§9 Artefacts from Kilise Tepe, 2007-2011

Naoíse Mac Sweeney and others

Introduction

This text presents descriptions of over 800 artefacts from the Late Bronze Age and Iron Age levels at Kilise Tepe (Levels II and III in the North-West corner, and Levels 2 and 3 in the Central Strip), excavated in the 2007-2011 seasons. By "artefacts" we mean all items which were created by and/or subjected to human activity, with the exception of ceramics which will be described in other chapters. Not included here are finds from the Early and Middle Bronze levels in G19 and G20, which have been studied by Dr T.E. Şerifoğlu, and from the Hellenistic and Byzantine levels, which will be described in Dr M.P.C. Jackson's report on these periods. In a few instances finds from Level 1 (and in the NW corner, Level I) have been included here, when it seemed possible or probable that they originated in the earlier periods with which this report is concerned.

Following broadly the precedent of our report on the 1994-98 seasons at the site, the finds are numbered in a continuous sequence set up for this volume, and they are presented in sections grouping material or artefact types as follows:

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10 Lithics	605-681	N. Mac Sweeney
11 Worked stone	682-747	N. Mac Sweeney
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Catalogue entries

Each entry will normally provide in the first line the "object number" and the "unit number" as assigned by the excavator. Where relevant, a KLT number is given: these are selected items which were catalogued at the end of each season and deposited in the Silifke Museum, and are kept in the Museum's central storage room, rather than in the annex which houses the great majority of the Kilise Tepe materials. The dimensions are given in centimetres (and grams); dimensions which are incomplete due to breakage or wear are generally enclosed in round brackets – thus "H. (2.3)" means "maximum extant height 2.3 cm".

Drawings

The drawings are placed on Plates 1-31 after the catalogue (pp. 87-117). Each drawing bears the catalogue number assigned to the item in question. Where there is no drawing (as usually in sections 9 and 10, but occasionally elsewhere) the catalogue number in the text is enclosed in square brackets – [353]. We believe that grouping drawings in this way has advantages over pasting each one next to each artefact's catalogue entry.

Photographs
When disseminating artefact descriptions on-line earlier constraints on reproducing photographs no longer apply, and we have therefore aimed to provide at least one photograph of virtually every item. These are to be viewed in the folder §3-7.Photos. The photo identification number given applies to the photograph(s) which are stored on-line in a folder called KT Artefact Photos, which contains a separate folder for each section of the catalogue. Several other photographs of each object exist in the main site corpus of photographs, which will be accessible on-line in due course. Within each folder the individual photos show their artefact's catalogue number as the first element in their file-name, followed by the photo's identity number for internal reference (e.g. 348-2010_KT_A_1271 copy.jpg). In many cases an artefact only appears with other items in a group photo. These group shots are located after the individually illustrated items in each section of the Artefact Photos folder, and their file-names give the section number and Group letter – e.g. Group 7A. Where an artefact has not been photographed, most usually because of its poor preservation, the abbreviation "n.ph." (no photograph) is included at the end of the catalogue entry.

This artefacts chapter is the first part of the final report on our 2007-2011 seasons to be completed. It is accompanied by the account of the excavations, covering the stratigraphy and architecture. Separate reports on the micromorphology, on the molluscs, on the grindstones, and on the zoo-osteology and archaeobotany are ready or in preparation. The ceramics will be described in two chapters, covering the Late Bronze Age and Iron Age respectively.

1. Glyptic (1-6)

Naoíse Mac Sweeney and Dominique Collon

Previous excavation of the Stele Building area uncovered a total of six seals, four bearing Anatolian hieroglyphic inscriptions. The glyptic finds from the 2007-2011 seasons are consistent with these earlier discoveries, implying continuity in the area's administrative functions not only throughout the various incarnations of the Stele Building but also from the time of its Late Bronze Age predecessor, the NW Building. Four seals were uncovered in 2007-2011: one ivory stamp seal with a hieroglyphic inscription in the Level III NW Building, one clay stamp seal with floral motif from beneath the Stele Building, a clay stamp seal from the later Iron Age area I18, and a copper or bronze stamp out of context in Byzantine deposits. In addition, from Level 2 in the Central Strip came a small fragment of lentoid stamp seal and a clay bulla.

Level III: NW Building and surrounding area
1 I19/541 84051 KLT 182
Level IIId
Stamp seal; ivory Hittite 'tripod' stamp seal. A small piece is missing from the edge of the base. The seal is made of one piece of ivory and consists of a domed disc on which rest three clawed feet and legs of lions which support a square tablet on which is a flattened cylinder, with two incised bands at each end and perforated longitudinally. The sealing surface is surrounded by a notched band within which is an inscription consisting of six hieroglyphic signs. All surfaces are highly polished. There are signs of wear on the perforation, suggesting that the seal was strung and worn.

Tripod seals are almost exclusively made of metal, generally bronze. The leonine legs are usually joined at the top by a cylinder for suspension that, unlike the Kilise Tepe seal, seems usually to be plain. In general, the sealing surface of the tripod seals is a disc inscribed with a Luwian hieroglyphic inscription; Güterbock notes the similarity between the inscriptions on the face of the tripod seals and those of the convex-sided bi-facials (Boehmer and Güterbock 1987, p. 61). This also applies to the Kilise Tepe seal and would indicate a date in the 13th century BC. However, the metal examples lack the rounded proportions and quality of the Kilise Tepe seal. The following list of metal tripod seals is based on that provided by Güterbock (loc. cit.). There are examples from London, British Museum: ME 102475; Oxford, Ashmolean: No. 188 of "base silver", purchased at Bor in central Turkey (Hogarth 1920 pp. 21 Fig. 19A, 37, and Pl. VII); No. 189 of "base silver" with an inscription and a figure on the sealing surface, but also an inscription on the upper side of the disc, between the lions' feet (op. cit. pp. 37, 72 Fig. 74, and Pl. VII); No. 190: bronze (op. cit. pp. 21 Fig. 19B, 37, and Pl. VII); and No. 191 (see below); Baltimore, Walters Art Gallery: "brass" (Gordon 1939, No. 71); Berlin, Vorderasiatisches Museum: silver-gilt with an inscription and a figure (Jakob-Rost 1997, No. 78, p. 40, illustrations of the base on p. 41 and back cover, and of the shape on p. 116); Paris, Bibliothèque Nationale: acquired in 1972, bronze (Masson 1975, pp. 219-20 No. 6 and p. 232 No. 1); Paris, Louvre: silver (Delaporte 1923, No. A.1039, Pl. 101:14a-b); Brussels, Musées Royaux du Cinquantenaire: "*Argent bronze*" (Speelers 1917, pp. 84, 193).

Possibly provenanced examples consist of Ashmolean No. 188 purchased at Bor (Hogarth 1920, see above), an "iron" seal with a silver sealing surface from Çorca near Konya (Bossert 1942, Nos. 685 and 687), and one from Çardak, also near Konya (Güterbock 1949, p. 62 Abb. 15:3 and 19:1). The excavated examples consist of the lower part of a badly corroded, worn and damaged bronze tripod seal with a flat base (design illegible) found at Boğazköy (Boehmer and Güterbock 1987, No. 238), and perhaps a fragment of a black stone seal found in the 2007 excavations at Tell Açana (ancient Alalakh) that may have been part of a tripod seal (one probable lion's paw survives) with a geometric pattern on its base, but too much is lost for this to be certain (AT07 2983; Collon, forthcoming).

A special form of tripod seal, with a domed, almost hemispherical sealing base also occurs, with the hieroglyphic inscription surrounded by a floral motif. In the Ashmolean Museum there is a gold example from Tamassos in Cyprus, with the suspension cylinder replaced by a suspension ring (Hogarth 1920, pp. 21 Fig. 19C, 37, and Pl. VII; Bossert, 1942, No. 701), but the leonine paws are flimsy. From the Boğazköy excavations (Oberstadt, House 21) there is an ivory example with its sealing surface domed like the Tamassos example, and with the hieroglyphic inscription also surrounded by a floral motif. The exceptional shape and materials of both these seals indicate that they were destined for use in an élite context, and such domed seals could have made the deep concave impressions of royal and official seals of the late 14th to 13th centuries BC (e.g. Neve 1993, pp. 57-61).

This Boğazköy ivory seal is the only ivory tripod example known to the authors apart from the Kilise Tepe seal. Furthermore, with its grooved cylinder at the top it provides a very close parallel for the Kilise Tepe seal, and the detailing of the lions' paws is also similar (Neve 1986, p. 178; Boehmer and Güterbock 1987, pp. 61, 73-4, Abb. 54). The ivory seals from Boğazköy and Kilise Tepe are of a similar high quality and might even have been élite luxury products from the same 13th-century ivory workshop. It is impossible to ascertain whether

such a workshop would have been situated in the capital, or whether it was more likely to have been located near the harbour through which the ivory reached Anatolia. The presence of the gold domed tripod example in Cyprus may perhaps point to a location of the workshop nearer Kilise Tepe than Boğazköy.
H. 1.7; Di. 1.25; Di. perf. 0.4; Wt. 4.1
Photos: 08:0715, 08:0721

2 J19/717 96520
Level IIIe, from P08/55 below Stele Building Rm 3
Stamp seal; clay. The seal is conical in form, with a slightly elongated shape so that the base surface of the seal would have originally been slightly oval. The top of the cone is pierced by a single round hole across the longer side. It is made from fine grey clay and the surface bears some traces of a red-orange slip. The seal is broken so that very little of the base survives, but what does remain appears to have a radial floral motif on it. An unusual feature of this seal is that the design on the base is made in relief, rather than by incision. This might perhaps suggest that the seal was used for decorative stamping rather than administrative purposes.
H. 2.2; Di. base (2.0); Di. perf. 0.2
Photos: 09:2376, 09:2383

Level 2: Central Strip
3 L14/598 93014
Level 2f, Pit fill.
Bulla; irregular lump of clay with a broken surface which bears the traces of a circular seal impression. The outer ring of the seal seems to have been a high ridge, as it has caused a deep impression. Holes for the string can be seen at the back of the bulla. Made from fine buff clay. The back of the bulla bears fingerprints where it has been squeezed into shape.
H. 3.2; W. 3.2; Di. seal 2.2
Photos: 10:1625, 10:1629

4 L14/697 93033
Level 2e
Fragment of the edge of a lentoid seal, made from dark purple-black stone. The roughly oval faces of the seal were both decorated with a toothed border pattern. One side has been damaged, but the other face retains one circle from its seal design. Around the edge of the seal there are two grooved bands. The seal was pierced longitudinally, with a round perforation.
Di. ca. 1.5
Photo: 09:1955, 09:1957, 09:1959

Level I: H17
5 H17/6 83201 KLT 183
Byzantine layers near surface
Stamp seal; copper alloy. Narrow stem topped by a small, perforated “hammer” handle. At its base the handle flares where it joins a lopsided disc that is decorated on its base with two incised concentric circles, the outer being incomplete. The inner circle has seven radiating lines alternating with recessed dots; in the space between the two circles there is a mass of irregular radiating lines.

The design on the base is so thinly and shallowly incised, and the design is so unspecific, that this object was probably decorative and amuletic, rather than functional as a seal. The asymmetrical shape of the sealing surface was probably due to damage, after which the damaged part was hammered flat. Probably Late Bronze Age.
1.7 x 1.7; L. of handle 0.75, di. of perf. 0.2; Th. of disc 0.19
Photos: 08:0818, 08:0822

Surface
6 I18/31 74000 KLT 150
Surface soil
Stamp seal; clay. Circular, with flat surface tapering to suspension loop on reverse, now broken off. Made from orange-pink clay with very small dark gritty inclusions. Abstract design with swirling and concentric lines incised on flat surface, inside an enclosing ring around edges of the circular face. Possibly Early Bronze Age.
Di. 3.0; H. 1.3; Wt. 11.9
Photos: 07:0195, 07:0201

2. Clay Objects (7-65)

Naoíse Mac Sweeney

This section includes a range of types of object made from baked or unbaked clay. Clay beads (**243**, **244**, **252**, **262**, **290**), seals and sealings (**2-3**, **6**), loomweights (Section 3) and spindle whorls (Section 4) can be found elsewhere. Other clay items that are not mentioned here are dealt with in the pottery chapters. Such items include pot stands and ceramic appliqués which were originally attached to vessels. The remaining clay finds are here categorised into several groups:

- Figurines (**7-12**)
- Discs made from reused potsherds (**13-31**)
- Other clay discs (**32-36**)
- Architectural fragments and clay furniture (**37-41**)
- Clay spheres (**42-45**)
- Miscellaneous clay objects (**46-54**)
- Clay fragments and lumps (**55-66**)

Figurines (7-12)

A number of zoomorphic figurines were found in the 2007-2011 seasons. These include roughly handmade figurines of coarse ware (e.g. especially **9** and **10**) as well as fine wheel-made figurines in Red Lustrous Wheel-made Ware (**7** and **11**). All of the figurines seem to have been quadrupeds of some sort, mostly bovines but perhaps also other hoofed animals. Not included here is one clay figure that is considered to be an attached decoration for pottery rather than a figurine *per se* (J19/734). No anthropomorphic figurines were found in either the Bronze or Iron Age levels during the 2007-2011 seasons.

Level III: NW Building
7 I19/689 94056
Leg of a zoomorphic figurine of a hoofed animal, perhaps a cow, sheep, goat or deer. The leg is made of a hollow cylinder of clay, ending in the slightly protruding foot. The foot is in the shape of a cloven hoof. The figurine was made from Red Lustrous Wheel-made Ware. Close parallels for this leg have been found at the lower city at Boğazköy, from both domestic and temple contexts (Parzinger and Sanz 1992, 114-5, nos.153-8, Taf.72). The Boğazköy examples are thought to have been bovids.
H. 6.7; L. foot 3.8; Di. leg 2.7
Photos: 09:1743, 09:1745

Level 3: Central Strip
8 J14/448 11090
Level 3 phase 6
Body of a zoomorphic figurine of an unknown quadruped. Made from coarse buff-orange clay with gritty inclusions. The complete surface was covered in dark red paint. The main part of the figurine has been formed by combining two rolls of clay: one curved round to make the right fore and hind legs, the other curved round to make the left fore and hind legs, with the two rolls moulded together in the centre to form the main roll of the body. The neck formed by attaching two smaller rolls of clay onto the body, and then smoothing them together to form a wide neck. There are two additional features on the animal's back, formed by extruding two strips of clay moulded from the animal's rump and folding them back, and sticking them along the length of its back – perhaps representing reins.

A comparable figurine of a quadruped with a burden on its back is known from Bronze Age Tarsus (Goldman 1956, 337, no.13). Another comparable figurine is an unidentified harnessed quadruped from a sixth century BC deposit at Gordion, which has a similar applied strap or harness on its back (Romano 1995, p. 55, no.133).
H. 5.2; L. 8.9; W. 3.1; Wt. 231.3
Photo: 11:2144

Level 3 to 2 transition: Central Strip
9 J14/424 11054

Pit sealed by Surface 5a
Head and part of the body of a small zoomorphic figurine, probably bovine. Made from fine grey clay with few inclusions, formed by hand-pinching. The surface is undecorated. The horns or ears have broken but are cylindrical in section. The face is worn and the nose/snout has broken off. The body is broken at the shoulder. Rather than standing on protruding legs, the figurine seems to have rested on its flat stomach as base. Of the legs there are signs of only one – a foreleg which protrudes slightly outwards.
H. 1.7; L. 1.9; W. 1.0; Wt. 3.75
Photo: 11:1195

Level 2: Central Strip
10 L14/698 93033
Level 2e
Rough figurine of a quadruped with a thick neck and raised tail. Perhaps a bull or a stag, as there is a broken protrusion on top of the head that may have represented horns or antlers. The four legs, muzzle, tail and horns have been broken off. The figurine has been formed by roughly hand-pinching the clay into shape. Made from fine buff clay. There are some traces of a red slip and the figurine has been heavily burnt on one side.
H. 3.7; L. 4.6; W. 2.0
Photo: 09:1931

Level I and Unstratified
11 I18/257 85004
Level I
Head fragment of zoomorphic figurine, perhaps a bull, made from Red Lustrous Wheel-made Ware, covered in a dark red slip. The short, horizontal muzzle has been broken off at an angle. There were originally two protruding ears or horns on either side of the head, one of which has been broken off; and two eyes, one on either side of the muzzle. The neck has been formed from a roll of clay, and the muzzle and ears or horns have been made by adding rough clay cones to it. The eyes are made from additional discs of clay that have been attached by smoothing them upwards from the neck. There is a cylindrical cavity inside the neck, perhaps for attaching the neck to the body with a pin, or from turning.

The form of this figurine bears some similarity to that of three horse figurines from the Late Bronze Age levels of Gordion (Gunter 1991, 84, no. 523-5, Pl.29). However, these figurines have additional clay 'reins' attached on either side of their heads, supporting their interpretation as horses. They were also made of local buff and tan clay. A much closer parallel for this particular figurine can be seen in an example from an unstratified context at Tarsus (Goldman 1963, 342, no. 44). The moulding of the Tarsus figurine's head, horns/ears, and eyes is extremely similar to the Kilise Tepe example, although the type of clay used and the decoration are markedly different. The Tarsus example was not made from Red Lustrous Wheel-made Ware, but from local buff ware. It was painted with broad stripes, and is thought to have been made locally due to its similarity with the Iron Age Tarsus horse figurines.
H. 2.6; Di. neck 1.1; L. muzzle 3.5
Photo: 08:1407

12 J14/279 11024
Level 2k, Pit 11/11 fill
Body of a zoomorphic figurine, possibly bovine or equid. Made from fine grey clay with few inclusions. The body has been formed from a clay roll, then covered with an additional clay sheath, to which features have been added and hand-pinched into shape. The surface is undecorated. Stumps of all four legs remain, as well as the stump of a tail curving downwards, and the thicker stump of a neck curving upwards. Additions have been made and smoothed into the animal's back: four flat vertical strips, two on each side, broken off. This might have been representative of a burden or load on the back of the quadruped.
H. 2.45; L. 6.4; W. 2.6; Wt. 47.6
Photo: 11:0327

Discs made from reused potsherds (13-31)

These items belong to a distinctive class of object at Kilise Tepe. They are made from relatively flat body sherds from ceramic vessels, deliberately fashioned into a roughly round shape by chipping. The vessels from which the discs are made vary, although as a group the examples found in the 2007-2011 seasons tend to have been made from thicker, coarser sherds than those found in the earlier excavations. There is also an apparent preference for heavier, coarser sherds during the Bronze Age and early Iron Age levels when compared with the later Iron Age, and this may be significant.

The possible function of these objects has been discussed in previous Kilise Tepe publications (EKT, 454-459), as have incidences of similar items at other Anatolian sites (Joukowsky 1986 vol.1, 381; Obladen-Kauder 1996, 214-224). It is sufficient therefore to reassert the possible use of the discs as stoppers for jars and other containers, or as a base for winding threads into a ball, or as tokens of some sort.

It has been suggested that the pierced examples of these discs may have been used as light loom weights, but this seems unlikely given the irregular shapes and centres of balance of these objects. Similarly, it is worth nothing that relatively few of the Kilise Tepe discs were perforated, compared with those from other sites such as Demircihüyük (Obladen-Kauder 1996, 347-8, Taf.87-9); Aphrodisias (e.g. Joukowsky 1986 vol. 2, 678-9, nos. 41-61; 688-9, nos. 47-9 and 53; and 705-6, nos. 37 and 40); and Troy VI late (Blegen *et al.* 1953, fig.370, nos.21-7). Of the two perforated examples

here (**28** and **29**) and the one partially-perforated example (**30**), only one shows signs of wear caused by stringing around the perforation (**29**).

It should be noted that unlike many comparable objects from other sites, these discs show no signs of abrasion or wear along their circular edges. This pattern holds true for discs found both in the 2007-11 seasons and in the earlier excavations at Kilise Tepe. There are only three exceptions to this rule: **14**, **19** and **29**.

As in the publication of the previous excavations, the discs here have been categorised into groups by size. Small discs range from 2.4-3.9 cm in diameter. Medium discs range from 4.0-5.3 cm. Large discs range from 6.0-7.3 cm. There is no clear chronological pattern to the size variations, and it remains uncertain whether the different sizes of discs would have had functional implications.

Level III: NW Building

13 I19/791 11123
Level IIIc/d
Reused potsherd; cut into a rough oval-shaped disc, made from dark brown clay with very small white lime inclusions. The exterior is covered in a dark red paint. Medium.
Max Di. 4.4; Th. 1.2
Photo: 11:1434

14 I20/680 11318
Level IIId early
Reused potsherd; cut into a rough oval-shaped disc, made from orange-pink clay with no inclusions. Exterior is covered in a creamy white slip. The edges show some signs of abrasion. Small.
Max Di. 3.8; Th. 0.7
Photo: 12:1035

15 I19/567 84038
Level IIId
Reused potsherd; cut into a rough disc, made from coarse buff-pink clay with gritty black and grey inclusions. Small.
Max. Di. 3.7; Th. 1.0
Photo: Group 2A

16 I19/568 84038
Level IIId
Reused potsherd; cut into a rough disc, made from coarse orange-pink clay with gritty grey inclusions. Medium.
Max. Di. 5.1; Th. 1.4
Photo: Group 2A

17 I19/569 84038
Level IIId
Reused potsherd; cut into a rough disc, made from coarse red clay with some signs of burning. Small.
Max. Di. 3.3; Th. 0.7
Photo: Group 2A

18 I19/732 94059
Level IIIc
Reused potsherd; cut into a rough disc, made from coarse red clay. Small.
Max. Di. 3.6; Th. 0.7
n.ph.

19 I19/774 11121
Level IIId
Reused potsherd; cut into a rough disc, made from fine orange-red clay with no inclusions. Red slip on the interior, suggesting this sherd originally came from an open shape. Disc shows signs of abrasion on the edges and the exterior. Small.
Max Di. 2.5; Th. 0.7
Photo: 11:1164

Level 3: Central Strip

20 K14/996 92066
Level 3, phase 11
Reused potsherd; cut into a rough disc, made from semi-coarse light pink clay, red-slipped on the exterior. Small.
Max. Di. 3.8; Th. 0.75
Photo: Group 2B

21 K14/1011 92057
Level 3, phase 11
Reused potsherd; cut into a rough disc, made from coarse red clay and red slipped on both faces. Small.
Max. Di. 3.9; Th. 1.25
Photo: Group 2B

Level II: Stele Building and Western Courtyard

22 I19/741 74529
Level IIb
Reused potsherd; cut into a rough disc, made from coarse pink-grey clay, slipped surface. Medium.
Max. Di. 3.9; Th. 0.7
Photo: 10:1385

23 J19/506 77022
Level IIa
Reused potsherd; cut into a rough disc, made from coarse red clay with gritty inclusions. Medium.
Max. Di. 4.2; Th. 1.3-1.6
Photo: 07:0929

24 J20/254 78043
Level IIc
Reused potsherd; cut into a rough disc, made from coarse red-buff clay. Large.
Max. Di. 6.3; Th. 1.5
Photo: 07:1161

25 I18/218 85022
Level IIe late

Reused potsherd; cut into a rough disc, made from brown clay with no inclusions. Medium.
Max. Di. 4.8; Th. 0.9
Photo: Group 2A

Level 2: Central Strip
26 J14/346 11028
Level 2e/3-4
Reused potsherd; cut into a rough disc, made from coarse black clay with gritty inclusions. Exterior surface partly burnt. Medium.
Max. Di. 4.5; Th. 0.9
Photo: 11:0649

27 K14/990 92449
Level 2f
Reused potsherd; cut into a rough disc, made from semi-coarse light red-pink clay. Large.
Max. Di. 6.9; Th. 1.3
Photo: Group 2B

28 J14/345 11022
Level 2k
Reused potsherd; cut into a rough disc. Made from red-orange clay with small white inclusions. Circular hole drilled through off-centre. Medium.
Di. 5.2; Di. perf. 0.5; Th. 0.6; Wt. 17.8
Photo: 12:1030

29 J14/275 11022
Level 2k
Reused potsherd; cut into a roughly pentagonal flat shape. Made from gritty orange-pink clay with pale brown burnished surface. Hole drilled roughly in the centre. The fabric has been worn down around the hole on both sides, and the edges of the sherd have been smoothed through abrasion. Medium.
Max. Di. 5.2; Th. 1.2; Wt.39.3
Photo: 11:0292

30 I14/416 75319
Level 2
Reused potsherd; disc cut from the handle of a jug or jar. There is a drill hole in one side, and incomplete perforation. Made from fine red clay with no inclusions. Small.
Di. 2.4; Di. perf. 0.2-0.3; Th. 9.4-0.9
Photo: 12:2449

Level 1: Central Strip
31 K14/241 75010
Level 1
Reused potsherd; cut into a very rough disc, made from coarse red clay. Small.
Max. Di. 3.45; Th. 1.3
Photo: 07:0582

Other clay discs (32-36)

These clay discs are of a similar shape and dimension to the ones made from reused potsherds listed above. However, they were not originally part of ceramic vessels, as is evident from the treatment of the surfaces and the lack of curvature on the disc body. Instead, they seem to have been roughly fashioned into a disc shape. A similar object was found in the earlier excavations (EKT, no.1527), and an unusual example found in the 2007-2011 excavations made from stone (**728**) is listed in this catalogue with the other worked stone objects. Since all these discs, both clay and stone, are of similar shape and size, it is possible they all had the same function. Ceramic discs of a similar size have been found from the Hittite imperial period at Alaca Höyük, where it was suggested that they were used as rough covers for jars (Koşay 1951, 125, Pl.61, fig.1: Koşay and Akok 1966, 157-8, Pl.19).

Level II: Stele Building
32 J18/455 96006
Level IIb
Baked clay disc, roughly made and undecorated. This object differs from the clay discs made from reused potsherds, in that it was first shaped from clay and then deliberately baked in its final shape. Made from grey clay with black gritty inclusions. Small.
Di. 3.5; Th. 0.7-0.9
Photo: 09:3306

Level 2: Central Strip
33 J14/425 11048
Level 2e/3
Baked clay disc, made from coarse buff clay. This disc is unusual in that it is particularly thick, especially in relation to its diameter. Small.
Di. 2.8; Th. 1.9
Photo: 12:1042

34 L14/672 93032
Level 2e/3-4
Fragment of a baked clay disc, made from dark red coarse clay. Uncertain size due to fragmentary preservation.
Th: 1.1
Photo: 10:1621

35 K14/510 82011
Level 2f
Baked clay disc with thickened centre, with a depression in this thickened area on one side. Made from coarse pink clay, partly broken. Perhaps an unfinished spindle whorl.
Di. 3.4; Th.1.5; Depression di. 1.1, depth 0.35
Photo: 08:0660

36 J14/161 74813
Level 2

Pierced clay disc. Regular disc with flat top and bottom surfaces. From each surface a conical depression is hollowed out, at the base of which is the perforation. Made from coarse red clay, burnt on one side. Large. This object can be compared with EKT, n.1570. Similar objects have been found from Bronze Age Tarsus (Goldman 1956, 328, nos. 73 and 74).
Di. 6.5; Di. perf. 0.3; Wt. 9.0
Photo: 10:0467

Architectural fragments and clay furniture (36-40)

A range of different objects has been included within this category. These include items which would have been associated with cooking and food preparation (**37**, **39**, and **41**), as well as artefacts which were most likely parts of architectural features. There is little indication from the objects themselves as to the nature of these architectural features, and except for **36** there are no indications of burning on any of the pieces, making it unlikely that they were originally parts of a hearth. One object of particular interest is **39**, which appears to be a spit support.

Level III: NW Building
[37] I19/628 94015
Level IIIc
Three large fragments of an architectural installation, perhaps a tannur. The smooth interior surface is burnt. Made from coarse orange-buff clay.
L. 12.8; W. 14.3; Th. 4.3
Photo: 10:1450

[38] I19/742 84010
Level IIa
Fragment from flat ceramic artefact, perhaps a tile. Medium fired fabric with small white grits. One face burnished or polished to a brick-red surface, the other smoothed flat. No finished edges.
W (5.4), Th. 1.7; L. (5.5)
Photo: 10:3255

Level 2: Central Strip
39 J14/302 11033
Level 2e
Fragment of a baked clay artefact, perhaps a spit support or firedog. Roughly pyramidal shape with smoothed rounded corners. There is a transverse perforation running through it, imperfectly preserved. The interior of the perforation is burnt. The burning is most intense at the mouth of one side, and becomes less intense along the perforation so that there are no traces of burning on the other mouth. This may have been where the spits rested, thereby causing the burning. Made from coarse pink-buff clay with large inclusions. Comparable pyramidal spit supports or firedogs are categorised as firedog Shape Type I from Demircihöyük (Obladen-Kauder 1996, 355, Taf. 99 no. 3 – Taf.100 nos. 1-2), and are also known from Early and Middle Bronze Age levels at Tarsus (Goldman 1956, 324, nos. 16-22, fig. 442).
H. 9.5; W. 8.8; Di. perf. 1.9
Photo: 11:0410

40 K14/525 82014
Level 2f
Three fragments of the same architectural installation, non-joining.
a) corner piece, cuboid, hole drilled vertically from the top surface, not all the way through
L. 8.8; W. 5.0; H. 5.8
b) corner piece, rounded corner
L. 8.3; W. 7.6; H. 6.7
c) rim fragment. All made from coarse yellow-buff clay.
L. 4.4; W. 5.2; H. 2.2
Photo: 10:1927

[41] J14/160 74807
Level 2
Three fragments of a clay oven, including one with a top corner. The top surface of the piece is gently concave, so that there is a raised edge around the top. All made from coarse pink-grey clay.
Largest piece: L. 8; W. 7.5: Th. 5.8; Total Wt. 370.5
Photo: 10:0713

Clay spheres (42-45)

This section includes four spherical clay objects which may be unfinished beads, spindle whorls or loomweights. However, the rough and incomplete nature of these objects makes it impossible to tell what they originally may have been, so they have been included in this section, rather than in the respective chapters with the other clearer examples.

Level 2: Central strip
42 K14/568 82029
Level 2e/4-5
Sphere of coarse grey unbaked clay. Perhaps an unfinished spindle whorl, with no perforation yet. Some seemingly accidental scratching tool marks on the outside, comprising one slash and three holes. In several fragments.
Di. (2.8)
Photo: 10:0089

43 K14/770 92414
Level 2f
Fragments of two different spheres. One appears to be solid, the other hollow. Use uncertain - perhaps unfinished loomweights? Both made from coarse grey clay and unbaked. Very fragile.
a) Di. 5.7

b) Di. (5.5)
Photo: 10:0120

[44] J14/165 74807
Level 2
Irregular sphere; perhaps a failed bead. One perforation does not pierce through the whole sphere, a slip seems to have caused another to remove a part of the sphere.
Di. 1.5; Di. perf. < 0.1
Photo: 10:0483

Level II late: I18
45 I18/265 85047
Level IIe intermediate
Irregular clay ball, made from coarse buff-grey unfired clay. There appears to be some kind of mark incised on the ball, in the form of a sharp 'V' shape, with a round dot next to it.
Di. 3.2; Wt. 223
Photo: 10:3950

Miscellaneous objects (46-53)

The objects listed under this heading all have clear forms and there is some idea as to their function and use. However, they have not been found in sufficient quantities to be listed as separate categories. They are therefore presented together in this section, and have been arranged by Level, phase and area. Of particular note are two cylindrical objects (**49** and **52**), which bear some similarity to the cylindrical loomweights discussed below (Section 3). However, given that these two items do not have perforations which would allowed for stringing them, and do not have obvious signs of abrasion from being tied and used as weights, they have not been included with the loomweights. Instead, it is suggested that these unperforated cylinders may have been used as stoppers for narrow jars or bottles.

Level II: Stele Building and Western Courtyard
46 I19/784 11126

Level IIa/b
Round stopper, roughly formed into a hollow hemisphere with extended sides; coarse grey-pink clay with gritty inclusions. Perhaps a stopper for the neck of a jar or bottle, or a miniature container?
Di. 2.7; H. 3.8; Wt. 22.3
Photo: 11:2085

47 J20/252 78042

Level IIb.i
Moulded dish; just under half of a roughly oval-shaped dish, with flat base and vertical sides. The interior base of the dish has been decorated with deeply incised patterns and round perforations. This decoration takes the form of a thick border around the edges of the base, with short perpendicular notches and perforations at relatively regular intervals. Within this border, a 'T' shape is incised, pointing to the oval end of the dish, with a perforation on either side. Two more perforations can be seen in the central part of the dish, as well as two short notches perpendicular to the border. The style and method of decoration recalls that of the 'Turmvasen' from Boğazköy (Parzinger and Sanz 1992, 111, no. 23, Taf. 63). However, this dish clearly lacks the tower-shaped protrusions which give the Turmvasen their name.
L. 8.9; W. (6.7); H. 2.7
Photos: 07:2154, 07:2155

48 J20/305 81803
Level IIb.i
Large bathtub of grey, heavily grit-tempered ware fired to reddish-brown on both exterior and interior surfaces, and wet-smoothed. The shape is slightly irregular, partly due to soil pressure which has distorted the vessel. One end is more everted than the other. The tub has two vertical handles attached to the exterior at each end, but one has been placed centrally instead of to one side like the others. The construction of the rim (W. 4.8 cm) is interesting. It seems that clay was applied to the outside edge of the walls of the vessel, and thumb impressions were made along it. The rim piece, which had horizontal lines to prevent vertical slippage, was also covered on its reverse with damp clay, and was then applied to the wall of the pot so that the thumb prints were filled with clay from the back of the rim. The join was covered with clay to form the top of the rim, which was then smoothed and finished off. It is not clear whether this technique was used all round the bathtub, or whether this was a repair of some sort.

The function of such vessels remains uncertain, but bathtubs are known from across the Aegean and eastern Mediterranean in the Late Bronze and Iron Ages. They are generally thought to have been used for bathing or purification, although they sometimes occur also in funerary contexts. However, it has been recently suggested that these may have instead been used in textile production, specifically for the fulling of wool (Mazow 2008).
L. 68.0; W. 61.0; H. 24.0
Photos: 08:1515, 08:1520, 08:1524

49 H19/486 83041
Level IIb/c
Cylindrical object; perhaps a clay stopper? End fragment of a straight-barrelled clay cylinder, similar to **52** below. This object may have been used as a stopper for narrow-necked jars or bottles. Made from coarse pink-grey clay.
H. (3.4); Di. 3.7; Wt. (7.8)
Photo: 08:0665
Central Strip: Level 3
50 J14/526 11712

Level 3 phase 5
Corner of a clay stand or base, made from coarse buff-pink clay with gritty inclusions. The stand tapers inward and upward from the flat base to the top surface, which is slightly uneven. Roughly made and undecorated.
H. 4.3; W. 5.5
n.ph.

