A Set Of Early Iron Age Discovered at Dhat Khayl Near Al-Hamra (Ad-Dakhiliyah), Oman

Guillaume Gernez

ABSTRACT:

A set of objects, mainly made of copper/bronze, was discovered fortuitously during development work at Dhat Khayl, a village in the wilayat of al-Hamra (ad-Dakhiliyah) located at the foot of the mountains of central Oman. These vessels, daggers and bangles are all typical of the Early Iron Age and correspond to well-known types from this period. Although the context is not documented, it is likely that these objects were originally part of a funerary assemblage. The quality and homogeneity of the material is remarkable, allowing it to be accurately dated and placed in the cultural context of its production and distribution.

KEYWORDS: Early Iron Age, Copper/Bronze, Oman, Daggers, Bangles, Material culture.

مُقتنيات من العصر الحديدي المُبكر مُكتشفة في منطقة ذات خيل الواقعة في ولاية الحمراء بمحافظة الداخلية، سلطنة عُمان

غلوم غيرنيز

الملخص:

تم عن طريق الصدفة اكتشاف مجموعة من الأدوات التي تمت صناعتها بشكل رئيسي من النحاس/البرونز وذلك أثناء القيام بالأعمال التطويرية في منطقة ذات خيل وهي قرية في ولاية الحمراء (بمحافظة الداخليةً)، تقع عند سفوح الجبال في وسط عُمان. تُعد جميع هذه الأواني والخناجر والأساور المُكتشفة طرازاً من العصر الحديدي المبكر حيث إنها تتوافق مع الأنواع المعروفة جيداً من تلك الفترة. وعلى الرغم من أن السياق الذي وجدت فيه هذه الأدوات غير موثق بعد إلا أنه من المحتمل أنها كانت في الأصل جزءاً من مجموعة جنائزية. تتصف المواد بشكلٍ واضح بتجانسها وجودتها، مما يسمح بتأريخها بدقة ووضعها في السياق الثقافي لإنتاجها وتوزيعها.

الكلمات المفتاحية: العصر الحديدي المبكر، النحاس/البرونز، سلطنة عُمان، الخناجر، الأساور، الثقافة المادية.

THE SITE

Dhat Khayl is a neighbourhood of al-Hamra, located on the plain near Wadi Ghul, immediately south of Jebel Shams (**fig. 1**). Today it consists mainly of fields, gardens and farms, as well as a few houses. There are also two hills in this area. On one of them, a settlement site of Early Iron Age II date was found during the surveys carried out by Jutta Häser in 1999 and 2000 (Häser 2003:26-27).

Figure 1: *Map of main Early Iron Age sites (map: NSA / G. Gernez).*

It was while carrying out construction works that a resident of Dhat Khayl discovered, in 2021, a set of 19 objects, mostly made of copper/bronze, some whole and others broken, twisted and/or incomplete, dated unambiguously to the Early Iron Age.

We have no information on the context, but from the number and type of objects, four possibilities

can be proposed: it may be either small hoard, or part of a larger hoard, or a set of funerary offerings belonging to a collective burial, or to several closely spaced graves. The choice is not obvious as all these cases are attested in South-Eastern Arabia during thee Early Iron Age: hoards/deposits from Ibri/As Silami (Yule and Weisgerber, 2001), Al Khawd (al-Jahwari et al, 2021), Mudhmar (Gernez et al, 2017) or Sallut (exhibited at Bisya and Sallut Visitor Center), collective graves of Qidfa‘ 1 (Al Tikriti, 2022), Dibba al-Bayah (Genchi, 2020), individual graves of Bawshar (Costa et al, 1999) and Jebel al-Buhais (Jasim, 2012). As we will see in the analytical section, some evidences point to a funerary interpretation, but it is also possible that these objects were collected when a collective grave was emptied: that practice is attested at Dibba al-Bayah (Genchi 2022). In this case, the Dhat Khayl objects could come from a hoards itself made up of funerary offerings.

CATALOGUE

The only non-metallic items in the set are a softstone pot and its lid. All the others are copper/bronze. They comprise weapons (daggers), ornaments (bangles) and vessels (bowls with or without spout).

Softstone Vessels

1 – Truncated conical pot (**fig. 2, 3.1, 4.1**) DA 53084. The bottom of this truncated conic pot is slightly convex and its rim is partly broken. It is quite small (maximum diameter 8.5 cm, diameter of the mouth 5 cm, height 6 cm). Inside, one can see tool marks corresponding to the hollowing out stage (fig. 2 right, 3.1). Its decoration consists of oblique engraved straight lines converging upwards, so forming triangles filled with other oblique segments. the longest sides of each triangle are surmounted by angular zigzags („saw-teeth“ motif). These form a chevron patterncomprising 11 elements. This frieze is framed at the top and bottom by a couple of irregular lines, those at the top being deeper and having a saw-tooth line between them.

This is a very typical Early Iron Age I-II form and decoration. Related shapes and decoration are known from Jebel al-Buhais BHS 23 (Jasim, 2012:84, fig. 103) and BHS 78 (ibid, 223, fig. 268), but are very much in the minority at this site. Zigzag or saw-teeth decoration is known from many sites of this period, for example at Bawshar (Costa, et al., 1999:65, fig. 19). They have become one of the most classic types of motifs. On the other hand, more similar examples in terms of both pattern and composition are known from Sallut (Tagliamonte, 2018:290, pl. 79.27), Dibba al-Fujairah 76/1 (Pellegrino et al, 2019:fig. 20.1) and Dibba al-Bayah LCG-1, where they are most numerous (type 14) (Genchi and Tursi, 2022:fig. 15).

While the form is widespread in the Iron Age, the motifs, association and organisation of the decorations are highly variable (Tagliamonte, 2018:290).

Figure 2: *a: Softstone pot and lid (cat. 1-2). b: tool marks on the inner surface (photos: G. Gernez).*

2 – Round lid (**fig. 2, 3.2, 4.2**) DA 53085 probably associated with pot cat. 1, because it fits perfectly on this one (diameter 4.8 cm). The colour is neatly different, the lid being made of a much darker rock, but this is not a rare case (witnessed, e.g., at Adam North (Gernez, and Giraud, 2019:73, fig. 6.31)). Its rim is decorated with a row of 11 dotted circles along the edge, not very regular and partly scraped off by fine dashes, the tip is decorated with three circles also scraped off by dashes, and the middle of the knob is enlarged. Traces of a pointed tool, punch or awl, are visible underneath, and on the sides of the rim (**fig. 3.2**).

