

E. Small finds from the Dinka Settlement Complex, 2015-2019

This section includes six chapters dealing with various groups of small finds excavated at the Dinka Settlement Complex. §E1 presents the new small finds retrieved during the 2019 excavations on Qalat-i Dinka (QID1), supplemented by two detailed studies on the fibulae (§E2) and the cylinder seals (§E3) found there. All arrowheads found between 2015-2019 (originating in excavations at Gird-i Bazar and QID1) are analysed in §E4, followed by an archaeometric analysis of the “Bodkin type” arrowhead found in 2015 at Gird-i Bazar (§E5). Finally, all artefacts made of faunal remains that have been found at the Dinka Settlement Complex between 2015-2019 are collected and discussed in §E6.

E1. The 2019 small finds from Qalat-i Dinka (QID1)

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E1.1 Introduction

This chapter deals with the small finds collected from operation QID1 during the 2019 campaign. Overall, the 2019 small finds from QID1 amount to about 500 items, which join the approximately 200 items collected during the 2016 and 2018 campaigns. As was the case in previous campaigns, modern looting affected the operation QID1 severely, altering the entire stratigraphy of the operation and making the association between finds and specific deposits or structures very problematic. As a consequence, not all the small finds from QID1 can be presented in a stratigraphic sequence.

For this reason, the small finds have been subdivided into three groups based on their origin:

Group 1: Finds associated with looted graves.

Small finds from this group have been assigned to specific graves on the basis of the following criteria:

- They were located inside the grave architecture (Graves 102 and 105);
- They were found in direct contact with the skeleton (Graves 103 and 110);

- They were found in the fill immediately above the skeleton (Grave 106).

The cremation burial Grave 101 represents a lucky case because several items were found in a section of the grave pit that had been left undisturbed by the looters. The finds from Group 1 are discussed in §E1.2 below.

Group 2: Ancient finds found in looting pits.

These finds constitute the largest group. They were collected from the fills of the looting pits excavated throughout the operation. These items are discussed in §E1.3, organised by category and material. It was not possible to establish a stratigraphic sequence for them. In some cases, finds found in those fills that were located very close to graves are singled out as they may have originated from the graves themselves. Items that were more likely to have originated in the structures of Building P, and not from graves, are discussed in the final section §E1.4.

Group 3: Modern finds found in the looting pits.

This constitutes quite a large group of items, comprising aluminium pieces, cigarette filters, fragments of modern metal tools, and plastic remains, which were left behind by recent looters. They have helped us identify and follow the looting pits during the excavation. None of the 2019 modern finds provided any information on the date of the looting event, in contrast to 2016, when a biscuit wrapper was found bearing a production date of 1999¹¹¹, thus providing a *terminus post quem* for the looting. Modern items will not be discussed in the present chapter.

Assigning chronological horizons to the items from Groups 1 and 2 can prove to be challenging. As shown in §A and §C (Table C1), radiocarbon dates available from the excavation area QID1 range from the beginning of the Iron Age to almost the end of the first millennium BC. Among the objects in both Groups 1 and 2, only those from Grave 110 can be connected to an absolute date (767-488 calBC). However, some items show stylistic connections that help narrow the wide chronological range provided by the radiocarbon dates. These connections and their chronology

¹¹¹ Kreppner/Squitieri 2017a, 56.

are discussed in the following sections, and especially in §E2, §E3 and §E4.

E1.2 The small finds from graves (Group 1)

In the following sections, the small finds from graves are discussed, starting with the cremation burials (Graves 101 and 109), continuing with the cist graves (Graves 102, 103 and 105) and concluding with the simple pit burials (Graves 106 and 110). Basic information about the objects from each grave is summarised in tables¹¹² that also contain their registration and catalogue numbers. Only particularly interesting objects are discussed in greater depth.

E1.2.1 Grave 101

Grave 101 is a cremation burial found in Square 182909 (§C5.3.1). It is formed by a grave pit whose lining shows burnt traces, and contains ashy layers on the bottom. An urn was found standing in the pit, along with some items around it. Although the grave had been looted, the urn was left intact. Some bronze fragments found around the urn were possibly modified by heat, while the other items did not show any trace of burning or heat modification, suggesting that they were placed in the grave pit after the combustion had taken place. Among these items were six decorated bone tubes, which are discussed in greater detail below. No absolute date for this grave is available as the attempt to radiocarbon date a human bone fragment from inside the urn was unsuccessful. Stylistic dating may be possible for at least some of the grave items.

Registration no.	no.	Description	Context
PPP 182909:008:001, PPP 182909:009:013-014,	1	6 shapeless bronze fragments, possibly modified by heat. L. < 5 cm.	Around the urn
PPP 182909:009:004	2	Shapeless bronze fragment, L. 8 cm, possibly from a bowl modified by heat.	Around the urn
PPP 182909:009:007	3	3 iron fragments, L. 3 cm; W. 0.3 cm, possibly belonging to one or more pins.	Around the urn

¹¹² Abbreviations used in this section, including the object tables: L. = length; W. = width; H. = height, Th. = thickness; D. = diameter. The materials of the objects discussed in this chapter have been identified by eye, unless indicated otherwise. The term "bronze" as used in the present discussion designates any copper-alloy.

Registration no.	no.	Description	Context
PPP 182909:009:017	4	Iron stick, L. 18 cm, W. 1.5, hollowed, made of a rolled piece of iron, tapering to one end. It probably had a bone handle (no. 7) (Fig. E1.2).	Around the urn
PPP 182909:009:018	5	Iron pin, fragment. L. 6 cm, W. 0.3 cm.	Around the urn
PPP 182909:009:006	6	Ceramic object, cylindrical, L. 4 cm, with a wider base. Broken. Possibly the foot of a beaker.	Around the urn
PPP 182909:009:005 PPP 182909:009:008-011 PPP 182909:009:016	7	6 decorated bone tubes, partially preserved (see below).	Around the urn
PPP 182909:048:004	7	Decorated bone tube, in fragments (see below).	Near the urn
PPP 182909:048:005-006, PPP 182909:048:008	8	3 shapeless bronze fragments, L. < 5 cm.	Near the urn
PPP 182909:048:007	9	Golden crescent-shaped earring. L. 1 cm; Th. 0.2 cm decreasing to 0.1 cm at the extremities. Weight: 1 g (Fig. E1.3).	Near the urn
PPP 182909:022:001	10	Metal fragment, shapeless. L. 4 cm.	Fill inside the urn
PPP 182909:022:002 PPP 182909:022:003 PPP 182909:022:004 PPP 182909:022:005	11	4 ovoid unworked stones, L. 2 cm. PPP 182909:022:002 is translucent white, possibly made of alabaster (translucent gypsum). The other stones are dark reddish and opaque.	Fill inside the urn

(7) Decorated bone tubes (registration numbers: PPP 182909:009:005, PPP 182909:009:008-011, PPP 182909:009:016 = Fig. E1.1, and PPP 182909:048:004)

Material: Bone.

Dimensions: PPP 182909:009:005: L. 7 cm, D. 2.5 cm, broken; PPP 182909:009:008: broken into four fragments, the largest with L. 8 cm, D. 2.5 cm; PPP 182909:009:009: L. 5 cm, D. 2.5 cm, broken; PPP 182909:009:010: broken into four fragments, the largest with L. 5 cm, D. 2.5, PPP 182909:009:011: broken into seven fragments, the largest with L. 4 cm; D. 2.5 cm. PPP 182909:009:016: best preserved: L. 11 cm; D. 2.5 cm, PPP 182909:048:004: broken into eight fragments, the largest with L. 2 cm.

Six decorated bone tubes, of which five were found surrounding the urn, while one was below it. They are all in fragments, except for PPP 182909:009:016, which is the best preserved and has been restored. PPP 182909:009:016 is a hollowed bone tube, showing a rounded perforation



Fig. E1.1: Decorated bone tube PPP 182909:009:016 (7) from Grave 101. Restored by Akam Omar Qaradaghi. Photo by Haymin Noori.



Fig. E1.2: Iron stick PPP 182909:009:017 (4) from Grave 101. Photo by Andrea Squitieri.



Fig. E1.3: Golden crescent-shaped earring PPP 182909:048:007 (9) from Grave 101. Photo by Louise König.

