The Collective Corridor-Shaped Tombs of The Daba Al Bayaah Necropolis (Musandam, Oman): The Origin and Spread of A Funerary Structure Based On Evidence From South-East Arabia

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ABSTRACT

This paper takes as its starting point the exploration of two collective tombs of the corridor-shaped type, also known as 'long-chambered', identified in the 2nd/1st millennium BC necropolis at Daba Al Bayaah, on the east coast of the Musandam Peninsula in the Sultanate of Oman. The spread of this type of tomb is limited to the northern region of the Oman Peninsula, and to the period between the middle/late Bronze Age and the beginning of the Iron Age (first half of the 2nd millennium BC - first half of the 1st millennium BC). These tombs are of monumental character with a corridor chamber, usually semi-subterranean, that can reach a length of up to 30 m. The focus is therefore on the diffusion confined to the northern area of south-eastern Arabia, comparing the investigated specimens, and describing similarities and differences in order to hypothesise construction patterns. Furthermore, light is shed on the origins of this phenomenon, which are probably to be found in Iranian Luristan, on the basis of some similar architectural choices linked to funerary aspects and on the presence of objects of clear Iranian derivation among Dibbā findings.

KEYWORDS: Oman peninsula; collective grave; graveyard; late Bronze Age; early Iron Age.

قبور جماعية على هيئة ممر في مقبرة دبا البيعة بمحافظة مسندم، سلطنة عُمان: الأصل والانتشار لبناء جنائزي بناءً على الأدلة من جنوب شرق شبه الجزيرة العربية

فرانشيسكو جينشي

الملخص:

تنطلق هذه الورقة البحثية من استكشاف قبرين جماعيين من النوع المُتجسد على هيئة ممر، والمعروفة أيضا باسم "الغرف الطويلة"، والتي تم التعرف عليها في مقبرة من الألف الثاني/الأول قبل الميلاد في دبا البيعة الواقعة على الساحل الشرقي لشبه جزيرة مسندم في سلطنة عمان. يقتصر تواجد هذا النوع من القبور على المنطقة الشمالية من شبه الجزيرة العمانية، وبالفترة بين العصري البرونزي الوسيط/المتأخر وبداية العصر الحديدي (النصف الأول من الألف الثاني قبل الميلاد – النصف الأول من الألف الأول قبل الميلاد). هذه القبور ذات طابع معماري ضخم مع غرفة على هيئة ممر، وعادة ما تكون شبه تحت أرضية، ويمكن أن يصل طولها إلى ٣٠ متراً. لذلك ينصب التركيز على تواجدها المحصور في المنطقة الشمالية من جنوب شرق شبه الجزيرة العربية، ومقارنة العينات التي تمت دراستها، ووصف أوجه التشابه والاختلاف من أجل افتراض أنماط البناء. علاوة على ذلك، يتم إلقاء الضوء على أصول هذه الظاهرة، والتي من المحتمل أن تكون موجودة في لورستان الإيرانية، وذلك بناءً على تواجد بعض الخيارات المعمارية المماثلة المرتبطة بالجوانب الجنائزية، وعلى وجود أدوات من بين اكتشافات دبا ذات اشتقاق إيراني واضح.

الكلمات المفتاحية: شبه الجزيرة العمانية، قبر جماعي، مقبرة، العصر البرونزي المتأخر، العصري الحديدي المبكر.

1. INTRODUCTION

Dibbā lies on the eastern coast of the Musandam peninsula, directly overlooking the Gulf of Oman (Fig. 1). Today, this enclave is politically divided into three zones: one belonging to the Sultanate of Oman (Daba-Oman, usually transliterated as Dibbā, also known as Daba Al Bayaah), one to the Emirate of Sharjah (Dibbā al-Hisn), and another to the Emirate of Fujairah (Dibbā al-Fujairah). The Dibbā burial complex—represented by two 'Long Collective Graves' (LCG-1 and LCG-2), a later PIR (Préislamique Récent) grave, and several pits with ritual offerings—seems to have been continuously occupied from the Late Bronze Age (1600–1350 BC) until the PIR period (early/mid-3rd cent. BC–mid 3rd cent.AD). (Magee, 1996, 2014; Velde, 2003; Mouton, 2008; Haerinck et al., 2021).

Collective tomb LCG-1 was accidentally discovered in the beginning of 2012 when infrastructural works were being carried out within the propriety of the Sporting Club at Daba Al Bayaah (25°36'38.78''N, 56°15'28.57''E), in the Musandam Peninsula part of the Sultanate. The Ministry of Heritage and Tourism of the Sultanate of Oman (MHT) started a project of rescue excavation in the following years, under the supervision of Sultan al-Bakri, then Director of the Department for Excavations and Archaeological Studies, and now Advisor of Minister. Francesco Genchi as field director and under the scientific supervision of the late Maurizio Tosi, then an archaeological advisor for the MHT conducted additional seasons for the MHT. During the 2013 season, while exploring the area around the first corridor tomb and verifying the presence of pits containing grave goods that had been moved from the tomb over time, the walls of the second corridor tomb LCG-2, located 5 m from the previous one and oriented north/south, were discovered (Genchi, 2013; 2015; Genchi et al., 2018; 2022).

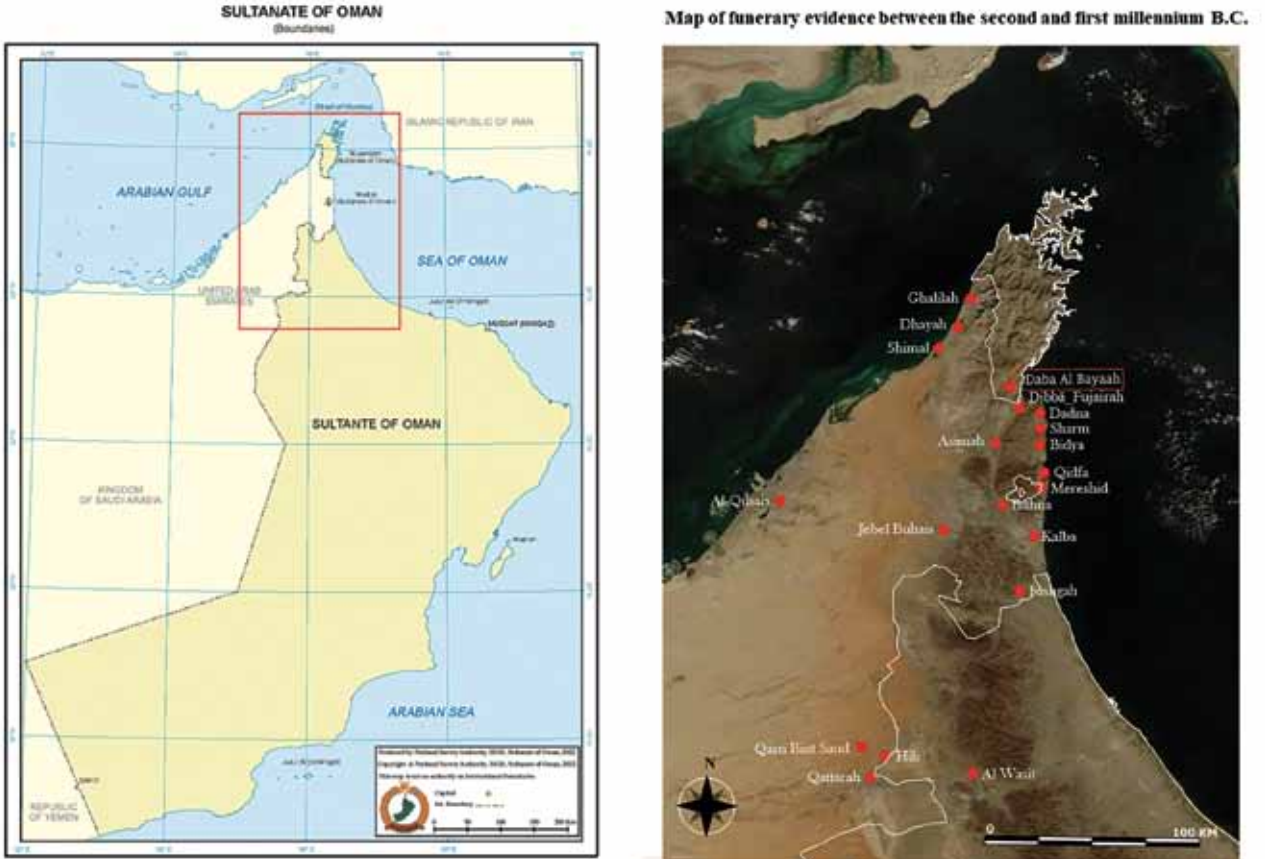

Figure 1*: Map of the south-eastern Arabia (left) and of the Oman Peninsula with location of Daba Al Bayaah and the other burial sites mentioned in the text (right).*