While the widening of the knob is well known during the Early Iron Age at Jebel al-Buhais (Jasim, 2012:101, figs 125.5, 126) and Bawshar (Costa et al, 1999:68, cat. 127 B), the dotted circle decoration is much more typical of the Bronze Age, although one is known from Bawshar B 50 (ibid, 65 cat 101). Is it an ancient object that was re-cut to fit the pot? This seems possible, judging from the tool marks on the rim and the circles that appear to have been filed down. According its biconical profile typical of the Early Iron Age, the knob could have also been reshaped, even is such a shape is possibly attested earlier at Tell Abraq (Degli Esposti, et al. 2022). To sum up, even itmight be an occasional persistence of this decorative style, the hypothesis of a reshaped heirloom is stronger.

Figure 3: *Softstone pot and lid (cat. 1-2) (photos: G. Gernez).*

Copper/bronze vessel

3 – Copper spouted bowl DA 53094 (**fig. 4.3, 6.3**). This bowl with a short spout and flat bottom is slightly deformed and almost complete. Its shape is the simplest possible, with a slightly thickened straight rim (3 mm, while the rest of the bowl is only 0.5 mm thick). Its wide (4.1 cm) and short (barely 2 cm) spout is formed in continuity with the rim. It corresponds to the MeOB1 class defined by Yule and Weisgerber (2015a:36-37).

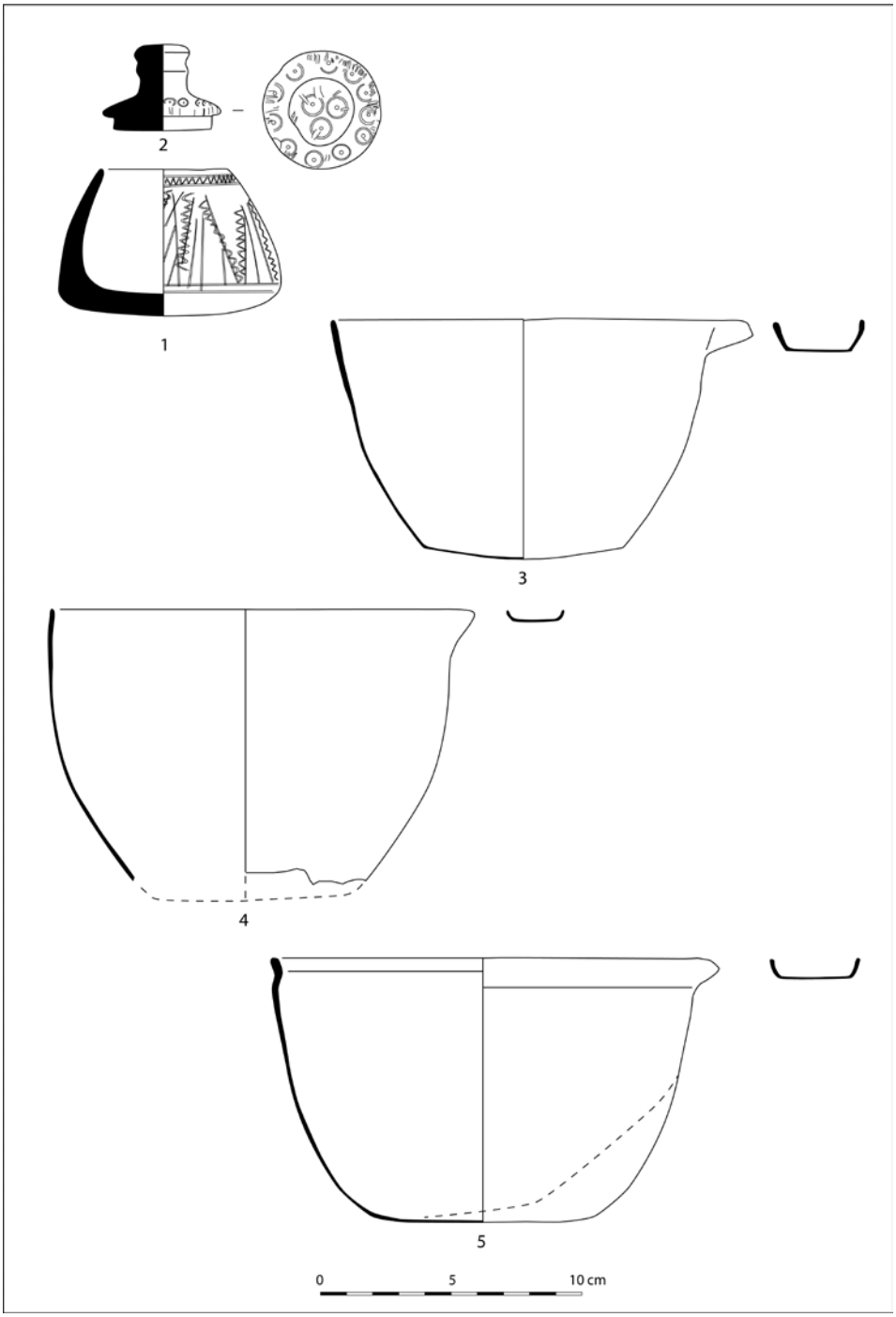

Figure 4: *Softstone (cat. 1-2) and copper/bronze vessels (cat. 3-5). (drawings: G. Gernez).*

The diameter of the opening is 15.5 cm, the diameter of the bottom is about 8 cm and its height is 9 cm, which is well within the corpus norm. Its weight is also average: 273.9g (including corrosion). Due to the corrosion, no trace of assembly was observed, but it is in any case probable that this ware was made by hammering a metal plate that was initially thick as the rim remained, and then refined as it was deformed.

Pottery spouted bowls have existed since the Bronze Age, and this tradition continues into the Iron Age. In the case of metal spouted bowls, which are relatively rare except in some tombs like Qidfa‘ 1 upper burial tier (Al Tikriti 2022:44) and in the hoard at Ibri/As Silami, their function and value may have been of a prestigious or ritual nature.

The closest parallels come from Ibri/As Silami (Yule and Weisgerber, 2001:51-52, pl. 16-17) and Qidfa‘ 1 (Al Tikriti 2022:126, pl. 74.B3). Others are attested at Al Khawd hoard (al-Jahwari et al, 2021:320-307, pl. 8-13) but their condition makes it difficult to determine their form.

4 – Copper spouted bowl DA 53096 (**fig. 4.4, 6.4**). The second bowl is almost identical to the previous one, both in terms of its dimensions (d opening = 14.8 cm, h = 10.6 cm, weight = 289.3 g) and its morphology. The flat bottom is highly damaged.

