: le-tex publishing services GmbH, Leipzig
Corporate Design, Layoutgestaltung/*Layout design*: LMK Büro für Kommunikationsdesign, Berlin

Umschlagfoto/*Cover illustration*: Loculus relief with a woman and two children, a boy and a girl. Archaeological Museum Istanbul, inv. no. 3751/O.M. 207, AD 100–135, Ingholt Archives, PS 363 (© Palmyra Portrait Project and Rubina Raja, courtesy of the Ny Carlsberg Glyptotek)

**Druckausgabe/*Printed edition***

Druck und Vertrieb/*Printing and Distribution*: © Otto Harrassowitz GmbH & Co. KG, Wiesbaden 2025, Kreuzberger Ring 7c-d, 65205 Wiesbaden, www.harrassowitz-verlag.de, produktsicherheit.verlag@harrassowitz.de

P-ISSN: 1868-9078 – ISBN: 978-3-447-12474-4



Druck und Bindung in Europa/*Printed and Bound in Europe*

**Digitale Ausgabe/*Digital edition***

Webdesign/*Webdesign*: LMK Büro für Kommunikationsdesign, Berlin
XML-Export, Konvertierung/*XML-Export, Conversion*: digital publishing competence, München
Programmierung Viewer-Ausgabe/*Programming Viewer*: LEAN BAKERY, München

E-ISSN: 2943-6567 – DOI: https://doi.org/10.34780/jja70h13
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## ABSTRACT

### What's in a Hut Tomb?

Cemetery Mapping in Eastern Oman 2017–2023, Preliminary Report

Paul A. Yule – Michela Gaudiello – Stephan Blum – Janick Hammes

The following evaluates 778 tombs surveyed, 295 from the BEW salvage excavations in the Bāṭina, and 361 excavated from Samad/al-Muyasser. We entered long-known and also new sites into an open-source database known as 'Ent' – an ongoing effort. Two issues arise for the hut tomb chronology: to determine a more specific nomenclature of the tomb shapes and to date by means of contexted finds. To the extent possible, we disambiguate hut tombs from other burial structures. Specific stone structures previously identified as 'cairns' can be more closely typologised. Dating tombs more finely than to the Early Iron Age or late pre-Islamic period is rarely realistic. Excavated, poorly preserved tombs shed little light on the dating of well-preserved hut tombs.



## KEYWORDS

al-Salayli, Bilad al-Muadin, cylinder tomb, Hur al-Dhaba, hut tomb

PAUL A. YULE – MICHELA GAUDIELLO – STEPHAN BLUM – JANICK HAMMES

# What's in a Hut Tomb?

## Cemetery Mapping in Eastern Oman 2017–2023, Preliminary Report

## 1 Introduction

1 Leading up to publication, I would never have dreamed of sparking such discussion about this admittedly dry and pithy subject. The discourse surrounding so-called hut tombs is multifaceted. First, opinions about the strengths and weaknesses of the archaeological research on different pre-Islamic periods in south-east Arabia diverge. Suffice it to say, while Early Iron Age (EIA) settlement sites such as Muweila, Salut, and Lizq are indeed excavated, documented, and published[1], this is rarely true for such funerary sites in a strict sense. Recently, through the artefacts found in some excavated examples, colleagues have attributed hut tombs to the late pre-Islamic period, which are typically dated to the EIA.[2] These excavators also indicate a high likelihood of reusing those tombs in late antiquity.[3] But do we date the tombs to the period when they were constructed (tomb type) or to when they were reused (based on their artefacts), and how do we differentiate between the two? In light of the lack of excavation of several tombs across different governorates, is it not more accurate to be cautious about their dating, rather than relying solely on one classification parameter that applies to all the tombs in all of Oman? Despite the recent dedicated fieldwork by many colleagues in NE Omani Bāṭina, the undeveloped state of research- lacking drawings, photos of tombs, and cemetery plans- has compelled the following study of tomb classification. Regarding late pre-Islamic burial practices and architecture, although numerous sites have been published and studied in detail over the past 20 years, our knowledge in this area still remains in its infancy.[4] When our hut tomb project started, quality imagery for pre-Islamic south-eastern Arabian archaeology still needed improvement and dissemination. Below, we aim to clarify the confusing array of names used to describe a few basic tomb forms.

1 Respectively, Karacic et al. 2018; Avancini – Degli Esposti 2018; Kroll 2013.
2 Düring 2022, 172.
3 Düring et al. 2017, 75; Düring 2022, 175, also Laurenza 2019.
4 Recent summary: Yule 2018b.

2 *Purpose:* Originating from the al-Ṣalaylī site, this study provides original survey data to shed light on hut tombs, their chronology, and regional variety. Our fieldwork served as a training operation in tomb recording for professionals and students. From 2017 to 2023, the authors catalogued contexts believed to be attributable to the EIA[5] or possibly the late pre-Islamic period. With a chronological limitation and a focus on the eastern Oman governorate, this ambitious project is still far from completion. Brief initial visits to various sites helped prioritise site potential. We concentrated our study on the five sites: Bilād al-Muaʿdin, al-Ṣalaylī, al-Shuwayʿi, Manal, and Ḥūr aḍ-ḍabʿ. This study revises previous survey iterations and offers a more comprehensive explanation of the hut tomb typo-chronology and mapping.[6] Moving toward a burial architecture typology necessarily requires extensive mapping, which can adapt to chronological changes in tomb types, which results as the study progresses. Further excavation would lend weight to our observations, which is necessary to progress. One must simplify tomb classification for large, complex find zones, such as Kalba. Large prehistoric cemeteries of standing tombs, such as Saiḥ Aulad Muṭayr, Bidbid/al-Sodīya, al-Berain in eastern Oman and others, are only preliminarily recorded and require further work for them to tell their story. The years have witnessed the initial publication of sites, challenges to interpretations, and their chronology, resulting in an iterative development of this elusive topic.

3 *Study structure:* The authors discuss hut tomb architecture by means of *1*, Introduction, *2*, 'Iron Age' site discovery, *3*, main sources, *4*, al-Ṣalaylī project, and, *5*, conclusions in the context of ongoing study of EIA and Samad Late Iron Age (SLIA) archaeology in SE Arabia.[7]

4 At the risk of seeming pedantic, English cardinal equivalents of the Arabic governorate names simplify geographic referencing. 'Core-Oman' refers to central, north-eastern and eastern Oman. Further, Oman is a north-south peninsula from Musandam southward to the latitude of Ṣuḥār,[8] where it widens. However, Al-Jahwari uses the term 'Oman Peninsula' to encompass all of SE Arabia[9] as an east-west peninsula definition.

5 *Tomb chronology:* This is a controversial, sometimes polemical subject due to its source weakness, complexity and competing prehistoric chronologies. For this reason, the authors resolve only to two periods, not finely defined phases for tomb types. EIA and SLIA, assigned here to 1200–300 BCE and 300 BCE–300 CE respectively, are mentioned below, the absolute dating not being our concern. Chronological anchor points are discussed in detail elsewhere.[10] Tomb types without finds confound even this simple dichotomy, intended to make fundamental distinctions. Bronze Age tomb architecture (also re-used) lies outside our scope.

6 *Tomb nomenclature:* Researchers who conducted past surveys cavalierly term various hut-like tombs '*buyut al-jahal*', '*cabanes*', 'cairns', 'cell-graves', 'circular towers', 'honeycomb tombs', 'horse shoe tombs', '*Hüttengräber*', 'Early Iron Age tombs', '*Kastengräber*', '*kuch al-qabr*', 'oblong Iron Age graves', 'pillboxes', '*tombe a ferro di cavallo*', '*tombe a torretta*', 'towers', 'truncated towers' and '*turmartige Gräber*'. This may say more about the first impression of the observer and the state of preservation than the original tomb form.[11] In the case of the Bāṭina Expressway (BEW) the various salvage excavations generated different tomb typologies.

5 Yule et al. 2022; Yule 2024.

6 Updating e.g. Yule et al. 1994, 396–398 Pl. 8; Yule 2001a, 27–45; Yule – Gaudiello 2017; Yule et al. 2022, 291–302 Figs. 16–24; 306–307 Fig. 25; Yule et al. 2023a, 236–237.

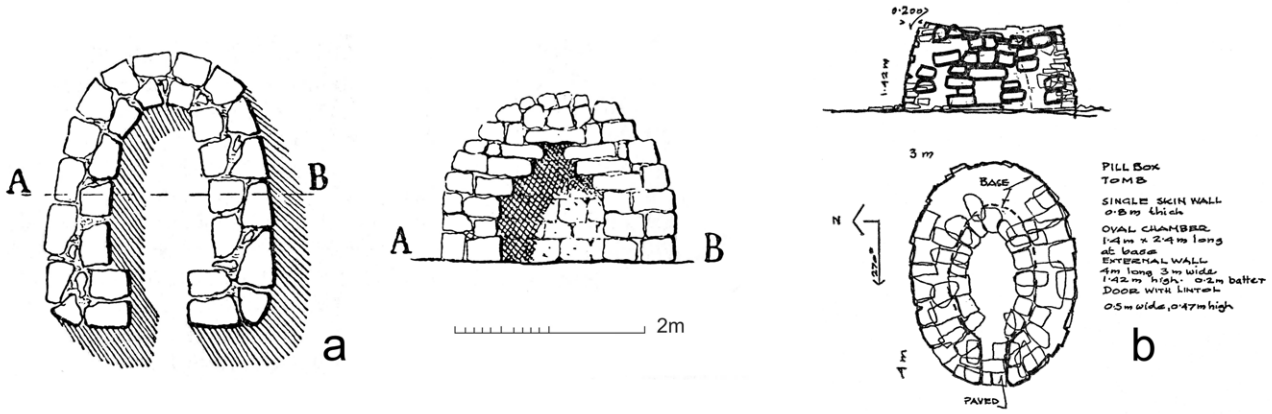
7 Our main sources go back to the online site gazetteer, ent: Yule 2024; Yule – Mauro 2024; Schiettecatte et al. 2023 as well as heidICON, Oman pool.

8 Cf. Mouton 2008, 3–4.

9 Al-Jahwari 2013, 1 fig. 1.

10 E.g. Magee 1996; Schreiber 2010; Degli Esposti et al. 2019; Yule 2016, 64–68 Figs. 31–32; Yule – Mauro 2025.

11 Regarding the regional tomb classification and nomenclature for different periods: Doe 1976, 148–149; Yule 2001a, 39–40; Steimer-Herbet 2004, 14; Yule et al. 2022, 298–299.




1

Fig. 1: a) Early documented hut tomb from Ṣuḥār, Rujm; b) Hut tomb/pillbox tomb at al-Niba

الشكل ١: a) مدفن كوخي من صحار تم توثيقه قديمًا، رُجم؛ b) مدفن كوخي/ مدفن «علبة حبوب الدواء» في النبا

7 Borrowed from English military vernaculars, 'pillbox' is jargon which refers to a team-sized small arms or observation fortified shelter.[12] In SE Arabia, after 'pillbox', the lowest common denominator of badly damaged tombs is the lowly 'cairn' – another catch-all term which includes any stone ruin. 'Hut tomb' and 'pillbox' appear interchangeably throughout SE Arabian field survey discussions. The pioneer British architect, D. B. Doe, first described 'pillbox tombs' as, "circular-oval or rectangular single chamber walled tomb constructed of river boulders or hewn stone slabs, flat tombs with long flat stones covering the burial chamber".[13] At the time, surveyors hesitated to impose a date on thoroughly robbed pillboxes.[14] They drew simple descriptive funerary architectural distinctions, but tend to date tombs to the 3rd millennium. The present study is neither a first nor final typology for SE Arabian pre-Islamic funerary architecture, which began in the 1980s[15] and gained momentum as a result of the BEW excavations (below, sections 3 and 4).

## 2 'Iron Age' funerary site discovery in SE Arabia

8 The earliest known hut tomb sketch and description of 1914 in SE Arabia pertain to a site near Ṣuḥār, Rujm (Fig. 1 a), which little resembles other known tombs. Its authors point out a wide variety of such prehistoric '*cabanes*' in the area. S. Miles[16] and other pioneer authors[17] also reported intriguing 'circular towers' and 'cairns' which in archaeological context refer, for better or for worse, to any putatively anthropogenic pile of rocks. Such terms commonly populate archaeological survey reports. Owing to Quranic prohibitions against elaborate burials, the non-Islamic date of hut tombs in Oman can be undisputed. Islamic graves are readily identifiable and have a distinct style, setting them apart from previous burials that occurred in specific topographic situations, often in groups.

9 Today, 'thousands' of hut tombs in NE Oman[18] remain paradoxically obscure within SE Arabian archaeology; the public interest in the Bronze Age and its architec-

12 During the World Wars, built in anticipation of an axis invasion which never came to be, to this day thousands cover notably southern Britain, visible to all, including archaeologists.

13 Doe 1976, 148.

14 E.g. de Cardi et al. 1976, 147 chart 1; Doe 1977, 38–39.

15 E.g. Vogt 1981; Vogt 1984; Vogt 1985; Carter 1997, 31–55; Yule 2001a, 27–45.

16 Miles 1919, 534.

17 E.g. Doe 1976.

18 E.g. Frifelt 1975, 373–374; Düring – Olijdam 2015, 103; van de Geer et al. 2015, 10.

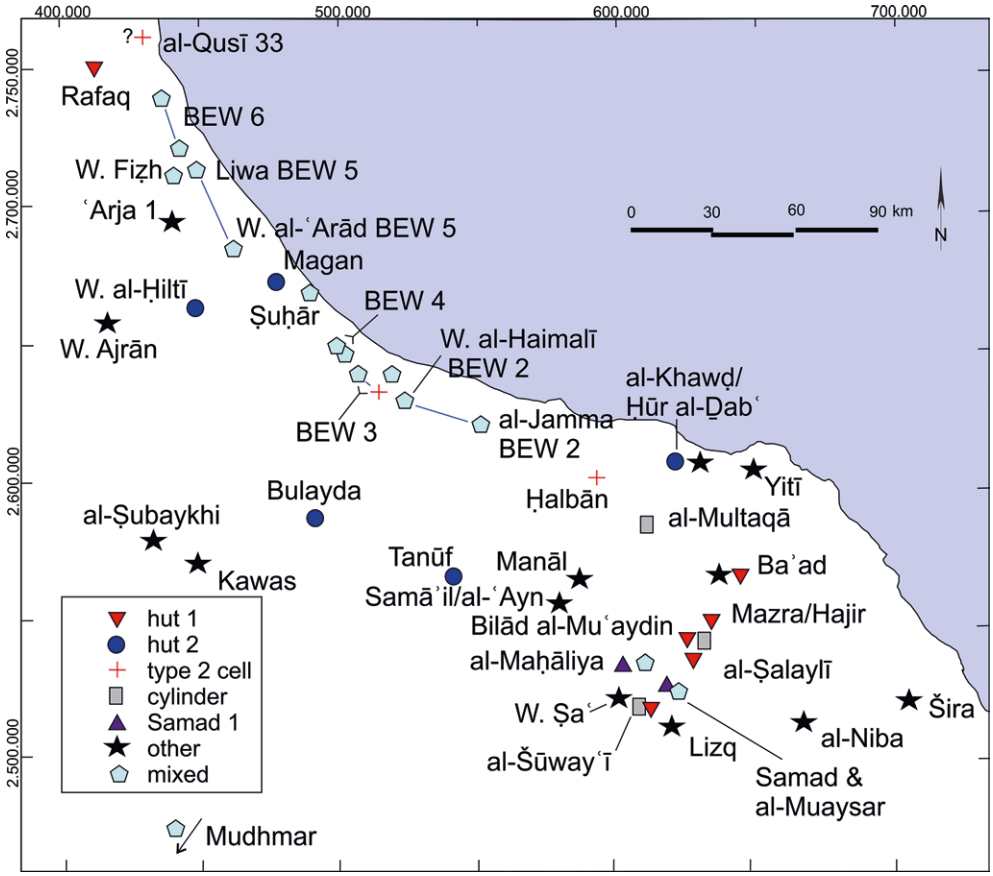



Fig. 2: Sites visited and referred to with their main grave/tomb types

الشكل ٢: المواقع التي زرناها والمذكورة في النص مع نماذج قبورها/مدافنها الرئيسية

2

ture is twice as great as that of later periods (Fig. 2, Tab. 1).[19] B. Düring reports recording '3300 cairns' in his fieldwork in NE Oman, of which most are attributed to the Late Antique period due to the finds. However, the final report still needs to clearly associate tomb structures and finds.[20] Paradoxically, beyond a knowledge of the outward appearance and meagre contents of hut tombs, dating and ancient meaning remain superficial in general. That scholars take decades to correct their first impressions about a given artefact class (e.g. hut tombs or daggers) is an open secret if not a platitude. Isolated interpretations such as, "…early pre-Islamic graves, chief among them the 'trilith type'"[21] today can be better contextualised. On the other hand, given a lack of even recently accepted documentation standards from disparate sources and disciplines, one should not be too critical of pioneer archaeological documentation.

10 Doe crafted an early sketch of a hut tomb, or pillbox, the roof of which was no longer extant, which he dated to the 3rd millennium (Fig. 1 b). The 'single skin wall' which he notes, may be more aptly dubbed a 'double wall' since it is formed of an inner and outer shell normally filled with gravel to smaller stones.[22] Doe's publications establish a first descriptive nomenclature, but at the time, it was too early to expect a normative or classificatory one for the sample available. He designated a 3rd-millennium beehive tomb from Jebel al-Ḥammah as a 'cairn tomb'[23] and showed 'pillbox tombs' of different periods, which vary in their basic form. This collective term includes diverse grave types.[24]

19 Yule et al. 2023a, 239 table 2.

20 Düring 2022, 175.

21 Thomas 1929, 209.

22 Systematic recording of this: e.g. Kuronuma et al. 2022, 77–80 table 3.

23 Doe 1977, pl. xxb; criticism: Yule et al. 2023b.

24 ʿAbāyah 2: Doe 1977, 39 fig. 1; al-Niba 48: Doe 1977, 51 fig. 13; al-Feg 2: Doe 1976, 150–151 fig. 27; Wādī Gheiran: Doe 1976, 150. 153 fig. 28.

In 1994 followed the publication of the best-preserved example of a hut tomb known at the time, from Bilād al-Muaʿdin, the roof of which today is still largely intact (Fig. 3 a).

11 Despite decades of study, hut tombs are notoriously difficult to date. K. Frifelt dated iron artefacts excavated from seven unpublished 'cell-graves' in Wādī al-Jizī to the EIA.[25] Although G. Weisgerber[26] and Yule[27] dated hut tombs to the EIA, this intuitive estimate rests on a few tombs with finds *in situ*. Graves have also been referred to as 'flat-topped pillbox graves', which contain EIA finds,[28] which have small walls, originally stood less than 1 m in height and stretch this metaphoric nomenclature. Such grave varia may otherwise contain finds of the SLIA.[29] A borderline case is manifest in a few extant hut tombs preserved from a large burial area at Samāʾil/al-ʿAyn (Fig. 4 a–b) destroyed *en masse* around the year 2000, as a result of road-widening. The distribution of this kind of tomb is suspected through the Samāʾil pass northward to the Bidbid area, some 35 km northward.[30]

12 Archaeological surveyors may be unable to provide systematic information about a large, poorly preserved hut tomb site due to limitations in time, staff, map quality, funding, and publication restrictions. For many destroyed burial structures, often the word 'cairn' is the only economical way to refer to them. The present authors began studying suspected EIA and late pre-Islamic sites cited in the pioneering and later literature, the most relevant being Doe and de Cardi.[31] Weisgerber,[32] Hauptmann,[33] Yule[34] and Al-Jahwari.[35] Our project is a mapping one. Few of the funerary sites surveyed yield finds. The pre-GPS survey provides site coordinates in degrees, with or without minutes, or in map references without seconds, which enable only small-scale mapping. From pioneer small-scale survey maps[36] the positioning of sites for those attempting to visit amounts to a rough approximation, given the vast improvements made subsequently in the road system. Standard maps from Oman's National Survey Authority (NSA) at a scale of 1:100,000 (and more recently 1:50,000) are most helpful for searching place names. Archaeological sites rarely, if ever, appear on these maps. The scale is too small for all but the most superficial mapping tasks. The book 'Wadis of Oman' is necessary to more accurately locate sites because of its bilingual Arabic-English place-names, indices of wadi and town names, as well as high-resolution photos for this difficult task.[37] Local naming of wadis in Oman varies notoriously.

13 It is widely assumed that site discovery derives mostly from field surveys. This is only partly true. In the 1980s and 1990s, archaeological survey in Oman began less from the study of remote sensing and more from acquiring local and foreign informants in the host country to share their knowledge. For example, in 1980, the 'discovery' of the EIA fort at Lizq was made by Shaikh Ḥamdan al-Ḥārthī of Samad, who shared information with Gerd Weisgerber. In 1991, the pilot, John Nowell, showed Yule the way to the important archaeological site – 'al-Shir' (الشّير), a site with some 58 extant Umm an-Nar period tower tombs, which were preserved to a height of as much as 5.8 m (Fig. 3 b).[38] In 2015,

25 Frifelt 1975, 373; for increasing amount of iron objects in EIA contexts see Yule 2018a, 142–143.
26 Weisgerber 1981, 182–183 fig. 6.6.
27 Yule 2001a, 14 Table 2.1; 39–40.
28 Potts 1992, 372.
29 E.g. gr. M2720, Yule 2001b, Pl. 22.
30 Yule 2001a, 40, 370; Yule 2001b, Pl. 581b.
31 de Cardi et al. 1977.
32 Weisgerber 1981, 183. 190 fig. 12; 224–226 figs. 60–61.
33 Hauptmann 1985, 116–117.
34 Yule 2016.
35 Al-Jahwari 2013.
36 E.g. 1:354.000, Doe 1977, pl. ix.
37 El-Baz 2004.
38 Nowell 1991; Yule – Weisgerber 1998.