2. EVALUATION AND BRIEF DESCRIPTION OF THE TOMBS

The LCG-1 tomb has a rectangular shape, with a length of 14.75 m and a width of 3.50 m with a total area of 49m2 (Genchi, 2013, Genchi, 2020; Frenez et al., 2020). Its burial chamber is underground and about 1.35 m deep, while its orientation is NW/SE. The foundations and the lower part of the walls have been constructed from large natural blocks, with rounded sides and with the internal face almost flat, arranged on at least 6-7 rows (Fig. 2). The lowest rows are characterised by their large size, while the uppermost ones are smaller and more irregular (Fig. 3). Above the walls a false vault covered the tomb with large slabs arranged partially overlapping toward the centre line. The slabs are made of large flat stones taken from the slope of the mountain and not from the wadi, like the previous rounded stones.

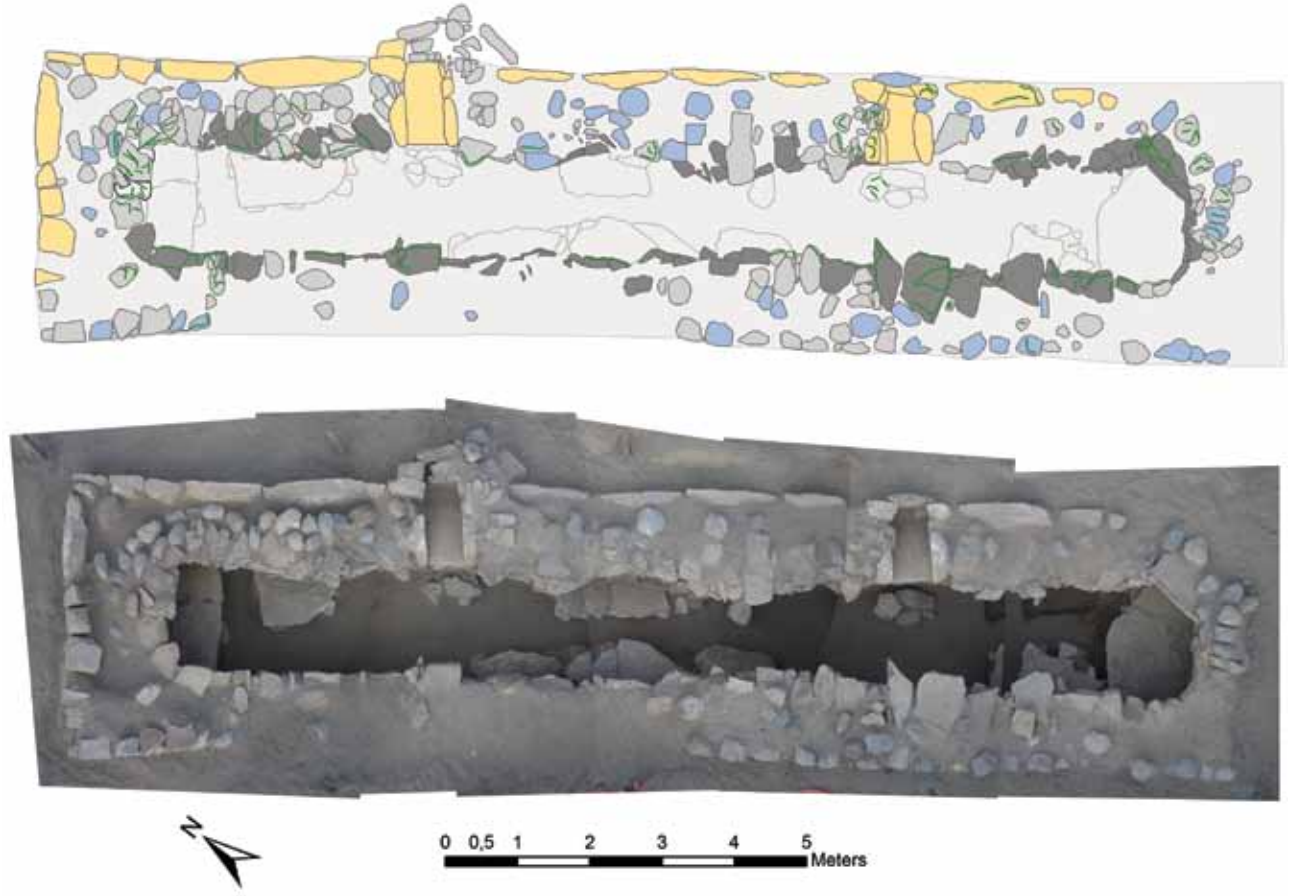

Figure 2*: Photogrammetric plan of the LCG-1 tomb*.

On its northern side, the tomb features two trapezoidal, short-corridor entrances, which are constructed from limestone rectangular blocks, one flat block being used as a threshold and the others positioned vertically and slightly inclined toward the center at the top (Figs. 4, 5). The entrance is about 0.7 m wide and 0.8 m long and is positioned about one meter from the bottom of the chamber. Eight benches containing clusters of disarticulated human bones (in secondary deposition) were created along the inner walls of the structure, using large slabs supported by smaller stones (Figs. 6, 7).

Figure 3*: The inner face of the walls of tomb LCG-1*.

The outer walls on the western side are made from limestone blocks with flat and accurate faces. The precise arrangement of the outer side and the presence of these blocks only on the eastern side could suggest a re-configuration of the perimeter at a later stage of the structure's use. The LCG-2 tomb also is rectangular in plan, with a length of 24 m and a width of 4.20 m, consisting of thick perimeter walls composed of rows of wadi boulders in the lower levels and limestones and beach-rocks in the upper levels (Fig. 8). The stones in the inner face project slightly in their arrangement, drawing the profile of the vaulted burial chamber. The funerary chamber is semi-subterranean, and the long axis was oriented in a north–south direction. The walls of the burial chamber are constructed of at least twelve stones rising to a height of approximately 2.30 m from the bottom of the chamber (Fig. 9). The thickness of the long perimeter walls reaches 2 m on the east side and is very well preserved. The perimeter walls have been reinforced by inserting a kind of plaster between the stones of the courses.

Figure 4*: Photogrammetric section of the inner face of the north-east wall of tomb LCG-1*

Figure 5*: Detail of the two entrances to the LCG-1 tomb positioned along the north-east wall*

Figure 6*: Detail of one of the benches at the base of the LCG-1 tomb corridor and the contents consisting mainly of skulls*.

Figure 7*: The bench positioned on the short side of the tomb and detail of the stones used to support the slab*.

