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Tombs and landscapes in a canyon of the al-Ḥajar mountains: results of the surveys at WTN07 in the Tanūf District (North-Central Oman), 2022–2023

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Summary

Research towards the reconstruction of various archaeological landscapes in the Al-Ḥajar mountains is still ongoing. Past investigations in the Wādī Tanūf canyon have revealed long-term transformation of landscapes of higher places, such as hilltops and a cave on a cliff. However, the function of the wadi terraces has not been sufficiently investigated. In the 2022–2023 season, we surveyed the site of WTN07 on a wadi terrace and documented 123 Islamic graves, as well as one probable Wādī Sūq tomb (Tomb 122). A detailed examination indicates that Tomb 122 is a rare collective tomb in North-Central Oman and has composite characteristics represented by a U-shaped chamber, a possible entrance corridor, and an attached annex with a few subsidiary tombs. Furthermore, we have identified eight non-mortuary features, including a newly discovered building (Structure 01) in Wādī Tanūf, as well as a platform (Structure 02) and a long wall (Structure 04). These findings highlight the importance of the terrace in the canyon, given the limited flat space available. We assume that the small terrace running along the river was a place for different activities over time, with most of the evidence related to the movement of people in the trans-Ḥajar region, since the canyon can be considered as a corridor.

Keywords: archaeological landscape, Tanūf, Wādī Sūq period, Islamic, use of canyon terrace

Introduction

The archaeological investigations in the interior regions of south-east Arabia have mainly concentrated on oasis sites such as Bāt (Cable 2012; Cable & Al-Jabri 2019; Frifelt 1975; Swerida, Dollarhide & Jensen 2020), Bisya/Salūt (Avanzini & Degli Esposti 2018; Condoluci & Degli Esposti 2015; Degli Esposti 2021; Jean et al. 2023; Sauvage et al. 2022); Al-Khashbah (Schmidt et al. 2021, Rustāq (Deadman et al. 2022); Al-Ain (Al-Tikriti 1981; 2011; Méry 2011; Lombard 1985); and Qumayrah (Bieliński et al. 2023), located along the piedmont of the Al-Ḥajar Mountains that run from the eastern part of the United Arab Emirates (UAE) in the north-west to the northern part of Oman in the east. Surveys and excavations of these sites have successfully depicted the dynamics of past socio-economic transformations, and have presented the importance of oases as a geographical focus of past human activities in the Arabian Peninsula.

In contrast to the piedmont areas, the archaeological characteristics of the mountainous areas still need to be fully understood. The Oasensiedlungen Omans Project documented the evidence of human activity on the high plateau at Al-Jabal Al-Akhḍar (Schreiber 2007) and Maqtāʾ (Gaube et al. 2012), as well as the canyons and hills at al-Ḥamrāʾ, Zammah, and Balad Seet (Häser 2000; 2003; 2010). Other studies on ancient rock art (Fossati 2019) and mining (Giardino 2017; Hauptmann 1985) have also identified continuous occupation of plateaus and canyons. However, there is a significant gap in the understanding of past human adaptation and landscape development in canyons.

To close this gap, the authors have selected the canyon and adjacent areas in the Tanūf District, North-Central Oman, and have carried out archaeological investigations there since 2017 (Fig. 1). The aims of our survey were: 1) to understand the transformation of archaeological landscapes from prehistory to pre-

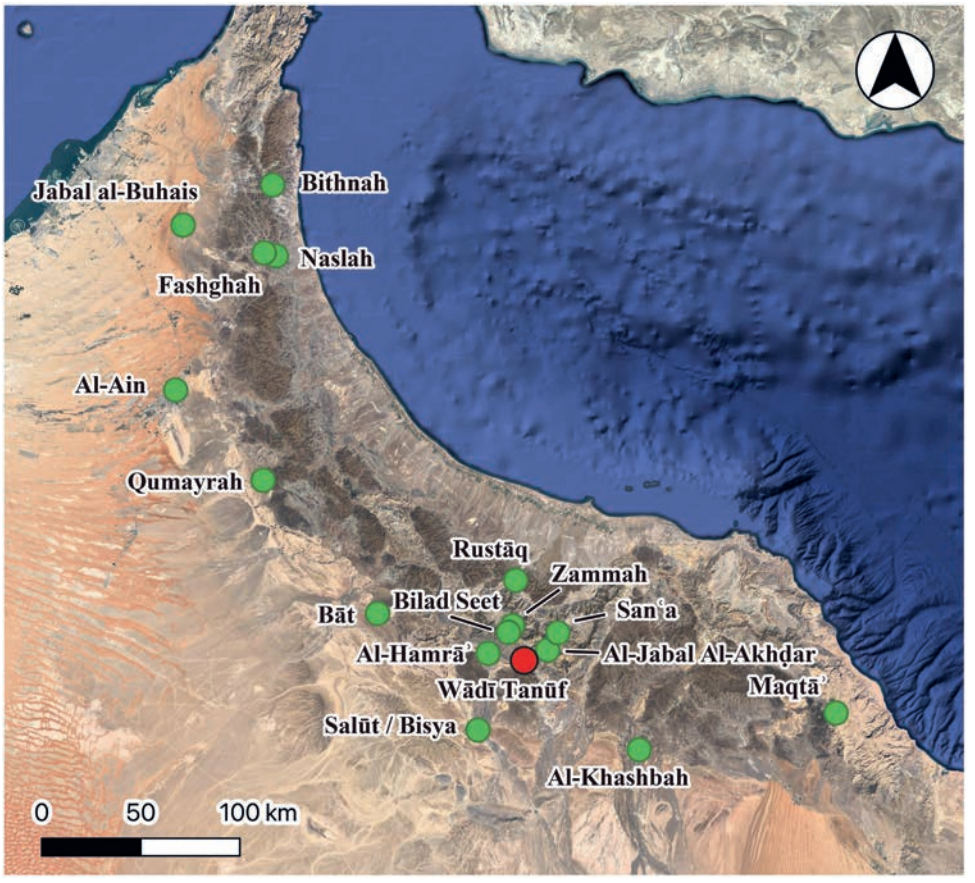

Figure 1. *The location of the Tanūf District and the other sites mentioned in this paper (base map: Google Maps, applied with QGIS).*

modern times; 2) to understand the change and continuation of land use in a limited topographical space around the canyon, its outlet, and adjacent riverine areas; 3) to compare the differences between the major oases and the canyon; and 4) to evaluate the role of the canyon during human history, particularly in view of the movement of people.