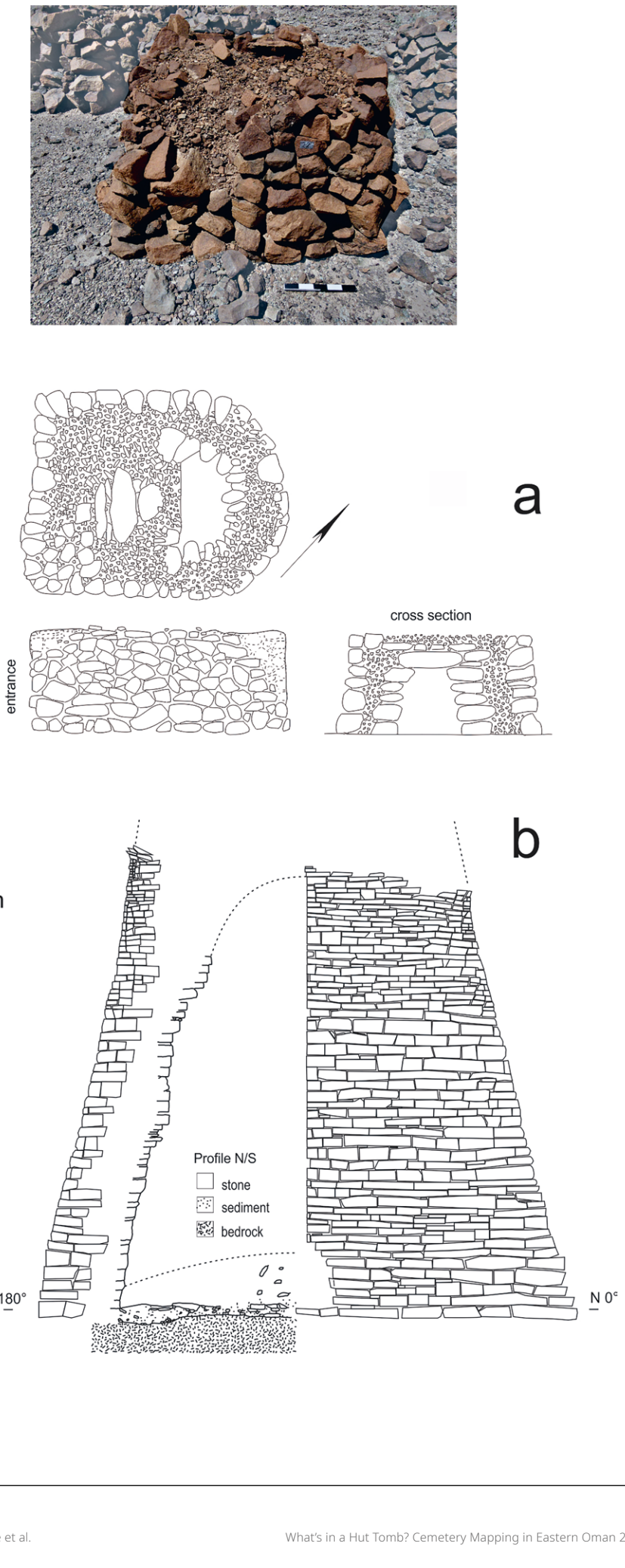



Fig. 3: a) Bilād al-Muaʿdin hut tomb Bi22 drawing and photo toward the SW; b) tower tomb at al-Shir

الشكل ٣: a) بلاد المعيدن، رسم وصورة للمدفن الكوخي Bi22 باتجاه الجنوب الغربي؛ b) المدفن البرجي في الشير

3

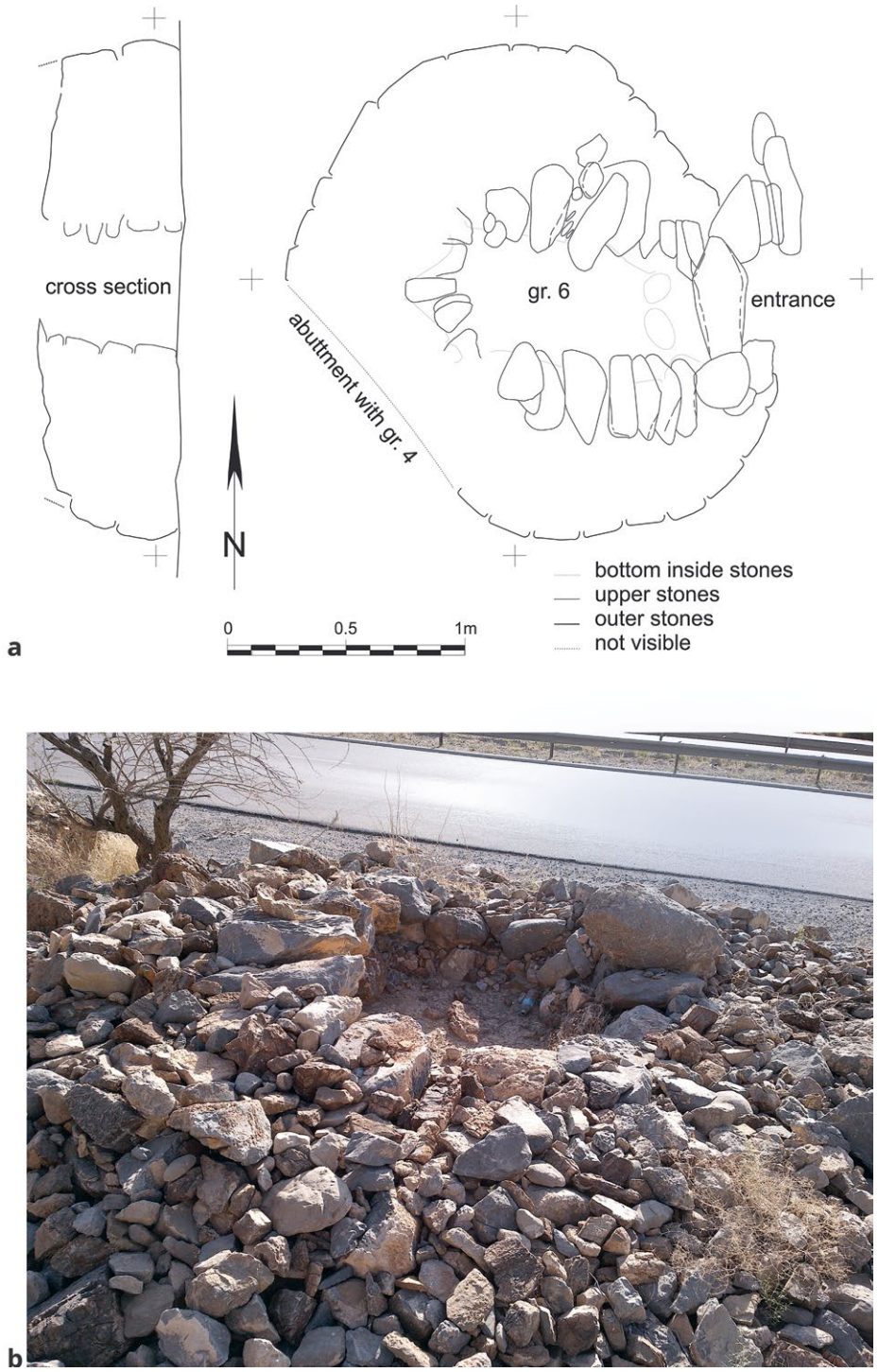



Fig. 4: a) Samāʾil/al-ʿAyn tomb sketch; b) photo thereof

لكشلا ٤: a) لئامُس نفدمّل عيرس مسر/ العين؛ b) صورة له

4

ʿAlī Khamis al-Rasibī showed Yule several sites.[39] More recently, for good reason, other experts use aerial surveys as the point of departure for their research.[40] As affordable high-resolution satellite imagery entered the public domain in the late 1960s, it found archaeological applications; if not for prospecting, then at least to depict sites in publications. Unexcavated burial sites of the SLIA are invisible to satellite imagery. In recent years, as they became publicly available, drones have been used in SE Arabia for prospection, but strict government regulations may make them unaffordable for most budgets.

39 E.g. al-Rasibi – Yule 2017; al-Rasibī et al. 2018a.

40 Harrower et al. 2013, 259–260.

14 Not survey, but rather follow-ups often gave initial find circumstances of artefacts submitted to Oman's Ministry of Heritage and Tourism and its predecessors. Thereby, Ministry employees request more thorough identification of the associated archaeological sites. Such led Yule to investigate diverse settlement and funerary sites including al-ʿAmqāt, Baḥlā/al-ʿAqir, al-Bārūnī, al-Fuwayda, al-Nejd, al-Rustāq/al-Marba, al-Ṣunṣuna, Mahūt, Manaḥ, Mutī, Samāʾil/al-ʿAyn (Fig. 4 a–b), Umq al-Rabakh, ʿUqdat al-Bakra, Yitī etc., mostly of the SLIA.

15 Since 2017, a small Heidelberg study group has surveyed around 62 of these sites; their reports are now accessible on Propylaeum-DOK and Academia.edu, some only briefly,[41] before appearing in print media studies in final form.[42] Our initial goal was to catalogue comparatively well-preserved tombs at al-Ṣalaylī and elsewhere, typologize them, attempt to disambiguate by means of building shape and find circumstances, and strive for a chronology of their origin. Visited by pioneering archaeologists in the 1970s and 80s, most of these sites are still poorly documented, may be difficult to locate and access, or may no longer be preserved as previously reported. These sites offer archaeologists a variety of documentation opportunities. Often sketchy, site position, size, and state of preservation provide basic data that can continually be improved, especially with today's technical means. Monitoring their state of preservation and documenting degradation was another goal. Limited financial and time resources restrict our initiative, unlike, more fortunately, teams in the BEW.

## 3 Main sources of this study

16 During 2014–16, dating evidence emerges from the scattered BEW salvage excavations, which produced, for the first time, a wide selection of excavated remains for the entire pre-Islamic age, including the excavation and survey at Ṣuḥār in the 1980s. BEW **Package 2**, which covers a stretch from the 58 km to the 83 km road marks from al-Jamma (al-Rustāq) NW to Wādī al-Ḥimailī[43] lies roughly 22 km inland from the coast (Fig. 2). In 2016, a team from Sapienza University in Rome excavated and documented 25 structures in a detailed and well-illustrated manner in al-Jamma and Wādī Banif in the southern Bāṭina plain, at the foot of the al-Hajar mountains. Hut tombs are challenging to identify unequivocally among the excavated examples.[44] The excavators report that the most interesting and best-preserved groups of cairns are located in inland al-Jamma, on the top and on the slopes of low hills, or on the terraces and beds of the valleys. In a detailed study, five styles of excavated tombs reportedly include *1)* Hafit style (3200–2700 BCE), *2)* Wadi Suq style (2600–1600 BCE), *3)* domed cell style (1300–600 BCE), *4)* honeycomb style (1300–300 BCE), *5)* mound style (Wadi Suq, late Bronze Age). The tomb architecture styles/types are clearly illustrated.

17 During rescue operations beginning in 2014 the Durham team surveyed and excavated for **Packages 3 and 4** 20 km inland from al-Sawayq in a NE corridor to approximately 20 km inland from Hafit (Fig. 2). Package 3 yielded 43 sites and Package 4, 16 sites. Seven burial types include *1)* circular Hafit, *2)* oval cell-grave, *3)* elongated oval, *4)* honeycomb, *5)* subterranean circular, *6)* Wadi Suq cist, *7)* unclassified.[45] The team encountered no intact hut tombs; instead, they classified as standing 'type 2 cell' tombs,

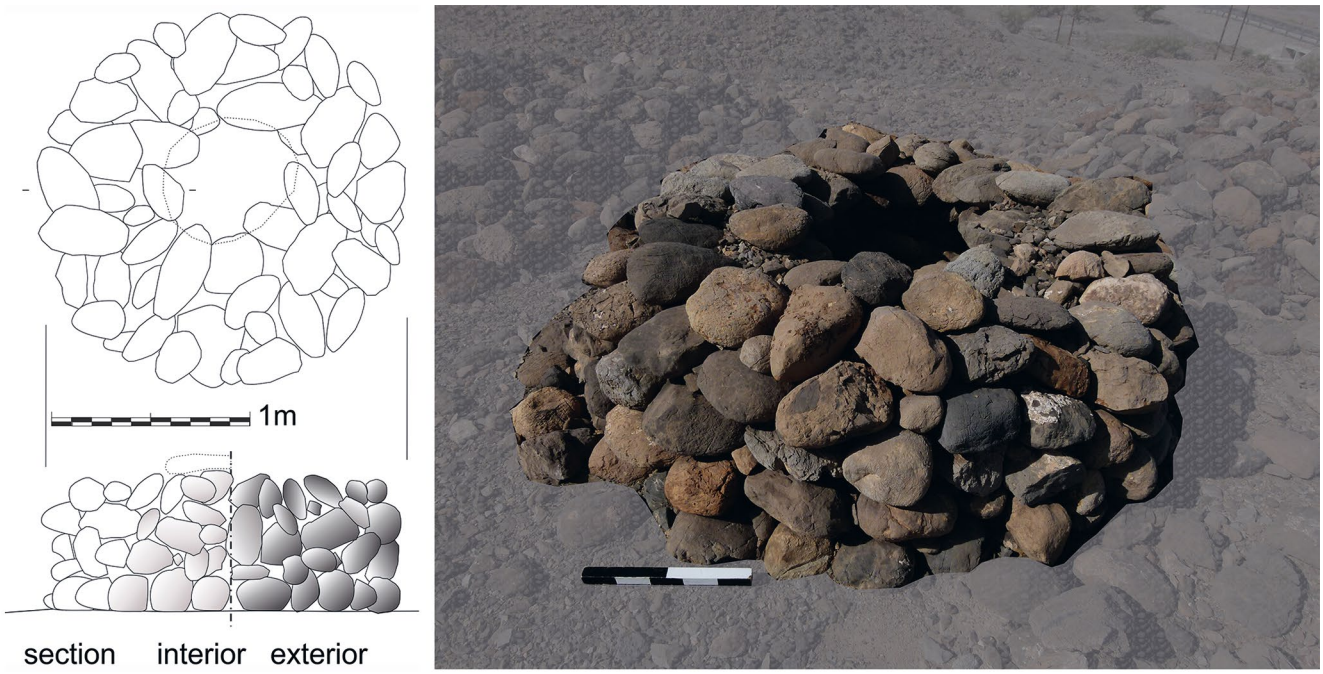
41 Yule 2015a; Yule 2015b; Yule 2015c; al-Rasibi – Yule 2017; al-Rasibī et al. 2018a; al-Rasibī et al. 2018b; Gaudiello – Yule 2018a; Gaudiello – Yule 2018b; Yule – al-Asmi 2019; Yule et al. 2021; Yule – Mauro 2019; Juhas et al. 2023; Yule et al. 2024.

42 E.g. Yule 2016; Yule et al. 2022.

43 UTM 40Q 525521e, 2611568n.

44 Genchi et al. 2016; Genchi – Larosa 2021.

45 Saunders 2016, 8–14.




5

Fig. 5: a) Cross section of a type 2 hut tomb at Ḥalbān. Originally the top was closed; b) photo thereof

الشكل ٥: a) مقطع عرضي لنموذج المدفن الكوخي 2 في حلبان، وكانت الذروة مغلقة في الأصل؛ b) صورة له

as in the Wādī al-Jizī.[46] The main reason for the absence of identifiable hut tombs is that contexts rarely are preserved more than three courses in height (usually less), eluding identification. On the strength of his Bāṭina contexts, Deadman ponders whether or not, in general, hut tombs comprise a discrete tomb class.[47] The answer depends on which examples are included in the definition. 35 % of his BEW Package 3 & 4 oblong 'type 2 cell' tombs reportedly yielded EIA pottery.[48] Similar small tombs have been observed outside of the Bāṭina, for example, at Ḥalbān (Fig. 5 a–b), circular in plan. Here, this term is used in a more limited way than as conceived and designates small, free-standing circular plans which are recognisable above the foundation course. Deadman's type 4 cell tombs show as a main attribute the agglutinative tomb groups,[49] observed in various cases.[50] At first glance, Deadman's type 6 cell tomb plans could be termed hut tombs, even if they contrast in plan those in eastern Oman. They contain no dating finds[51] and seem to correspond best to Wadi Suq subsurface 'end wall' graves.[52]

18 **Package 5** is 41 km long and begins 18 km inland from the Bāṭina coast between Liwa SE over Falaj al-Sūq to Wādī al-ʿArād (Fig. 2). Beginning in 2014, 250 features, including 168 tombs, were surveyed. At the Wādī al-ʿArād site, the only tomb type is designated 'tower-shaped grave'.[53] At Falaj al-Suq, 'dome-shaped' and 'horse-shoe-shaped' tombs occur.[54] At the Liwa site, 'tumuli-shaped graves' are designated.[55] 'Dome-shaped' graves are stratigraphically earlier than the 'horseshoe-shaped' tombs of Falaj al-Suq and the 'tumuli-shaped graves' of Liwa. Citing tombs in the Wadi al-Qawr,

46 Deadman 2016, 190–193 figs. 372–379.
47 Deadman 2016, 192 fig. 378.
48 Deadman 2016, 192.
49 Deadman 2016, 195 fig. 382.
50 Gentelle – Frifelt 1989, 122 'Wadi Jizzi'; Yule 2001b, Pl. 481 'Bawshar honeycomb cemetery'.
51 Deadman 2016, 197 fig. 387.
52 Yule et al. 2022, 293 Fig. 17g. h.
53 Laurenza et al. 2020, 347 fig. 3a.
54 Laurenza et al. 2020, 350 fig. 5a. b.
55 Laurenza et al. 2020, 351 fig. 6.


Fig. 6: Excavated hut tomb, al-Ṣalaylī site SAL-1: 24, is typical for eastern Oman

الشكل ٦: مدفن كوخي نُقب عنه في موقع الصليلي SAL-1:24، وهو نموذجي لشرقي عُمان

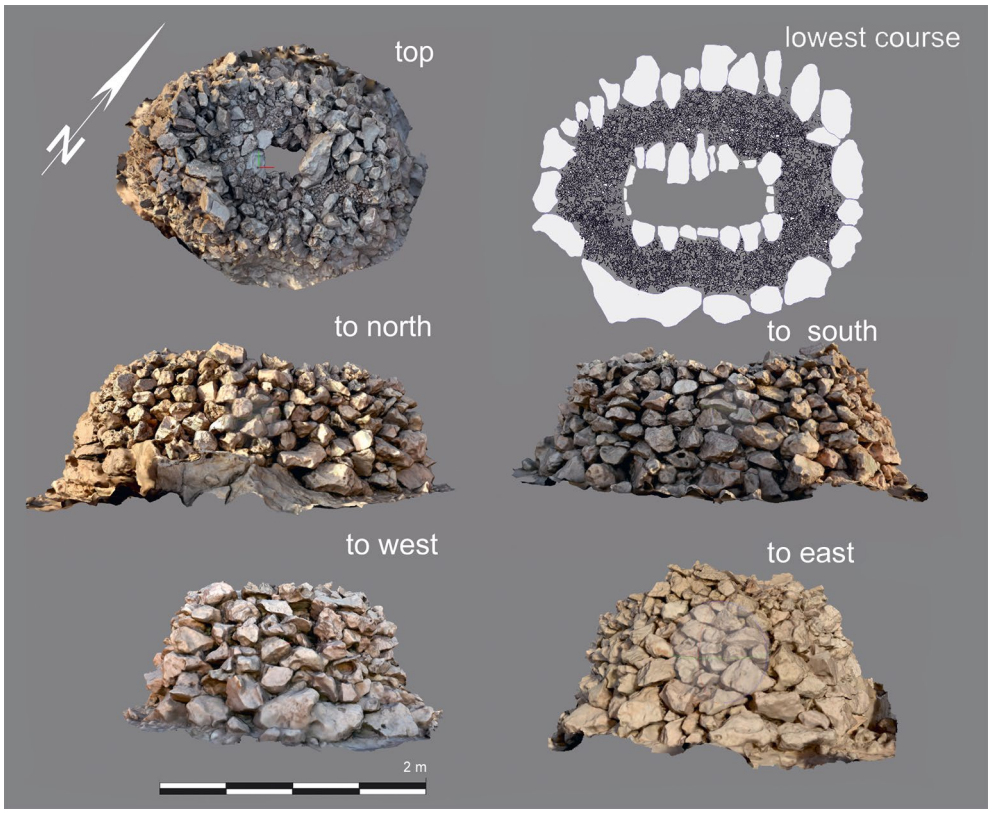
6

Jebel Buhais and Samad, horseshoe-shaped tombs are dated to the Wadi Suq period.[56] They also date 'tumuli' to 'Wadi Suq/Iron Age II-III' in a find note. The team excavated at least four re-used tomb ruins dated by the occurrence of coins and seals.

19 **Package 6** begins roughly 9.5 km inland from Dawānij to the south of Shināṣ and runs to the border with the United Arab Emirates, where it connects to highway 1, the BEW (Fig. 2). In 2014, the Nijmegen team excavated 23 structures out of a total of 43. The excavators consider 16 of these to be tombs.[57] They distinguish 'circular', 'semi-circular', 'oval' and 'beehive shaped' structures.[58] At first glance, 'beehive' tombs, resemble the D-shaped plan of hut tombs from eastern Oman, but lack datable finds. The tomb's visual documentation shows both photos and drawings together. The excavators note that, "Tombs from the iron age and later have a large variety of shapes and a typology has never been made".[59] Presumably, the EIA is meant. They also note that these are basically homogeneous in their construction and lack Bronze Age parallels.[60]

20 Aside from rows of hut tombs on the ridges of Wādī al-Jizī[61] and 77 'honeycomb' graves as at Bawshar,[62] other possible EIA tombs can be distinguished: Hut tombs

56 Laurenza et al. 2020, 353 tab. 2, which does not specify which tombs are being compared.
57 van de Geer et al. 2015, 17.
58 van de Geer et al. 2015, 20 fig. 5.
59 van de Geer et al. 2015, 37. In fact, tomb classifications are published, e.g. Vogt 1985; Yule 2001a, 38–45.
60 van de Geer et al. 2015, 21. 37.
61 Jaussen – Savignac 1914, 170; Frifelt 1975, 381; Yule 2001b, Pl. 592.
62 Yule 1999, 28–41 Fig. 6; Yule 2001a, 370; Yule 2001b, Pl. 481.