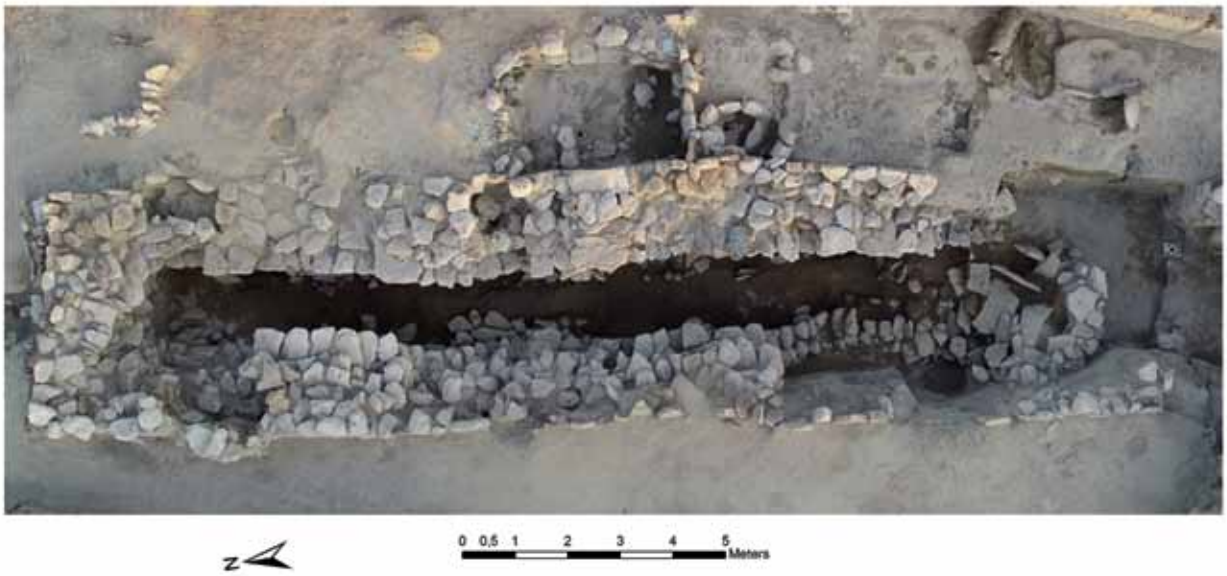

Figure 8: Photogrammetric plan of the LCG-2 tomb.

Figure 9*: Detail of the inner face of the walls of tomb LCG-2.*

The rectangular entrance, which is located in the eastern perimeter wall and measures 1.2 m in height and 0.78 m in width, is lined with stone slabs from all sides and is provided with a lintel and threshold leading to the corridor through a dromos (Fig. 10). The latter is very well preserved for about 2 m and has a roof and staircase made of slabs to descend into the chamber (Fig. 11).

Figure 10*: The entrance to the LCG-2 tomb in the east wall and the compartment framing it*.

Figure 11*: Detail of the access dromos to the corridor with the staircase and the human remains placed inside in the later phases*.

Once the dromos lost its function as an access point, it was used to accommodate further burials (of around ten individuals). A rectangular enclosure consisting of long slabs and stones defined an outer area around the main entrance, which was later used as an ulterior burial area. In the last phases of use, the perimeter walls lost their delimiting function and began to be used as a burial site, especially primary burials, with the removal of parts of its walls to form pits. At least four sub-circular chambers were laid on the walls, some of which contained multiple individuals (Fig.12). Other chambers were created instead by further subdividing the main, elongated chamber. Originally it is possible that the burial chamber was roofed with flat slabs placed over corbelling stones. Some roofing slabs were found inside the burial chambers where they had collapsed, while others may have been removed during subsequent structural modifications and looting of the grave (Genchi 2015; Genchi et al., 2018; 2022).

A distinctive and perhaps unique feature which emerged from the exploration of the LCG-2 tomb floor is the identification of a clay pathway that explains how the corridor floor was used. This is a narrow, central, compact clay floor on either side of which a series of burial pits were excavated (Figs. 9, 13). It therefore represents a kind of walkway at the bottom of the corridor that allows one to move within the chamber.

Figure 12*: Two of the numerous burial chambers carved into the tomb's perimeter walls*

Figure 13*: The burial pits arranged on either side of the pathway at the base of the corridor.*

3. CHARACTER AND DIFFUSION OF CORRIDOR-SHAPED TOMBS IN THE NORTHERN PART OF SE ARABIA

Within the panorama of funerary architecture in the south-east of the Arabian Peninsula between the 2nd and 1st millennia B.C., numerous construction variants can be found, which are essentially divided into individual and collective tombs. At its essence, this architectural difference in tomb construction seems to reflect regional and partly also chronological characteristics. Corridor tombs are found exclusively in the northernmost part of the Arabian Peninsula, i.e. in the territory of the Arab Emirates and the Governorate of Musandam. On the other hand, tombs suitable for numerous individuals are found throughout most of the 2nd millennium, especially in the northern areas, while individual tombs show a more widespread diffusion during the Iron Age, especially in the central region (Samad phase).

Several tombs with a remarkably similar structure have been excavated in the UAE during recent decades, although several of them had been erected completely above ground (Righetti, 2015: 126; Kästner, 1991; Vogt, 1987; Donaldson, 1984). However, several underground or partially underground graves that show a good similarity with Dibbā LCG-1 have also been investigated. A similar underground chamber is found in a recently published grave that was excavated at Dibbā Fujairah (Pellegrino et al., 2019)and another one at Qarn al-Harf, in the Emirate of Ras al-Khaimah (Kennet et al., 2013). Nevertheless, the closest resemblance to be found are the long tombs at Sharm, Bidya 1 and Dhayah 3 (Riley & Petrie, 1999:180–189; Al-Tikriti, 1989:106; Kästner, 1991:238) (Figs. 14-16).

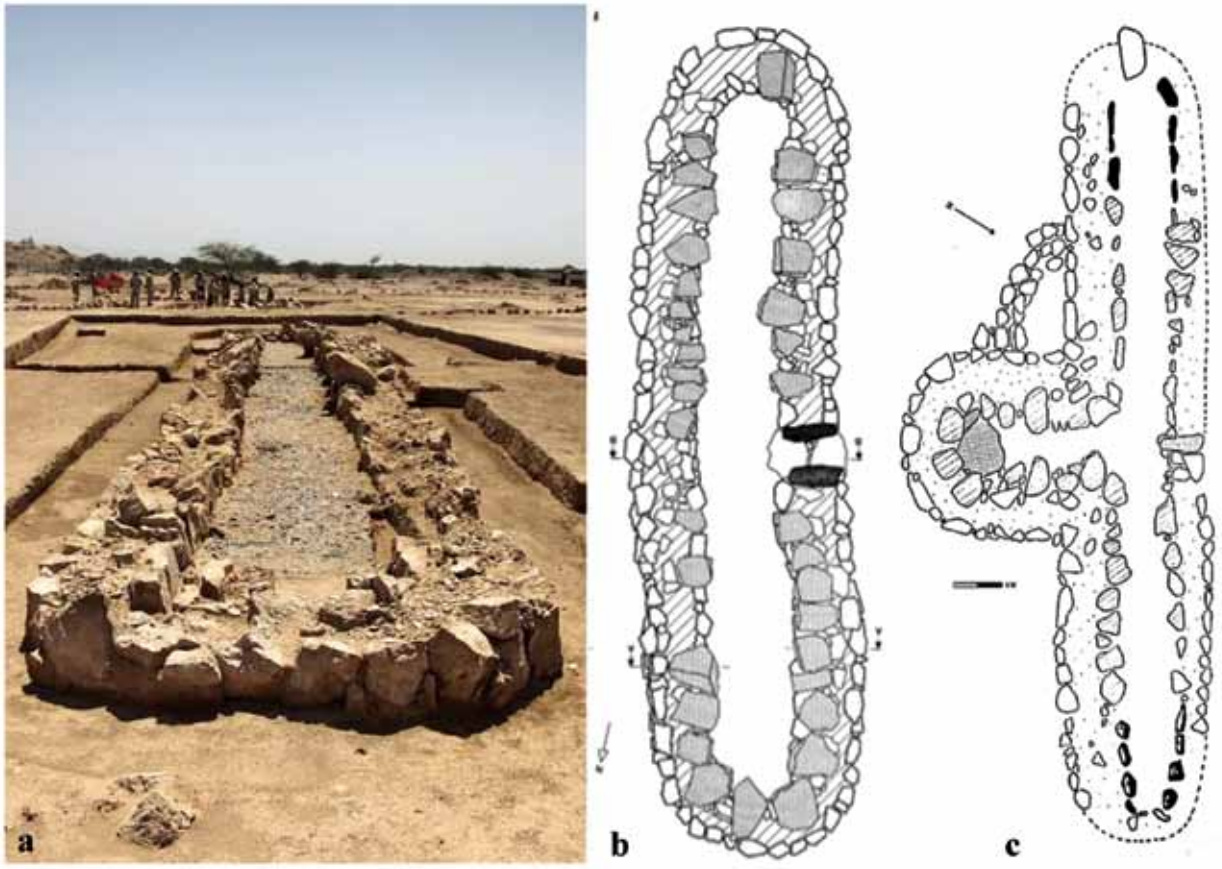

Figure 14*: a: The SH101 at Shimal; b: The SH1 at Shimal (Donaldson, 1984); c: The DH2 tomb at Dhayah (Kästner, 1991).*