Central Strip: Level 2
51 L14/657 93032
Level 2e/3-4
Domed or mushroom-shaped stopper. Made from coarse red clay, with pebbly concretions on the underside. Of a similar type to some stoppers found in the previous campaign at Kilise Tepe (EKT, nos. 1498 and 1500).
Di. 5.6; H. 3.1
Photo: 10:1642

52 K14/811 92418
Level 2e/2
Fragment of a clay cylinder with rounded top, perhaps stopper for a vessel. There is a small perforated hole on one side near the top, although this does not appear to have been used for suspension. Made from very coarse grey-pink clay with large inclusions. Like **49**, this object may also have been used as a stopper for narrow-necked jars or bottles.
H. 4.4; Di. 3.7 Photo: 10:0102

Unstratified and Surface
53 K14/388 75047
Surface
Clay ring; fragment (<25%) of a rough clay ring with square section. The upright is centrally grooved, and the upper surface is decorated by two incised bands. A similar item was found in previous excavations on the site (EKT, no. 1622), also at surface levels. However, unlike the previous example, this object is made from buff ware, and has no wash on the exterior. In addition, this object has incised decoration on the upper surface, where the previously-discovered object had one polished and one rough surface. It remains uncertain what these objects may have been.
Ring W. 1.3; H. 1.6
Photo: 07:1541

54 I20/657 + 607 1400+84069
Surface/Level IIId
Stand; base and section of shaft of a roughly cylindrical clay stand. Wheel-made from very coarse pink-grey clay with large inclusions. There are traces of a creamy yellow slip and burning. Two depressions just above the base were either deliberate finger holds, or show where the stand was picked up whilst the clay was still wet.
Di. base (9.7); H. (>17.0)
Photo: 11:1080

Clay fragments and lumps (55-66)

This category includes fragmentary objects which cannot be identified as constituting part of a recognisable artefact, or lumps of clay of uncertain form and use. One irregularly-shaped re-used potsherd is included in this section (**64**). It has not been included with the section on re-used potsherd discs, because of its irregular shape, and the clear signs of wear on its edges which contrast with the sherd discs.

Level 3: Central Strip
[55] J14/518 11713
P11/47 (Level 3)
Fragment of a cylindrical clay stand(?), made from coarse pink-grey clay with large inclusions. Formed by moulding a clay sheath around a central clay roll. The surface is rough and undecorated.
L. 8.8; W. 6.5; H. 4.7
Photo: 12:0911

Level II: Stele Building
[56] J20/235 78041
Level IIc
Fragment of a baked clay spoiler or kiln support. Made from fine brown-buff clay.
L. 6.0; W. 3.0; H. 3.1
Photo: 09:0303

Level 2: Central Strip
[57] J14/414 11068
Phase 5
Fragment of an unbaked clay object with curved exterior face and an incomplete perforation inside. Perhaps a failed loomweight.
Max. Di. 6.5
Photo: 12:0917

[58] J14/334 11038
Level 2e/3
Clay lump; a lump of baked clay with a circular depression on top.
L. 5.8; W. 5.0; H. 2.5
Photo: 12:0957

59 K14/645 82052
Level 2e/5
Object of uncertain use, made from coarse buff clay. Appears not to be broken, but to be triangular-shaped with one face a regular concave arc. Signs of use and rubbing on the tip of the triangle.
L. 2.5; W. (1.5); H. 1.6
Photo: 10:0095

60 K14/740 92410
Level 2f

Burnt clay lump; curved corner from a clay object which as been badly burnt.
L. 3.4; W. 4.0; H. 2.7
Photo: 10:0101

61 K14/757 92411
Level 2f
Three fragments of an unbaked clay object. Made from coarse pink-grey clay with large air inclusions. a) shows a rough curved cylindrical shape, b + c) display no clear shape, but show signs of burning on their external surfaces.
a) L. 3.8; W. 3.0; H. 2.2
b) L. 3.5; W. 2.3;
c) L. 3.1; W. 2.9; H. 2.3
Photo: 10:0110

62 K14/276 75042
Level 2f
Small fragment from a small faience vessel. Light buff core, composition, not clay, with light blue glaze surface in and out. On exterior, remnants of a narrow horizontal rib, perhaps with a deliberate groove running vertically up from it.
(2.2) x (1.5) x 0.55 (Th.)
Photo: 07:0469

Level II late: I18
63 I18/253 85040
Level IIe intermediate
Fragment of a clay container with a curved hollow within it, used for burning objects in the hollow. No external surface is preserved.
Max. L. (12.6); Wt. 535.5
Photo: 10:3892

Unstratified
64 K20/282 81400
Unstratified
Reused potsherd, broken into an irregular shape. Fine red clay with a red slipped surface, with edges smoothed from use by rubbing. Differentiated from the reused potsherd discs (see above **13**-**31**) in that the sherd is very irregular.
Max. L. 5.7; Th. 0.7-0.8
Photo: 09:3274

Late Iron Age: N15
65 N15/52 73416
Clay spoiler; irregular clay spoiler.
Photo: 11:2109

66 N15/106 73416
Unbaked clay object; not a loomweight, but uncertain fragmentary object in many parts and mostly disintegrated. Made from coarse pink clay with many inclusions. One fragment has a slightly concave smooth face, making it unlikely that this is a loomweight. Perhaps part of a pot.
From the Iron Age N15 deposit (see section 3).
Wt. 130.1 g
n.ph.

3. Loomweights (67-193)

Naoíse Mac Sweeney

During the 2007-2011 seasons, loomweights were found only in certain locations and from specific chronological levels. No loomweights were found in the Level III deposits, or the earlier Level II assemblages in the Stele Building area. Instead, most of the 58 loomweights found date from a relatively narrow chronological span – Levels 2e and 2f in the later Iron Age. This is true of the cluster of twenty-eight weights found in Square I18, and also the twenty-nine weights found in the Central Strip. There is one exception to this general rule – the single unusual loomweight from Level 1 in Square L14 (**124**). A deposit of loomweights from a slightly later period was uncovered *in situ* in Square N15, and these are presented in the final part of this Section (**125-193**).

There is considerable standardisation across the two main loomweight assemblages from the 2007-2011 seasons. Most of the loomweights discovered were roughly spherical, or doughnut shaped with a central vertical perforation, and made from unbaked grey clay with few visible inclusions (or very small black inclusions). This shape and material also characterised the loomweights from Level II found in previous seasons (EKT, 469-70). This type of loomweight is well known from other Iron Age contexts in Anatolia, and has been found at Tarsus (Goldman 1963, 390, no.5, fig. 179) and in a cache at Alişar Höyük (von den Osten 1937, 450, fig. 507), as well as other sites. Within Anatolia, they are perhaps best known from Gordion, where several thousand have been found, mostly dating to the Early Phrygian Period (Burke 2005). Weights of this type have also been found in the Iron Age Levant (Cecchini 2000), and have sometimes been used to argue in favour of migration from Anatolia south into Palestine (Barber 1991, 301-3; this is also true of 'clay spools' – see below). The classic work on this type of loomweight in the Levant and concerning experimental archaeology with the form is Sheffer (1981). Loomweights of this type are suitable for use on the warp-weighted vertical loom. Loomweights which deviate from the standard shape are discussed in the relevant places below.

Both the I18 and Central Strip loomweight assemblages have a spread of weights. The range for the Central Strip loomweights is generally between 65g and 250g, while the range for the I18 loomweights is much greater, from 85.6g to 1032g. Amongst these I18 weights however, most cluster between 85.6 and 288.2g, with only one exceptionally heavy weight stretching the top end of the range (**115**). Two extremely small weights were also found in the Central Strip (**85** and **86**). These are unsuitable for stringing on regular looms, but may instead have been used for small hand-held looms and tablet looms. In general, the loomweights from the 2007-2011 seasons seem to have been lighter than those unearthed in previous campaigns, which had a wider range of weights from roughly 200-800g (EKT, 470). Overall, the loomweights excavated in the 2007-2011 seasons are consistent with the weaving of relatively light warp threads, and, consequently, relatively light textiles. This suggestion sits well with the evidence from the spindle whorls (Section 4 below). Although the spindle whorls were found in a wider range of levels than the loomweights, most are also relatively light and imply the spinning of fine threads. However, it is worth bearing in mind that many of these loomweights were unbaked, and so were in a poor state of preservation and crumbling, making it impossible to determine their weight precisely. Some of the weights given here are approximate, and several loomweights could not be weighed at all.

Level 2 late: Central Strip

Thirty objects which are most likely loomweights were found in the later Iron Age levels from the Central Strip. Nineteen of these are the standard doughnuts made from unbaked grey clay mentioned above. The exceptions are five loomweights with a roughly bell or cone shape (**68**, **72**, **84**, **85**, **86**), and a group of cylindrical loomweights (**88-95**). Most of the loomweights were found in Level 2f.

The cylindrical loomweights deserve additional attention. Although the function of these objects remains somewhat uncertain, on balance they are most likely to be loomweights, and so have therefore been included in this chapter. All were meant to hang horizontally, and have transverse perforations running vertically through the barrel. A cache found together of five of these loomweights (**91**-**95**) all have thickened ends and a slightly bulging convex silhouette, and most have been broken in the middle. A further three of the loomweights (**88**-**90**) have a more uniform cylindrical shape.

These cylindrical loomweights may perhaps be compared to the clay ovoids found in earlier excavations on the site (EKT, 466-468, nos.1639-78). However, the clay ovoids had, on the whole, a smoother and more rounded and convex shape on their long surfaces. Comparisons can also be drawn with the objects known as clay spools which occur widely across the Aegean, eastern Mediterranean and now also the central Mediterranean in levels associated with the LBA-EIA transition (Rahmstorf 2011, 320ff.). Object **96** from square I18 seems likely to be a clay spool of this type (see the description of this object for the further discussion of clay spools). However, it is not certain whether the horizontal cylindrical loomweights **88**-**95** can also be placed in this category. These objects are of a similar shape to some of the spools found elsewhere, but all had transverse perforations for suspension, whereas spools known from other sites are not usually pierced. A direct comparison for these objects can be found at Iron Age Tarsus (Goldman 1963, 391, no. 9, fig. 179). This transverse perforation would allow for easy suspension of the objects, perhaps facilitating their use for weaving. However, given that these objects were roughly made and the perforations relatively large, it is possible that these would not have hung straight but rather have been irregularly balanced. A final consideration is that objects **88**-**95** are relatively small and light, and would not have been appropriate for use in a warp-weighted vertical loom. They may, however, have been used for tablet weaving on small mobile racks.

While the great majority of the weights in this section are of clay, occasional stone weights were also recovered in I18 (see below). Possibly the triangular stone from Level 2f in the Central Strip, which is catalogued under Worked Stone (**743**), was also a loomweight, though no perforation survives.

67 I14/343 75353
Level 2
Doughnut shaped. Made from coarse grey unbaked clay.
H. 3.4; Di. 6.5; Di. perf. 1.5-1.8; Wt. 109.9
Photo: 10:0480

68 K14/598 82041
Level 2e/5-6
Large bell-shaped loomweight, with oval base. Made from coarse grey unbaked clay. Scrape and tool marks on all sides.
H. 8.2; Base 7.4 x 8.3; Di. perf. 1.5; Wt. 280
Photo: 07:0673; Group 3B

69 K14/336 75056
Level 2e
Doughnut shaped. Made from coarse grey unbaked clay, with a few large inclusions including charcoal pieces and small snail shells. Part broken off.
H. 4.35; Di. 8.7; Di. perf. 1.6
Photo: 12:2241, right

70 J14/233a 11004
Level 2f
Fragmentary loomweight of doughnut form. Made from coarse grey-pink clay with gritty inclusions. Badly burnt and fragmentary. Less than a quarter remaining.
H. (4.5); Di. (9.0); Wt. (41)
Photo: 12:2241, left

71 J14/233b 11004
Level 2f
Fragmentary loomweight of roughly spherical shape. Made from coarse buff clay. Roughly one third remains.
Di. (8.0); Wt. (50)
Photo: 11:0371

72 J14/237 11005
Level 2f
Bell-shaped loomweight with a roughly square horizontal section. Made from coarse pink-grey clay with gritty inclusions. This weight is unusual in that it has a vertical perforation, which is slightly off-centre. The base has been broken off.
H. 7.5; Di. 2.2; Wt. 105.9
Photo: Group 3B

73 K14/274 75042
Level 2f
Doughnut shaped. Made from unbaked semi-coarse grey clay. Two fragments, not connecting.
H. 2.8; Di. (5.2); Di. perf. 1.6; Wt. (241)
Photo: Group 3B

74 K14/495 82009
Level 2f
Two fragments of a doughnut shaped or spherical loomweight, non-joining. Made from buff clay with gritty inclusions. Unbaked.
Di. perf. <1.0 Photo: Group 3B

75 K14/497 82009
Level 2f

Spherical. Made from coarse grey unbaked clay. Fragile and fragmentary, less than 25% remaining.
H. 5.8; Di. (7.8); Di. perf. (0.8)
Photo: Group 3B

76 K14/505a 82011
Level 2f
Fragmentary spherical loomweight. Made from coarse, grey unbaked clay with a few black inclusions. Less than 25% of the loomweight survives.
H. (2.9); Di. (4.8); Di. perf. (1.5)
Photo: Group 3B

77 K14/505b 82011
Level 2f
Fragmentary spherical loomweight. Made from coarse, grey unbaked clay with few black inclusions. Roughly 25% of the loomweight remains. It has a wider perforation at base.
H. (3.2); Di. (6.0); Di. perf. (2.0)
Photo: Group 3B

78 K14/517 82013
Level 2f
Doughnut shaped. Made from unbaked grey clay.
H. 3.0; Di. (7.0); Di. perf. 1.9; Wt. 89
Photo: Group 3B

79 K14/558 82025
Level 2f
Doughnut shaped. Fragment only, less than 25% remaining. Made from coarse red clay with many inclusions. Unbaked and very fragile.
H. 3.2; Di. (6.0); Di. perf. (1.7)
Photo: Group 3B

80 K14/751 92411
Level 2f
Roughly spherical loomweight of unbaked coarse grey clay.
H. 4.2; Di. 5.4; Di. perf. 1.7; Wt. 122
Photo: Group 3B

81 K14/932 92449b
Level 2f
Very roughly spherical loomweight, slightly longer in one dimension than the other. Made from semi-coarse grey clay. Unbaked, slightly burnt surface.
H. 4.5; Di. 6.0-6.5; Di. perf. 0.7; Wt. 167
Photo: Group 3B

82 K14/520 82014
Level 2f
Large roughly cylindrical loomweight, broken into three pieces. Made from coarse yellow-buff clay. About half preserved.
Di. perf. 1.7
Photo: Group 3B

83 L14/621 93025
Level 2f
One third of a doughnut-shaped loomweight. Made from coarse grey unbaked clay. Scratches on surface probably from excavation.
Di. 5.3
Photo: Group 4D

84 J14/404 11040
Level 2f
Roughly made pyramidal loomweight with flat base and a roughly triangular plan. There are two small horizontal perforations, one from each of the two better-preserved faces through to the third face, which is more poorly preserved. The top has been broken off, and there is some damage to one edge in particular. Made from white-grey clay with small inclusions.
H. 5.3; Base 4.0x4.5; Wt. 66.4
Photo: 12:0931

85 K14/767 92414
Level 2f
Possible loomweight; uneven bell or cone shaped object, on a roughly circular base. Hole through the top of the cone for suspension. Made from semi-fine grey clay. Unbaked. This object is extremely light, and seems unlikely to be a loomweight for a regular vertical loom. It is possible, however, that it was used as a loomweight for a hand-held tablet loom or weaving rack. Similar to **86**.
L. 4.2; Base Di. 4.7, Top Di. 1.5; Wt. 58
Photo: 09:0184

86 K14/1004 92461
Level 2f
Possible loomweight, uneven bell or cone shaped object, on a roughly circular base. There is a slight narrowing of the point of the cone, and the base is flat. Made from coarse grey clay, lightly fired. There are traces of burning on the underside. Similar to **85** this is an extremely light object and could not have been used on a standard vertical loom. It is possible, however, it could have been used on small hand-held looms.
L. 2.8; Base Di. 4.4; Top Di. 0.2; Wt. 20
Photo: 10:1883

87 J14/283 11025
Level 2k
Doughnut shaped loomweight of unbaked grey clay with large gritty inclusions.
H. 3.4; Di. 6.0; Di. perf. 1.8; Wt. 79.5
Photo: 11:0430

Cylindrical loomweights
88 K14/753 92411
Level 2f
Horizontal cylindrical loomweight; fragment of a clay cylinder, with transverse perforation. Made from coarse grey clay. This loomweight has a uniform cylindrical shape, rather than having thickened ends and a central bulge.
H. (4.3); Di. (4.1); Di. perf. 1.0
Photo: Group 3B

89 K14/823 92410
Level 2f
Horizontal cylindrical loomweight; roughly half of a short, fat, clay cylinder with transverse perforation. Made from coarse grey clay. This loomweight has a uniform

cylindrical shape, rather than having thickened ends and a central bulge.
H. 4.3; W. 4.6; Di. (1.0)
Photo: Group 3B

90 K14/516 82013
Level 2f
Horizontal cylindrical loomweight; complete clay cylinder with a transverse perforation. This loomweight has a uniform cylindrical shape, rather than having thickened ends and a central bulge. Made from coarse red clay. Unbaked.
L. 6.3; Di. 3.3; Di. perf. 1.0; Wt. 65
Photo: 08:0047; Group 3B

91 K14/227 75037
Level 2f
Horizontal cylindrical loomweight; one end of a clay cylinder with a transverse perforation. Fragmentary condition. Rather than being a uniform cylinder, this has slightly thickened ends and a central bulge. Made from coarse yellow clay.
H. (2.1); Di. 3.25
Photo: 07:0386; Group 3C

92 K14/229 75037
Level 2f
Horizontal cylindrical loomweight; roughly one third of a clay cylinder with a transverse perforation. Rather than being a uniform cylinder, this has slightly thickened ends and a central bulge. Made from coarse red clay with large inclusions including stones. Buff surface.
H. (3.7); Di. 2.9; Wt. (23.1)
Photo: 12:2158; Group 3C

93 K14/231 75037
Level 2f
Horizontal cylindrical loomweight; roughly one third of a clay cylinder with transverse perforation. Rather than being a uniform cylinder, this has slightly thickened ends and a central bulge. Made from coarse red clay with large inclusions, buff surface.
H. (4.2); Di. 3.55; Wt. (31.8)
Photo: 07:0444; Group 3C

94 K14/235 75037
Level 2f
Horizontal cylindrical loomweight; nearly half of a clay cylinder with transverse perforation. Rather than being a uniform cylinder, this has slightly thickened ends and a central bulge. Made from coarse red clay, buff surface.
H. (4.1); Di. 3.1; Wt. (25.8)
Photo: 10:2171; Group 3C

95 K14/494 82009
Level 2f
Horizontal cylindrical loomweight; just over a third of a clay cylinder with transverse perforation. Rather than being a uniform cylinder, this has slightly thickened ends and a central bulge. Made from coarse red clay with large inclusions including small stones. Buff surface.
H. (4.0); Di. 3.4; Wt. (39.2)
Photo: Group 3C

Level II late: Square I18

Twenty-seven loomweights were found in close proximity to each other from two consecutive phases (IIe late and IIf) in square I18. These seem to be even more standardised than those from the Central Strip, almost all being made from the same coarse buff-grey unbaked clay and almost all being of a similar roughly spherical or doughnut shape. The high concentration of standardized loomweights suggests textile working activity in this area. Less standardized weights are: **96**, which is an unpierced clay spool; **101**, **113** and **119** which are all made from irregular stones; **107**, which has a flattened biconical shape (and is not too dissimilar from the standard form), and **115** which is a particularly large bell-shaped example weighing more than 1 kg, whose sides slope only gently.

96 I18/272 85050
Level IIe intermediate
Spool; a large clay spool in two fragments, with a thinner waist and larger ends. Circular section. Made from coarse grey unbaked clay. The weight and size of this spool makes it appropriate for use in the vertical warp-weighted loom. The distinction between this object and the horizontal cylindrical loomweights listed above is that this object has a notably narrower 'waist' in the middle, and is unperforated. A similar, but larger, object was found in the previous campaign at Kilise Tepe (EKT, 477, no. 1777, Fig. 443).

Clay spools of this type are widely distributed across the Aegean and eastern Mediterranean during the Late Bronze to Early Iron Age transition, and their use seems to have spread particularly quickly during the course of the twelfth century BC. From their contexts they were clearly textile tools, and it was originally assumed that they were used as bobbins or reels. However, it is now widely accepted that these objects were used in a similar fashion to loomweights. Their narrowed 'waist' means that they could be strung without the need for a perforation. See Rahmstorf 2011, 320ff. for a discussion of clay spools more generally and of their distribution as currently known. For examples in Syria, see Cecchini 2000, 214-9, fig.1. Closer to home, examples can be found at Alişar Höyük (von den Osten 1937, 283-4), Tille Höyük, (Summers 1993, 51), Tell Ta'yinat (Harrison 2009, 183 and 2010, 49-50), and Tarsus (Goldman 1956, fig. 444, no. 53). Like the doughnut shaped loomweights, clay spools have sometimes been used as 'evidence' to support the idea of a migration from the Aegean to the Levant at the end of the Late Bronze Age (Yasur-Landau 2010).

H. 8.6 Di. ends 5.5; Wt. 223
Photo: 10:3916

97 I18/267 85045
Level IIe late
Doughnut shaped. Made from coarse red-orange unbaked clay. About two thirds preserved.
H. 5.4; Wt. (140)
Photo: Group 3A

98 I18/211 85021
Level IIe late
Doughnut shaped. Made from coarse buff-grey unbaked clay. Several non-joining pieces. About 75% preserved.
H. 3.9; Di. 6.0; Di. perf. 1.2; Wt. (107)
n.ph.

99 I18/228 85025
Level IIe late
Roughly spherical loomweight. Made from coarse buff-grey unbaked clay. Approx. 75% preserved.
H. 5.4; Di. 6.8; Di. perf. 1.8; Wt. (184)
n.ph.

100 I18/235 85027
Level IIe late
Loomweight; spherical. Made from coarse pink-grey unbaked clay. Roughly two thirds preserved.
H. 5.2; Wt. (165)
n.ph.

101 I18/213 85021
Level IIe late
Loomweight, made from irregular river pebble. Perforation is non-axial.
L. 6.8; W. 4.3; Di. perf. 0.7; Wt. 138
Photo: 10:3930

102 I18/170 85005
Level IIf
Roughly and irregularly spherical. Made from coarse grey-buff unbaked clay.
H. 4.5; Di. 7.2; Di. perf. 1.6; Wt. 203.3
Photo: Group 3A

103 I18/171 85005
Level IIf
Doughnut shaped. Made from coarse buff-grey unbaked clay. About 90% complete.
H. 3.5; Di. 6.0; Di. perf. 1.4; Wt. (118)
Photo: Group 3A

[104] I18/172 85005
Level IIf
Doughnut shaped. Made from coarse buff-grey unbaked clay. Very poorly preserved.
Di. 9.2 (min.)
n.ph.

105 I18/173 85005
Level IIf
Slightly squashed spherical shape. Made from coarse buff-grey unbaked clay. About 90% complete.
H. 5.3; Di. 7.4; Di. perf. 1.9; Wt. (239)
Photo: Group 3A

106 I18/175 85005
Level IIf
Roughly spherical. Made from coarse buff-grey clay. Very poorly preserved.
n.ph.

107 I18/176a 85005
Level IIf
Two fragments of a flattened biconical loomweight, with raised central collar around the perforation on one side. Over two-thirds preserved. Made from coarse buff-grey unbaked clay.
H. 3.2; Di. perf. 1.4; Wt. (108)
Photo: Group 3A

108 I18/176b 85005
Level IIf
Two fragments of a spherical loomweight. Made from coarse buff-grey unbaked clay. Less than one third preserved.
n.ph.

109 I18/176c 85005
Level IIf
Fragment of a doughnut shaped loomweight. Made from coarse buff-grey unbaked clay. Less than 25% preserved.
n.ph.

110 I18/179 85005
Level IIf
Irregularly-squashed spherical shape. Made from coarse grey unbaked clay.
H. 5.0; Di. 7.4; Di. perf. 1.6; Wt. 288.2
Photo: Group 3A

111 I18/182 85007
Level IIf
Roughly spherical. Made from coarse buff-grey unbaked clay. Two non-joining fragments, approx. one third preserved.
H. 5.2; Di. 7.3; Di. perf. 1.4; Wt. (196)
Photo: Group 3A

112 I18/183 85008
Level IIf
Doughnut shaped. Made from coarse grey unbaked clay.
H. 3.9; Di. 7.9; Di. perf. 1.8; Wt. 200.7
Photo: Group 3A

113 I18/188 85011
Level IIf
Irregular river pebble, with large perforation through it, off-axis.
L. 5.7; W. 4.1; Di. perf. 1.1; Wt. 85.6
Photo: 08:1389

[114] I18/190 85012
Level IIf
Roughly spherical. Made from coarse buff-grey unbaked clay. Very poorly preserved. n.ph.

115 I18/191 85011
Level IIf

Large loomweight, shaped roughly into a bell shape with almost vertical sides. Made from coarse buff-grey unbaked clay. About 90% complete.
H. 8.8; L. (11.6); W. 9.2; Wt. (1032)
Photo: Group 3A

116 I18/192 85012
Level IIf
Doughnut shaped. Made from coarse buff-grey unbaked clay. Burnt on one side.
H. 4.2; Di. 7.8; Di. perf. 1.2; Wt. 206.5
Photo: Group 3A

117 I18/193 85012
Level IIf
Irregular but roughly spherical loomweight. Made from coarse grey unbaked clay.
H. 5.3; Di. 7.3; Di. perf. 1.2; Wt. 271.5
Photo: Group 3A

118 I18/201 85015
Level IIf
Doughnut-shaped. Made from coarse buff-grey unbaked clay. About 80% complete.
H. 3.7; Di. 6.6; Di. perf. 1.8; Wt. (168)
Photo: Group 3A

119 I18/204 85017
Level IIf
Rough and irregular stone made into a loomweight. Perforation is near the top, while the base is thicker.
H. 8.6; Base 8.5x5.5; Di. perf. 1.4; Wt. 435.5
Photo: 10:3930

120 I18/222 85011
Level IIf
Roughly spherical loomweight. Made from coarse buff-grey unbaked clay. Very poorly preserved. Almost complete.
H. 5.2; Di. 7.5; Di. perf. 1.8; Wt. 252
Photo: Group 3A

121 I18/225 85024
Level IIf
Roughly and irregularly spherical loomweight. Made from coarse buff-grey unbaked clay. Very poorly preserved. Less than 25% preserved.
n.ph.

122 I18/237 85028
Level IIf
Roughly spherical loomweight. Made from coarse buff-grey unbaked clay. Roughly two thirds preserved.
H. 5.5; Di. 6.7; Di. perf. 1.8; Wt. (78)
n.ph.

123 I18/157 74056
Level IIf
Irregular and roughly-shaped doughnut. Made from coarse buff-grey unbaked clay.
H. 3.1; Di. 3.1; Di. perf. 1.5-2.0; Wt. 101.2
Photo: Group 3A

Level 1

124 L14/550 93021
Dismantling Level 1 walls
Fragment of a roughly cuboid shaped loomweight made from dark red stone, with large hole drilled through. It is possible that this was not actually a loomweight, although this does seem to be the most likely use for the object. Although included here, it could be of Hellenistic or later date.
H. 3.2; W. 3.2; Di. perf. 1.8; Wt. 83.8
Photo: Group 4D

Late Iron Age: the N15 assemblage

The loomweight deposit in Square N15 was excavated towards the end of the 2007 season. The deposit was located in a corner of a room enclosed by walls W4703 and W4704, in a level lying directly under the south-eastern corner of a Byzantine room between walls W4806 and W4701, but on a different orientation (see plan P26). The loomweights were excavated in an upper (**125-162**) and lower (**163-192**) group, but they seemed all to belong to the same episode of deposition and were all given the unit number 73416, while units 73417 and 73428 represent the clearing of soil around the deposit and up to the walls. Unit 73419 was pottery collected from within and around wall W4704, and unit 73420 was used for the collection of pottery directly under the loomweight deposit. It appeared that the lower group was associated with a large *in situ* jar (see photo of jar in situ). One further loomweight (**193**) recovered in 2008 probably belongs with the main deposit.

There were 68 loomweights found in the deposit, all apparently fairly similar in their size and style. Although it was originally thought that the deposit might represent a loom *in situ*, the excavator soon noted that there was no evidence for a loom in the area. Instead, it was suggested that the deposit may represent a cache of loomweights in storage. This is consistent with the ceramics found in the deposit, which were predominantly closed shapes and included both large storage jars and small and medium sized closed vessels. The deposit may therefore represent a storage area for household goods and foodstuffs. The associated ceramics suggest that this deposit is Iron Age in date, although it has been disturbed by pits from the Byzantine period.

Several other objects were found in the deposit alongside the loomweights, and are described in the appropriate chapters. These included a number of metal objects, perhaps tools for use during textile production. There were two iron blades (**459** and **461**), a metal scoop (**460**), what appears to be an iron awl (**462**), a curved piece of copper wire or a hook (**463**), and an iron nail (**464**). In addition to these metal tools, the deposit also included a spindle whorl (**237**), a clay bead (**295**), and two unidentified fragmentary objects made from unbaked clay (**65-66**).

Several of the loomweights bore clear traces of burning on their external faces. Burning was not, however, evident on any of the breaks. This suggests that the breaking of the vessel containing the loomweights and the abandonment of the room did not occur in the context of a burnt destruction. Indeed, the soil in these units also supports this, and the soil directly around the deposit was described as 'a circle of hard soil'. Instead, the traces of burning on the exterior of some of the loomweights imply that some of them may have had a long period of use, during which they were exposed to ash or flames.

The N15 loomweights (125-193)

Most of the N15 loomweights are roughly made from the same coarse light grey clay, with relatively few inclusions save for the occasional large pebble. They are unbaked, and therefore many have deteriorated since their excavation. Almost all of the loomweights are of the 'doughnut' type, which is familiar from Level II or 2 phases elsewhere on the site, as well as elsewhere in the Iron Age eastern Mediterranean (see above), and would have been suitable for use on the warp-weighted vertical loom.

In the following Table, where no shape is given, a doughnut form should be assumed. There are a number of exceptions however, falling into one of three categories:

• Several examples deviate from the standard doughnut type in that they have a sharper profile, resembling a more rounded version of a biconical type. Strictly speaking, these loomweights fall somewhere between the biconical and the doughnut shapes. This variation is not known elsewhere on site, and may be an idiosyncrasy of this particular deposit. I have designated these here as 'angular doughnut': **134, 136-7, 150, 161, 164, 173-4,** and **185-6**.

• **131** has a spherical shape. This is not dramatically different from the standard doughnut shape, being slightly taller and larger in proportion to its diameter. This variation may not be especially significant, and it is possible it was accidental, but **167** is similar, and it is noticeable that with weights of 372g and 404g, these two are the heaviest in the assemblage.

• Three loomweights were of the conical or 'spinning top' type, a shape that is more usually associated with spindle whorls at Kilise Tepe (Section 4; EKT, Chapter 37). Loomweights of this type are not known from any other deposits on the site, and spindle whorls of this shape are mostly decorated and predominantly concentrated in MBA levels. The use of this shape for unbaked and undecorated loomweights in this shape is therefore intriguing. The spinning top loomweights are: **135, 142** and **189**.

The loomweights were excavated in two levels, with 38 being lifted in the upper level and 30 excavated directly underneath them. There is no reason to think that the two layers are significantly different, but they are presented in the catalogue below in this order. Not all of the loomweights are illustrated, due to their fragile state of preservation. However, given the high degree of standardization, the drawings of 15 examples are representative of the assemblage (Plate 6), and more than half of them (59) are visible in photos (Groups 3D, 3E and 3F. Given their fragmentary state, it was not possible to take measurements in many cases for height, diameter and diameter of perforation. In the table below, these measurements are therefore only included for loomweights when it was possible to confirm these reliably. The poor state of preservation also means that the weights cited in the table below cannot be taken as accurately corresponding to the weights of complete loomweights. Although we were originally able to retrieve near-complete objects from the deposit in almost all cases, the partial disintegration of the loomweights before processing meant that each loomweight was measured as a group of fragments, rather

than as a complete object. In most cases therefore, the weight given represents the minimum that each loomweight would have weighed in its complete form. Although this is far from perfect, there is some value in the resulting range of weights as illustrated in Table 9.1.

Table 9.1 Loomweights from Square N15

	N15/	H.	Di.	Di.perf.	Wt.	Shape	Condition	Photo group
[125]	62				173.8			3D
[126]	63				276.5		Traces of burning	3D
[127]	64				94.0		Traces of burning	3D
[128]	65				168.6			3DE
[129]	66	1.8			176.5			3D
[130]	67	4.3			170.5		Traces of burning	3D
131	68	5.4	8.5	1.9	372.0	more spherical than doughnut shaped		
132	69	3.85	7.2	1.8	198.8			
[133]	70	3.9			137.6			3E
[134]	71				349.5	angular doughnut		3E
[135]	72				202.1	conical, with raised lip round perforation on one side	Some white chalky inclusions. Traces of burning	3E
[136]	73	3.35			201.6	angular doughnut		3E
[137]	74	4.1			136.0	angular doughnut		3E
[138]	75	4.1			238.9		Traces of burning	3E
[139]	76	4.3			169.8			3E
[140]	77	4.3			313.5		Traces of burning	3E
[141]	78	5.1			297.6			3E
[142]	79	3.8			148.9	Conical		3E
[143]	80				123.8			3F
[144]	81	4.1			282.7	perforation has wider mouth on one side		3F
[145]	82				273.0			3F
[146]	83				310.5			3F
[147]	84	4.0			192.4		Traces of burning	3F
[148]	85	3.4			166.4			3F
[149]	86	4.6	7.9	1.9	287.8			3F
150	87	4.5	8.3	1.85	308.9	angular doughnut		

151	88	4.2	7.9	1.5	271.9			3F
[152]	89	3.7			182.3		some chalky white inclusions	3F
[153]	90				100.8			3F
154	91	4.0	8.1	1.9	226.2			
[155]	92				176.8			3F
[156]	93	4.1	8.0	1.8	317.4			
[157]	94				162.0		coarse pink clay with many inclusions	3F
[158]	95	4.8		1.6	329.8			3F
[159]	96				97.7			3F
[160]	97	3.5			119.5			33F
161	99	3.85	8.5	2.3	226.5	angular doughnut		3F
[162]	58	3.0		1.5	127.1	Conical		3F
163	108	3.9	7.2	1.9	215.2	Conical		
[164]	109				223.2	angular doughnut		3F
[165]	110				68.1			3E
[166]	111	3.3	7.5	2.0	198.8	sloping perforation		3E
[167]	112	6.0	7.6	2.0	404.3	more spherical than doughnut shaped		3E
[168]	113	4.1			135.4			3E
[169]	114				271.6		traces of burning	3E
170	115	3.5	5.8	1.5	125.3			3E
[171]	116	3.1			207.6		traces of burning	3E
[172]	117				211.8			3E
173	118	3.9			221.6	angular doughnut	traces of burning	3E
[174]	119				258.2			3E
[175]	120	4.25	8.0	1.9	262.0		traces of burning	3D
[176]	121	3.1			193.4		traces of burning	3D
177	122	3.3	7.3	1.6	171.6			
[178]	124	4.2	7.0	2.3	295.5			3D
[179]	125				129.7			3D
180	57	4.2	7.9	1.5-2.0	234.0			
[181]	126	3.5	6.8	1.3	149.7		traces of burning	3D
[182]	127				154.1			3D
[183]	128	4.1			204.9			3D
[184]	129	3.2			214.6		traces of burning	3D
[185]	130				104.1	angular doughnut		3D
[186]	131	3.3			158.8	angular doughnut		3D
[187]	132				96.1			3D
[188]	133	4.2	7.5	1.65	157.0		traces of burning	
[189]	134	3.5	6.9	1.8	143.7	conical, with raised lip round perforation on one side		3D
[190]	105	3.0			127.2		traces of burning	3F
[191]	136				230.9			3D

[192]	59				(480.0)	fragments from more than one loomweight		3
193	156	4.5	6.2-6.7	~0.9	181.2			

Table 9.1 (ctd.). Loomweights from Square N15

4. Spindle Whorls (194-237)

Naoíse Mac Sweeney

A total of 44 spindle whorls were found in the Bronze and Iron Age levels during the 2007-2011 seasons, and these are generally of similar types to those found in the previous campaign. In this catalogue, the whorls are arranged first by level, then by phase, and then by area.