7

Fig. 7: The excavated hut tomb HDh7 at Ḥūr al-Dhabʿ is comparable in shape, double wall construction, to those in NE Oman

الشكل V: تمكن مقارنة المدفن الكوخي HDh 7 الـمُنقب عنه في حور الضبع بشكله وإنشائه ذي الجدار المزدوج بتلك في شمال شرق عُمان

with an entrance at the front (Fig. 6), or lacking one (Fig. 7), arguably date to this period (see below). Niche graves are a common form which contain EIA finds, best known from al-Buḥaiṣ in Sharja emirate.[63]

21 More recently, since 2014 Leidener colleagues have extensively surveyed[64] cairns in NE Oman in Wādī al-Jizī (Wādī al-Jizī Archaeological Project (WAJAP)). In a preliminary report of their survey Düring and Olijdam 'found' (i.e. surveyed) 'dome-shaped cairns' and 'terraced cairns'[65] and report, "these graves date predominantly to the first centuries AD, quite possibly to the Sasanian period"[66], otherwise not well-represented in the Bāṭina. Being unfamiliar with these unpublished contexts, a reader might conceivably query whether the two are in fact two grades of preservation for one or more tomb types. Otherwise, these authors refer to 'oval' and 'horseshoe' tombs.[67] The final report will bear the burden of proof as to which tombs show primary use or secondary re-use. Analogously, e.g. at al-Khawḍ/Ḥūr al-Dhabʿ one excavated hut tomb yielded two late Sasanian fragmented glass *oinochoae,* in secondary context together with a skeleton some 10 cm above the original floor.[68]

22 Omissions in Düring's catalogue of related archaeological surveys[69] can be complemented here for eastern Oman with published contexts[70] and potential Iron Age

63 Jasim 2012, tombs Bhs16, Bhs17, Bhs22, Bhs23, Bhs26–Bhs33, Bhs35, Bhs36 etc.; Yule et al. 2022, 295 Fig. 19c. d.
64 Düring et al. 2017, 79.
65 Düring – Olijdam 2015, 101–103 figs. 7. 8, respectively.
66 Düring – Olijdam 2015, 103.
67 Düring 2022, 175 fig. 4.
68 Juhas et al. 2023, 7 Fig. 7, glass vessel comparison: Andersen 2007, 86–87 fig. 365.
69 Düring 2022, 170–171.
70 Various places throughout the present text.

Fig. 8: Cylinder tomb at al-Multaqā site 3 viewed to the NE

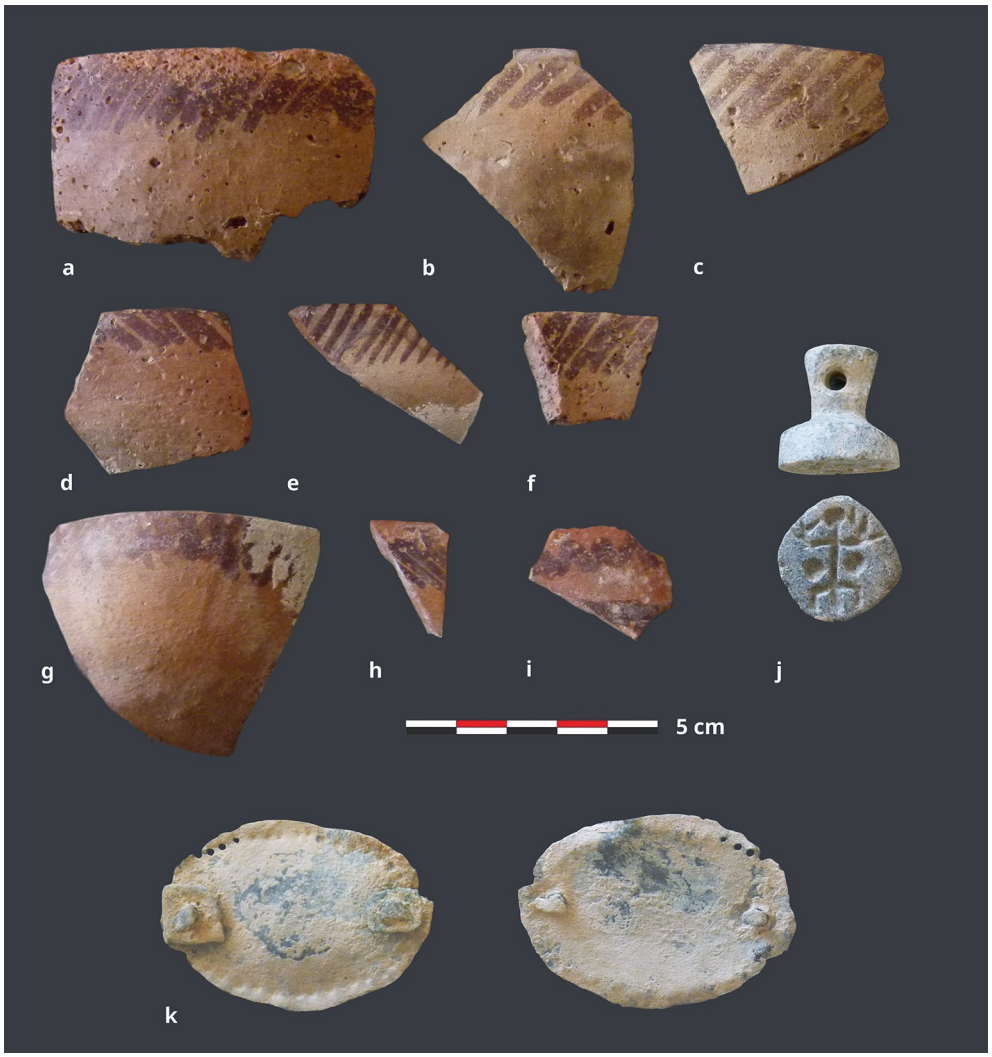
الشكل ٨: منظر إلى الشمال الشرقي لمدفن أسطواني في موقع الملتقى 3

8

funerary sites.[71] Of these, with 245 hut tombs, the al-Ṣalaylī site contains the largest number, followed by Bilād al-Muaʿdin. At Samāʾil/al-ʿAyn, only a small remnant of what once was an extensive cemetery,[72] does not appear in the Tab. 2 tally. Some of this scattered material with its varying chronological evidence and morpho-metric descriptive data has been available for several years.[73] Without such data and drawings, the validity of the tomb chronology and distribution proposed here can be challenged out of hand.

23 The burial sites al-Multaqā 1–3 are thoroughly disturbed as a result of 40 years of road-building and collateral damage in the wadi immediately west of Sarūr – the busy north-south route 23 (Fig. 2). Both so-called cylinder tombs without entrances and roofs as well as (previously) SLIA graves populated the area, but today only a few cylinders are visible 100–200 m west of the road where they are less accessible on the upper slope (Fig. 8). One of the few contexts which yielded finds (Fig. 9) near (not in) cylinder tombs was the al-Multaqā 'small find site' 40–100 m to the south of the extant cylinder tombs, presumably also previously covered with tombs. The painted diagonal, hanging, hatching, and cross-hatching on exterior vessel rims are typical EIA bowl decoration. New are the stamp seal in soft stone and a copper alloy cramp of the Cr-class.[74] In size, shape and topographic situation, the cylinder tombs at al-Multaqā[75] resemble those at al-Shuwayʿi (Fig. 10 a–b) and Bilād al-Muaʿdin (Fig. 11).[76] Schreiber groups the '*Hüttengräber*' of the latter site with others in Sayja/Manāl and the Ṣuḥār hinterland.[77]

71 Tab. 1 and Tab. 2 which amount to over 62 sites with over 778 hut tombs.
72 Pers. comm. Sultan al-Bakri.
73 E.g. Yule 2001a, 39–40.
74 Yule – Mauro 2025, 159 Fig. 3.23.
75 Yule et al. 2021, 10 Fig. 14.
76 Yule et al. 2024.
77 Schreiber 2007, 274 note 1081.




9

Fig. 9: EIA funerary pottery, seal and cramp, surface finds from al-Multaqā

الشكل ٩: فخار دفني من عصر الحديد المبكر وختم وقامطة، وهي لقى سطحية من موقع الملتقى

24 Recently, in Wādī Tanūf, a substantial hut tomb site, WTN13, was recorded in detail,[78] which substantiates the otherwise thin distribution of this tomb type in central Oman.

25 Manāl 1: This battered hut tomb and EIA settlement site lies 14 air km NW of al-Ṣalaylī (Fig. 2). In 2001 and 2002, excavation of the settlement there began. Scattered across the site are 107 ruined hut tombs without entrances.[79] None, which the excavators date to "after the Iron Age settlement", were excavated.[80] Both EIA and SLIA sherds litter the surface.

26 To the north, in Fujairah, hut tombs may exist at Jebel al-Qusī sites 33a–c, west of Kalba with, "more than one hundred pill-box tombs many of them constructed originally in complexes of two and three, but never more" (Fig. 2).[81] No pottery occurred *in situ*, and scattered pottery is not datable. As defined here, hut tombs usually stand 1 m or higher. Some 500 m to the SW in Kālbā/Taraif tombs have been described: "This area is characterised by the presence of several almost identical tombs formed to resemble Cairns shaped either as ovals or circles and raised 60–70 cm above ground. These tombs

78 Kuronuma et al. 2021, 118 table 5; Kuronuma et al. 2022, 80–82.

79 Yule et al. 2022, 299. 294 Fig. 18f.

80 ElMahi – Ibrahim 2003, 96.

81 de Cardi – Doe 1971, 241. 258, figs. 242–244; de Cardi et al. 1975, 22, fig. 33. Cf. Carter 1997, 31–55; Corboud et al. 1988, 26 no. 22: no confirmation of form.

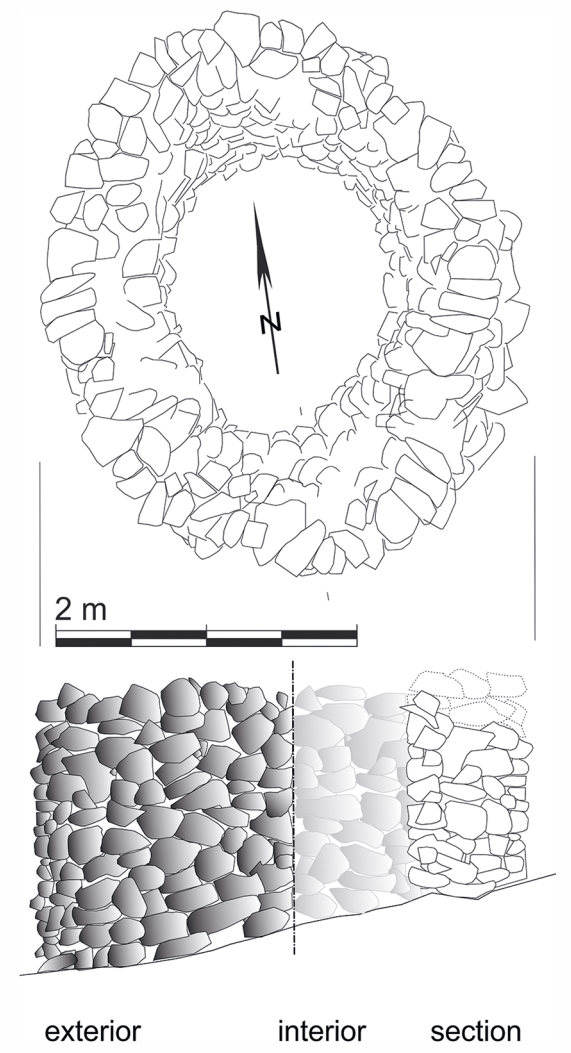



Fig. 10: a) Al-Shuway'i cylinder tomb 302 drawing; b) 3D scan to the SE

الشكل ١٠: a) رسم للمدفن الأسطواني 302 في الشويعي؛ b) مسح ثلاثي الأبعاد باتجاه الجنوب الشرقي

10

lie in separate clusters on a gravel platform, each cluster contains between 3 and 23 tombs[82]. However, they are dug slightly into the surface and may be slightly mounded.[83] These bring to mind a single, atypical grave in Samad cemetery S10 dated to the SLIA.[84]

82 Jasim 1992, 9.
83 Jasim 1992, 9. 22–23. 31 fig. 5.
84 Gr. S101123: Yule 2001b, Pl. 202.

11

Fig. 11: Bilād al-Muaʿdin cylinder tomb A1, viewed toward the NNE

الشكل ١١: منظر باتجاه الشمال/الشمال الشرقي للمدفن الأسطواني A1 في بلاد المعيدن

Jasim dates their finds to the PIR. On 29.11.2023 C. Schwall (Mainz) reported that the three al-Qusī sites indicated by the de Cardi team were not locatable due to subsequent extensive levelling processes of the landscape. R. Carter forwarded a photo of a ruined hut tomb, preserved three courses in height and D-shaped in plan from al-Rafaq 2, Wadi al-Qawr, Ra'as al-Khaimah. Several examples could be tallied.[85]

27 In 2018, the project of our study group focused on hut tombs at the al-Ṣalaylī site, with its large number of hut tombs. The hut tomb sites at al-Ṣalaylī impelled us to search for parallels and to document them to illuminate the tomb typology. The representivity of known hut tombs remains an open question.[86] We tracked down mentions of 'Iron Age tombs', some of which conceivably were hut tombs, 1–11 October 2021, in a U-shaped excursion through core-Oman, to gain a regional overview. Beginning in al-Ṣalaylī the team proceeded NW to ʿIbrī/Kawas and al-Subaykhī (Fig. 2), where the pioneer, K. Frifelt, noted 'Iron Age' tombs, but did not document them.[87] Moreover, the map of Gentelle and Frifelt subsequently re-mapped, 'third millennium grave groups' at these sites without further comment.[88] On inspection, both sites turn out to contain 'Hafit' tombs.[89] Gentelle and Frifelt signal 'Iron Age graves' in Bulayda,[90] which we verify as hut tombs (Fig. 12).[91] These are indistinguishable in shape and size from those in NE Oman. We proceeded further north to Ajran, where hut tombs in Google Earth imagery were suspected but not confirmed, and eastward to the BEW sites. South and west of Ṣuhār, countless tombs max as high as 1.80 m in height, some well-preserved. Thousands of hut tomb examples in NE Oman completely overshadow all other areas of what has become the Sultanate. Our survey ended in Ḥalbān, 18 km south of the coast in

85 Cf. del Cerro Linares et al. 2023.

86 Yule 2001a, 27–45.

87 Frifelt 1975, 383.

88 Gentelle – Frifelt 1989, map opposite p. 120; Yule et al. 2021.

89 Definition: Bortolini 2020.

90 Gentelle – Frifelt 1989, their small-scale published map opposite p. 120.

91 Yule et al. 2023b. On 05.02.2025 at Ibri/Halet Sedd c. 40 rowed hut tombs were noticed at 23°12'40", 56°31'37".


Fig. 12: Double wall hut tomb at al-Bulayda viewed to the north

الشكل ١٢: منظر إلى الشمال للمدفن الكوخي المزدوج الجدار في البليدة

12

the southernmost part of NE Arabia (Fig. 2), with a tally of 28 extant 'type 2 cell tombs' in this badly disturbed area.

28 Intensively researched, but not a major source for EIA graves, is the Samad project of 1987–1991: Of 361 excavated pre-Islamic graves, 20 yielded EIA finds.[92] Their grave attributes include their dimensions, special features such as: K=circular/oval plan, W=cantilever stones, E=end walls, U=incomplete, s=narrow floor proportions, O=orthostatic walls, g=short floor proportions, S=ring surrounding the burial cist, V=variant plan (circular/oval). While the damaged M803 and S101200 once may have been hut tombs, another is of Wadi Suq type.[93] The remainder at Samad are subsurface stone cist graves, either in secondary or primary use. Four of the graves at Samad with EIA finds[94] fit Wadi Suq grave attributes: short chamber with an end wall and may be re-used. Two others are either not finished or are damaged, eluding classification.[95] Further burial structures of our sample under discussion are varia and not of usual cist form. Significantly, these subsurface graves reveal more about Wadi Suq burial architecture than the completely robbed ones at Wadi Suq.[96] In this same dataset, at Samad Wadi Suq graves distinguish themselves from SLIA ones in their form. Only two circular/oval plans are arguably of EIA origin. Subsurface cist graves particularly with end walls are considered to be of Wadi Suq date.

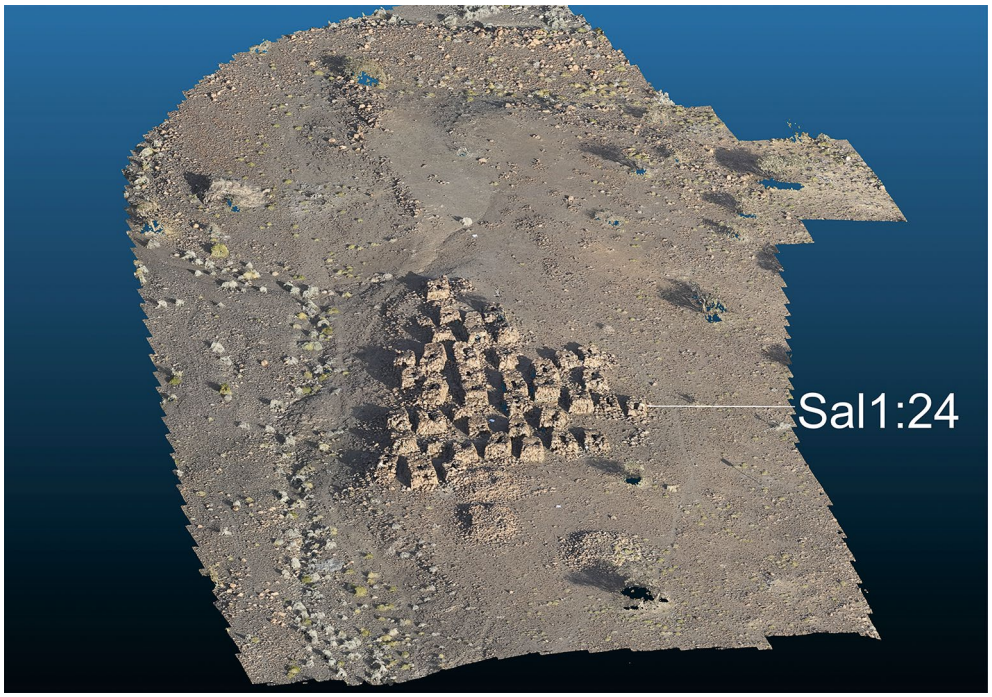
92 Yule et al. 1994, 409–412 Table 5; Yule 2001a, 444–450 Annex 1.

93 Gr. S101040; cf. van de Geer et al. 2015, 61 fig. C14 structure 9; Deadman 2016, 196–198 fig. 388 'Hafit'; Gernez – Giraud 2019, 63 fig. 6.18, 'Wadi Suq?'.

94 Gr. S2186, S2101?, S21105 and S2301.

95 Gr. S10103 and S2116.

96 Frifelt 1975, 376 fig. 4, cemetery plan: 404–412 for a description and catalogue of graves and finds without drawings of the latter.




13

Fig. 13: Geo-referenced 3D scan of al-Ṣalaylī hut tomb cemetery SAL-1

الشكل ١٣: مسح ثلاثي الأبعاد يبين الأرض المحتوية لمقبرة المدافن الكوخية SAL-1 في الصليلي

## 4 The al-Ṣalaylī project

29 *Discovery:* In the 1970s Goettler, Firth and Huston recognised this remote site, with its combination of hut tombs and suspected prehistoric copper production.[97] G. Weisgerber postulated[98] that this small mining and smelting site might illuminate the history of copper production in Oman because it was less likely to be as disturbed as major producers such as ʿArjāʾ in the NE, in use over centuries. In 2018, 1150 m SW of the Jebel al-Ṣalaylī in the E-W Wuqayb valley a Heidelberg team began prospection owing to its large four groups of hut tombs,[99] a 215 m long mine gallery, over 80 medieval houses and small copper slag deposits.[100] Given the presence of Persian glazed pottery,[101] we light-heartedly named the historic settlement of the miners and smelters, 'Persian village'. For whatever reason, the often-repeated statement of the local population is that the *furas* produced the slag heaps.[102] In 2022 M. Gaudiello took up excavation here in order to articulate the site chronology beyond the scope of the present report.[103]

30 *First prospection:* We first determined the position of the graves preliminarily by means of a GPS/GNSS camera, with a maximal 3 m radial resolution. The four hut tomb groups in al-Ṣalaylī are distributed from the main valley to a valley NW of site SAL-1.[104] The tomb entrances face downslope next to gullies. The tombs of group SAL-1 (Figs. 13. 14) are ordered in a rough formation in comparison to the others; those in SAL-2 to SAL-4 to the west and north-west have a spatially more random distribution. The tombs in SAL-1 are rather uniform in size, shape and technical building quality. On the strength of the position, cemetery layout, and relative tomb uniformity, SAL-1 is taken

97 Goettler et al. 1976, 44 ‚site 45 Musfa'.

98 Weisgerber 1980, 66 figs. 4–5, 102 figs. 71–72; Weisgerber 2007, 198; Hauptmann 1985, 116.

99 Yule et al. 2022, 282–285 Figs. 6. 9. 10.

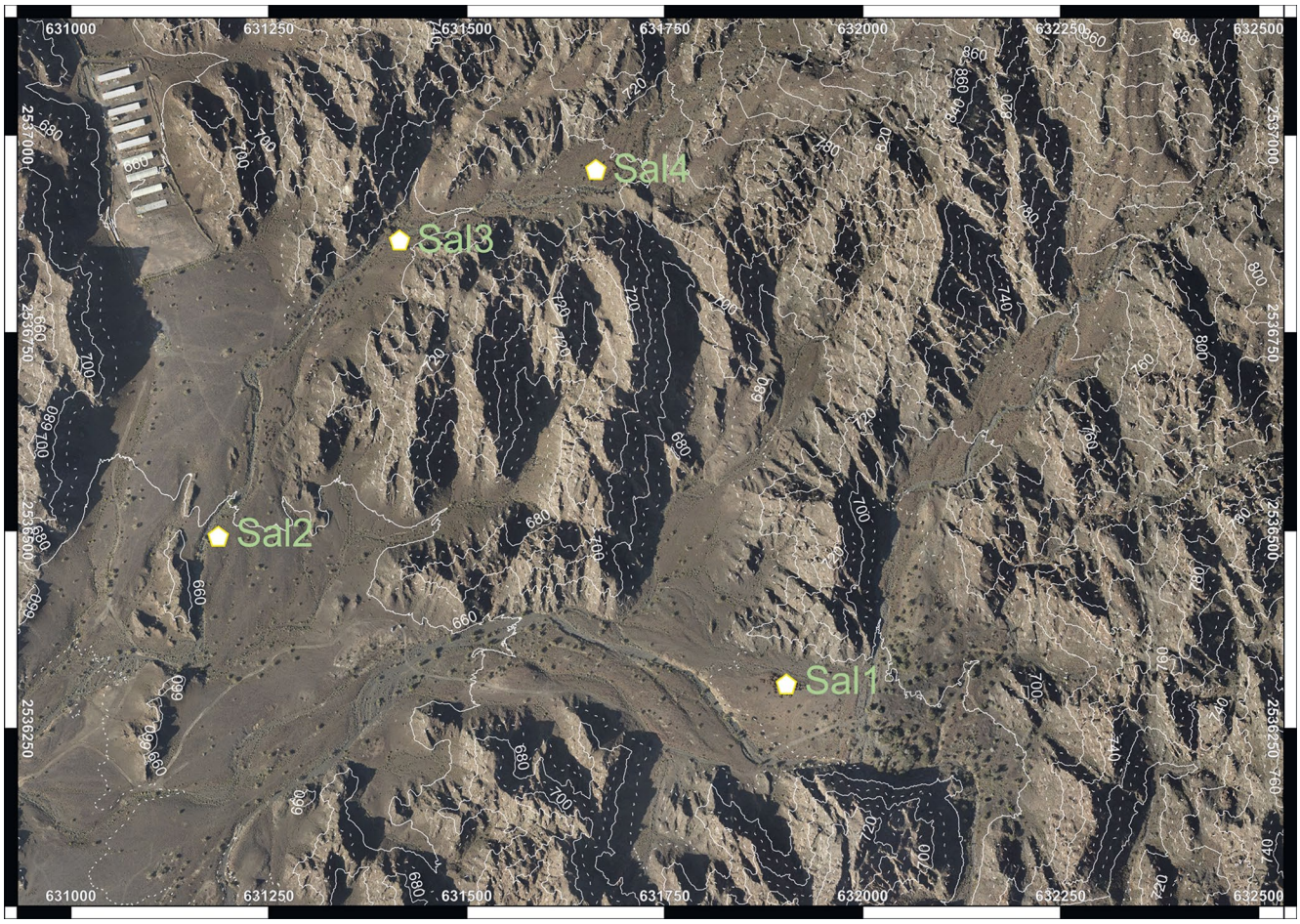
100 Approx. 900 or perhaps 1025 tons: Yule et al. 2022, 286 note 45; cf. Hauptmann 1985, 116: "25 000 tons, Bronze Age, early Islamic, Middle Islamic–recent".