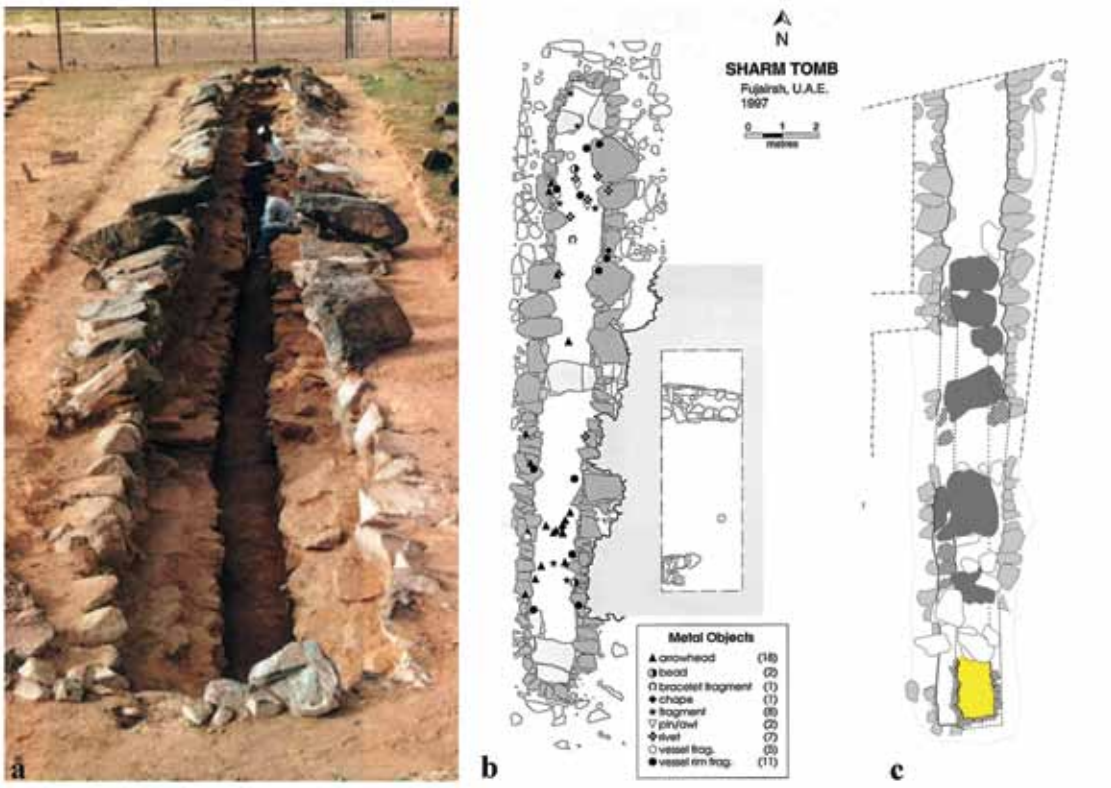

Figure 15*: a: The Bidya tomb (Al-Tikriti, 1989); b: the Sharm 1 tomb (Weeks, 2000); c: Dibbā 76/1 at Dibbā Fujairah (Pellegrino et al., 2019).*

Figure 16*: a: The DH9 tomb at Dhayah; b: The Qattarah tomb; c: The SH600 tomb at Shimal, d: The Bithnah tomb 4*

Regarding the LCG-1 tomb, the closest parallel is Sharm's Tomb 1 in the neighbouring Emirate of Fujairah. Excavations at Sharm were first undertaken in 1997 by a team from the University of Sydney. The tomb at Sharm is a long-chambered, semi-subterranean funerary monument, with an external length of approximately 17.2 m and an average external width of 2.5 m. The superstructure of the tomb was constructed out of large wadi stones assembled using a dry-stone technique, with smaller stones used to fill the interstices. The foundation stones of the chamber were laid in an orderly linear manner to allow a vertical interior face and appear to be unworked (Riley & Petrie, 1999:182). Like that of Dibbā, the Sharm tomb has two entrances, both of which are located in the eastern wall of the chamber. The entrances are spaced at an equal distance from each end of the tomb and are each comprised of a threshold stone, with vertical stones functioning as door jambs laid perpendicularly to the line of the long eastern wall. Besides the entrances, one of the main similarities with LCG-1 is the presence of benches at the base of the corridor. The benches are made from large stones similar to those used for the upper layers of the chamber corbelling. They sit approximately 0.5 m above the ground and are supported by suitably sized wadi boulders. A mix of archaeological material, including bone, pottery, fragments of soft stone vessels, shell, and other small finds, was found both above and below the benches.

The tombs of Dibbā LCG-1 and Sharm 1 possess different structural features characteristic of other tombs that have been dated to the second millennium BC. However, the LCG-1 tombalso presents features that are uncommon to the funerary architecture of the period. These features include two entrances facing east, as well as benches at either end of the tomb and another in the centre. The pattern of re-use visible in the material remains and discussed elsewhere in this issue, indicates a continuing interest in the tomb. Although the heterogeneity of the funerary architecture of the second millennium (i.e. the Wadi Suq period / Late Bronze Age / Early Iron Age) makes comparison difficult, the corridor tombs are not unparalleled in length, shape, and orientation. Other examples of above-ground and underground single-chamber tombs from the Wadi Suq range in length from 10 to 30 m. The absence of a strict consistency in size suggests that these dimensions may have been determined by pragmatic considerations, including the type and quantity of raw materials available for construction and the expected number of burials which were to be accommodated in the tomb. For example, tomb LCG-2, which is 24 meters long, contained almost 300 individuals inside it based on anthropological analyses. Unfortunately, we have no further such counts for longer tombs such as Bidya. The tombs with the oldest material, such as Tomb 1 and Tomb 6 of the Shimal necropolis (Donaldson, 1984: 196) and a tomb in Ghalilah (Donaldson, 1985:95), are all very similar in length to the above-mentioned tomb. This may suggest similarities in architectural and construction practices on both sides of the Hajar Mountains during this period. In terms of basic construction and design, there are numerous examples of Wadi Suq tombs that are long and rectangular with the ends rounded, both on the surface and in underground monuments. In addition to those mentioned in Shimal and Ghalilah, we can also mention those in the Dhayah cluster (1 East, 1 West and 9) (Kästner, 1989: 39-44), those in Al-Qusais B (Cleuziou, 1981:285; Vogt, 1985:192-193), Al-Wasit (Al Shanfari & Weisgerber, 1989; Yule & Weisgerber, 2015: 9-108) Bidya (Al Tikriti, 1989:102-103), and Sharm (Riley & Petrie, 1999:181-189).

