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Joint Heidelberg University/Ministry of Heritage and Tourism Project (2023): Archaeological Rescue Operation at Al-Khod, Ḥūr ad-dab', Muscat

In September 2018 the population of the capital area reached 1.4 million. Places such as Al-Khod need room for growth. The development of this area during the past 20 years includes the building of the Nizwa road, highway 15, to its north-east Lulu Al-Bandar super market and flanking to its west a large housing settlement. There, pre-Islamic hut tombs are scattered over the three low mountains (600m x 300m area). The Ministry of Defence plan to develop the mountains (Fig. 2) as a recreational facility – the 'Heritage Hill' project. This report sketches the mapping and excavation (12.01. to 26.01.2023) and documents 140 burial structures, the excavated finds, the clearance of stone from the tomb cluster on the southern mountain, figures of the 3D and drawings of the tomb images. This site, with its hut tombs and niche graves is important to solve the problem of the dating and nomenclature of prehistoric funerary architecture. The author searches for an alternative to the nomenclature 'cairn' which describes not the original architecture, but rather an undifferentiated, dishevelled state of preservation.

On the southern side of the property of the Ministry of Defence, 200m south-west of the Lulu Al-Bandar parking lot lies a concentration of prehistoric hut tombs on the backs of the three east-west mountain chains and prehistoric niche graves in their piedmont zones. The Lulu parking lot is separated from the archaeological site by a cobbled masonry trench 1m in depth. To the west, highway 15 closes the site off. In 2022 building began immediately to the east. But to the south the site is still not built on. Further local building plans, while not yet announced, are certain to follow in coming years generated by population increase. The entire archaeological site has been damaged by road building and construction, especially to the west. Bulldozing has taken place recently to the north-eastern and eastern flanks of the site.

In 2018 Ali Khamis Al-Rasibi of the then Ministry of Heritage and Culture (today Ministry of Heritage and Tourism) began to plan to protect this site and turn it to good use. He posted antiquities signs to show that the site stood under protection of the ministry. In October 2018, May 2019 and October 2021 Michela Gaudiello, Stephan Blum, Fausto Mauro and Paul Yule of the Heidelberg University team surveyed this site as a service for the ministry. This site was particularly interesting owing to the paucity of data regarding hut tombs. It was necessary to change the numbers which the team wrote on the architectural features, which often do not correspond with those used here. Owing to electronic defensive

disturbance, the hand-held GPS did not work in this military area and yielded bizarre results for our site mapping. With the help of the Differential GNSS receiver of the GUTech this team already submitted a first hut tomb plan of Ḥūr ad-dab' to the Ministry which was published in 2021 (Yule *et al.* 2021, 301 fig. 24). This season it was possible to complete the optical mapping of the niche tombs. We used the simplest and most direct method of recording. So-called niche tombs are invisible to satellite imagery and require direct observation.

80 hut tombs, 56 niche tombs, 6 recent *sangars* (temporary fortified defensive position with a breastwork constructed of stone) as well as 10 destroyed stone structures comprise the main features. The two kinds of graves (Figs. 2-3) on site need not be contemporary *sensu stricto* with each other. Some of the tombs consist of merely a few remaining stones. In most cases the tomb roof has collapsed. The hut tombs typically use a sandwich wall construction. They spread unevenly on three parallel ESE-WNW oriented mountains. Between them lies a 50m wide empty valley. Some 30 tombs lie on the northern mountain nearer to Lulu. But more lie on the ridge of the third mountain 150m to the south. The preservation of the tombs varies; a few still are roofed. They are built of broken stone 20 to 100 cm in size. Hut tombs consists of the local limestone, but those on the south mountain show a mixture of light-coloured limestone and dark mafic rock. The largely intuitive dating of hut tombs (Yule and Gaudiello 2017)