(D. 0.5 cm) near one edge. The surface is decorated with motifs distributed in three horizontal bands. The first shows a cross-hatched motif, the second a herringbone pattern, and the third repeats the first motif. They are separated by two plain camps. The other five bone tubes are not as complete as this one, however they show the same decorative patterns so it can be assumed that they resembled PPP 182909:009:016 originally. The fragmented tubes also preserve, in many cases, the 0.5 cm diameter circular perforation. The tubes are made from a long *mammalia* bone, but it is not possible to define the species. **Comparisons:** Decorated bone tubes similar to our examples date back to the Early Bronze Age, when they can be found across the Aegean and the Levant¹¹³. During the first millennium BC, they are found in several sites throughout the Levant and Mesopotamia, concentrating from the 9th century BC through the Achaemenid period. They were recovered from a variety of contexts (not just funerary)¹¹⁴.

¹¹³ Genz 2003; Rahmstorf 2010.

¹¹⁴ See e.g., **Iron Age:** Assur (Wicke 2011, Pl. 46: V31-V32; Miglus *et al.* 2016, Pl. 90c); Yunus cemetery (Woolley 1939, Pl. 21.22), Zincirli (Luschan 1943, Pl. 59: r, s), Deve Hüyük (Moorey 1980, Fig. 15), Tell Ali Al-Hajj (Ishida *et al.* 2014, Fig. 6.96.34), Megiddo (str. XIII and IV: Lamon/Shipton 1938, Pl. 99: 3; Loud 1948, pl. 196: 2-6); Nippur (McCown *et al.* 1978, Pl. 68: 4D, 337); **Achaemenid:** Til Barsip (Thureau-Dangin/Dunand 1936, Pl. 16: 8-9; Pl. 18: 7-8), Kamid el-Loz (Poppa 1978, Graves 2, 6, 8, 11, 12, 58, 71, 72, and 78); **Hellenistic-Parthian:** 'Atlit (Johns 1933, Fig. 7), Nippur (University of Pennsylvania Museum of Archaeology and Anthropology, object no. B14660). It should be noted that the bone tubes from QID1 and their comparisons here discussed are not to be confused with ivory pyxides. These are items which can show similar decorative patterns to bone tubes, but have a wider diameter and are frequently equipped with lids (see Wicke 2008).

Concerning their use, some have suggested that they were intended as kohl tubes, others as handles. The first interpretation is supported by evidence from some Levantine graves, where decorated bone tubes were found along with kohl sticks¹¹⁵; however, because the examples from Grave 101 show a perforation near the edge, which could have been used to fix the tube to another object, and they do not show any discoloration from the presence of kohl, they seem to have been used as handles. The iron stick, 18 cm long (no. 4, Fig. E1.2), which was found near the urn, was possibly equipped with one of the bone tubes as a handle. Similar iron sticks, although without handles, were found at the cemetery of Dinkha Tepe II-III (Iron Age II)¹¹⁶.

Finally, it is worth mentioning that only one decorated bone tube comparable to the QID1 examples has been reported from western Iran, from Surkh Dum in Luristan¹¹⁷. Other decorated bone tubes from western Iran differ from our examples with their square sections, thick walls, and

¹¹⁵ E.g., Kamid el-Loz, Grave 11; Til Barsip, Burial C.

¹¹⁶ Muscarella 1974, Figs. 7, 16.

¹¹⁷ Muscarella 1981, 348, no. 27.



Fig. E1.4: Bronze button PPP 181908:033:005 (14) from Grave 102. Photo by Andrea Squitieri.



Fig. E1.5: White applique PPP 181908:036:012 (18) from Grave 102. Photo by Andrea Squitieri.

E1.2.4 Grave 103

Grave 103 is a cist grave located in Square 182908 (§C4.5). It had been robbed, but the skeleton was partially preserved. A flat ring was found in the pelvis area, and two unworked pebbles were found near the elbow and the knee respectively. The other items come from the fill directly above the skeleton.

Registration no.	no.	Description	Context
PPP 182908:019:007	19	Bronze flat ring, with thicker edges. D. 2.3 cm, H. 1 cm. Decorated parallels come from Iron Age III graves at Mala Mcha and Ruwar (both in Iranian Kurdistan).	With the skeleton, in the pelvis.
PPP 182908:019:009 PPP 182908:019:010	20	2 unworked pebbles, D. 2 to 3 cm. PPP 182908:019:009 is roundish and pink in colour; PPP 182908:019:010 is white and oval in shape.	With the skeleton: the first near the knee, the second near the elbow.

Registration no.	no.	Description	Context
PPP 182908:019:002	21	Complete iron bracelet with overlapping extremities, D. 4.7 cm, Th. 1.2 cm. Due to corrosion, it is not clear if the terminals are decorated.	Looted grave fill
PPP 182908:019:003-004	22	2 iron pins, fragments. L. 4.6 cm and L. 8 cm.	Looted grave fill
PPP 182908:019:005 PPP 182908:019:008	23	2 iron rings in fragments. D. < 2 cm.	Looted grave fill
PPP 182908:019:006	24	Iron fragment, L. < 1 cm, original shape cannot be determined.	Looted grave fill

* Amelirad *et al.* 2017, Fig. 30; Ghasimi *et al.* 2019, Fig. 20.

E1.2.5 Grave 105

Grave 105 is a cist grave located in Square 181908 (§C3.5). Only part of the architecture was found, while the fills had been looted and the skeleton completely obliterated. The items listed below were found inside the grave architecture. The fill above the grave architecture, called Locus:181908:044, may also have contained some of the items coming from this grave (§E1.3).

Registration no.	no.	Description	Context
PPP 181908:051:002	25	Iron fragment, possibly from a ring, L. 4.5 cm.	Looted grave fill
PPP 181908:055:006	26	Iron fragment, L. 1.8 cm, original shape cannot be determined.	Looted grave fill
PPP 181908:055:002	27	Fragments of a blue material, possibly from an Egyptian Blue bead.	Looted grave fill

E1.2.6 Grave 106

Grave 106 (§C6.2.2) is an inhumation grave located in Square 181909. It lies between the northern border of the excavation area and Grave 107, of which only the architecture has been found but no objects (Figs. C5, C17). No architecture connected to Grave 106 has been found. Partially-articulated human remains were found, which perhaps belonged to two individuals. The items shown in the table below were found in the fill immediately above the skeleton(s), and some of them are discussed in more detail after the table. Several pieces of personal ornamentation were found, plus the arrowhead (PPP 181909:069:019) discussed in §E4.

Registration no.	no.	Description
PPP 181909:069:001	28	2 bronze pins with spiral decoration (see below).
PPP 181909:069:005		
PPP 181909:069:002	29	Bronze fragments, possibly of needles. L. 6.8 cm (max), Th. 0.1 cm.
PPP 181909:069:010	30	Bronze dome-shaped perforated disc (see below).
PPP 181909:069:011	31	Bronze open ring with flat surface, D. 2.7 cm, Th. 0.1 cm.
PPP 181909:069:022	32	Bronze tube formed from a rolled sheet, L. 5.5 cm, D. 0.4 cm. Parallels from Kalhu (Nimrud), Deve Hüyük and Hasanlu (Level IV)*.
PPP 181909:069:003	33	Bronze bead, oblate shape. D. 0.7 cm.
PPP 181909:069:023	34	3 bronze coils (see below).
PPP 181909:069:024		
PPP 181909:069:029		
PPP 181909:069:025	35	3 bronze crescent-shaped earrings (see below).
PPP 181909:069:027		
PPP 181909:069:031		
PPP 181909:069:032	36	Bronze-iron mirror, broken (see below).
PPP 181909:069:019	/	Iron arrowhead, broken (see §E4).
PPP 181909:069:007	37	3 iron bracelets, decorated (see below).
PPP 181909:069:008		
PPP 181909:069:009		
PPP 181909:069:012	38	3 iron rings: D. 2.6 cm / 2.7 cm / 1.5 cm, Th. 0.4 cm / 0.4 cm / 0.1 cm. The last has overlapping extremities.
PPP 181909:069:016		
PPP 181909:069:020		
PPP 181909:069:013	39	11 iron curved fragments, L. max 2 cm, original shape cannot be determined.
PPP 181909:069:015		
PPP 181909:069:021	40	Iron crescent-shaped earring. D. 2.6 cm, Th. 0.6 cm.
PPP 181909:069:017	41	Truncated bicone bead in Egyptian Blue decorated with vertical grooves. D. 0.25 cm.
PPP 181909:069:018	42	Fragments of a blue material, possibly from an Egyptian Blue bead.
PPP 181909:069:014	43	2 red carnelian beads, oblate shape. D. 1 cm; D. 0.4 cm.
PPP 181909:069:030		
PPP 181909:069:028	44	Cylindrical white bead, L. 1.4 cm; D. 0.7 cm, possibly in chalk.
PPP 181909:069:026	45	Black stone beads, PPP 181909:069:026 possibly has an etched decoration. L. 1.5 cm / 1.4 cm / 0.8 cm; D. 0.4 cm / 0.5 cm / 0.5 cm.
PPP 181909:069:033		
PPP 181909:069:034		

* Kalhu (Nimrud): Curtis 2013, Pl. 74; Deve Hüyük: Mooney 1980, Fig. 16: 423; Hasanlu IV: Muscarella 1988, cat. no. 129.