The tomb of LCG-2, on the other hand, is less well-known in terms of its architectural features relative to the region. In terms of size, the only tomb that comes close is that of Bidya 1, which reaches 30.7 m in length (Al-Tikriti, 1989:101-111, pl. 62). The entrance door carved into the outer wall on the east side finds some comparisons in the region of Ras al-Khaimah, where Tombs 1, 3 and 9 in Dhayah (Kästner, 1989:42; 51-55; 44-47) present a very similar door, i.e. one built with large square side slabs, architrave and threshold. These are less imposing entrances, but were made using the same construction technique. Two examples

are also attested in the U and W-shaped tombs in the Jebel Buhais necropolis (BHS 8 and BHS 90) (Jasim 2012:42, 279). From a constructional point of view, LCG-2 also appears to be a hybrid type as it has an outer face built above ground, which allowed for the construction of the entrance door, but a semi-subterranean chamber lined with stones and slabs two metres deep. Usually, corridor tombs are either built above ground, as in the case of Dhayah (tombs 1 and 9) (Kästner, 1989: 42, 44-47) or Shimal (tombs 1, 6, 95, 98, 101, 102) (Donaldson, 1984: 196-220; Kästner, 1989: 26-27, 27-31; Vogt & Franke-Vogt, 1987: 21-22; Kästner, 1989: 35-38) or they have an underground chamber, as is the case at Sharm (Riley & Petrie, 1999: 180-189), Qattarah (Cleuziou, 1981: 284; Vogt, 1985: 193) and Bithna (Corboud et al., 1996: 21-46) or a semi-underground chamber, as in the case of Al-Qusais (Cleuziou, 1981: 285; Potts, 1990: 240), Bidya (Al-Tikriti, 1989: 101-111), and Al Wasit (Yule & Weisgerber, 2015: 9-110). What LCG-2 has in common with other corridor tombs, however, is the custom of re-using the tomb through rearrangements and renovations, i.e. by constructing additional burial chambers and by dismantling the facing. This habit of re-use culminated in the Late Pre-Islamic phase (300 BC - 300 CE) and links LCG-2 to other tombs such as Bithna (Corboud et al., 1996: 56-59), Dibbā 76 (Barker & Ali Hassan, 2005: 320), Sharm (Petrie, 2000: 80-86) and others.

3.1 ATTEMPTS TO CLASSIFY TOMBS BETWEEN THE 2ND AND 1ST MILLENNIA BC

In recent decades, various classifications of tombs from the 2nd millennium BC have been proposed, thanks to the increased research data and, above all, the diversification of funerary architecture. After a millennium of collective burials from the Hafit and Umm-an Nar periods, spread evenly across the territory, we witness the reappearance of the coexistence of individual and collective tombs, often characterised by architectural diversity and linked to the Wadi Suq and Early Iron Age phases.

The first classification was proposed by Vogt in 1985 (1985: 183-221), who distinguishes between eight different types of tomb divided between individual and collective graves. Each group is thus subdivided according to the shape of the grave and then according to whether it is underground or above ground. This typology was the first to be produced and concerned only a small number of tombs known at the time. It is based in part on Donaldson's designations that emerged during the studies of the Ghalilah and Shimal tombs. The variation in the plans identified during the last 30 years of research makes this typology too old to be used to good effect today.

The typology drawn up by J.M. Kästner in 1989 (Kästner, 1989) partly repeats the terms used by Vogt, since it uses the designation of the Shimal and Ghalilah tombs. It is, however, limited to the tombs of the Dhayah regions, Ghalilah and Shimal (the subject being the architectural study of tombs from the Wadi Suq period in the Emirate of Ras al Khaimah).

This is followed by the typology drawn up by Carter published in his thesis in 1997 (Carter, 1997), which focuses on the evolution of ceramics by studying the assembly of the Kalba settlement site. A typology of the tombs is produced as well as a typology of the types of settlement sites (Chapter 4, Part 2). Carter identifies 17 types of tombs whose grouping is carried out according to a chronological attribution of construction and / or use of the tomb. This classification includes tombs that were built during the second part of the second millennium BC. and that were often re-used during the first half of the first millennium BC. Prolonged use implies a difficulty in dating these monuments.

Certainly, the most up-to-date attempt to classify tombs in light of the latest discoveries is that made by Sabrina Righetti in her doctoral thesis at the University of Paris 1 in 2015 (Righetti, 2015). Her research considers tombs built during the Wadi Suq and Late Bronze Age phases and which were re-used until the Early Iron Age. Since the typologies previously elaborated are no longer suitable in the light of recent data, this study establishes a new and modern typology of the tombs by combining

some common characteristics in order to reduce the categories and facilitate identification of the funerary monument. For this purpose, the classification was constructed using an easily understandable denomination, abandoning the old denominations developed by other scholars. The main distinction on which this classification is based is between individual and collective tombs. Individuals are divided into two subgroups: underground / semi-underground tombs and tombs built above ground. The collective ones are also divided into two subgroups: tombs with a single chamber, distinguished according to their shape (round, rectilinear, curvilinear, horseshoe) and tombs consisting of several chambers.

The corridor tombs belong to the category of tombs with a single rectangular chamber, which are differentiated in turn based on construction technique (C: Collective; M: Monocellular; 2: Rectangular) (Righetti, 2015: 126-127).

The CM2a type corresponds to long above-ground "Shimal type". Consisting of a two-sided exterior and sometimes facing in roughly cut stones (SH1), with a filling of earth and small stones, they have an elongated and rounded rectangular shape. The cover is made using large slabs inserted transversely into the facings of the tomb. The height of the facings before the first courses of the roofing is limited to one course, which corresponds somewhat to the foundation course. The entrances are integrated into the foundation of the facing of the tomb. The threshold slab is located at the level of the first course of the foundation, with a large block being used for each jamb (or jamb) and a slab for the lintel. Tombs belonging to this category are found in the necropolises of Shimal and Dhayah (SH1, 6, 95, 98, 101, 102, 600; DH 1 east, 1 west, 9).

The CM2b type corresponds to semi-subterranean tombs, whose burial chamber has an oval or rounded rectangular shape. It consists of a chamber buried to a depth of about 1 m. The largest known of these, Bidya 1, is 30.7 m long and 2 m wide, while the tomb at Sharm I is 17.2 m long. Tomb B at Al Qusais is not preserved in its entirety, but only a 7 m long portion has been uncovered. It appears that the burial chamber may have had a second level. The entrances are in the middle of one of the long sides and consist of a threshold slab and a slab for each jamb. The cover courses are inserted transversely into the walls and were used to support a slab cover. Benches were identified at the northern and southern ends of the Sharm tomb and in the centre (they are made of large blocks placed at about 0.50 m from the ground and supported by stone blocks). Tomb LCG-1 in Dibbā belongs exactly to this category. Other examples are the tomb of Al Wasit W1, tomb B at Al Qusais, tomb K at Hili, tomb 1 in Sharm and tomb 1 in Bidya.

The CM2c type corresponds to a long rectangular tomb whose funerary chamber seems to have been semi-subterranean. Their average exterior length is 11.8 m with an average exterior width of 2.4 m. Their average interior length is 9.7 m with an average interior width of 1.7 m. They were covered with flagstones. Their entrance is built on the middle of a long side. No preferential axis orientation is observed.. Examples of this type are tombs A and B at Diba, Qattarah tomb and tombs A and B at Al Qusais.

The CM2d type corresponds to above-ground rectangular graves. Of modest dimensions, their average exterior length is 6 m and their average exterior width is 2.8 m. The average interior length is 4.1 m, and the average interior width is 1 m. Consisting of a two-sided facing filled with gravel and sand, they have a rounded rectangular shape. No entries were identified. They were probably covered with large slabs. These are tombs 94 and 401 at Shimal.

The CM2e type corresponds to the "so-called T-shaped" tomb, of which only one example has been identified at Bithnah 14 (Corboud et al. 1996:16–17 fig. 16 & 17). The buried funerary chamber is constructed from a facing of several layers of stones, homogeneous in shape. The first course of the facing, corresponding to the foundation, is made up of larger blocks of stone. The walls slope slightly inwards as the stone courses are laid, reducing the open space and probably facilitating roofing with flat slabs.

Figure 17*: The Pit 4 to the south of LCG-1 tomb and its contents*.