5 – Copper spouted bowl DA 53095 (**fig. 4.5, 6.5**). This short spout bowl is similar to the previous ones in its dimensions (d opening = 16.2 cm, h = 10.3 cm, weight = 262.3 g). Its spout, with rounded edges, is wider (almost 5 cm at the tip), and the main difference is the sinuous profile at the rim, forming a marked indentation visible on the inside and outside.

This profile falls between types MeGB3 and MeGB5 in Paul Yule’s typology (al-Jahwari et al, 2021:64-66), and examples are known from Ibri/As Silami (Yule and Weisgerber, 2001:60, pl. 34) and Qidfa‘ 1 (Al Tikriti, 2022:127, pl. 76.B7).

6 – Copper spouted bowl DA 53097 (**fig. 5.6, 6.6**). Smaller than the others (d opening = 12.7 cm, h = 7, cm, weight = 169.1 g), this almost truncated cone-shaped bowl has a simple rim and is also very damaged at the bottom, which is explained by its thinness. For a very close parallel, see Qidfa‘ 1 (Al Tikriti, 2022:126, pl. 75.B4).

7 – Copper spouted close bowl (**fig. 5.7, 6.7**). This is a different type: it is smaller than the previous ones (diameter approx. 10 cm and h = 8.5 cm), has a much narrower and longer spout (approx. 8 cm x 2.5 cm), a slightly closed sinuous rim, and two marked grooves near the bottom. Unfortunately, the object is incomplete, broken in two and its spout is twisted. This kind of long spouts and closed shapes corresponds to a variant of MeGB1 class (Yule and Weisgerber 2015a:36-37).

8 – Copper spouted bowl (**fig. 5.8, 6.8**). Only the long, sturdy spout (11 cm x 2.3 cm) remains, as well as a part or the rim. It is slightly sinuous, and its opening must have had a diameter of about 15 cm.

9 – Copper bowl (**fig. 5.9**). This is a fragment of a very simple straight edge. As it has been flattened, it is difficult to estimate its diameter, but it should be around 16 cm.

10 – Copper pot (**fig. 5.10, 6.10**). Only the perimeter of the rim, thickened and slightly sinuous, is known. It is slightly closed, without a spout. The diameter of the opening is 13 cm. It could be the rim of a small cauldron, such as the one found at Sallut (Sasso, 2018:326, pl. 85.21), but without handles. Other closed shapes with sinuous rim are known at Qidfa‘ 1 (Al Tikriti 2022:127, pl. 76.B7 and pl. 77.B13)

11 – Copper pot (**fig. 5.11, 6.11**). A little more complete than the previous one, this large pot (or closed bowl, or cauldron) has no spout. Its rim is slightly sinuous androunded.

Daggers

12 – Copper dagger DA 53091 (**fig. 7.12, 9.12**). This dagger has an elongated triangular blade with a hexagonal cross-section, the base of which is formed by angular shoulders ending in a thick rectangular tang. Its dimensions are: L = 21.2 cm; l = 2.6 cm, th = 0.4 cm, w = 77.5 g. No trace of the shaft is preserved or visible in the corrosion, but it is likely that the tang was inserted into a wooden (or perhaps bone or metal?) handle, and held in place by glue and/or fibres ties holding the handle tight.