Since the launch of our project, we have found many archaeological sites in the canyon of Wādī Tanūf and the broad floodplains of Wādī al-Abyaḍ (Fig. 2). In particular, we have discovered the rare use of a cave located in the cliff at Mugharat al-Kahf (WTN01) (Miki et al. 2020; 2022) during the Wādī Sūq period (*c.*2000–1600 BC), together with two contemporary cemeteries (WTN13 and WTN14) on the high slopes (Kuronuma, Miki & Kondo 2021; 2022a). We have also discovered archaeological remains of the Islamic period, as well as those of the Early Bronze and Iron Age in the terraces, on hill slopes, and on an isolated plateau. These results have suggested the presence of rich and diversified human activity in the canyon of Wādī Tanūf and in basins downstream. Considering the highly movement-oriented archaeological evidence in our discoveries, we postulated the importance of the canyon as a route across the Al-Ḥajar mountains (Kuronuma et al. 2023).

During the 2022–2023 season we therefore aimed to identify additional archaeological evidence which would enable us to confirm our hypotheses. We sought both cemeteries and non-funerary sites in order to understand the archaeological landscapes and their diachronic transformations in relation to the movement of the inhabitants. In this context, we identified new sites, as well as several previously surveyed sites that had been briefly documented. We supplemented the existing records and updated them to reconstruct a detailed archaeological landscape, which helped us to confirm that the WTN07 site on the wadi terrace is important for understanding the formation of archaeological

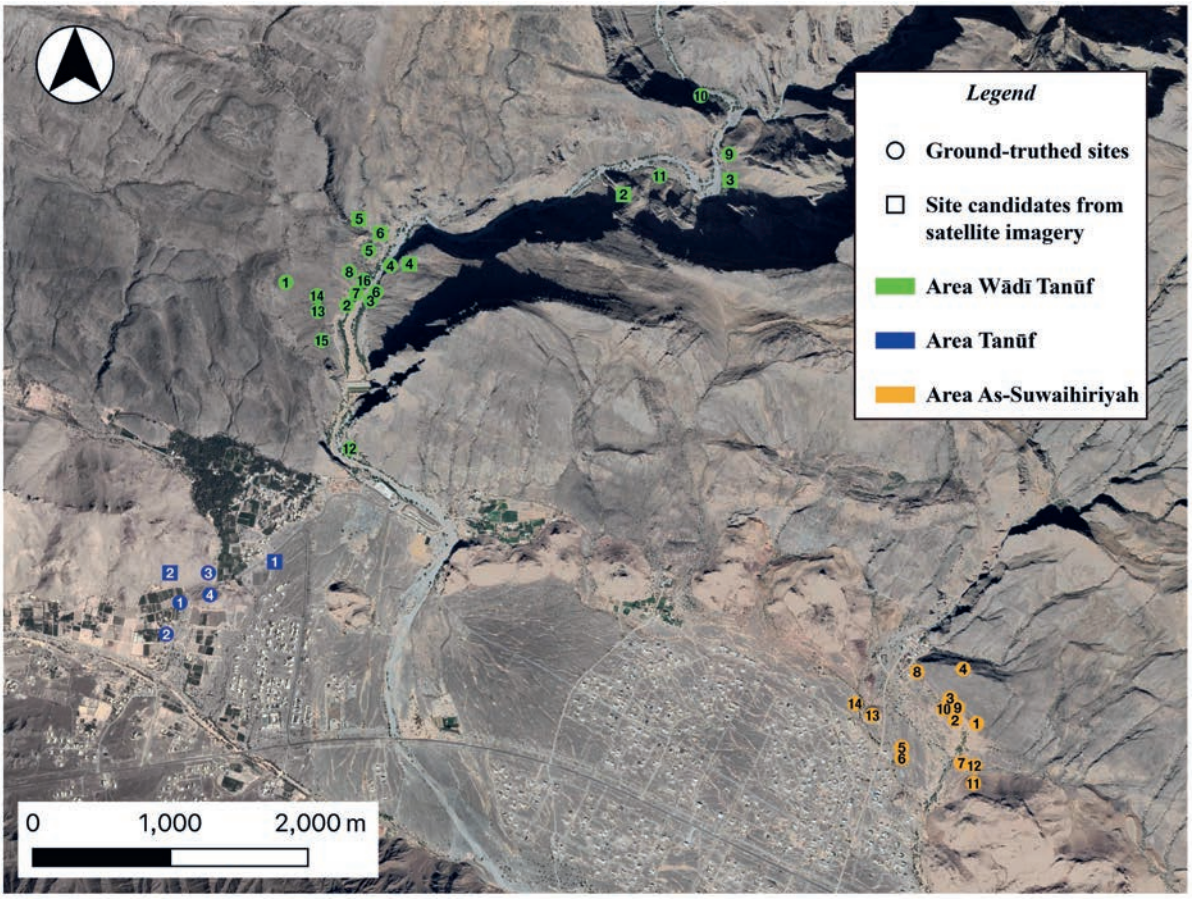

Figure 2. *Distribution of archaeological sites in the Tanūf District (base map is Google Maps applied with QGIS; adapted from Kondo, in press: fig. 1).*

landscapes and their environment. This paper reports on the survey results and discusses insights gleaned from them to fill the gap in what is currently known about the archaeological landscape in the piedmont area of south-east Arabia. It is hoped that this will contribute to the understanding of archaeological landscapes in the Arabian piedmont zones.