Based on this classification, the LCG-2 tomb at Dibbā does not seem to have a precise location. The semi-subterranean chamber and the placement of the entrance in the middle of one long side would suggest a CM2c type, although its excessive length sets it apart from others of this type. Regrettably, the two Dibbā tombs (A and B) are not preserved in their entirety, and, from the position of the entrance, tomb A would appear to be almost as long as that of LCG-2. In addition, entrances such as Dibbā's are mainly found in the Dhayah tombs that almost all belong to the CM2a type, i.e. tombs built above ground. In the case of LCG-2, by contrast, the chamber is semi-subterranean with a few stones that serve as steps to go down through the short entrance dromos.

3.2 CONSTRUCTION FEATURES COMMON TO CORRIDOR-SHAPED TOMBS IN SOUTH-EASTERN ARABIA

A common feature of the corridor tombs found in south-eastern Arabia is the entrance. A distinction can be made between the entrance located at the head of the perimeter walls, which consists of a kind of lithic cist, and the one embedded in the façade wall. The former is found in tombs with an underground or semi-underground chamber, the latter in those built on the ground and sometimes with a semi-underground chamber. In the case of the two Daba tombs, the first model refers to the LCG-1 tomb (Fig. 5), and the second to the LCG-2 tomb (Fig. 10). In both cases the entrance is integrated into the construction, and therefore considered during the construction of the tomb. It is incorporated into the foundation wall. Entrances are constructed in quadrangular form. They have one or two slabs for the threshold, one slab for each jamb or shoulder, and a slab forming the lintel (present in the second model). These different elements were built at the same time as the first courses of the walls. They are consolidated by the addition of small stones inserted in the interstices, which reinforce the cohesion of the structure. In some cases, above the lintel the course of the cladding continues. The entrance appears to be almost always the same size, about 1 m per side. From the outside, the entrance could be closed with one or more slabs, as has been documented for LCG-2. Moreover, in the case of LCG-2 the entrance leads to a small corridor (dromos) within the thickness of the perimeter wall (about 2 m) that allows one to enter the burial chamber through a staircase made of slabs (Fig. 11). This is a very rare case, as the thickness of the wall usually does not exceed 1 m. In the later phases of the tomb's re-use, the entrance function was removed and transformed into a burial chamber. Ten individuals were placed in the space of the dromos and the entrance was obliterated from the outside with the juxtaposition of large slabs.

The stones used are rough, and in some monuments, such as SH1 (Donaldson, 1984: 196-220), SH 99 (Kästner, 1989: 32) and Asimah 6 (Vogt, 1994: 42), they are roughly shaped. The stone blocks used vary according to the geology of the area: boulders from the wadi bed, limestone blocks from the surrounding mountains (in this case, mainly slabs) and beach stones. In the case of the Dibbā tombs all these types of stones are used (Figs. 3, 9). Those chosen to build LCG-2 are rough and show no traces of processing, if the entrance slabs are excluded. The same choice is made for LCG-1, although in this case the external perimeter of the tomb is made with well-cut rectangular stones on the model of that of the Umm an-Nar tombs. In fact, this could be the result of the stones' re-use.

The construction of corridor tombs with an underground chamber first requires the excavation of a long, deep pit, as was carried out in the case of both Dibbā tombs. Then the wall against the wall of the pit is built. In the attested corridor tombs this facing may stop at the floor level, and in this case the last course of stones marks the perimeter of the pit. Alternatively, it may be built with a few courses above ground, as in the case of the Daba tombs. In fact, LCG-1 has at least one or two courses above the ground surface, while LCG-2 has at least three or four courses in its original configuration, which become at least six in the face in which the entrance is cut.

The double-wall construction technique is used in almost all types of tombs, even in corridor tombs, especially if they are built above ground. Only a few examples of tombs do not use this technique,

among which we can mention the so-called T-tomb of Bithnah 14 (Corboud et al., 1996:16-30), the corridor tomb of Sharm (Riley & Petrie, 1999:181-183) and the two tombs of Dibbā. The double-sided wall consists of two faces erected opposite each other, less than a metre apart, with the central space being filled with small stones and earth. The use of this technique improves the strength of the wall, particularly without the excavation of a foundation pit and by using large rough blocks. It is therefore likely that this technique is not found in graves with a foundation pit. In both cases, the first course differs from the subsequent courses: it is generally composed of larger stone blocks than those used for the upper courses. This first course must be stable to allow elevation.

In the case of both corridor tombs at Dibbā, the foundation stones of the chamber were laid in an orderly linear manner to allow a vertical interior face and appear unworked. This lowest course of the chamber wall is comprised of significantly larger stones than those used in the courses immediately above, which themselves provide structural support for the uppermost courses. The walls of the chamber are preserved in some places up to six courses high within LCG-1, and up to twelve courses high within LCG-2 (Figs. 3, 9). A differentiation in stone orientation is visible between the lowest and the upper courses of the tomb. Generally, from the third or fourth course upwards, the stones are inserted transversely into the wall, so that their shorter rounded ends form the interior face of the chamber. These transversely laid stones are also tilted approximately 45 degrees from the horizontal. While constructed differently to the lower courses, the stones of the uppermost ones were not arranged to continue the vertical inner face but indicate the beginnings of the formation of the roof of the chamber.

Several tombs in the region have the outer face of the wall made of vertically arranged slabs, thus giving a solid foundation as well as an aesthetic appearance to the outer facades. This feature is also visible in both tombs of Dibbā: in the case of LCG-1 these are large, square boulders that serve as an outer perimeter, while in the case of LCG-2 they are actual slabs that cover the outer face at specific points.

Other scholars have pointed out another technique common to some corridor tombs which concerns the use of upper courses of the inner face. In fact, they slope slightly inwards, producing a twofold advantage: firstly, the space to be covered with the roof is less large, and, secondly, it allows the weight of the roof to be distributed throughout the tomb.

In this regard, it should be mentioned that the covering techniques were first hypothesised by Donaldson (Donaldson, 1984:295) in connection with the exploration of the Shimal and Ghalilah tombs, before being later reinterpreted by Vogt in 1998 (Vogt, 1998:282, fig. 3a) in his general analysis of the funerary contexts of the Ras al-Khaimah area. They basically envisaged two types of probable covering for the corridor tombs.

The first covering technique, that proposed by Donaldson, has it that these tombs had a saddleback roof, with successive courses of stone slabs being cantilevered towards the centre of the chamber. Each course of these stones would have projected successively into the tomb chamber, before finally meeting in the middle to form a massive, cantilevered roof structure. The second, proposed by Vogt, supposes the tomb roof to be a deck, with only enough corbelled courses of projecting/cantilevered slabs being used to enable the roof to be covered by flat slabs. With the uppermost stones of the Dibbā tombs chamber, each successive course reveals the beginnings of cantilevering and the nearness of the upper courses to one another underscore the presumed intention to reduce the required length of the roofing slabs

In both tombs at Dibbā, the highest preserved stones are close to 80-90 cm apart, which would suggest that both hypothesised techniques are possible. The presence of two in-situ slabs in the tomb of Dhayah 2 might indeed lean towards Vogt's interpretation.

A common feature of some corridor tombs (and indeed collective tombs in general) is the presence of benches at the base of the chamber, usually arranged in the corners but sometimes also along the long sides. They are present in the Sharm tomb (Riley & Petrie, 1999:186-187) , the Shimal 600 tomb (Vogt, 1998:279, pl. 2b), the Dhayah 3 and 9

tombs (Kästner, 1989:51-55, pl. 26; 44-47, pl. 23), the Ghalilah 2 tomb (Donaldson, 1984:221) and the LCG-1 tomb in Dibbā (Frenez et al., 2020:4-6, fig. 2; Genchi, 2020:243, fig. 37.1). It is difficult to define what their function may have been, since no artefacts have been unearthed in direct association with these benches (except for two valuable objects such as a bronze spearhead and a stamp eal from LCG-1). However, despite the funerary character of the monuments in which they are built, we might be tempted to postulate an arrangement linked to practices or rituals during the opening of the tomb.