Chronologically, a notable proportion of the spindle whorls came from Level II or 2 deposits (29 out of a total of 44), and spatially a good number of whorls were found in the Central Strip (22 whorls). This is perhaps significant as half of the loomweights found in the 2007-2011 seasons (30 out of 60, the N15 group excluded) were also found in Level 2 deposits in the Central Strip. Beyond this general point, it is difficult to trace chronological and spatial patterns in the deposition of spindle whorls from the 2007-2011 seasons because of the relatively small size of the assemblage.

This initial discussion considers patterns across the entire group of 44 whorls together, rather than from subdivisions of the assemblage.

Shape

The majority of the spindle whorls found were biconical in shape (28 out of 44). There is some variation in the form, with some examples being relatively steep and tall, with greater height than diameter. The commonest type, however, is the flattened biconical. This has a relatively wide and squat shape, a greater diameter than height, and prominently flattened top and bottom faces (sometimes decorated). Other shapes include the conical (also known as 'spinning top'; 5 whorls: **195**, **217**, **226**, **229**, **232**), the hemispherical (3 whorls: **196**, **198**, **223**), the spherical (4 whorls: **201**, **213**, **236**, **237**), and the doughnut shape (3 whorls: **209**, **214**, **225**). See Table 9.2 for correspondences between the whorl shapes found at Kilise Tepe and those from other sites.

Kilise Tepe shape	**Aphrodisias type** (Joukowsky 1986, 373)	**Troy type** (Blegen *et al* 1953, Fig. 291)	**Mersin type** (Garstang 1953, Fig. 116)	**Tarsus type** (Goldman 1956, Figs 447-450)	**Demircihüyük** (Obladen-Kauder 1996, Abb. 158)
Biconical	2	n/a	row 7 whorls 1-2; row 5 whorl 5	Fig 447 no. 11; Fig 450 no.87	VI.3-4 and VII (both variants)
Flattened biconical	2	15	n/a	Fig 447 nos. 18, 23; Fig 450 no.79	VI.1-2 and VI.5
Conical ('spinning top')	4, 7	9, 12	row 5 whorls 2-3	Fig 450, nos. 77, 80, 84	IV and V (all variants)
Hemispherical	3	4	row 7 whorl 4	Fig 448 nos 34-40	I.2
Spherical	n/a	1	n/a	Fig 447 no. 22	I.1; I.3
Doughnut	5	3, 16, 19	row 7 whorl 5	Fig 448 nos. 28-32; Fig 449 nos, 68-70	III (all variants)

Table 9.2. Correspondences of spindle whorl shapes between Kilise Tepe and other sites

Decoration and material

Most of the spindle whorls are made from clay, although one whorl was made from bone (**198**), and three from stone (**225**, **228**, **232**). In the case of one whorl (**221**), part of the wooden and metal spindle was preserved inside the whorl itself.

Just under half of all whorls were decorated (20 out of 44). There does not appear to be a clear correlation between decoration and the weight – there are both decorated and undecorated whorls at both ends of the weight range. However, there may be some relationship between decoration and shape. All five of the conical whorls were decorated, as was also the case with conical whorls from the previous campaign (EKT, Chapter 37). Spherical and hemispherical whorls do not seem to have been decorated. Biconical and doughnut-shaped whorls appear both in decorated and undecorated forms.

Decoration includes either surface treatment in the form of a slip or burnishing, or incised decoration. There are no clear patterns in which type of whorls are decorated in which manner. In general, decoration is not especially detailed or of a high standard. Incised designs are often uneven, lines are not straight, and gaps between motifs are irregular. The most common form of incised decoration is simple banding around the point of maximum circumference, and plain radial lines on either the upper or lower face of the whorl. The decorative incised arcs found on whorls during the previous campaign are largely absent.

Weight

The whorls vary in weight, but remain within the parameters of the whorls found in the previous campaign (between 5g and 50g). See Table 9.3 below for the distribution of these weights. No clear patterns emerge concerning possible relationships between weight and either decoration or shape. However, it may be significant that most of the heaviest weights (those over 30g) were found in deposits from the later phases of Level II or 2 – one from square I18 (**234**), and four from the Central Strip (**220**, **222**, **224**, **233**). Of course, these phases also yielded several whorls of medium (20-30g) and light (5-19g) weight. The exception to this general rule is **199**, which is the only heavy whorl found in a Level III context. In comparison, the weight range of the whorls found in the areas of the NW and Stele Buildings is much more restricted at 7-22g. This pattern might be suggestive of changing practices in textile production on the site. However, with this relatively small sample, it is difficult to draw any firm conclusions.

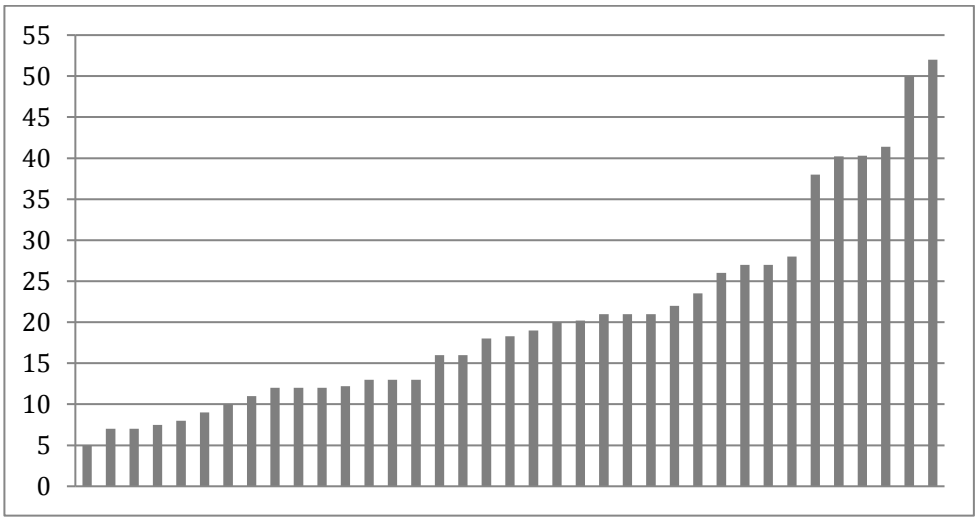

Table 9.3. Weights of spindle whorls. Incomplete whorls and **237** are not included.

Level III: NW Building and surrounding area

194 I19/544 84054
Level IIId
Biconical. Made from coarse red clay with white grit temper. Undecorated.
H. 2.7; Di. 3.6; Di. perf. 0.6; Wt. 28
Photo: Group 4A

195 I19/669 94045
Level IIId
Conical. Made from coarse red clay with white inclusions. Radial incised patterns on the flat end.
H. 1.8; Di. 3.7; Di. perf. 0.7; Wt. 21
Photo: Group 4A

196 I19/696 94058
Level IIId
Hemispherical, flattened. Made from fine brown clay. Traces of a burnished black slip.
H. 1.2; Di. 2.6; Di. perf. 0.5; Wt. 7
Photo: Group 4A

197 I19/471 84012 KLT 180
Level IIId or IIIe
Flattened biconical. Partly burnished, with incised decoration on the flat base. This comprises an irregular horizontal line round the circumference, and rough circles round the ends of the perforations, from which radiate three groups of three parallel lines top and bottom. Most of the lines are double, cut in the leather-hard clay by a thin blade. Chipping of the surface round all the lines would indicate that the surface of the clay was already dry.
H. 2.2; Di. 2.7; Di. perf. 0.45; Wt. 13
Photo: 08:0727

198 I19/547 84057
Level IIId/e
Hemispherical. Made of bone (head of a deer or cow femur). The domed surface is polished and well preserved. Flat surface ends of the perforation totally deteriorated. Undecorated.
H. 1.0; Di. 3.5; Di. perf. 0.7; Wt. 9
Photo: Group 4A

199 J19/617 77079
Level IIIe
Biconical with flattened top and base, and undecorated. Made from coarse orange clay with heavy white inclusions.
H. 2.4; Di. 4.2; Di. perf. 0.6; Wt. 41.4
Photo: 09:0281

200 J19/749 96558
Level IIIe
Biconical. Made from black clay with buff slip.
H. 2.3; Di. 3.3; Di. perf. 0.6; Wt. 19
Photo: Group 4B

201 I19/614 94001
Unstratified but probably Level IIId/e or IIa/b.
Spherical. Made from coarse brown clay. Undecorated.
H. 2.4; Di. 3.2; Di. perf. 0.6; Wt. 22
Photo: Group 4A

Level II early: Western Courtyard

202 I19/466 84008
Level IIa
Biconical. Made from fine grey clay. Traces of a black slip.
H. 2.0; Di. 2.8; Di. perf. 0.4; Wt. 8
Photo: Group 4A

203 I19/373 74562
Level IIa/b
Biconical, roughly formed. Made from fine buff clay. Undecorated. The whorl was found in several pieces, and has been almost completely reconstructed.
H.2.7; Di. 2.8; Di. perf. 0.6; Wt. 16
Photo: Group 4A

204 I19/279 74514
Level IIb
Biconical, broken in half with part of one half missing. Made from yellow-grey clay. Undecorated.
H. 1.9; Di. 2.8; Di, perf. 0.5; Wt. 13
Photo: Group 4A

205 I19/285 74512
Level IIb
Biconical, flattened. Made from fine grey clay. Incised on one side with rough radial lines and a single circular band.
H. 1.2; Di. 2.5; Di. perf. 0.4; Wt. 7
Photo: Group 4A

206 I19/349 74548
Level IIc
Biconical, flattened. Made from fine grey clay. Undecorated.
H. 1.8; Di. 3.6; Di. perf. 0.4; Wt. 21
Photo: Group 4A

207 H19/546 91010
Level IIc
Biconical, roughly shaped. Made from black gritty clay. Incised decoration, with vertical bands containing rows of dots.
H. 1.8; Di. 2.5; Di. perf. 0.6; Wt. 11
Photo: Group 4A

Level II early: Stele Building

208 K20/265 81813
Level IIa
Biconical, roughly shaped. Made from buff clay with small grey inclusions. Undecorated.
H. 1.7; Di. 2.9; Di. perf. 0.8; Wt. 12
Photo: Group 4B

209 J19/706 96511
Level IIa
Doughnut. Made from brown clay with black inclusions (each <1mm). Traces of a black slip on the external surface.

H. 1.8; Di. 3.2; Di. perf. 0.6; Wt. 20
Photo: Group 4B

210 J18/450 96001
Level IIb.i
Biconical, roughly shaped and flattened. Made from fine buff clay. Undecorated.
H. 1.4; Di. 2.7; Di. perf. 0.4; Wt. 10
Photo: Group 4B

211 J19/496 77013
Level IIb
Biconical, half remaining. Made from black clay, with buff slip and radial incised decoration on one side.
H. 2.4; Di. (3.9); Di. perf. (0.7); Wt. 18
Photo: Group 4B

Central Strip: Levels 3-2

212 K14/890 92052
Level 3, phase 11
Shape roughly between spherical and biconical, with an almost squarish section. Made from semi-fine unbaked clay. Hole not fully pierced through, perhaps unfinished?
H. 2.5; Di. 2.5; Di. perf. 0.6; Wt. 12
Photo: Group 4C

213 K14/975 92080
Level 3, phase 10
Spherical. Made from semi-fine grey clay and undecorated. Unbaked.
H. 1.9; Di. 2.4; Di. perf. 0.5; Wt. 12
Photo: Group 4C

214 L14/742 93056
Level 3, Phase 7/8
Doughnut-shaped. Made from grey-buff unbaked clay.
H. 2.5; Di. 3.75; Di. perf. 0.8; Wt. 27
Photo: Group 4D

215 K14/696 92007
Level 3, phase 7
Biconical with flattened top and bottom. Incised lines radiate from edge inwards in three groups of three, each group roughly 1 cm apart. Made from grey fine clay with black slip. The lines end at an incised band around the perforation. This decoration is on both sides. One shallow incised band encircles the edge, separating the two sides.
H. 1.9; Di. 2. 65; Di. perf. 0.5; Wt. 13
Photo: Group 4C

216 J14/443 11090
Level 3, phase 6
Biconical. Made from fine grey clay with few inclusions. Roughly made and undecorated, with an off-centre perforation.
H. 2.3; Di. 2.75; Di. perf. 0.3; Wt. 18.3
Photo: 11:1403

217 J14/497 11718 KLT 217
Level 3, phase 6
Conical, underside concave with a hemispherical hollow. Made from coarse orange clay with small gritty dark inclusions. The exterior is undecorated. There is incised decoration around the rounded edges of the bottom surface. Five groups of three concentric semi-targets are arranged around the edge. The interior hemispherical hollow has been painted red, and there is red paint tracing the incised decoration.
H. 2.0; Di. 4.1; Di. perf. 0.65; Wt. 23.5
Photo: 11:1833

218 K14/573 82031
Level 3, phase 6b
Biconical with indented base and moulded interior on base. Made from coarse dark red gritty clay. Undecorated.
H. 2.7; Di. 4.5; Di. perf. 0.5; Wt. 52
Photo: 12:1051; Group 4C

219 J14/417 11056
Level 2, surface 5a
Flattened biconical. Made from dark grey-black clay with few inclusions, save for one shiny black inclusion. Undecorated. Roughly half preserved.
H. 6.1; Di. 3.7; Di. perf. 0.6; Wt. 9.8
Photo: 12:1056

220 K14/569 82029
Level 2e/4-5
Flattened biconical. Broken, two parts glued together, several still missing. Made from coarse yellow-buff clay. Traces of a black slip.
H. (2.3); Di. 3.1; Di. perf. 0.4
Photo: Group 4C

221 L14/675 93039
Level 2e/4-5
Biconical, with raised ridge at centre. Made from orange-buff clay. The whorl is red slipped, with a row of small circular depressions around top and bottom halves.
H. 3.4; Di. 3.9; Di. perf. 0.5; Wt. 38
Photo: Group 4D

222 L14/671 93040 KLT 199
Level 2e/4-5
Flattened biconical. Wood and copper insert partly preserved within the whorl. This insert takes the form of a fine cylindrical wooden rod (Di. 0.2mm), which was covered, at least at one end if not along the length of the rod, with a fine coating of copper alloy. Made from buff clay with small inclusions. Incised decoration – two parallel bands at point of greatest circumference, with radial lines on both upper and lower faces.
H. 2.1; Di. 3.2; Di. perf. 0.5; Wt. 19 g.
Photo: 09:1880

223 J14/137 74808
Level 2e
Flattened hemispherical, part missing. Made from semi-fine grey clay.
H. 1.6; Di. 3.3-3.2; Di. perf. 0.6; Wt. 12.3
Photo: Group 4E

224 L14/632 93023
Level 2e
Flattened biconical. Made from fine grey clay. Incised groove around the middle, black slipped.
H. 2.7; Di. 3.1; Wt. 50
Photo: Group 4D

225 L14/722 93050
Level 2e
Natural river stone, polished into a rough doughnut shape and with a hole pierced through.
H. 0.8; Di. 2.6 (min.); Di. perf. 0.6; Wt. 5
Photo: Group 4D

226 J14/239 11005
Level 2f
Conical. Made from dense grey clay with few inclusions. Incised decoration on both exterior and base. On exterior, top and bottom bands with four vertical designs with double zig-zag between lines. On base, four concentric semi-target designs within a circle. Just over half preserved.
H. 1.7; Di. 2.8; Di. perf. 0.4-7; Wt. 7.5
Photo: 11:0274

227 K14/818 92420
Level 2e/2
Tall biconical with flattened top and base, almost cylindrical. Made from semi-coarse brown clay, surface blackened by fire? Decorated with four bands of circular depressions. These circular depressions are shallow, and are close together in the middle bands.
H. 3.0; Di. 2.8 (centre), 2.3 (top and bottom); Di. perf. 0.8 x 0.5; Wt. 27
Photo: Group 4C

228 L14/643 93028
Level 2e/2-3
Biconical. Made from dark grey limestone.
H. 2.25; Di. 3.3; Di. perf. 0.9; Wt. 21
Photo: Group 4D

229 J14/206 86201
Level 2e/f
Conical. Made from dark grey clay with a buff-orange slip, incised decoration with four panels on the upper side and semicircle pattern on the base.
H. 1.4; Di. 3.2; Di. perf. 0.7; Wt. 12.2
Photo: Group 4E

230 J14/348 11034
Level 2e
Flattened biconical. Made from gritty black clay with a red surface. Traces of black slip on exterior. Two joining fragments.
H. 4.0; Di. 3.7; Wt. 20.2
Photo: 11:0633

231 K14/264 75043
Level 2f
Biconical with flattened top and bottom. Made from fine grey clay with a black slip.
H. 2.5; Di. 2.7; Di. perf. 0.4; Wt. 16
Photo: Group 4C

[232] K14/488 82009
Level 2f
Conical. Made from soft white porous stone, heavily eroded. Traces of two vertical incised lines opposite each other as decoration.
H. (1.8); Di. (2.6); Di. perf. 0.9; Wt. n/a
Photo: Group 4C

233 I14/282 75330
Level 2
Spherical. Made from gritty red clay.
H. 3.1; Di. 0.4; Di. perf. 0.75-0.85; Wt. 40.3
Photo: 07:2148

Level II late: I18
234 I18/217 85022
Level IIe late
Roughly biconical, with thickened waist. Made from friable light-brown grit-tempered unbaked clay, repaired from numerous fragments (some still missing). Decorated with incised zig-zags and dots.
H. 3.7; Di. 4.3; Di. perf. 0.5; Wt. 40.2
Photo: 08:1736

Level I and Unstratified
235 J19/487 77005
Level I
Biconical. Made from fine grey clay with no inclusions. Undecorated, save for two rough holes drilled into one surface.
H. 2.2; Di. 3.6; Di. perf. 0.6; Wt. 26
Photo: Group 4B

236 J19/741 96569
Unstratified
Spherical, roughly shaped. Made from buff clay with black inclusions. Undecorated.
H. 2.1; Di. 2.8; Di. perf. 0.5; Wt. 18
Photo: Group 4B

Late Iron Age: N15
237 N15/123 73416
Fattened doughnut or squashed spherical shape, with a slight ridge at the centre. Made from the same unbaked grey clay as the loomweights with which it was found. From the N15 loomweights deposit.
H. 2.4; Di. 3.5; Di. perf, 0.5; Wt. 35.4
Photo: Group 3D

5. Beads (238-295)

Naoíse Mac Sweeney and Margaret O'Hea

Most beads uncovered during the 2007-2011 seasons were made from faience, frit or glass. As with beads from the previous campaigns, the small size of many of the beads and the lack of laboratory analysis makes it difficult to determine their material precisely. In the catalogue below, it should therefore be assumed that where no material is specified, the bead in question is made from either faience, frit or glass. Where beads have been made from other materials – either clay, stone, bone, or metal – this has been specified in their catalogue entry. There seems to be no clear chronological or spatial pattern governing the choice of bead-making material.

The beads excavated in the 2007-2011 seasons fall into a number of standard types. The most common type is referred to as the 'standard type' in the catalogue below, and takes the form of a small, flat, disc-shaped bead of standardised proportions (typically ca. 0.1 cm in height and ca. 0.3-04 cm in diameter). These beads are made from faience, frit or glass; and are usually white or light blue in colour. Such beads are commonly found across Anatolia and the Near East, and have been unearthed, amongst other sites, at Alaca Höyük (Koşay 1951, 135, Pl.94, fig.1, no.266), Beycesultan (Mellaart and Murray 1995, 150, no.344, fig.O.41 and Plate XVI b), and Tarsus (Goldman 1956, 339 nos.5-8, fig.453). They are also known from previous excavations at Kilise Tepe (EKT, 211).

Another particularly common type is the small doughnut shaped bead, which is slightly larger than the standard type, but also suitable for stringing in groups. This type seems often to have been made from clear or white glass, the surface of which has now deteriorated so that it appears to have a pearlescent sheen (for examples from previous excavations, see EKT, 501). Most of these beads appear to have been made by winding.

There are a small number of more unusual beads that tend to have a more decorated surface and are slightly larger or more ornate. These may have been strung with other beads as with the small types described above, but they could also have been used individually in different ways. Amongst these are cylindrical beads made from wound metal (**250** and **251**), naturally polychrome stone (**266**) or segmented faience (**287**).

Beads were found in the NW Building, the Stele Building, and in the Level 2 deposits in the Central Strip. Only the dust from a single bead was found in the later Iron Age building in I18 (**254**). As in previous campaigns, the beads found during the 2007-2011 seasons were mostly single stray finds. There are, however, some exceptions to this general rule. The most significant of these is the large group of 163 beads found plastered into the IIa floor of Room 8 of the Stele Building (**259**). Smaller clusters were found elsewhere in the Stele Building (**256**) and in later phases of Level 2 in the Central Strip (**286** – these particular beads seem to have been strung together onto a necklace), while two separate clusters of beads were uncovered in Late Bronze Age levels of the NW Building (**238** and **239**).

Level III: NW Building
238 I19/621 94006
Level IIId
Group of thirteen beads made from faience, frit or glass, found stuck together in a clay lump.
a) Blue-grey faience, with a flat flower shape. The 'petals' comprise four larger lobes, between which there are four smaller lobes.
H. 0.1; Di. 0.6; Di. perf. 0.2
b) Grey, doughnut shaped
H. 0.1; Di. 0.3; Di. perf. 0.05
c) Grey, doughnut shaped
H. 0.1; Di. 0.3; Di. perf. 0.05
d) Light blue, disc shaped, standard type
H. 0.1; Di. 0.3; Di. perf. 0.05
e) Light blue, disc shaped, standard type
H. 0.1; Di. 0.4; Di. perf. 0.1
f) Light blue, disc shaped, standard type
H. 0.1; Di. 0.4; Di. perf. 0.1
g) Blue, doughnut shaped
H. 0.1; Di. 0.3; Di. perf. 0.05
h) Blue, doughnut shaped
H. 0.1; Di. 0.3; Di. perf. 0.05
i) Blue, doughnut shaped
H. 0.1; Di. 0.35; Di. perf. 0.05

j) Grey, disc shaped, standard type
H. 0.1; Di. 0.35; Di. perf. 0.18
k) Blue, doughnut shaped
H. 0.1; Di. 0.45; Di. perf. 0.1
l) Clear/white wound glass with pearlescent sheen, doughnut shaped
H; 0.15; Di. 0.43; Di. perf. 0.18
m) Glass bead, immediately broke into yellow powder.
Photo: 09:2665

[239] I19/794 11133
Level IIId
Seven small beads made from glass, frit or faience, encased in a lump of mud. These beads were preserved only in a fragmentary condition, making it impossible to ascertain dimensions.
a) Light blue-green, doughnut shaped
b) Light blue-green, doughnut shaped
c) Bright blue, uncertain shape
d) Brown, doughnut shaped
e) Yellow-cream, doughnut shaped
f) Light blue-green, uncertain shape
g) Light blue-green, uncertain shape
Photo: 11:2157; *in situ*: §3.2.13, 3.2.14

[240] I19/736 94006
Level IIId
Light blue, disc shaped. Standard type.
H. 0.1; Di. 0.4; Di. perf. 0.2
Photo: 10:1402

241 I19/792 11132 KLT 222
Level IIId
Hard dark red stone, spherical shape. The perforation is relatively wide, and is now irregularly shaped due to wear on one side of the hole where it has been strung.
L. 1.95; Di. 0.9; Di. perf. 0.3
Photo: 11:1588

242 I20/667 11319
Level IIId
Clear wound glass, now slightly discoloured. Rough doughnut shape. There is a ring of yellow paint around the hole, both top and bottom.
H. 0.6; Di. 1.15; Di. perf. 0.25
Photo: 11:1974

243 I19/545 84045
Level IIId
Unfinished bead; made from grey clay with small black inclusions, spherical shape. This object is a sphere of baked clay, with a pierced hole that does not penetrate all the way through the sphere. Perhaps an unfinished or rejected bead, similar to **244.**
H. 2.0; Di. 1.9; Di. perf. 0.15
Photo: 09:0763

244 I19/560 84062
Level IIId/e
Unfinished bead; made from semi-fine grey clay, spherical shape. This object is a sphere of baked clay, with a pierced hole that which does not penetrate all the way through the sphere. Perhaps an unfinished or rejected bead, similar to **243**.
H. 1.5; Di. 1.6; Di. perf. 0.15
Photo: 09:1324

Level II: Western Courtyard and surrounding area
245 I19/355 74549
Level IIa
Clear/white wound glass with pearlescent sheen, doughnut shaped.
H. 0.2; Di. 0.7; Di. perf. 0.2
Photo: 09:1413

246 H19/535 91003
Level IIa/b
Green-grey faience, disc shaped with radial ribbing and indented edges. As the flat side of the disc is more fully decorated, it seems likely that this was the upper surface for display. It could therefore be an appliqué button for sewing onto textiles rather than a bead that would have been strung. A similarly shaped bead was found at Alaca Höyük, although this was made from red stone (Koşay 1951, 136, Pl.94, fig.3, no.34).
H. 0.2; Di. 1.1; Di. perf. 0.2
Photo: 09:0207; Group 5A

247 H19/537 91004
Level IIa/b
Light blue, disc shaped. Standard type.
H. 0.2; Di. 0.3; Di. perf. 0.1
Photo: Group 5A

248 I19/343 74543
Level IIa/b
Light blue, disc shaped. Standard type.
H. 0.05; Di. 0.6; Di. perf. 0.1
Photo: 07:0803

249 I19/ 347 74543
Level IIa/b
Dark brown stone, disc shaped. Standard type.
H. 0.2; Di. 0.4; Di. perf. 0.1
Photo: 07:0804

250 H19/561a 91020
Level IIb
Cylindrical bead made from copper wire wound in a tight spiral. The wire is flat and rectangular in cross-section. The profile of the cylinder bulges out at the centre. Found alongside **251**.
H. 2.6; Di. 0.3-0.6; Di. perf. 1.5
Photo: 10:1342 top

251 H19/561b 91020
Level IIb
Cylindrical bead made from copper wire wound in a tight spiral. The wire is flat and rectangular in cross-section. The cylinder is of almost uniform shape. Found alongside **250**.
H. 2.1; Di. 0.4; Di. perf. 1.5
Photo: 10:1342 bottom

252 H19/450 83011
Level IIb/c

Brownish black clay still retaining traces of black burnish, spherical shape. There are collars around the ends of the perforation.
H. 2.0; Di. 2.0; Di. perf. 0.35
Photo: 10:1412

[253] H19/473 83022
Level IIc
Clear/white wound glass with a pearlescent sheen, doughnut shaped. Too fragmentary for conserv–ation, measurement or photography.

[254] I18/258 85042
Level IIe, intermediate
Turquoise frit reduced to powder, presumably from a bead.

Level II: Stele Building
255 J19/510 77022
Level IIa
Clear/white wound glass with a pearlescent sheen, doughnut shaped.
H. 0.2; Di. 0.5; Di. perf. 0.2
Photo: 07:0245

[256] J19/645 77027
Level IIa
Five white and blue beads, disc shaped and of the standard type. Four are whole (three blue and one white), one is in fragments (white).
H. 0.3; Di. 0.2; Di. perf. 0.1
Photo: 09:0406; Group 5B

257 J19/518 77031 KLT 152
Level IIa
Beads; 163 beads made from various materials. This collection of beads was found plastered into walls and floor at the south-west corner of the IIa floor of Room 8. See Jackson & Postgate 2009, 209. The beads include:
a) 122 light blue and white, disc shaped, standard type
H. 0.15-0.2; Di. 0.2-0.35; Di. perf. 0.1-0.15
b) 1 small brown stone bead
H. 0.15; Di. 0.3; Di. perf. 0.1
c) 3 larger brown stone beads
H. 1.5; Di. 0.5; Di. perf. 0.2
d) 1 grey stone bead
H. 1.5; Di. 0.5; Di. perf. 0.15
e) 1 large white bead, perhaps made from shell
H. 1.5; Di. 0.6; Di. perf. 0.15
Photo: 07:0348

258 J19/613 77073
Level IIa
Clear/white wound glass with pearlescent sheen, doughnut shaped.
H. 0.2; Di. 0.5 Di. perf. 0.2
Photo: 09:0410; Group 5B

259 J19/635 77073
Level IIa
Clear/white wound glass with a pearlescent sheen, likely doughnut shaped, broken in three places.
H. 0.55; Di. 0.2l Di. perf. 0.2
Photo: 10:0409; Group 5B

260 J18/468 96001
Level IIb.i
Bead made from bone, flat and disc-shaped. Only half is preserved.
H. 0.35; Di. 1.4
Photo: 10:0779

261 J19/586 77052
Level IIb.i
Dark brown-black wound glass (perhaps originally blue or green), spheroid shape. The bead features painted decoration, consisting of three bands of uneven zig-zags, with a white zig-zag in the middle flanked by a yellow zig-zag on either side. Fragments of two similar beads were found in the earlier excavations (EKT, 503, no. 2079), but did not, however, come from the Stele Building area but instead from K14.
H. 1.5; Di. 1.6; Di. perf. 0.3
Photo: 07:2125

262 K20/266 81413
Level IIb.i
Made from undecorated grey clay, biconical shape.
H.1.7; Di. 1.9; Di. perf. 0.5
Photo: 08:1236

[263] J20/247 78034
Level IIb.i
Clear/white wound glass with pearlescent sheen, likely doughnut shaped, extremely fragmentary.
Photo: Group 5B

264 J19/784 96564
Level IIb.i
Bead made from bone. Hemispherical shape with flattened top, eroded.
H. 0.8; Di. 0.3; Di. perf. 0.35
Photo: 10: 0786

265 K19/505 81012
Level IIe/f
Bead made from bone. Conical shape, made from a mammal long bone shaped by turning. Close parallels for this object can be found at Boğazköy (Boehmer 1979, 50, nos.3663-7, Taf.30).
H. 0.5; Di. 1.4; Di. perf. 0.25
Photo: 08:1379

Levels 3-2: Central Strip
266 I14/278 75325
Level 2
White and brown-banded agate. The bead has a slightly bulging cylindrical shape.
H. 1.5; Di. 0.5; Di. perf. 0.15
Photo: 07:1220

267 K14/921 92059
Level 3, phase 11
Light blue frit. Irregular shape but roughly disc or cylinder shaped. It is difficult to ascertain the original shape of this bead, as it is heavily worn on some sides so that perforation is no longer at the centre of the bead.
H. 0.3; Di. 1.0; Di. perf. 0.23
Photo: Group 5A

268 K14/922 92047
Level 3, phase 10
Clear/white wound glass with pearlescent sheen, doughnut-shaped.
H. 0.2; Di. 0.45; Di. perf. 0.2
Photo: 09:2679; Group 5A

269 K14/752 92022
Level 3, phase 8
White wound glass with blue flecks, doughnut shape. During manufacture, the glass has been wound so that a peak of the glass still remains at the perforation edge.
H. 0.4; Di. 0.6; Di perf. 0.3
Photo: 09:0219; Group 5A

270 L14/744 93055
Level 3, phase 7
Light turquoise on smoother face, other face encrusted. Flat disc with narrow perforation.
H. 0.1; Di. 0.55; Di. perf. 0.15
Photo: Group 5A

271 L14/728 93049
Level 3, phase 7
Marbled greenish-brown stone, disc shaped. One of the surfaces has been broken off and so is rough. The remaining original surfaces are polished smooth.
H. 0.3; Di. 1.3; Di. perf. 0.4;
Photo: 09:2435; Group 5A

272 L14/738 93054
Level 3, phase 7
White pearlescent wound glass, doughnut shaped but irregularly formed.
H. 0.15; Di. 0.45; Di. perf. 0.33
Photo: 09:2653; Group 5A

273 L14/731 93054
Level 3, phase 7
Light blue, disc shaped. Standard type.
H. 0.1; Di. 0.3; Di. perf. 0.1
Photo: Group 5A

274 L14/717 93044
Level 2, phase 5-6
Light blue. Disc shaped. Standard type.
H. 0.07; Di. 0.19; Di. perf. 0.11
Photo: Group 5A

[**275**] J14/524 11096
Level 2, phase 5
Bead made from bone. Cylindrical, heavily worn.
H. 0.35; Di. 0.35; Di.perf. 0.05
Photo: KT11_PP_0560

276 J14/418 11056
Level 2, phase 5a
Clear/white wound glass with a pearlescent sheen, spherical. The bead has painted decoration, consisting of four horizontal bands in pale yellow.
H. 0.8; Di. 0.7; Di. perf. 0.2
Photo: 12:1094

277 J14/474 11076
Level 2, phase 5a
Bead made from bone. The bead has a cylindrical shape, made by smoothing the antler of a red or fallow deer into a cylinder, and drilling a hole longitudinally through the centre.
H. 1.4; Di. 1.9; Di. perf. 0.8
Photo: 11:1584

[278] J14/508a 11070
Level 2, phase 5a
White, disc shaped. Standard type. Found by flotation of same unit as **279**.
H. 0.15; Di. 0.4; Di. perf. 0.1
Photo: 12:1098 right

[279] J14/508b 11070
Level 2, phase 5a
Soft white stone, cylindrical shape. Found by flotation of same unit as **278**.
H. 0.3; Di. 0.35; Di. perf. 0.05
Photo: 12:1098 left

280 L14/713 93041
Level 2e
White glass, disc shaped. Standard type.
H. 0.1; Di. 0.35; Di. perf. <0.05
Photo: Group 5A

281 L14/749 93039
Level 2e
Soft white stone, formed into a roughly cuboid shape. The hole has been drilled through from one direction, so that the perforation is not uniform throughout but instead tapers. There are smoothing lines/striations visible on the flat surfaces where the stone has been worked.
H. 0.3; Di. 0.6; Di. perf. 0.15
Photo: Group 5A

282 K14/940 92445
Level 2e
Blue faience. This bead has an unusual shape, perhaps mimicking that of a pomegranate or a macehead. It is collared top and bottom, with central rough globe separated into four lobes separated by deep vertical striations. One set of separating striations is deeper and wider than the others, creating more of a separation between two of the lobes than between the others. It is slightly chipped on the collar. A similar bead was found at Alaca Höyük (Koşay 1951, 135, Pl. 94, fig. 1, no. 183), and four similar beads were found in Iron Age levels at Tarsus (Goldman 1963, 395, nos. 11-14).
H. 1.13; Di. 0.9; Di. perf. 0.15
Photo: Group 5A

283 L14/691a 93026
Level 2f
Black wound glass, with greenish mottled discoloration on the surface. Doughnut shaped.
H. 0.22; Di. 0.55; Di. perf. 0.26
Photo: Group 5A

284 L14/691b 93026
Level 2f
Greenish white surface and light green in cross-section; disc shaped. Standard type, in fragmentary condition.
H. 0.15; Di. (lost) ~0.55
Photo: Group 5A

285 K14/182 75012
Level 2f
Clear glass, spherical.
H. 1.25; Di. 1.6; Di. perf. 0.4
Photo: 10:3512

286 K14/315 75049
Level 2f
Twenty-two beads from a single necklace, all made from frit, glass or faience. Of the twenty-two, twelve were preserved in good condition (considered here under the letters: a-l), and nine were fragmentary. Of the fragmentary beads, seven seem to be doughnut shaped beads made from clear/white glass; and two seem to be thick doughnut shaped beads made from light green glass, frit or faience.
a-f) Six beads of a longitudinal ovoid shape. These beads were all made from wound glass – one black, the others blue-grey. In all cases the darker glass is wound with white for decorative effect.
H. 0.8-1.0; W. 0.5-0.6; Di. perf. 0.15-0.25
g) Creamy white wound glass, doughnut shaped
H. 0.4; W. 0.6; Di. perf. 0.3
h) White, disc shaped, standard type
H. 0.2; W. 0.2; Di. perf. 0.15
i) Light blue, disc-shaped, standard type
H. 0.15; W. 0.4; Di perf. 0.15
j) Black, doughnut shaped, with a raised collar on one face
H. 0.7; W. 1.05; Di. perf. 0.2
k) Light green, doughnut shaped
H. 0.8; W. 1.2; Di. perf. 0.3
l) Blue-grey and white wound glass, spherical
H. 0.6; W. 0.8; Di. perf. 0.3
Photo: 07:0785

287 K14/518 82014
Level 2f
Blue faience ('Egyptian Blue'), with cylindrical shape divided into fifteen segments by incised lines.
H. 2.4; Di. 0.5; Di. perf. 0.2
Photo: 08:1904

288 J14/319 11025 KLT 221
Level 2k
Wound black glass, spherical shape. The surface of the glass is mottled and the shape is slightly irregular, with a raised lip where the glass has set after winding.
H. 0.85; Di. 1.1; Di. perf. 0.5
Photo: 11:0656

Unstratified
289 I19/328 74545
Unstratified, North-West Building
Bead; Fragment of a small, spherical, bright blue glass bead.
Max. pres. dimension: (0.4)
Photo: 07:0808

290 K19/486 77600
Unstratified, Stele Building area
Fine grey clay, spherical shape. Undecorated.
H. 2.3; Di. 2.4; Di perf. 0.4
Photo: 07:0079

291 K19/490 81000
Unstratified, Stele Building area
Hard black stone, spherical shape.
H. 2.0; Di. 2.5; Di perf. 0.5
Photo: 08:1226

292 K14/587 82037
Unstratified, Central Strip
Black glass, vitrified and broken into pieces. The state of preservation was too fragmentary for detailed recording or measurement. (The drawing shows the two largest pieces).
Photo: 10:3529

[293] I19/613 94001
Unstratified, North-West Building
Bead; light blue, disc shaped. Standard type.
H. 0.1; Di. 0.3; Di. perf. 0.25
Photo: 09:1716

294 J19/646 81600
Unstratified, Stele Building area
Beads; two light blue, disc shaped beads. Standard type.
H. 0.3; Di. 0.2l Di. perf. 0.1
Photo: Group 5B

Late Iron Age: N15
[295] N15/176 73416
Cylindrical ceramic bead with square perforation and purple paint. From the N15 loomweight deposit.
L. 1.6; Di. 0.5; Di. perf. 0.2; Wt. 0.5
n.ph.