Past archaeological investigations in Tanūf

Beatrice de Cardi first surveyed the Tanūf District and reported two Umm an-Nar towers (Sites 28 and 29) and a Hafit cemetery (Site 27), although no archaeological sites from the Wādī Tanūf canyon were mentioned (de Cardi, Collier & Doe 1976). The canyon of Wādī Tanūf was the subject of rock-art studies, with some examples having been published in previous years (Clarke 1975; Preston 1976; Jäckli 1981). However, further research was not conducted until the 2010s, when Angelo Fossati documented rock art (2019), while David Lockwood visited rock-art sites and a Hafit cemetery (2014a; 2014b). However, to date, no multi-focused archaeological research has been conducted.

Since 2017, we have conducted a survey in the canyon of Wādī Tanūf, as well as downstream in the floodplain of Wādī al-Abyaḍ around modern Tanūf and As-Suwaihiriyah (Kuronuma, Miki & Kondo 2021; 2022a; 2022b; Kuronuma et al. 2023; Miki et al. 2020; 2022; forthcoming). In Wādī Tanūf, we discovered thirteen sites ranging chronologically from the Early Bronze Age to pre-modern times with the exception of definite Late Bronze Age evidence. The sites contain eight cemeteries (WTN02,

WTN05, WTN07, WTN11, WTN13, WTN14, WTN15, and WTN16), one fortification (WTN05), three rock-art panels (WTN10, WTN12, and WTN13), two occupations (WTN02 and WTN07), and three caves (WTN01, WTN09, and WTN12). Some sites contain multiple types of evidence from different periods.

Among them, WTN01 — with the toponym Mugharat al-Kahf — has particular importance for the Middle Bronze Age, as we discovered the rare use of a cave, revealed by radiometric dating of charred date stones excavated from the stratified deposits, together with pottery from the Wādī Sūq period (Miki et al. 2020; 2022; forthcoming).[1] This evidence suggests the probable temporal use of the cave by mobile people in the Al-Ḥajar Mountains.

Subsequently, at a lower level of the hill slope on which the cave is located, we also discovered two probable Wādī Sūq cemeteries (WTN13 and WTN14) with tomb types of individual burials (Kuronuma, Miki & Kondo 2021; 2022b). This evidence further strengthens the claim of Middle Bronze Age activities in the canyons. The prevailing presence of individual graves implies the burying of the dead along the transportation route, with relatively low costs involved for building tombs in the designated area. Interestingly, we also confirmed a few probable Wādī Sūq tombs utilizing the local boulders on the slope for part of the tomb (Kuronuma, Miki & Kondo 2021).

These discoveries indicate activities at the higher level of the canyon, although evidence near the main transportation route on the riverbed remains to be explored. Therefore, WTN07 was the best site for understanding the potential importance of the wadi terrace. No detailed surveys had been conducted before this season at this site. We attempted to document the types of features, their numbers and characteristics, the state of preservation, and their layout.

Survey methodology

The Tanūf District is characterized by highly elevated topography. The conditions of the terrain prevented systematic sampling and we therefore applied an alternative method using a full-coverage survey framework (Kuronuma, Miki & Kondo 2022b), which is suitable for these small wadi terraces along Wādī Tanūf. In the case of the terrace containing the WTN07 site, the boundary of the site was first defined according to the topographical characteristics of the area.

We had already briefly visited the site over past seasons, and satellite imagery survey had been carried out (Kuronuma, Miki & Kondo 2022b). After defining the boundary, therefore, we walked throughout the terrace, and checked and recorded the features identified through satellite imagery. The terrace generally has clear visibility with sparse vegetation, making it easier to detect features. The geolocation and typological characteristics of all identified features were recorded. Geolocational data were obtained using a portable global positioning (GPS) system (Garmin GPSMAP 60CSx) and a real time kinematic (RTK) positioning system (Emlid Reach RS+) operated via a corresponding mobile phone application. In principle, the RTK system is more accurate than portable GPS devices, with less than a few centimetres of deviation in geolocation accuracy. The portability of the RTK system enabled quick and accurate positioning of every feature. We also drew the outlines of the encountered features with sequential geo-positioning, which enabled a post-processing reconstruction of the outline using a geographical information system (GIS).

Some of the focused features were subjected to detailed recording, namely photographs, sketch drawings, data-sheet entries, and three-dimensional modelling. This process is ongoing at this stage and will be completed in future seasons. Photographs were usually taken from two angles but where necessary, additional photographs, including close-ups, were taken from other angles.

Three-dimensional modelling was achieved in two ways. Fast modelling was initially carried out using LiDAR applications (Scaniverse and Polycam) installed on an Apple iPad Pro 13 inch. Subsequently, for a more precise and detailed model, orthophotos were taken using Agisoft Metashape Professional and CloudCompare software. The sketch and datasheet were cross-checked using a high-resolution three-dimensional model.

[1] This radiometric result represents one of the richest sets of absolute date in North-Central Oman from the Wādī Sūq period. Although we have published more than twenty-five dates from Mugharat al-Kahf, there are seven dates which may include the Late Bronze Age in 95.4% of probability. However, we currently have no material evidence which supports the use of the cave during the Late Bronze Age.