101 Yule et al. 2022, 288 Fig. 14.

102 Weisgerber 1981, 185; Yule – al-Kalbani 2019; Yule et al. 2022, 280–281. 304.

103 Gaudiello 2024.

104 Yule et al. 2022, 281–282 Figs. 5–7.




14

Fig. 14: Rectified map of the multi-period site, al-Ṣalaylī, just SE of centre lies the hut tomb cemetery SAL-1. UTM 40 ITRF14 ellipsoid height. State: 20.02.2023

الشكل ١٤: خريطة مصححة للموقع المتعدد الفترات، الصليلي، وتقع مقبرة المدافن الكوخية SAL-1 إلى الجنوب الشرقي من المركز مباشرة. الارتفاع الإهليلجي UTM 40 ITRF14. الحالة بتاريخ ٢٠٢٣/٢/٢٠

to possibly show a higher status population than the three other hut tomb sites, further from the mine and smelting area. The four hut tomb groups are taken to represent a single relative event of unknown length.

31 *Mapping:* Intending to map the site to decimetre exactness, from 2018 to 2021 we made drone flights over parts of the site. In February 2022, in order to geo-reference more exactly, first it was necessary to determine three fixed points by means of 12-hour measurements with the GNSS Leica CS15 field controller.[105] Fifty 40 × 50 cm ground marking targets were distributed over the entire surface and 3d-positioned with the 'rover'. We mapped the entire 1700 × 800 m site with the DJI Matrice quadcopter and a high-resolution camera with georeferenced orthographic imagery (Fig. 14). With the Leica RTC 360, we also scanned the hut tomb cemetery SAL-1 and part of the copper mine. Despite due diligence, no geoid model could be obtained, and the map heights are based on the WGS 84 ellipsoid for UTM zone 40q. The single georeferencing of both measurements enables a global coordinate with centimetre exactness. The mapping is ongoing and the archaeological features can be entered into the map.

32 *Bilād al-Muaʿdin survey:* This site lies 6 km NNW of al-Wuqayb, where in March of 1981 the team of the German Mining Museum, Bochum, researched copper production from the Bronze Age into the Islamic period.[106] In 2021, the authors verified different sites which the Bochumers mapped. The re-orientation of the map with north in the upper half, addition of a scale and new documentation of hut and cylinder tombs (Fig. 15) update the published aerial site map of 1981. Subsequent prospectors cut large

105 Yule 2022.

106 Weisgerber 1981, 189 fig. 11 (aerial image). 210 fig. 42 (landscape view). 259 fig. 105 (tombs).

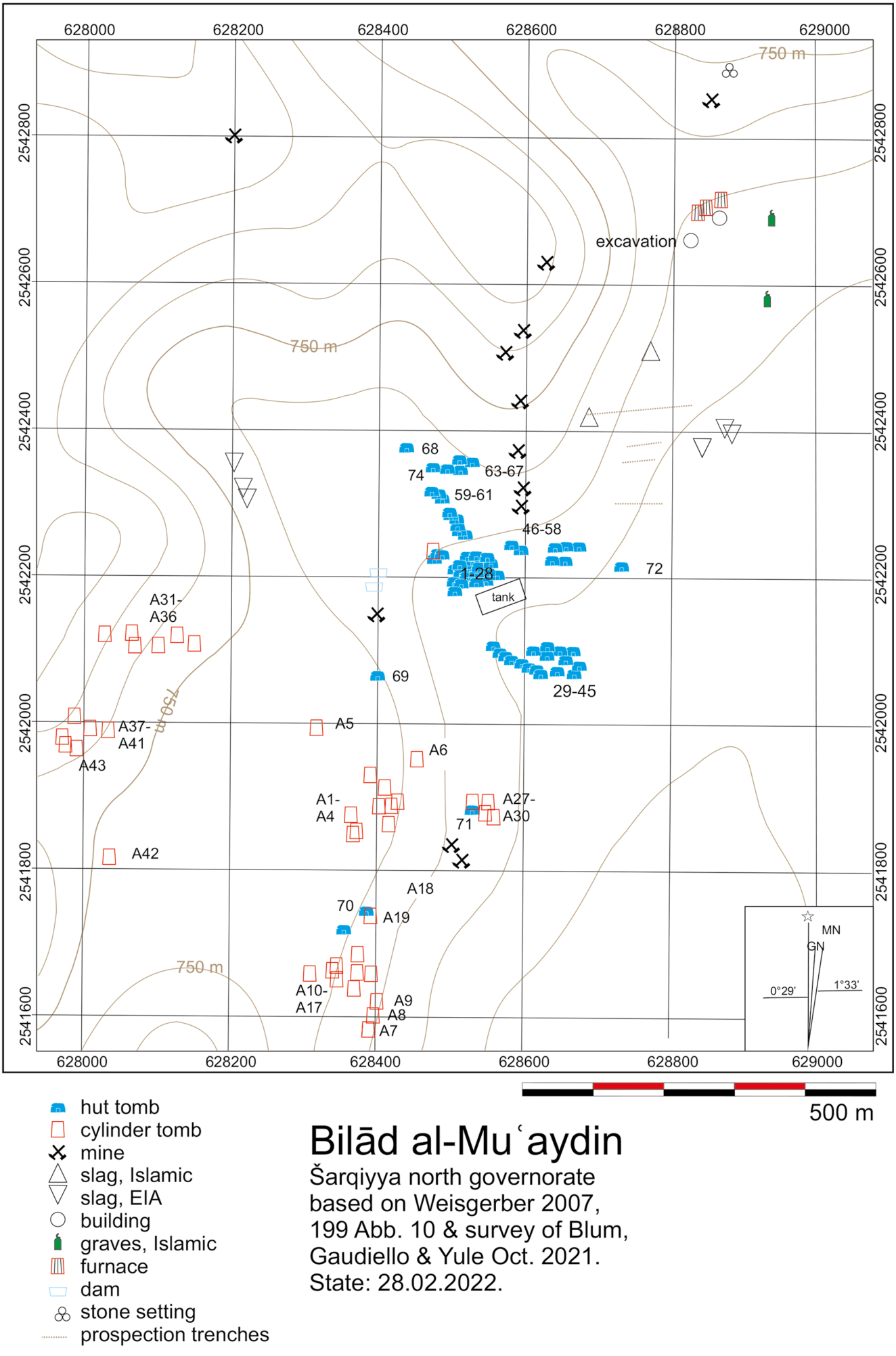



Fig. 15: Map of the archaeological sites at Bilād al-Muaʿdin

الشكل ١٥: خريطة للمواقع الأثرية في بلاد المعيدن

trenches through the Islamic period slag fields. Our mapping reveals hut tombs as at al-Ṣalaylī, but a second kind of cylinder as well which Weisgerber mentioned as '*turmartige Gräber unbekannten Alters*' and '*Rundbauten*', but shows only as a single tantalising tiny image,[107] not shown on the published aerial photo. At al-Muaʿdin, respectively 75 hut and 43 cylinder tombs are positioned in two ways (Tab. 3). The first lie in the valleys and on lower slopes, while cylinders appear higher in the mountains and to the SW of the site. Till now, aside from human bones reported by M. Kunter,[108] these features have not yielded diagnostic finds. Nor have they yet been systematically examined for artefacts. Cylinder tombs have no entrance.

33 Weisgerber and Hauptmann attributed the hut tombs to EIA copper producers.[109] As opposed to al-Ṣalaylī, Bilād al-Muaʿdin contains copper slag datable by means of associated EIA pottery.[110] Several study seasons at both sites have failed to produce proof in support of the attribution of the tombs to copper producers of the EIA. At al-Ṣalaylī to judge from the pottery evidence, the provable copper production is early Islamic.[111] The absence of EIA artefacts at al-Ṣalaylī leaves the hut tomb dating unsupported, which rests otherwise uncomfortably on the tomb architecture. Hut tombs have not yet been excavated at either site, but rather only mapped and described. As at Mazra,[112] the hut tombs occur in context with medieval copper production remains. This could be taken as evidence either for their possible medieval origin or re-use. Varying tentative datings were advanced to explain the history of copper production at what is now referred to as al-Ṣalaylī.[113] At first, our team intuitively associated hut tombs with the EIA since the tombs and finds of adjacent periods form plausible assemblages.[114] But a date still requires verification in light of reported cases of the heterogeneous finds from the BEW and Wādī Jizī excavations mentioned above.

## 5 Conclusions

34 *Research basis:* The foregoing evaluates 1434 burials, which are listed in open-source publications. Dating tombs more finely than to the EIA or late pre-Islamic period is rarely realistic. Until the past decade, the origin, spatial and temporal distribution of hut tombs and related structures have remained obscure, marginal topics. For the hut tomb chronology two issues arise: a more specific nomenclature of the tomb shapes and datable contexted finds. Our study group attempted a disambiguation of 'cairns' and 'pillboxes' and others in order to move beyond present-day fortuitous preservation, and, where feasible, focus on the original appearance. In several cases, more specific identifications are possible as a first step. Since the study of the cemetery plans of different periods is still in its infancy, and structures along family or status lines are partly theoretical, we have begun to make our documentation thereof available for study.[115] Although archaeologists recovered numerous grave plans from the BEW sites, the downside is that the correspondence between the outer appearance and the dating of these with preserved hut tombs is spotty. Thus, only half of the cairns are classifiable

107 Weisgerber 1981, 259 fig. 105; cf. here Fig. 12.
108 Pers. comm.
109 Weisgerber 1981, 183. 190.
110 Weisgerber 1981, 179 fig. 4. 189 fig. 11.2; Weisgerber 2007, 199 fig. 10.4.
111 Yule et al. 2022, 286–290 Tab. 1. Fig. 14; Gaudiello 2024.
112 Weisgerber 1980, 101.
113 Yule et al. 2022, 290 tab. 1.
114 Weisgerber 1981, 182–183 Fig. 6.6; Yule – Gaudiello 2017, 50–51.
115 Yule 2024.

by original type, far fewer are datable. Remember, we are interested in the original, not the ruined appearance, whereas others may not always draw this distinction.[116]

35 *Hut tomb typology:* The BEW salvage project enlarges the number of published tombs, although at first glance they cannot easily be compared with each other (Tab. 4). The amount of damage to each tomb is impossible to quantify, which affects the typology. There is no simple rule that the greater the number of tombs of a given project, the more complex the classification, because some colleagues 'split' while others 'lump' in their typology strategy. Thus, the largest survey project (WAJAP) has the simplest two-part classification while excavated Package 2, with 25 tombs, has a five-part typology, described textually in detail. However, WAJAP is known only from preliminary reports as opposed to the final publications of the BEW projects. The Durham project for Packages 3 and 4 shows a more detailed 7-part tomb classification than the others. In 2014 the first BEW packages (4 and 6), had to coin their own tomb typologies, which the following projects could adopt, modify or deny. Evidently, the goals, methods, overview of tomb types and chronological definitions of different survey archaeologists diverge.

36 The published Package 6 tombs are basically homogeneous in their construction. But a comparison among the BEW teams was limited since the reports needed time to be printed prior to their appearance. The closest correspondence is between the typologies of Packages 2 and 6, as opposed to 3 and 4. Vice versa, in eastern Oman, so-called 'tumuli-shaped' burial structures from the NE are foreign and/or have not yet been recognised. 'Tower-shaped' and 'beehive-shaped' standing tombs of Package 2 come close to well-preserved hut tombs. Massive 'horseshoe-shaped' tombs especially in the northern-most Packages 5 and 6[117] are rare or non-existent further south.

37 *Excavated versus unexcavated tombs:* Typologising complete hut tombs on the strength of ruined ones rarely yields clear results. Typology-building of one's own tombs at a given site is a double-edged sword. Myopically, some impose their local data on the entire regional body. Paradoxically, even large datasets of a given kind of structure, site or area, while necessary, may yield few significant archaeological insights. Ideally, all of the data are necessary for a valid judgement of a grave/tomb typology. The Wādī Tanūf WTN cemetery project comes closest to our own project method since it typologises numerous well-preserved standing tombs. The use of similar/analogous problems, goals and methods coincides with/parallels to our goals and methods.

38 *Main types:* Notwithstanding different tomb form interpretations from the BEW salvage publications, aside from Bronze Age tombs, four main extant standing tomb types occur in Core-Oman: **1)** hut tombs with an entrance at one end, **2)** those without an entrance, **3)** small type 2 cell tombs circular or oblong in plan as well as **4)** cylinder tombs (Figs. 2. 16). This supersedes the single hut tomb type discussed in the 1980s and 1990s, based on hut tombs in Wādī al-Jizī and Bilād al-Muaʿdin. Tomb typologies vary in their intention and validity. After preliminary documentation has proven the variational breadth of the tombs of a given cemetery, the authors' project is only marginally in the realm of archaeology *per se* and more in the realm of cultural resource management.

39 *Nomenclature:* 'Cairns' and 'pillboxes' are terms from pioneer archaeologists, coined by their first-hand experience largely in the World Wars.[118] Such have become somewhat anachronistic misnomers analogous to 'lead' pencils, 'tin' foil, 'blackboards', which today exist in different colours, the 'dialling' of telephone numbers, although rotary dials no longer exist.[119]

116 See Fn. 53 and 64.

117 Laurenza et al. 2020, 350 fig. 5a. b; van de Geer et al. 2015, 37, e.g. p. 44 fig. C3.

118 'Pillbox' (and 'bunker') remained in the vocabulary of the Vietnam, Korea and Ukraine conflicts, but as combat has become more mobile, its occurrence is rarer.

119 Wikipedia 'misnomer' <https://en.wikipedia.org/wiki/Misnomer>.

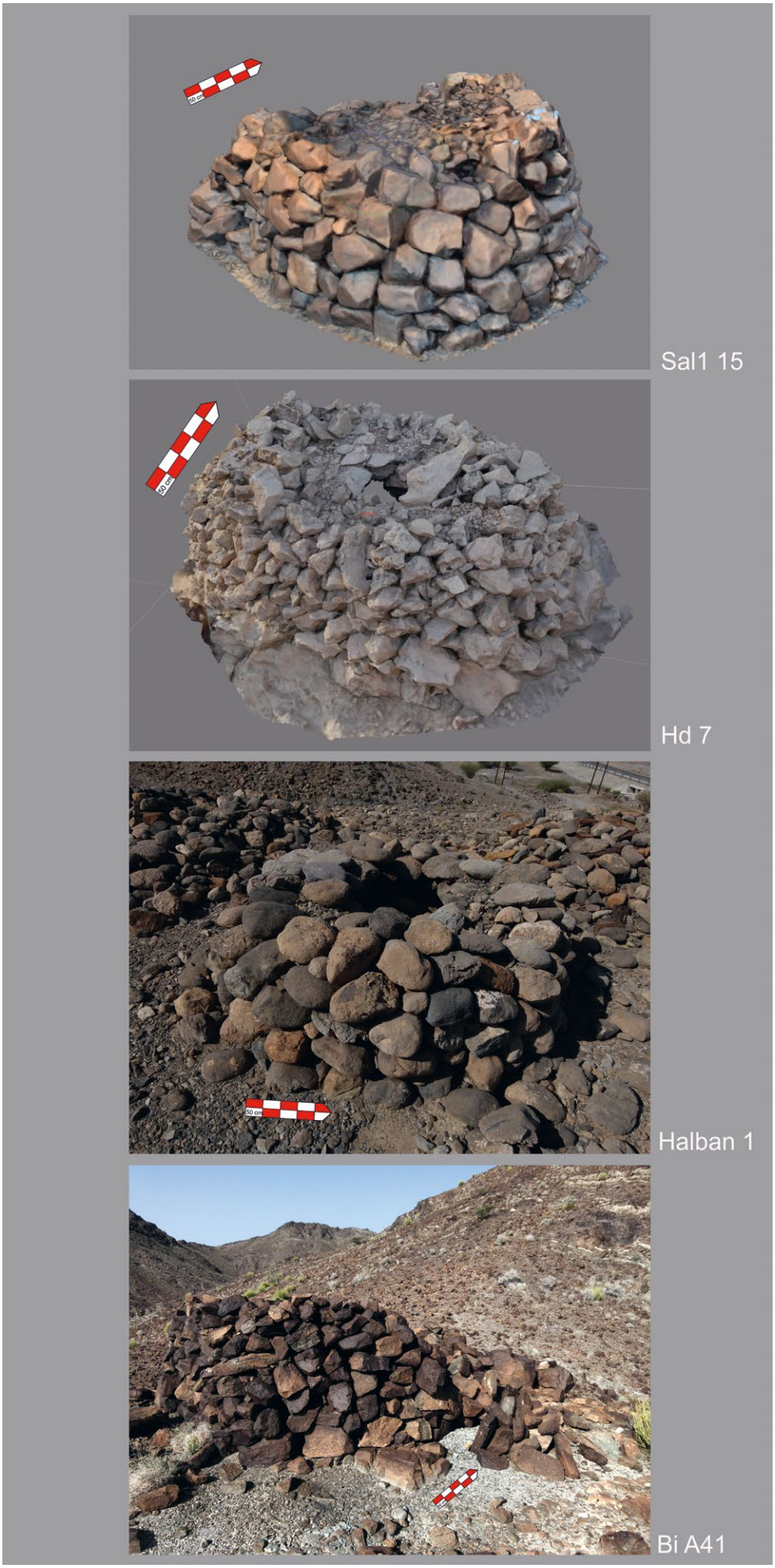
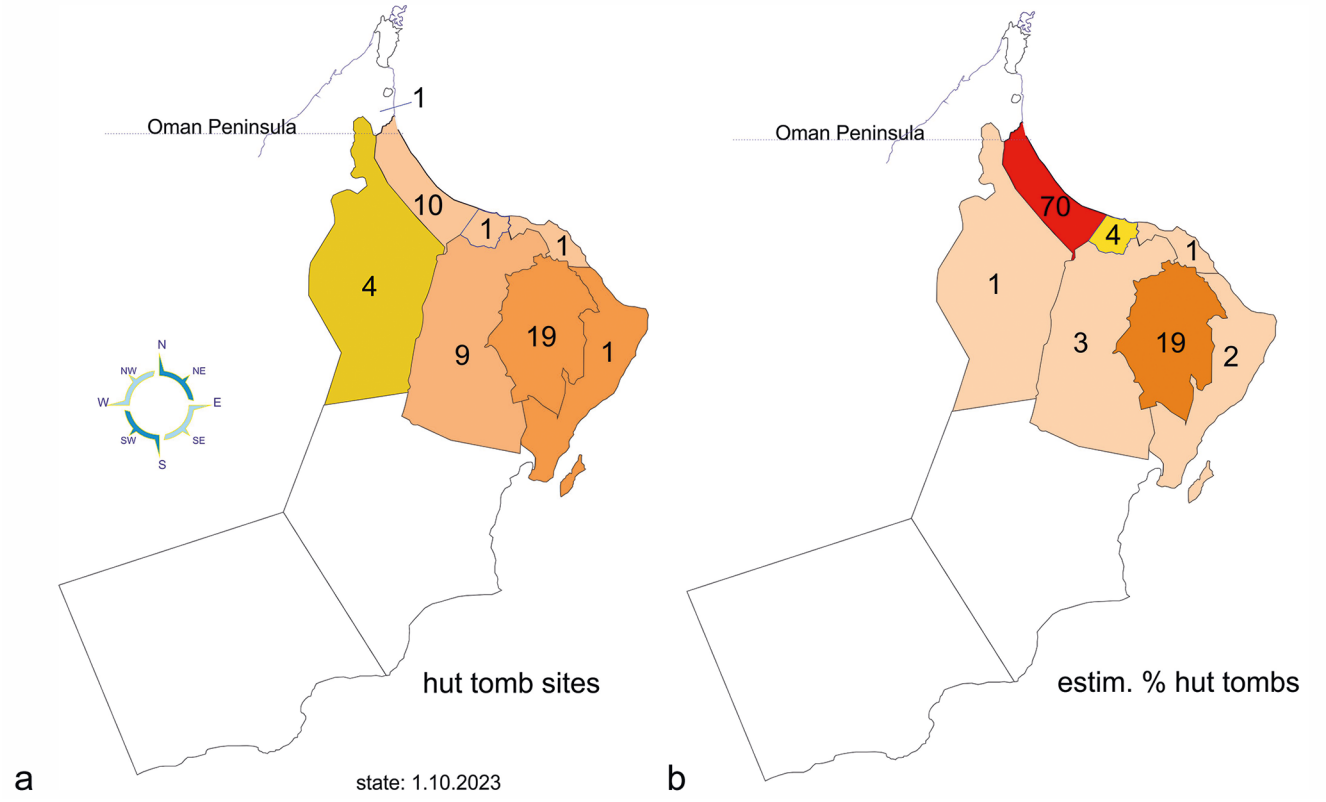