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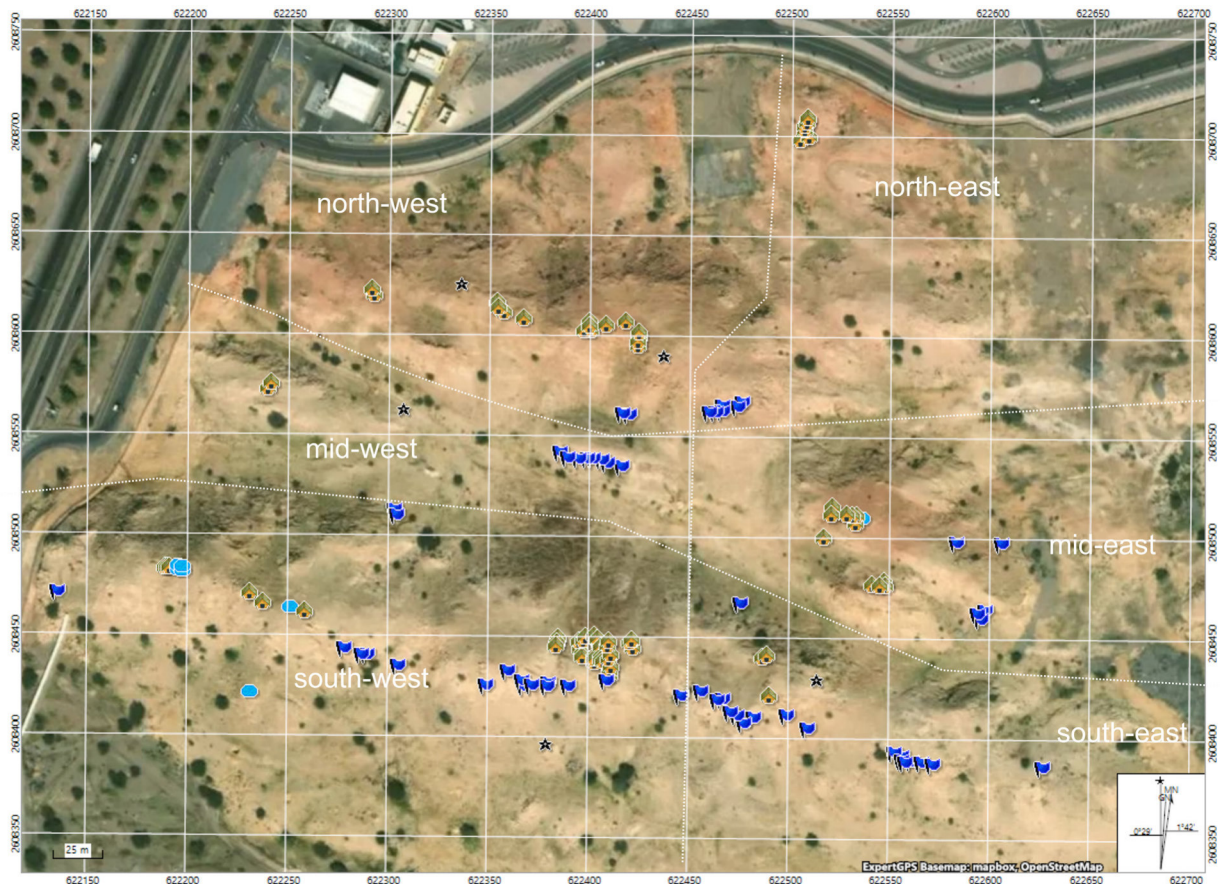


Figure 1. This Google Earth satellite image from April 2013 shows the Ḥūr aḍ-ḍab' site and its archaeological features. The site lies between Lulu Al-Bandar, above and road no. 15 to the left. The blue flags signify niche tombs and the red huts hut tombs. The blue 'safires' signify completely ruined tombs while the 5-point stars designate sangars.

has been seriously challenged by virtue reportedly of those containing finds dating up to Late Antiquity (Düring and Olijdam 2015). In the Baṭīna and Wadi Al-Jizzi, recent surveys show destroyed tombs, only rarely well-preserved ones. In 2016, departing from ruined tombs in NE Oman, Deadman questions whether hut tombs form a valid kind of tomb classification. EIA tombs have been excavated especially in the BEW (Batina Expressway), but preserved only one or 2 courses high, the challenge at hand is to abridge the disconnect between them and well-preserved hut tombs. While many in the Baṭīna are clearly hut tombs, others there are not.

The hut tombs and niche tombs as at Ḥūr aḍ-ḍab' have been little studied and give us significant information with regard to local demography, burial customs and social structure of the local population. They reveal building methods which have not yet been documented in the different parts of the Sultanate. In their form the hut tombs are more closely

related to those of north-eastern and eastern Oman. The entrance is from the top, not from the end.