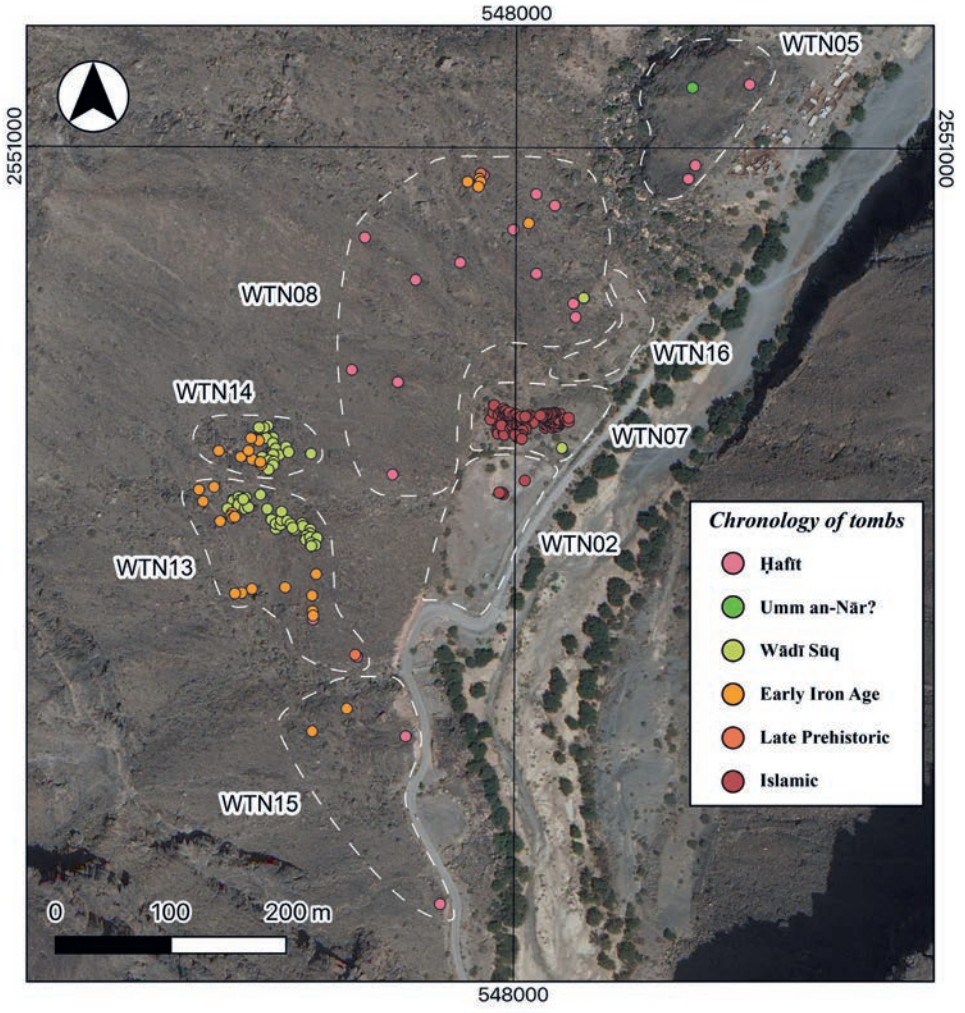

Figure 3. *Distribution of archaeological sites in the Wādī Tanūf area at the end of the 2022–2023 season (modified from Kuronuma et al., forthcoming: fig. 4). White broken lines indicate the boundary of archaeological sites; dots indicate the location of tombs. The coordinate system is UTM40Q (background image: AW3D Ortho Imagery © DigitalGlobe, Inc., NTT Data Corporation).*

Results: discovery in WTN07

Overview of the topography

The terrace where WTN07 is located is surrounded by a hill slope to the north-west and west. The north-eastern part is dissected by a small gully which runs down to the main flow of Wādī Tanūf, and the eastern edge of the terrace is defined by a modern tarmacked road. The southern part is a continuation of the terrace with site WTN02, which is a continuation of WTN07, although the condition of WTN02 has largely deteriorated. The border between WTN02 and WTN07 is defined by the modern embankment-like mound which, according to the time-lapse images obtained from Google Satellite, was formed by the bulldozing that took place between May 2009 and May 2013. The southern part of the entire terrace (i.e. the southern end of WTN02) is bisected by the road (Fig. 3).

Following the surveys of the terrace, 124 tombs and eight non-funerary structures (Fig. 4) were identified. Except for Tomb 122, all graves are Islamic. The nature of the non-funerary architectures varies and includes a building and a platform. The distribution of identified features was not uniform across the terrace. Islamic graves cover a large part of the terrace, but are mainly obscured in the western and central parts. In contrast, the eastern and north-eastern parts are devoid of