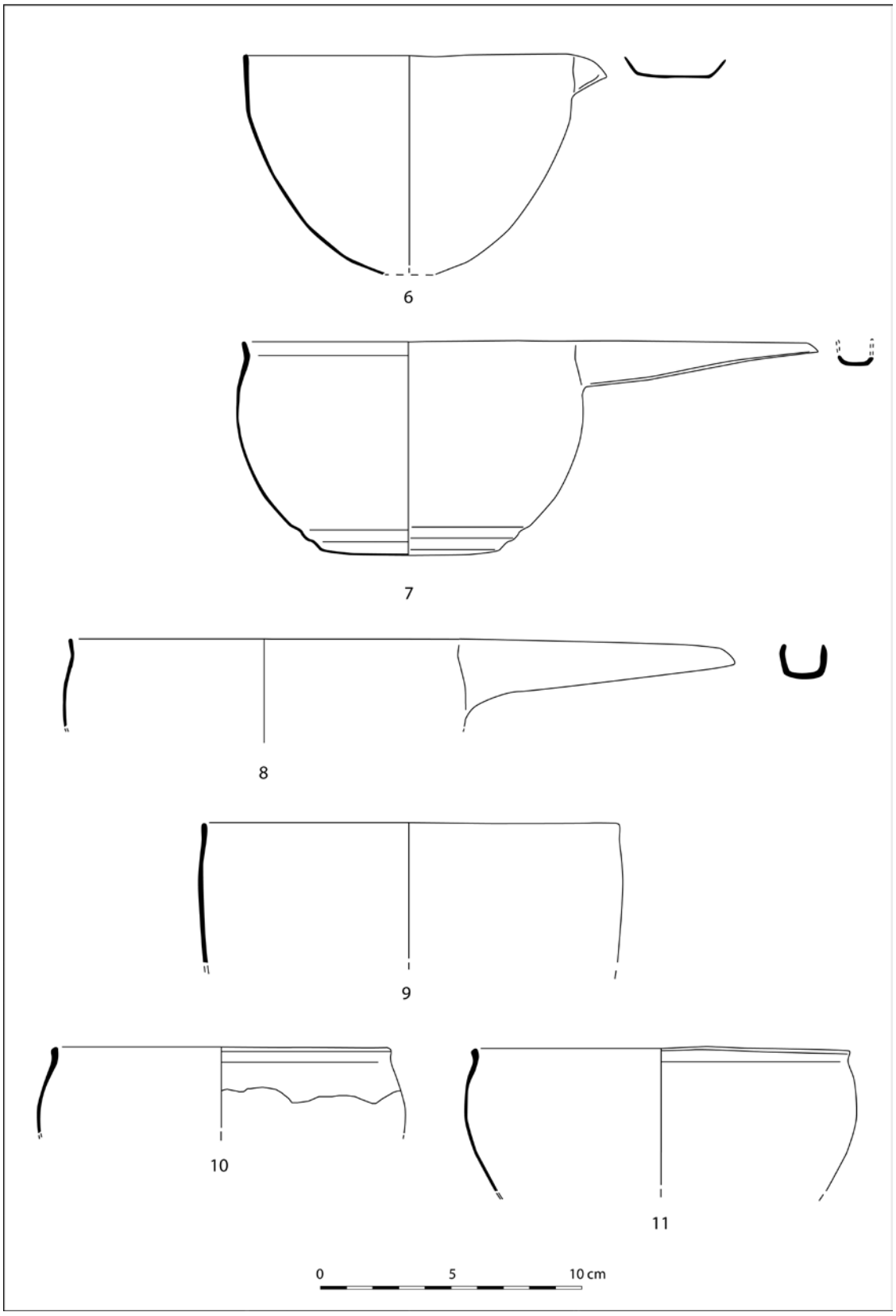

Figure 5: *Copper/bronze vessels (cat. 6-11) (drawings: G. Gernez).*

Figure 6: *Copper/bronze vessels (cat. 3-11) (photos: G. Gernez).*

This simple type (Yule's class D5 - al-Jahwari et al, 2021:52) is known from the Wadi Suq period, but is most common in the LBA and early Iron Age. Similar examples are attested in Iran (ibid, 53) as well as at Saruq al Hadid (Weeks et al, 2017:49, fig. 19), 'Uqdat Al Bakrah (Yule, 2018:cat. 130-150) and Mudhmar building 1 room 3005 (unpublished). At Sallut, two are known, one from an early layer belonging to EIA I (Sasso, 2018:pl. 85.75), one from a wall of a later phase, EIA III (ibid, pl. 85.77).

13 – Copper dagger (**fig. 7.13, 9.13**) DA 53093. This long dagger (L = 32,3 cm, l knob = 5,8 cm, l blade = 2,7 cm, th = 0,6 cm, w = 254,9 g) has an elongated triangular blade (elliptic in section) and a rim-flanged grip slightly indented with crescentic knob. Despite the corrosion, it seems possible to identify a central rivet, but the original wooden parts of the grip could also have been held by the folding of the rims that are very thin, especially at the junction between the handle and the blade, and the addition of an adhesive substance. The hilt is straight.

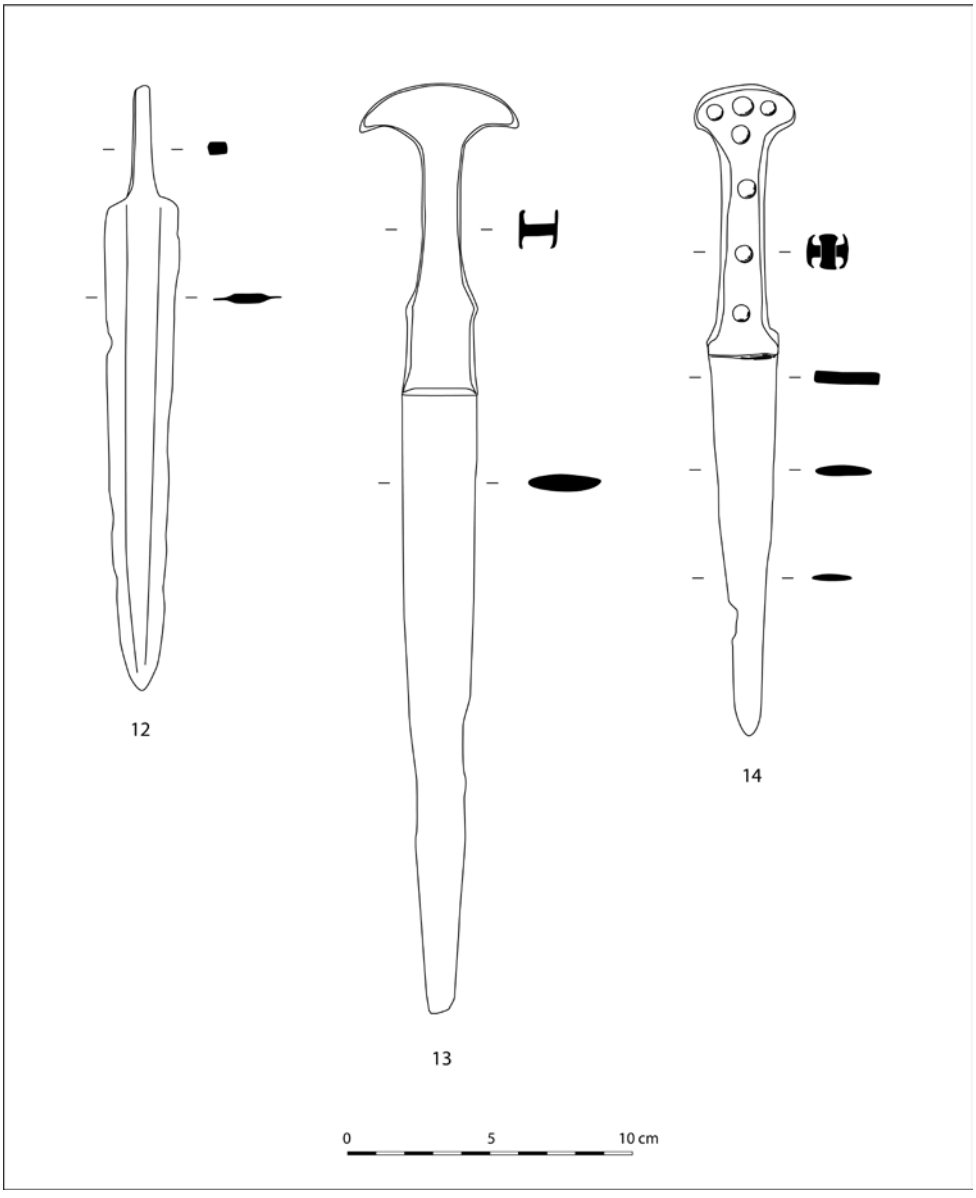

Figure 7: *Copper/bronze daggers (cat. 12-14) (drawings: G. Gernez).*

This is a well-known form during the Early Iron Age. From the morphology, this blade corresponds to Yule's D 8 class (al-Jahwari et al, 2021:54), i.e. almost the earliest of the Early Iron Age, close to the LBA archetypes, especially by the straight guard and the folding of the edge. The closest parallels are known in the Ibrī/As Silami hoard (Yule and Weisgerber, 2001:43, pl. 2.14-19), at 'Uqdat Al Bakrah (Yule, 2018:pl. 7, cat. no. 171), al-Qusais (Weisgerber 1988:288, pl. 162) and Qidfa' 1 (Al Tikriti, 2022:135, pl. 92-93). Others parallels are known from western Iran (al-Jahwari et al, 2021:54-55), for instance at Kutal-i Gulgul tomb A9, dated around 1200 BCE (Overlaet 2005:22, pl. 3.8) illustrating the connection between Western Iran and South-Eastern Arabia at this time. The LCG-1 tomb at Dibba al-Bayah yielded many daggers of this type. This weapon therefore seems rather typical of EIA I.