(28) Pins with spiral decoration (registration numbers PPP 181909:069:001 = Fig. E1.6, and PPP 181909:069:005).

Material: Bronze.

Dimensions: PPP 181909:069:001: L. 6.3 cm; Th. 0.1 cm; PPP 181909:069:005: L. 2.6 cm; Th. 0.2 cm, broken.

PPP 181909:069:001 is a roll-headed pin with spiral decoration. PPP 181909:069:005 is thicker than the first pin,



Fig. E1.6: Pin with spiral decoration PPP 181909:069:001 (28) from Grave 106. Photo by Andrea Squitieri.

and its extremities are not preserved. It shows the same spiral decoration as the first.

Comparisons: Roll-headed pins, although not decorated like the examples here, are attested in various sites, e.g., Kalhu (Nimrud), Dur-Šarrukin (Khorsabad), Deve Hüyük, and Megiddo, and in Iran at Dinkha Tepe and Talish (Gilan Province)¹¹⁹.

(30) Domed-shaped perforated disc (registration number PPP 181909:069:010; Fig. E1.7)

Material: Bronze.

Dimensions: D. 4.2 cm; H. 1.2 cm.

Dome-shaped disc with a perforation (D. 0.3 cm) in the middle. Partially covered with patina, and with a short crack visible on the side. It was perhaps used as a decorative element, for example as a metal boss to decorate a handle terminal.



Fig. E1.7: Domed-shaped perforated disc PPP 181909:069:010 (30) from Grave 106. Photo by Andrea Squitieri.

Comparisons: Similar examples have been found in the Iron Age graves of Dinkha Tepe (levels III-II) and of Sanandaj (8th-7th centuries BC)¹²⁰.

119 Kalhu and Dur-Šarrukin: Curtis 2013, Pl. 93: 1161; Deve Hüyük inhumation cemetery: Mooney 1980, Fig. 14: 357-358; Dinkha Tepe: Muscarella 1974, Fig. 36; Megiddo stratum V and I: Lamon and Shipton 1938, Pl. 84: 11-13; Talish: Bassampour 2014, Fig. 5

120 Dinkha Tepe: Muscarella 1974, Fig. 7: 622 and Fig. 48: 714-715; Sanandaj: Amelirad *et al.* 2012, Pl. 18.



Fig. E1.8: Bronze coils (left: PPP 181909:069:023, right: PPP 181909:069:024) (34) from Grave 106. Photo by Andrea Squitieri.

(34) Coils (registration numbers PPP 181909:069:023 = **Fig. E1.8 left**; PPP 181909:069:024 = **Fig. E1.8 right**; PPP 181909:069:029).

Material: Bronze.

Dimensions: PPP 181909:069:023: L. 2.1 cm, D. 1 cm; PPP 181909:069:024: L. 1 cm, D. 0.4 cm; PPP 181909:069:029: L. 0.6 cm, D. 0.4 cm (broken).

Three bronze coils made of a thin, looping bronze string. The first has an ovoid shape with the string forming a sort of hook on one extremity (broken); the other two have a cylindrical shape. They were possibly used as beads, or in the case of PPP 181909:069:023, as pendants.

Comparisons: Similar items are known from the inhumation graves at the cemetery of Sanandaj, dated to the 8th-7th centuries BC; from the Iron Age II graves (c. 1050-800 BC) of Hasanlu; from Dinkha Tepe, and from Iron Age III graves in Luristan at the cemeteries of War Kabud and Baba Jillan. Parallels in silver are known from Kul Tarike cemetery, dated to around the 7th century BC¹²¹.

(35) Crescent-shaped earrings (registration numbers PPP 181909:069:025 = **Fig. E1.9**, PPP 181909:069:027, and PPP 181909:069:031).

Material: Bronze.

Dimensions: PPP 181909:069:025: D. 1.1 cm; Th. (max): 0.4 cm; PPP 181909:069:027: D. 1 cm, Th. (max) 0.2 cm; PPP 181909:069:031: D. 0.9 cm; Th. (max): 0.3 cm.



Fig. E1.9: Crescent-shaped earring PPP 181909:069:025 (35) from Grave 106. Photo by Andrea Squitieri.

Three crescent-shaped earrings with touching extremities.

Comparisons: Several earrings of this shape have already been found on Qalat-i Dinka during the 2016 and 2018 campaigns¹²². Crescent-shaped earrings occur frequently across the Near East throughout both the Bronze and Iron Ages¹²³.

(36) Mirror (registration number PPP 181909:069:032; **Fig. E1.10**).

Material: Bronze and iron.

Dimensions: plaque: L. 11.4 cm, W. 4.4 cm, Th. 0.8 cm; stem: L. 2.1 cm, D. 1.3.

Four fragments, of which the largest has a bronze stem attached to a flat circular plaque in iron, broken in half. The other three fragments are smaller and are likely also parts of the plaque. The object is interpreted as a mirror, based on its shape.

121 Sanandaj: Amelirad *et al.* 2012, Pl. 19b-c, Pl. 21; Hasanlu: Danti/Ci-farelli 2015, Fig. 23h (Grave SK111); Dinkha Tepe: Muscarella 1988, cat. no. 31, Muscarella 1974, Fig. 45: 1002; War Kabud: Haerinck/Overlaet 2004a, Fig. 36: G3-G4; Baba Jillan: Hasanpur *et al.* 2015, pl. 11; Kul Tarike: Rezvani/Roustaei 2007.

122 Kreppner/Squitieri 2017a, Fig. C26; Squitieri 2019, Fig. H8.

123 E.g., Curtis 2013, Pl. 86; Ilan 2014.



Fig. E1.10: Fragments of a bronze-iron mirror PPP 181909:069:032 (36) from Grave 106. Photo by Andrea Squitieri.

(37) Bracelets, possibly decorated (registration numbers PPP 181909:069:007 = **Fig. E1.11:** left, PPP 181909:069:008, and PPP 181909:069:009 = **Fig. E1.11:** right).

Material: Iron.

Dimensions: PPP 181909:069:007: D. 9 cm, Th. 1 cm; PPP 181909:069:008: D. 9.1 cm; Th. 0.7 cm; PPP 181909:069:009: D. 6.1, Th. 0.7 cm.

PPP 181909:069:007 is an open iron bracelet, while PPP 181909:069:008 and PPP 181909:069:009 have overlapping terminals. All three have highly corroded surfaces, which obscure any decorative motifs that may exist on their terminals. Similar bracelets from other Iron Age sites often have terminals decorated with stylised animal heads of caprids or serpents.

Comparisons: Iron Age examples of similar bracelets are attested in many sites, for example Kalhu (Nimrud), Hasanlu, the cemetery of Sanandaj, as well as in Luristan and the Gilan Province of Iran¹²⁴.



Fig. E1.11: Iron bracelets (left: PPP 181909:069:007, right: PPP 181909:069:009) (37) from Grave 106. Photo by Andrea Squitieri.

¹²⁴ Kalhu (Nimrud): Curtis 2013, 107-110, Pl. 84-85; Hasanlu: Muscarella 1988, 36; Sanandaj: Amelirad et al. 2012, Pl. 36; Luristan: Baba Kilan, Hasanpur et al. 2015, Pl. 21; Gilan Province (Talish): Bassampour 2014, Fig. 10.

E1.2.7 Grave 110

Grave 110 (§C5.3.3) is an inhumation pit grave found in Square 182909 (**Figs. C5, C17**). It was partially looted, but the upper part of the skeleton was preserved. Three bronze fibulae and a cylinder seal with its glass cap were found in direct association with the skeleton, and are discussed in detail in §E2 and §E3. The other finds include beads found in the fill directly above the skeleton. This grave yielded a radiocarbon date of 767-488 calBC (see **Table C1**).