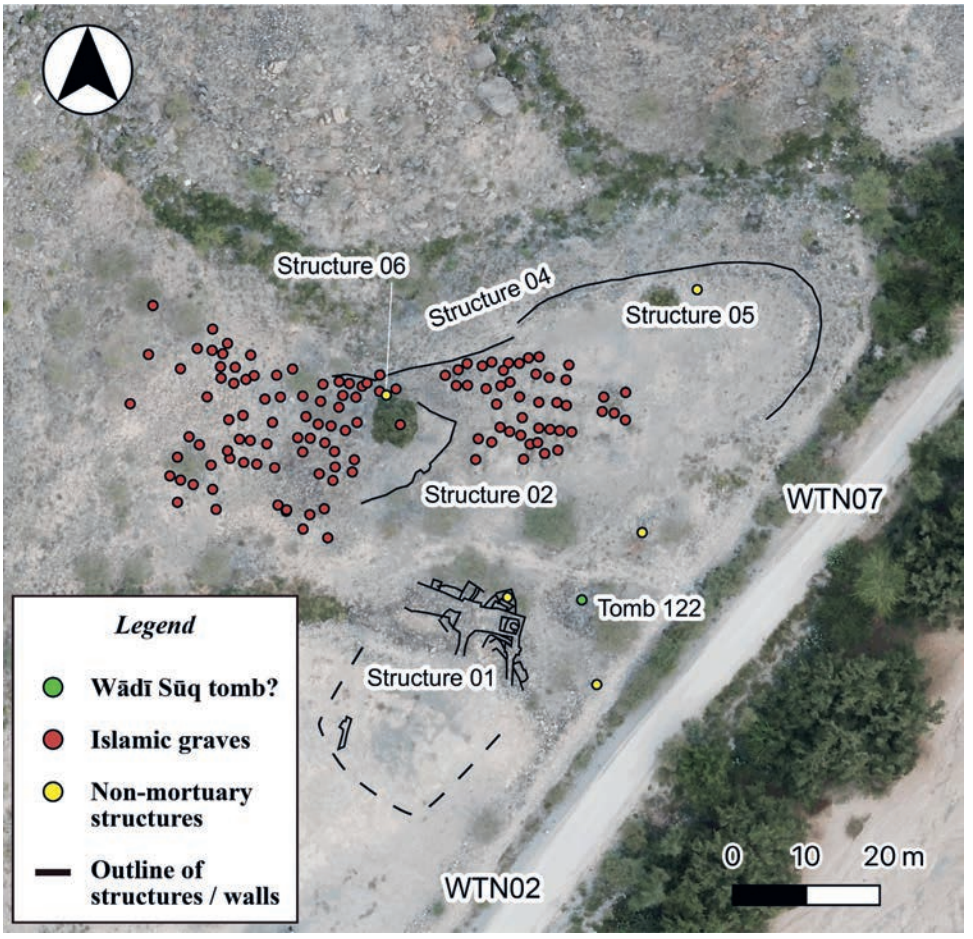

Figure 4. *The distribution of archaeological features in WTN07 (drone photography by Eng. Riyadh Ashoor Yousuf Keskes [GreenBird 3D]).*

archaeological features on the surface, except for the encircling wall (Structure 04) which stands at the edge of the gully slope.

A probable Wādī Sūq collective tomb

We found a circular tomb (Tomb 122) in the south-eastern part of the site boundary (Fig. 5). This tomb is the most important discovery at this site, and we currently assume this is a collective tomb, probably of the Wādī Sūq period, judging by the typology. We identified an above-ground section with circular outlines with a diameter of *c.*4 m and *c.*0.6 m for the section above ground. The top of this structure is covered with gravel which is typically less than 15 cm in size (Fig. 5/1). This indicates that there was no structure above the currently visible ceiling and that the present height is the original. The exterior surface of the above-ground section is composed of rounded wadi stones *c.*30–50 cm, probably taken from the bed of Wādī Tanūf. They are not covered with gravel, which clearly delineates the structural boundary. The outline is generally circular although interestingly, there is a roughly rectangular section protruding to the north-east (Fig. 5/2). The ceiling gravel and exterior wall appear to be continuous with no break, indicating they form part of the main structure. The size of this protruding section is *c.*1.88 m long and *c.*1.22 m wide and we currently surmise that this may be an entrance with a corridor, which is buried under the deposits and collapsed stones.

A partially exposed interior funerary chamber was observed at the centre of the structure (Fig. 5/3). We

confirmed a protruding feature in the interior layout, which is a possible dividing wall connected to the exterior wall in the south-western part and which runs on a north-east–south-west axis (*c.*57° due north). The possible dividing wall is *c.*1.1 m long and *c.*0.9 m wide. The interior surface of the chamber is demarcated by rounded wadi stones whose size is the same as those of the exterior surface of the above-ground structure. This line enables the identification of the U-shaped chamber, which is covered with deposits; its depth could not be determined.

The main characteristic of Tomb 122 was a large annex attached to the southern and south-western side of the exterior wall of the main structure (Fig. 5/4). The border between the main body and the annex is clearly visible from the wadi stones which are found in between, unlike in the case of the above-mentioned annex on the north-eastern side of the main body. The size of this annex is *c.*5.8 m long and *c.*8.1 m wide. Furthermore, we identified three possible subsidiary tombs to the west and north-west of the tomb (Figs 5/5–7), although this number may change because of the current state of the stones scattered on the surface. There may also be the remains of a ring-wall south-east of the tomb (Fig. 5/8), but this is uncertain at this stage.

The layout mentioned above is unusual but there are comparanda in Jabal Salūt. At least three similar tombs are classifiable as the CM4d type categorized by Sabrina Righetti (2015) in the areas of JS2 (Tomb JS2_G2), JS4 (Tomb JS4_G4), and JS6 (Tomb JS6_G1) (Condoluci & Degli Esposti 2015; Degli Esposti, Brandolini & Zerboni 2021; Degli Esposti et al. 2018; 2021). Among them, Tomb JS4_G4 resembles Tomb 122 in Wādī Tanūf (WTN07) in terms of the U-shaped funerary chamber, the presence of a partial exterior ring-wall, and subsidiary graves. Tomb JS4_G4 has two subsidiary graves in the north-west (Tomb JS4_G5) and south-west (Tomb JS4_G7). The orientation of the interior dividing wall of Tomb JS4_G4 is *c.*26° due north (north-east), similar to Tomb 122 in WTN07. Nevertheless, the possible protruding entrance and the annex of Tomb 122 in WTN07 are different from the JS4_G4 tomb complex. There are several tombs with an entrance to a corridor in Bithnah Tomb 4 (Corboud et al. 1996) and Jabal al-Buḥayṣ Tomb BHS 12 and 37 (Jasim