14 – Copper Dagger DA 53092 (**fig. 7.14, 9.14**). This dagger has a similar shape than the previous one, but smaller (L = 22,9 cm, l knob = 3,5 cm, l blade = 2,3 cm, th = 0,4 cm, w = 122,7 g). It has a thin triangular blade elliptic in section, a straight hilt and a rim-flanged straight grip with crescentic knob. Thin rims are folded. 7 big rivets maintained the original wooden parts of the grip, but according to their width (6 to 9 mm), they could also have had a decorative purpose. Three are located in the crescentic knob, and 4 along the grip at regular intervals. The presence of rivets suggests that the dagger was deposited with its handle. This could be another argument for a funerary context, since weapons are usually deposited whole in graves, whereas in some hoards only the metal part is selected: for instance, the sword from Al Khawd hoard has no rivet (al-Jahwari et al, 2021:4).

This type (class D 11of Yule (al-Jahwari et al, 2021:52, 56)), this type, which seems originated in the Levant in the middle of the 2nd millennium BCE (Maxwell-Hyslop 1946:35), is quite rare and restricted to South-Eastern Arabia during the EIA, but has very close parallels at Dibba al-Bayah LCG-1 (Genchi, 2020:468) and Qidfa' 1 (Al Tikriti, 2022:132-134, pl. 87-91).

Bangles

15 – Bangle DA 53088 (**fig. 8.15, 9.15**). This large and heavy bangle (dimensions: diameter = 8 cm; width = 3,1 cm; thickness = 1,5 cm; weight = 516,7 g) is formed by a plano-convex section bar folded to form an adjustable ring on the wearer's wrist. The two ends are separated by one centimetre, and each is decorated with four deep and wide grooves.

This type of bangle is well known in the Iron Age, both in terms of size and decorative grooves. Some of them are sometimes considered as anklets according to their diameter, but this should be discussed. The best examples (Yule's class B5 (al-Jahwari et al, 2021:48)) come from the LCG-1 tomb at Dibba al-Bayah (Genchi, 2020:468), as well as from the Qidfa' 1 tomb (Al Tikriti, 2022:141-142). Outside of funerary contexts, they are also attested among objects from the ʿIbrī/As Silami deposit (Yule and Weisgerber, 2001:46-47, pl. 6.57-7.69) and the workshop at ʿUqdat al-Bakra (Yule, 2018:pl. 5, cat. no. 118). A bangle with wide, deep grooves decorated with oblique dashes was found at al-Akhdar (Yule and Weisgerber, 2015b:159, pl. 13.7). The closest specimen, particularly because of its plano-convex cross-section, was found at Rumeilah, house F period 2 (Boucharlat and Lombard, 1985:60, pl. 63) in association with a dagger. Although Paul Yule originally dates it to EIA III (al-Jahwari et al, 2021:48), the chronology derived from absolute dating at Rumeilah (Boucharlat and Lombard, 1991) leaves open the possibility of an older dating, to EIA II (period Rumeilah 2A or beginning of 2B).

It is possible that this type, like other metal productions, lasted for several centuries.

16 – Copper bangle DA 53087 (fig. 8.16, 9.16). The bangle is oval in cross-section and fairly massive (d=7.9 cm; w = 2.3 cm; th = 1.7 cm; weight = 462.2 g), with two deep notches on either side of the opening. Due to corrosion, it is not possible to determine if there are any other notches. The two ends are 1.8 cm apart.

In addition to the bangles mentioned above, parallels that are similar in their oval cross-section and the presence of only two grooves are attested at

Jebel al-Buhais BHS 23 (Jasim, 2012:83, fig. 102), BHS 27 (ibid, 96, fig. 117), BHS 30 (ibid, 102, fig. 127), BHS 61 (ibid, 166, fig. 197) and BHS 77 (ibid, 218, fig. 262).

17 – Copper bangle DA 53090 (**fig. 8.17, 9.17**). This bangle is thiner and lighter than the previous one (d=7,7 cm ; w = 1,8 cm ; th = 1,8 cm ; weight =253,6 g), also plano-convex even if the part is less flat, with 4 shallow but covering grooves, grouped two by two and separated by an annular zone. The two ends touch..

18 – Copper bangle DA 53086 (**fig. 8. 18, 9.18**). This rather large but thinner bangle (d=8.8 cm; w = 1.7 cm; th = 1.4 cm; weight =355.2 g) is characterised by its asymmetrical cross-section, slightly convex towards the inside and better rounded towards the outside. Four deep notches, grouped two by two, are located near the tips. These are only one to two millimetres apart.

19 – Copper bangle DA 53089 (**fig. 8.19, 9.19**). This bangle is exactly the same as the previous DA 53086 (d=8.7 cm; l = 1.6 cm; th = 1.4 cm; weight =346.1 g) except for the difference in corrosion.

It seems evident that both were associated as observed in the tombs of Jebel al-Buhais (Jasim, 2012:296). They were probably made at the same time, and were intended for the same individual, in life and/or in death. The presence of this pair among the corpus is a clear indication of a funerary context, as has been proposed for other corpora from chance finds (Gernez, 2012:115).