Registration no.	no.	Description	Context
PPP 182909:067:010	/	Bronze fibula (see §E2.1).	Near the left clavicle
PPP 182909:067:004	/	Bronze fibula (see §E2.1).	Near the right clavicle
PPP 182909:067:011	/	Bronze fibula (see §E2.1).	Near the left elbow
PPP 182909:067:007	/	Cylinder seal with hunting scene (see §E3.2).	Next to the left elbow
PPP 182909:067:008	/	Glass cap for cylinder seal found with seal PPP 182909:067:007 (see §E3.2).	Next to the left elbow
PPP 182909:067:009	46	Shapeless rock crystal (quartz) fragment, translucent, L. 2.3 cm; W. 1.7 cm; H. 1 cm.	On a left rib
PPP 182909:067:002	47	Tiny and shapeless fragments of gold	Grave fill
PPP 182909:067:001	48	Carnelian barrel bead, L. 1 cm; D. 0.6 cm (Fig. E1.12).	Grave fill
PPP 182909:067:003	49	White oblate bead decorated with vertical grooves, D. 0.4 cm.	Grave fill
PPP 182909:067:005	50	Fragments of a blue material, possibly from an Egyptian Blue bead.	Grave fill

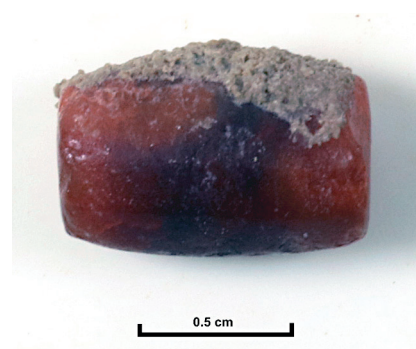


Fig. E1.12: Carnelian bead PPP 182909:067:001 (48) from Grave 110. Photo by Andrea Squitieri.

E1.2.8 General considerations on the grave goods (Group 1)

Only the items from Grave 110 can be connected to an absolute date derived from radiocarbon analysis (767-488 calBC). Based on their style, the items from the other graves may also belong to a chronological horizon very close to that of Grave 110. Though many of the grave goods can occur across a very long span of time (e.g., the crescent-shaped earrings and the carnelian beads), others have parallels only among the Late Iron Age and Achaemenid-period sites of the Levant, northern Mesopotamia and western Iran. Overall, it seems that a date spanning from around the 9th century BC to the end of the Achaemenid period would be appropriate for the grave items analysed in this section (see also below §E1.4). Additional items from graves, some of which having a chronological significance are discussed in the following §E2, §E3 and §E4.

E1.3 Small finds from looted fills and the topsoil (Group 2)

The sections below will deal with the ancient items found in the fills of the looting pits (Group 2). Because they lack stratigraphic information, they have been organised by material and category. Ancient finds from the topsoil are discussed here also, as they too do not provide any stratigraphic information.

The finds discussed below are divided into the following categories:

- 1) Stone tools;
- 2) A complete metal bowl;
- 3) Metal rods and studs;
- 4) Pieces of personal ornaments formed from metal;
- 5) Beads in various materials;
- 6) Perforated ivory/bone items;
- 7) Perforated ceramic discs.

To this list, we should add the items from looted fills that are discussed in other sections:

Registration no.	Item	Chapter
PPP 181909:067:001	Fibulae	§E2
PPP 182909:020:007		
PPP 182908:008:006	Cylinder seals	§E3
PPP 181909:067:003		
PPP 181908:025:009	Arrowheads	§E4
PPP 181908:029:030		
PPP 181908:029:055		
PPP 181909:052:016		
PPP 181909:052:017		
PPP 181909:063:011		
PPP 181909:063:013		

E1.3.1 Stone tools

Stone tools are divided into morphological categories following the classification established in the previous publications of the stone tools from the Dinka Settlement Complex¹²⁵. Basic information is first provided in the table below, then each category is discussed in greater detail.

Registration no.	no.	Description
PPP 182909:006:005	51	2 half-broken querns. PPP 182909:006:005: L. 12 cm, W. 11.5 cm, H. 7.5 cm. It shows a flattish surface smoothed through use, and a curved dorse. It seems to be too wide to be a handstone. Stone may be granite. PPP 182909:020:011: L. 11 cm, W. 13.5 cm. Similar to PPP 182909:006:005.
PPP 181908:044:042	52	3 broken handstones. PPP 182909:019:003: L. 11.1 cm; W. 7.4 cm; H. 5.5 cm. Working surface flat polished through use, convex dorse easy to grip. Stone is basalt. PPP 182909:014:002: L. 8 cm, W. 6.5 cm, H. 4 cm. Working surface rough, convex dorse.
PPP 182908:007:013	53	4 pounders. PPP 182908:007:013: L. 8 cm, W. 6.5 cm. Ovoid pebble with pecking marks on the surface. Stone: basalt. PPP 182909:051:002: D. 6.5 cm. Ovoid pebble (broken) with pecking marks. Speckled stone, may be granite. PPP 181909:051:002: L. 8 cm, W. 7 cm. Spheroid pebble, with pecking marks. Stone is whitish, and could be limestone. PPP 182909:005:004: D. 7 cm. Spherical pebble made of basalt with pecking marks.
PPP 181908:029:011	54	9 perforated stones. D. between 10-15 cm. They are in white limestone, and show a biconic perforation of about 2-3 cm in the middle of a roughly-worked, disc-shaped cobble.
PPP 181908:029:033		
PPP 181908:044:019		
PPP 181909:062:005		
PPP 181909:062:006		
PPP 182908:006:005		
PPP 182908:022:005		
PPP 182908:046:004		
PPP 182909:021:004		
PPP 181908:029:006	55	4 pebble mortars. D. < 13 cm. They have two shallow depressions on opposite sides carved into slightly-worked pebbles. Stone is limestone except for PPP 182908:038:002 which is basalt
PPP 181908:044:044		
PPP 182908:038:002		
PPP 182908:006:007		
PPP 181908:029:038	56	4 spheroid pebbles (weights?). D. around 5 cm, polished surface.
PPP 181908:029:054		
PPP 181909:050:004		
PPP 181909:050:006		

¹²⁵ Squitieri 2017; 2018; 2019.

Registration no.	no.	Description
PPP 182909:006:006	57	4 broken whetstones, 1 entirely preserved.
PPP 182909:004:004		They have square sections, smooth
PPP 182909:020:002		sides showing tiny linear marks, and
PPP 182909:026:004		rounded extremities (when preserved).
PPP 182909:020:008		PPP 182909:006:006: L. 7.5 cm, W. 2.8;
		PPP 182909:004:004: L. 7.5 cm, W. 3.5 cm;
		PPP 182909:020:002: L. 5 cm, W. 2.5; PPP
		182909:026:004: L. 6 cm, W. 4 cm; PPP
		182909:020:008: L. 8 cm, W. 3 cm. This
		whetstone is completely preserved and
		contains a bi-conic perforation of D. 0.3
		cm used to hang the tool with a string.
PPP 181908:062:004	58	Spindle-whorl. Material: limestone. D. 2.7
		cm; H. 0.7 cm.
PPP 181908:048:009	59	Polished stone fragment, L. 6.5 cm, W.
		3.7 cm, with triangular section, slightly
		pointed. It may be the broken leg of a
		tripod bowl. Stone is basalt.
PPP 182909:006:004	60	Ring base and curved body fragment of a
		bowl. Made of basalt.

(51) Querns.

These are grinding tools with a triangular section and a flat working surface. Mainly used to grind grain. Two half-broken querns were found in QID₁, possibly made of granite.

(52) Handstones.

These are upper tools used for grinding in conjunction with querns. They have a flattish, smoothed working surface and a curved dorso. Usually they can be easily distinguished from querns by their size, which must be small enough to easily grip in the hand. While the examples from QID₁ are broken, they have been interpreted as handstones because they are narrower and easier to handle than the querns. Their stone is basalt.

(53) Pounders.

These are defined as spheroid or ovoid pebbles usually with one dimension larger than 5 cm which makes them easy to grip and use to pound without harming the fingers. They also show pecking marks on their surface due to use. Four examples made of basalt and limestone were found in QID₁. These tools have close parallels from the Lower Town¹²⁶.