Metal Objects (296-464)

Franca Cole and Naoíse Mac Sweeney

A large number of metal objects were recovered from Kilise Tepe in the 2007-2011 seasons. Copper, iron, silver and lead items were all found. Finds have been divided up, first by their metal (copper, iron, and other), and then by the type of object. Unidentified lumps of metal and slag or ore are listed after the artefacts (copper: **382**-**392**; iron: **449**-**457**). A few metal items associated with the deposit of loomweights in N15 form the final section (**458**-**464**).

Copper and bronze objects

No analysis has been carried out to determine the composition of the metals used in these objects. It is likely that in many cases the copper has been alloyed with another metal, but without analysis this is never certain, and as a result, we have used the term 'copper' to refer to all objects made from any type of copper alloy. This cannot accurately reflect the variety of materials actually used.

Jewellery

We have included in this section two items which may be rings, earrings, or copper wires used as links in a chain (**299**, **300**). While we cannot be certain what the function of these items may originally have been, their size and shape suggests that use as a finger or earring was possible.

Level III: NW Building
296 I19/691 94059
Level IIIc below Rm 32
Twin torc necklaces of copper, found lying together on a surface. Each of the ends is coiled around into a circle for decorative effect. The two necklaces were found twisted together. Parallels for the coiled decoration at the ends can be found on a ring and two bracelets from Boğazköy (Boehmer 1972, 123, no.1051, Taf.35; and 125, nos.1108-9, Taf.36).
Torc Di. 12.0-11.3; Wire Di. 0.5
Photo: 09:2695

297 I19/692 94058
Level IIId
Circular copper pendant. Made as a single piece with tongue shape projecting out, and then rolled round to make a tube for stringing the pendant. Several bronze pendants made in this fashion were found at Boğazköy (Boehmer 1972, 30, nos.1-5, Taf.1; Boehmer 1979, 1, nos.2471-2476A, Taf.1). A similar pendant made from gold leaf was also found in Early Iron Age levels at Tarsus (Goldman 1963, 398, no.2, fig.181). For a detailed and wide-ranging discussion of this type of pendant attachment across the Near East, see Boehmer 1972, 19-30.
Di. 1.2-2.0
Photo: 09:2849

Level 2: Central Strip
298 L14/680+681 93042
Level 2 phase 5-6
Copper bracelet, made from a simple circle of bronze with circular section and tapering ends.
L. 13.5 (long piece), 4.0 (broken piece); Th. 0.4; Wt. 5.8
Photo: 09:2855

299 L14/678 93042
Level 2 phase 5/6
Ring or earring. Curved piece of copper wire, with circular section. The wire is broken at both ends, but the size of the fragment and the curvature could suggest this was worn as a ring.
L. 4.7 (if unfurled); Th. 0.2
Photo: 10:1789

Level II late: Western courtyard
300 I18/254 85038
Level 2e
Ring or chain link; bronze ring of simple wire twisted round into a circle with ends overlapping. The wire is roughly rectangular in section.
Di. 2.3 (ext.) 1.9 (int.); Wire cross section. 0.1 x 0.2
Photo: 10:3995

Surface: Central Strip
301 K14/686+687 92402
Unstratified
Fibula and pin; flat bronze fibula in a D-shape, with regular circular holes of differing sizes punched through for decoration (one was later used to attach a replacement pin when the original pin broke off). Hollow hemispherical studs were inserted into these holes for

decoration - 5 remain complete, 2 more incomplete. There were originally 22 such holes: 5 large ones on the main curve; 3 small ones in a perpendicular row at each end of the curve; 6 in each of the terminals of the curve, 2 vertical, and two fanning out to the right and left of this central pair. The terminals of the curve are marked with a double incised line, and the bottom one is bent backwards to provide a clip for securing the pin. The end of the replacement pin is curled around the top terminal.

Fibula pin: this was originally catalogued under the finds number K14/686. Part of the pin is still attached to the brooch, while the main body of the pin was broken off. The pin has a square section but tapers towards the tip. It appears to have been a replacement pin, and is perhaps slightly thinner than would ideally hold its weight. The stub of the original pin can still be seen at the back of the brooch, welded into place. The tail end of this pin is threaded through one of the brooch's perforations, and curled around the back to hold it in place. It emerges at the back of the brooch alongside the stub of the original pin.

The fibula can be categorised as a Phrygian fibula of Type XII,9 (Muscarella 1967, 19-20, pl.VI, fig.31). This type appears to have been popular at Gordion itself, and was found in large numbers in various tumuli (for the 50 examples from Tumulus MM alone, see Young 1981, 165-6, Pl.78), as well as on the City Mound. Examples of this type are also known from across Anatolia and the Aegean, including at Boğazköy (Boehmer 1972, 54-8 nos.84-102 Taf.6), Midas City, Lindos on Rhodes, Samos, Paros, Olympia, Argos, Perachora, and Marino in Italy (see Boehmer 1972, 57 and Abb.30 for the distribution of the type). It has also been suggested that this type of fibula is represented on the Neo-Hittite relief of King Urpallu at Ivriz. It is notable that the Kilise Tepe fibula belongs to the standard Type XII,9, rather than the subtype 9β as established by Boehmer. The studs of fibulae in subtype 9β are solid, rather than hollow. Attaching hollow studs requires more delicate handiwork than attaching solid studs.

It seems that this fibula type remained in use for a relatively long period, although it seems to have been especially popular in the late eighth century BC. An example of this type has been found in a deposit associated with the Early Phrygian Destruction Level at Gordion, which would place the development of this form ca. 800 BC. However, it has now been established that this example is intrusive, and since the form appears elsewhere at Gordion only in later levels, we must assume that it developed in the latter part of the century (Sams 2011, 640).

Fibula: L. 4.3 (max distance between the tips of the terminals); W. 0.45-0.5 (width of the flat curve); Th. 0.3 (thickness of flat curve); Di. 3.5 (exterior of curve); 2.4 (interior of curve)
Pin: L. 4.0; Th. 0.09
Photo: 10:2882

Projectiles

It is notable that most of the bronze and copper projectiles are of the same type. They are barbed and tanged, with a raised flat midrib extending back into the tang. This type of projectile point is found widely in central Anatolia, and one projectile previously excavated at Kilise Tepe from Level II also falls into this category (EKT, 518, no. 2246). The type has been classified as Type V.2 by Erkanal (1977, 53, pl. 18 no. 69-80). Examples are known from Boğazköy (Boehmer 1972, 104-8, nos. 817-9, 823-4, 831-45); Alişar Höyük (von den Osten 1937, fig. 496, e1158); Alaca Höyük (Koşay and Akok 1966, Pl. 131, nos. 1-6); Sardis (Waldbaum 1983, 36, no. 46); Mersin (Garstang 1953, Pl. 32a); and Tarsus (Goldman 1956, 291, nos. 79-85, fig. 427) amongst other places. These examples from other sites either date to the Hittite imperial period or to the Early Iron Age, which fits well with the dates of the Kilise Tepe projectiles listed below. Two copper projectiles do not belong to this common type: **303** which is socketed, and **305** which is willow-leaf shaped.

Amongst the bronze and copper projectiles which do belong to the barbed and tanged type with raised flat midrib, two longer examples have been found which are categorised here as 'javelin heads', rather than 'arrowheads' (**307-8**). The length and weight of these objects suggests that they may have been used as throwing projectiles rather than being shot from a bow. They are significantly larger than the other examples found at Kilise Tepe, and indeed also the comparable examples found at other sites, which tend to have lengths of 6-11cm. A particularly close comparison for the javelin heads can be found at Boğazköy (Boehmer 1972, 107, no. 818, Taf. 26).

Level III: NW Building
302 I20/630 71703 KLT 169
Level IIId
Arrowhead. Triangular shape with sharp deep barbs and a raised flat midrib, which is wider at the base of the arrow but tapers towards its tip. The midrib extends back in rectangular section before narrowing into a tang with square section.
L. 2.6 (head); 7.3 (complete); W. 1.3 (head); Cross section tang: 0.3x0.3; Th. at midrib 0.6
Photo: 07:1879

303 J19/692 96503
Level IIIe
Arrowhead. Triangular, no barbs, extending back into a metal shaft with hollow socket. This triangular socketed type without barbs appears to be relatively uncommon. A few examples are known from Boğazköy (Boehmer 1972, 109, no.884, Taf.30; Boehmer 1979, no.3157, Taf.15; Erkanal 1977, 50). At Tarsus, socketed arrowheads do not appear until the beginning of the Iron Age, and this triangular example is most closely paralleled by a relatively late type (Goldman 1963, 373, no.39, fig.174).

This triangular socketed arrowhead type should not be confused with the leaf-shaped and three-edged socketed types which are widely distributed across the eastern Mediterranean between the seventh and early fifth centuries BC. These are generally thought to derive from Scythian and Cimmerian types (Snodgrass 1967, 82; Waldbaum 1983, 32-5). It has been suggested that this type was first introduced into Anatolia by the migrating Cimmerians, although the arrowheads seem to appear slightly later than the supposed time of the Cimmerian arrival (Boehmer 1972, 109-15). The type later seems to have become standard issue within the Persian army (Schmidt 1957, 99).
L. 5.8; W. 1.8 (head); 0.65 (socket)
Photo: Group 6A

304 K20/290 81408
Level IIIe
Arrowhead. Triangular shape with short barbs and a raised flat midrib, which is wider at the base of the arrow but tapers towards its tip. The midrib extends back into the tang which is tapered and has a square section.
L. 6.0; W. 1.6 (head); Th. at tang 0.3
Photo: Group 6A

Level II: Stele Building
305 J20/264 78036 KLT 168
Level IIa
Arrowhead. Willow-leaf shaped and narrow head, with flattened central midrib which tapers towards the point. The midrib extends back into flattened rectangular section before narrowing into a tang with tapering square section. This type is also known from several sites in central Anatolia during the Hittite imperial period, including Boğazköy (Boehmer 1972, 109, nos. 876-8, Taf. 30); Alaca Höyük (Erkanal 1977, 47, pl. 17, no. 40; Koşay 1951, pl. 85, fig. 2, no. 1), as well as at Levels II and I at Beycesultan (Mellaart and Murray 1995, 143, no. 100, fig.O.7; and 137, no. 142, fig. O.11). They are also known from Cilicia, including at Mersin (Garstang 1953, 232, no. 18, and 250, nos. 8-9). At Tarsus, the examples seem to be slightly more lozenge-shaped rather than having smooth gently concave sides (Goldman 1956, 291-2, nos.88 and 91, fig. 427). The shape is also well attested in iron at Tarsus (Goldman 1963, 365-6, nos. 53-90, fig. 171).
L. 4.8 (head); 8.5 (complete); W. 1.2 (head); Th. at midrib 0.3; Cross section tang 0.2x0.2 min.
Photo: 07:1832

306 J18/454 96001
Level IIb.i
Arrowhead. Triangular shape with short barbs and a raised flat midrib, which is wider at the base of the arrow but tapers towards its tip. The midrib extends back into a tapering tang with rectangular section.
L. 8.8; W. 1.9 (head); Th. at tang 0.6
Photo: Group 6A

Level 3: Central Strip
307 K14/883 92053
Level 3, phase 11
Javelin head. Willow-leaf shaped and narrow head, with pronounced barbs and a raised flat midrib, which is wider at the base of the javelin head but tapers towards its tip. The midrib extends back into a tapering tang with rectangular section. Found alongside **308**.
L. 17.1 (complete); W. 2.0 (head); 0.2 (tip of tang); Th. at midrib 0.7
Photo: 10:2978 right

308 K14/886 92053
Level 3, phase 11
Javelin head. Willow-leaf shaped and narrow head with broken barbs and a raised flat midrib, which is wider at the base of the javelin head but tapers towards its tip. The midrib extends back into a tapering tang with rectangular section. Found alongside **307.**
L. 9.6 (head); 8.2 (tang); W. 2.0 (head); 0.2 (tip of tang); Th. at midrib 0.6
Photo: 10:2978 left

Blades

A range of bronze and copper bladed objects was found in the 2007-2011 seasons. These include two sickle blades, one single-edged straight blade, and one particularly unusual object which may either be a type of weapon, or a multi-tool incorporating a sickle blade with an axe (**310**).

Level III: NW area
309 J19/657 81609
Level IIIe
Sickle blade; gently curved sickle blade, with rounded point. The blade is of regular width, narrowing into the haft.
L. 24.2; Th. 0.3
Photo: 09:0383

Level II: Stele Building
310 J19/520 77028 KLT 166
Level IIa, Stele Building Room 8
Crescent-shaped copper bladed object; possibly a weapon

related to the Egyptian *khopesh*, or a multi-purpose sickle and cutting tool. The object consists of a curved sickle head with interior cutting edge and thickened back edge with a rounded end. The back of this sickle head has a second roughly rectangular protrusion, with a gently convex secondary cutting edge facing the opposite direction from the sickle blade edge. The object extends downwards into a rod with a regular rectangular section into the rest of the object, which has been broken off.

Exact parallels for this object have not been found, but it can be compared with similar types of bladed objects with segmented or separate cutting edges. See, for example, the segmented sickle from Hittite levels at Alaca Höyük (Koşay and Akok 1966, 187, no.227, Pl.46).
H. 10.3 (max. pres.); Th. 0.45; W. 1.9-2.1 (sickle); 5.0 (secondary cutting edge); 2.0 (rod)
Photo: 07:1895; *in situ* Photo §5.44
See: Jackson & Postgate 2009, 209 and 228, fig.2.

311 J19/485 77007 KLT 167
Level IIb, Stele Building Room 9
Sickle. Curved blade with parallel sides and a triangular point. The back of the blade is thickened. Extends back into a tang with rectangular section, part of which has been bent at a right angle and broken.
L. 22.0; W. 19.0
Photo: 07:1888
See: Jackson & Postgate 2009, 210.

Level 2: Central Strip
312 L14/611 93020
Level 2f
Blade; two non-joining fragments of a single edged copper blade, with one sharpened side and thickened back.
L. 1.51; W. 1.1; Th. 0.4
Photo: 10:1821

Tools

This section includes several distinct types of copper or bronze tools, including awls, spatulas, and chisels. All of these items were relatively small in size.

Level III: NW Building
313 I19/617 94003
Level IIId
Complete awl with square section, ending in a chisel blade. Traces of a wooden handle are preserved on three faces of the square-sectioned tang.
L. 6.9; Th. 0.4-0.5
Photo: Group 6C

314 I19/665 94043
Level IIId
Small chisel or pointed tool with square section, thickened to form a handle and roughly sharpened into a chisel-like point.
L. 6.6; W. 0.9 (handle); Th. 0.6 (shaft)
Photo: Group 6C

315 I20/632 71703
Level IIId
Small chisel with square section. One end of the tool terminates in a chisel blade, while the other has been sharpened roughly into a point – perhaps the re-shaping of a broken tool?
L. 3.5; Th. 0.2-0.3
Photo: Group 6C

Level II early: NW Building and Western Courtyard
316 J20/207 78005
Level IIa
Awl. Fragment of shaft with rectangular section. The shaft gradually thickens until it reaches the join with the head, which narrows to a sharp point.
L. 3.4; Th. 0.35 (max); 0.2x0.2 (tool shaft)
Photo: 10:0969

317 I19/404 74571
Level IIa/b
Handle and shaft of an awl. Shaft has square section, and the thicker handle area also has a square section, but with curved corners.
L. 4.3; Th. 0.8 (handle); 0.3 (shaft)
Photo: Group 6C

318 I19/461 84005
Level IIa/b
Part of a tool with square section, tapering to a point which is broken off. The shaft gradually widens into the central area, then is nipped into a 'waist', and is broken thereafter.
L. (8.9); Th. 0.3-0.6
Photo: Group 6C

319 J19/532 77031
Level IIb.i
Spatula, with hemispherical head and small spoon bowl. The small bowl was made by flattening the shaft slightly and adding a depression.
L. 7.9; Di. 0.7 (head); 0.2 (shaft)
Photo: Group 6B

Level 2: Central Strip
320 K14/537 82016
Level 2e
Multi-tool with circular section. One end tapers to a smooth point, the other is flattened to a chisel.
L. 4.2; Di. 0.2 (max)
Photo: 10:3072

321 K14/519 82014
Level 2f
Awl, with square section. The end tapers gradually to a point, and the handle side is thicker with a broken end.
L. (4.25); Th. 0.4
Photo: 10:3058

322 K14/761 92414
Level 2f
Spatula fragment, including part of the shaft and start of the flat end. The flat end seems to fan out in a triangular fashion, the shaft has a circular section.
L. (2.8); Di. shaft 0.23; Wt. (1.5)
Photo: 10:3054

Needles (see Group Photo 6D)

Needles are thin, straight rods of copper, usually with a circular section, one end of which is pointed and the other which takes the form of an eye through which thread can be passed. Only objects which can be securely identified as needles are listed here. Other items which may have the shafts of needles or pins are listed with the nails and pins below. There seem to have been two main ways of making the eye of the needle: in many cases, the end of the shaft has been slightly flattened, and looped over onto itself to make the eye, while in other examples the shaft has been split into two.

Level III: NW Building
323 I19/698 94060
Level IIIc
Head and shaft of a needle with square section. The eye was formed by flattening the shaft and looping it over onto itself.
L. (3.1); Di. of shaft 0.15
Photo: Group 6D

324 J19/721 96521
Level IIIe
Large tapering needle, with circular section. This object is of the size and type commonly now used in the sewing together of hay bales. The eye has been formed by flattening the shaft of the needle and folding it over on itself.
L. 14.1 (extended); Di. of shaft 0.3; Di eye 0.45
Photo: Group 6B

325 J19/751 96558
Level IIIe
Needle, tapering shaft with circular section. The eye has been formed by flattening the shaft and folding it over onto itself.
L. 8.4; Di. of shaft 0.1-0.4
Photo: 10:0937

326 J19/731 96512
Level IIIe
Part of shaft and start of the eye of a needle. The shaft has a circular section, and the eye was made by splitting the shaft.
L. (2.1); Th. 0.3
Photo: 10:1220

327 J19/612 77078
Level IIIe
Two fragments of a needle, circular in cross section. The smaller piece has the eye, formed by the shaft being folded back over, giving a rounded end and an elliptical shaped eye.
Longer piece - L. (4.7)
Shorter piece - L. (2.6)
Wt. (1.5) g.
Photo: 07:1509

328 J19/491 77009
Level IIIe/IIa
Three main pieces with some smaller fragments. The shaft is circular in cross-section, and folded over to form the head with a rounded end and a thin elliptical eye. The longest surviving piece measures 4.9 cm in length, the head is 0.8 cm in length and when complete it must have been at least 10 cm in length.
Photo: 07:0232

Level II early: Stele Building and Western Courtyard
329 I19/458 84003
Level IIa/b
Needle; head and shaft of a needle with circular section. The eye was formed by attaching a thin loop made from a separate piece of metal.
L. (5.1); Di. of head 0.3
Photo: Group 6D

330 I19/525 84043
Level IIa/b
Straight needle with circular section. The eye was formed by flattening the shaft and looping it over onto itself.
L. 8.2; Di. of shaft 0.2
Photo: Group 6D

331 I19/537 84052
Level IIa/b
Needle with circular section. The eye was formed by flattening the shaft and looping it over onto itself.
L. 10.1; Di. of head 0.25
Photo: Group 6D

332 I19/781 11126
Level IIa/b
Eye and small part of the shaft of a needle. The shaft is circular in cross section and the needle is broken at both ends. The eye has been made by flattening the shaft and separating it into two.
L. (2.7); Di. of shaft 0,4
Photo: 12:0410

333 I19/266 74513
Level IIb
Two fragments of a needle with circular section. The eye was formed by flattening the shaft and looping it over on itself.
L. a) (4.6); b) (2.1); Di. of shaft 0.2
Photo: Group 6D

Levels 3-2: Central Strip
334 K14/794 92035
Level 3, phase 11
Three non-joining fragments of the same needle with circular section. Most of the eye is now broken off, but it is evident it was originally made by splitting the shaft.
a) longest fragment, tapering to a point;
b) the start of the eye is just visible, where the shaft was split;
c) piece of shaft.
L. a) (5.7), b) (0.9), c) (0.8); Di. 0.2
Photo: Group 6F

335 J14/222 86209
Level 2e
Shaft of a needle with circular section. The beginnings of the eye remain visible, but this has been mostly broken off. The eye was originally made by splitting the shaft.
L. (6.3); Th. 0.2; Wt. (1.1)
Photo: 10:0287

Pins and nails (see Group Photos 6B, 6E)

Pins and nails are the most common copper alloy objects uncovered in the 2007-2011 seasons. Pins are defined as usually being straight thin rods of metal with a circular section, and a head at one end. Nails are similar, but are often thicker. In many of the cases below, only part of the shaft has been preserved, meaning that it is not always certain what the final function of the item would have been. One object listed here is of particularly uncertain function (**340**), as the nature and placement of the break makes it unclear whether this was originally a pin or a spatula. As for their purpose, the default assumption remains that pins were intended for use with clothing or other textile products, while nails were for wooden artefacts. It is noticeable that there are no small nails (such as in modern English tacks or panel pins), and the nails we do have must have belonged to fairly bulky objects, such as doors, large chests, or vehicles.

Level III: NW Building
336 I19/652 94038
Level IIId
Complete pin. The shaft has a circular section tapering to a point, and the pin has a roll head with flat rectangular section.
L. 4.5; Th. of head 0.4
Photo: Group 6D

337 I19/662 94041
Level IIId
Shaft of a pin with rectangular section, tapering to a square section.
L. 6.4; Th. of shaft 0.15-0.4
Photo: Group 6E

338 I19/686 94055
Level IIId
Shaft of a tapered pin with circular section.
L. (9.4); Di. of shaft 0.1-0.2
Photo: Group 6E

339 I19/795 11132
Level IIId
Pin. Appears complete. The head is slightly domed and is in the shape of an 8-petalled flower. The petals are arranged in four pairs, and each pair is slightly separated from the next one. The shaft is circular in cross section and has bands of ribbing near the top. It tapers to a rounded point.
L. 8.6; Di. of head 1.0l; Di. of shaft 0.3-0.2. Wt. 8.6 g.
Photos: 12:0330, 12:0333

340 I20/663 11318
Level IIId
Pin or spatula; broken shaft with a circular section. At one end of the shaft, there is a flattened round fragment of metal, which could be the disc-shaped head of a pin. However, this type of pin is not known at Kilise Tepe. Alternatively, the nature of the break might suggest that this was originally the start of the round flat head of a spatula.
L. (7.0); Di. of head 0.7; Di. of shaft 0.2
Photo: 11:1736

341 J19/691 96503
Level IIIe
Pin with circular section. Attached to the shaft is a rounded biconical head, with a circular depression on the top for decorative inset.
L. 6.0; Di. of shaft 0.3; Di. of head 0.9; H. of head 0.4
Photo: Group 6B

Level 3: Central Strip
342 J14/450 11095
Level 3, phase 6
Pin with circular section, tapering to a point.
L. 5.3; Di. of shaft 0.4
Photo: 12:0414

Level II early: Stele Building and Western Courtyard
343 I19/244 74501
Level IIa/b
Straight shaft of a pin with circular section.
L. (4.5); Di. of shaft 0.1
Photo: Group 6E

344 I19/254 74500
Level IIa/b

Pin; with curled top.
L. 6.0; Di. of shaft 0.4
Photo: 07:1024

345 I19/341 74543
Level IIa/b
Three fragments of a pin, not joining after conservation, two perhaps originally joining: a) gently curved, b) bent in two places, c) fragment. The combined length of the three fragments would have been about 13 cm, and the complete pin would have been longer than this.
a) L. (7.3); Di. of shaft 0.2
b) L. (5.3); Di. of shaft 0.2
c) L. (0.7); Di. of shaft 0.15
Photo: Group 6E

346 I19/387a 74567
Level IIa/b
Fragment of a pin with circular section and a tapering shaft.
L. (2.9); Di. of shaft 0.3
Photo: Group 6E

347 I19/387b 74567
Level IIa/b
Fragment of a pin with circular section.
L. (3.0); Di. of shaft 0.2
Photo: Group 6E

348 J19/674 81624
Level IIb.i
Nail or pin; curved fragment with circular section, tapering sharply to a point. The diameter of the shaft is slightly larger than most of the other pins found, so it may be preferable to classify this item as a nail.
L. (2.6); Di. of shaft 0.5
Photo: 10:1271

Level 2: Central Strip

349 J14/138 74808
Level 2
Pointed tip of a pin or nail, with circular cross section.
L.(0.8); Di. 0.2
Photo: 10:0437 top left

350 K14/329 75053
Level 2e
Shaft of a pin with roughly circular section, and a groove along it.
L. (1.8); Di. 0.3
Photo: Group 6F

351 K14/436 75073
Level 2e
Pin or nail fragments; four pieces of the shaft of a pin or nail, with circular section. The pin or nail had been bent into a right angle.
L. (4.2); Th. 0.3-0.5
Photo: Group 6F

352 L14/705 93046
Level 2/3, phase 5/6
Tip of a nail with circular section and rounded blunt end.
L. (2.4); Di. at tip 0.3
Photo: 10:1777

353 K14/611 82043
Level 3, phase 6
Two non-joining fragments of the same pin with circular section.
L. a) (2.9), b) (1.9); Di. 0.1
Photo: Group 6F

354 J14/169 74809
Level 1/2
Small fragment of a nail with rectangular section, bent into a right angle.
Cross section of shaft 0.3 x 0.2
Photo: 10:0437 top right

355 K14/316 75049
Level 2f
Shaft and point of a pin or nail with circular section. The tip has largely been corroded away, but the shape is still visible.
L. (3.2); Di. 0.2
Photo: Group 6F

356 K14/301 75047 KLT170
Level 2f
Pin. Short round shaft with domed head (di. 0.8 cm).
L. 3.3; Th. 0.4; Wt. (2.4) g.
Photo: 07:1863

Unstratified

357 K20/252 81400
Unstratified
Fragment of a pin with square section.
L. (2.6); Di. of shaft 0.2
Photo: 10:1292

[358] K14/913 92064
Unstratified
Shaft of a pin with circular section.
L. (4.1); Di. 0.2; Wt. (1.1)
Photo: Group 6F

359 K14/674 92002
Unstratified
Head and small part of shaft of a nail. The head is a hollow dome.
Di. of head; 1.7
Photo: 10:3037

Wires (see Group Photo 6G)

These pieces of copper (alloy) are thin pieces of wire, mostly with circular section. They are usually small, and it is not clear what they would have been used for.

Level III: NW Building
360 I19/699 94059
Level IIIc
Bent piece of wire with circular section and a loop at one end.
Th. 0.2; L. (4.1)
Photo: Group 6G

361 I19/559 84062
Level IIId/e
Wire with square section, looped around into two circular loops. One end is broken off, the other tapers to a point. This is too small to have been a bracelet, and too large to have been a finger ring, and so is included in this category rather than with the jewellery.
Th. 0.1; Di. of loop 2.8
Photo: Group 6G

362 I20/677 11329
Level IIIc/d
Originally straight piece of wire, now bent in two places and almost forming a Z shape. The wire tapers to a point at one end, while the other end is broken. It has a circular cross section.
Di. 0.1
Photo: 11:1732

Level II early: Stele Building and Western Courtyard
363 I19/384 74566
Level IIa/b
Squashed wire loop. One end tapers to a rounded point, the other is broken.
Th. 0.2
Photo: Group 6G

364 I19/783 11126
Level IIa/b
Wire with circular cross section, curved around almost to make a loop. Both ends are broken.
Max. Di. of loop 1.4; Di. of wire 0.3
Photo: 12:0386

365 H19/550 91013
Level IIb
Straight piece of wire, with extended strands of metal core of the wire exposed at either end.
Th. 0.15; L. of main wire (2.2); L. (including extensions) 3.1
Photo: 09:2836

366 I19/260 74510
Level IIb/c
Small piece of wire with circular section, bent into a rough round shape.
Th. 0.2
Photo: Group 6G

367 J19/611 77071
Level IIb.i
Wire, bent into a roughly hooked shape. Circular section.
L.(3.5); Th. 0.2
Photo: 10:1219

Level 3: Central Strip
368 L14/737 93054
Level 3, phase 7
Three fragments of a wire with circular section, the largest fragment tapering to a point. Bent into a curve.
Di. 0.1
Photo: 10:1772

Miscellaneous objects

The following copper (alloy) objects all have a discernible form, and it is possible to make some inferences about their original functions. Of particular interest are: one object with a curving leaf shape which may originally have been an inlaid eye for a near to life-size statue (**372**), and a hemispherical button or stud (**371**) which may have belonged on a belt. The objects are arranged by level, phase and area.

Level III: NW Building
369 I19/768 11117
Level IIIc
Ingot or staple. A bar of copper with rectangular section, broken off at one end. The preserved end is capped by a cuboid bar of copper. Perhaps a small ingot or weight, or a staple used to hold together building materials in construction.
L. (3.1); W. 1.8; Th. 0.6
Photo: 12:0443

370 I19/573 84066
Level IIId
Hook. Wire bent into a hook shape and sharpened at the point. Poorly preserved.
Hook Di. 1.3
Photo: 09:2832

Level II early: Western Courtyard
371 I19/362 74557
Level IIa/b
Button or stud. Domed hemispherical button or stud with two metal flaps for attachment. These flaps extend from the circumference of the dome, and are folded back onto one another. Similar examples were found in previous seasons at Kilise Tepe (EKT, 522, no. 2290, figs. 310 and 457). This type of button with the flaps for attachment is often used for the decorative studding on Phrygian belts of the disk and studded-leather type (for this type of belt, see Young 1981, 147-9, fig. 94). For close-up views of such bronze button-studs, see Kohler 1995, 139, no. 89, Pl. 70E.
Di. 0.8

Photo: 09:2817

372 I19/491 84029
Level IIa/b
Curved, leaf-shaped object. The convex face has a smooth finish, and the edges are slightly raised. There appear to be some markings on the surface which may indicate a traced pattern. This could perhaps have been the inlaid eye for a statue. The author has not found any direct parallels for this, but the use of stone, shell, paste and other materials as inlays for statue eyes is well attested in both the Mesopotamian and the later Greek sculptural traditions. Greek sculptors are also known to have made use of metal attachments, although not usually for eyes (Ridgway 1990).
Distance between two tips. 2.1; Th. 0.1
Photo: 09:2799

373 I19/267 74513
Level IIb
Thin tube with rolled head. Perhaps originally the pin of a fibula?
L. (3.1); straw Di. 0.6
Photo: 07:1076

Level II early: Stele Building
374 J20/257 78049
Level IIb.i
U-shaped object; in three fragments, formed from a flat copper ribbon doubled over onto itself lengthways.
L. bottom of the U: 3.2; L. arms of the U: 3.1; Th. 0.5
Photo: 10:0945

375 K19/540 81026
Level IIb.i
Three fragments of an object which included rods fastened perpendicularly to each other.
L. of largest fragment (2.6); Th. 0.25
Photo: 10:1259

376 K19/548 81026
Level IIb.i
Broken object; made from two rods fixed perpendicularly to each other.
Long thin arm; L. (2.0); Th. 0.15
Short fat arm: L. (1.1); Th. 0.3
Photo: 10:1309

Level 2: Central Strip
377 J14/133 74805
Level 2
Hook-shaped object; made from a rolled sheet of metal. The roll has a roughly rectangular section, and has been deliberately closed off at one end and fashioned into a hook at the other. The tip of the hook is broken off.
Di. of hook curve 2.4; section of the roll 0.4 x 0.5; Wt. (7.9)
Photo: 10:0293

378 K14/369 75069
Level 2e
Rod; with square section, broken at both ends.
L. (3.8); Th. 0.4-0.5
Photo: 10:2924

379 K14/417 75067
Level 2e
Edge fragment from a solid copper object, perhaps some sort of vessel or container. The external surface and rim is highly polished, while the interior is rougher.
L. (2.8); W. (1.5); Th. 0.5
Photo: 10:2934

380 J14/408 11067
Level 2e/3
Curved piece of copper with diamond shaped section. The curvature is irregular and does not seem part of the original object.
L. (3.4); Th. 0.5
Photo: 12:0485

381 J14/392 11053
Level 2e/3-4
Fragment of a flat copper object with a slightly curved edge. This piece may have been deliberately snapped off. Perhaps the rim of a bronze plate, or a part of a helmet?
L. (3.0); W. (1.8); Th. 0.2
Photo: 12:0419

Unidentifiable lumps and fragments (Group Photos 6G-6H)

This is a catch-all category for small lumps and fragments of copper or copper alloy which cannot be identified as forming part of a recognisable object. For the most part these were not drawn, but photographs were taken.

Level III: NW Building
[382] I19/488 84028
Level IIId
Lump of copper.
L. 4.1; W. 2.2; H. 0.9
Photo: 09:0752

Level II early: Stele Building and Western Courtyard
[383] H19/551 91014
Level IIb
Five lumps of copper, four of which are very small and fragmentary. The largest fragment is made from a flat sheet, curved slightly upwards to form a shallow half-pipe.
Max L. of largest fragment (2.55)
Photo: 10:1329

[384] J18/466 96003
Level IIa
Three fragments of copper.