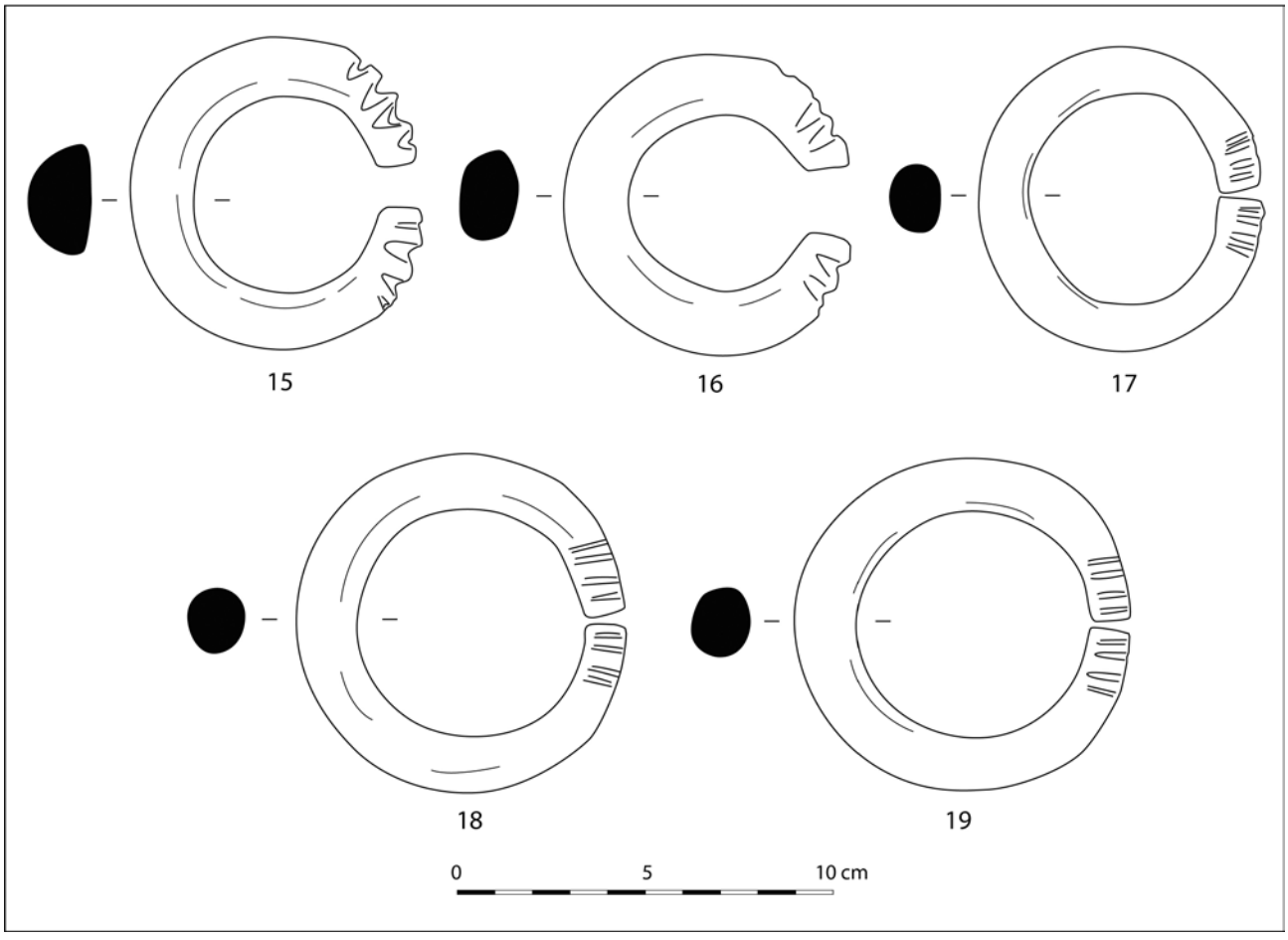

Figure 8: *Copper/bronze bangles (cat. 15-19) (drawings: G. Gernez).*

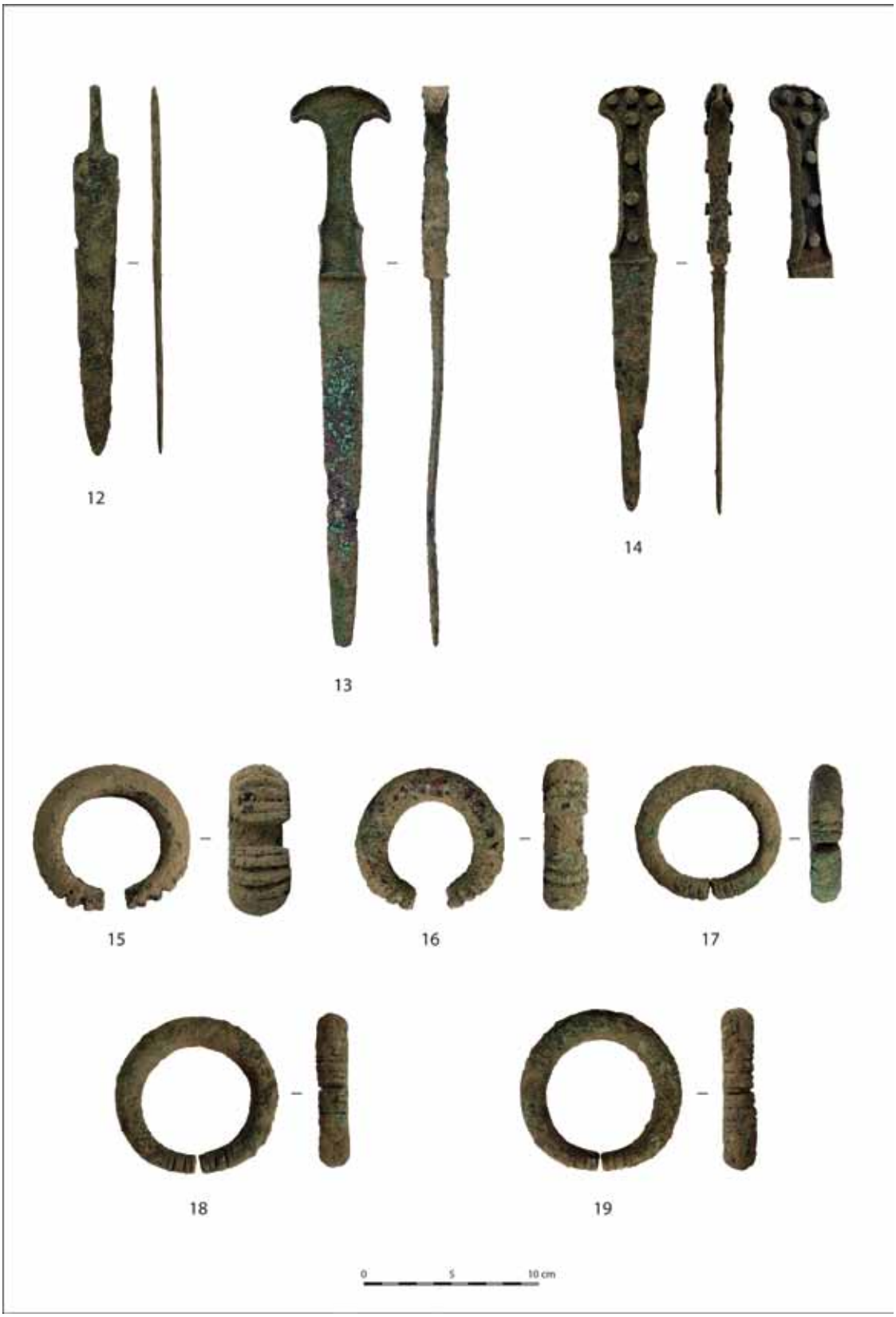

Figure 9: *Copper/bronze daggers and bangles (cat. 12-19) (photos: G. Gernez).*

Cat.	DA	Type	Material	L / D max (cm)	Width (cm)	Weight (g)
1	DA 53084	Pot	Softstone	8,5		
2	DA 53085	Lid of pot 1	Softstone	4,8		
3	DA 53094	Spouted bowl	Copper/bronze	15,5		273,9
4	DA 53096	Spouted bowl	Copper/bronze	15,1		289,3
5	DA 53095	Spouted bowl	Copper/bronze	16,2		262,3
6	DA 53097	Spouted bowl	Copper/bronze	12,7		169,1
7	-	Spouted pot	Copper/bronze	~ 10		
8	-	Spouted bowl	Copper/bronze	~ 15		
9	-	Bowl	Copper/bronze	~ 16		
10	-	Pot/bowl	Copper/bronze	14,8		
11	-	Pot/Bowl	Copper/bronze	14,5		
12	DA 53091	Dagger	Copper/bronze	21,2	2,6	77,5
13	DA 53093	Dagger	Copper/bronze	32,3	5,8	254,9
14	DA 53092	Dagger	Copper/bronze	22,9	3,5	122,7
15	DA 53088	Bangle	Copper/bronze	8,8	3,1	516,7
16	DA 53090	Bangle	Copper/bronze	8,6	1,8	253,6
17	DA 53087	Bangle	Copper/bronze	8,3	2,3	462,2
18	DA 53086	Bangle	Copper/bronze	9,2	1,7	355,2
19	DA 53089	Bangle	Copper/bronze	9,1	1,6	346,1

Figure 10: *Inventory of artefacts discovered at Dhat Khayl*

ANALYSIS OF THE CORPUS

Technical characteristics

The items in the corpus have not been subject to compositional analysis. Nevertheless, the data already available for this type of Iron Age artefact is considerable, well known, and long discussed. Among these, analyses of the Ibri/As Silami corpus (Yule and Weisgerber, 2001), 'Uqdat Al Bakrah (Goy, 2018, Giardino and Paternoster, 2018), Al Khawd (al-Jahwari et al. 2021:133-172), Sallut (Degli Esposti et al, 2016), Masafi (Goy et al, 2013) and Mudhmar (Goy, 2019:537) provide information on the composition and alloys, including their variety. While copper is always the main constituent, and is often alloyed with small proportions of other metals and metalloids (tin, arsenic, lead, nickel, silver, zinc), true tin bronze is known (and can reach classical ratios around 8-9% tin) but remains a minority, except for some types of objects, such as bracelets (Prange and Hauptmann, 2001). However, objects of the same type may or may not contain tin.

From a manufacturing perspective, while metal thin vessels were formed by hot hammering, thicker and more complex objects were moulded, including daggers, as evidenced by theunfinished items discovered at Mudhmar (Gernez, Jean, and Benoist, 2017:109). Nevertheless, no stone or clay moulds have so far been found in the region, despite excavations at production sites. Concerning the bangles, the complexity of the volumes may suggest the lost wax technique (Goy, 2019:407).

Softstone vessels are usually made of chlorite or steatite, both present in the area (Harrower et al, 2016:199); calcite, limestone, sandstone and mudstone are sometimes used (Genchi, and Tursi, 2022:111). Blocks were pre-formed by removal

of material, then hollowed out (pressure or chisel removals, traces of which remain within) and more carefully formed (sometimes simultaneously (ibid, 204, fig. 8)) before finishing by polishing (abrading) the outer surface, and decorating with engraving using fine, pointed tools.

Softstone vessels