LCG-1, along with Tomb 1 in Sharm, contains the most benches, at least eight. At each end of the chamber and in some places almost halfway along its length, 'benches' have been built (Figs. 6, 7). They are made of large stones similar to those used for the upper layers of the chamber's crowning. They stand approximately 0.5 m above the ground and are supported by appropriately sized wadi boulders. At least three of the benches in LCG-1 are built into the wall face, which indicates that they were not an afterthought or a later addition but rather part of the original design of the tomb. A mixture of archaeological material, including bones, pottery, fragments of soft stone, shells and other small artefacts was found both above and below the benches. In particular, as many as 12 skulls were found inside the storage area covered by a large slab, which were probably the result of human remains being set aside for additional space (Fig. 6).

In rare cases inside the corridor, there is a kind of pavement consisting of pebbles, slabs or other stone material. For example, this configuration was found in tomb SH 102 in Shimal (Kästner, 1989:35-38; Vogt, 1987:23) and tomb DH1 in Dhayah (Kästner, 1989:42). At the base of the corridor of LCG-1 there was no chamber floor arrangement , while at the base of LCG-2 a clay-beaten surface was identified that was used as an internal walkway. In this case it is a naturally occurring sediment that has been reinforced to make it walkable, at the sides of which the deposition pits of individuals were excavated.

The annexation of structures such as additional burial chambers to the main tomb is a widespread practice in collective tombs of different shapes and types. Regarding the corridor-shaped tombs, two examples can be found at the site at Dhayah (tomb DH 2) (Kästner, 1989:42, 61-66, pls. 29-30). The reason why additional annexed chambers were built could be explained by the practical need to expand the burial space, or it could represent a more specific desire to be linked to a tomb that had a particular value for the community. As far as the two tombs of Dibbā are concerned, only LCG-2 presents some evidence in the form of a rectangular enclosure consisting of long slabs and stones which define an outer area around the main entrance, and which were later used as an ulterior burial area. This structure appears to have been added to the main tomb later, although it bears a relationship to the entrance (Fig.10). In fact, the access threshold to this room is aligned with the entrance to the corridor.

Two tombs present a similar semi-circular construction attached to the long perimeter wall. These are Tomb A at Al-Qusais which has a semicircular enclosure attached to the wall and Tomb 2 at Dhayah where the enclosure surrounds an adjoining room. Both structures, however, are not related to the entrance, which is located on the opposite side in both cases and therefore differ from the LCG-2 tomb.

Furthermore, other small burial chambers are scattered around the tomb in the form of lithic cists or small sub-circular chambers leaning against the external facade of the facing. In this case, they could be interpreted as areas of successive depositions around the now filled and sealed or disused funerary structure. This suggests that the large tomb played a significant role for the community, leading to the construction of small, annexed rooms or the need to dismantle part of the walls to obtain new funerary spaces.

On the facilities related to funerary practices, a significant data point emerges from the surrounding area of the LCG-1 tomb. This is the presence of pits surrounding the grave or near it, another aspect that is falsely referable to collective graves and thus also to corridor-shaped tombs. These pits are generally filled with dozens of objects belonging to grave

goods and which were probably moved from the grave into the pits (Figs. 17-19). This seems to be the most plausible interpretation of the contents of the pits. Around LCG-1, five pits were identified, each containing dozens of valuable objects, in total about 300 metal, ceramic, stone vessels and beads. The objects are almost identical to those found inside the grave. Funerary sites with the same custom of storing grave goods in pits adjacent to the tomb include the areas near tomb II in Sharm (Riley & Petrie, 1999:188) and tomb DH3 in Dhayah (Kästner, 1989:51-55, pl. 26).

Figure 18*: The Pit 1 to the south of LCG-1 tomb and its contents*.

4. CONCLUDING REMARKS ON THE POSSIBLE ORIGIN OF THE CORRIDOR-SHAPED TOMB

With the rise of corridor-shaped tombs in the northern region of south-eastern Arabia, specifically in the northern Arab Emirates and Musandam a marked change was undergone in the construction choice of tombs designed to accommodate a high number of individuals. The choice to construct tombs with a collective character represents a constant and widespread practice from the Early Bronze Age onwards. From the Wadi Suq phase we see the construction of large stone funerary structures, whether underground, semi-underground or above ground, and sometimes very different in shape and configuration. These collective tombs persist in use up to the central phases of the Early Iron Age.

The earliest records of corridor-shaped tombs are attested in the Ras al-Khaimah area (Shimal, Ghalilah, Dhayah), alongside others with other shapes such as circular ones (Vogt, 1998). As mentioned, these tombs can be dated to the first half of the second millennium on the basis of the Wadi Suq phase materials found in large quantities. The substantial differences found in the funerary architecture may reflect a certain variability between the communities that inhabited these areas, in relation to the segmentation of tribal groups. The question therefore arises as to whether the origin of this type of funerary structure is to be found in the same region where monumental funerary structures of a collective character had been built for centuries, or whether it is a model introduced by external groups.

Figure 19*: Details of main objects recovered in the Pit 1*.

The large, diversified assemblage of imported artefacts discovered in tomb LCG-1 confirms and further illustrates the features of such a network of long-distance cross-cultural exchange. Although the copper-based tools and weapons from LCG-1 are still undergoing analysis (Genchi, 2013: 39–44), they are typologically comparable to those found in the tombs of Al-Qusais (Taha, 1981), Qidfa 1 (Al-Tikriti, 2022) and Jebel Buhais (Jasim, 2012), which contain materials attributable to the 2nd millennium BC, and in the metal recycling workshop of Uqdat Al Bakrah, along Wadi Dank in north-western Oman (Yule & Gernez, 2018). According to Gernez (Yule & Gernez, 2018: 172), these were either inspired by or imported from Khuzestan, Luristan or the Gilan Plain in western and northern Iran (Yule & Gernez, 2018: 172). Thus, based on the available archaeological material, which is strongly influenced by the style typical of the western Iranian regions of the 2nd millennium BC, the corridor tombs can be thought to originated in this direction.

Excavations conducted in the late 1960s in the Pusht-i Kuh region by the Belgian Archaeological Mission in Iran uncovered at least two large graveyards with identical types of tombs (Fig. 20).