L. largest fragment (1.1)
Photo: 10:1235 right

[385] I19/246 74501
Level IIa/b
Fragment of copper sheet.
Max L. (1.5)
Photo: Group 6H

[386] H19/435 83009
Level IIc
Four fragments of copper sheet.
Max L. (0.6).
Photo: Group 6H

[387] H19/437 83009
Level IIc
Fragment of copper sheet[?].
Max L. (0.7).
Photo: Group 6H

[388] I19/672 94048
Level IIIc
Lump of copper.
L. 4.8; W. 0.9; H. 0.4
Photo: 10:1318

[389] J19/779 96574
Level IIc
Lump of copper.
L. 1.6; Th. 0.3
Photo: 10:1235 left

Levels 3-2: Central Strip

[390] K14/947 92076
Level 3 Phase 13
Fragment of copper.
L. 0.9; Wt. 1.0
Photo: Group 6I

[391] L14/631 93023
Level 2e
Four fragments of a thin copper sheet.
L. (2.6); W. (2.5); Th. <0.1
Photo: 10:1817

[392] K14/825 92422
Level 2e/2
Lump of copper, roughly flat shape.
L. 1.3; W. 1.0; Th. 0.35; Wt. 1.3
Photo: Group 6I

Iron

Iron items, as must be expected, were only found in the later levels of this site, particularly in the latter part of Level II and Level I and similarly in the Central Strip. It is possible that some of the iron items listed here are of relatively recent manufacture, and caution is therefore advised when considering these objects. Unlike copper, badly corroded iron does not respond well to conservation, and the precise outlines of many of the pieces here remain unrecognizable.

Blades and projectiles

The forms of the iron blades and projectiles differ from those of the copper or copper alloy objects described above. The projectile points are of different types, and amongst the bladed objects there are significantly more single-edged straight blades than any other type. The blades **397-99** all come from P11/11, the back-filled storage pit in I/J14.

Level 2: Central Strip

393 J14/322+316 11035 + 11038
Level 2e/3-4
Iron axe-head; badly corroded double axe-head, with cylindrical central section designed to enclose a circular shaft. Both sides of the axe-head curve downwards from the central shaft. The cutting edges are slightly curved (convex). It is broadly comparable with similarly-shaped axe-heads from Alişar Höyük (von den Osten 1937, 441, fig. 502), and two from Gordion (McClellan 1975, Pl. 27, nos. 367-8). The smaller fragment (J14/316) was recovered from pit P11/16.
W. (6.8); H. cylindrical section 4.5; Wt. 457 g.
Photo: 12:0199

394 J14/204 86201
Level 2e/f
Three-edged iron arrowhead, with a leaf shape. No barbs, the three leaves of the head slope back into the tang. A comparable iron arrowhead has been found at Boğazköy (Boehmer 1972, 152, no. 1500, Taf. 51), and some at Gordion (McClellan 1975, 44-5, Pl.1 nos.34b and 35).
L. 5.2; Wt. 4.9
Photo: 09:0916

395 J14/212 86206
Level 2f
Four-sided iron arrowhead with a square section, narrowing to a point. Badly corroded. No sign of any barbs, the head slopes back into the tang directly. Iron arrowheads of this type were found in substantial numbers at Boğazköy (Boehmer 1972, 151-2, nos. 1514-31, Taf. 49-50), and are known from Midas City (Haspels 1951, 151, Pl. 42c nos. 1-6). Many examples are also known from later Iron Age levels at Gordion (McClellan 1975, 23-4 and 28-32, Pl. 1). See, for illustration, the example from Tumulus H at Gordion (Kohler 1995, 50, TumH 11, Pl. 28C).
L. 5.2; Th. 0.8; Wt. 7.5
Photo: 10:0265

396 K14/728 92407
Level 2f
Badly corroded iron blade with a single cutting edge. The straight back is thickened, and the cutting edge curves back to meet it at a rounded tip.
L. 6.8
Photo: 10:3088

397 J14/320 11025
Level 2k
Part of a single-edged iron blade, tapering to a point. The blade has a roughly triangular section with a flat back. The attachment to handle was not preserved.
L. (7.5); W. 2.0; Th. 0.6
Photo: 12:0236

398 J14/272 11019
Level 2k
Fragment of a curved iron blade with a single cutting edge. The back of the blade is thicker so that the blade has a roughly triangular section.
L. (6.0); W. 2.0; Th. 0.6-0.15
Photo: 12:0262

399 J14/286 11025
Level 2k
Blade, or strap. The piece of iron is very flat, and one small circular rivet is visible at the unbroken end, where it would have been fixed either into the blade handle or onto the strap connection. The iron gently tapers from the unbroken end.
L. (4.0); W. 2.3; Th. 0.2
Photo: 12:0429

400 J14/262 11014
Level 1/2
Fragment of an iron blade or narrow arrowhead, badly corroded. The blade is double edged, with parallel sides and a lens-shaped section. It extends back into the tang with square section. The shape of the blade is similar to that of N15/50 (**459**) from N15.
L. (6.2); W. 2.7; Th. 0.8
Photo: 12:0292

Nails and pins

As with copper (alloy) objects, nails and pins were the most common category of iron objects found in the 2007-2011 seasons. As before, the distinction between a nail and a pin is unclear and relatively arbitrary, although I have chosen to classify some objects as nails if their shafts are relatively thick when compared to their length. The corrosion of these items often made it impossible to establish an accurate measurement of the shaft thickness, so the relative proportions had to be estimated.

Level II: North-West corner
401 H19/427 83005
Level IIf
Pin or nail. Fragment of shaft, broken each end, circular cross-section.
L. 3.8; Di (0.8), Wt. 1.5
n.ph.

Level 2-1: Central Strip
402 J14/407 11065
Phase 5a/b
Shaft of an iron nail with circular section, tapering sharply to a point.
L. (6.1); Th. 0.8
Photo: 12:0282

403 J14/242 11005
Level 2e/2-3
Nail or pin. Shaft only with circular section, tapering to a point.
L. (2.8); Di. of shaft 0.4
Photo: 12:0311

404 J14/205 86201
Level 2e/f
Very short iron nail or pin with rectangular section. The tip tapers into a point, while at the head the shaft is split as if to create the eye of a needle. However, the length and thickness of the pin does not make it likely that this is a needle.
L. 2.8; Th. 0.5-0.2
Photo: 10:0309

405 K14/479 82008
Level 2f
Tip of an iron nail or pin, badly corroded, with circular section and tapering to a point.
L. (3.7); Di. 0.4
n.ph.

406 K14/230 75037
Level 2f
Nail or pin. Curved piece from the shaft with circular section.
L. if straight (4.6); Di. 0.74
n.ph.

407 K14/236 74037
Level 2f
Curved piece from the shaft of an iron pin or nail with circular section and gently tapering, badly corroded.
Di. 0.6-0.3
n.ph.

408 K14/261 75041
Level 2f
Head and part of the shaft of a large iron nail. The head is a simple dome, and the nail is badly corroded.
L. of shaft (1.1), of head and shaft (2.7).
Photo: 11:2058

409 K14/265 75042
Level 2f
Shaft and tip of an iron nail with square section. It is badly corroded, and in two joining pieces.
L. (10.0); Di. (0.5) (corroded). n.ph.

410 L14/596 93014
Level 2f
Tip of an iron nail with square section, the tip tapering to a flattened chisel point.
L. (3.0); W. 0.7; Th. 0.7
Photo: 10:1809

411 K14/780a 92415
Level 2f
Blade or pin; fragment of a narrow iron implement with lens-shaped cross section, narrowing to a sharp point. This could potentially have been a small and narrow blade. However, the object is very badly corroded and it is impossible to tell.
L. (5.0); Th. 0.5
Photo: 12:0634

412 K14/780b 92415
Level 2f
Nail or pin; badly corroded. Out of one side of the corroded lump can be seen a small rod with square cross-section.
L. (2.9); Cross section 0.4 x 0.35
Photo: 12:0631

413 J14/312 11025
Level 2k
Two joining fragments of the shaft of an iron nail with oval section, tapering sharply down to a point. The shaft is broken cleanly off at the top.
L. (4.6)
Photo: 12:0288

414 J14/378a 11019
Level 2k
Large iron nail, bent out of shape and badly corroded with uncertain section. The head is a flattish cuboid, placed perpendicular to the shaft.
L. (5.0)
Photo: 12:0277

415 J14/378b 11019
Level 2k
Fragment of an iron pin or nail with square section, tapering to a point.
L. (1.8); Th. 0.3
Photo: 12:0302

416 J14/378c 11019
Level 2k
Fragment of an iron nail or pin with circular section, tapering to a point.
L. (1.4); Th. 0.7-0.4
Photo: 12:0308

417 I14/290 75331
Level 1/2
Fragment of the shaft of an iron nail or pin, with circular section. Badly corroded.
L. (4.8); Th. 0.5
Photo: 10:0375

418 J14/288 11026
Level 1/2
Complete iron pin. Shaft with circular section tapering down to a point, with head made from a flat circular disc. This object is particularly well preserved, and it is possible that it is an intrusive item of much more recent manufacture.
L. 6.4; Di. 0.5
Photo: 12:0362

Unstratified
419 K14/798 92416
Unstratified
Complete iron nail with a square cross section, tapering to a point. The head seems to be a domed hemisphere.
L. 7.6
Photo: 11:2118

Tools and other objects

This category includes two recognisable iron tools (**422** and **425**), as well as several iron items which cannot be associated with recognisable objects or functions.

Level 2: Central Strip
420 K14/808 92418
Level 2e
Fragment of a large flat iron object. It seems to have been flat on upper and lower surfaces. One original edge is preserved, which is at right angles to both surfaces.
L. (6.7); W. (3.8); Th. 1.9; Wt. 72.2
Photo: 10:3008

421 J14/317 11038
Level 2e/3
Rod; eleven fragments of a shattered iron rod, several rods, or other object. The fragments are non-joining, but the grain of the metal suggests a long, rod-like implement with lens shaped cross section.
Cross section 1.1x1.5
Photo: 12:2246

422 J14/366 11011
Level 2e/2
Tool; fragment of an iron tool. The shaft has a square section, and thickens at one end, presumably towards the handle. It continues into a head, where the metal begins to curve and is much finer, although still with a square section.
L. 2.4; Th. shaft (0.3); Th. curved head 0.15

Photo: 12: 0304

423 L14/630 93023
Level 2e
Fragment of an iron T-shaped object, made from a rod with roughly square section, joined at a right angle by a second rod with roughly square section. Corroded.
L. 4.2; W. 0.8; Th. 0.5
Photo: 10:1802

424 L14/602 93018
Level 2e/f
Rod; fragment of an iron rod with square section. Although there is a lump of concretion around it, the rod is visible at one end.
L. 1.6; W. 0.9; Th. 0.4; Wt. 0.8
Photo: Group 6K

425 K14/774 92414
Level 2f
Complete iron tool with three parts, all with square cross section, perhaps an awl. The top part seems to have had a circular section (although it is impossible to be certain), and has a rounded end. The central part tapers gradually towards the pointed tip. The part with the pointed tip forms a separate part, and is angled slightly.
L. 10.5
Photo: 11:2111

426 K14/714 92405
Level 2f
Rod or bar; fragment of an iron rod or bar with rectangular section. The bar has been twisted round on itself at one broken end.
L. (4.2); W. 1.2; Th. 0.55
Photo: 12:0607

427 K14/833 92415
Level 2f
Flat bar with rectangular section, badly corroded. Perhaps part of an iron rod or bar.
L. 2.6; W. 0.8; Th. 0.4; Wt. 2.1
Photo: Group 6J

428 K14/487 82009
Level 2f
Two fragments of a solid iron rod with rectangular section, the larger piece bent at an obtuse angle, the tip of the smaller piece folded back; possibly from a fibula. Badly corroded.
Larger piece: L. (4.2); Cross section 0.6 x 0.7 narrowing to 0.5 x 0.6.
Photo: 10:3081

429 K14/550 82023
Level 2f
Fragment of an iron rod with rectangular section. Badly corroded.
L. (2.8); W. 0.8; Th. 0.6
Photo: 10:3021

430 J14/268 11020
Level 1/2
Fragment of an iron strap or bar, broken at one end. The preserved end tapers to a point, the cross section of the bar is rectangular.
L. (4.65); W. 1.2; Th. 0.4
Photo: 12:0317

Unstratified
431 J20/231 78029
Unstratified
Fragment of an uneven iron rod with circular section.
L. 3.9; Di. 0.95
Photo: 10:1249

432 K14/590 82037
Unstratified
Flat iron rod with rectangular section.
L. (4.2); W. 0.5; Th. 0.4
n.ph.

Unidentifiable lumps and fragments

Again, this is a catch-all category for small pieces of iron, which cannot be distinguished as belonging to a recognisable object. It is also possible that some of these items may never have been part of any original artefact, but perhaps are the debris of metal-working activities.

Level III: NW Building
[433] I19/636 94016
Level IIId
Lump of iron.
L. 4.8; W. 4.0; H. 2.6
Photo: 10:1363

Levels 3-2: Central Strip
[434] K14/1007 92063
Level 3, Phase 11
Small flat fragment of iron.
L. 1.3; Th. 0.05; Wt. 0.3
Photo: Group 6J

[435] K14/275 75042
Level 2f
Fragment of iron.

L. 0.6; Wt. 0.8
Photo: Group 6J

[436] K14/278 75042
Level 2f
Small lump of iron.

L. 1.1
Photo: Group 6J

[437] K14/416 75041
Level 2f
Iron lump of uncertain form and use. Badly corroded.
L. 2.3; Wt. 3.2
Photo: Group 6J

[438] K14/498 82009
Level 2f
Lump of corroded iron.
L. 2.3; Wt. 3.1 g.
Photo: Group 6J

[439] K14/790 92409
Level 2f
Lump of iron with the remains of one flat surface, but otherwise corroded.
L. 1.1; Wt. 1.3
Photo: Group 6J

[440] L14/622 93026
Level 2f
Lump of corroded iron from Pit P07/15.
L. 2.6; W. 1.5; Th. 0.6
Photo: Group 6K

[441] L14/624 93026
Level 2f
Lump of corroded iron from Pit P07/15.
L. 1.2; W. 1.1; Th. 0.7; Wt. 1.3
Photo: Group 6K

[**442**] J14/146 74811
Level 2f
Iron lump or slag; uncertain whether this is an object or a lump of slag.
Photo: Group 6K

Other metals: silver and lead

In addition to the copper alloy and iron objects listed above, metal objects were also found in silver and lead. These have been arranged according to Level and phase.

Level II: Western Courtyard
443 I19/394 74571
Level IIa/b
Silver rods; two lengths of silver rod, both with circular section and tapering to a rounded point. It remains unclear what these rods may have been used for, or what type of object they may have originally been from.
a) L. 4.2; Th. 0.45-0.25
b) L. 3.1; Th. 0.45-0.35
Photo: 10:1348

444 J20/261 78058
Level 2e
Fragment of a flat lead sheet, rolled over on itself four times to make a cylinder. A flat sheet such as this could potentially have been used for writing. No traces of writing are visible to the naked eye from the outside, although the sheet could not be unrolled.
L. 1.7; Di. 1.0-1.35
Photos: 09:0418, 09:0421

Levels 3-1: Central Strip
445 K14/934 92075
Level 3 Phase 12
Piece of flat lead ribbon, with folded edges. This seems to have been a different lead ribbon to **446**.
L. 3.4; W. 0.4; Th. <0.1
Photo: 10:3097

446 I14/248 75316
Level 1
Fragments of a thick lead ribbon, bent into a C shape. This seems to have been a different lead ribbon to **445**, and comes from a Level 1 context, but it is included here for comparison.
W. 1.2; Th. 0.3
Photo: 10:0407

447 L14/582 93011
Level 2f
Small circle of lead wire, with tapering ends overlapping. This could have been used either as an earring, a finger ring or as a link in a chain of rings.
Di. 1.4; Th. 0.1; Wt. 1.2
Photo: 10:1756

448 I14/250 75318
Level 1/2k
Silver finger ring, bent slightly out of shape. The ring itself is of circular section, and made from silver wire simply being bent around into a curve. The top of the ring is decorated with a triple flower decoration - made from metal balls stuck together, four for each flower. This rough granulation method using metal balls for decoration can be found on a similar silver finger ring from Zincirli (von Luschan and Andrae 1943, 166 e, Taf. 45 and Taf. 44 r).
Di. 2.5; Di. each ball 0.3; Wt. 6.2
Photo: 10:0387

Slag and ore

Several pieces of iron slag and ore were found in the northern area, specifically in the area of the Stele Building and North-Western Building. Perhaps surprisingly, many of these come from relatively early phases of the Iron Age – Levels IIa and b. This is unexpected, given that many of the iron objects come from relatively late phases of the Iron Age. In any case, it seems that some form of iron-working was carried out on the site during this relatively early period.

Level II: Stele Building and Western Courtyard

[449] J19/726 96508
Level IIa
Five small lumps of iron slag.
L. longest piece 3.0
Photo: 10:0924

[450] I19/492 84029
Level IIa/b
Lump of iron slag.
L. (2.0)
Photo: 09:0732

[451] J19/673 81630
Level IIb.i
Seven fragments of brittle yellow-brown slag.
L. longest piece 3.9
Photo: 09:0312

[452] K19/541 81007
Level IIb.i
Large lump of iron slag.
L. (7.5)
Photo: 09:0309

[453] I19/399 74575
Level IIa/b
Lump of iron ore from inside FI 07/10.
L. (10.2)
Photo: 09:0804

[454] I18/158 74056
Level IIf
Lump of iron slag.
L. (6.6)
Photo: 10:3922

Level 2: Central Strip

[455] J14/335 11038
Level 2e/3
Slag; small fragment of iron slag from fire installation.
L. (0.5), Th. 0.2
Photo: 12:0407

[456] J14/282 11025
Level 2k
Lump of iron slag
L. (7.8)
Photo: 12:2251 left

[457] J14/292 11025
Level 2k
Piece of pink conglomerate stone with some bits of iron slag melted onto it.
L. (5.9)
Photo: 12:2251 right

Metal items from N15

The metal objects found in the deposit alongside the loomweights perhaps included tools for use during textile production. There were two iron blades (**459** and **461**), a metal scoop (**458**), what appears to be an iron awl (**462**), a curved piece of copper wire or a hook (**463**), and what appears to be an iron nail (**464**).

458 N15/4 73416 KLT 172
Copper scoop; with triangular head. The sides of the head curve upward to form a cup-like shape. The shaft is rectangular in plan and cross-section and is decorated with an incised zig-zag pattern on the upper side.
L. 6.9; W. 1.45; Th. of handle 1.0; Wt. 2.4
Photo: 07:1873

459 N15/50 73416
Fragment of an iron blade or narrow arrowhead, badly corroded. The blade is double edged, with parallel sides and a lens-shaped section. It extends back into a tang with circular section. The shape of the blade is similar to that of J14/262 (**400**).
L. 4.2; W. of blade 1.4; Di. of tang 0.9; Wt. 7.1
Photo: Group 6L

[460] N15/55 73416
Piece of an iron object, with a flat, strap-like shape terminating in a rounded end. Badly corroded.
L. 6.1; W. 1.9; Wt. 6.1
Photo: Group 6L

[461] N15/60 73416
A single edged iron blade in many small fragments, badly corroded. Recognizable pieces include: the tip of the blade, where the cutting edge curves up to meet the back of the blade at a point, and also the end where the blade goes back into a tang with a circular section.
Wt. 27.5
Photo: Group 6L

[462] N15/135 73416
Iron tool with round cross-section and points at both ends. Perhaps an awl.
L. 9.3; W. 1.25-4; Wt. 31.6
Photo: Group 6M

Photo: Group 6M

463 N15/143 73416
Curved piece of copper wire with circular section, bent around into a hook shape. At one end, it appears to taper, although a break means it is not clear whether this would have tapered into a point and therefore have been a hook.
L. 2.7; Di. of wire 0.3; Wt. 1.8
Photo: 11:2063

[464] N15/144 73416
Large iron nail with square section, badly corroded. Appears to be straight, without any obvious sign of a head. Possibly broken at head. Point preserved.
L. 9.3; Cross-section 1.25 x 1.25; Wt. 4.7

7. Worked Bone, Horn and Ivory (465-540)

Naoíse Mac Sweeney, Julia Best and Jennifer Jones

The objects discussed in this section are those made from worked bone, horn, or ivory, and their description relies heavily on the analysis and expertise of the team's zooarchaeologists: Peter Popkin, Julia Best and Jennifer Jones. Their full analysis of the unworked bone assemblage will be presented separately.

Bone artefacts were found in all main areas, but the Level III NW Building has produced the richest assemblage of worked bone items, including a number of bone tools, and 19 astragali. From a single context in the Level IIa Western Courtyard came an assemblage of pieces of bone that had been chopped or worked in some way (Nos. **524**-**529**), indicating that at this date a craftsman was at work here producing bone artefacts.

In this chapter, worked items of bone, horn and ivory, are presented in functional categories. Beads made from bone have been described with the other beads (see Nos. **260**, **264**-**5**, **275**, **277**), and likewise a bone spindle whorl with the other spindle whorls (see No. **198**). The remaining bone items are catalogued here, organised by level and area, under the following categories:

- Bone tubes (465-467)
- Spatulas (468-472)
- Pendants (473-477)
- Miscellaneous tools and other objects (478-486)
- Astragali (487-522)
- Worked pieces of bone (523-540)

Bone tubes

These three bone tubes were all made from hollowed-out long bones, either of bird or mammals. Hollow bone tubes were found in the previous campaign at Kilise Tepe (EKT, 537-8, nos. 2471-8, fig. 460), but those examples were rougher and had a less fine finish than the examples from 2007-2011. The function of these objects is uncertain, although it is possible that they were used as handles for tools or blades. Two similar hollow bone tubes were found at Iron Age Tarsus (Goldman 1963, 384, nos. 22-3, fig. 177).

465 I19/286 74529 KLT 165
Level IIb
Tube-shaped implement; the outer surface polished with a high sheen in places. The object is made from a cylindrical tube from the long bone of a large bird. One end is cut straight (though slightly damaged), the other slightly narrower end is also cut straight, with a small chip missing. This end is decorated with two incised encircling bands, at approx. 1 and 2.5 mm from the end, then a band of 8 tiny dots irregularly placed from 2 to 3 mm below the second incised band. There is a short incised stroke below one of the dots. Then 4 more incised encircling bands between 8 and 12 mm from the end, about 1 mm apart from each. Halfway along, where it has been broken, there is a dark brown discoloured patch caused by burning.
L. 7.8; Th. 1.3; Di. perf. 0.8
Photo: 07:0769

466 L14/633 93022
Level 2e/f
Tube-shaped implement; fragment of a cylindrical tube made from a sheep or goat metapodial. The cylinder has been deliberately hollowed out to take the form of a tube. The object is broken at one end, but the surviving end has been cut or sawn cleanly perpendicular to the axis. The tube is not highly polished, nor is there any sign of incised decoration.
L. 3.4; Di. 1.0
Photo: 09:0565

467 K14/784 92027 KLT 200
Unstratified
Tube-shaped implement; the outer surface is polished with a high sheen in places. The object is a cylindrical tube made from a mammal long bone shaft (likely sheep or goat), cut or sawn perpendicular to the long axis at both ends. The cylinder has been deliberately hollowed out to take the form of a tube. Both ends have been cut cleanly and smoothed. At the narrower end, there are four incised bands set closely together, followed by another five incised bands further down the tube. Between the two groups of bands, a broader field is decorated with four sets of two parallel incisions running diagonally around the shaft in a zig-zag fashion.
L. 8.2; Di. 1.2-0.9
Photo: 09:0547

Spatulas

This category includes two distinct types of objects, the use of which is not completely clear. Both sets of objects are made from flat pieces of bone, highly polished and smoothed on one surface, and left rough on the other. Two of these items were relatively broad, and were sharpened into a triangular point at one end (**468**-**469**). The other three objects seem to have longer, narrower forms with parallel sides, two of which ended in a rounded tip, and one of which had a tapered point. These latter objects in particular are similar to two objects found in the previous excavations, which were of a similar shape and size, but bore no incised decoration (EKT, 538, no. 2479, fig. 460; no. 2480, not illustrated).

Both the rounded and pointed shapes of spatula represented here have close comparisons from other sites in Anatolia and the Levant, and are often found together. They have been found, amongst other places, at Tarsus (Goldman 1963, 380 and 383-4, nos. 313, fig. 177); Zincirli (von Luschan and Andrae 1943, 122, Taf. 59-60); Tell Afis (Cecchini 2000, fig. 6); Tell Taannek (Friend 1998, 61-6); and Troy VIIIa (Blegen *et al.* 1958, 52, no. 37-336, fig. 219), where they are categorised as Types 4-5 amongst the pointed bone implements (Blegen *et al.* 1958, fig. 211). Most of these examples come from Iron Age levels, although two are known from the Late Bronze Age at Tarsus (Goldman 1956, 316, nos. 87-8, fig. 439). These objects seem to be spatulas or laminas used in pattern-weaving, or textile tools employed in the weaving of finer cloths (see Cecchini 2000, 223-9 for a full discussion).

Central Strip, Level 2
468 K14/383 75037
Level 2f
End of a flat bone spatula, made from a piece of scapula. The scapula has been shaped into a long, flat rod with parallel sides, and sharpened into a fine triangular point at one end, and has been broken at the other. The object is highly polished on one face while retaining the rough bone texture on the other.
L. (7.3); W. 1.7; Th. 0.2
Photo: 07:1050, 07:1051

469 K14/588 82014
Level 2f
End of a flat bone spatula, made from a piece of scapula. The scapula has been shaped into a long, flat rod with parallel sides, and sharpened into a fine triangular point at one end, and has been broken at the other. The object is highly polished on one face while retaining the rough bone texture on the other.
L. (6.1); W. 1.6; Th. 0.2
Photo: 08:1326

470 J14/301 11025
Level 2k
Tip of a flat bone spatula, made from a piece of mammal rib. The rib has been shaped into a flat rod with parallel sides and a rounded tip. The upper surface is highly polished, and has incised decoration. The decoration is in banded zones, separated by three incised lines. The zone at the tip and the second zone are both decorated with cross-hatching. The third zone is decorated with a tooth pattern. The object has been broken, so it is impossible to tell the original length of the piece.
L. (2.9); W. 0.4; Th. 0.1
Photo: 11:0597

471 J14/492 11025
Level 2k
Piece of a flat bone spatula made from a mammal rib. The rib has been shaped into a long, flat rod with parallel sides and a rounded tip. The object is highly polished on one face while retaining the rough bone texture on the other. The object has been broken, so it is impossible to tell the original length of the piece.

L. (3.5); W. 1.7; Th. 0.1
Photo: 11:1818

472 J14/548 11025
Level 2k
Piece of a flat bone spatula made from a mammal rib. The rib has been shaped into a long, flat rod with parallel sides and a tapered point at one end, which has been broken at the very tip. The object is highly polished on one face while retaining the rough bone texture on the other. The object has been broken, so it is impossible to tell the original length of the piece.
L. (8.4); W. 1.9; Th. 0.1
Photo: 12:2149

Pendants

This group comprises four similar bone objects, which come from different levels and contexts, as well as one unusual ivory object (**473**). The four similar items are all relatively small flat objects with a round perforation, which appear to have been suspended and used as pendants. It is possible that these objects were not primarily used for ornamentation in the way that we might think of pendants today, as there are only faint signs of wear around the circular perforations. Instead, the flat surfaces may mean that these items were used as spatulas, perhaps for delicate work such as in the preparation of cosmetics or as tools for pattern weaving.

The ivory item (**473**) was clearly strung, as its suspension hole shows signs of wear. The hollow cavity within it might indicate that this object was a fitting into which the main part of the pendant was fitted, or a portable container for extremely small items or commodities.

473 I19/812 11115 KLT 228
Level IIIc
Pendant made from elephant ivory, with highly polished surfaces. The shape recalls a macehead, consisting of an onion-shaped dome sloping downwards to a projecting cylinder at the bottom. There is a deeply incised band around the lower part of the dome. At the top of the dome there is a nodule with a longitudinal piercing, through which the pendant was strung. A round hole has been drilled upwards into the projecting cylinder at the bottom, so that the cylinder is hollow. This cavity was most likely used for inserting another item, although this is unlikely to have been a metal item as there are no evident traces of discoloration from metal. Half of the pendant survives, and part of the curved edge has been broken off. The drilled hole is slightly off centre within the nodule. This may be due to use wear by hanging on one side.
H. total 2.5; Di. of dome 2.3; Depth of hollow cylinder 1.5; Di. of hollow cylinder 0.5
Photo: 12:2074

474 J20/276 78063
Level IIa
Upper part of flat pendant. The pendant is roughly rectangular in shape, with almost parallel vertical sides. The top of the pendant, however, has a gentle convex curve. 4.5 mm from the top, a circular hole has been drilled through, of 2 mm diameter. On one side, there are three faint but possibly intentional cut marks. The surface does not appear to have been polished.
L. 2.5; W. 1.2; H. (0.3)
Photo: 07:1518

475 K14/716 75056
Level 2e
Part of a pendant made from a hollowed out pig's canine with a perforation drilled through the enamel. The drill hole was originally cut through both sides of the tooth, but since then half of the pendant has fallen away. The edges of the pendant have been carefully cut into roughly rectangular shape, with the two upper corners cut off.
L. 2.5; W. 1.6; Di. perf. 0.25
Photo: 10:3463

476 K14/688 92004
Unstratified
Upper part of a flat trapezoidal-shaped pendant. The pendant is roughly rectangular at the top, but broadens gradually towards the bottom. 4 mm from the top, a circular hole of 1.6 mm diameter has been drilled through the pendant. The pendant is broken at the bottom end, and is made from the left transverse process of a lumbar vertebra, probably of a sheep or goat, although possibly of a roe deer. The surface does not appear to have been polished.
L. (3.0); W. 1.0
Photo: 09:0239

477 K14/718 75047
Surface
Roughly half of a flat pendant made from antler. The pendant appears to have been a flat teardrop shape, the main body of it being flat and circular, extending out at the bottom towards what seems to be a point. The surface does not appear to have been polished.
L. 2.0; W. (0.7); Th. 0.3
Photo: 10:3504

Miscellaneous tools and other objects

These objects have been made from bone, horn or fossil, and have been highly worked to make specific tools or other items. They include two toggles of different shapes (**482** and **483**), one notched pin resembling pins found in a cache in previous excavations (**486**), and a mysterious flat object of uncertain use (**480**).

Level III: NW Building
478 J19/777 96502
Level IIIe
Polished cylindrical piece of mammal long bone, polished on the outer surface, broken each end. This may have been used as the shaft of a pin. It is distinct from the bone tubes (see above), as it is not hollow on the inside.
L. (2.8); Th. 0.4
Photo: 10:0767

Level II: Western Courtyard
479 I19/522 84029
Level IIa/b
Worked fragment of plant fossil. Shaped as a hollow cone, with a chip broken off. It has a decorative incised ring around the base.
L. 3.8; Di. (base) 1.4
Photo: 08:1309

Level II: Stele Building
480 K19/536 77021 KLT 181
Level IIb.i
Tool made from antler, with tip broken, and the cortex visible on the back, which is flat and smooth. All sides are highly polished save for the lower surface, and the upper surface is slightly domed. Roughly shaped like a modern "Croix de Lorraine", with a central straight flat rod with oval section, tapering at one end into a point (the other point is broken off). The broken end is somewhat longer than the one with the point preserved. In the central part, the rod broadens into four protruding teeth, two on each side. The protrusions are curved slightly inwards towards each other on both sides. The effect is a shape akin to a holly leaf. Several interpretations have been proposed for this piece. A similar object was found in the previous excavations (EKT, 539, no. 2491, fig. 460).

This object could be a small bobbin or shuttle connected with weaving fine textiles, with the thread wound on the narrower central part, but this would only accommodate a small amount of thin thread. Use-wear around the edges seems to support this interpretation. Alternatively, it could be a stylised figurine with vestigial arms, hips and tapering pin-like extensions: a shorter one for the head and a longer one for the legs. However, this interpretation seems less likely given the use-wear and the lack of obvious comparable figurines known from elsewhere. One object which is perhaps comparable is an object described as a "fitting piece with unclear exact use" found at Boğazköy, but it is wider in its central part where there is a large circular hole (Boehmer 1972, 198, no. 2061, Taf. 73). Alternatively, this could be an ornament for bodily adornment or other decorative purpose.
L. 10.3 (orig. 10.8); W. 2.4; Th. 0.6; Wt. 8.5
Photo: 08:0835

481 J19/543 77042
Level IIb.1
Straight piece of bone carved so that it has a roughly square section. At one end, it is slightly flatter and easier to hold between fingers. Perhaps the handle of a tool of some sort.
L. 5.3; W. 3.5; Di. 0.8; Di. perf. 0.3
Photo: 07:0719

Level 2-1: Central Strip
482 K14/332 75054 KLT 164
Level 2e
Highly polished bone toggle or bobbin, with two tapering ends, one broken off. At the centre there is a groove for attachment. Similar bone toggles have been found at Alaca Höyük (Koşay and Akok 1966, 181, no. 267, Pl. 39); and Tarsus (Goldman 1963, 385, nos. 28-9, fig. 178).
L. (3.8); Di. 0.4
Photo: 07:0594

483 J14/390 11053
Level 2e/3-4
Weight, attachment or toggle. roughly half of a bone object of uncertain function, made from a large piece of mammal humerus. The humerus has been cut into a roughly cylindrical shape with bevelled edges and hollowed out inside so that it is pierced longitudinally. There is also a large hole pierced vertically through the middle. There are some cut marks on the outside, just below the circular perforation. This object is unlikely to be a loomweight, not just because of its light weight, but also because the perforation is extremely large, which would make it an unbalanced weight. The object bears some similarity to pieces of horse harness found in Late Bronze Age Beycesultan (Mellaart and Murray 1995, 148, nos. 311-2, fig. O36).
H. 1.8; Di. 6.8; Di. perf. 4.5; Wt. 44
Photo: 11:0880

484 K14/225 75036
Level 2f
Thin and flat teardrop-shaped object, resembling an elongated modern guitar pick. The surfaces of the object have been polished. This could have been a decorative inlay which was originally inset into a piece of furniture or other object.
L. 1.6; W.0.6; Th. 0.1
Photo: 07:0717

485 J14/180 74810
Level 1/2
Part of a cuboid bone object, broken diagonally. A circular hole was drilled through the centre of the cuboid. It is unclear what this item might have been used for, although it could have been a toggle attachment of some kind, or perhaps part of the trappings of a horse harness.
L. 2.5; W. 0.9-0.7
Photo: 10:0539

Level I: I18
486 I18/97 74025 KLT 163
Level 1
Notched bone tool, approximately square in cross-section tapering to a sharp point. It has a broad notch on one side (4 mm "high", starting at 2 mm from the surviving top, and 1.5 mm deep). This object is burnt and blackened. It should be seen in the context of the 35 notched bone pins found in a cache in the Stele Building during the previous campaign at Kilise Tepe (EKT, 536-7, fig. 318), and is included for this reason although found in a later context. However, this example differs from those in the cache in that it does not have two parallel notches near the head of the pin, but instead one broad notch. It is possible, however, that this broad notch was created by the central part between two notches being broken off.
L. 4.6; Cross-section at head 0.4 x 0.4
Photo: 07:0564

Astragali

Astragali are found both singly and in groups, such as the group of seven astragali found in the Level III North-West Building. Many of these show signs of use, being worn down on one or more sides. Some astragali have been pierced. Regrettably not all of the astragali found their way onto the desk of the zoo-archaeologists, hence details of species and side are lacking for some.