Fig. 16: Departing from preserved, not excavated, structures, three kinds of hut tombs emerge: Those without an entrance, those with an entrance and small type 2 cell tombs. Cylindrical tombs form a fourth group. Those without an entrance and type 2 cells are distributed mostly in NE Oman, those with an entrance as well as cylinders in E Oman

الشكل ١٦: تبرز ثلاثة أنواع من المدافن الكوخية بحيادها عن البنى الباقية وغير المنقب عنها: تلك العديمة المدخل وتلك ذات المدخل والنموذج الصغير 2 ، ‹مدفن الحُجَيْرة›. وتشكل المدافن الأسطوانية مجموعة رابعة. تتوزع تلك العديمة المدخل وحُجَيْرات النموذج 2 غالبًا في شمال شرقي عُمان، أما تلك ذات المدخل وكذلك الأسطوانية ففي شرقي عُمان




17

Fig. 17: a) Although most known hut tomb sites occur in eastern Oman; b) if instead one estimates the number of tombs, this elicits a different result. Thousands of hut tombs in NE Oman completely overshadow all other areas of what has become the Sultanate. The SE and S are devoid of hut tombs

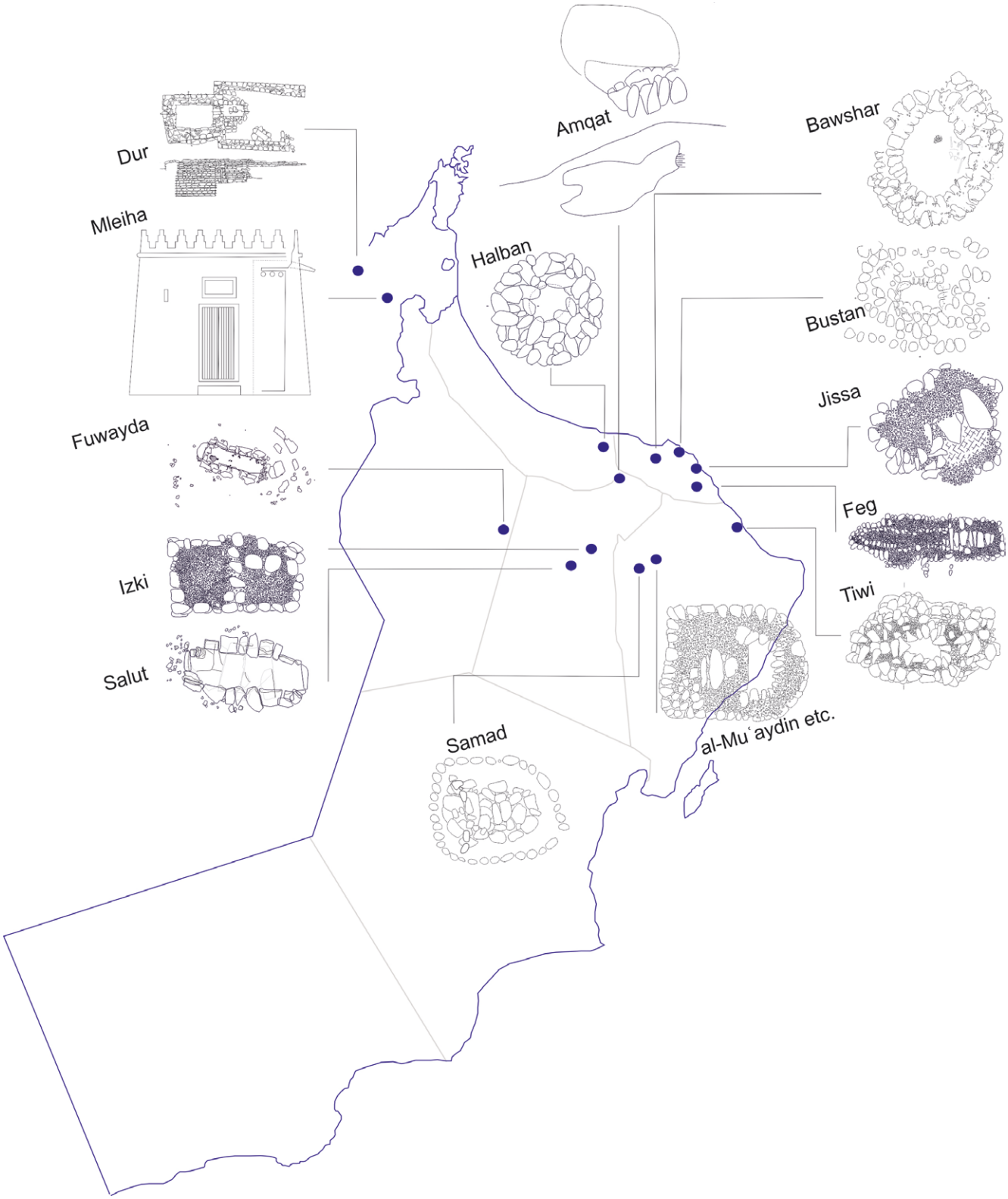
الشكل ١٧: a) على الرغم من أن غالبية مواقع المدافن الكوخية المعروفة ظهرت في شرقي عُمان؛ b) فإن هذا، إذا قمنا بدلاً من ذلك بتقدير عدد المقابر، سيُحدث نتيجة مختلفة. الآلاف من المدافن الكوخية في شمال شرقي عُمان تلقي بظلالها كليًّا على مجمل المناطق الأخرى للسلطنة الحالية. ويخلو الجنوب الشرقي والجنوب من المدافن الكوخية

40 *Hut tomb geographic distribution:* The foregoing largely confirms a previous attempt at a geographic explanation of hut tombs.[120] The reason for the scarcity of hut tombs in central and NW Oman is unknown, as it is a generally little-prospected, demographically poor area. Oman's SE and S are devoid of hut tombs. Albeit the number of hut tomb *sites* shows the majority in eastern Oman (Fig. 17 a), if instead, one estimates the number of *tombs*, far and away NE Oman has the highest number (Fig. 17 b).

41 *Chronology:* In principle, the equation of EIA copper production with hut tombs remains hypothetical, notwithstanding statistical inference that there is a large EIA population and innumerable such tombs.[121] Today, the authors' proposed interim 'EIA?' dating for hut tombs rests mainly on the related type 2 cell tombs with stratified pottery in the BEW Packages 3 and 4. Since only a third of these have yielded EIA pottery, the question arises if some also might date later. In this scenario, the hut tombs which reportedly contain Sasanian finds, would best be considered as secondary re-uses. A dating for hut tombs in the Wadi Suq period also has been suggested tentatively.[122]

42 Moving forward, the authors' assemblage-forming strives to assign grave and find types to single periods. However, in the case e.g. of copper alloy Ar2 arrowheads, analogously they occur in both Wadi Suq and EIA II contexts.[123] The 'EIA?' term for hut tombs and type 2 cell tombs remains a more cautious, even if partly assumed, convention which results from the lack of strong dating evidence, as stated in the introduction of this essay, notwithstanding new partially published results in NE Oman. We await in anticipation of the forthcoming documentation of the Leiden archaeological project in NE Oman.

120 Yule et al. 2022, 297–299. 306–307 Fig. 25.
121 Yule et al. 2023a, 241 Fig. 9.
122 Kuronuma et al. 2021, 121.
123 Yule et al. 2023a, 233–235 Fig. 4. 5.




18

Fig. 18: Main funerary architectural forms of the late pre-Islamic period, not to scale. The inclusion of hut tombs adds to its diversity, but leaves the EIA with implausibly few tomb types

الشكل ١٨: الأشكال المعمارية الدفنية الرئيسية من أواخر فترة ما قبل الإسلام، ليست بالمقياس. إن دمج المدافن الكوخية وسع من تنوعها، لكنه ترك عصر الحديد المبكر بنماذج مدافن قليلة، مما لا يُعقل

43 Were we to re-date the hut tombs in Core-Oman from the EIA to the first half of the 1st millennium CE, this would result in expelling the main suspected tomb type from that period and producing a millennium-long chronological tomb-lacuna. In fact, the large EIA population sometimes reused the cist graves of the preceding period, as in the Samad site S22. These and perhaps subsurface niche graves would then become the two main EIA burial forms. However, this idea is implausible because they are too few in relation to the large EIA population.

44 Figure 18 shows what SE Arabia's late pre-Islamic period would look like were we to assign to it type 2 cells and hut tombs, such as those from Bilād al-Muaʿdin. Some 26 grave types are known for SE Arabia's late pre-Islamic period (Tab. 5). A standardised tomb typology is a welcome alternative, as in other established fields of archaeology.[124] With or without the hut tombs, during the SLIA the formal heterogeneity of grave forms in SE Arabia is striking. This suggests highly local populations spread over the area with little contact to each other.[125] However, while this is clear for grave types, still lacking are grave inventories to confirm this. In the case of both IA periods in Core-Oman, we may not be able to answer even the simplest of questions regarding the respective populations. However, the burial practices of the SLIA are better known than those of the preceding periods.

## Acknowledgements

45 We thank the Ministry of Heritage and Tourism and its predecessors for aiding and abetting our fieldwork over the years. The Gerda Henkel Foundation generously supported the quadcopter mapping in 2022 (42/V/21). Heidelberg University gave its imprimatur for this initiative. Mr. Fausto Mauro (Würzburg) verified and corrected Yule's site gazetteer for the EIA and late pre-Islamic period, for which he is heartily thanked. Prof. Dr. Jörg Klonowski (i3mainz) of the Mainz University of Applied Sciences advised our student training project and organised the tachymetre which we lent. Mr. Janick Hammes (Mainz University of Applied Sciences) evaluated the 3D scan of the site SAL-1 and the map of the entire site. Michela Gaudiello participated in annual campaigns from 2018–22. Dr. Stephan Blum participated in the survey of October 2021. The Department of Geo-Sciences of the German University of Technology in Oman generously lent us a Leica Viva CS15 GNSS for our geo-positioning, including the necessary valid radio licence. Mr. Sultan al-Habsi of National Rocks (Muscat), flew the DJI Matrice with its high-resolution camera in order to record al-Ṣalaylī. Prof. Dr. Barbara Veselka (Luxembourg) provided the report of BEW Package 6. Prof. Elizabeth Childs-Johnson, Dr. Michele Degli Esposti, Dr. Iris Gerlach, Dr. Maciej Makowski and Dr. Rémy Crassard made valuable suggestions, not all of which are followed. Dr. Christoph Schwall (Mainz) kindly verified sites in Kalba first-hand. The editor and anonymous referees are thanked for numerous corrections and suggestions.

## Data availability statement

46 The data that support the findings of this study are available from the corresponding author upon reasonable request.

124 E.g. Pill Box Study Group 2012, with numerous pillbox types.

125 Yule 2018b, 458.

## Bibliography


**Al-Jahwari 2013** N. Al-Jahwari, Settlement Patterns, Development and Cultural Change in Northern Oman Peninsula: A Multi-Tiered Approach to the Analysis of Long-Term Settlement Trends, British Foundation for the Study of Arabia Monographs 13 (Oxford 2013)

**al-Rasibi – Yule 2017** Kh. al-Rasibi – P. Yule, Report for the Survey 20 to 21.06.2017 in the Southern Sharqīyah, Internal Report to the Ministry of Heritage and Culture, submitted 09.07.2017, 8 pages; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2019/4422 (accessed 28.3.2023)

**al-Rasibī et al. 2018a** Kh. al-Rasibī – M. Gaudiello – P. Yule, Survey of Central Oman, 1–6 January 2018, Internal Report to the Ministry of Heritage and Culture, submitted 26.01.2018, 20 pages; https://archiv.ub.uni heidelberg.de/propylaeumdok/3885 (accessed 28.3.2023)

**al-Rasibī et al. 2018b** Kh. al-Rasibī – P. Yule – W. Arnold, Survey in the Sharqīyah, 27 February – 3 March 2018, Internal Report to the Ministry of Heritage and Culture, submitted 13.03.2018, 10 pages; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2018/3884 (accessed 23.12.2023)

**Andersen 2007** S. Andersen 2007, The Tylos Period Burials in Bahrain, Vol. 1: The Glass and Pottery Vessels (Aarhus 2007)

**Avancini – Degli Esposti 2018** A. Avancini – M. Degli Esposti, Husn Salut and the Iron Age of South East Arabia, Arabia Antica 15 (Rome 2018)

**Bortolini 2020** E. Bortolini, Zukayt and the Burial Fields of Wadi Halfayn, in: S. Cleuziou – M. Tosi – D. Frenez – R. Garba (eds.), In the Shadow of the Ancestors: The Prehistoric Foundations of the Early Arabian Civilization in Oman (Oxford 2020) 229–231

**Carter 1997** R. Carter, Defining the Late Bronze Age in Southeast Arabia: Ceramic Evolution and Settlement during the Second Millennium BC (PhD dissertation, University College London 1997)

**Corboud et al. 1988** P. Corboud – R. Hapka – P. Im-Obersteg, Archaeological survey of Fujairah 1 (1987): Preliminary Report. First Campaign of the Archaeological Survey of Fujairah, United Arab Emirates (Bern 1988)

**Costa et al. 1999** G. G. Costa – P. Yule – C. Phillips, Grave BIIb, in: P. Yule, Studies in the Archaeology of the Sultanate of Oman, Orient-Archäologie 2 (Rahden/Westf. 1999) 22–7; https://doi.org/10.11588/propylaeumdok.00000817

**de Cardi – Doe 1971** B. de Cardi – D. Doe, Archaeological Survey in the Northern Trucial States, East and West 21, 1971, 225–289

**de Cardi et al. 1975** B. de Cardi with a section by C. Vita-Finzi and A. Coles, Archaeological Survey in Northern Oman, 1972, East and West 25, 1975, 9–75

**de Cardi et al. 1976** B. de Cardi – S. Collier – D. Doe, Excavations and Survey in Oman, 1974–1975, Journal of Oman Studies 2, 1976, 101–187

**de Cardi et al. 1977** B. de Cardi – D. B. Doe – S. P. Roskams, Excavation and Survey in the Sharqiyah, Oman, 1976, Journal of Oman Studies 3/1, 1977, 17–33

**Deadman 2016** W. Deadman, Discussion, in: B. Saunders, Archaeological Rescue Excavations on Packages 3 and 4 of the Batinah Expressway, Sultanate of Oman, British Foundation for the Study of Arabia 18 (Oxford 2016) 189–206

**Degli Esposti et al. 2019** M. Degli Esposti – E. Tagliamonte – M. Sasso – P. Ramorino, The Late Iron Age of Central Oman (c. 300 BC–AD 300): New Insights from Salūt, Proceedings of the Seminar for Arabian Studies 49, 2019, 97–114

**Doe 1976** D. Doe, Gazetteer, Journal of Oman Studies 2, 1976, 148–187

**Doe 1977** D. Doe, Gazetteer of Sites in Oman, 1976, Journal of Oman Studies 3/1, 1977, 35–57

**del Cerro Linares et al. 2023** C. del Cerro Linares – C. Fernández Rodríguez – P. Gómez Sanchez – A. Alonso García – A. González Martín, The al Khudairah Necropolis (Sharjah, UAE) Reflections from the 2023 Field Season, Etudes et Travaux 36, 2023, 39–56

**Düring 2022** B. Düring, Beyond Dots with Dates: A Landscape Approach to the Sohar, Hinterlands, Arabian Archaeology and Epigraphy 33, 2022, 170–177; https://doi.org/10.1111/aae.12219 (accessed 24.12.2023)

**Düring – Olijdam 2015** B. Düring – E. Olijdam, Revisiting the Ṣuḥār Hinterlands: The Wādī al-Jīzī Archaeological Project, Proceedings of the Seminar for Arabian Studies 45, 2015, 93–106, http://www.jstor.org/stable/43783625 (accessed 24.12.2023)

**Düring et al. 2017** B. Düring – E. Olijdam – S. Botan, New Iron Age Funerary Data from Collective Graves in Wādī Fizḥ, Northern Oman, Proceedings of the Seminar for Arabian Studies 47, 2017, 75–92

**El-Baz 2004** F. El-Baz, Wadis of Oman, Satellite Image Atlas (Muscat Office of the Advisor to the Sultan in Cultural Affairs 2004)

**ElMahi – Ibrahim 2003** A. ElMahi – M. Ibrahim, Two Seasons of Investigations at Manāl Site in the Wādī Samāyil Area, Sultanate of Oman, Proceedings of the Seminar for Arabian Studies 33, 2003, 77–98

**Frifelt 1975** K. Frifelt, On Prehistoric Settlement and Chronology of the Oman Peninsula, East and West 25/3–4, 1975, 359–424

**Gaudiello 2024** M. Gaudiello, The Islamic Mining Settlement of al-Ṣalaylī: Results of the First Excavation Season, Proceedings of the Seminar for Arabian Studies 53, 2024, 79–92

**Gaudiello – Yule 2018a** M. Gaudiello – P. Yule, Survey in al-Khawd, Khur al-Ḍabaʿ, Muscat Municipality (Sultanate of Oman), Survey 23.10.2018, Interim Internal Report to Ministry of Heritage and Culture, 25.10.2018; https://archiv.ub.uni-heidelberg.de/propylaeumdok/4144/ (accessed 18.12.2023)

**Gaudiello – Yule 2018b** M. Gaudiello – P. Yule, Survey in Wadi Musfah, East of Ǧebel al-Ṣalaylī, Sharqīyah North Province (Sultanate of Oman), Survey 17.–22.10.2018, Internal Report to Ministry of Heritage

and Culture, submitted 23.10.2018, http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2018/4145 (accessed 31.12.2023)

**Gaudiello – Yule 2019** M. Gaudiello – P. Yule, Archaeological Study Visit to the Šarqiyyah 28.03.–12.04.2019, Internal Report to the Ministry of Heritage and Culture, Heidelberg Univ. Initiative, submitted 25.04.2019; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2019/4398 (accessed 31.12.2023)

**Genchi – Larosa 2021** F. Genchi – N. Larosa, Funerary Evidence and Reuse Practices: The Cairn Burials at al-Jamma in the South Batinah Foothills (Sultanate of Oman), Journal of Oman Studies 22, 2021, 41–72

**Genchi et al. 2016** N. Larosa – L. Fattore – D. Mancinelli – D. Martino – P. Bonanni – E. Zambetta, Archaeological Fieldwork on Package 2 Batinah Expressway, Sultanate of Oman, Season 2016 20 March – 20 May, Internal Report for the Ministry of Heritage and Culture (Muscat 2016)

**Gentelle – Frifelt 1989** P. Gentelle – K. Frifelt, About the Distribution of Third Millennium Graves and Settlements in the Ibri Area of Oman, in: P. M. Costa – M. Tosi (eds.), Oman Studies: Papers on the Archaeology and History of Oman, Serie Orientale 63 (Rome 1989) 119–126

**Gernez – Giraud 2019** G. Gernez – J. Giraud, Taming the Great Desert: Adam in the Prehistory of Oman, The Archaeological Heritage of Oman 3 (Oxford 2019)

**Goettler et al. 1976** G. Goettler – N. Firth – C. Huston, A Preliminary Discussion of Ancient Mining in the Sultanate of Oman, Journal of Oman Studies 2, 1976, 43–55

**Harrower et al. 2013** M. Harrower – J. Schuetter – J. McCorriston – P. Goel – M. Senn, Survey, Automated Detection, and Spatial Distribution Analysis of Cairn Tombs in Ancient Southern Arabia, in: D. Comer – M. Harrower (eds.), Mapping Archaeological Landscapes from Space (New York 2013) 259–268

**Haerinck, E. 2001** Excavations at ed-Dur (Umm al-Qaiwain, United Arab Emirates), Vol. II: The Tombs (Leuven 2001)

**Hauptmann 1985** A. Hauptmann, 5000 Jahre Kupfer in Oman, Der Anschnitt, Beiheft 4 (Bochum 1985)

**heidICON** heidICON-Pool 'SKVO "Oman"'; https://heidicon.ub.uni-heidelberg.de/pool/oman (accessed 31.12.2023)

**Jasim 1992** S. A. Jasim, Excavations at Traif-Kalba the Emirate of Sharjah, Sharjah Archaeology 7, 1992, 7–26 + figures

**Jasim 2012** S. A. Jasim, The Necropolis of Jebel al-Buhais: Prehistoric Discoveries in the Emirate of Sharjah United Arab Emirates (Sharja 2012)

**Jaussen – Savignac 1914** A. Jaussen – R. Savignac, Mission archéologique en Arabie, Vol. II: El-ʿEla, d'Hégra a Teima, Harrah de Tebouk (Paris 1914); https://archive.org/details/missionarcheolog21jaus/page/170/mode/2up (accessed 28.03.2023)