The presence of a chlorite pot and its probable lid is very common in funerary contexts, for example at Jebel al-Buhais (Jasim, 2012) and Dibba al-Bayah (Genchi, 2020:467), and on the contrary rare from the deposits and hoards - none was found among the deposits of Building 1 and the slope (area 3) of Mudhmar (Gernez et al, 2017, Jean, Pellegrino, and Gernez,2018), nor in the Al Khawd deposit (al-Jahwari et al, 2021). None is known from 'Uqdat Al Bakrah either (Yule and Gernez, 2018). Among the exceptions are the As Silami hoard (Yule, and Weisgerber, 2001, pl. 45-47), and the ritual pits outside tomb LCG-1 in Dibba al-Bayah (Genchi, 2020).

Since the 3rd millennium BCE, softstone vessels has been part of the funerary furniture, and despite the typological evolution, the continuity in practices is very clear, even if the content of the pots is not known.

Metal vessels

Metal vessels are known from the early 2nd millennium BCE to the Iron Age in the region, and also attests to a continuity of production and use, although they are rarer than chlorite pots. These items are valuable in their own right because of the value of copper. Given their larger volume than the sofstone pots, we can assume that their contents were less valuable. Based on the presence of spouts, these vessels were probably used for occasions related to meals or ceremonies, or even libations. Their use is probably not only related to funerary practices, but could be part of them.

It is possible that the variety in shape and size of the spouts is related to the use of the bowls or simply reflects the choice or skill of the craftsman who made them. The other pots without spouts may have been used as containers or even as cooking pots.

The presence of metal vessels is reminiscent of the Ibri/As Silami hoard, which contained several hundred pieces, some of them very similar to the present corpus (Yule and Weisgerber, 2001; Yule, 2015c), as well as that of al Khawd (al-Jahwari et al, 2021:302-307). It is observed to be rarer in necropolises: at Jebel al-Buhais, only tomb BHS 78 yielded one (Jasim, 2012:226); it is also known at Bawshar (B42, cat 148). They are more numerous at Qidfa' 1 (Al Tikriti 2022) and Dibba al-Bahyah LCG-2 (Genchi, and Larosa, 2022:119-121) However, in hoards, they are usually crushed and folded, and better preserved when they belong to the funerary material. In the case of the Dhat Khayl objects, some are broken because of their fragility, but they are not folded nor crushed. This could constitute an argument in favour of the funerary context.

Daggers

Daggers are part of the typical Iron Age weapon assemblage, along with axes and arrows (see Gernez, Jean, and Benoist, 2017). They are attested in tombs from the beginning of the 3rd millennium, and their morphological evolution seems to show an influence from Mesopotamia and more probably from Iran from the LBA and during the EIA. This is particularly noticeable in the technique and morphology of the grip, which is not attested locally until around 1400 BCE.

From then on, these grip daggers became the norm and are known both in deposits and graves. In contrast to arrows and spears, which are rather the weapons of soldiers destined for war, and axes, which have several statuses (personal weapons, weapons of war, marks of prestige), daggers are more widespread within society, and are the personal and familiar weapon, accompanying its bearer in life as well as in death, and symbolising on the one hand his social status and his individuality on the other hand (Testart, 2004:304). Their quality and the presence of supernumerary rivets, as in the

case of cat. 14 DA 53092, seem to attest to a desire for aesthetic and/or symbolic quality.