Level III: NW Building
[487] I19/811 11108
Level IIIc
Right goat astragalus, ground on all faces.
W. 1.8; L. 2.7; H. 1.5
Photo: Group 7A

[488] I19/810 11108
Level IIIc
Right sheep astragalus, ground on all faces.
W. 1.8; L. 2.7; H. 1.45
Photo: Group 7A

[489] I19/817 11117
Level IIIc
Left sheep astragalus, ground on the anterior face, and polished on the medial and lateral sides.
W. 2.0: L. 3.1; H. 1.6
Photo: Group 7A

[490] I19/733 94028
Level IIId
Right sheep/goat astragalus, ground on medial, lateral, anterior and posterior sides. This astragalus has been ground so heavily that it is almost cuboid in shape.
W. 1.5; L. 1.5; H. 1.2
Photo: Group 7B

[491] I19/734 94033
Level IIId
Right goat astragalus, ground on the medial side.
W. 2.0; L. 3.1; H. 1.8
Photo: Group 7B

[492] I19/735 94056
Level IIId
Left goat astragalus, ground on the medial and lateral sides.
W. 1.7; L. 1.9; H. 1.7
Photo: Group 7B

[493] I19/737 94006F
Level IIId
Two astragali; found together in a sample from a basket impression. Both are left sheep astragali, ground on the anterior faces.
a) W. 1.9; L. 2.8; H. 1.6
b) W. 1.9; L. 2.6; H. 1.5
Photo: Group 7B

[494] I20/642 71703
Level IIId
Astragalus; ground on both medial and lateral sides, bearing some butchery marks.
W. 1.8; L. 3.0; H. 1.6
Photo: Group 7B

[495] H19/564 91023
Level IIId/e
Cache of seven astragali; three left goat astragali, one left sheep astragalus, three right sheep astragalus. All were ground on the medial sides.
a) W. 2.0; L. 3.1; H. 1.6
b) W. 2.1; L. 3.0; H. 1.8
c) W. 1.9; L. 2.85; H. 1.6

d) W. 2.2; L. 3.15; H. 1.8
e) W. 2.35; L. 3.5; H. 2.0
f) W. 1.9; L. 2.85; H. 1.6
g) W. 1.85; L. 2.7; H. 1.5
Photo: 09:2891

[496] J19/778 96503
Level IIIe
Left sheep astragalus, ground on both medial and lateral sides.
W. 2.0; L. 2.9; H. 1.7
Photo: Group 7C

[497] K19/509 81014
Level IIIe
Astragalus.

Level II: Western Courtyard and Stele Building
[498] J19/498 77008
Level IIa/b
Worked astragalus.
W.2.3; Th.1.7; L. 3.3; Wt. 8.1
Photo: 07:0098

[499] I19/462 84003
Level IIa/b
Left sheep astragalus, ground on both medial and lateral sides.
W. 1.8; L. 2.7; H. 1.55
Photo: Group 7C

[500] I19/241 74580
Level IIa/b
Left goat astragalus, slightly polished due to frequent use, some traces of grinding on one side.
W. 1.7; L. 2.65; H. 1.45
Photo: Group 7B

[501] I19/245 74501
Level IIa/b
Right goat astragalus, ground on one side.
W. 1.5; L. 2.6; H. 1.4
Photo: Group 7B

[502] I19/425 74564
Level IIa/b
Astragalus; highly polished due to frequent handling, with some traces of grinding on one side.
W. 1.7; L. 2.7; H. 1.9
Photo: Group 7B

[503] I19/444 74579
Level IIa/b
Right, sheep or goat astragalus, partly broken, with slight traces of grinding on one side.
W. 1.6; L. 2.7; H. 1.5
Photo: Group 7B

[504] H19/579 91014
Level IIb
Left sheep astragalus, ground on both the medial and lateral sides.
W. 1.9; L. 3.1; H. 1.7
Photo: Group 7B

[505] I19/309 74539
Level IIb
Left goat astragalus, highly polished from frequent handling, some traces of grinding.
W. 1.8; L. 2.9; H. 1.6
Photo: Group 7B

[506] J18/470 96001
Level IIb.i
Right sheep astragalus, showing signs of very heavy wear.
W. 1.8; L. 3.0; H. 1.5
Photo: Group 7C

[507] J20/312 81802
Level IIb.i
Two astragali; both show signs of grinding on both medial and lateral sides, a) right sheep astragalus, b) right goat astragalus
a) W. 1.75; L. 3.05; H. 1.6
b) W. 1.8; L. 2.9; H. 1.6
Photo: Group 7C

Level 2: Central Strip
508 K14/386 75054
Level 2e
Fragment of a heavily worn astragalus. A circular hole has been drilled vertically through the astragalus.
H. 2.4; Di. perf. 0.2
Photo: 07:1013

[509] K14/594 82040
Level 2e/6
Left sheep astragalus, ground on both the medial and lateral sides.
W. 1.55; L. 3.2; H. 1.4
Photo: Group 7F

[510] L14/750 93027
Level 2e/2-3
Left sheep/goat astragalus, chopped along the horizontal axis.
W. 1.9; L. 2.9
Photo: Group 7H

[511] J14/547 11011
Level 2e/2-3
Right sheep/goat astragalus, heavily ground on all sides to create flat surfaces.
W. 1.6; L. 3.0; H. 1.25
Photo: Group 7D

[512] L14/751 93022
Level 2e/f
Left sheep astragalus, heavily worn on the lateral side.
W. 1.5; L. 2.5; H. 1.4
Photo: Group 7H

[513] J14/546 11042
Level 2e/f

Left sheep/goat astragalus, ground on medial and lateral sides until flat.
W. 1.5; L. 2.65; H. 1.4
Photo: Group 7D

514 K14/379 75037
Level 2f
Astragalus; fragment of a heavily worn astragalus, broken in half. A circular hole has been drilled vertically through the astragalus on the preserved side.
W. 1.9
Photo: 07:1205

515 K14/717 75012
Level 2f
Left sheep astragalus with a small (2.5 mm diam.) perforation drilled through the proximal-medial lobe. It also has a 10 mm vertical incision carved into the centre of the posterior articular surface.
W. 2.0; L. 3.0; Di. perf. 0.3
Photo: Group 7F

[516] J14/540 11025
Level 2k
Right sheep astragalus, heavily ground on the lateral side. One hole has been pierced through the proximal end.
W. 1.85; L. 2.8; H. 1.45; Di. perf. 0.2
Photo: Group 7E

[517] J14/541 11025
Level 2k
Right sheep astragalus, showing wear on all faces. Hole pierced through the proximal end.
W. 1.9; L. 2.8; H. 1.6; Di. perf. 0.2
Photo: Group 7E

[518] J14/542 11025
Level 2k
Left sheep astragalus, heavily worn on the lateral side.
W. 1.6; L. 2.8; H. 1.3
Photo: Group 7D

[519] J14/543 11025
Level 2k
Left sheep astragalus, polished and charred.
W. 1.9; L. 2.8; H. 1.45
Photo: Group 7D

[520] J14/544 11025
Level 2k
Right sheep astragalus, ground on both lateral and medial sides. One hole has been pierced vertically through the centre, although the piercing does not reach through the entire astragalus.
W. 1.85; L. 2.85; H. 1.4; Di. perf. 0.15
Photo: Group 7E

[521] J14/545 11025
Level 2k
Right sheep astragalus. Two circular holes have been pierced through vertically.
W. 1.65; L. 2.7; H. 1.95; Di. perf. 0.2
Photo: Group 7E

522 I14/403 75360
Level 2 early
Worked sheep astragalus, worn smooth on all faces. Probable small cut marks and use polish.
W. 1.5; L. 2.6; H. 1.3
Photo: 10:0504

Worked pieces of bone

These items are not so much objects that were made from bone, but rather pieces of bone which have been worked in some way and still essentially preserve their natural shape and form.

Level III: NW Building
523 I19/493 84030
Level IIId
Tool handle made from red deer antler (*Cervus elaphus*) with a large hole drilled through the centre from side to side. This hole might have been designed to fit around the shaft of a tool. The antler was cut or sawn on three planes at end opposite to base to remove the antler branches, and seems to have been shed naturally.
L. 11.9; W. 9.0; H. 5.0
Photo: 08:1672

Level II: Western Courtyard and Stele Building
524 I19/499 74580
Level IIa/b
Worked bone; sawn-off piece of a cow knuckle (*Bos taurus*). Left metatarsal-proximal sawn from anterior, posterior, lateral and medial directions approx. 4 cm distal to proximal articulation.
Di. 5.1; H. 3.4
Photo: Group 7G

525 I19/500 74580
Level IIa/b
Tool made from the long bone of a red deer (*Cervus elaphus*). The bone has been cut into a point, so that the tool has a roughly triangular shape. There is some possible use-wear on the shaft tip.
L. 18.0; W. 6.3
Photo: Group 7G

526 I19/517 74580
Level IIa/b
Worked bone: small piece of long bone, with saw marks on three sides.
L. 1.9; W. 1.5
Photo: Group 7G

527 I19/519 74580
Level IIa/b

Two worked bones.
a) Fragment of the long bone shaft of a large mammal. Sawn at one end from both interior and exterior directions. Broken at the other end
L. 10; W. 3
b) Fragment of the rib shaft of a large mammal. Sawn off at one end and split and partially smoothed on interior face. Slight polish.
L. 6; W. 2
Photo: Group 7G

528 I19/520 74580
Level IIa/b
Worked bone: piece of a long bone shaft, sawn at both ends.
L. 3.0
Photo: Group 7G

529 I19/521 74580
Level IIa/b
Worked bone: fragment of the long bone shaft of a large mammal. Sawn at both ends in medial-lateral direction.
L. 3.5; W. 3.5
Photo: Group 7G

530 I19/502 74502
Level IIb
Worked bone: fragment of the long bone shaft of a large mammal, sawn at one end and broken at the other.
L. 2.8
Photo: Group 7G

531 I19/501 74519
Level IIc
Worked bone; right mandible of a pig, broken unevenly at several points and now in a jagged shape.
L. (8.9)
Photo: Group 7G

Level II late: I18
[532] I18/231 85022
Level IIe late
Worked antler tip, chopped at one side, and naturally tapering towards the tip at the other.
L. 4.6; W. max. 1.9
Photo: 08:1304

Level 2 late: Central Strip
533 K14/185 75017
Level 2f
Worked tip of a deer antler, cut at one side and at the other sharpened to a flat, chisel-like point. There is a single deep cut mark in one side of the object.
L. 3.0; Di. 1.3
Photo: 07:0964

[534] K14/607 82009
Level 2f
Worked tip of an antler, chopped at one side and smoothed into a point at the other. At the chopped side, part of the antler has also been chopped away longitudinally.
L. 9.3; W. 2.4 (thick end), 0.4 (tip)
Photo: 10:3374

[535] K14/608 82009
Level 2f
Chopped fragment of scapula or other large mammal bone, cut into a rough triangular shape.
L. 2.5; max.W. 1.9
Photo: 10:3496

[536] K14/610 82011
Level 2f
Chopped fragment of scapula or other large mammal bone, cut on four sides in a roughly rectangular shape.
L. 3.3; W. 1.8
Photo: 10:3453

[537] K14/1003 92446
Level 2e/5
Chopped piece of scapula, cut into a roughly trapezoidal shape.
L. 3.3; W. 3.7
Photo: 10:3419

[538] L14/752 93041
Level 2e
Rough bone tool, chopped from sheep/goat metacarpal shaft to have a sharp point. The point however is rubbed and blunted with use. The head of the tool appears to have originally had a circular perforation.
L. 4.7; W. 1.1
Photo: 10:1703

Level 1: Central Strip
539 I14/413 75316
Level 1
Bone tool; flake of the long bone of a large mammal fashioned into a rough teardrop shape with a point at one side but sharp edges all round. A bulb of percussion is visible, and flakes seem to have been taken off in order to maintain sharpness of the edges.
L. 6.2; W. 1.8; Th. 0.4
Photo: 10:0515

Unstratified
[540] I14/406 86000
Unstratified
Worked horn; antler tip, chopped at one side, and naturally tapering towards the tip at the other. Partially burnt.
L. 7.0; W. 1.4-0.7
Photo: 08:1323

8. Worked Shell (541-564)

Naoíse Mac Sweeney and Sofie Debruyne

Included here are only those shells that which show signs of being worked. For unworked shells, see S. Debruyne, in §12 Mollusca below. The 29 shells listed here have therefore all either been pierced, sliced, or polished, although their final function is not always clear; they are also discussed in §12, and most feature in the photographs attached to that section.

It is perhaps significant that all of the worked shells listed here are marine shells. During the 1994-1998 excavations, marine shells made up only 6.1% of the total shell assemblage (Debruyne 2010), and we anticipate that they will once again constitute a relatively small proportion of all shells found. Their overwhelming over-representation amongst the worked shells is therefore notable, and seems to imply some form of social preference. This is all the more significant given the relatively easy availability of freshwater shells and molluscs from the nearby Göksu River, in comparison to marine shells and molluscs which have had to be imported to the site, likely travelling up the Göksu river valley from the Cilician coast.

Level III: NW Building

[541] I19/524 84043
Level IIId
Pierced marine gastropod shell (*Nassarius gibbosulus*), with a round hole in the body whorl, opposite the aperture.
H. 1.6; W. 1.2; Di. perf. 0.5
Photos: 08:1365; §12.6

[542] I20/631 71703
Level IIId
Pierced marine bivalve shell (*Glycymeris* sp.), with a round hole below the umbo; wear at the upper edge of the hole; beach-worn shell.
H. 2.7; L. 2.6; Di. perf. 0.6
Photos: 07:0953; Group 8E; §12.16a, 16b

Level II: Stele Building and Western Courtyard

[543] K19/504 81009
Level IIa
Ring-shaped fragment of a marine gastropod shell (*Phorcus turbinatus*); polished.
max. Di. (1.9); Th. 0.3
Photos: 10:0808; §12.17

[544] I19/369 74558
Level IIa/b
Four marine gastropod shells (*Nassarius gibbosulus*).
a) Pierced with hole in the body whorl, opposite the aperture.
H. 1.7; W. 1.2; max. Di. perf. 0.3
b) Hole in the base; ground apex, connected to the lower part of the shell.
H. 1.4; W. 1.2; Di. perf. 0.4
c) Ground apex, not connected to the lower part of the shell; unfinished bead?
H. 1.4; W. 1.2
d) Ground apex, not connected to the lower part of the shell; unfinished bead?
H. 1.5; W. 1.2
Photos: 09:0768, 09:0771

[545] I19/366 74557
Level IIa/b
Pierced marine gastropod shell (*Columbella rustica*), with a hole in the body whorl, opposite the aperture; apex removed (intentionally?); fresh shell.
H. 1.3; W. 1.0; Di. perf. 0.1
Photos: Group 8A; §12.6, 12.7

[546] I19/364 74558
Level IIa/b
Worked marine gastropod shell (*Nassarius gibbosulus*); with a ground apex, not connected to the lower part of the shell; unfinished bead?
H. 1.5; W. 1.2
Photos: Group 8B; §12.7

[547] I19/280 74514
Level IIb
Pierced marine gastropod shell (*Conus ventricosus*); with a hole in the body whorl, left of the aperture.
H. 2.4; W. 1.4; Di. perf. 0.3
Photos: Group 8A; §12.9

[548] H19/581 91014
Level IIb
Pierced marine gastropod shell (*Conus* sp.); with a drilled hole in the apex.

H. 0.9; W. 0.7; Di. perf. 0.2
Photos: Group 8A; §12.9

[549] H19/552 91014
Level IIb
Pierced marine gastropod shell (*Conus* sp.); with a drilled hole in the apex.
H. 1.5; W. 1.1; Di. perf. 0.2
Photos: Group 8A; §12.9, 12.10

[550] J19/641 77075
Level IIc
Three worked marine gastropod shells (*Nassarius gibbosulus*); with a ground apex, not connected to the lower part of the shell; perhaps unfinished beads?
a) H. 1.5; W. 1.3
b) H. 1.3; W. 1.1
c) H. 1.3; W. 1.1
Photos: Group 8B

Level 2 late: Central Strip
[551] K14/713 75045
Level 2e
Pierced marine shell (*Monetaria annulus*); cowrie shell, with a (natural?) hole in the dorsum.
H. 2.0; W. 1.4; max. Di. perf. 1.2
Photos: Groups 8C, 8D; §12.1

[552] K14/382 75051
Level 2e
Pierced marine gastropod shell (*Turritella turbona*); with two round holes, one in the body whorl (opposite the aperture) and one in an upper whorl; beach-worn shell
H. 2.95; W. (0.9); Di. perf. 0.4-0.2
Photos: Groups 8A, 8C; §12.9, 11a, 11b

[553] K14/232 75037
Level 2f
Pierced marine gastropod shell (*Nassarius circumcinctus*); with a round hole in the body whorl, opposite the aperture.
H. 1.3; W. 0.85; Di. perf. 0.3
Photos: Group 8C; §12.16a, 16b

[554] K14/526 82014
Level 2f
Pierced marine bivalve shell (*Glycymeris* sp.); with a round (natural?) hole in the umbo; beach-worn shell.
H. 2.6; L. 2.7; Di. perf. 0.4
Photos: Group 8E; §12.16a, 16b

[555] K14/528 82014
Level 2f
Pierced marine bivalve shell (*Spondylus gaederopus*); badly beach-worn, with a rough (natural?) hole
H. 4.6; L. 5.5; max. Di. perf. 0.9
Photos: Group 8C; §12.5

[556] K14/560 82014
Level 2f
Pierced marine shell (*Bolinus brandaris*) with one hole in the body whorl, opposite the aperture; fresh shell.
H. 5.4; W. 3.8; Di. perf. 0.25
Photos: 08:1334; §12.13

[557] K14/609 82009
Level 2f
Two pierced marine gastropod shells; with round holes.

a) *Nassarius gibbosulus* with hole in the body whorl, opposite the aperture.
H. 1.45; W. 1.05; Di. perf. 0.4
b) *Conus ventricosus* with drilled hole in the apex; beach-worn shell.
H. 1.2; W. 1.0; Di. perf. 0.3
Photos: Group 8A; Group 8C; §12.6, 9

[558] K14/1015 92410
Level 2f
Pierced marine shell (*Monetaria moneta*); cowrie shell, with a (natural?) hole in the dorsum.
H. 2.3; W. 1.6; max. Di. perf. 1.0
Photos: Group 8D; §12.1

[559] K14/881 92419
Level 2f
Fragment of pierced marine bivalve shell (*Glycymeris* sp.); with a (natural?) hole in the umbo.
H. 2.5; Di. perf. 0.5
Photos: Group 8E; §12.16a, 16b

[560] J14/280 11019
Level 2k
Pierced marine shell (*Monetaria annulus*); cowrie shell, with a (natural?) hole in the dorsum.
H. 1.9; W. 1.5; max. Di. perf. 1.1
Photos: Group 8D; §12.1

[561] J14/139 74808
Level 2
Pierced marine bivalve shell (*Glycymeris* sp.); with a round hole in the umbo; beach-worn shell.
H. 2.5; L. 2.5; Di. perf. 0.4
Photos: Group 8E; §12.16a, 16b

Level 1: I18
562 I18/52 74013
Level I
Shell pendant; lip fragment from a marine gastropod shell (*Semicassis granulata undulata*) with drilled hole at anterior end; beach-worn.
L. 4.0; W. 1.2; Di. perf. 0.2
Photos: 07:0262; §12.18a, 18b6

Unstratified
[563] K14/675 92001
Surface find
Pierced marine gastropod shell (*Nassarius gibbosulus*); with a round hole in the body whorl, opposite the aperture.
H. 1.3; W. 1.1; Di. perf. 0.4
Photos: Group 8C; §12.6

[564] I14/389 75382
Unstratified

Marine gastropod shell (*Nassarius circumcinctus*); without apex (removed intentionally?), not connected to the lower part of the shell; unfinished bead?
H. 1.2; W. 0.9
Photos: Group 8B; §12.7

9. Fossils (565-604)

Naoíse Mac Sweeney and Sofie Debruyne

As with the 1990s excavations, fossils were found in seasons 2007-2011, and as before, the most common types continue to be marine fossils. Marine fossils naturally occur in the limestone formations of the area, and it is unsurprising that they should be found at Kilise Tepe. However, many of these items are likely to have been deliberately taken to the site, as their appearance is too frequent to be wholly accidental. Indeed, one piece of rock containing a plant fossil (**597**) was fashioned into a rough disc shape for use as a gaming piece or token, while another stone bearing the fossilised impression of a shell (**577**) was kept and the area of the shell impression painted red. This deliberate use of fossils was also evident from the earlier excavations, where a sea-urchin fossil (EKT, 497, no. 1998) was drilled and used as a spindle whorl.

It is perhaps significant that most of the fossils were found in Level II and III deposits, and that very few examples came from the Byzantine period while none at all were found in the Early Bronze Age phases. This might suggest that the Late Bronze and Iron Age inhabitants of the site were particularly interested in retaining fossils, especially when compared to their earlier and later counterparts.

The fossils are described here only briefly. The catalogue as a whole was prepared on site by Naoíse Mac Sweeney, without specialist expertise. Sofie Debruyne has kindly edited the entries for molluscs. Some bivalve and gastropod shells could be attributed to a species by using Erünal-Erentöz 1958, but for most specimens the description is kept at a general level. However, it is hoped that these entries and photographs will be sufficient to give the reader a sense of the range of material uncovered.

Shells: bivalves

Bivalve shells form the largest group of fossils found in the 2007-11 excavations. These are of varying sizes, ranging from 2.7-7.9 centimetres as measured at their maximum extent. On the whole, the examples found in these excavations were larger than those discovered in the 1990s.

Levels III and II: NW Building and Stele Building area

[565] I20/670 11319
Level IIId
Fossilised Venus clam shell; Veneridae, cf. *Dosinia lupinus* (Linnaeus, 1758).
L. 2.1
Photo: 12:0985

[566] I19/422 74579
Level IIa/b
Fossilised scallop shell; Pectinidae; markings preserved on both sides.
L. 6.7
Photo: Group 9A

[567] K19/538 81026
Level IIb.i
Fossilised Venus clam shell; Veneridae, cf. *Dosinia lupinus* (Linnaeus, 1758).
L. 3.2
Photo: Group 9A

[568] J19/502 77021
Level IIb.i
Fossilised bivalve shell.
L. 2.7
Photo: Group 9A

[569] J19/780 96574
Level IIc
Fossilised bivalve shell; scallop; Pectinidae.
L. 3.5
Photo: Group 9A

[570] H19/544 91009
Level IIc
Fossilised clam shell; Thraciidae, cf. *Thracia pubescens* (Pulteney, 1799).
L. 5.7
Photo: Group 9A

Levels 3-1: Central Strip

[571] K14/810 92037
Level 3, phase 12
Fossilised scallop shell fragment; Pectinidae.
Max. L. 6.2
Photo: Group 9A

[572] I19/227 74537
Level 2a/b
Fossilised scallop shell; Pectinidae; markings preserved on both sides.
L. 6.1
Photo: Group 9A

[573] K14/407 75067
Level 2e
Fossilised scallop shell fragment; Pectinidae.
Max. L. 3.3
Photo: Group 9A

[574] K14/415 75061
Level 2e
Fossilised scallop shell fragment; Pectinidae.
Max. L. 6.5
Photo: Group 9A

[575] L14/666 93032
Level 2e/3-4
Fossilised scallop shell; Pectinidae; only one side of the shell visible.
L. 4.2
Photo: Group 9A

[576] K14/912 92426
Level 2e/3
Fossilised scallop shell fragment; Pectinidae.
Max. L. 3.5
Photo: Group 9A

[577] I14/365 75367
Level 2
Fossil imprint of a bivalve shell in a large stone; possibly spiny oyster; cf. Spondylidae, cf. *Spondylus* sp.; the area of the imprint seems to have been painted red.
L. 7.0
Photo: 10:0128

[578] I14/374 75368
Level 2
Fossilised scallop shell; Pectinidae; markings preserved on both sides.
L. 7.2
Photo: Group 9A

[579] J14/184 74801
Level 1
Fossilised scallop shell fragment; Pectinidae; only one side of the fossil is visible, the other remains encased in a river pebble.
L. 4.4
Photo: Group 9A

Level I: I18
[580] I18/50 74011
Level I
Fossilised scallop shell; Pectinidae; markings preserved on both sides.
L. 3.5
Photo: Group 9A

[581] I18/131 74033
Level 1
Fossilised bivalve shell; scallop; Pectinidae; markings preserved on both sides.
L. 7.9
Photo: Group 9A

Shells: gastropods
This category includes a range of spiral-shaped shell types. Overall, they tend to be smaller than the bivalves.

Level 2: Central Strip
[582] L14/756 93041
Level 2e
Fossilised gastropod shell; possibly basket shell; cf. Nassariidae.
L. 1.8
Photo: 12:2110

[583] L14/608 93020
Level 2e/f
Fossilised gastropod shell; possibly turban shell; cf. Turbinidae.
Max. L. 4.1
Photo: Group 9B

[584] K14/842 92419
Level 2f
Fossilised gastropod shell; cone shell; Conidae, *Conus* sp.
L. 2.7
Photo: Group 9B
Level I: I18

[584a] I18/61 74015
Level 1
Fossilised whelk; Buccinidae, *Buccinum* sp.
L. 3.2
Photo: Group 9B

[585] I18/69 74015
Level 1
Fossilised gastropod shell.
L. 3.1
Photo: Group 9B

Coral

Level III: NW Building
[586] J19/716 96520
Level IIIe
Fossilised coral
H. 5.4
Photo: Group 9D

Levels 3-2: Central Strip
[587] L14/743 93055
Level 3, Phase 7
Fossilised coral
H. 4.3
Photo: Group 9D

[588] K14/429 75071
Level 2e
Fossilised coral
H. 2.9
Photo: Group 9D

[589] J14/125 74804
Level 2
Fossilised coral
H. 10.9
Photo: Group 9D

Teeth, tusks or ribs

The identity of these objects is not immediately obvious, and it is possible that their designation as teeth, tusks or ribs may be incorrect. However, a number of these items have been found in different trenches, and the overall impression is of a set of very similar fossils, with pinched oval or lens-shaped section, curved along their length. It is perhaps more likely that these objects are fossilised rib bones, as they do not taper in the way that teeth or tusks usually do. In addition, the example **590** shows two of these fossils preserved next to each other, encased in stone together in an arrangement that which would suggest ribs. Unfortunately, there is no clear pattern in either the spatial or the chronological distribution of these items.

Level III: NW Building
[590] I19/653 94039
Level IIIc
Fossilised teeth, tusks or ribs; piece of two uncertain curved fossils with oval sections, encased next to each other in rock.
W. (1.1)
Photo: Group 9C

[591] I19/804 11137
Level IIId
Piece of floor paving with part of a fossilised tooth, tusk or rib showing on the surface. From the triangular pavement in Room 33.
Photo: 12:2347

Levels 2-1: Central Strip
[592] J14/179 74808
Level 2
Fossilised tooth, tusk or rib; piece of an uncertain curved fossil with oval section, encased in stone.
W. (1.5)
Photo: Group 9C

[593] I14/274 75303
Level 1
Fossilised tooth, tusk or rib; piece of an uncertain curved fossil with oval section, encased in stone.
W. (1.6)
Photo: Group 9C

[594] L14/572 93010
Level 1
Fossilised tooth, tusk or rib; piece of an uncertain curved fossil with oval section.
W. (0.8)
Photo: Group 9C

Plant fossils

Level II: Stele Building
[595] J19/727 96510
Level IIa
Translucent stone containing fossils of circular lichen-type plants.
Photo: 10:0202

Unstratified
[596] K14/649 82056
Unstratified
Fossil token or disc; plant fossil of a frond with three leaf projections. Area around fossil cut into a round disc-shaped token.
Di. (2.85); Th. (0.95)
Photo: 10:3246

[597] J19/606 77029
Unstratified
Fossilised wood; fragment of a piece of fossilised wood
L. 3.4
Photo: 10:0252

Unidentified fossils

Level II: Stele Building
[598] J19/644 77021
Level IIb.i
Fossil with roughly cylindrical central part and curved end, on either side are radiating wing-like patterns. Perhaps an insect.
L. 6.8
Photo: 10:0163

[599] K20/279 81410
Level IIb.i
Unidentified fossils; six pieces of white fossil, water-eroded. Perhaps originally shell.
Photo: 10:0259

[600] I19/448 74578
Level IId/e
Thin, cylindrical fossil, with longitudinal markings down the length of the cylinder. Thickens at one end, where it is broken.
L. 2.9
Photo: 10:0239

Level 2: Central Strip
[601] K14/768 92020
Level 3, phase 9/10
Cylindrical, brown fossil with a very smooth surface. Thicker at one end, and faint lines run longitudinally along the cylinder. Along the long edges are two small protruding 'wings'.
Max. Di. 0.8; L. 2.3
Photo: 10:0235

[602] K14/381 75053
Level 2e
Piece of a cylindrical fossil, with a projecting ridge running longitudinally along the cylinder.
Di. 1.5; L. 5.4
Photo: 07:1463

[603] L14/559 93006
Level 1/2f
Rounded end of a roughly formed stone cylinder in soft creamy stone, probably a fossil.
L. 2.9; Di. 0.8
Photo: 10:1609

Level II late: I18
[604] I18/229 85025
Level IIe
Piece of a cylindrical fossil.
Di. 0.7; L. 2.2
Photo: 08:1360

10. Lithics (605-681)

Naoíse Mac Sweeney

The lithics uncovered during the 1994-1999 excavations were studied in detail by Tim Reynolds (EKT, 545-558), who concluded that the small assemblage was varied and difficult to characterise. As a general rule, it appeared that flaked stone tools were current in use during the Early Bronze Age levels at the site (and possibly Middle Bronze), but that flaked stone tools recovered from later levels were likely to be out of context, thrown up from earlier levels. Except in G19 and G20, not treated here, the lithics unearthed in the 2007-2011 excavations are therefore likely to be out of context, and have not had the benefit of such expert analysis. They are presented here by level, with photographs, as a supplement to Dr Reynolds' survey.

As before, the majority of these tools are probably of relatively local chert or flint, others may be limestone or quartz (EKT, 552), but interestingly 18 pieces out of the total of 76 lithic artefacts uncovered are obsidian (i.e. 24%). From our earlier seasons obsidian made up only 10% of the assemblage.

Level III: NW Building

[605] I19/763 11105
Level IIIc-d
Fragment of a straight blade with two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from tan flint.
L. 1.8; W. 2.2; Th. 0.6
Photo: Group 10A

[606] I20/683 11319
Level IIId
Flake; possibly worked at one end to form a scraper edge. Made from grey flint.
L. 1.9; W. 2.1; Th. 0.5
Photo: Group 10A

[607] I19/597 84051
Level IIId
Fragment of a straight blade with two parallel cutting edges, created by retouching on both sides. Made from milky-white and black opaque stone.
L. 1.6; W. 1.45; Th. 0.2
Photos: 09:1403, Group 10C

[608] I19/678 94044
Level IIId
Flake, with slightly concave cutting edge showing wear from use. Made from obsidian with a deep black colour.
L. 2.6; W. 1.9; Th. 0.8
Photo: Group 10C

[609] I20/654 11302
Level IIId
Flake. Made from tan flint.
L. 3.2; W. 2.2; Th. 1.45
Photo: Group 10A

[610] I20/660 11317
Level IIId
Flake, with one slightly concave cutting edge.
L.5.2; H. 1.6; Th. 0.9
Photo: Group 10A

[611] I20/684 11304
Level IIId
Core; part of a flint pebble, with flakes taken off on two faces.
L. 3.0; W. 2.4; Th. 1.1
Photo: Group 10A

[612] J19/718 96520
Level IIIe
Core; made from milky white flint.
L. 2.9; W. 2.5; Th. 1.1
Photo: 10:0827

Level 3: Central Strip

[613] K14/951 92076
Phase 13
Flake; made from tan flint.
L. 2.3; W. 1.6; Th. 0.45
Photo: Group 10E

[614] L14/725 93051
Phases 6-7
Flake; small chip of translucent black obsidian, perhaps debitage.
L. 1.1; W. 0.6; Th. <0.1
n.ph.

[615] L14/716 93044
Phase 6a
Flake; small chip of translucent black obsidian, perhaps debitage.
L. 0.4; W. 0.3; Th. <0.1
n.ph.