**Juhas et al. 2023** M. Juhas – L. von Schlammersdorff – F. Weber – P. Yule, Internal Report of an Archaeological Rescue Operation at al-Khod, Hor al-Ḍabʿ (al-Ḥawḍ, Ḥūr Aḍ-Ḍabʿ), Muscat Governorate, 12.01. to 26.01.2023 for the Ministry of Heritage and Tourism, Version 1: A Rescue Excavation and Mapping of Hut Tombs and Niche Tombs, Internal Report submitted 08.02.2023; https://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2023/5725 (accessed 23.12.2023)

**Karacic et al. 2018** S. Karacic – M. Händel – E. Hammer – P. Magee, The Architecture of the Iron Age II Fortified Settlement at Muweilah (Sharjah, United Arab Emirates), Arabian Archaeology and Epigraphy 29, 2018, 27–54

**Kroll 2013** S. Kroll, The Early Iron Age Lizq Fort, Sultanate of Oman, Translated and Revised by Paul Alan Yule, Zeitschrift für Archäologie Außereuropäischer Kulturen 5, 2013, 159–220

**Kuronuma et al. 2021** T. Kuronuma – T. Miki – Y. Kondo, A Bronze- and Iron Age Cemetery at Wādī Tanūf, ad-Dākhilīyah: A Preliminary Report of Years 2019–2020 Survey, Journal of Oman Studies 22, 2021, 99–125

**Kuronuma et al. 2022** T. Kuronuma – T. Miki – Y. Kondo, Early Bronze Age Cemeteries in Tanūf District, ad-Dākhilīyah Governorate: Preliminary Report of Years 2017 to 2020 Survey, Journal of Oman Studies 23, 2022, 70–100

**Laurenza 2019** S. Laurenza, Scavi Preventivi lungo il Segmento 5 della Batinah Expressway/ Rescue Excavations along Package 5 of the Batinah Expressway, in: D. Frenez – M. Cattani (eds.), Sognatori, 40 Anni di Ricerche Archeologiche Italiane in Oman (Rome 2019) 122–126

**Laurenza et al. 2020** S. Laurenza – M. Bianchi – M. di Michele, Graves, Distribution and Social Memory: Towards a New Definition of Funerary Landscape in Oman, in: C. Coppini – C. Simi (eds.), Interactions and New Directions in Near Eastern Archaeology, Proceedings of the 5th Broadening Horizons Conference (Udine 5–8 June 2017) (Trieste 2020) 343–357

**Magee 1996** P. Magee, The Chronology of the Southeast Arabian Iron Age, Arabian Archaeology and Epigraphy 7, 1966, 240–252

**Miles 1919** S. Miles, The Countries and Tribes of the Persian Gulf (London 1919)

**Mouton 2008** M. Mouton, La péninsule d'Oman de la fin de l'âge du fer au début de la période sasanide (250 av.–350 ap. JC), BAR International Series 1776 (Oxford 2008)

**Nowell 1991** J. Nowell, A Day Above Oman (Dubai 1991)

**Overlaet – van der Stede 2020** B. Overlaet – V. van der Stede, The 2018/19 Excavations at Mleiha Graveyard Area F (Brussels privately distributed 2020)

**Pillbox Study Group 2012** Pillbox Study Group, Type 22 Pillbox, http://www.pillbox-study-group.org.uk/type-22-2/ (accessed 30.10.2023)

**Potts 1992** D. T. Potts, The Arabian Gulf in Antiquity 1: From Prehistory to the Fall of the Achaemenid Empire (Oxford 1992)

**Saunders 2016** B. Saunders, Archaeological Rescue Excavations on Packages 3 and 4 of the Batinah Expressway, Sultanate of Oman, British Foundation for the Study of Arabia 18 (Oxford 2016)

**Schiettecatte et al. 2023** J. Schiettecatte – G. Charloux – K.-Y. Cotto – M. Gallo – E. Kerkaert – L. Nehmé – J. Norris – A. Payen – S. Pébay-Peyroula – J. Rohmer – I. Rossi – P. Yule, Digital Atlas of Ancient Arabia, PostgreSQL geodatabase, viewed 15 September 2023. Repository URL: https://ancientarabia.huma-num.fr/geoserver/; URL: https://ancientarabia.huma-num.fr/maps/

**Schreiber 2007** J. Schreiber, Transformationsprozesse in Oasensiedlungen Omans: Die vorislamische Zeit am Beispiel von Izki, Nizwa und dem Jebel Akhdar, online PhD dissertation, University of Munich; https://doi.org/10.5282/edoc.7548 (accessed 15.12.2023)

**Schreiber 2010** J. Schreiber, The Iron I-Period in South-Eastern Arabia: A View from Central Oman, in: A. Avanzini (ed.), Eastern Arabia in the First Millennium BC (Rome 2010) 81–90

**Schreiber – Häser 2004** J. Schreiber – J. Häser, Archaeological Survey at Ṭīwī and Its Hinterland (Central Oman), Proceedings of the Seminar for Arabian Studies 34, 2004, 319–329; https://www.jstor.org/stable/41223828

**Steimer-Herbet 2004** T. Steimer-Herbet, Classification des sépultures à superstructure lithique dans le Levant et l'Arabie occidentale (IV$^{e}$ et III$^{e}$ millénaires avant J.-C.) (Oxford 2004)

**Thomas 1929** B. Thomas, The South-Eastern Borderlands of Rubʾ al Khali, The Geographical Journal 73.3, 1929, 193–212

**van de Geer et al. 2015** P. van de Geer – M. A. Goddijn – J. van de Leije – B. Veselka – A. Wossink, Archaeological Fieldwork on the Batinah Expressway Package 6, Oman (Leiden 2015)

**Vogt 1981** B. Vogt, Der Friedhof Maysar-9, in: G. Weisgerber, Mehr als Kupfer in Oman, Ergebnisse der Expedition 1981, Der Anschnitt 33/5–6, 1981, 239–243

**Vogt 1984** B. Vogt, 1$^{st}$ millennium B.C. Graves and Burial Customs in the Samad Area, Oman, in: R. Boucharlat – J.-F. Salles (eds.), Arabie orientale, Mésopotamie et Iran méridional de l'âge du fer au début de la période islamique. Réunion de travail, Maison de l'Orient, Lyon 1982, Editions Recherche sur les civilisations. Mémoires 37 (Paris 1984) 271–284

**Vogt 1985** B. Vogt, Zur Chronologie und Entwicklung der Gräber des späten 4. bis 2. Jahrtausends v. Chr. auf der Halbinsel Oman: Zusammenfassung, Analyse und Würdigung publizierter wie auch unveröffentlichter Grabungsergebnisse (PhD dissertation, Göttingen 1985)

**Weisgerber 1980** G. Weisgerber, '…und Kupfer in Oman', Der Anschnitt 32/2–3, 1980, 62–110

**Weisgerber 1981** G. Weisgerber, Mehr als Kupfer in Oman, Ergebnisse der Expedition 1981, Der Anschnitt 33/5–6, 1981, 173–263

**Weisgerber 2007** G. Weisgerber, Sites of Multi-Period Copper Production in the Sultanate of Oman, in: J. C. Orchard – J. J. Orchard (eds.), Proceedings of the International Symposium: Archaeology of the Arabian Peninsula through the Ages, 7$^{th}$–9$^{th}$ May 2006 (Muscat 2007) 190–209

**Yule 1999** P. Yule, The 'Honeycomb Cemetery', in: P. Yule, Studies in the Archaeology of the Sultanate of Oman, Orient-Archäologie 2 (Rahden/Westf. 1999) 28–72

**Yule 2001a** P. Yule, Die Gräberfelder in Samad al Shān (Sultanat Oman): Materialien zu einer Kulturgeschichte, Vol. I: Text, Orient-Archäologie 4 (Rahden/Westf. 2001); https://doi.org/10.11588/diglit.4043 (accessed 15.12.2023)

**Yule 2001b** P. Yule, Die Gräberfelder in Samad al Shān (Sultanat Oman): Materialien zu einer Kulturgeschichte, Vol. II: Tafeln, Orient-Archäologie 4 (Rahden/Westf. 2001); Plates: https://doi.org/10.11588/diglit.4044 (accessed 15.12.2023)

**Yule 2015a** P. Yule, Archaeological Research in the Sultanate of Oman: Bronze and Iron Age Graveyards, Der Anschnitt, Beiheft 28 (Bochum 2015)

**Yule 2015b** P. Yule, Excavation and Prospection in Izkī and Neighbouring Areas of Central Oman 2011, in: P. Yule, Archaeological Research in the Sultanate of Oman: Bronze and Iron Age Graveyards, Der Anschnitt, Beiheft 28 (Bochum 2015) 179–203

**Yule 2015c** P. Yule, Archaeological Recording of Heidelberg University in Oman April & December 2014, May 2015, Internal Report for the Ministry of Heritage and Culture, submitted 29.12.2015

**Yule 2016** P. Yule, Valorising the Samad Late Iron Age, Arabian Archaeology and Epigraphy 27, 2016, 31–71; https://doi.org/10.1111/aae.12060

**Yule 2017** P. Yule, Visit in al-Sharqīyah/al-Dhurra in Wadi al-Nibaʾ (=Wadi al-Aghdaʾ), Internal Report for the Ministry of Heritage and Culture, submitted 25.01.2017; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2017/3401 (accessed 15.12.2023)

**Yule 2018a** P. Yule, Conclusions, in: P. Yule, (ed.), Early Iron Age Metal-Working Workshop in the Empty Quarter, Sultanate of Oman (Bonn 2018) 140–146

**Yule 2018b** P. Yule, Toward an Identity of the Samad Period Population (Sultanate of Oman), Zeitschrift für Orient-Archäologie 11, 2018, 438–486

**Yule 2022** P. Yule, Mapping of the al-Ṣalaylī Valley: Foundation Stone in the Planned Research on Defining the Identity of the Early Iron Age Population in South-Eastern Arabia, February 2022. Alexander Sima Expedition to the Sultanate of Oman, submitted to the Ministry of Heritage and Tourism, Sultanate of Oman, 27.08.2022

**Yule 2024** P. Yule, ent eia oman+uae, uploaded 20.01.2024

**Yule – al-Asmi 2019** P. Yule – Kh. al-Asmi, Archaeological Findspot, al-Neǧd, Wazīrat al-ʿAmīrat, Internal Report to the Ministry of Heritage and Culture, submitted 07.04.2014; http://archiv.ub.uni-heidelberg.

de/propylaeumdok/volltexte/2019/4397 (accessed 15.12.2023)

**Yule – al-Kalbani 2019** P. Yule – M. al-Kalbani, Prospection Visit on 04.12.2019 to al-Sharqiyyah Province, al-Ṣalaylī & al-Maʿdin, Heidelberg Univ. Initiative, Interim Report to the Ministry of Heritage and Culture, submitted 06.12.2019

**Yule – al-Rāsibī 2015** P. Yule – Kh. al-Rāsibī, ʿUmq al-Rabaḫ, al-Sharqīyah, Internal Report for the Ministry of Heritage and Culture, Sultanate of Oman, submitted 13.04.2015; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2017/3675 (accessed 18.12.2023)

**Yule – Gaudiello 2017** P. Yule – M. Gaudiello, Photogrammetric Recording of an Early Iron Age Hut Tomb in Central Oman, Kermes 107, 2017, 50–54; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2020/4610 (accessed 15.12.2023)

**Yule – Mauro 2019** P. Yule – F. Mauro, Archaeological Study Visit to the Central Part of Oman 16.–29.09.2019, Heidelberg Univ. Initiative, Internal Report to the Ministry of Heritage and Culture, submitted 04.10.2019; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2019/4550 (accessed 17.12.2023)

**Yule – Mauro 2024** P. Yule – F. Mauro, Gazetteer ent slia nlia slia pir sas, 2024

**Yule – Mauro 2025** P. Yule – F. Mauro, At the Dawn of History the Late Pre-Islamic Age in South-Eastern Arabia (Oxford 2025); http://doi.org/10.32028/9781803279930

**Yule – Weisgerber 1998** P. Yule – G Weisgerber, The Tower Tombs at Shir/Jaylah, Sultanate of Oman, Beiträge zur allgemeinen und vergleichenden Archäologie 18, 183–241; http://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2009/291/ (accessed 15.12.2023)

**Yule et al. 1994** P. Yule – G. Weisgerber – M. Kunter – M. Bemmann, Wadi Suq Burial Structures in Oman, Nubica 3/1, 1994, 379–415

**Yule et al. 2021** P. Yule – M. Gaudiello – S. Blum, Field Report of the Alexander Sima, Heidelberg University Archaeology Mission to Oman, 9 September – 15 October 2021, Internal Report submitted 22 October 2021; https://archiv.ub.uni-heidelberg.de/propylaeumdok/volltexte/2021/5149 (accessed 15.12.2023)

**Yule et al. 2022** P. Yule – M. Gaudiello – J. Lehner, Al-Ṣalaylī Valley in Eastern Oman, Early Iron Age Burial and Multi-Period Copper Production, Zeitschrift für Orient-Archäologie 14 (2021), 2022, 276–317

**Yule et al. 2023a** P. Yule – B. Pracejus – N. Al-Jahwari – Kh. Douglas – M. Gaudiello, Metal Hoard in al-Ḫawḍ on the Sultan Qaboos University Campus, Aftermath or Apex?, Zeitschrift Orient-Archäologie 15 (2022), 2023, 230–246

**Yule et al. 2023b** P. Yule – S. Blum – M. Gaudiello – J. Hammes, Heidelberg University, Alexander Sima Prospection of Suspected Iron Age Sites in Eastern Oman, Lecture, 17.11.2023, Chicago, American Schools of Oriental Research Annual Meeting

**Yule et al. 2024** P. Yule – A. Wilkening – N. Ayash, Prehistoric Cemetery in al-Šuwayʿi (الشويعى), Sultanate of Oman: A Find Note, 2024; https://doi.org/10.11588/propylaeumdok.00006580

## ZUSAMMENFASSUNG

**Was steckt in einem Hüttengrab?**

Friedhofskartierung im östlichen Oman 2017–2023, vorläufiger Bericht

Paul A. Yule – Michela Gaudiello – Stephan Blum – Janick Hammes

Im Folgenden werden 778 untersuchte Gräber ausgewertet, 295 aus den BEW-Bergungsgrabungen in der Bāṭina sowie 361 aus Samad/al-Muyasser. Wir haben sowohl altbekannte als auch neue Grabstätten in der Open-Source-Datenbank „ent" registriert – eine laufende Arbeit. Für die Chronologie der Hüttengräber sind zwei Probleme zu lösen: die Bestimmung einer genaueren Grabformennomenklatur und anhand der kontextuellen Funde datieren zu können. Soweit möglich, grenzen wir die Hüttengräber von anderen Bestattungsstrukturen ab. Bestimmte Steinstrukturen, die bisher als „cairns" identifiziert wurden, können genauer typologisiert werden. Eine genauere Datierung der Gräber als in die frühe Eisenzeit oder die späte vorislamische Zeit ist selten realistisch. Ausgegrabene, schlecht erhaltene Gräber geben relativ wenig Aufschluss über die Datierung von gut erhaltenen Hüttengräbern.



## SCHLAGWORTE

al-Salayli, Bilad al-Muadin, Zylindergrab, Hur al-Dhaba, Hüttengrab



## الخلاصة

**ماذا يوجد في المدفن الكوخي؟**

وضع خرائط للمقابر في شرق عُمان خلال الأعوام ٢٠١٧ إلى ٢٠٢٣، تقرير أولي

باول أ. يول – مِكِلا غاوديِلّو – شْتِفَنْ بْلوم – يَنِك هَمِّس

يجري فيما يلي تقييم ٧٧٨ من القبور المستطلعة بالمسح الآثاري ومن بينها ٢٩٥ قبرًا كشفت عنها التنقيبات الإنقاذية لمشروع « طريق الباطنة السريع» في الباطنة، وكذلك ٣٦١ قبرًا من سمد/المُيَسَّر. وقد سجلنا مواقع معروفة من قبل وأخرى جديدة في قاعدة بيانات المصدر المفتوح «Ent»، وهو عمل ما زال جاريًّا. هذا وتبدت مشكلتان تتعلقان بالتعاقب الزمني للمدافن الكوخية، ألا وهما تحديد مجموعة مصطلحات أكثر دقة لأشكال المدافن، وتأريخها استنادًا إلى اللقى المكتشفة في سياقها. ونميز هنا قدر المستطاع المدافن الكوخية عن البنى الدفنية الأخرى. وهكذا تأتي نمذجة بنى حجرية محددة كانت تعتبر فيما مضى «معالم حجرية» بدقة أكبر. ومن النادر أن يكون التوصل إلى تأريخ أدق للقبور أكثر من إلحاقها بعصر الحديد المبكر أو أواخر عهد ما قبل الإسلام أمرًا واقعيًّا؛ إذ لا تقدم القبور المنقب عنها والباقية على حال سيئة إلا معلومات قليلة حول تأريخ المدافن الكوخية الجيدة الحال.



## الكلمات المفتاحية

الصليلي، بلاد المعيدن، مدفن أسطواني، حور الضبع، مدفن كوخي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## CONTACT

Prof. Dr. Paul A. Yule
Languages and Cultures of the Near East, Semitic Studies, Prehistory and Near Eastern Archaeology, Ruperto Corola University Heidelberg
Germany
paul.yule@t-online.de
ORCID: https://orcid.org/0000-0002-7517-5839

Dr. Michela Gaudiello
Eberhard-Karls-Universität-Tübingen, Institut für Ur- und Frühgeschichte und Archäologie des Mittelalters
Germany
m.gaudiello12@gmail.com
ORCID: https://orcid.org/0000-0002-0177-0707

Dr. Stephan Blum
Eberhard-Karls-Universität-Tübingen, Institut für Ur- und Frühgeschichte und Archäologie des Mittelalters
stephan.blum@uni-tuebingen.de
ORCID: https://orcid.org/0000-0002-2311-687X

Janick Hammes
Mainz University of Applied Sciences
janick.hammes@students.hs-mainz.de
ORCID: https://orcid.org/0009-0004-7196-7021



## METADATA

Titel/*Title*: What's in a Hut Tomb? Cemetery Mapping in Eastern Oman 2017–2023, Preliminary Report / *Was steckt in einem Hüttengrab? Friedhofskartierung im östlichen Oman 2017–2023, vorläufiger Bericht*

Band/*Issue*: Zeitschrift für Orient-Archäologie 17

Bitte zitieren Sie diesen Beitrag folgenderweise/*Please cite the article as follows*: P. A. Yule – M. Gaudiello – S. Blum – J. Hammes, What's in a Hut tomb? Cemetery Mapping in Eastern Oman 2017–2023, Preliminary Report, ZOrA 17 (2024), 2025, § 1–46, https://doi.org/10.34780/90054g74