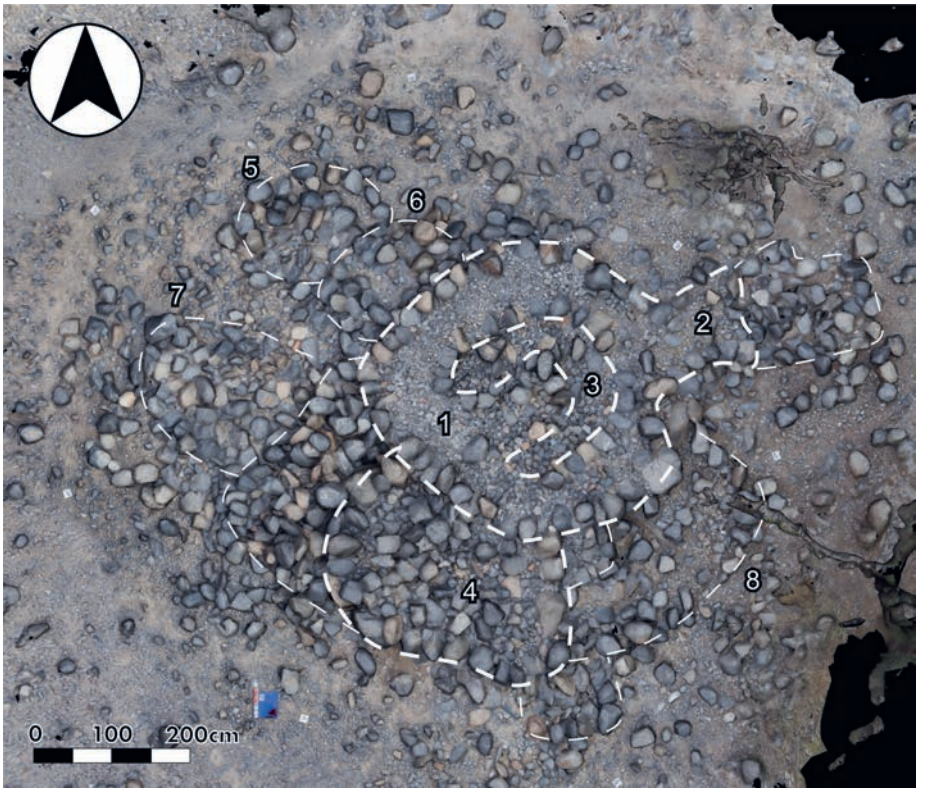

Figure 5. *An orthophoto of Tomb 122:* **1.** *ceiling with gravel;* **2.** *possible entrance with a corridor;* **3.** *U-shaped funerary chamber;* **4.** *attached annex;* **5–7.** *supposed subsidiary graves;* **8.** *possible ring-wall.*

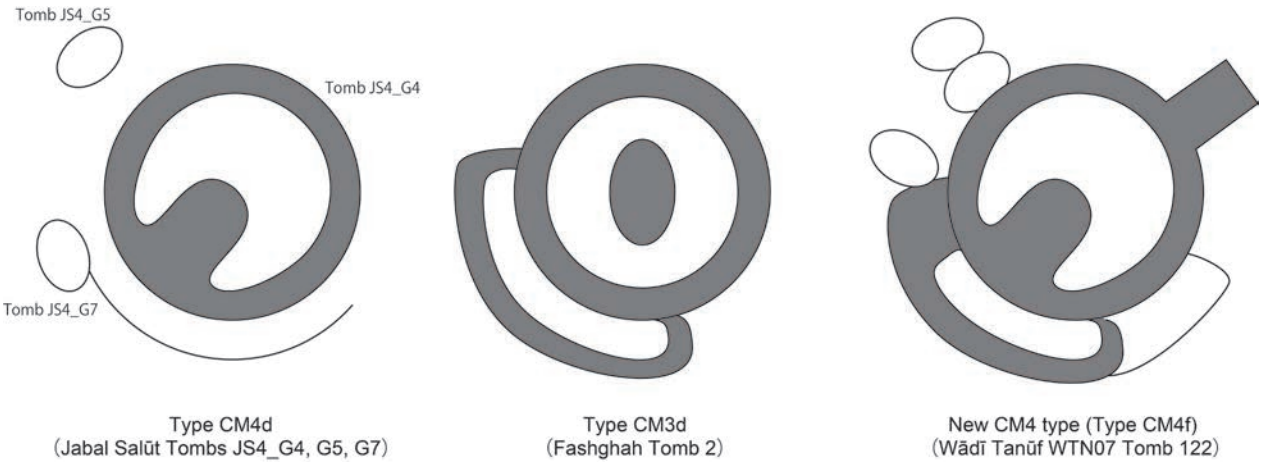

Figure 6. *A schematic comparison of the tomb types.*

2012). Tomb BHS 12 is similar to Tomb 122 in WTN07 in terms of the U-shaped funerary chamber with a dividing wall running north-east–south-west, along with an entrance opening to the north-east, but these tombs have no annexes. Tombs with an annex have been reported in Naslah Tomb 1 and Fashghah Tomb 2 in the UAE (Phillips 1997: 211–212, figs 5–6), but the funerary chambers in these two examples have an O-shaped layout because of the independent wall at the centre. These are comparable to Righetti's (2015) CM3d type and the characteristics of the funerary chamber are different from those of Tomb 122 in WTN07.

In summary, Tomb 122 in WTN07 can be described as a composite of various tomb types (Fig. 6). Such a mixture of structural characteristics is not unusual considering the varied typology of tombs of the Wādī Sūq period. After a detailed examination, we contend that a new type should be defined based on Righetti's typology.

Islamic graves

The remaining mortuary features identified indicate the presence of Islamic graves (Fig. 7), which have a simple oval or oblong structure with a simple exterior wall and standing stones (Shawāhid stones) at one or both ends. The typical size is *c.*2 m in length and *c.*1.2 m in width. No superstructures were observed. The usual orientation of the long axis is north–south, indicating that the buried person could be lying on the right side, facing the local qibla. However, there are some irregularities in the orientation of the tombs' long axis too. The Shawāhid is usually flat and rectangular, but irregular shapes are also present. We also confirmed some cases of a combination of two or three relatively small stones forming one unit of the Shawāhid. The difference in layout of the Shawāhid, in terms of the presence of either one or both ends, is probably related to the gender of the buried person (see Ibrahim & Strachan 2020), although this cannot be confirmed at this stage. We only determined that this type of tomb is not recent. In the context of WTN07, Islamic graves were built to avoid existing features. For example, there were no Islamic graves at the boundary of Structure 02 (the platform), indicating that Islamic graves were later than Structure 02. Examples of a similar tomb type were also confirmed in Wādī Tanūf WTN11 and WTN16 but there are also some reported examples in Ṣanʿā in the Wādī Banī Kharūṣ system (Ibrahim & Strachan 2020). Because of the large number of graves, we temporarily halted the detailed documentation process when we reached Grave 20 and after taking the coordinates of all the graves up to that point. The detailed recording and seeking of inscriptions of the remaining graves are the subject of the forthcoming season.