[616] K14/695 92006
Phase 6b
Core; nodule of light brown flint.
L. 4.4; W. 3.7; Th. 3.0
Photo: Group 10E

Level II: Western Courtyard

[617] I19/303 74537
Level IIa/b
Flake; made from obsidian with an almost translucent black colour.
L. 2.0; W. 2.2; Th. 0.4
Photo: Group 10C

[618] I19/340a 74543
Level IIa/b
Fragment of straight single-edged blade, the cutting edge of which shows signs of use. Made from light brown flint.
L. 5.6; W. 5.6; Th. 0.7
Photo: Group 10C

[619] I19/340b 74543
Level IIa/b
Fragment of a triangular flake with two cutting edges tapering to a point (broken). Made from light brown flint.
L. 2.8; W. 2.9; Th. 0.5
Photo: Group 10C

[620] I19/365 74558
Level IIa/b
Flake; made from red-pink stone.
L. 2.9; W. 1.8; Th. 0.6
Photo: Group 10C

[621] I19/382 74537
Level IIa/b
Flake; perhaps microburin. Made from tan flint.
L. 2.6; W. 2.3; Th. 0.5
Photo: Group 10C

[622] I19/272 74513
Level IIb
Core; nodule of tan flint, with signs of flaking on two of the three main faces.
L. 5.0; W. 5.0; Th. 1.5
Photo: Group 10C

[623] I19/292 74513
Level IIb
Blade; fragment of a straight blade which seems to have two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from tan flint.
L. 2.5; W. 2.3; Th. 0.45
Photo: 9:1727

[624] I19/479 84009
Level IIc
Flake; with one slightly concave edge retouched. Made from tan flint.
L. 2.3; W. 1.6; Th. 0.5
Photo: Group 10C

Level II: Stele Building

[625] J19/507 77022
Level IIa
Flake. Made from tan flint.
L. 4.1; W. 1.5; Th. 0.9
Photo: Group 10D

[626] J19/508 77022
Level IIa
Core. Made from marbled milky-white and brown flint.
L. 3.7; W. 3.15; Th. 1.1
Photo: Group 10D

[627] J19/703 96511
Level IIa
Flake, perhaps microburin. Made from translucent black obsidian.
L. 1.1; W. 0.9; Th. 0.2
Photo: Group 10D

[628] J20/267 78005
Level IIa
Core; nodule of tan flint.
L. 6.8; W. 5.9; Th. 2.8
Photo: Group 10D

[629] K19/556 81029
Level IIa
Flake; made from translucent brown flint.
L. 1.5; W. 1.4; Th. 0.43
Photo: Group 10D

[630] K19/566 81039
Level IIa
Fragment of a straight blade with two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from translucent brown flint.
L. 3.8; W. 1.3; Th. 0.45
Photo: Group 10D

[631] J19/583 77052
Level IIb.i
Core. Made from dark brown translucent flint.
L. 7.3; W. 5.2; Th. 4.3
Photo: Group 10D

[632] J19/499 77021
Level IIb.i
Fragment of a straight blade with two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from opaque tan flint.
L. 5.1; W. 1.9; Th. 0.85
Photo: Group 10D

[633] J20/334 81803
Level IIb.i
Flakes; two flakes of a dark red chipped stone.
a) L. 1.1; W. 0.75; Th. 1.4
b) L. 0.9; W. 0.8; Th. 1.8
Photo: Group 10D

[634] K19/500 81413
Level IIb.i
Core of deep black obsidian, with pieces flaked off from some of its faces.
L. 3.2; W. 2.8; Th. 1.2
Photo: Group 10D

[635] J19/515 77083
Level IIc

Roughly triangular flake, with signs of retouching around the edges. Made from translucent brown flint.
L. 3.8; W. 1.1; Th. 0.2
Photo: Group 10D

Level 2: Central Strip
[636] K14/581 82034
Level 2e, surface 5
Fragment of a straight blade with two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from light brown flint.
L. 1.3; W. 1.1; Th. 0.3
Photo: Group 10E

[637] J14/453 11057
Level 2e, surface 5a
Triangular flake with two cutting edges tapering to a point (broken). Made from obsidian.
L. 1.8; W. 1.0; Th. 0.6
Photo: KT11-PP-0551

[638] J14/299 11033
Level 2e, surfaces 3-4
Roughly triangular flake. Made from translucent grey and brown flint.
L. 2.45; W.1.6; Th. 1.0
Photo: Group 10F

[639] J14/310 11035
Level 2e, surfaces 3-4
Flake. Made from orange flint.
L. 2.7; W. 1.8; Th. 0.4
Photo: Group 10F

[640] J14/387 11053
Level 2e, surfaces 3-4
Core; nodule of translucent white flint.
L. 3.6; W.2.4; Th. 2.1
Photo: Group 10F

[641] J14/241 11005
Level 2e, surfaces 3-4
Flake. Made from milky white flint.
L. 2.6; W. 2.0; Th. 0.6
Photo: Group 10F

[642] J14/253 11013
Level 2e, surfaces 3-4
Core. Made from milky-white and black opaque stone.
L. 4.2; W. 3.5; Th. 2.0
Photo: Group 10F

[643] J14/353 11050
Level 2e, surfaces 3-4
Fragment of roughly triangular flake, with two cutting edges tapering to a point (broken). Made from translucent brown flint with closely packed plant(?) fossils.
L. 4.7; W. 3.1; Th. 0.8
Photo: Group 10F

[644] L14/641 93027
Level 2e, surfaces 3-4
Core; nodule of white and brown flint.
L. 6.4; W. 1.0; Th. 3.2
Photo: Group 10B

[645] J14/305 11021
Level 2e
Flake, with one retouched cutting edge. Grey-brown translucent flint.
L.3.8; W. 2.3; Th. 1.2
Photo: Group 10F

[646] K14/321 75052
Level 2e
Irregular flake made from translucent black obsidian.
L. 1.0; W. 1.1; Th. 0.2
Photo: Group 10E

[647] L14/629 93023
Level 2e
Irregular flake made from translucent black obsidian.
L. 1.8; W. 1.1; Th. 0.9
Photo: Group 10B

[648] K14/343 75057
Level 2e
Core. Made from translucent brown flint.
L. 3.6; W. 2.6; Th. 1.0
Photo: Group 10E

[649] K14/364 75061
Level 2e
Core; nodule of opaque milky-white stone.
L. 5.9; W. 2.85; Th. 2.4
Photo: Group 10E

[650] K14/365 75061
Level 2e
Core; made from brown flint.
L. 4.5; W. 2.6; Th. 1.35
Photo: Group 10E

[651] K14/437 75072
Level 2e
Broken fragment of a flaked tool. Made from translucent black obsidian.
L. 1.25; W. 0.5; Th. 0.2
Photo: Group 10E

[652] L14/688 93041
Level 2e
Fragment of a flaked tool, perhaps a blade. Made from translucent black obsidian.
L. 2.3; W. 1.6; Th. 0.15
Photo: Group 10B

[653] L14/693 93029
Level 2e
Flake of translucent black obsidian, perhaps debitage.
L. 1.0; W. 0.45; Th. <0.1
Photo: Group 10B

[654] L14/696 93033
Level 2e
Fragment of a straight blade with two parallel cutting edges, created by flaking pieces off from a central ridge

on one of the surfaces. Finely made from translucent black obsidian.
L. 2.8; W. 0.9; Th. 0.15
Photo: Group 10B

[655] J14/225 86207
Level 2e/f
Fragment of a straight blade with one cutting edge. Made from opaque milky-white flint.
L. 3.0; W. 1.4; Th. 0.5
Photo: Group 10H

[656] L14/593 93016
Level 2e
Core, made from opaque white and tan flint.
L. 2.1; W. 1.0; Th. 1.05
Photo: Group 10B

[657] K14/724 92406
Level 2f
Fragment of blade with single cutting edge. The blade is slightly curved and the cutting edge is on the concave side – perhaps a sickle? Made from black obsidian.
L. 1.7; W. 1.2; Th. 0.45
Photo: 12:1058

[658] K14/270 75043
Level 2f
Flake. Made from translucent dark brown flint.
L. 2.8; W. 1.8; Th. 0.75
Photo: Group 10E

[659] K14/277 75043
Level 2f
Flake; made from tan flint.
L. 2.7; W. 2.2; Th. 0.8
Photo: Group 10E

[660] K14/226 75037
Level 2f
Fragment of a blade with two parallel cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from dark brown flint.
L. 2.6; W. 1.3; Th. 0.45
Photo: Group 10E

[661] K14/251 75039
Level 2f
Flake. Made from opaque milky-white flint.
L. 1.85; W. 1.5; Th. 0.45
Photo: Group 10E

[662] K14/255 75039
Level 2f
Core, made from flint varying in colour from milky white at the centre of the nodule to bright red-orange at the sides.
L. 3.6; W. 2.8; Th. 1.3
Photo: Group 10E

[663] K14/256 75039
Level 2f
Flake, with very clear toolmarks or incised decoration on one side, consisting of 6 parallel lines. Made from tan flint.
L. 2.6; W. 1.5; Th. 0.65
Photo: Group 10E

[664] J14/126 74804
Level 2
Roughly triangular flake with one cutting edge. Made from translucent brown and white flint.
L. 3.1; W. 2.3; Th. 0.7
Photo: Group 10H

[665] K14/296 75011
Level 1/2f
Fragment of a triangular flake with two cutting edges tapering to a point (broken). Made from translucent dark brown flint.
L. 1.55; W. 1.65; Th. 0.6
Photo: Group 10E

[666] K14/224 75032
Level 1/2f
Flake. Made from translucent black obsidian.
L. 1.4; W. 1.1; Th. 0.3
Photo: Group 10E

[667] L14/558 93006
Level 1/2f
Core, made from opaque milky-whitish bluish flint.
Photo: Group 10B

[668] J14/289 11026
Level 1/2
Irregularly shaped flake with one cutting edge. Made from black flint with white flecks.
L. 2.0; W. 1.8; Th. 0.5
Photo: Group 10F

Levels II-I and Surface: I18
[669] I18/239 85027
Level IIe late
Core; nodule of milky-white stone.
L. 6.6; W. 4.9; Th. 3.8
Photo: Group 10G

[670] I18/107 74029
Level I
Roughly teardrop shaped biface tool, with two apparent cutting edges tapering to the point of the teardrop. Made from opaque red-brown flint.
L. 3.8; W. 2.9; Th. 0.9
Photo: Group 10G

[671] I18/141 74044
Level I
Core, made from opaque milky-white stone with a bluish tinge.
L. 3.8; W. 0.3; Th. <0.1
Photo: Group 10G

[672] I18/164 85000
Surface
Fragment of a blade with two parallel cutting edges. Made from translucent orange flint.
L. 2.2; W1.6; Th. 0.7

Photo: Group 10G

[673] I18/282 74057
Level I
Blade with a single cutting edge. Made from dark flint, with some concretions.
L. 6.1; W. 2.4; Th. 1.4
Photo: Group 10G

Level I and Unstratified: Stele Building area
[674] J18/436 73200
Level I
Chip; debitage, made from opaque white and tan flint.
L. 3.6; W. 2.9; Th. 0.5
Photo: Group 10D

[675] J18/439 73201
Level I
Fragment of a triangular flake with two cutting edges tapering to a point. Made from obsidian.
L. 2.2; W. 1.7; Th. 0.5
Photo: Group 10D

[676] J19/720 96519
Unstratified
Fragment of a straight blade with two parallel cutting edges, created by retouching on both sides. Made from tan flint.
L. 5.8; W. 2.2; Th. 0.3
Photo: Group 10D

[677] J20/204 78001
Unstratified
Core or piece of obsidian.
L. 4.2; W. 2.1; Th. 1.1
Photo: Group 10D

Surface and Unstratified: Central Strip
[678] K14/750 92002
Unstratified
Core; large nodule of flint.
L. 7.4; W. 6.3; Th.1.8
Photo: Group 10E

[679] K14/677 92000
Unstratified
Narrow, tapered blade with two cutting edges, created by flaking pieces off from a central ridge on one of the surfaces. Made from glossy black obsidian.
L. 5.1; W. 1.3; Th. 0.8
Photo: Group 10E

[680] J14/232 11002
Unstratified
Core, made from translucent white-yellow flint.
L. 3.7; W. 2.4; Th. 1.8
Photo: Group 10F

[681] K14/684 92402
Surface
Flake; perhaps microburin. Made from tan flint.
L. 2.2; W. 1.9; Th. 1.2
Photo: Group 10E

11. Worked stone objects (682-747)

Naoíse Mac Sweeney

Ground stone objects, not including grindstones, are considered in this section. These fall into several categories:

- Stone vessels (**682-691**)
- Palettes (**692-695**)
- Whetstones (**696-705**)
- Polished stones (**706-711**)
- Stone spheres (**712-714**)
- Stone panels / decorative inlays (**715-717**)
- Architectural components **(718-727)**
- Miscellaneous objects **(728-735)**
- Objects of uncertain use **(736-747)**

Stone vessels (**682-691**)

No complete stone vessels have been found to date at Kilise Tepe (EKT, 564-5). Instead, fragments of rims and handles have been found, as well as one complete profile (**688**). The small number of stone vessels represented at the site (six from the 2007-2011 seasons, and eight from previous seasons), suggests that the acquisition, manufacture and use of stone vessels was not a priority at the site. It is perhaps worth noting that some of the fragments found in recent excavations (**682** and **689**) seem to come from very shallow vessels, which may almost have functioned as palettes (see below for palettes).

Level III: NW Building

682 I19/571 84051
Level IIId
Rim fragment of a very shallow stone bowl or plate. Made from the local blue-black limestone with white veins, which is commonly found throughout the lower Göksu valley. This piece has a single white vein running through it.
W. along rim (2.7); L. rim to break (2.9)
Photo: 09:0748

683 I19/566 84035
Level IIIe
Rim fragment of a very shallow stone bowl or plate. Made from light blue-grey limestone.
W. along rim (3.5); L. rim to break (2.7)
Photo: 09:1364

Level II: Stele Building and Western Courtyard

684 I19/290 74501
Level IIa/b
Handle fragment of limestone jar or jug. This fragment could be either from the top or the bottom half of the handle, which appears to have been slightly irregularly formed. Given the size of the handle, the jar or jug must have been sizeable and relatively heavy. Made from pinkish-cream limestone, with some traces of red wash on the external surfaces.
H. 7.8; W. across handle 7.1
Photo: 09:1806

Level 2 late: Central Strip

685 J14/351 11050
Level 2e, surfaces 3-4
Rim fragment of a shallow stone dish or mortar. The walls are shallow, curving gently into a thick base. The rim itself is flat. The fragment looks like the corner of a rectangular shaped vessel, rather than a circular bowl. Made from micaceous blue-grey limestone. [also described **804**]
H. (5.2); L. (9.8); Th. 1.2
Photo: 11:0730

686 K14/433 75068
Level 2e
Handle of a small stone vessel, made from grey stone.
L. 2.9; Handle protrusion 2.3
Photo: 10:3192

687 L14/753 93013
Level 2e/f
Rim fragment of a stone bowl with flat simple rim. Made from dark grey-blue porous stone.
W. along rim (2.8); L. rim to break (1.1)
Photo: 10:1503

688 K14/324 75037
Level 2f

Complete profile of a large stone bowl. Grooved everted rim, and flat base with low, wide ring.
H. 5.8; Rim Di.12.5; L. along rim 13.4
Photo: 07:0893, 07:0900

689 K14/385 75036
Level 2f
Rim, of either a stone vessel or a palette. Made from dark blue-grey stone.
L. (2.5); L along rim (3.3)
Photo: 07:1487

690 J14/342 11024
Level 2k
Rim fragment of a stone bowl with gently curving side. Made from porous dark blue-grey stone. Similar to **691**.
L. along rim (3.3); Th. 0.9
Photo: 12:2274 right

691 J14/343 11022
Level 2k
Rim fragment of a stone bowl with straight flaring sides and a flattened rim. Made from porous dark blue-grey stone. Similar to **690**.
L. along rim 3.5; Th. 0.8
Photo: 12:2274 left

Palettes (692-695)

Palettes are flat objects, with a very shallow concave bowl on their upper face, and tend to be small enough to be held in the palm of the hand. These items could either be used as shallow dishes, or for grinding small quantities of commodities such as spices or pigments. There is perhaps some grey area between shallow stone vessels (see above) and palettes, although the items categorised as palettes below are slightly flatter and shallower than those listed as shallow vessels above. Palettes were found in all levels during previous excavations at Kilise Tepe (EKT, 563, nos. 2618-23). Palettes are also known from Late Bronze Age levels at Tarsus (Goldman 1956, 277, no. 158, fig. 421), as well as from Mersin (Garstang 1953, 157, fig. 99 and 217, fig. 134).

692 I19/342 74543
Level IIa/b
Rim fragment of a grey limestone palette. The rim is moulded with a slight thickened edge.
L. 5.8; W. 3.9; Th. 1.1
Photo: 07:1549

[693] K14/1012 75054
Level 2e
Rim fragment of a stone palette.
L. 2.8; Th. 0.8
Photo: 10:3163

694 K14/240 75015
Level 2f
Rim fragment of an ovoid palette, in fine grained tan stone.
L. 6.4; W. 3.6; Th. 0.5
Photo: 07:0552

695 L14/623 93025
Level 2f
Edge fragment of a grey/brown limestone palette, with a relatively rough upper surface. The edges have been chipped into shape, rather than ground.
L. 6.9; W. 3.8; Th. 1.2
Photo: 10:1491

Whetstones (696-705)

Whetstones previously found at Kilise Tepe were of two main types: a portable type of roughly elongated form (whether with cylindrical or rectangular section), smoothed by the repeated sharpening of blade or tools; and larger, less portable stones which bore marks of smoothing through similar processes (EKT, 565-6). See also **734** described below as a pendant. During the 2007-11 seasons, only examples of the smaller, more portable type were found.

Levels III-II: NW Building and Stele Building area

696 I19/697 94060
Level IIIc
Complete, narrow whetstone with rounded ends and rectangular section. Made from the local blue-black limestone with white veins running through it, a type of stone which is commonly found throughout the lower Göksu valley. This whetstone has two very thin white veins. Use wear can be seen on both faces.
L. 10.7; W. 2.0; Th. 0.8
Photo: 09:3244

697 I19/687 94044
Level IIId
End fragment of a long, narrow whetstone with circular section, tapering towards the end. Made from pinkish-grey stone.
Di. (1.3); L. (3.4)
Photo: 09:1822

698 K20/258 81408
Level III

Most of a narrow, tapered whetstone, with a rectangular section. At the tip, there is a slight cutaway to produce a slight stepped profile. Made from dark grey limestone.
L. (6.3); W. 1.2-0.8; Th. 0.8 (main) 0.55 (cutaway)
Photo: 08:1269

699 K19/557 81029
Level IIa
Fragment of a thick whetstone with rectangular section.
L. 3.7; W. 2.7; Th. 2.4
Photo: 10:0853

[**700]** K18/246 6121
Level IIf?
Fragment of object, possibly whetstone, with only one surface extant. Dark grey/brown basalt. The worked surface is polished, unlike the grinding faces of the querns and grinders from the site, but perhaps re-used from an old quern. Excavated in 1998 and already listed in EKT 1, 575 as No. 2816, but included here because the possible use as a whetstone was not mentioned.
L. (8.3); W. (4.2)

Level 2: Central Strip
701 J14/402 11064
Level 2e, phase 5a
Fragment of a whetstone. Made from the local blue-black limestone. Rectangular in plan, with a slight taper at the preserved end. There are grooves on both the upper and the lower surfaces. On one of these, the groove is irregular and deep, scoring along the length of the whetstone. On the other, the groove is shallow, and runs straight, parallel and close to the edge.
L. 6.1; W. 1.1; Th. 0.8
Photo: 11:0919

702 K14/411 75070
Level 2e
Narrow rectangular whetstone with square section, tapering towards the end. Small circular holes in upper and lower faces towards the ends, presumably for suspension. Made from dark purple stone.
L. 4.1; W. 1.0; Th. 0.7; Hole Di. 0.15
Photo: 10:3168

703 K14/506 82011 KLT 177
Level 2f
Wedge-shaped whetstone, made of a fine-grained slate-grey stone. There are traces of use on one side, with notched chipping at the narrow end on one side, and little use on the other, which has notches at the narrow end. The upper (thick wedge-shaped) end has been filed down in three directions and is not flat.
L. 8.5; W. 1.4; Th. 0.4-0.9
Photo: 08:0769

704 K14/1010 92417
Level 2f
Curved whetstone with a teardrop-shaped section. Made from a dark grey stone.
L. 4.5; W. 2.7; H. 1.3
Photo: 10:3112

705 K14/1009 92408
Level 2k
Roughly rectangular whetstone. Worked on at least three faces. One face is noticeably smoother and flatter and was probably used the most. Made from greenstone.
L. 10.9; W. 2.3; Th. 1.5
Photo: 10:3291

Polished stones (706-711)

The use of these polished stones is uncertain. They could potentially have been used as makeshift whetstones, but this seems unlikely given the presence of dedicated whetstones in the same levels and areas. It is possible that some of these objects were used for burnishing pottery, especially as they seem to have been made from dense, igneous rock. However, the visual quality of these three stones is unusual given the other stone types found at Kilise Tepe – they have either a deep black or dark-red colour, which may also be significant. One of these items (**706**) is certainly unlikely to have been used as a burnishing stone, as it has been shaped into a pyramid. It has been included in this section because of the similarity of the stone used in its manufacture.

Level II: NW Building
706 I19/417 74579
Level IIa/b
Polished pyramidal stone, ground to a narrow three-sided pyramid. Made from hard, black stone with deep glossy colour. The surfaces are smooth to the touch, but have not been finely finished. A similar pyramidal stone has been uncovered in Early Bronze Age levels of Tarsus, although this example was made from polished red stone (Goldman 1956, 280, no. 208, fig. 422).
H. 3.1; L. of sides of base 1.9, 1.2, 2.0
Photo: 09:1341

[707] I19/271 74513
Level IIb
Stone fragment, highly polished on one side into a smooth dome. Made from hard, black stone. It is possible that this formed part of the base of a stone bowl. There are faint traces of red pigment on the broken non-polished surface. Compare **709.**
L. 5.3; W. 4.1; H. 2.2
Photo: 07:0626

Level 2-1: Central Strip
[708] K14/430 75071

Level 2e
Polished stone of uncertain use and uneven shape. Made from hard, black stone with deep glossy colour. The stone has been worn down on one side by repeated friction to form a smooth and flat surface. The other surfaces are smooth to the touch, but more irregular. This object seems likely to have been a burnishing stone.
L. 4.6; W. 4.0; H. 2.0
Photo: 10:3143

709 K14/441 75075
Level 2e
Polished stone piece, highly polished on one side into a curved surface. Made from hard black non-local stone. It is possible that this formed part of the base of a stone bowl. There are traces of red coloration on the broken non-polished surface. Compare **707**.
L. 5.2; W. 4.9; H. 3.2
Photo: 10:3264

[710] J14/153 74811
Level 2e
Polished stone of uncertain use and partially natural shape. Made from hard, dark red stone with a deep glossy colour. The stone has been worn down on one side by repeated friction to form a smooth and flat surface. The other surfaces are rounded and appear natural. This object seems likely to have been a burnishing stone.
L. 4.2; W. 2.7; H. 2.9
Photo: 10:0558

Late Iron Age: I18
711 I18/268 85053
Level IIe/X
Polished pebble of uncertain use and apparently natural shape. Made from hard, black-green stone with natural white striations. Highly polished and very tactile.
L. 4.6; W. 3.0
Photo: 10:3937

Stone spheres (712-714)

These small stone spheres may have been used as slingshots. All four of these spheres were found in Level 2 deposits in the Central Strip. Objects with similar shapes and dimensions were found in the previous campaign (EKT, 563, nos. 2624-6).

[712] K14/312 75051
Level 2e
Eroded sphere of soft sandstone. Uncertain use – perhaps slingshot?
Di. 4.0
Photo: 10:3215

[713] K14/851 92419
Level 2f
Two polished stones in rough spherical shapes. Made from tan-caramel coloured stone. Uncertain use – perhaps slingshots?
a) Di. 2.4
b) Di. 2.3
Photo: 10:3230

[714] I14/386 75382
Unstratified
Stone sphere; roughly spherical shape. Uncertain use – perhaps slingshot?
Di. 5.1-5.4
Photo: 10:0550

Stone panels / decorative inlays (715-717)

The four objects in this category have been made from the same creamy-white coloured sandstone, and have the same flat form. The flat stones seem to have been carefully cut into different shapes, however. The care in the finishing of these pieces, and their thinness, perhaps suggests a decorative use – they may have been used as inlays for furniture or architectural installations. Equally, however, they may also have been used as tokens or gaming pieces. In all four cases, there is no clear distinction in finishing between the two flat faces. It does not seem, therefore, that only one surface was meant for display while the other was hidden from view. All three were found in the area of the NW Building and Stele Building, and belong either to Level III or the earliest phases of Level II.

715 J20/313 96520
Level IIIe
Flat panel of stone in a trapezoidal shape. Made from creamy white sandstone, with a single shallow circle cut into each of the two flat surfaces. These circles do not pierce through the object and so are not holes or perforations. The care taken in their execution does not suggest that these were mistakes or failed attempts at perforation.
L. 1.8; W. 1.1; Th. 0.6
Photo: 08:1368

[716] J19/522 81039
Level IIa

Two flat panels of stone in rectangular shapes. Made from creamy white limestone, with flat surfaces plain and unmarked. Piece a) is slightly larger and has an uneven rectangular shape and may have been an unfinished or discarded piece. Piece b) is slightly smaller and has a more regular shape, with the appearance of a finished object.

a) L. 3.1; W. 2.1; Th. 0.35
b) L. 2.8; W. 2.1; Th. 0.25

Photo: 07:0617

717 I19/346 74543
Level IIa/b
Flat panel of stone in a diamond shape. Made from creamy white sandstone, with flat surfaces plain and unmarked.
L. 3.3; W. 2.0; Th. 0.7
Photo: 07:1511

Architectural components (718-727)

Listed here are three door sockets, a threshold slab and another slab from the centre of a room. There are also a few miscellaneous fragments which – like the clay architectural fragments – give little clue as to the nature of the architectural features from which they came.

Level III: NW Building
718 I19/773 94009
Level IIId
Threshold slab in Room 37.
L. 55.6; W. 37.0; H. 17.2
Photo: 11:S:1792

[719] J19/655 81609
Level IIIe
Stone door socket. Roughly oval boulder of flakey yellowish limestone, with flattish upper surface and rounded lower profile. Approx. circular depression at about centre, di. 11.3 along L. of stone, 9.3 across W. Depth of depression ~3.3 cm.
L. 35.6; W. 22.3; H. 13.2
Photo: 10:0983

Levels 3-2: Central Strip
[720] K14/577 82032
Level 2/3, phase 6a
Untrimmed slab of limestone from off floor.
17 x 16 cm; H. 3 cm
Photo: 10:3330

[721] J14/382 11050
Level 2, surfaces 3-4
Corner fragment of an architectural feature; a rounded right angle. Made from pink-grey limestone.
L. 6.9; W. 6.0; Th. 2.3
Photo: 11:0838

[722] J14/354 11050
Level 2, surfaces 3-4
Architectural fragment.
L. 7.2; W. 4.6; Th. 3.8
Photo: 11:0743

723 K14/326 75036
Level 2f
Limestone artefact, originally rectangular, with two parallel longitudinal drill holes.
H. 6.1; L. (along dressed edge) 12.0
Photo: 07:0648 (label incorrectly says K14/009)

Level I: Stele Building area
724 H19/481 83037
Level IIc
Door socket found out of position and inverted. No further details recorded.
Photo: 10:1017

[725] J19/661 81605
Room 3, Level IIb.i
Door socket. Grey limestone with yellowish encrusted surface. Approx. circular, roughly finished, with a (possibly natural) depression off centre, sloping down to one side.
23 x 20 x 10 (H.)
Photo: KT14_A8

Levels II-I: I18
[726] I18/238 85028
Level IIf
Slab of dressed stone cut into perpendicular faces. From the foundation trench of Wall 424.
H. 6.1; L. 3.9; W. 3.1
Photo: 10:3866

727 I18/47 74011
Level I
Inscribed fragment from the side of a limestone artefact or structure. Parts of two finished surfaces survive, at an obtuse angle to each other. One face is blank, the other has an incised line running the length of the surviving edge, and inside this incised signs, consisting of 3 triangles, 3 dots, and a rectangle. The incised lines vary from 3 to 5 mm in width, the dots from 5 to 8 mm in diameter. One end is broken away, the other end is also rough, but looks as though it may have formed a base. It seems more likely that these signs are decorative rather than a coherent inscription. The two central triangular signs bear some similarity to dalet or resh in Phoenician and Aramaic, and the tetragonal sign may recall some signs of the Hebrew alphabet, but taken together they do not suggest a script.
H. (14.8); W. (9.3); Th. 2.2
Photo: 07:0329

Miscellaneous objects (728-735)

This category includes all objects which seem to have an identifiable form and function, but which are few enough in number not to have a separate category of their own. Amongst these are several very interesting items, including a stone stele from an altar in the Stele Building.

Level III-II: NW Building and Stele Building

728 I19/536 84051
Level IIId
Flat stone disc with rough upper and lower faces, perhaps gaming piece or token. This piece should perhaps be considered alongside the clay discs (**32-36**). It has been suggested that these were used as rough covers for jars at Alaca Höyük (Koşay 1951, 125, Pl. 61, fig. 1: Koşay and Akok 1966, 157-8, Pl. 19), but there is no way of confirming this for Kilise Tepe. Similar stone discs have also been found at Aphrodisias (belonging to the 'small discs' category; Joukowsky 1986, 233-4) and Boğazköy (Boehmer 1972, 226 no. 2359, Taf XCIV and no.2364, Taf XCV).
Di. 2.7; Th. 0.9
Photo: 08:1246

729 K19/526 81413 KLT 176
Level IIb.i
Axe, made from highly-polished greenstone with very fine mottling. The section is lens shaped and symmetrical in profile, and the cutting edge is slightly convex with signs of use and re-sharpening. The back edge is slightly roughened with wear. This object is typical of the "Greenstone axe" type which is familiar from both Middle and Late Bronze Age levels in the previous excavations (EKT, 559). Such axes are well known from other Anatolian sites, including: Mersin (Garstang 1953, fig. 150, nos. 9-11); Tarsus during both the Bronze Age (Goldman 1956, 265 and 272 nos 50, 51, 54, 58 and 60, fig. 416) and Iron Age (Goldman 1963, 388, nos 1-2, fig. 180); Aphrodisias (Joukowsky 1986, 229, fig. 252, nos 13, 15, 16, 19); and Beycesultan (Mellaart and Murray 1995, 146 nos 280-3).
L. 5.2; W. 4.05; Th. 1.85; Wt. 61.0
Photo: 08:0743

730 J19/549 77044
Level IIb.i, Room 10, just to the east of the doorway to Rm 3.
Piece of a rectangular, flat stele, made from creamy-coloured sandstone. The stele seems to have been deliberately shaped into a tall rectangle with two flat surfaces. On one of these flat faces, there are some traces of red pigment, but these are too faint to discern any obvious pattern or design. Both faces of the stele, however, show some signs of burning. This stele bears some comparisons with the stele found in Level IIc of Room 3 of the Stele Building (EKT, 576 no. 2829) – the object which gives the complex its name. Both of these stelae have two roughly flat surfaces, and both bear the faint traces of red paint.
H. 32.2; W. 10.4; Th. 6.8
Photo: 07:0988

Levels 3-2: Central Strip

731 J14/467 11705 KLT 224
Level 3
Biconical weight with flattened base and flattened circular terminals. Made from purple-grey haematite. Highly polished and regular shape. The weight of this object is consistent with the standard Mesopotamian shekel weight. The use of the 8.3-8.4g standard is attested nearby from EBA Tarsus (Rahmstorff 2008).
L. 2.7; Di. 1.2; Th. 0.6; Wt. 8.4
Photo: 11:1790

732 J14/391 11053
Level 2e, surfaces 3-4
Hammerstone, rounded with roughly ovoid shape. Surfaces are smooth with some damage. Made from dense white stone.
L. 8.2; W. 6.3-6.8; Wt. 61
Photo: 11: 0847

733 K14/333 75054
Level 2e
Incense burner(?). Rough cuboid of grey-green limestone with trapezoidal section. There is a circular recess in top, but it is otherwise undecorated. A similar item found in the previous excavations has been interpreted as an incense burner, but this object was decorated with incised lines and dots (EKT, 561, no. 2611). It is possible that the incense may have been burned in the circular recess on the top. A similar object has been uncovered in Bronze Age levels at Tarsus (Goldman 1956, 277, nos 154-5, fig. 421).
L. 5.8; W. 3.6; H. 2.5 (max pres)
Photo: 07:0641

734 J14/287 11025 KLT 223
Level 2k
Long cuboid pendant, perhaps originally was a small whetstone. The plan is trapezoidal, and the thickness and finishing of the surfaces is smooth but not regular. The head of the pendant is at the wider, thinner end, and it was strung by a hole showing some signs of wear from stringing. The head is decorated with an incised band running around the four sides of the pendant, as well as two decorative notches on either side of the hole and one along the top edge. The incised band and notches are neater on one side than the other, and this must have been worn on the front for display. Made from dark grey slate.
L. 5.5; W. 1.6; Th. 0.4; Wt. 11.8
Photo: 11:0583

Unstratified

735 I18/184 85009
Unstratified
Part of a stone figurine or decorative figure in the shape of the head of a bird. Made from burnt grey stone, with the eyes and beak incised. The eyes are depicted with two concentric circles, and the beak is simply rendered with a line. The figurine has been broken at the neck, there is a large chip missing on one side, and the other side is rough and blackened so that the eye is barely visible. The variations in colour and the crooked line of the beak combine to give it a particularly quirky appearance. Date uncertain.

Photo: 09:0585

H. head 5.2; L. head 5.5; Th. 3.0

Objects of uncertain use (736-747)

These objects are all made from ground stone, but we remain unsure what they may have been used for.

Level III: to east of NW Building
[736] J19/708 96512
Level IIIe
Lump of white chalk. The shape of the lump is roughly bell-shaped, but it is impossible to determine the original shape, due to crumbling and erosion.
Di. (2.2); H. (1.4)
Photo: 10:0813

[737] J19/614 77079
Level IIIe
Sphere of soft white stone, likely chalk. This is unlikely to have been a slingshot (see above), due to its larger size, and the soft porous nature of the stone. Harder stones are better suited to use as missiles.
Di. 9.0; Wt. 264.9
Photo: 09:0321

Level II: Stele Building
738 J19/546 77042
Level IIb.i
Object made from white-clear quartz, carved into a shape similar to that of a stamp seal. The flat circular base of the object bears no carved motif, however, but has a single hole drilled up along the central axis of the object, which does not pierce through the top. Perhaps a token or a gaming piece?
Di. 1.9; H. 2.0
Photos: 07:1212, 07:1213

739 K20/270 81413
Level IIb.i
Fragment of a completely flat, roughly rectangular stone object. While the long sides of the rectangle are completely straight, the short edge is gently curving at one side and has been broken off at the other. The perfectly flat nature of this item precludes it being a palette (for which, see above), as we would expect a palette to contain a slight dip in the centre or a slight thickening of the rim. This item has neither feature. Made from the local dark blue-black limestone with white veins, which is easily found throughout the lower Göksu valley. This piece has a single white vein, running longitudinally through the fragment.
L. (6.4); W. (6.6); Th. 1.3
Photo: 08:0639

740 K19/496 81003
Level IIb.ii
Uncertain object; nodule of creamy white soft stone, shaped into a short cylinder with domed end. Function unclear. Due to the softness of the stone, this object has been substantially eroded and it is no longer possible to discern its original shape.
Di. 1.2; H. 2.2
Photo: 10:0836

Levels 2-1: Central Strip
[741] K14/311 75051
Level 2e
Ground stone object of uncertain use. Roughly formed into a crescent shape with a flat base, rising up with one vertical side and one sloping.
L. 8.0; W. 2.2; H. 3.3
Photo: 07:0758

742 K14/393 75065
Level 2e
Fragment of a roughly formed stone cylinder. Made from beige limestone. Uncertain use.
L. 2.75; Di. 2.05
Photo: 07:0931

743 K14/237 75037
Level 2f
Ground stone object; triangular slab, with apex broken off. Unclear use, perhaps a loomweight. Made from hard beige stone.
L. 4.6; W. (5.0); Th. 1.7
Photo: 07:0421

[744] J14/219 86204
Level 2f
Stone piece, worked into a triangle. Cream on the two largest parallel faces, grey elsewhere.
L. 5.9; W. base 2.2
Photo: 08:0642

745 J14/118 74801
Level 1
Edge fragment from a large ground stone object, with the start of the corner turning. Made from dark blue-grey stone.
L. 9.9
Photo: 07:1169

Surface and Unstratified
746 I14/405 86000
Surface
Naturally hemispherical stone broken in half. A round depression inside has been ground or hollowed out inside. It is possible that this item was a crude incense burner (cf. **732** above).
L. 4.9; W. 3.9; Di. depression 1.6
Photo: 10:0592

747 K14/466 82000
Surface
Broken piece of burnt limestone object, shaped into a roughly cuboid shape. The object has two polished faces, and there is

a drill channel through one of the unworked faces. It was probably the use of this drill which caused the original object to split open, leaving the broken cuboid in its current form.
L. (4.3); W. (3.6); H. 3.1; Di.(drill hole) 1.1
Photo: 10:3282

12. Grindstones and mortars (748-806)

David Heslop

The grindstones from the 2007-2011 excavation seasons were studied on site in 2012, and the comparable material from the 1990s stored in the Silifke Museum was also examined. A full report on both bodies of material, including finds from Early and Middle Bronze Age and Byzantine levels, will be found via the project website. Here the observations relevant to the Late Bronze and Iron Age corpus are presented, followed by the detailed description of each item.

Introduction

As the subsistence economy of the settlement was, to a greater or lesser extent, based on the cultivation of cereal crops, the need to acquire suitable rock with which to process grain into flour must have been an important consideration for the inhabitants of the settlement. This report marks the first step to achieving a fuller understanding of lithic procurement patterns in this part of the Göksu Valley, a study which is hindered by the lack of comparative published assemblages in the region, and because the geo-chemical study of quern production sites is not as advanced in Turkey as in neighbouring countries. As it is not yet possible to make the connection between the quern quarry site and the place of use, discussion on acquisition, must, therefore, be framed in more general terms, casting the question in terms of a contrast between long-distance procurement of high-quality materials that are not available locally, and the more readily available lithologies that are close at hand, but which do not make good querns. Clear patterns have emerged from the assemblage, which will contribute to our understanding of how the settlement was connected to the wider world.