Investigating tombs with caved in roofs without damaging them is difficult and collapse is irreversible. They easily may collapse just to gain access, which we avoided (e.g. tomb HDh8). We completely excavated tombs HDh6 and HDh7. Experimentally we re-constructed HDh7 with six workmen. This took four hours, but the roof was not completely re-closed. We avoided excavating niche tombs, because these lay outside the possible site of the Heritage Hill building. No site plan was available for us of the planning or the topography, which would have improved or speeded up our mapping. We focussed on the northern mountain which seemed the likely site of the new building. The shape of the niche tombs varies according to the shape of the natural geological niche which forms one side of the structure. Given the wide variation, this is not a tomb type, but rather only a simple way to build tombs which

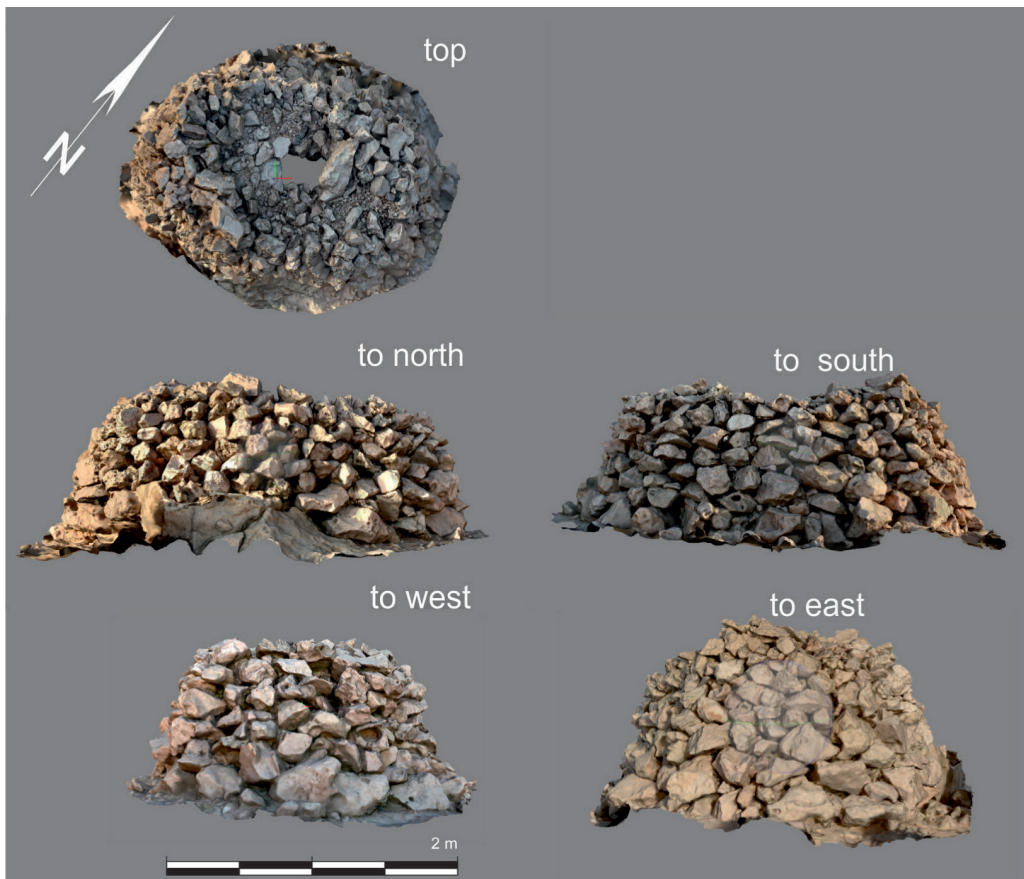


Figure 2. Photogrammetric orthographic view of hut tomb HDh7, seen from four sides and from above.

may vary in shape. This is not specific to a place or a time, but is wider. It also occurs in Zafār (Al-Shahrī 1991, 187 fig. 8). Examples from Al-Buhays (Sharja emirate), contained EIA finds (Jasim 2012, tombs BHS16, BHS17, BHS22, BHS23, BHS26–BHS33, BHS35, BHS36). Some of the niche tombs show skeletal remains *in situ* but could not be recorded for time reasons. Fortunately, Halima Al-Shehhi was available to study the human remains.