(54) Perforated stones.

Disc-shaped stones, with diameters between 10 and 15 cm, usually roughly worked at the edges, and showing coarse-

ly made, bi-conic perforations in their centres. Their function is not clear, and it is possible they had multiple purposes. Among these, they may have been used as weights for digging sticks. It is unlikely that they were used as weights for weaving as they are too heavy (heavier than 500 g) and irregular. For a similar reason, they were probably not used to weight fishing-nets. We should also exclude their potential use as fly-wheels and door-sockets, firstly because they are not consistent enough to allow a smooth rotation, and secondly because door-sockets at the Dinka Settlement Complex look very different from these perforated stones. Several such perforated stones were also found in the Lower Town¹²⁷.

(55) Pebble mortars.

These are disc-shaped stones, never more than 13 cm in diameter, showing two shallow depressions on the opposite sides, carved into an unworked or slightly worked body. They are also called cupmarks. The depressions are irregular and do not show evident wear marks inside. These tools may have had many uses connected to grinding small substances. Similar pebble mortars were also found in the Lower Town¹²⁸.

(56) Spheroid pebbles, possibly weights.

These are spheroid or ovoid pebbles, showing a smooth surface, with dimensions not exceeding 5 cm. They are similar in shape to pounders, however they lack visible pecking marks and their size makes them uncomfortable for pounding. Hence, they are interpreted as weights for a variety of purposes. Similar tools have also been found in the Lower Town¹²⁹. We do not have a sufficient number to make a statistical analysis of their weight distribution patterns, which might confirm their identification as weights.

(57) Whetstones.

These tools can be easily recognised by their squarish sections, rounded edges, and tiny linear wear marks on their smooth sides. The only entirely-preserved example from QID₁, PPP 182909:020:008, is also perforated near one end, allowing the tool to be hung by a string. Similar whetstones were found in 2018 during the operation QID₂ at Qalat-i Dinka, and many more have been found in the Lower Town¹³⁰. They were used to sharpen other objects, including metal items such as arrowheads.

127 Wilkinson/Squitieri/Hashemi 2016; Squitieri 2017; 2018; 2019.

128 Wilkinson/Squitieri/Hashemi 2016; Squitieri 2017; 2018; 2019.

129 Squitieri 2017; 2018; 2019.

130 Squitieri 2017; 2018; 2019.

126 Squitieri 2017; 2018; 2019.

(58) Dome-shaped spindle-whorl (Fig. E1.13).

This example is the only spindle-whorl in this shape found in the Dinka Settlement Complex. Spindle-whorls known from both Qalat-i Dinka and the Lower Town are made of ceramic and are disc-shaped (§E1.3.11).



Fig. E1.13: Dome-shaped spindle whorl from looting fill. PPP 181908:062:004 (58). Photo by Andrea Squitieri.

(59-60) Stone vessel fragments.

One has a triangular section, a pointed extremity and a polished surface; it may have been the foot of a tripod bowl. The other is a fragment of a ring base attached to a curved body, which belonged to a ring base bowl. They have no parallels in the Lower Town.

Many of the stone tools listed above have parallels from the Main Occupation Period structures of the Lower Town, namely the pounders, perforated stones, pebble mortars, spheroid weights and whetstones, thus establishing a material connection between the Lower Town and Qalat-i Dinka. The tools identified as handstones and querns in QID1, on the other hand, are much rarer (if not absent entirely) in the Lower Town; only one broken quern has been found in DLT2¹³¹. The stone tools described above are difficult to relate to graves. Although it is not impossible to find stone tools in funer-

ary contexts, these objects are more frequently part of the urban setting. Hence, it is possible that these stone tools originated in Building P. The dome-shaped spindle whorl represents the first of its kind ever found in the Dinka Settlement Complex, as do the two fragments of stone vessels. They could be pieces of furniture from a destroyed grave, since it is not uncommon to find such items in graves. However, due to the context of these finds, this is difficult to establish.

E1.3.2 A complete bronze bowl

(61) Flat-based metal bowl (registration number: PPP 181908:029:034 = Fig. E1.14).

Material: bronze.

Dimensions: D. 19 cm; H. 6 cm.

Complete bronze bowl with a flat base bowl, curved body, and flared rim. It was found in a looting pit fill, about 2 m west of the looted Grave 102 (§C3.5). It was in an upside-down position, and contained the bones of an almost complete human hand mixed with soil. On the basis of these contents, it is plausible that it came from one of the graves found in Square 181908. Although radiocarbon analysis was carried out on one of the bones, it was not successful due to the lack of collagen.

Comparisons: Bowls similar to PPP 181908:029:034 are often referred to as *phiale*¹³². They can be found across a vast area of the Near East throughout the Iron Age and the Achaemenid period. Many of these bowls bear decorative motifs, unlike ours which is plain¹³³. Although



Fig. E1.14: Complete metal bowl PPP 181908:029:034 (61) found in a looting pit close to Grave 102. It was found upside down with bones of a human hand in it. Restored by Akam Omar Qaradaghi. Photo by Haymin Noori.

¹³¹ Squitieri 2018, Fig. G8.

¹³² Luschey 1939.

¹³³ Iron Age: Howes Smith 1986; Achaemenid period: Dusinberre 1999.

an Assyrian origin has been suggested for their design¹³⁴, their appearance in the Late Bronze Age and Iron Age I Hasanlu points rather to a tradition that may have been inspired by the second millennium BC flared-rim bowls from south-eastern Anatolia, Iran, and Mesopotamia¹³⁵. Bronze *phiale* became popular after the 9th century BC, with several examples found in Assur¹³⁶ and Kalhu (Nimrud)¹³⁷, as well as outside Assyria¹³⁸. Some plain examples similar to PPP 181908:029:034 are also known from the Iron Age III graves in Iranian Kurdistan and Luristan¹³⁹. During the Achaemenid period, bronze *phiale* were even more widespread, and have been found across the area stretching from Central Asia to Greece¹⁴⁰.

E1.3.3 Metal rods and studs

This category is comprised of metal rods and studs which, although found in looting pits, may have been elements of grave furniture as they were found in close proximity to Graves 102, 103, and 105. Possibly they were used to assemble pieces of wooden furniture that were included in the grave goods, of which nothing more has been preserved.

(62) Curved metal rods (registration numbers: (A) PPP 181908:029:008 = **Fig. E1.15**; (B) PPP 181908:029:009; (C) PPP 181908:029:010; (D) PPP 181908:029:046; (E) PPP 181908:046:003; and (F) PPP 182908:011:003).

Material: iron.

Dimensions: A: L. 13.2 cm, Th. 2.1 cm; B: L. 5.3 cm, Th. 0.7 cm; C: L. 7.6 cm; Th. 0.7 cm; D: L. 6.7 cm; Th. 0.8 cm; E: L. 6.5 cm, Th. 0.7 cm; F: D. 4.3; Th. 0.8 cm

Six curved iron rods with rather thick bodies. They are broken, except for PPP 181908:029:008, which is complete. The rods were found in looting pits so their context cannot help to establish their function. However, it is noteworthy that four of them (A, B, C and D) were found in close proximity to one another, in the fill covering the architecture of Grave 102. It is therefore possible that they came from this grave. In support of this, we should mention that the

fill Locus:181908:029, where the rods were found, also contained a number of bronze studs (**no. 63**) matching those found inside Grave 102, which suggests that this fill may have contained parts of the original grave furniture. Rod F was found above Grave 103, and possibly derived from it.

Comparisons: Their shape and bodies resemble the connecting rods used in furniture from Kalhu (Nimrud)¹⁴¹. Some of the Kalhu examples show grooves on their bodies, a feature which is seen on PPP 181908:029:046 and possibly also on PPP 181908:029:009, although here it is obscured by corrosion.



Fig. E1.15: Curved iron rod PPP 181908:029:008 (**62**) from a looting pit near Grave 102. Photo by Andrea Squitieri.

(63) Metal studs (registration numbers PPP 181908:029:043 = **Fig. E1.16**; PPP 181908:029:049; PPP 181908:029:051; PPP 181908:042:003; PPP 181908:044:004; PPP 181908:044:008; PPP 181908:044:014; PPP 181908:044:035; PPP 181908:044:040; PPP 181908:033:005; PPP 181908:044:015; PPP 181908:044:033; and PPP 182909:043:003).