The analysis described here looks at 56 ground stone objects from the Late Bronze Age and Iron Age levels which can be associated with cereal processing, although other grinding uses cannot be discounted (see below). The account follows the equivalent report in EKT by Dominique Collon (2007, 569-72) and uses the same descriptive terminology: “quern” denotes the lower, fixed, saddle-shaped stone on which the grain was crushed using a smaller, upper stone worked backwards and forwards, and termed the “grinder”. The results of that report are still valid, and although the 1994-98 finds have been re-examined, it has been for the purpose of achieving a site-wide consistency in recording and analysis. The detailed catalogue of this study will only embrace the querns and grinders from the 2007-11 seasons. A full archive report of the querns from the full sequence of occupation on the settlement will available as part of the KT archive, accessible in digital form through the project website; this brief account will reference the site-wide trends but restrict detailed coverage to the Late Bronze Age-Iron Age period of this report. A discussion paper on the assemblage is being published separately in a specialist publication (Heslop, *in prep.*). The report is in two sections, the saddle querns and grinders, and the mortars and other ground stone objects.

12.1 Saddle querns and grinders

12.1.1 Acquisition

The movement of rock used in food preparation is as old as the technology itself; the stones used to grind Typha flour at Cuddie Springs, New South Wales, Australia, one of the oldest dated use of grindstones for worldwide, at 27,000 yrs BP, were sourced at more than 100 km distant (Arangueran *et al.* 2007, 845). The ground stone objects used for milling at Kilise Tepe included igneous rocks which are not present in the Göksu valley, which has a geology of Miocene sedimentary marls, conglomerates and chalk. The lithological composition of the Late Bronze Age-Iron Age ground stone assemblage is as follows:

Lithology	***Number***	***%***
Basalt	19	33.9
Lava	12	21.4
Sandstone	9	16.1
Congl & limestone	14	25.0
Unknown	2	3.6
	56	**100**

Table 9.4. Lithology of LBA and IA querns and grinders

This compares with the whole assemblage, as follows:

Lithology	***Number***	***%***
Basalt	45	26.8
Lava	35	20.8
Sandstone	52	31.0
Congl. & limestone	28	16.7
Unknown	2	4.8
	168	**100**

Table 9.5. Lithology of querns and grinders for all periods.

The basalt grindstones come from unknown sources at some considerable distance from the site. Several sources may have been used, but without geo-chemical analysis of both the artefacts from site and the basaltic outcrops across the Anatolian plate, the specific sources cannot be identified. Like Kilise Tepe, Çatalhöyük is in an alluvial plain, with only the water-rolled pebbles and boulders of the Çarşamba Çay providing any variation in lithology. The coarse sandstones and basalts that were used for making grinding stones must be imported from over 50 kms from Karadağ, Boz Dağ and the Taurus mountains (Baysal & Wright 2005).

The typical basalt from Kilise Tepe is a feldspathic gneiss (visual identification by Dr Jean Hall, University of Newcastle) with a dense, vitreous matrix often densely permeated with phenocrysts which improve the abrasive properties of the rock. The stone is moderately difficult to sculpt, but is durable and maintains an abrasive surface when dressed.

Vesiculated lava was, perhaps, the lithology of choice for cereal milling. Settlements close to suitable lava fields, like Kinet Höyük, Dörtyol, in south central Turkey, would use the rock exclusively (Heslop *in prep.*), and in the Roman and early medieval period, lava rotary querns were transported many hundreds of kilometres by river and sea. The voids within the pumice have two beneficial effects; they create an abrasive surface to the grinding face which does not blunt with use, and they reduce the density of the stone making large querns and millstones much lighter than other stone types with equivalent milling properties. They are easy to work, but have one very serious drawback; the rock is brittle and easily shattered. Once buried, the rock can be prone to chemical weathering within the soil horizon, which, in adverse ground conditions can decompose the object into small fragments, but this does not seem to have occurred at Kilise Tepe, where conditions for lava preservation are fair to good. The type will be over-represented in the assemblage as even small pieces are recognized by the excavators as being artefacts, and distinct from the lithological background noise; similarly-sized fragments of sandstone or conglomerate would only be collected and recorded if they displayed a working surface or other distinctive feature.

12.1.2 The Organization of Production

Important research at Coşkuntepe, in north-western Turkey, on the coast opposite Lesbos has revealed considerable evidence of the organization of ground stone production in the region (Takaoğlu 2005, 419-29). Fieldwork has concentrated on primary evidence from quarry and workshop sites, where the rough-out blocks were fashioned, and the trackways along which the product was transported. Where manufacture or secondary working occurred on or near the settlement, the archaeological evidence is unambiguous, and includes the presence of partly-worked blocks of stone, discarded manufacturing failures, broken and worn-out hammer-stones, and the debitage of the reduction working process. Nothing of this sort has been recovered in Cilicia. At the excavations at Kilise Tepe, there is no evidence of workshops reducing rough-out blocks to finished artefacts, or of the debris-scatters of chipped waste around living spaces or areas of craft production, associated with lithic reduction.

There is one example from the site of a discarded block of rock with partial working, showing that some carving was done locally. This is a block of basalt, **790**, displaying, on three sides, the original natural patinated surface of the rock. It was derived, therefore, from a boulder-field of weathered rock from an eroding outcrop, rather than from a quarried face. From the direction of the working to form the curved side of the saddle-quern, it is possible to estimate that the bed of basalt was only about 8 cm thick. The presence of the patinated surface suggests that the object was being made from a blank that was carried onto the site, rather than being re-cycled from another object. It is possible that craft production of querns from traded blanks was undertaken elsewhere on site, but such evidence has not been recorded during the extensive fieldwalking programme undertaken across and around the mound. Whatever the circumstances by which the rough-out, **790**, reached the site, the vast majority of basalt and lava querns were traded or exchanged as finished or nearly finished utensils, carried along long-distance commodity networks, that were presumably funded through surpluses in agricultural production. Similar mechanisms may be inferred from the presence of good quality coarse-to-medium grained sandstones in the assemblage. Again, the sources are many kilometers from the settlement, but less distant than the igneous types.

By contrast, all of the limestone and conglomerate querns could easily have been collected from the adjacent river bank. These fine-grained and poorly-cemented sedimentary rocks have very poor milling properties, and, in the case of the large-pebbled conglomerates, are difficult to sculpt and maintain.

12.1.3 Form

A recent review of saddle quern development (Peacock 2013, 12-16) summarizes earlier typological classifications and tentatively proposes a general pattern of development for the type (*op. cit.* fig 2.5). The saddle querns and grinders in use at Kilise Tepe are all of Peacock's Type 4 – shaped querns of elongated plan which produce concave wear on the long axis of the grinding-face with little or no concavity evident on the short axis cross-section. The wear-pattern is typical of a "to-and-fro" action of a transverse top stone – the grinder – which typically develops a convex wear pattern. The highly fragmented character of the assemblage makes it difficult to assess the precise formal properties or full dimensions of the stones, but some variation can be seen in the range of forms for the different lithologies. The basalt and lava have the highest quality of manufacture, both in rectangular forms with gentle curved undersides. The present group has no complete examples, but the general shape can be appreciated from the illustrations of two almost complete basalt saddles in the first report (EKT, Fig 468, 2718 & 2741). No complete lava saddle querns have been recorded; a single substantial saddle fragment (**754**) was from a rectangular slab with little detailed finishing.

The forms of the sandstone querns, where evident, are similar; for example **767**, **772** and **756** have all been carefully worked to create the basic form, but they display less secondary finishing of the side walls and under surface than the basalt and lava querns. A wider range of shape, including some sub-oval forms also evident, e.g. **755**, matches the variation in geology, with several different sandstones being used, presumably from a number of production sites. As noted above, the locally-acquired querns are usually adapted riverine and alluvial boulders, selected to require the minimum of shaping, beyond the establishment of a flat grinding face.

It is only the lava upper stones that display high-quality modelling. Two examples **774** and **776** are almost identical in form and material, and are clearly the product of specialized industries producing for a wide market.

12.1.4 Use, Re-use and Discard

The ground conditions at Kilise Tepe were not conducive to the survival of surface residues and no querns were found *in situ*, or in clear association with ancillary equipment and foodstuffs. Ethnographic parallels, residue analysis and micro-wear analysis on other sites, have shown that the equipment could potentially be used for a variety of functions, including the grinding of other grains and seeds, tubers, fibrous plants, salt, ochre, pigments, and metal ores (Peacock 2013, 10; Ebling & Rowan 2004, 109). It is assumed that, in the absence of clear evidence otherwise, the vast majority of querns were used to process cereal grain. Preliminary pounding to de-husk and crack the grain sheath could have been done in a mortar with wooden pestle (no stone pestles were noted) but as only three were found, they were relatively scarce in this phase, as opposed to the Hellenistic and Byzantium periods.

Close examination of the ratio of grinders to saddle querns show that this varies according to lithology, with the better milling rocks scoring heavily as grinders and the poorer sedimentary types having very few grinders, but proportionately many more saddles. This cross-assemblage observation is re-enforced by close examination of individual stones: many of the igneous grinders show evidence of having been re-cycled from worn-out base stones. The thickest part of a worn-out saddle would be the angle between the flat base and the curved side. This combination is seen on the non-grinding face or back of a number of basalt grinders, particularly Nos. **771**, **773**, **775**, **784** and **801**. Some of the small, undiagnostic fragments of basalt, like **749** at only 4.5 x 3.8 cm, may represent debitage from this secondary working. Custom and experience may well have combined to re-enforce the preference for igneous as opposed to sedimentary grinders; there were only four out of 21 made of conglomerates, limestones and sandstones, the rest were igneous.

Looking in more detail at this aspect of the assemblage, the patterns of fragmentation were recorded for the quern stones and grinders. A simple scale of 1-5 was used, with 5 being more than 80% complete. Table 9.6 shows the breakdown of fragment size by lithology, split between the upper and lower stones, the grinders (G) and saddle querns (Q).

	1		**2**		**3**		**4**		**5**	
	G	*Q*	*G*	*Q*	*G*	*Q*	*G*	*Q*	*G*	*Q*
Basalt	6		1		4	1			2	
Lava		1			1		1		1	
Sandstone		1				3		1		
Congl & limestone		2	2	1	2	2				2

Table 9.6. Fragment size by lithology

It shows that the differences between the imported lava and basalts being used to exhaustion and carefully re-cycled as opposed to the local resources which show less fragmentation and the survival of a higher proportion of saddle querns. Table 9.7 shows the fragmentation just for the lower stones only; only two igneous examples were recorded, the rest in basalt and lava being grinders. By contrast, there are instances of limestone saddle querns being discarded intact and lightly worn. The best example of this is **753**, which was in one of the build-up layers in the open space in J14, in Surface 5a. The notable absence of limestone and conglomerate ground stone in the form of grinders strongly suggests that this element, the part that was most active in the grinding process, was made of the most durable stone available.

	1	**2**	**3**	**4**	**5**
Basalt			1		
Lava	1				
Sandstone	1		3	1	
Congl & limestone	2	1	2	1	2

Table 9.7. Fragment size by lithology for saddle querns

The grinders often showed evidence of percussion damage on one of the pointed ends. This may well have been caused by using the grinder as a hammer to roughen the surface of the saddle quern, to maintain abrasion. They could also have been used as a general-purpose hammering tool.

12.1.5 Discussion

The earliest phases of occupation used imported querns of high quality almost exclusively (Heslop *in prep.*). In the Early and Middle Bronze Age periods, a predominance of basalt and good quality sandstones is seen, and this is also the case with the later Hellenistic and Byzantine periods. It is only in the Late Bronze Age and Iron Age phases of occupation that limestone and conglomerate quern stones become widely used, accounting for a quarter of the finds. This figure may underestimate the actual figure, as the basalt and lava component was increased by a fairly intense pattern of re-use that saw any sufficiently large piece of igneous rock being re-cycled as the small components in the grinding tool-kit. As the better quality querns are the products of long-distance trade, the appearance on the settlement of poor-quality querns, appears to be result of disruptions in these supply networks in the Late Bronze Age, which necessitated the use of local resources. It is possible that these local types were used only as a last resort, when better types were difficult or impossible to obtain, and then discarded, complete and lightly used, when external supply was resumed.

The difference in quern types might, alternatively, have been an indicator of social status, with the better querns being used for processing the cereal diet of the higher classes or castes. Perhaps the most significant group from the Late Bronze Age and Iron Age levels is that from Room 4f in the post-Stele Building structure. This has been interpreted as a store and work room, with evidence of pottery production, textile crafts and cereal processing. A storage facility, of brick and stone, and described as a bin by the excavators, may have been used for storing grain, in which case the surviving portion would have held about 200 kg. or been associated with ceremonial or religious consumption. Here were collected the best two lava grinders, **774** and **776**, the former whole, the other a half fragment, and the only reasonably complete upper stones from this assemblage.

The imported querns and grinders show every indication of having been highly curated – in the sense that they were acquired considerably before use, demonstrate over many centuries consistent patterns of activity, and were subject to modification of shape and adoption of new functions. The local types show very different patterns of use and discard. The character of curation and the resultant evidence of artefact modification change through time, as would be expected in such a long-lived settlement, but given the fact that most objects come from contexts that would typically be separated both spatially and chronologically from the place of use, it is difficult to detect subtle changes in how the objects were stored, used, modified and then discarded.

12.2 Mortars and other ground stone objects

Three mortars were recovered from the excavation between 2007 and 2011. Two larger types were of local limestone, of poor sculptural quality, one being a riverine cobble, the other being only roughly worked from a square block. Interestingly, there were no basalt or lava mortars from any phases of occupation on the site. The only mortar of a rock other than limestone or local sandstone was a small mortar or grinding slab that was probably from the nearby serpentine outcrop at Göcekler up the Kurtsuyu valley. Being of a much higher standard of workmanship, this may have been the product of specialized craftsmen, working for export.

Abbreviations

g/f = grinding face
calc = calcareous
dims = dimensions
frag = fragment

Level III: NW Building
[748] I19/540 84014
Level IIIe
Small frag of igneous grindstone; very concave surface, so probably a quern. The g/f >7.2 x >5.3; max Th. 2.8, min 2.4. Outer surface pitted. The g/f is pitted as black inclusions – limonite? – have eroded out, giving excellent milling properties. Lithology – dark green/grey igneous basalt/lava. Quite light density but no vesicles. Black inclusions and sparse mica.
Photo: Group 12A

749 I19/563 84035
Level IIIe
Small, undiagnostic frag of basalt with g/f >4.5 and other dims, 2.7 x 3.8.
Photo: Group 12A

750 J19/615 77079
Level IIIe
50% of grinder, only one end extant, G/f flat in both planes. Very crude working to achieve form. Plano-convex shape with one flat plane and the other curved suggests re-use of a saddle quern as a grinder. Lithology – Igneous, black and red matrix. High % of black inclusions, up to 1.8 x 1.0. Back is flattish – worked to remove flakes. Heavily concreted with limescale, on back sides but not g/f.
Photo: 09:2022

751 J19/723 96524
Level IIIe
Half frag of igneous saddle, >21.3 x 18.4; max Th. 4.5. Gently undulating upper surface. G/f concave along long axis very slightly convex on short. Tooling clear around edge. Lithology – grey/green speckled igneous. Unusual in having both massive veins of quartz and iron nodules.
Photo: 09:1976

Level 3: Central Strip
752 J14/529 11705
Level 3
Small fragment of grinder. Max. >8.4 x 8.4, max Th. 4.1. Natural boulder, probably riverine, with surface patina with solution pitting on both back and g/f, showing very light use.
n.ph.

[753] J14/528 11705
Level 3
Complete limestone quern, 37.5 x 24.4 x 9.2, located in N Section of J14a. Probably a river boulder with a grinding face worked onto one side. The fabric is pock-marked with voids of missing larger inclusions, which provides the abrasive quality. There is slight edge damage on one of the long edges. Lithology – off-white limestone with fine-grained, soft matrix with many small fossil-pits and voids.
Photo: 11:2398

[754] K14/813 92039
Level 3 phase 13
Large frag >18.2 x 19.6 full W; max Th. 5. 4 x min 3.6. Sub-rectangular plan – g/f in both planes. Steep sides; g/f flat, very large for grinder. Lithology – conglomerate – calc – fine light grey matrix – many large mixed pebbles – max 1.6 x 1.0. Grey-green predominantly, but also many brown, black and white. Pits left where pebbles lost. Not good milling properties.
Photo: Group 12B

755 K14/814 92039
Level 3 phase 13
Complete saddle. 24.6 x 13.0 x 4.7 max Th. Concave g/f 10 mm across long axis, slightly concave across short. Curved outer profile. One end intact, other broken, but not by much. Lithology – white limestone – fine grained with occasional fossil pits. No inclusions, v. poor lithology [similar to large quern **753**] Highly calc. Gentle dimpling on base – hammering from manufacture?
Photo: Group 12B

[756] K14/832 92039
Level 3 phase 13
Square plan half of a saddle quern with concave g/f – 0.4 over 21.5 of W. Other L. >18.4, steeply angled g/f – max 8.4 – min 4.5. No clear sign of tooling around sides. G/f has sooting, particularly on one corner. Lithology - Calcareous sandstone with v pebbly seams. Fine-medium grained light grey-fawn sandstone. Many small inclusions – mainly black and brown, well sorted & rounded.
Photo: Group 12B

[757] K14/903 92448
Level 3, phase 6
Substantial fragment of quern broken along both axes. Moderately concave g/f. >16.5 x >14.0; max Th. 6.0, min 5.2. No evidence of tooling around the extant edges. Lithology - grey-white limestone, fine –grained matrix with many small black, brown and dark red inclusions.
Photo: 09:2027

[758] K14/541 82016
Level 3, phase 6b
Conglomerate grinder, part of side top and very small frag of g/f (35 x 35). Very poor quality material. Lithology - very friable – many fossils & poorly sorted but highly rounded inclusions of river gravel max size 8 x 5 mm. Straight edge – from brick-shaped form. Red staining on vertical wall.
Photo: 10:1892

[759] K14/582 82034

Level 3, phase 6b
Small fragment of g/f >12.5 x >9.8 Max Th. 5.1 – slightly concave g/f. Probably aerofoil shape. Sketch shows tooling on steep side of back and unworked part on tail, where fracture is. In plan, one corner extant. Lithology – very soft limestone – surface pitted with solution depressions – some tooling to make steep face. Reddish tinge to rock – with one thick (5 mm) vein through fracture. Occasional inclusions – small brown rounded up to 2 mm. Occasional fossil pits. Very calc.
Photo: 10:1137

Level IIa-c: Stele Building and Western Courtyard
[760] J19/680 77022
Level IIa/b
> 50% of saddle; D-shaped with more curved straight side. G/f concave in long axis & flat across short axis. Cross-section plano-convex. Max L. > 25.6 x W. 18.4; Max Th. 7.4. Coarse hammering of large scoops out of steeper underside. Lithology – light grey-brown quartz-rich sandstone, no larger inclusions or fossil-pits.
Photo: 09:1981

[761] I19/243 74501
Level IIa/b
Very small fragment of a very round-backed grinder. Only very small edge of the g/f survives; heavily covered in limescale. Lithology – dark grey sandstone – very coarse, weakly bonded matrix. Many larger inclusions, up to 2 mm, black most common, angular, poorly sorted.
Photo: Group 12A

762 I19/326 74543
Level IIa/b
2 joining frags of quern or grinder – very heavily worn g/f (10.2 x 5.0; max Ht. 4.7). Side slopes at about 45% with slight curve.
Photo: Group 12A

763 I19/449 74562
Level IIa/b
Edge fragment (<20%). Form has steep outer side and convex g/f. Traces of tooling, broad, shallow hammer pecks, to make form. Lithology - Maroon conglomerate; matrix has many mixed pebbles – medium size, well sorted and rounded, many brown/black.
Photo: Group 12A

[764] K20/268 81413
Level IIb.i
Most of grinder in 3 pieces, recently broken and joining. Straighter sided section with round end. Typical plano-convex cross-section with hollow back profile. G/f flat or very slightly convex. Lithology – basalt – some vesicles in g/f but not elsewhere. Very turbulent structure – very brittle. Frequent white inclusions – soft and not calc.
Photo: 09:1995

[765] H19/530 91002
Level IIc
Frag >14.8 x >11.5 max Th. 11.3. G/f markedly concave – 3 mm in 14.0 W. With thickness behind g/f suggests saddle quern but no other indication of form. Conglomerate lithology very brittle and all other surfaces are fractures. Lithology – conglomerate red colour – in two bands – boundary running through g/f along long axis – lighter on one side – darker has many more pebbles – up to 4.0 x 3.0, all water-rounded. Very poor lithology, the darker sections having turbulent bedding and many fine cracks. It could be heat reddened and thermally cracked, although if so it is very even round the edges and through the rock. Not calc.
Photo: 09:2009

766 J19/618 77083
Level IIc
Water-rounded small boulder – oval with one end slightly pointed, and with chipping – possibly used as a hammer stone. Lithology – Grey limestone – open matrix – many small voids on surface, giving abrasive quality. Black inclusions, ?limonite, no larger than flecks.
Photo: 09:3220

Levels IIe-f: I18
767 I18/221 85029
Level IIe
Substantial piece of quern, perhaps 60%. L. >38.0 x >27.2. Max Th. 3.6. Heavily worn, but not exhausted. Roughly rectangular plan with one curved shorter edge, the other carefully worked flat. Lithology – yellow-brown medium grained sandstone, well sorted and rounded, with no fossil pits and sparse small angular black inclusions, up to 2 mm across, Moderate to good milling properties.
Photo: Group 12C

768 I18/262 85487
Level IIe intermediate
Fragment of quern with one corner extant, rounded and with coarse tooling, with parts of two straight sides. Flat g/f, and with an irregularly-facetted underside. Lithology – light grey basalt. Few inclusions. Very dense and fine-grained matrix.
Photo: Group 12C

769 I18/263 85045
Level IIe late
Complete grinder, an adapted boulder, with much of the natural patina surviving on the upper edge. One side coarsely worked to make the back roughly symmetrical, and the corners of the broader end have been hammered to make a rounder plan form. No fine tooling. - 28.8 x 18.4 x 7.0 max Th. Very slight concavity on g/f, suggesting very light use. Lithology – light grey basalt. Densely speckled with darker phenocrysts. Very fine and dense matrix.
Photo: Group 12C

770 I18/181 85008
Level IIf
G/f concave in both axes – max concavity 8 mm; may have worn through. >30.0 x >23.4 x max Th. 4.0. Facetting on base and outer edge slope. Lithology – pale cream/white calc sandstone with many varied inclusions, occasionally very large (2.3 x 1.5). Coarse-medium grained, poorly sorted – angular – weakly cemented. Poor-moderate milling properties.
Photo: Group 12C

771 I18/196 85012
Level IIf
Complete grinder of plano-convex cross-section and irregular plan, showing the grinder was made from part of a saddle quern. 22.6 x 14.0. Fine linear tooling forming the original shape of the quern – flat based and with curved outer wall – and then cruder hammering on the broader end to work the original shape into that of a grinder. Lithology – grey basalt with pink tinge. Many white phenocrysts in turbulent matrix.
Photo: Group 12C

772 I18/197 85012
Level IIf
Approx 50% of quern. Only one corner. Very coarse hammer-pitting on underside to achieve form; round sides and end. No sign of basal facet – slightly hollowed in middle of back. Lithology – pink-grey medium-grained sandstone with much quartz in veins, one running vertically through rock – fracture follows one. Some rounded inclusions, up to 8 mm x 6 mm.
Photo: Group 12C

773 I18/198 85012
Level IIf
Saddle re-used as grinder. The chamfered surface is very finely finished, the basal facet is less carefully worked. G/f convex on short axis, concave (max. 2 mm) on long axis. Lithology - Dark grey-green basalt with glassy matrix, banded, the upper part darker with slightly fewer white inclusions, lower part has more than 50% of surface covered with white inclusions. Clearly seen in fracture, as being lighter in colour at the lower part – the g/f part of the saddle uses the darker part.
Photo: Group 12C

774 I18/199 85012
Level IIf
Complete grinder, g/f flat in both planes. 14.5 x 7.5 x 2.5 max Th. Very carefully made – clearly the product of a specialist production centre, along with **776**, below, and therefore definitely an imported object. No clear sign of tooling – back is very smooth, through much handling. Very crisp edges – slight damage on one side of narrow end, possibly from secondary use as hammer-stone. Lithology – medium grey vesicular lava, fine and regular, no larger inclusions or voids. Excellent milling properties.
Photo: Group 12C

775 I18/224 85024
Level IIf
Complete grinder. Not symmetrical but the fractures at either end are worn – from handling in use? Width certainly original – 16.1; L. extant 20.6. Max Ht. (full) 4.3. Gouges from working on back face, linear grooves. Lithology – speckled igneous. Many inclusions – largest 4.1 x 1.6. Frequent small white flecks and inclusions – larger are quartz.
Photo: Group 12C

776 I18/227 85024
Level IIf
Lava grinder, of same form and material as **774**, but fractured diagonally. >25.5 x W. >11.4; Max Th. 3.7. Lithology - dark grey/black, no inclusions or flaws in lava. Small to medium vesicles, very evenly spread through the matrix. Very fine lava for quern production.
Photo: Group 12C

777 I18/233 85024
Level IIf
Very small piece of conglomerate saddle. >9.6 x >6.2 x Max Ht. 4.2. G/f very concave – 8 mm in 9.1 extant. Lithology - Cream white conglomerate with huge voids from lost pebbles. Band of smaller angular black, brown and green inclusions through rock used for g/f.
Photo: Group 12C

Level 2: Central Strip
778 J14/403 11058
Surface 5a
Small fragment of undiagnostic grindstone. Secondary use has worn the edges and corners smooth. Lithology – medium grey vesicular lava, fine and regular, no larger inclusions or voids, very similar to **772**, above.
Photo: 11:1052

779 K14/904 92446
Level 2e/5
Frag of basalt grinder – worn almost flat. L. extant 9.1 x full W. 10.9, max Th. 3.0. Convex g/f. Lithology - heavily laminated basalt; large (up to 11 mm x 5 mm) inclusions. Originally, brick-shaped form, worn down until unable to be used. Black/dark grey with reddish hue.
Photo: 09:2032

[780] J14/309 11035
Level 2e/3-4
Lava frag with no worked surfaces extant. 7.2 x 5.2 x 3.1 Lithology – medium grey vesicular lava, with dense – medium vesicles.
Photo: Group 12E

[781] J14/383 11050
Level 2e/3-4
Approximately half of rectangular grinder, split along long axis. 12.1 x >6.1 x 3.6. Very slightly convex g/f. Adapted boulder with only a slight amount of tooling at one end. Lithology – grey-brown limestone of very fine-grained matrix without larger inclusions. Very poor milling properties.
Photo: 11:0865

782 J14/384 11050
Level 2e/3-4
25% of grinder with convex g/f > 5 mm. 11.9 x 7.4 x 3.9 max. G/f, back and one corner extant. Lithology - igneous dark grey matrix with many white inclusions.
Photo: 11:0856

[783] J14/385 11050
Level 2e/3-4
Small piece of g/f, part of opposite face and one outer edge. G/f dead flat but well worn. Lithology - pinkish/grey sandstone. Many rounded, small inclusions, mostly ferruginous. Non-calc, friable but hard. Moderate milling properties.
Photo: 11:0863

[784] J14/389 11053
Level 2e/3-4
Substantially complete grinder, probably re-used from a worn lower stone. >11.9 x >9.1 x 3.3. Roughly triangular shape; extant g/f, 7.5 x 7.1, has reddish staining. Coarse hammering on rear face. Lithology – light grey dense basalt with many fine dark inclusions.
Photo: 11:0159

[785] L14/649 93030
Level 2e/3-4
Small (>3.6 x >2.7 x 3.2 max Th.) frag of g/f, but no other diagnostic features. Lithology – Conglom–erate; largely quartzite fine pebbles, well-rounded, moderately sorted. Friable matrix. Poor milling properties.
Photo: 10:1596

[786] J14/270 11021
Level 2e
60% of grinder, almost a quarter circle in plan, probably roughly hemispherical. G/f 14.0 x 13.5 x 5.7 max Th. – the back surface looks fresher – suggesting that an originally more curved face has been flattened out by removing facets to re-use a worn saddle as a grinder. Lithology- medium grey calcareous fine sandstone, poorly sorted, poorly rounded with many small, white, sub-angular inclusions.
Photo: 11:2336

787 J14/271 11021
Level 2e
Undiagnostic frag of g/f. Lithology - coarse-grained sandstone – calc, poorly sorted, large grained; many white inclusions, principally quartz, poorly sorted and angular. G/f flat. 4.7 x 4.7 x 4.6 max Th.
Photo: 11:0380

[788] J14/304 11034
Level 2e
Small piece of lava with g/f, no other extant surfaces. G/f 4.8 x 4.0. Max Th. 2.9; min 2.4. Lithology – Dark grey lava with sparse vesicules, some large, up to 16 mm.
Photo: Group 12E

[789] K14/313 75051
Level 2e
Small frag of lava, g/f 4.5 x 4.0 x 5.2 max Th. G/f worn smooth. Very small frag of back face (3.6 x 3.5). Lithology – medium grey lava; sparse vesicules, up to 3 mm across.
Photo: 07:0531

[790] K14/442 75075
Level 2e
Block of basalt with working for curved-sided object, probably for a saddle quern. >14.3 x 11.2 x 7.5. Original, patinated surfaces on three of the sides of the roughly cube-shaped block, showing the thickness of the exposure, as 7.5 cm. The other three sides show fractures, but only one, the face with the working, has evidence of tooling. This is in the form of fine hammer marks, probably from a quartzite hammer-stone, or similar implement. The tooling clearly follows the course of a band of white inclusions within the rock, which would presumably have been easier to work than the more glassy, darker matrix, and have created a more abrasive surface for the grinding face of the saddle quern. Lithology – dark grey/green basalt with banding of dense and small white phenocrysts.
Photo: 11:2314

[791] L14/726 93050
Level 2e
Lava frag – no worked edges. >5.8 x >3.4 x 4.6 max Th. Lithology – light-medium grey fabric, medium sized voids, regularly spread through the rock.
Photo: Group 12D

[792] L14/637 93024
Level 2e
G/f but no other confirmed surfaces. 11.2 x 5.9 x 3.9 max Th. G/f slightly convex. Lithology – basalt, dark grey/green matrix with many mainly white inclusions.
Photo: Group 12D

[793] L14/674 93041
Level 2e
Small frag of lava. > 6.0 x >5.4 x 5.5 max Th.; very small g/f (3.6 x 2.7). Lithology - quite dense fabric – medium-sized vesicules, unevenly distributed through fabric. Medium dark grey/blue fabric.
Photo: 09:2041 left

[794] L14/685 93041
Level 2e
Small fragment of undiagnostic form, with g/f and part of curved side-wall. >7.0 x >5.5 x 4.0 max Th. Lithology - medium grey basalt. Sparse inclusions.
Photo: 09:2041 right

[795] K14/273 75043
Level 2f
Small frag of g/f of saddle – markedly concave g/f; 2 mm across the 8.1 extant L. of the long axis. 6.7 max W, surviving. Max Th. 5.2. G/f and part of wall survive – g/f very smooth – almost polished. Lithology – dark green/grey igneous, almost no inclusions – very occasional small black angular inclusions. Slight pitting in surface suggests original very uneven surface not fully ground out. Very hard and slightly micaceous.
Photo: 07:0523

[796] K14/446 75024
Level 2f
Small fragment of unidentified rock with g/f (dims not recorded). Form unknown.
n. ph.

[797] K14/448 75024
Level 2f
Grinder – approx. 50% extant. Fractured across width. >13.9 x 12.9 x 3.4 max Th. Slightly convex g/f.

Lithology - grey conglomerate not calc. Coarse-grained, poorly sorted and rounded. Many large inclusions, including one black cobble that goes right through the thickness of the object and probably caused fracture. Beds of more gritty, black inclusions running along the bedding plane, parallel to the g/f, which has black staining. Medium milling properties.
Photo: 10:1125

798 K14/772 92414
Level 2f
Edge of very small fragment of bottom stone – g/f (3.3 x 3.0) and start of curved, outer wall. >4.0 x >4.0; 3.3 max Th. G/f markedly concave and smooth, so it could be a saddle but the form is more typical of a grinder. Lithology - lava quite dense – sparse, very small vesicules.
Photo: 10:1190

799 K14/791 92414
Level 2f
Frag of g/f and sloping wall – form unknown. G/f flat in one plane and convex in the other. G/f retains pitting – wearing of softer white inclusions – quartz? Up to 12.6 x 8.2 x 5.3 max Th. Lithology -angular, poorly sorted. Occasional black flecks and sparse mica. Matrix is light grey/green. Good milling properties.
Photo: 10:1152

800 K14/817 92419
Level 2f
Small fragment (>5.9 x >4.8 x 2.6 max Th.) of g/f; form unknown. Lithology – unidentified green fine grained, possibly a metamorphic rock, but could be a very fine-grained sandstone.
Photo: 10:1183

[801] L14/579 93011
Level 2f
Approximately half of grinder – broken cleanly across middle; one good end, one missing, g/f. back and half of long sides extant. Rectangular in plan, aero-foil in section - presumably a re-used saddle quern. 15.5 full W.; 13.7 longest extant L. and 5.3 max Th. Lithology – light grey fine, dense basalt with many fine black/dark red inclusions.
Photo: 09:2044 left

802 L14/580 93011
Level 2f
Small saddle, about half extant. Significant concavity on long axis – 3 mm – therefore must be saddle. Round form, three large facets out of surviving end. Only g/f visible– rest plastered in limescale. Very well sculpted. Max L. >15.0, W. > 15.9, max Th. 4.9. Lithology – light brown, coarse-grained, angular sandstone. Definitely not calc. Occasional inclusions – white 3 mm and black, less common, 3 x 2 mm. Very good milling properties. Abrasive and well-cemented. In form v. similar to K14/814 (**755**) but larger.
Photo: 09:2044 right

[803] I14/298 75339
Level 2
Very small fragment of lava. The g/f is convex, 4.8 x 4.2, max Th. 3.2. Lithology - medium grey lava, medium-small vesicles.
Photo: 10:0580

Mortars etc.
804 J14/351 11050
Shallow mortar/abrading slab. 40% extant. Fracture through radius. Di. 12.0; L. 10.1 x W. > 6.3 x Ht 4.4. Max depth of bowl, 11 mm; lip 9 mm wide; very finely polished, slight chipping, largest chip, 110 mm x 50 mm. Bowl surface lighter in colour, origin fine tooling slightly rough to the touch down wall and curved angle. Central area polished smooth with use. Lithology - light red-green igneous rock, v. slightly translucent – possibly serpentine? [also described **685**].
Photo: 11:0732

805 K14/866 92047
Mortar. Coarsely sculpted from square block, sides curved but original block still evident in rim of bowl and base plan. Bottom half missing, so profile can't be re-constructed. Rounded lip. Lithology – off white limestone. Many fossil pits and bit of broken fossil in matrix. Inside of bowl polished with use – indistinct brown staining across parts of lower sides but not base.
Photo: 09: 2005

806 J14/501 11727
Frag (approx. 50%) of river cobble used as mortar. Large bowl, approx. 18.0-20.0 in diameter, depth > 67 mm. Bowl very heavily worn but not polished. Lithology – light brown/grey very fine-grained limestone – no visible inclusions or fossil pits.
Photo: 11:2342