Despite their differences, the three daggers correspond to three aspects of the same weapon type: the tanged blade was inserted in a handle made of perishable material, the shape of which can be assumed to be related to the usual daggers; the grip dagger is the 'classic' form, which does not require a rivet (possibly only one) to hold the handle; and the seven-rivet dagger is a primarily aesthetic elaboration of the standard model.

Bangles

These heavy bangles have sometimes been considered to be exclusively funerary because of their weight (Goy, 2019:475), but the presence of such objects in domestic contexts (house at Rumeilah) on the one hand, and the practice of wearing heavy jewellery known from the ethnographic literature on the other, indicate that they could have been worn by people during their life.

Bangles are part of a tradition of adornment dating back to the Bronze Age, but the thickness, morphology and decoration of the specimens discussed here are typical of Iron Age fashion. Their value was threefold: real (weight of the metal), aesthetic (colour and brilliance of the bronze) and symbolic (quality and style of the motifs). The quality and quantity of bangles attested in the hoard of As Silami (106), the tomb of Dibba al-Bayah LCG-1 (49), Qidfa' 1 (32) as well as at Saruq al-Hadid testify well to the production and diffusion of these ornaments in the society from central Oman to the Oman peninsula. From the known evidence at Jebel al-Buhais (Jasim, 2012) and the pair in cat. 18-19, it seems likely that individuals wore an identical bangle on each arm.

The ensemble discovered at Dhat Khayl also raises questions about the absence of certain categories of objects that were extremely common in the Iron Age: no arrows, no beads, no shell buttons, no pottery items were reported. Perhaps they were not seen during the work that led to the discovery of the objects.

HYPOTHESIS OF ORIGINAL CONTEXT AND DATING

Original context

As discussed above, the arguments in favour of a funerary context rather than a hoard are: the presence of a sofstone pot and its lid, metal vessels with little or no distortion or bending, intact (undamaged and unbent) daggers - at least one of which was deposited with its handle (which is inconsistent with the possible selection of copper alone) and a pair of bangles.

The main arguments for a hoard are the number of objects, too large to be found in an individual grave (which is the standard funerary pattern of the region, in contrast to the north where the tradition of elongated collective burials of the Middle Bronze Age continues into the Iron Age), the chronological and stylistic homogeneity of the corpus, and the selection of almost exclusively metallic objects, favouring certain objects (metal vessels, daggers, bangles) and excluding others like arrowheads.

If this is indeed a funerary context, the number of objects seems to indicate a collective burial, which is not attested in Central Oman from 2000 BCE onwards, with the exception of Bisya (where semi-buried tombs from the 3rd millennium have been reused (Gernez, Goy, and Germain, in prep.). It is possible that a collective burial was present at Dhat Khayl, but it seems more likely that the objects come from several closely spaced tombs destroyed during the construction works.

Another possibility cannot be excluded: the set - if it is complete - could come from a cache of objects resulting from the ancient looting of several tombs, which the looter buried and never came back to look for. This set of objects would then have remained buried for hundreds of years, or even three thousand years if the looting took place very soon after the burials, until their recent discovery. This hypothesis is attractive but difficult to prove.

Dating

The corpus, as we have pointed out, is particularly homogeneous. According to the types of objects and

their association, the closest comparable contexts are Dibba al-Bayah LCG-1 and Qidfa‘ 1, first constructed during the Middle/Late Bronze Age and re-used mainly in EIA I and the first part of EIA II. Similarities are also attested with the As Silami hoard and the Jebel al-Buhais tombs (EIA I-II). None of the Dhat Khayl artefacts refer to the LBA, so it seems possible to place this complex in the Early Iron Age. This seems to be confirmed by the fact that the dagger types are earlier than those of Adam, dated to the EIA II (900-600 BCE) (Gernez, Jean, and Benoist, 2017).

We therefore propose an EIA I dating (1250-900 BCE), which can be confirmed, refined or proved wrong by the ongoing studies and publications of major Iron Age sites (in particular Qidfa‘ 1, Saruq al-Hadid, Masafi, Sallut, Mudhmar and Dibba al-Bayah LCG-1 and LCG-2), since the absolute chronology will be refined thanks to the multiplication of radiocarbon dates, and when a considerable quantity of artefacts will allow for a reliable representativeness.

CONCLUSION: DHAT KHAYL IN THE EARLY IRON AGE CULTURAL HORIZON

The set discovered at Dhat Khayl is part of the production, circulation and consumption of copper alloys in the Early Iron Age. Whether it is a hoard or a funerary deposit, its particularity is that it belongs typologically to assemblages known mainly in the Oman peninsula (Northern Oman and UAE) area rather than in the heart of the Hajar Mountains, notably among the material found in collective burials such as Qidfa‘ 1 and Dibba al-Bayah LCG-1.

The scarcity or even absence of these products in Central Oman reflects more the reality of the occupation of the territory than the existence of distinct cultural facies. Indeed, with the exception of Sallut, whose ancient levels date back to the EIA I (c. 1250 BCE), necropolises and settlement sites of this period are so rare that some authors have sometimes suggested that only the region of the Oman Peninsula was perennially occupied, noting a quasi-abandonment of the whole area south of the Hajar Mountains (see Döpper, 2021:1-3) since the late Middle Bronze Age (Wadi Suq period) around 1600 BC due to aridification. The revival of the region and the occupation of the oases would then have been possible only from the EIA II onwards with the development of underground irrigation by falaj.

However, there is evidence to qualify this view of a long abandonment of the whole area south of the Hajar Mountains: although rare, LBA graves (1600-1250 BCE) are attested at Nizwa Warrior Burial (al-Shanfari and Weisgerber, 1989) and Bisya Tomb 1 (Orchard and Orchard, 1990:pl. 13) and BG-3 (Gernez, Goy, and Germain, in prep.). LBA-dated elements, related to reuse, are also found at Samad, Bat and Lizq (Döpper, 2021:4, 7). Concerning EIA I, recent dates obtained at Sallut testify to an effective settlement from the beginning of the Iron Age, or even before it, with radiocarbon ranges often located around 1400 and 1200 BC cal (Condoluci, Degli Esposti, and Phillips 2018:96) for the earliest settlement levels and around 1200-1000 BC cal for the subsequent occupation levels (ibid, 98).

The sustained efforts in surveying and excavation within this area, coupled with collaboration with the Ministry of Heritage and Tourism for rescue excavations and chance discoveries, are poised to significantly augment our understanding of the Early Iron Age in Oman.

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CONTRIBUTORS ADDRESS:

Guillaume Gernez

PhD - Researcher - Humanities Research Center - Sultan Qaboos University - Email: guillaume.gernez@univ-paris1.fr