In 2018 in his project estimate to the ministry Yule proposed excavating and documenting Ḥūr aḍ-ḍab' during a period of 60 or of 30 days. However, funds enabled survey and excavation for only 14 days in the field (6 days/week). Our fieldwork is thus only a pilot project. Compared to other salvage operations in the Baṭīna we had a critically low relation of documenters (de facto 4) and labourers (6) in relation to the number of tombs. On the third day it was decided that the well-preserved Ḥūr aḍ-ḍab' tombs were not be destroyed, as opposed to those of the Baṭīna salvage operations. In the available time, first we re-

corded 24 tombs by means of 'Structure from Motion' (SfM) software. The graphic documentation of the tombs and writing requires more time than does actual excavation. The 140 archaeological features appear on the site map and in a gazetteer of the site.

On the southern mountain we also cleared the large cluster of tombs of stone fallen from the upper tomb courses, in order that visitors can freely move through it (Fig. 5).

The finds

Surface finds were rare and included a few sherds of medieval TURQ pottery. The tombs contained few finds, all were disturbed. Most common finds were disturbed skeletons. Tomb HGh04 contained *Pinctada* beads (Fig. 6). Three broken late Sasanian glass *aryballo*i also occurred in the same tomb - the first of its kind in this part of Oman. They find parallels from burials on Bahrain (Andersen 2007, 86 fig. 352). No diagnostic Early Iron Age finds came to light.