DOI: 10.34780/90054g74

| Al-site | kind | finds | UTM 40 e | UTM 40 n | literature |
|---|---|---|---|---|---|
| ʿAbāyah 2 | cemetery | SLIA | 687382 | 2562626 | al-Rasibī et al. 2018a |
| ʿAbāyah 4 | fortified settlement | SLIA | 687738 | 2573414 | al-Rasibī et al. 2018a |
| al-ʿAmqāt | cemetery | none | 614764 | 2593614 | Gaudiello – Yule 2019 |
| al-ʿAmqāt 1 | hut tomb | none | 615547 | 2593218 | al-Rasibī et al. 2018a |
| al-ʿAmqāt 2 | hut tomb | none | 615628 | 2593200 | al-Rasibī et al. 2018a |
| al-ʿAmqāt 3 | hut tomb | none | 615732 | 2593090 | al-Rasibī et al. 2018a |
| al-ʿAmqāt 4 | hut tomb | none | 615054 | 2593441 | al-Rasibī et al. 2018a |
| al-ʿAmqāt 5 | hut tomb | none | 615575 | 2593164 | al-Rasibī et al. 2018a |
| al-ʿAmqāt 6 | hut tomb | none | 615951 | 2592775 | al-Rasibī et al. 2018b |
| al-ʿAmqāt 7 | sherds | SLIA | 615794 | 2592802 | al-Rasibī et al. 2018b |
| al-ʿAmqāt 8 | hut tomb | none | 616048 | 2592957 | al-Rasibī et al. 2018b |
| al-Baṭīn 1 | cemetery | SLIA | 672578 | 2519360 | al-Rasibī et al. 2018a |
| al-Baṭīn 1 | cemetery | WS, SLIA | 672578 | 2519360 | Gaudiello – Yule 2019 |
| al-Baṭīn 2 | cemetery | SLIA | 672544 | 2518986 | Gaudiello – Yule 2019 |
| al-Baṭīn 3 | honeycomb cemetery | WS? | 671080 | 2520111 | Gaudiello – Yule 2019 |
| al-Dhurra | settlement | SLIA | 675147 | 2514964 | Yule 2017 |
| al-Dhurra (Negda Madirah) | settlement | SLIA | 675048 | 2514892 | al-Rasibī et al. 2018a |
| al-Ǧawābī | trilith | none | 759506 | 2438816 | al-Rasibī et al. 2018a |
| al-Ḫawḍ/al-Madīnah | cemetery | SLIA | 613948 | 2607812 | Gaudiello – Yule 2019 |
| al-Ḫawḍ/al-Madīnah | settlement | SLIA | 613921 | 2607846 | Gaudiello – Yule 2019 |
| al-Kamil/al-Ġubayrat | cemetery | EIA? | 733000 | 2451000 | Gaudiello – Yule 2019 |
| al-Kamil/al-Wafi | trilith | none | 717453 | 2484084 | al-Rasibi – Yule 2017 |
| al-Kamil/al-Wafi | cemetery | none | 723203 | 2489981 | al-Rasibi – Yule 2017 |
| al-Kamil/al-Wafi | fort | subrecent? | 733148 | 2448056 | al-Rasibi – Yule 2017 |
| al-Kamil/al-Wafi | cemetery | BA | 733056 | 2451387 | al-Rasibi – Yule 2017 |
| al-Kamil/al-Wafi, Sabt Saite | fort | sub-recent | 718991 | 2487030 | al-Rasibi – Yule 2017 |
| al-Multaqā 3 | cemetery | EIA | 612596 | 2585729 | Yule et al. 2021a |
| al-Muyassar, M34a | fortin | SLIA | 616344 | 2522465 | Gaudiello – Yule 2019 |
| al-Nejd | fortified settlement | SLIA | 655215 | 2587855 | Yule – al-Asmi 2019 |
| al-Rakī/al-Qabil wilayat | grave | recent | 699489 | 2520140 | al-Rasibī – Yule 2017 |
| al-Rawdah-Muqata | cemetery | multi-period | 626992 | 2531404 | al-Rasibī et al. 2018a |
| al-Ṣalaylī | mine | 9th–10th c. CE | 632327 | 2536312 | Yule et al. 2021b |
| al-Ṣalaylī | cemetery | medieval | 631600 | 2536344 | Yule et al. 2021b |
| al-Ṣalaylī | settlement | medieval | 631150 | 2536340 | Yule et al. 2021b |
| al-Ṣalaylī | various | medieval | several | several | Yule et al. 2021b |
| al-Ṣalaylī 1 | hut tomb | none | 631901 | 2536305 | al-Rasibī et al. 2018a |
| al-Ṣalaylī 1 | cemetery | none | 631901 | 2536305 | Gaudiello – Yule 2019 |
| al-Ṣalaylī 1-4 | cemetery | none | several | several | Gaudiello – Yule 2018b |
| al-Ṣalaylī 2 | hut tomb | none | 631235 | 2536611 | al-Rasibī et al. 2018a |
| al-Ṣalaylī 3 | hut tomb | none | 631311 | 2536763 | al-Rasibī et al. 2018a |
| al-Ṣalaylī 5 | slag field | medieval | 632056 | 2536283 | al-Rasibī et al. 2018a |
| al-Ṣalaylī 6 | mine gallery | medieval | 632313 | 2536336 | al-Rasibī et al. 2018a |
| al-Ṣalaylī 7 | building ruin | medieval | several | several | al-Rasibī et al. 2018a |
| al-Ṣalaylī wp 94 | stone | recent? | 631663 | 2537104 | Yule et al. 2021b |
| al-Ṣalaylī, false grave | cemetery | none | 631735 | 2536292 | Yule et al. 2021b |
| al-Shūwayʿī | cemetery | none | 609597 | 2518267 | Gaudiello – Yule 2019 |
| al-Šūwayʿī | cemetery | none | 609597 | 2518267 | Yule et al. 2021a |
| al-Shūwayʿī | cylinder tomb | none | 609597 | 2518267 | Yule et al. 2021b |

| Al-site | kind | finds | UTM 40 e | UTM 40 n | literature |
|---|---|---|---|---|---|
| Bani Bu Ḥassan/Saiḥ Aulad Muṭayr | cemetery | BA | 737025 | 2447374 | al-Rasibi – Yule 2017 |
| Bilād al-Mu'aydin | complex site | multi-period | 628286 | 2542237 | Yule – al-Kalbani 2019 |
| Bilād al-Mu'aydin | complex site | multi-period | several | several | Yule et al. 2021a |
| Bilād al-Mu'aydin | cemetery | none | 628570 | 2542193 | Yule et al. 2021a |
| Bulaydah | cemetery | none | 486655 | 2586076 | Yule et al. 2021a |
| Faġr | trilith | none | 667282 | 2489887 | Gaudiello – Yule 2019 |
| Fulayǧ al-Rašāšdah | cemetery | UaN | 670131 | 2493126 | Gaudiello – Yule 2019 |
| Ḥalbān | cemetery | none | 597198 | 2603926 | Yule et al. 2021a |
| Ḥalbān | type 2 cell | none | 597198 | 2603926 | Yule et al. 2021b |
| Ḥūr al-Ḍabʿ | cemetery | none | 622206 | 2608537 | Gaudiello – Yule 2018a |
| Ḥūr al-Ḍabʿ | cemetery | EIA | 622206 | 2608537 | Gaudiello – Yule 2019 |
| Ḥūr al-Ḍabʿ | cemetery | none | 622206 | 2608537 | Yule et al. 2021a |
| Ḥūr al-Ḍabʿ | niche grave | none | 622591 | 2608474 | Yule et al. 2021b |
| ʿIbri, al-Subaykhī | cemetery | none | 434298 | 2577433 | Yule et al. 2021a |
| ʿIbrī, Kawas | cemetery | none | 451182 | 2570105 | Yule et al. 2021a |
| Izkī, al-Adbī Iz900 | cemetery | SLIA | 578617 | 2535482 | Yule 2015b |
| Majazeh | mine | none | 602463 | 2517242 | Yule et al. 2021a |
| Markah/al-Kamil/al-Wafi | settlement, trilith | multi-period | 717807 | 2484239 | al-Rasibi – Yule 2017 |
| Misera al-Rākī | cemetery | SLIA+Islamic | 702460 | 2519591 | al-Rasibī et al. 2018b |
| Musfa | hut tomb | none | 631834 | 2540046 | al-Rasibī et al. 2018a |
| Qariyat al-Saiḥ | settlement | SLIA | 604112 | 2545815 | Yule 2015c |
| Qirn Abū Lihīyah | fortified settlement | SLIA? | 675252 | 2514867 | al-Rasibī et al. 2018a |
| Samaʾīl/al-ʿAyn | hut tomb | none | 586253 | 2560022 | unpublished |
| Sarūr 1 | cemetery | none | 613570 | 2585517 | Gaudiello – Yule 2019 |
| Sarūr 2 | cemetery | none | 613410 | 2585673 | Gaudiello – Yule 2019 |
| Shenah 1 | cemetery | SLIA | 679861 | 2531593 | al-Rasibī et al. 2018a |
| Shenah 2 | rock art | not datable | 680435 | 2532136 | al-Rasibī et al. 2018a |
| Ṭawī ʿAyša | cemetery | UaN | 736383 | 2465481 | Gaudiello – Yule 2019 |
| ʿUmq al-Rabaḫ | settlement | SLIA | 714060 | 2533396 | Yule – al-Rasibī 2015 |
| Wadi al-Arad | cemetery | none | 462422 | 2685840 | Yule et al. 2021a |
| Wādī al-Ḥiltī | cemetery | none | 462937 | 2677955 | Yule et al. 2021a |
| Wādī al-Ḥiltī 1 | hut tomb | none | 462856 | 2677950 | Yule et al. 2021b |
| Wādī al-Ḥiltī 2 | hut tomb | none | 465509 | 2679275 | Yule et al. 2021b |
| Wādī al-Ḥiltī 3 | hut tomb | none | 466335 | 2679712 | Yule et al. 2021b |
| Wādī Ṣāʿ | Cu smelting | Islamic | 606781 | 2519949 | Gaudiello – Yule 2019 |
| Wadi Ṣaʿ iii | Cu smelting | none | 607470 | 2518918 | Yule et al. 2021a |
| Wariya | cemetery | not datable | 631734 | 2540125 | al-Rasibī et al. 2018a |
| Yiṭī | cemetery | WS | 671223 | 2600986 | Gaudiello – Yule 2019 |

1

Tab. 1: Prehistoric sites recorded 2011–23

الجدول ١: مواقع ما قبل التاريخ التي وُثقت ما بين ٢٠١١ و ٢٠٢٣

| site | kind of burial | amount | governorate | source |
|---|---|---|---|---|
| al-Multaqa 1 | cylinder | 26 | Dāḫiliyya | al-Rasibī pers. com. |
| al-Ṣalaylī | hut | 242 | Sharqiyya N | Goettler et al. 1976, 44 no. 45 |
| al-Shūwayʿi | cylinder | 13 | Sharqiyya N | Yule et al. 2024 |
| al-Shūwayʿi | hut | 10 | Sharqiyya N | Yule et al. 2024 |
| al-Shūwayʿi | *sangar* | 1 | Sharqiyya N | Yule et al. 2024 |
| al-Shūwayʿi | n. identif. | 8 | Sharqiyya N | Yule et al. 2024 |
| Baʾad | hut | 41 | Sharqiyya N | Doe 1976, 44–45 site 22a, c, fig. 8 |
| Bilād al-Muaʿdin | hut | 75 | Sharqiyya N | Weisgerber et al. 1981, 178. 185. 189–190 figs. 11–13; 209–210 fig. 42; 259 fig. 105 |
| Bilād al-Muaʿdin | cylinder | 43 | Sharqiyya N | Weisgerber et al. 1981, 178. 185. 189–190 figs. 11–13; 209–210 fig. 42; 259 fig. 105 |
| Bulayda | hut | 44 | Ẓāhira | Gentelle – Frifelt 1989, 124 |
| Ḥalbān | cell type 2 | 28 | Bāṭina S | Garba pers. com. |
| Ḥūr aḏ-ḏabʿ | hut | 83 | Masqāṭ | Gaudiello – Yule 2018b |
| Ḥūr aḏ-ḏabʿ | destroyed | 12 | Masqāṭ | Gaudiello – Yule 2018b |
| Ḥūr aḏ-ḏabʿ | niche | 52 | Masqāṭ | Gaudiello – Yule 2018b |
| Ḥūr aḏ-ḏabʿ | *sangar* | 8 | Masqāṭ | Gaudiello – Yule 2018b |
| Manāl | hut | 92 | Dāḫiliyya | ElMahi – Ibrahim 2003 |
| **total** | | **778** | | |

2

Tab. 2: The sites show various standing tombs usually optically catalogued. Varying preservation affects the representativity. Al-Ṣalaylī, Bilād al-Muaʿdin, Bulayda, Ḥūr al-Dhabʿ show good preservation. At al-Shuwayʿi it is less so, which affects the classification and its validity

الجدول ٢: تُظهر المواقع مدافن منتصبة متنوعة، عادةً ما تكون مفهرسة بصريًا. ويؤثر تفاوت الحالات التي بقيت عليها المدافن على تمثيلها. هذا وقد بقيت مدافن مواقع الصليلي وبلاد المعيدن وبليدة وحور الضبع بحالة جيدة. أما في الشويعي، فالوضع أسوأ، مما يؤثر على التصنيف وصلاحيته.