Material: all in bronze; except for PPP182909:043:003, which is in iron.

Dimensions: L. < 1 cm; head D. < 1 cm.

13 small metal studs with a rounded head, a flat head or a button-like head. They have a single pin, which in PPP 181908:033:005; PPP 181908:044:015; and PPP 181908:044:033 is not preserved. These small studs were possibly used to assemble wooden furniture. The bronze examples came from looted fill excavated above the Grave 105, and hence it is possible that they belonged to this



Fig. E1.16: Bronze stud PPP 181908:029:043 (**63**) from a looting pit near Grave 102. Photo by Andrea Squitieri.

¹³⁴ Curtis 2013, 69.

¹³⁵ Dusinberre 1999, 76; Danti/Cifarelli 2016, 366; Howes Smith 1986.

¹³⁶ Haller 1954.

¹³⁷ Layard 1853.

¹³⁸ See Curtis 2013, 71-72 for a list of sites.

¹³⁹ Sanandaj: Amelirad *et al.* 2012, Pl. 34: A10; War Kabud: Haerincq/Overlaet 2004a, Pl. 138: A37-4; Djub-i Gauhar: Haerincq/Overlaet 1999, ill. 15 no. 7, Pl. 33: 77b; Chamahzi Mumah: Haerincq/Overlaet 1998, Fig. 11.17.

¹⁴⁰ Dusinberre 1999, Fig. 2.

¹⁴¹ Curtis 2013, Pl. 58.681.

grave. The iron stud, on the other hand, came from a looted pit located near the eastern section of the excavated area, and hence it is not clear if it originated from a grave or another context. For comparisons, see **no. 15**.

E1.3.4 Metal pieces of personal ornamentation

Several pieces of rings, bracelets, earrings and pins were found across the operation. Many of them match those collected in previous campaigns. It is likely that they came from the graves destroyed by the looters. They are summarised in the table below, and potential parallels are included in the description.

Iron:

Registration no.	no.	Description
PPP 181909:052:010 PPP 181908:043:004	64	8 iron rings, with D. between 1.8 cm and 2.8 cm.
PPP 181909:058:005 PPP 181909:063:004 PPP 182908:006:004 PPP 182908:007:007 PPP 181909:050:003 PPP 182908:006:008		Very corroded. PPP 181909:058:004 has also some bronze patina because it was found along with bronze ring PPP 181909:058:004. PPP 181909:063:004 is thicker than the others (Th. 1.2 cm) so it is not clear whether it was a finger-ring or a small chain ring.
PPP 182908:007:014	65	Crescent-shaped iron earring, D. 1.6 cm; Th. 0.6 cm., highly corroded. For similar earrings in bronze, see below.

Bronze:

Registration no.	no.	Description
PPP 181908:029:021	66	Bronze pendant, L. 2.8 cm; D. 0.2-0.7 cm. Elongated object, thicker and rounded at one end, possibly a pendant.
PPP 181909:052:022	67	Bronze pendant, L. 2.4, D. max 1.1 cm. Composed of a spherical body with a smaller spherical shape on one end and a circular "loop" to which a hook is attached on the opposite side.
PPP 181908:043:005	68	Bronze spring ring, D. 1.8, made of a string looping on itself three times (Fig. E1.17). Perhaps used as a hair-binder. Parallels are attested in Iron Age III graves in Iranian Kurdistan ⁱ . See also parallels from Late Bronze Age and Iron Age graves from Hasanlu ⁱⁱ , Dinkha II-III ⁱⁱⁱ , from Iron Age III graves in Luristan ^{iv} , and from the Iron Age grave at Ruwar in Iranian Kurdistan ^v . See also similar items from Nimrud ^{vi} .

Registration no.	no.	Description
PPP 181908:044:005	69	Decorated bronze ring, D. 1.7 cm., with touching extremities and a ridged surface (Fig. E1.18). A similar decoration can be found on bracelets from Hasanlu (Level IV) ^{vii} .
PPP 181908:056:003	70	Decorated bronze ring, D. 2.3 cm; Th. 0.3 cm, with touching extremities. From the terminals along the body, the decorative motif is composed of: three transversal grooves, a cross and two longitudinal grooves along the rest of body. Very similar in shape and decoration to PPP 181909:038:055 found in 2018 ^{viii} .
PPP 181908:046:010 PPP 181909:063:006 PPP 182909:027:005	71	Bronze ring, D. 1.9 cm, with overlapping terminals. Bronze hair ring, D. 0.3 cm, with overlapping extremities. Bronze ring with overlapping terminals. D. 1.7 cm; Th. 0.1 cm. Similar rings with overlapping extremities are attested throughout a wide area.
PPP 181909:052:008	72	Broken bronze ring, D. 2 cm, Th. 0.2 cm.
PPP 181909:058:004	73	Bronze ring covered with iron corrosion (found with iron ring PPP 181909:058:005). D. 2.3 cm, Th. 0.3 cm.
PPP 181909:062:004	74	Bronze ring with touching extremities found with PPP 181909:062:007.
PPP 181909:062:007	75	Bronze ring with touching extremities found together with PPP 181909:062:004. D. 2.4 cm; Th. 0.1 cm.
PPP 181909:063:015	76	Open bronze ring, with tapering terminals. D. 2.9 cm; Th. 0.2 cm.
PPP 182908:002:004	77	Open bronze ring, D. 1.7 cm, with one spherical terminal.
PPP 182908:002:006 PPP 181908:044:057 PPP 182908:007:008 PPP 182908:007:015 PPP 182908:026:013	78	Crescent-shaped bronze earrings, D. between 0.8 cm and 1.6 cm, Th. between 0.1 cm and 0.3 cm. PPP 182908:007:015 is the only complete one (Fig. E1.19). See above for similar examples from Grave 106.
PPP 181908:050:003 PPP 181908:050:008	79	Two fragments of bronze items, possibly parts of pins. L. c. 2.5 cm; D. 0.1 cm

- i Amelirad *et al.* 2012, Pl. 15 (although these are thicker than our examples); Amelirad *et al.* 2017, Figs. 21b, 23 and 25; Amelirad/Azizi 2019, Fig. 17.
- ii Danti/Cifarelli 2013.
- iii Muscarella 1974.
- iv Haerinck/Overlaet 1999, Fig. 20; Haerinck/Overlaet 2004a, Fig. 27.
- v Ghasimi 2019, Fig. 10.
- vi Curtis 2013, Pl. 86.949-950, the latter in silver.
- vii Muscarella 1988, cat. n. 18 (University of Pennsylvania Museum of Archaeology and Anthropology, object number 59-4-126).
- viii Squitieri 2019, no. 8.



Fig. E1.17: Bronze spring PPP 181908:043:005 (68) from a looting pit. Photo by Andrea Squitieri.



Fig. E1.18: Bronze ring PPP 181908:044:005 (69) decorated with a ridged surface. Photo by Andrea Squitieri.



Fig. E1.19: Bronze crescent-shaped earring PPP 182908:007:015 (78) from a looting pit. Photo by Andrea Squitieri.

E1.3.5 Carnelian beads

Carnelian beads are very common across the Near East and can be found in virtually every period. Several examples come from the Sasanian graves of Gird-i Bazar, whose material has been identified by means of archaeometric analysis¹⁴². Because of their similarity in colour and shape,

the red beads from QID₁ are also thought to be carnelian. Interestingly, aside from QID₁, such beads have only been found among the Sasanian graves of Gird-i Bazar, while no such bead was found in the Iron Age structures of the Dinka Settlement Complex. This leads us to assign the carnelian beads to the graves of QID₁ rather than to Building P.