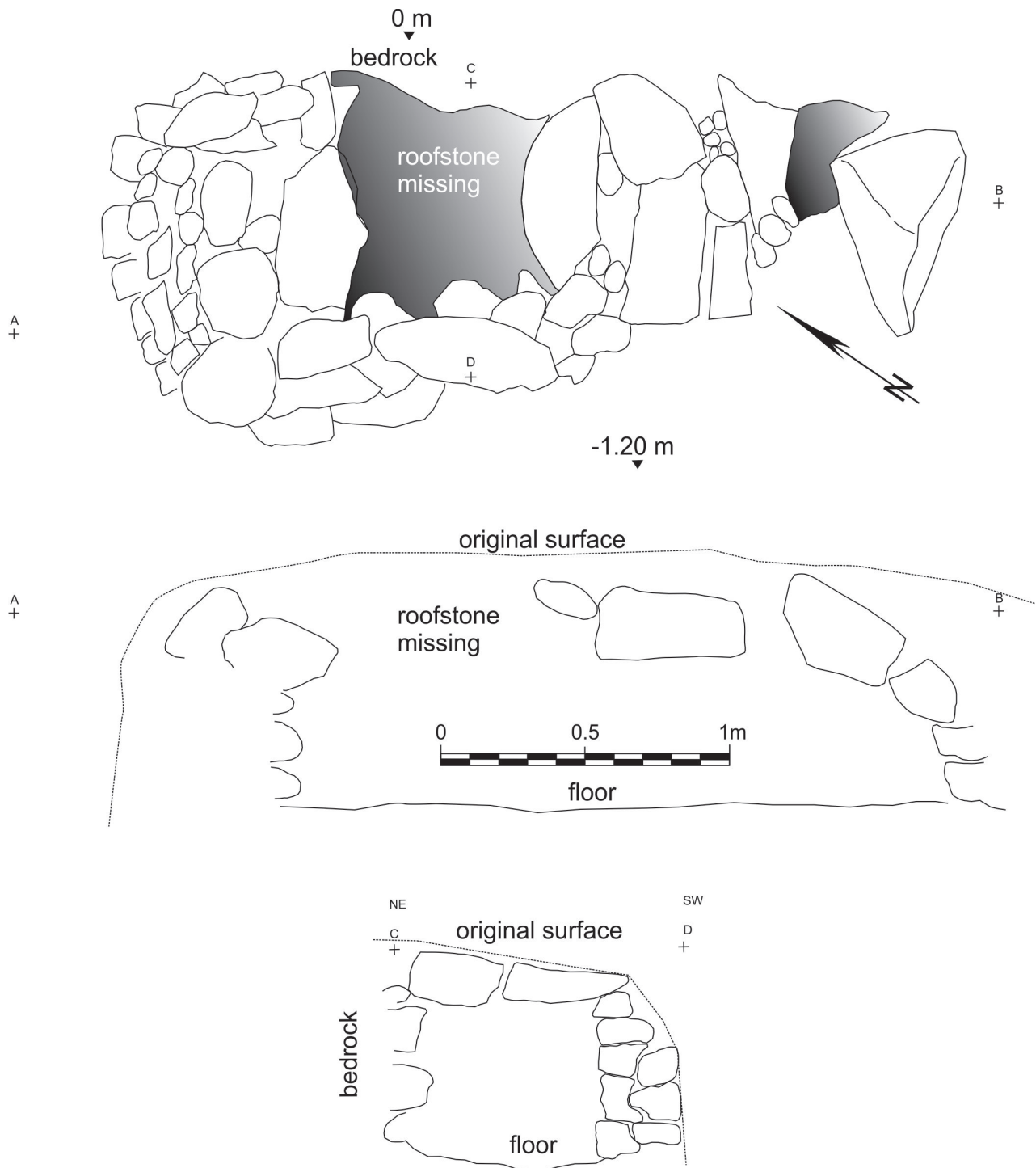


Figure 3. Orthographic view of the niche tomb, HDh84.

Archaeological Insights

The excavation gives a more concrete idea of the hut tomb means of construction in this part of Oman. The hut tombs at Ḥūr aḍ-ḍab' are not documented outside of the Baṭīna. Their form is partly conditioned by the locally available stone – whether rolled or broken. The frontal entrance, as known at hut

tomb sites in eastern Oman are not present at Ḥūr aḍ-ḍab', which belongs to the Baṭīna EIA tomb tradition. Nor is the common small type 2 cell tomb (Yule *et al.* 2021, 296 fig. 20). The chronology question for these tombs can best be resolved by OSL dating. The only datable finds at Ḥūr aḍ-ḍab' are late Sasanian glass vessels which are taken to be from reuse.

feature no.	SfM	excavated	plan sketch	final photo
Hdh001	x	x	x	x
Hdh002	x	x	x	x
Hdh003 <i>sangar</i>	x	x	x	x
Hdh004	x	x	x	
Hdh005	x	x	x	
Hdh006	x	x	x	x
Hdh007	x	x	x	x
Hdh008	x			
Hdh009	x	x	x	x
Hdh010	x	x	x	x
Hdh011	x	x	x	x
Hdh012	x			
Hdh013	x			
Hdh014	x	x	x	x
Hdh015	x			
Hdh016	x			
Hdh017	x			
Hdh018	x			
Hdh038	x			
Hdh039	x			
Hdh078	x			
Hdh079	x			
Hdh080	x			
Hdh081	x			
Hdh082	x			

Figure 4. Work accomplished 12.01. to 26.01.2023 at Ḥūr ad-ḍab'. The work consisted of the fashioning of 'Structure from Motion' 3D images, excavation, plan drawing and a final photo of each structure.

type of structure	hill	entrance (orientation)	length m min-max	width m min-max	height m min-max	preservation
<i>sangar</i> no. 8	north: 4	2: S; 1: S-SW; 1: SE-S	1.80-2.30	1.90-2.30	0.65-0.75	
	south: 4	1: SE; 1: NE; 2: ?	1.50-3.00	2.40-2.70	0.40-0.85	
Hut tombs no.: 71	north: 21	18: E; 2 NW ?; (t. 4-5) 1: NE-E	2.40-4.00	1.60-2.80	1.00-1.70	Quite good preservation. Mainly roof collapse; some side demolished. Tombs 9-10, 15-17 and 84 to 87 built together
	east: 12	4: SE; 3: E; 3: NE; 1: SW or NE?; 1: ? (t. 140)	2.20-3.20 t. 140 = ?	1.50-3.00 t. 140 = ?	1.10-1.65 t. 140 = ?	t. 140 completely demolished. Less good preservation. The roof is mostly missing or collapse as well as the uppermost courses. Tombs 21 to 24 built together. Tomb 30 isolate in isolated position.
	south: 38	21: E; 2: E-NE; 2: E-SE; 4: SE; 3: NE; 1: NE-E; 2: N; 1: N-NW; 2: ? (t. 65-127)	1.80-4.60m t. 65-127: ?	1.50-2.80 t. 65-127: ?	0.60-2.00 t. 127: ?	Quite good preservation. Several with roof collapsed and one side damaged. Many tombs built together as twin tombs or even in cluster of 3-4 tombs. Tombs built with white and black stones.