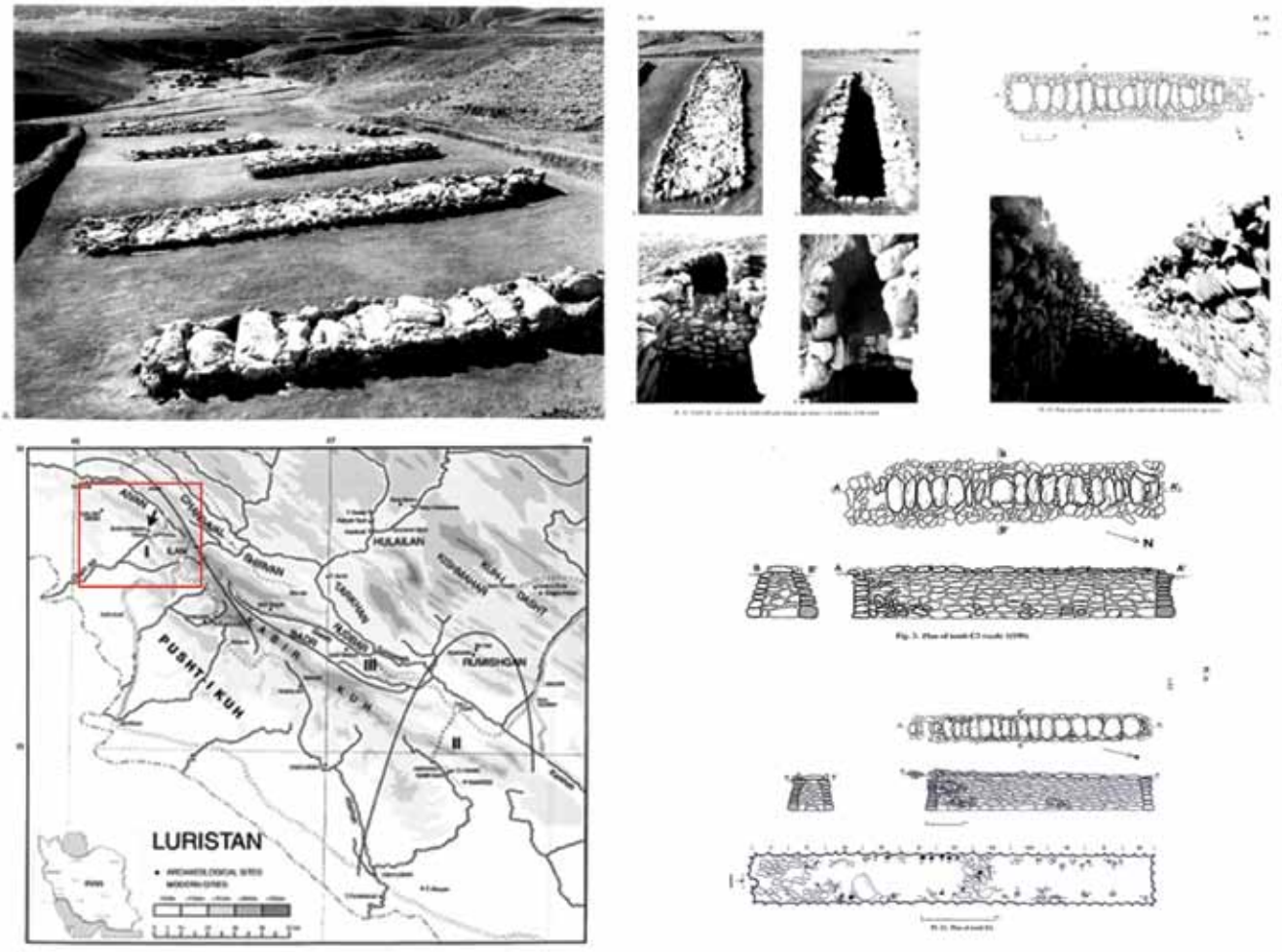

Figure 20*: The Bani Surmah and Kalleh Nisar corridor-shaped tombs in the Luristan, Iran (Haerinck & Overlaet, 2006; 2008).*

In the necropolis of Bani Surmah, 37 tombs were excavated, about ten of which were collective and monumental (Haerinck & Overlaet, 2006), while in the necropolis of Kalleh Nisar four burial areas with single and collective tombs were identified (Haerinck & Overlaet, 2008). These are collective tombs in the form of corridor tombs built in a much earlier period, i.e. the first half of the third millennium BC (Early Bronze Age I), but they were re-used until the first centuries of the second millennium BC (Middle/Late Bronze Age). The configuration of these tombs exactly follows the arrangement of those built from the beginning of the second millennium in south-eastern Arabia in terms of size and construction characteristics. The corridor tombs of Luristan are in fact 10–16 m long with a depth of between 1–2 m and have a subterranean burial chamber. The construction technique also involved digging a trench and the walls had been built with several horizontal layers of boulders (probably from the river). The stone of the lower rows were placed on their edge and the upper rows were placed flat, according to the pattern shown for the corridor tombs of south-eastern Arabia. A series of large, flat slabs sealed the burial chamber, providing an example of a possible tomb cover, in accordance with what had been assumed for the closure.

Although we do not want to force the search for the origin of the corridor-shaped tombs, one cannot deny that the grave goods in the LCG-1 tomb draw inspiration from the manufacturing style typical of Iranian Luristan, as well as the many valuable objects such as cylindrical seals from south-western Iran (Frenez et al., 2020). It is plausible that this type of funerary structure with a monumental character was introduced by the same groups that introduced some specific manufactures (metals, ornaments, perhaps even ceramics) or disseminated some valuable object around the middle of the second millennium BC.

From the 1st half of the 2nd millennium BC onwards, this type of tomb emerged in south-eastern Arabia and spread exclusively to the northern region. This development may respond to a need related to tribal groups that chose to lay their members in the same tomb, which therefore had to be spacious and monumental. On the other hand, this seems to be a widespread necessity, as there are many other types of large, monumental, and collective tombs in addition to the corridor-shaped ones. One need only look at the various tombs in the necropolis of Jebel Buhais (Jasim, 2012) or Wadi al-Qawr (Phillips, 1997), which appear in diverse forms, or U-shaped tombs such as Qidfa 1 (Al-Tikriti, 2022: 4-15) and Mereshid (Al-Tikriti, 2022:150; pl. 117) or ring-chambered tombs such as at Ghalilah (Donaldson, 1984: 296; fig. 16). One could imagine that the shapes of the tombs reflect the various regional character groups.

Even among the corridor-shaped tombs there seem to be similarities and specific characteristics which lead to their grouping. A feature that some of these tombs have in common is the presence or absence of the underground chamber. The so-called "Shimal type" tombs are built above ground with the typical short apsidal side and double facing wall; among these, the most significant are the tombs SH 1, SH 6 (Donaldson, 1984; 1985), SH 95, SH 98, SH 102 (Kästner, 1989), SH 600 (Vogt, 1998), SH 101 (Vogt, 1987) at Shimal and the tombs DH1 West, DH1 East, DH 9 at Dhayah (Kästner, 1989).

On the other hand, the tombs with an underground or semi-underground corridor have an entrance consisting of a threshold with vertical stones functioning as door jambs laid perpendicularly to the line of the long wall. The chamber is one to two meters deep: among these the most relevant are tomb LCG-1 in Dibbā-Oman (Genchi, 2020:243), tomb 1 in Sharm (Riley & Petrie, 1999:182-183), tombs A and B in Al-Qusais (Cleuziou, 1981:285; Potts, 1990:240), and the tomb of Qattarah (Cleuziou, 1981:284; Vogt, 1985:193).

Another variant is represented by a lower underground chamber sealed with slabs and often found still in situ. This type is exemplified by tomb 1 at Dibbā Fujairah, tomb 1 at Bidya (Al-Tikriti, 1989:106), tomb DH2 at Dhayah (Kästner, 1989:61-66, pls. 29-30) or a tomb recently discovered at Qarn al-Harf (Kennet et al., 2013). Also included in

this category are the so-called T-shaped tombs such as tomb 4 at Bithnah (Corboud et al., 1996) or tomb DH2 at Dhayah (Kästner, 1989:61-66, pls. 29-30), which have a perpendicular segment to the corridor.

Tomb LCG-1 in Dibbā (Frenez et al., 2020:4; Genchi, 2020:243) and tomb 1 in Sharm (Riley & Petrie, 1999:186) have two elements in common that make them almost identical: firstly, they have two entrances, both of which are situated in the north-eastern chamber wall, and they are spaced an equal distance from each end of the tomb. They also share the presence of benches at the base of the corridor. Similarly, tomb LCG-2 at Dibbā (Genchi et al., 2018; 2022) and tomb 4 at Bithnah 14 (Corboud et al., 1996) are the only ones to have an access dromos to the corridor composed of a stairway made of slabs. In the case of LCG-2, the dromos still retains the architrave and the roofing slabs.

In this regard, tombs with an underground chamber tend to be considered referable to a later development of the funerary architecture of the Wadi Suq phase. The presence of mixed Wadi Suq, Late Bronze Age and Early Iron Age material reinforces this hypothesis, which is well exemplified by the cases of tomb LCG-1 at Dibbā (Frenez et al., 2020; Genchi & Tursi, 2022), tomb 1 at Sharm (Barker, 2002) and tomb 4 at Bithnah (Corboud et al., 1996). However, while this architectural development may be a feature of the late Wadi Suq period, it is imprudent to use the architecture solely as a criterion of dating. Rather, it is more reasonable to associate the architectural features with different tribal groups that gravitated to the same region. In any case, the absence of such tombs in the central region of Oman during the entire second millennium suggests a differentiation from the groups of the northern region, which is also reflected in some "regional" characterizations of the material production.

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