Registration no.	no.	Description
PPP 181908:024:005	80	Oblate shape beads with straight perforation, D. between 0.4 cm and 1 cm. Fig. E1.20: PPP 182908:005:006.
PPP 181908:026:003		
PPP 181908:044:059		
PPP 181909:052:026		
PPP 182908:005:006		
PPP 182908:005:008		
PPP 182908:008:003	81	Spherical shape beads. Distribution and size: see oblate beads above.
PPP 182908:008:013		
PPP 182908:038:006		
PPP 182909:006:007		
PPP 182909:015:003		
PPP 182909:021:008		
PPP 182908:001:005		
PPP 181909:052:023		
PPP 182908:005:004	82	Barrel shape beads, D. between 0.5 cm and 1.6 cm.
PPP 182909:021:007		
PPP 182909:055:004		
PPP 181908:029:014	83	Short cylindrical beads, broken.
PPP 181908:029:045		
PPP 181909:052:024		
PPP 182908:002:005		
PPP 182909:034:009		

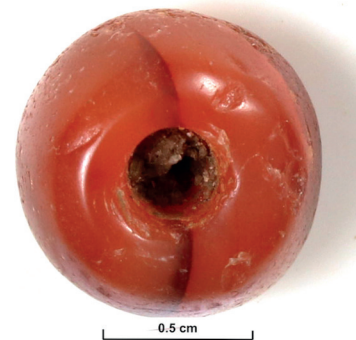


Fig. E1.20: Carnelian bead PPP 182908:005:006 (80) from looting pit. Photo by Andrea Squitieri.

E1.3.6 Blue/white-blue beads

In this category, I have included beads or fragments of beads in blue and white-blue colours. Given their colour and consistency, they may be made of Egyptian Blue, faience, or frit. However, some of the blue beads from the 2018 campaigns were proven to have been made of

¹⁴² Greenfield 2017, 174-175; Downey 2018.

Egyptian Blue by means of archaeometric analysis¹⁴³. Therefore, by comparison, it is possible that the beads discussed below are in Egyptian Blue. These items may well have originally been located in the graves. However, one fragmented bead in Egyptian Blue was also found in the Lower Town, in the operation DLT₂¹⁴⁴. This means that this material was also used in the Main Occupation Period structures in the Lower Town. Hence, it is possible that at least some of the Egyptian Blue beads from QID1 belonged to Building P rather than to the graves.

Registration no.	no.	Description
PPP 181908:044:024	84	Cylindrical blue beads, D. between 0.2 cm and 0.4 cm; L. between 0.3 cm and 0.6 cm. Broken and highly weathered. From the fill above Grave 105 so perhaps originated there.
PPP 181908:044:025		
PPP 181908:044:027		
PPP 181908:044:028		
PPP 181908:044:030		
PPP 181908:044:043		
PPP 181908:044:045		
PPP 181908:044:049	85	Grooved cylindrical beads, L. between 0.5 cm and 0.7, D. between 0.2 cm and 0.3 cm. PPP 181908:044:036 is likely a fragment of the same type as L. 0.2 cm and D. 0.2 cm. They are bluish-white in colour. They come from the fill above Grave 105. Similar beads are found across a vast area from the Levant to western Iran*. Fig. E1.21: PPP 181908:044:026.
PPP 181908:044:026		
PPP 181908:044:031		
PPP 181908:044:032		
PPP 181908:044:036		
PPP 181909:069:023	86	Short oblate bead decorated with grooves. This category of beads is also very frequently found across a vast area, see references above for the grooved cylindrical beads.
PPP 181908:050:005	87	Powdery and shapeless fragments of an intense blue colour. Based on the colour, they are probably Egyptian Blue. They were found mixed with soil, and may come from disintegrated beads or other small items.
PPP 181908:053:002		
PPP 181908:055:002		
PPP 182908:008:008		
PPP 182908:008:012		
PPP 182908:008:015		
PPP 182908:046:005		
PPP 182908:046:006		

* See e.g., Megiddo: Lamon/Shipton 1938, Pl. 91: 37; Hasanlu: University of Pennsylvania Museum of Archaeology and Anthropology, object no. 75-29-199, Sanandaj: Amelirad *et al.* 2012, Pl. 21; War Kabud in Luristan: Haerincq/Overlaet 2004a, Fig. 36.F1.



Fig. E1.21: Egyptian Blue grooved bead PPP181908:044:026 (85) from a looting pit. Photo by Andrea Squitieri.

E1.3.7 White beads

White beads, made of a soft, whitish material. Although no analysis has yet been carried out on them, they were probably made of ivory or bone. It is likely that they originated in the graves. Similar beads were found in the 2016 excavation campaign in QID1¹⁴⁵.

Registration no.	no.	Description
PPP 181908:044:039	88	Disc shaped white beads, D. 0.2 cm.
PPP 181908:053:003		
PPP 182908:026:006		
PPP 181909:052:013	89	Ring shaped bead broken in half, D. 0.6 cm.
PPP 182908:038:003	90	Oblate bead decorated with vertical grooves, D. 0.9 cm.
PPP 182909:027:008	91	Spherical bead, D. 1.8 cm.

E1.3.8 Shell beads and pendants

These are beads and one pendant made of shells¹⁴⁶. They also may have originated in the graves, although it is not clear. Though rare, cowrie shells have also been found in the Lower Town in the Main Occupation Period structures; hence it is possible that some of the shell beads below originated in Building P of QID1 rather than in the graves. These items are also discussed in §E6.2.

¹⁴⁵ Kreppner/Squitieri 2017a, Fig. C28.

¹⁴⁶ I would like to thank Anja Prust for the identification of the species of these shells.

¹⁴³ Squitieri 2019, 131.

¹⁴⁴ Squitieri 2018, no. 10.



Fig. E1.22: Fragments of beads from the tusk shell of *Dentalium* sp. PPP 181908:034:012 (92) from a looting pit. Photo by Andrea Squitieri.

Registration no.	no.	Description
PPP 181908:024:004	92	Fragments of beads from the tusk shell of <i>Dentalium</i> sp., L. 1.2, D. 0.7 cm; L. 1.2 cm, D. 0.2 cm (largest fragment); L. 1 cm, D. 0.4 cm.
PPP 182909:034:012		
PPP 181908:044:022		
		Fig. E1.22: PPP 181908:034:012. Similar shell beads are quite widespread across the Near East*.
PPP 181908:044:038	93	Cowrie shells, L. < 2 cm. Their backs are removed so they were intended to be used as beads**.
PPP 182908:013:004		
PPP 182908:035:003		
PPP 182909:024:006		
PPP 182909:034:010		
PPP 182909:034:011		
PPP 182909:055:003		
PPP 181909:063:005	94	Ring bead, broken (shell <i>Gastropoda</i>), L. 2.5 cm.
PPP 182909:007:001	95	Ring bead, broken (shell <i>Gastropoda</i>), D. 1.7 cm.
PPP 182909:034:005	96	Pendant (bivalve shell), L. 2.8 cm; W. 2.5 cm, with perforation.

* For recent finds, see the Iron Age graveyard of Qara-Tappeh in northwestern Iran: Dehpahlavan *et al.* 2019, Fig. 18 (top left).

** On cowrie shells used in Egypt and the Near East as ornaments, see Golani 2014.

E1.3.9 Bronze beads

Registration no.	no.	Description
PPP 181908:050:004	97	Short oblate bead decorated with grooves, D. 0.9 cm.
PPP 182908:007:009	98	Flat disc-shaped bead, D. 0.6 cm.
PPP 182908:042:003	99	Spherical bead formed from a flat sheet folded on itself, D. 1.2 cm.
PPP 182909:010:008	100	Coil bead with cylindrical shape, L. 0.7 cm, D. 0.5 cm. See similar examples from Grave 106, no. 34 .
PPP 181908:046:011	101	Bronze bead formed from a rolled band, D. 0.9 cm.

E1.3.10 Perforated ivory/bone items

These two are rectangular fragments of perforated items in ivory/bone. Similar items were also found during the 2016 campaign at QID1. They were possibly used to decorate pieces of furniture.

Registration no.	no.	Description
PPP 181909:052:006	102	Two pieces of what appears to be a rectangular ivory/bone small plaque with a perforation in the middle. A triangular shaped fragment is missing. L. 2.9 cm; W. 1.2 cm; Th. 0.3 cm. Similar items were found during the 2016 excavations, coming from right above the floor of Room 58*.
PPP 181909:063:014	103	Fragment of a rectangular-shaped ivory/bone item, with a circular perforation in the middle. L. 1.8 cm, W. 1.5 cm, Th. 0.4 cm. Similar to no. 102 .

* Kreppner/Squitieri 2017a, Fig. C25.



Fig. E1.23: Two pieces of a rectangular ivory/bone small plaque with a perforation in the middle: PPP 181909:052:006 (102). Photo by Andrea Squitieri.

E1.3.11 Ceramic discs

These are seven flat ceramic discs with a perforation in the centre. They are crudely made, and most likely are re-worked sherds of broken pottery vessels. They were possibly intended to be used as spindle-whorls. Similar items were found in the Lower Town in the Main Occupation

period structures; hence it is possible that the ceramic discs from QID1 belong to Building P.