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bi01 | S? | 3,00 | 1,80 | 0,53 | E slope, 2 courses recognisable at SE side, destroyed | | NE | 628.507 | 2.542.218 | 741 | hut |
| Bi02 | SSW | 3,25 | 2,70 | 1,90 | E slope, 2 pres. courses, NE end pres., SSW end collapsed, 40 % roof pres., pear shape | | ENE | 628.509 | 2.542.212 | 739 | hut |
| Bi03 | nd | 3,00 | 2,50 | 1,35 | E slope, on NW & W sides a few stones standing in situ | | N | 628.512 | 2.542.205 | 737 | hut |
| Bi04 | S | 2,70 | 1,70 | 1,20 | SE slope, to W lower wall stones in situ, 1 is 1 m high, destroyed, chamber visible | | WSW | 628.513 | 2.542.203 | 735 | hut |
| Bi05 | NNE | 3,60 | 3,60 | 1,20 | SE slope, roof caved in, walls preserved, orig. height determinable, sandwich walls | | S | 628.516 | 2.542.207 | 735 | hut |
| Bi06 | nd | 2,00 | 2,00 | 1,10 | SSE slope, orientation unclear, completely destroyed | | NNW | 628.517 | 2.542.197 | 732 | hut |
| Bi07 | SW | 2,90 | 2,10 | 1,70 | SSE slope, entrance damaged, ENE end intact, sandwich-like construction, roof: coarse stones, no gravel | 1 subcircular structure in the SSE side of the tomb | NW | 628.506 | 2.542.192 | 733 | hut |
| Bi08 | NE | 3,50 | 2,40 | 1,30 | SSE slope, entrance pres., 60 % roof caved in | sandwich technique, wall thick 0.90 m | NNW | 628.504 | 2.542.182 | 732 | hut |
| Bi09 | nd | 3,30 | 3,30 | 2,20 | on mountain peak, cylinder tomb, W side original height pres. | cylindrical structure not hut tomb, rounded structure at SSE side | SE | 628.477 | 2.542.229 | 754 | cyl. |
| Bi10 | nd | 2,00 | 2,00 | 1,00 | on mountain peak, just E of Bi09, destroyed | | SW | 628.483 | 2.542.230 | 752 | hut |
| Bi11 | S | 3,30 | 2,80 | 1,10 | on mountain peak, just E of Bi09, N end pres., otherwise destroyed, recent damage | sandwich technique | NE | 628.486 | 2.542.230 | 751 | hut |
| Bi12 | SW | 3,40 | 3,00 | 1,50 | SE slope, entrance destroyed, roof made of stone, no gravel, SE side damaged, pres. good, sandwich construction | copper cramp on surface | NE | 628.517 | 2.542.191 | 729 | hut |
| Bi13 | NNE | 4,00 | 2,30 | 1,50 | SE slope, roof pres. in one stone, 80 % of roof destroyed, Bi13-Bi18 form a row | sandwich technique without gravel, but small stones | SW | 628.529 | 2.542.188 | 726 | hut |
| Bi14 | NNE | 3,30 | 2,10 | 1,50 | lower SE slope, entrance pres., gravel roofing, 25 % of roof pres., rear & most of roof missing, 1 slab of roof in situ | | SW | 628.529 | 2.542.185 | 726 | hut |
| Bi15 | NNE | 4,00 | 2,30 | 1,40 | SE slope, entrance partly intact, SE side destroyed, orig. high determin., good condition | sandwich technique with gravel | SW | 628.530 | 2.542.181 | 725 | hut |
| Bi16 | NNE | 4,10 | 2,30 | 1,20 | SE slope, entrance not clearly recognisable, roof intact using gravel, irregular in shape, back side preserved | | SW | 628.530 | 2.542.178 | 725 | hut |
| Bi17 | NNE | 2,70 | 1,90 | 1,10 | SE slope, short tomb, roofing at entrance end pres., entrance intact | | SW | 628.530 | 2.542.176 | 724 | hut |
| Bi18 | SSW | 3,20 | 2,50 | 1,10 | SE slope, entrance & roof intact, NE upper wall & roof damaged, only two holes in the roof at the entrance and rear | | SW | 628.533 | 2.542.174 | 724 | hut |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bi19 | N | 2,80 | 2,80 | 1,20 | SE slope, entrance destroyed completely open, roof intact, made of coarse stone, recent damaged to W side, | rounded structure at E corner | SW | 628.538 | 2.542.185 | 725 | hut |
| Bi20 | SE | 3,40 | 3,20 | 1,60 | SE slope, entrance destroyed completely open, roof of coarse stone partly intact, massive lintel, recent vandalism, rear wall intact, wall 1.5 m thick | | NW | 628.538 | 2.542.195 | 725 | hut |
| Bi21 | E | 3,50 | 2,90 | 1,70 | SE slope, entrance and roof destroyed | masonry with large stones | W | 628.538 | 2.542.200 | 726 | hut |
| Bi22 | E | 3,80 | 2,50 | 1,30 | SE slope, 50 % of roof missing, large hole in the roof, gravel and silt in roof, rear end intact | | W | 628.542 | 2.542.203 | 725 | hut |
| Bi23 | SE | 3,30 | 2,60 | 1,40 | SE slope, entrance & roof intact, no silt, hole in NW end, old damage, | sandwich construction of walls | SE | 628.540 | 2.542.205 | 725 | hut |
| Bi24 | NE | 3,10 | 2,60 | 1,40 | SE slope, S side damaged recently, roof intact one stone missing | | SSW | 628.543 | 2.542.201 | 725 | hut |
| Bi25 | SE | 3,00 | 2,30 | 1,20 | SE sloped, entrance is convex, roof partly intact, original height preserved, | | NW | 628.554 | 2.542.196 | 724 | hut |
| Bi26 | SSE | 3,30 | 2,40 | 1,90 | SE slope, intact roof made of coarse stone, orig. height pres., entrance open | | NW | 628.530 | 2.542.222 | 726 | hut |
| Bi27 | E | 3,20 | 3,00 | 1,00 | E slope, entrance hardly recognisable, roof destroyed | sandwich with large stones | SE | 628.533 | 2.542.226 | 726 | hut |
| Bi28 | NE | 3,50 | 3,00 | 1,90 | NE slope at foot, disheveled, entrance destroyed, roof 30 % pres., missing roof at NE end, gravel at top, rounded end intact | | NW | 628.530 | 2.542.231 | 727 | hut |
| Bi29 | SSE | 4,00 | 3,10 | 1,40 | Bi29–Bi45 all on a flat surface, entrance damaged, orig. height pres., roof & wall damaged, collapsed tow. N, hole in W side | many small stones in the masonry | NW | 628.558 | 2.542.103 | 725 | hut |
| Bi30 | E | 3,50 | 2,80 | 1,40 | entrance damaged, roof largely intact with gravel, stone roof, collapsed on N side | | WNW | 628.565 | 2.542.102 | 725 | hut |
| Bi31 | NE | 4,20 | 2,00 | 1,50 | entrance irreg. in form, roof intact, S wall damaged, height intact, destroyed ESE side | | NE | 628.579 | 2.542.096 | 724 | hut |
| Bi32 | NE | 2,60 | 2,10 | 1,00 | rough convex entrance, roof caved in, SW corner broken down, nearly original height pres., almost rounded shape | sandwich construction | NE | 628.582 | 2.542.095 | 724 | hut |
| Bi33 | WNW | 5,00 | 3,20 | 1,80 | walls demolished at the NW–W and its end, roof partly intact, of coarse stone, orig. height certain | | E | 628.583 | 2.542.095 | 724 | hut |
| Bi34 | W | 3,80 | 3,60 | 1,40 | gravel on roof, height nearly pres., old damage, collapsed, appeared as a large mound of stones | sandwich construction | NE | 628.587 | 2.542.088 | 724 | hut |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bi35 | NNE | 4,00 | 3,00 | 1,50 | massive construction, entrance demolished, roof largely intact | sandwich construction, 1.10 m wall thickness | SW | 628.592 | 2.542.087 | 723 | hut |
| Bi36 | ESE | 4,00 | 3,40 | 1,70 | entrance demolished, collapsed to S and N sides, roof intact, walls damaged | 1.40 m max walls | NW | 628.601 | 2.542.086 | 723 | hut |
| Bi37 | NE | 3,20 | 3,00 | 1,20 | roof caved in, 50 % of entrance intact | sandwich construction | NW | 628.615 | 2.542.076 | 724 | hut |
| Bi38 | NE | 4,40 | 3,00 | 2,20 | W corner damaged, entrance fairly flat, orig. height certain, open at NW side | sandwich construction, 1.00 m wall thickness | SW | 628.622 | 2.542.079 | 724 | hut |
| Bi39 | W | 4,60 | 3,70 | 1,80 | large tomb, entrance pres., roof missing, collapsed at NE side | sandwich construction | ENE | 628.616 | 2.542.081 | 723 | hut |
| Bi40 | W | 4,50 | 3,80 | 1,30 | entrance destroyed, E end destroyed, badly damaged | sandwich construction with gravel coarse & fine fill | NE | 628.615 | 2.542.085 | 723 | hut |
| Bi41 | NNE | 3,30 | 3,30 | 1,10 | long tomb, pres. nearly to orig. height, roof caved in, one slab standing | sandwich construction using gravel fill | SW | 628.622 | 2.542.093 | 722 | hut |
| Bi42 | W | 4,50 | 3,30 | 1,80 | E end & roof destroyed, W end extant, entrance in perfect condition, completely open at NE side | | SW | 628.616 | 2.542.096 | 721 | hut |
| Bi43 | W | 2,20 | 2,20 | 1,20 | short, walls damaged, roof missing, orig. height extant, almost rounded shape | | S | 628.608 | 2.542.097 | 722 | hut |
| Bi44 | W | 5,00 | 4,10 | 1,70 | large tomb, one course of entrance extant, broken stone between two shells, at E end outer shell broken away, roof damaged here, 10 % preserved, orig. height certain, W end open | | E | 628.606 | 2.542.091 | 722 | hut |
| Bi45 | WNW | 4,10 | 2,60 | 1,50 | entrance & roof intact at W end, hole at E end, destroyed at ENE side | | NE | 628.596 | 2.542.099 | 722 | hut |
| Bi46 | W | 2,90 | 2,50 | 1,20 | SW mountain slope, entrance collapsed, height certain | | N | 628.616 | 2.542.240 | 732 | hut |
| Bi47 | W | 2,50 | 1,70 | 1,40 | tomb demolished, height uncertain, roof missing, sloped down | | NNE | 628.595 | 2.542.247 | 733 | hut |
| Bi48 | ENE | 4,30 | 2,50 | 1,40 | SSE mountain slope, long hut tomb, S pres., entrance lacking, roof 50 % pres., open roof at WSW side | | WSW | 628.587 | 2.542.244 | 733 | hut |
| Bi49 | WSW | 2,70 | 2,00 | 1,00 | SSE slope, entrance pres. in 1 course, wall not pres., back is extant | sandwich construction with small stone filling, use of large stones | NE | 628.596 | 2.542.227 | 727 | hut |
| Bi50 | NW | 3,00 | 2,00 | 0,80 | SW mountain slope, 1 course of entrance pres., NE long wall pres., SW wall damaged, SE wall missing, no roof, height unknown | | N | 628.593 | 2.542.226 | 727 | hut |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bi51 | SE | 3,70 | 2,60 | 1,40 | SW mountain slope, NE wall partly pres., roof, back wall & entrance destroyed, S end rounded | | N | 628.563 | 2.542.248 | 732 | hut |
| Bi52 | SSE | 3,10 | 2,20 | 0,80 | SW mountain slope, wall to NE partly pres., SW downhill side & entrance destroyed, one slab of roof standing | | WNW | 628.550 | 2.542.248 | 730 | hut |
| Bi53 | ESE | 2,60 | 2,40 | 1,60 | S mountain slope, sloped down roof missing, walls damaged | sandwich construction | NW | 628.531 | 2.542.252 | 726 | hut |
| Bi54 | SE | 3,50 | 2,50 | 1,50 | SW mountain slope, entrance & walls collapsed on all sides, 4 roof stones extant, missing WNW side | | NW | 628.522 | 2.542.254 | 727 | hut |
| Bi55 | nd | 1,90 | 1,60 | 1,00 | SW mountain slope, SE-NW axis, one roof stone extant, entrance demolished, downward walls collapsed, sloped on S edge | | NNE | 628.516 | 2.542.257 | 726 | hut |
| Bi56 | SE | 3,10 | 2,30 | 1,60 | S mountain slope in valley, entrance damaged, roof 40 % missing, hole in the roof | | NNE | 628.512 | 2.542.259 | 726 | hut |
| Bi57 | SSE | 3,50 | 3,00 | 1,60 | walls partly intact, roof caved in, large chamber, entrance destroyed | | ENE | 628.507 | 2.542.265 | 727 | hut |
| Bi58 | SSE | 3,20 | 2,60 | 1,60 | SW mountain slope, next to wadi, roof caved in, walls badly damaged, height certain | | NE | 628.504 | 2.542.269 | 727 | hut |
| Bi59 | SSE | 3,70 | 2,80 | 2,20 | SW mountain slope near wadi, good condition, entrance & roof intact, no more gravel in roof, hole at the W end, 1 skin of SW wall has collapsed | | E | 628.503 | 2.542.285 | 730 | hut |
| Bi60 | W | 2,90 | 2,60 | 1,90 | SW mountain slope near wadi, sloped down, 2 roof stones intact, walls dilapidated | | ENE | 628.506 | 2.542.282 | 730 | hut |
| Bi61 | S | 4,20 | 3,00 | 1,50 | SW slope near wadi, sloped down and destroyed, some roofing intact at N end | | NNE | 628.500 | 2.542.287 | 732 | hut |
| Bi62 | SSW | 3,80 | 2,60 | 1,70 | SSW mountain slope near wadi, entrance missing, roof partly intact, walls damaged | | NNW | 628.491 | 2.542.306 | 734 | hut |
| Bi63 | E | 4,50 | 2,60 | 2,00 | Steep S mountain slope near wadi, big tomb, roof collapsed | sandwich construction, rounded structure on S side | NE | 628.476 | 2.542.305 | 733 | hut |
| Bi64 | NNW | 2,80 | 2,90 | 0,90 | near mountain top, sandwich construction, roof missing, walls collapsed, entrance missing | | N | 628.528 | 2.542.361 | 762 | hut |
| Bi65 | SSW | 2,40 | 2,70 | 1,30 | WSW of the slope, near top of the mountain, entrance & walls largely intact, roof mostly demolished | | SE | 628.529 | 2.542.354 | 762 | hut |
| Bi66 | SW | 2,40 | 1,70 | 0,90 | WSW of the slope, recently largely destroyed, entrance barely recognisable | | SSE | 628.531 | 2.542.359 | 758 | hut |
| Bi67 | ENE | 4,00 | 2,60 | 1,70 | entrance demolished, roof & walls intact, roof caved in except a few slabs but height certain | sandwich construction | SW | 628.509 | 2.542.346 | 759 | hut |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bi68 | W | 3,30 | 3,20 | 1,20 | W mountain slope, upward, roof caved in except a few stones, round end is pres., 5 % of roof pres. | sandwich construction | SW | 628.437 | 2.542.374 | 749 | hut |
| Bi69 | NE | 3,00 | 2,50 | 1,30 | NE mountain slope, roof largely intact, NW & SE wall damaged, entrance largely intact | | W | 628.398 | 25.420.621 | 738 | hut |
| Bi70 | nd | 1,00 | 1,00 | 0,70 | SE slope, child grave, circle of 7 stones, gravel filling, nice example, do not match usual pattern of surface erosion, no regular gr. axis | | N | 628.388 | 2.541.740 | 732 | hut |
| Bi71 | nd | 2,00 | 1,00 | 0,50 | NE side of a mountain, niche grave, only niche gr. to date, close to BiA30 | built on the S ridge | S | 628.531 | 2.541.884 | 740 | hut |
| Bi72 | WSW | 4,60 | 3,00 | 1,50 | stands alone on a stone hill, walls pres., entrance has been quarried, 1 slag standing, gravel extant on the sidewalls, roof caved in | sandwich construction with large stones | NE | 628.732 | 2.542.213 | 726 | hut |
| Bi73 | NE | 2,00 | 2,00 | 1,10 | S wall extant | built onto S side of gr (cyl.) 9, sandwich construction with gravel, roof at height of base of gr. 9, | NW | 628.478 | 2.542.228 | 752 | hut |
| Bi74 | SE | 3,50 | 2,00 | 1,30 | near mountain top, long, demolished, roof caved in | no number on the photo | W | 628.494 | 2.542.347 | 754 | hut |
| Bi75 | E | 3,30 | 2,20 | 1,20 | on E mountain slope, destroyed, located among cylinders, not hut tombs | | SSW | 628.360 | 2.541.716 | 736 | hut |
| BiA01 | none | 4,20 | 4,10 | 1,70 | at mountain top, good condition, orig. height plausible, best pres. in NW-NE in a small part, 80 % of wall damaged, one of the best-built examples | sandwich construction, 1.00 m wall thickness | NE | 628.367 | 2.541.849 | 769 | cyl. |
| BiA02 | none | 3,00 | 3,00 | 1,50 | at mountain top, SSE part best pres., perhaps 15 % of the wall, W part shorter, good condition | sandwich construction, 0.65 m wall thickness | NE | 628.369 | 2.541.853 | 768 | cyl. |
| BiA03 | none | 4,40 | 4,00 | 1,70 | at mountain top, SSE part is highest pres., 15 % of wall is at orig. height | sandwich construction, 0.80 m wall thickness | N | 628.366 | 2.541.875 | 763 | cyl. |
| BiA04 | none | 4,00 | 3,70 | 1,70 | S mountain slope, regular in form, NW & possibly SE side pres., break to SW | sandwich construction, 0.90 m wall thickness | S | 628.392 | 2.541.929 | 753 | cyl. |
| BiA05 | none | 2,20 | 2,50 | 1,50 | W mountain slope, fragment of wall on E side has orig. height | sandwich construction no gravel, 0.46 m wall thickness [2 hor stones and 1 vert in the middle] | NE | 628.320 | 2.541.994 | 761 | cyl. |
| BiA06 | none | 4,70 | 3,60 | 1,60 | SE mountain slope, SE side orig. height possibly ascertainable, E part shorter | sandwich construction, 0.80 m wall thickness [2 hor stones and 1 vert in the middle] | SE | 628.456 | 2.541.952 | 733 | cyl. |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BiA07 | none | | | | ESE downhill part of slope, SW side best pres., 40 % possible pres. | sandwich construction no gravel but small stones, 0.70 m wall thickness | N | 628.394 | 2.541.578 | 731 | cyl. |
| BiA08 | none | 4,00 | 4,00 | 1,60 | NE mountain slope standing alone, SW slope is best pres., NE side shorter, inside is collapse, sandwich construction | sandwich construction with gravel and small stones, 0.80 m wall thickness, platform at SE side | NNW | 628.400 | 2.541.606 | 727 | cyl. |
| BiA09 | none | 4,40 | 3,00 | 1,70 | E mountain slope, large structure, uppermost wall in WSW reaches orig. height, W shorter, collapsed from N to SE side | sandwich construction with large sidestones, 1.00 m wall thickness | NW | 628.403 | 2.541.624 | 725 | cyl. |
| BiA10 | none | 3,70 | 3,40 | 1,90 | ESE mountain slope, upper wall on E in good condition, 20 % may be intact, much collapse on E side, NE & E sides missing | mixed masonry, sandwich with gravel and 2 hor + 1 vert stones in the middle, 0.60 m wall thickness, platforms at SE side | NW | 628.373 | 2.541.640 | 737 | cyl. |
| BiA11 | none | 2,40 | 2,10 | 1,00 | just E of BiA14, small cylinder, wall damaged, in WNW pres., collapsed at N, NW higher | sandwich construction, 0.50 m wall thickness | N | 628.344 | 2.541.655 | 744 | cyl. |
| BiA12 | none | 3,50 | 2,50 | 1,20 | built on other side (E) of the monolith shared with A 15, in better condition than A15, the monolith makes up 30 % of the wall, collapse in- and outside | mixed masonry, 2 hor + 1 vert stones or filled by smaller stones, 0.80 m wall thickness | N+NNE+NE | 628.366 | 2.541.656 | 738 | cyl. |
| BiA13 | none | 4,00 | 3,60 | 1,80 | on NE mountain slope, sandwich construction, good workmanship, to SW best pres. wall upslope to the S, possibly orig. height, 90 % of wall damaged at crown | sandwich construction, 0.70 m wall thickness | N+NW | 628.348 | 2.541.668 | 741 | cyl. |
| BiA14 | none | 3,70 | 3,40 | 1,80 | NE mountain slope, SW side is flattish, on the S best pres., SW & NE sides shorter | sandwich construction no gravel but small stones, 0.70 m wall thickness | N | 628.342 | 2.541.661 | 744 | cyl. |
| BiA15 | none | 3,00 | 2,10 | 1,50 | N mountain slope, built from a monolith (S side), possibly not at orig. height, except possibly W side, 40 % of the walling consists of 1 rock | mixed construction, sandwich with gravel and 2 hor + 1 ver stones, 0.60 m wall thickness | S | 628.370 | 2.541.662 | 736 | cyl. |
| BiA16 | none | 4,00 | 4,20 | 1,90 | SW mountain slope in a saddle, sandwich construction, among the best pres. of all of the cylinders, E to S sides orig. height, NE shorter | 3 hor stones, 0.80 m wall thickness, pic of large slab in the masonry | S | 628.311 | 2.541.657 | 752 | cyl. |
| BiA17 | none | 3,60 | 3,40 | 1,00 | on SE mountain slope, in a bad condition, S wall consists of 3 large stones, orig. height not pres., large blocks at SE and N sides | sandwich construction, 0.60 m wall thickness | S | 628.377 | 2.541.684 | 729 | cyl. |
| BiA18 | none | 3,00 | 3,00 | 0,80 | walls badly damaged, upslope possibly at orig. height, to SE much collapse, NE side higher | no sandwich, two stones close together, 0.60 m wall thickness | W | 628.381 | 2.541.734 | 733 | cyl. |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BiA19 | none | 3,80 | 3,80 | 1,20 | in a small saddle, adjacent mountain where we just were, walls all damaged, orig. height not pres., completely destroyed and sloped down | not sure sandwich construction, 0.70m wall thickness | NW | 628.418 | 2.541.776 | 733 | cyl. |
| BiA20 | none | 3,50 | 3,50 | 1,70 | E mountain steep slope, NW & SW side best pres., | mixed technique, sandwich with gravel + two stones close together, 0.80 m wall thickness | SE | 628.402 | 2.541.866 | 745 | cyl. |
| BiA21 | none | 4,50 | 4,30 | 1,80 | NW mountain slope, W side best pres., large and well-formed, floor is flat, 98 % of wall is destroyed, at W side a little may be of orig. height | sandwich construction, 0.70 m wall thickness | SW | 628.404 | 2.541.884 | 743 | cyl. |
| BiA22 | none | 3,90 | 3,80 | 1,80 | E mountain slope, near other cylinders, in WSW wall is best pres. & may show orig. height, uppermost stones did not terminate in a horizontal plane. Maybe the surface covers the lower course | sandwich construction, 0.90 m wall thickness | NW | 628.416 | 2.541.879 | 740 | cyl. |
| BiA23 | none | 4,30 | 3,70 | 1,70 | E mountain slope, SW wall highest, 10 % of upper wall pres. | sandwich construction, 0.70 m wall thickness | NNE | 628.423 | 2.541.869 | 739 | cyl. |
| BiA24 | none | 3,90 | 3,60 | 1,30 | NE mountain slope, near other cylinders, WSW wall is best pres., like the others, floor is nearly flat | sandwich construction, 0.60 m wall thickness | N | 628.430 | 2.541.892 | 735 | cyl. |
| BiA25 | none | 4,30 | 4,10 | 1,70 | SE mountain slope, wall pulled down, on SE side orig. height pres., S shorter | 2 hor + 1 ver stones covered by gravel, 1.00 m wall thickness | N | 628.413 | 2.541.913 | 739 | cyl. |
| BiA26 | none | 4,10 | 3,80 | 1,50 | E steep mountain slope, destroyed structure, regular in form, N to W side higher, near 50+ 'infant graves' | sandwich construction, 0.70 m wall thickness | NE | 628.427 | 2.541.924 | 737 | cyl. |
| BiA27 | none | 4,00 | 4,00 | 1,70 | atop a small mountain, orig. height on one side pres., S–NE sides shorter | sandwich construction with a few grave, 0.70 m wall thickness | E | 628.550 | 2.541.881 | 741 | cyl. |
| BiA28 | none | 2,20 | 1,80 | 0,70 | NNE mountain slope, close to BiA29, imperfect form, damaged, S side height original, W & E smaller most of E missing | 2 stones close together, 0.40 m wall thickness | E | 628.544 | 2.541.888 | 738 | cyl. |
| BiA29 | none | 2,10 | 2,00 | 0,60 | N side next BiA28, collapse inside, on NE side side wall is highest & appears to be orig., built on the S slope, E & W sides lowers | 2 stones close together, 0.40 m wall thickness | NE | 628.546 | 2.541.893 | 736 | cyl. |
| BiA30 | none | 1,80 | 1,60 | 0,60 | NNE mountain slope, close to Bi71, small cylinder, crown pres., little or no collapse surrounding or in the structure | no clear the technique, 0.40 m wall thickness | WNW | 628.528 | 2.541.889 | 740 | cyl. |
| BiA31 | none | 3,50 | 3,40 | 0,90 | S mountain slope at mid height, sandwich construction with small stones in filling, orig. height not extant, SE shorter and collapsed | sandwich construction, 0.50 m wall thickness | SW | 628.143 | 2.542.107 | 771 | cyl. |
| BiA32 | none | 3,00 | 2,60 | 1,00 | S mountain slope in a valley, orig. height extant on E side, built on S block, SE side higher | 2 stones close together, 0.50 m wall thickness | SW | 628.120 | 2.542.110 | 760 | cyl. |

| tomb no. | entr. ori. | L | W | H | notes 1 | notes 2 | phot. dir. | eastings | northings | alt. | type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BiA33 | none | 2,70 | 2,40 | 1,10 | S mountain slope, 18 m away from last tomb, W wall orig. height, well pres., NE shorter | sandwich construction, 0.60 m wall thickness | SW | 628.102 | 2.542.107 | 766 | cyl. |
| BiA34 | none | 2,40 | 2,00 | 1,10 | S mountain slope, next to wadi, N side may show orig. height, NW higher | 2 hor + 1 ver stones, 0.60 m wall thickness | SW | 628.070 | 2.542.102 | 765 | cyl. |
| BiA35 | none | 2,50 | 2,20 | 1,00 | SE mountain slope on a small ridge, well-pres., on N side 20 %–30 % extant, SE side destroyed | mixed masonry, 2/3 stones close together, no gravel, 0.50 m wall thickness | SW | 628.065 | 2.542.118 | 764 | cyl. |
| BiA36 | none | 4,30 | 3,00 | 1,60 | ESE mountain slope, well-pres., W side best pres. to orig. height, E side removed only 1 course extant, i.e. about 25 % of the circumference | sandwich construction, 0.70 m wall thickness | SW+NE+SW+E | 628.033 | 2.542.119 | 773 | cyl. |
| BiA37 | none | 4,20 | 2,40 | 1,00 | N mountain slope, SW wall is a monolith, walling destroyed, D-shape plan | sandwich construction, 0.60 m wall thickness | S+S | 627.989 | 2.542.003 | 765 | cyl. |
| BiA38 | none | 4,10 | 1,60 | 1,40 | built on E side of cliff, resembles a niche tomb, built on SW slope, E side possibly at orig. height | sandwich construction, 0.60 m wall thickness | SW+orth | 627.998 | 2.541.989 | 767 | cyl. |
| BiA39 | none | 3,20 | 3,00 | 0,70 | lower NE mountain slope, on a ridge, sandwich construction, few courses extant, destroyed | 2 stones close together, 0.60 m wall thickness | NE | 628.030 | 2.541.990 | 760 | cyl. |
| BiA40 | none | 3,90 | 3,80 | 1,40 | atop a small mesa, N of BiA41, good pres., no clear sandwich structure, S–NNE side possibly orig. height, W side wall damaged, SW & N shorter | 2/3 stones close together, no gravel, 0.70 m wall thickness | NW+SE | 627.972 | 2.541.977 | 782 | cyl. |
| BiA41 | none | 3,30 | 3,20 | 1,60 | atop the small mesa, SE & NW sides may have orig. height, 80 % wall damaged | 2/3 stones close together, 0.70 m wall thickness | S | 627.977 | 2.541.969 | 783 | cyl. |
| BiA42 | none | 4,30 | 3,80 | 1,10 | lower end of a mountain chain, large blocks at NE side, collapsed & recently destroyed, white sediment shows stone removal | sandwich construction, 0.80 m wall thickness | NNW | 628.038 | 2.541.815 | 753 | cyl. |
| BiA43 | none | 3,10 | 2,70 | 1,10 | NE mountain slope, built onto a cliff, D-shaped plan, NW side possible orig. height, wall damaged, NW-SE oblong, stands alone, place-name here Ruthedeh, built on SE slope wall | mix technique, 2/3 stones close together, sometimes medium and small stones as filling, 0.70 m wall thickness | SSW | 627.991 | 2.541.957 | 775 | cyl. |

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Tab. 3: Catalogue of hut and cylinder tombs at Bilād al-Muaʿdin. Images of the tombs are published in heidICON, Oman pool

الجدول ٣: جدول بالمدافن الكوخية والأسطوانية في بلاد المعيدن. وقد نُشرت صور المدافن في heidICON، مجموعة عُمان

| BEW package | no. of tombs | types |
|---|---|---|
| 2 | 25 | *1* Hafit style, *2* Wadi Suq style, *3* domed cell style (EIA), *4* honeycomb style (EIA & late pre-Islamic), *5* mound style |
| 3&4 | 43+16 | *1* circular Hafit, *2* oval cell-grave, *3* elongated oval, *4* honeycomb, *5* subterranean circular, *6* Wadi Suq cist, *7* unclassified |
| 5 | 168 | *1* tower-shaped, *2* dome-shaped, *3* horseshoe-shaped |
| 6 | 16 | *1* circular, *2* semi-circular, *3* oval- and beehive-shaped |
| WAJAP | 3300 | *1* dome, *2* terrace |

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Tab. 4: Overview of excavated tomb types in NE Oman from the BEW and WAJAP projects

الجدول ٤: نظرة عامة تبين نماذج القبور المنقب عنها في شمال شرقي عُمان من مشاريع «طريق الباطنة السريع» (BEW) وأعمال «المشروع الآثاري في وادي الجيزي» (WAJAP)

| | site | grave type | assemblage | geogr. distrib. | source |
|---|---|---|---|---|---|
| 1 | al-Amqat Am5 | Amqat | SLIA | middle | Yule 2001b, Pl. 474 |
| 2 | Bandar Jissa BJ4 | Jissa | SLIA | east | Yule 2001b, Pl. 478 |
| 3 | Bawshar BIIb | varia | nSLIA | east | Costa et al. 1999, 26 Fig. 4 above |
| 4 | Jal Bawshar B0 | Jal Bawshar | uncertain | east | Yule 1999, 17–20 Fig. 1 |
| 5 | al-Bustan Bu5 | Samad 2 | SLIA | east | Yule 2001b, Pl. 492–493 |
| 6 | CS.2.50.1 | Mahaliya 1 | SLIA | east | Yule – Mauro 2025, Fig. 2.30 |
| 7 | CS.2.50.1 | Mahaliya 2 | SLIA | east | Al-Jahwari 2013, 88 fig. 102 |
| 8 | CS.2.50.1 | Mahaliya 3 | SLIA | east | unpublished |
| 9 | CS.2.50.1 | Mahaliya 4 | SLIA | east | unpublished |
| 10 | CS.2.50.1 | Mahaliya 5 | SLIA | east | Yule – Mauro 2025, Fig. 2.30 |
| 11 | ed-Dur G 5156 | Dur 1 | PIR.C | north | Haerinck 2001, pl. 74–78 |
| 12 | al-Feg | Feg 1 | SLIA | east | Yule 2001b, Pl. 507 |
| 13 | al-FuwaydaFu12 | varia | SLIAn | middle | Yule 1999, 158 Fig. 15 |
| 14 | Izki Iz6 | Izki 1 | SLIA | east | Yule 2001b, Pl. 507 |
| 15 | Izki Iz66 | Izki 2 | SLIA | east | Yule 2015b, 190 Fig. 16 |
| 16 | Mleiha FA-5 | Mleiha tower | PIR | north | Overlaet – van der Stede 2020, 1 fig. 1 |
| 17 | al-Muqatta Mu1 | varia | SLIA | east | Yule 2001b, Pl. 532 |
| 18 | al-Muyassar M2720 | varia | SLIA | east | Yule 2001b, Pl. 24 |
| 19 | Salut SLP15 | varia | SLIAn | middle | Degli Esposti pers. comm. |
| 20 | Samad S1037 | Samad 1 | SLIA | east | Yule 2001b, Pl. 34 |
| 21 | Samad S101126 | varia | SLIA | east | Yule 2001b, Pl. 209 |
| 22 | Bilad al-Muaʿdin etc. | hut tomb 1 | EIA?–Sas? | E NE NW central | Yule 2001b, Pl. 479 |
| 23 | Hur al-Dhabʿ | hut tomb 2 | EIA?–Sas? | NE NW central | Yule et al. 2021b, 294 Fig. 18a; 295 Fig. 19b |
| 24 | Tiwi | Tiwi | SLIA | east | Schreiber – Häser 2004, 324 fig. 8 |
| 25 | Halban | type 2 cell | EIA? | NE | Yule et al. 2021b, 296 Fig. 20 |
| 26 | Bilad al-Muaʿdin etc. | cylinder | EIA? | east | Yule et al. 2021a, 9 Fig. 13 |

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Tab. 5: Typology of possible late pre-Islamic SE Arabian funerary structures

الجدول ٥: تصنيف للبنى الدفنية المحتملة من أواخر فترة ما قبل الإسلام في جنوب شرقي شبه الجزيرة العربية