Figure 7. *Tomb 18 in WTN07, viewed from the west.*

Non-funerary features

We also recorded eight examples of various types of non-funerary architecture.

Structure 01 is a building (Fig. 8) of which the southern half in WTN02 was bulldozed. The wall outline indicates at least two phases with different layouts (see Fig. 4). The first phase has the longest axis, running north-west–south-east. Remains were confirmed in the southern and northern parts of Structure 01. The second phase has a north–south axis. Two parallel walls composed of standing stones inserted into the surface soil as well as a small compartment can be observed. The building may have been connected to another to the west, but we could not confirm this. We also suspect a later reuse of the foundation of the building as an oblong, possibly late prehistoric, tomb. There are no clues as to the date of this building but if the possible late prehistoric tomb is confirmed, the building can be dated to a period earlier than the Early Iron Age (*c.*1300–300 BC), in which case this structure may have been built during the Bronze Age and has been used over the centuries. A detailed examination is planned.

Structure 02 is a low platform at the centre of the site (Fig. 9). The layout resembles a bent number 7 with the longest axis running north-east–south-west. Three to four courses of stones are confirmed in the best-preserved part and the wall is partially collapsed. The western side slopes gently and there are no walls. As previously noted, Islamic tombs were not found on the platform, indicating that the platform dates from before the Islamic period.

Structure 04 is the composite of long walls with bi-face constructions and a few gaps. These walls surround the northern, north-eastern, and eastern edges of the terrace (see Fig. 4). This was confirmed using satellite imagery before conducting the survey (Kuronuma, Miki & Kondo 2022b: fig. 9/d). Based on their location, the walls are not associated with the Islamic graves. We assume an earlier date for this structure because of the occurrence of bi-face walls during the Bronze Age, although the exact date is uncertain. We also confirmed a small, supposedly low platform (Structure 05) and a possible structure (Structure 06) inside Structure 04.

The remaining features (Structures 03, 07, and 08) have either a small and round or oblong outline which could indicate late prehistoric tombs, although this remains uncertain. We plan to assess these features in the forthcoming seasons.

Regarding the artefacts, probable Early Iron Age sherds with angular reddish mineral inclusions were found on the terrace. Unfortunately, the sherds are mostly undiagnostic. Future systematic collection of these sherds is required to determine their spatial distributions. We could not find contemporary features, but a scattering of pottery such as this is common in Islamic cemeteries.

Figure 8. *Structure 01 viewed from the east.*

Figure 9. *Structure 02 viewed from the east.*

Diachronic reconstruction of human activity in WTN07 in relation to the canyon

The survey revealed frequent use of the wadi terrace in WTN07 over millennia, indicating the long-term logistical importance of the wadi. From our past archaeological investigations, it has been established that Wādī Tanūf was a pathway connecting the highlands of Al-Jabal Al-Akhḍar with the lowlands. The discovery in WTN07 supplies further preliminary evidence.

The probable Wādī Sūq collective tomb (Tomb 122) is interesting in terms of the archaeological landscape. Up to the end of the 2022–2023 season, we confirmed 51 probable Wādī Sūq individual tombs in two cemeteries, WTN13 and WTN14, on the gentle slopes of the higher hill (Kuronuma, Miki & Kondo 2021; Kuronuma et al., in preparation). Evidence of short-term stay during the Wādī Sūq period was also discovered in the cave of Mugharat al-Kahf (WTN01) in the cliff at a higher location than WTN13 and WTN14 (Miki et al. 2020; 2022). The close locational relationship between WTN13, WTN14, and Mugharat al-Kahf suggests the presence of mortuary activities by transient people temporarily inhabiting the cave. Tomb 122 in WTN07 provides different aspects to support this hypothesis, particularly in relation to mortuary choices during the Wādī Sūq period.

As noted above, the terrace is adjacent to the wadi bed as a transportation route and may indicate the recurrent use of Tomb 122 in WTN07 for mobile people. The typical Wādī Sūq collective tombs were built in the oases, which probably related to sedentary or semi-sedentary lifestyles linked to agriculture (Kuronuma 2023) and this is the reason collective tombs are concentrated on the north-western part of south-east Arabia where the available water resource was relatively good during the Wādī Sūq period (see Velde 2009). By contrast, the evidence from Tanūf adds a different perspective, which suggests a connection with mobile ways of life together with collective tombs (Fig. 10).

The use of a terrace in Islamic cemeteries is not uncommon. Islamic cemeteries usually form grave clusters in vacant spaces without existing structures and require sufficient space for the alignment of graves to be oriented toward the qibla. Terraces are therefore suitable for constructing cemeteries in narrow canyons. The builders of all the other recorded Islamic cemeteries (WTN11 and WTN16) chose flat terraces. This phenomenon is a characteristic of the Islamic mortuary landscapes in Wādī Tanūf.