Registration no.	no.	Description
PPP 181908:027:005	104	7 perforated ceramic discs. D. between
PPP 181908:044:013		2.8 and 6.9 cm; perforation D. c. 0.5 cm.
PPP 181908:044:016		Fig. E1.24: PPP 182909:034:007.
PPP 182908:033:002		
PPP 182908:034:003		
PPP 182909:010:006		
PPP 182909:034:007		



Fig. E1.24: Perforated ceramic disc PPP 182909:034:007 (104) from a looting pit. Photo by Andrea Squitieri.

E1.4 Preliminary assessment of the 2019 small finds from QID1

The study of the small finds from QID1 presents several challenges because heavy looting has inevitably altered both the horizontal and the vertical positions of virtually every item.

In §E1.2, we discussed those items that can be established with certainty as originating from graves (Group 1). These include pieces of personal ornamentation such as fibulae, earrings, bracelets, beads, appliques, a mirror, and other types of objects such as decorated bone handles and metal studs. Many of these items have close parallels (e.g., the decorated bone tubes, no. 7) in the area extending from the Levant to West Iran. In some cases, their chronology can only be based on stylistic analysis, which would make a date between the 9th century BC through the Achaemenid period very likely.

Only for Grave 110 is a radiocarbon date range of 767-488 calBC available, which fits the results of the stylistic analysis conducted on the three fibulae (PPP 182909:067:010, PPP 182909:067:004, PPP 182909:067:011) found near the

skeleton (discussed by Friedhelm Pedde in §E2.1), and the cylinder seal (PPP 182909:067:007) showing a hunting scene in “Provincial Assyrian Style” (discussed by Anja Fügert in §E3.2). It is possible that at least some of the other graves also belong to the chronological horizon of Grave 110. The study on the arrowheads offered by Anja Hellmuth Kramberger in §E4 singled out one arrowhead (PPP 181908:033:004) from Grave 102 that can be dated to the 9th-6th century BC (see Table E4.2), a date range which is not so far off the radiocarbon date yielded by Grave 110.

Grave 106, which had the highest number of grave goods preserved, did not yield any radiocarbon date. However, the items retrieved from it, although not very diagnostic in nature, can easily be included in the 9th-6th century BC time horizon due to stylistic parallels from other sites.

Finally, based on the parallels identified for the decorated bone tubes, the cremation burial Grave 101 can only be dated to the time from the 9th through the Achaemenid period. This leaves open the possibility that the cremation burials (Graves 101 and 109) are of a later date than the inhumation burials, although further data are needed to ascertain this.

As we have seen, many objects come from looted fills and the topsoil (§E1.3). In some cases, they belong to the same object-types as items also found in graves. These are Egyptian Blue and carnelian beads, bracelets and rings with overlapping terminals, crescent-shaped earrings, and metal studs. It is possible that these items, although found scattered throughout the fills of the looting pits, came from graves that had been robbed or even completely destroyed by looting. Establishing a chronology for these items is very problematic if one considers that, based on the radiocarbon dates available from human remains in QID1 (see Table C1), these items may come from graves of various periods dating from the beginning of the Iron Age until the very late first millennium BC. It is also worth mentioning that the looting pits have also yielded pottery sherds belonging to before and after the first millennium BC (see Jean-Jacques Herr’s assessment in §D1), which makes it even more complicated to assign the QID1 objects from looted contexts to a specific period. The exceptions are two fibulae (PPP 181909:067:001 and PPP 182909:020:007, see Friedhelm Pedde in §E2.2) and two cylinder seals (PPP 182908:008:006 and PPP 181909:067:003, see Anja Fügert in §E3.3) that were found in looting pits but whose stylistic attribution to the Iron Age is certain.

We may also ask whether it is possible to identify, among the objects from looted fills, those which possibly came from the structures of Building P rather than from

graves. If we use the comparison with the items from the Lower Town (from the structures of the Main Occupation Period) as our criterion, then we may conclude that the stone tools (with only few exceptions), the perforated ceramics discs, some of the shell beads, and perhaps some of the Egyptian Blue beads may have come originally from Building P, since these objects all have parallels in the Lower Town. This attribution sounds reasonable, although the presence of Egyptian Blue beads in both QID1 graves and the Lower Town may indicate that these items may have originated from both graves and Building P.

The lack of stratigraphic information makes every attribution of objects to specific deposits or structures very tentative. The object horizontal distribution cannot be trusted either, as there is no way to know to what extent looters scattered the items around. However, it is noteworthy that the decorated ivory fragments¹⁴⁷ retrieved in 2018¹⁴⁸ during the excavation of the looted fills of Building P Room 58 do not have any parallels in the 2019 excavations, which concentrated outside this room. Moreover, some of these decorated ivory fragments from the 2018 campaign were also collected from the floor of Room 58 (although, it should be noted that the looters had reached this level). Hence, it can be suggested, based on the findings of the 2019 campaign, that the decorated ivory fragments of the 2018 campaign did originally belong to the furniture of Building P rather than to the graves¹⁴⁹. Of course, this assessment must be considered provisional as further investigations on QID1 may produce new evidence to help interpret the rich repertoire of small finds coming from this excavation area.

E2. Five fibulae from Qalat-i Dinka (QID1), 2019

*Friedhelm Pedde*¹⁵⁰

This chapter discusses five bronze fibulae found during the 2019 excavations at Qalat-i Dinka (QID1), three of which came from Grave 110, while the other two were recovered from the fill of looting pits identified within the excavation area.

¹⁴⁷ The material of these items has been tentatively identified as ivory; however, an in-depth analysis is required to decide whether their raw material is ivory or bone. See also §E6, Table E6.1.

¹⁴⁸ Squitieri 2019, 126-128.

¹⁴⁹ In the light of the 2019 discoveries, I corrected the interpretation given in Squitieri 2019, 132, where I had assigned to Building P also some pieces of jewellery, which may in fact belong to graves.

¹⁵⁰ Assur Projekt, Berlin.

E2.1 Fibulae from Grave 110

Grave 110 (§C5.3.3) yielded one skeleton of an individual, whose upper part was preserved and untouched, whereas the lower part was looted. Among other grave goods (§E1.2.7), the deceased was provided with three bronze fibulae of different types. They are all complete, with separately made and inserted needles.

Fibula 1: PPP 182909:067:004

Length 3.4 cm, height 2.2 cm, weight 6.89 g. Angle of the arms ca. 80°. Diameter pearls 0.6-0.8 cm, diameter discs 0.5-0.6 cm, diameter insertion segment 0.8 cm, length of the pin 3.3 cm.

This fibula was found near the right clavicle of the buried individual (Fig. E2.1). It is a small triangular fibula. The bow of the fibula has a sharp bend. Each arm has two circular beads, which are both flanked by two circular discs. One arm ends in a circular bead: the socket, or insertion segment, for the pin, which is bent in a spiral and is fixed in this segment. The other arm ends in a catch for the point of the needle, which slightly protrudes out of the catch. It is quite corroded, so it remains to be seen whether the catch has the form of a human hand.

The fibula belongs to group D2.2¹⁵¹. This group is clustered in the Assyrian heartland (Assur, Kalhu) and spreads widely from the Levantine coast to Iran¹⁵², where the type is found in particularly large quantities in Sar Kabud¹⁵³. Because of the wealth of examples, this group can easily be dated to the 7th century BC.

Fibula 2: PPP 182909:067:010

Length 3.9 cm, height 2 cm, weight 7 g. Angle of the arms 90°, diameter 0.4-0.7 cm. Needle length 2.8 cm.

This fibula was found on the other side of the skeleton, near the left clavicle (Fig. E2.2). This small piece also has a triangular shape, and the arms are bent at a right angle. The bend in the middle of the body is undecorated. This section, like the arms, has a rectangular or square profile and the arms are provided with a block. Its highly-corroded state does not allow any further analysis, but we can assume that after restoration these blocks will show a cross-hatching on their surface. There is no special segment for the insertion of the needle, which is simply inserted into the block. The other arm ends in a flat catch without any decoration. The pin has a double spiral and an additional loop at its end. The point of the needle does

¹⁵¹ Pedde 2000, 284-293, Pl. 66-68.

¹⁵² Pedde 2000, 285 (map).

¹⁵³ Van den Berghe 1978.