Niche graves no.: 52	north: 12	7: E-W; 3: NW-SE; 1: S-N; 1: WNW-ESE	1.20-5.00	0.90-3.20	0.20-1.90	Bad preservation. Mainly roof destroyed and collapsed into the tomb, side destroyed.
	east: 6	3: E-W; 2: NW-SE; 1: SW-NE	1.50-3.40 t. 139: ?	1.50-2.50 m t. 139: ?	0.70-1.20 m t. 139: ?	Bad preservation. Roof missing or collapsed into the chamber. Tomb 139 oval shape and roof collapsed
	south: 34	11: NW-SE; 3: N-S; 1: NE-SW; 1: NNW-SSE; 2: WNW-ESE; 4: E-W; 2: E; 4: SW-NE; 1: SE; 1: SE ? (t.124); 4: ? (t. 96, 108, 120,131)	1.00-6.00 t. 108-109 destroyed; t. 95-96, 118, 120, 124, 130-131, 135 = ?	0.70-5.00 t. 95-96, 108-109, 118, 120, 124, 130-131, 135 = ?	0.20-3.00 t. 95-96, 109, 118, 120, 124, 130-131, 135 = ?	Very bad preservation. Some tombs completely destroyed, other exposed until the bedrock, roof collapsed into the chamber
Unknown Destroyed no.: 12	north: 4	4: ? structures 78-79, 88-89	?	?	?	Twin structures
	east: 1	1: E ? (structure 25)	2.60 m	2.60 m	0.40 m	Not hut tomb.
	7	3: E; 1: E-SE; 1: SE; 1: N; 1: ? (structure 69)	3.80-4.90 m Structures 69 to 73 = ?	3.20-3.40 m Structures 69 to 73 = ?	1.20-1.50 m Structures 69 to 73 = ?	Destroyed tombs reconstructed into a defensive emplacement (n. 68-71); unrecognized original function.

Figure 5. Metrics of the burials at Ḥūr aḍ-ḍab'.

find no.	type of find	level	date	tomb no.	gramme
23.01.	bone	debris	18.01.2023	6	3
23.02.	bone	debris	18.01.2023	7	10
23.03.	charcoal	debris	19.01.2023	12	3
23.04.	glass	debris	18.01.2023	7	2
23.05.	pottery sherd	debris	19.01.2023	7	0,5
23.06.	white substance	debris	18.01.2023	10	3
23.07.	bone	debris	19.01.2023	11	493
23.08.	cartridge frag.	debris	19.01.2023	11	0,5
23.09.	bone	debris	18.01.2023	12	0,5
23.10.	bone	debris	22.01.2023	12	186
23.11.	glass	debris	19.01.2023	12	0,5
23.12.	mollusc shell	debris	22.01.2023	12	0,5
23.13.	seed	debris	19.01.2023	13	0,5
23.14.	bone	debris	22.01.2023	10	1512
23.15.	tooth	debris	22.01.2023	10	2
23.16.	tooth	debris	22.01.2023	11	0,5
23.17.	shell	debris	22.01.2023	10	8
23.18.	bone	debris	22.01.2023	4	30

23.19.	bone	debris	22.01.2023	5	45
23.20	bone	debris	23.01.2023	9	127
23.21	lithic	debris	23.01.2023	4	5
23.22	glass vessel frags	debris	23.01.2023	10	37
23.23	bead	debris	23.01.2023	4	4
23.24	bone	debris	25.01.2023	4	417
23.25	bone	debris	26.01.2023	5	636
23.26	bone	debris	24.01.2023	2	103
23.27	charcoal	debris	24.01.2023	10	7
23.28	bone	debris	24.01.2023	1	201
23.29 see 23.22	glass	debris	25.01.2023	10	
23.30	bone	debris	26.01.2023	14	57

Figure 6. The finds from the Ḥūr aḏ-ḏab' excavation of January 2023.

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