Finally, various non-mortuary features indicate the differential use of the terrace, aside from the mortuary use, through the ages. The discovery of Structure 01 is new to our archaeological investigations in Wādī Tanūf. As previously noted, the canyon is topographically limited for building structures, which is linked to the importance of caves as natural shelters. A newly discovered building with a probable multi-use phase may indicate non-mortuary uses other than rock shelters. Nevertheless, the uncertain date of Structure 01 is a current problem which could be resolved by excavating both the building and the bulldozed southern part of

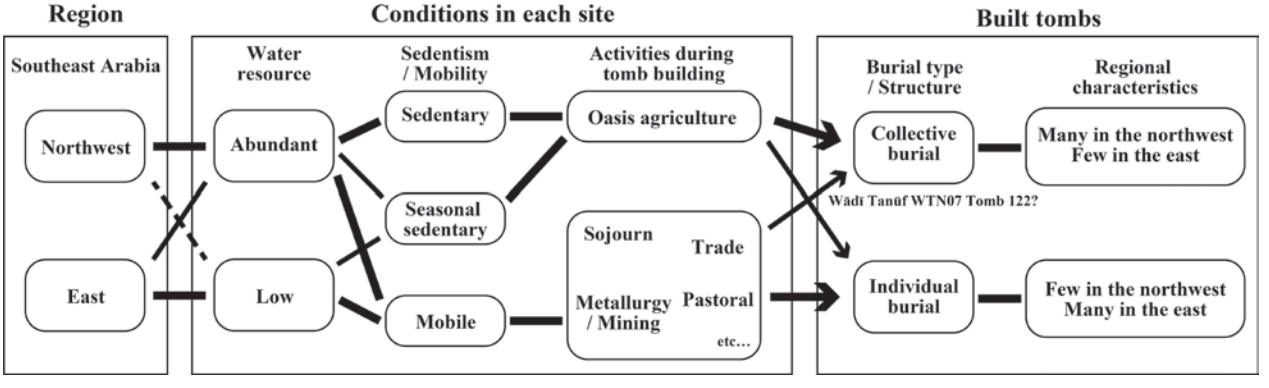

Figure 10. *Revised schematic model of the selective environment of Wādī Sūq tombs (modified from Kuronuma 2023: fig. 5). The thicker lines indicate a stronger relationship, the thinner lines indicate a weaker one.*

WTN02, where remains of the building's foundation were discovered. To determine the nature of Structure 01 in WTN07, an integrated assessment of WTN02 and WTN07 is required.

The purpose and date of the platform Structure 02 are also difficult to evaluate. However, the location of Structures 01 and 02, as well as Tomb 122, gives the impression that these structures encircle the empty space at the centre of WTN07.

Despite their unknown purpose, the enclosure walls — Structure 04 — notably delineate the boundary of the terrace to the north and north-east, together with the attached Structures 05 and 06. No superstructures were observed on the wall, but mud-brick structures may have originally been built, although there are no clues to enable us to reconstruct its original height. A function as a defensive structure is unlikely because the width of the wall is too small.

These discoveries suggest prehistoric intensive use of the terrace for mortuary and non-mortuary purposes. We can also interpret these various non-funerary structures as unrelated to Islamic activities. Our discoveries indicate the long-term intermittent transformation of archaeological landscapes caused by the limited available space inside the canyon, which could be useful for predicting land use and relevant archaeological landscapes in the canyons of the Arabian Peninsula.

Conclusion

The results of our survey in WTN07 cast a new light on the archaeological landscape in the canyon terraces. More (probable) Wādī Sūq evidence had not been expected, but we have now discovered a cave for temporary stay and cemeteries with both individual and collective burials. Many parts of the possible Wādī Sūq site assemblages in North-Central Oman were therefore present. In addition and despite being undated, the discovery of a prehistoric building indicates a relatively long-term stay inside the canyon, together with different structures for various purposes. Furthermore, the discovery of an Islamic cemetery is significant because it is the largest registered cemetery inside the canyon. WTN07 self-evidently represents a long-term transformation of the archaeological landscape. All of these new aspects can be connected to the significance of the canyon as a transportation route.

However, the lack of precise dating and an evaluation of the features discovered still remain. As noted above, we found a scattering of supposed Early Iron Age potsherds on the terrace but we did not encounter any notable artefacts suitable for dating. Excavations are therefore required to determine precisely the date and function. Because of its rarity and huge importance in reconstructing the archaeological landscape of the Wādī Tanūf canyon in the second millennium BC, Tomb 122 needs to be excavated to obtain further information. Although evidence of the Late Bronze Age is relatively scant in modern Oman, continuous use of the Wādī Sūq collective tombs through to the Late Bronze Age has sometimes been reported in the UAE (see Righetti 2015). The excavation of Tomb 122 can contribute to this research.

The details of the Islamic graves, such as dating and the individuals buried there, still remain to be explored. While maintaining respect for the Islamic graves, a detailed examination of the visible elements is important. Discovering the inscription on the Shawāhid is important to determine the calendrical date of construction of the tomb, as well as the genealogical relationships of the buried individuals in the graves. Further detailed examination of non-mortuary structures — such as excavations of Structures 01 and 04 — is expected to identify the use and formation of archaeological landscapes in the terrace. The chronological and locational relationship between Structure 01 and Tomb 122 is important for further interpretation of the site. The small soundings of Structure 04 may also contribute to the identification of yet undiscovered mud-brick uses or sub-surface foundations.

Remarks should also be made about the absence of evidence from other periods except for the Wādī Sūq period, the Early Iron Age, and the Islamic period. For example, use of the terrace during the Early Bronze Age was not observed. Some Hafit cairns have been discovered in Wadi Tanuf, but there has yet to be an identified use of the terrace (see Kuronuma, Miki & Kondo 2021; 2022a). Moreover, firm Umm an-Nar evidence is scarce in the canyon, except in Mugharat al-Kahf (Miki et al. 2022). Solid evidence of the Palaeolithic, Neolithic, and Samad Late Iron Age has also not been detected and this lack of evidence indicates that different strategies for using the canyon were employed at different periods,

implying the use and/or lack of use of the terrace with WTN07. The survey of WTN07 calls for a new phase of archaeological investigations in the Tanūf District in order to improve our understanding of the long-term transformation of the society and landscape located at the foot of the Al-Ḥajar Mountains, as well as at other Arabian piedmonts.

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