Introduction

During the summers of 2005 and 2006, members of the Upper Tigris Archaeological Research Project (UTARP) undertook a sixth and seventh season of archaeological fieldwork at the site of Kenan Tepe in the Upper Tigris River region of southeastern Turkey. The 2005 field season took place between May 13 and July 4, 2005. The 2006 field season took place between June 1 and June 30, 2006. In archaeological terms these two seasons were perhaps our most productive and interesting seasons yet. During the 2005 season we excavated two superimposed structures, found part of a third structure and carefully sampled several outside work areas from the Ubaid period on Kenan Tepe’s high mound. In the lower town we exposed parts of several Late Chalcolithic structures and carefully sampled several work areas dating to multiple phases within the Late Chalcolithic sequence (Rothman 2001). During the summer of 2006, we...
conducted our second study season during which time members of the UTARP team processed and analyzed an extensive amount of material collected in previous seasons.

Kenan Tepe is a multi-period mound measuring approximately 4.5 hectares in total size (figure 1). It is located on the north bank of the Tigris approximately 15 kilometers east of the modern town of Bismil (figure 2). Kenan Tepe is composed of a 32-meter high mound and a lower town to the northeast of the main mound (for a more in-depth description see Parker et al. 2003 and Parker and Dodd 2005). Archaeological research over the past seven years has shown that Kenan Tepe was occupied during five broad periods. The earliest remains unearthed at Kenan Tepe thus far belong to the so-called Late Northern Ubaid cultural complex. These remains are concentrated on the eastern slopes of Kenan Tepe’s main mound. Carbon samples taken from outside three Ubaid structures in trenches D5, D8 and E2 yielded 2-sigma calibrated dates ranging around 4650 BCE. Remains dating to the Late Chalcolithic period have been discovered in abundance in the easternmost area of Kenan Tepe’s lower town and in several soundings near the high mound (Parker et al. 2003; 2006). Carbon-14 analyses from Late Chalcolithic contexts have yielded dates in the late LC 3 or early LC 4 period (between ca. 3600 and 3500 BCE) and the LC 5 period (ca. 3100 BCE [Creekmore 2007; Parker et al. 2006]). Four more carbon dates from fortification/retaining walls on the high mound show that occupation continued through the Late Chalcolithic to Early Bronze Age transition (ca. 3000 BCE [Parker et al. 2006; Parker and Dodd 2005]). An analysis of the ceramics from various areas at Kenan Tepe combined with two carbon dates confirms that occupation at the site probably continued at least through the first half of the Early Bronze Age. Middle Bronze Age remains have been recovered on the eastern, western and northern slopes of the high mound. Carbon-14 analysis places these remains around 1800 BCE (Parker et al. 2003; Parker and Dodd 2003). Kenan Tepe was again occupied in the Early Iron Age as evidenced by the presence of Early Iron Age Corrugated Wares to between ca. 1050 and 900 B.C. (Parker et al. 2004. Also see Parker 2003). This report will focus on excavations conducted during the summer of 2005 and processing and analysis conducted during the summer of 2006.

The Ubaid Period: Excavation Summary

Ubaid or Ubaid-related material culture has been identified in three areas of the site. Ubaid ceramics were first discovered in a sounding in Area E on the southeastern slopes of the high mound during the 2000 field season (figure 3). In 2001, UTARP team members discovered the remains of part of an Ubaid period structure in trench D5 on the eastern slopes of the high mound. In 2002, Ubaid period remains were encountered at the bottom of our step trench in A9 and excavations continued in Area D. During the 2004 field season UTARP team members delineated the extent of Ubaid period occupation at the site by digging a number of trenches and soundings in the western part of Kenan Tepe’s lower town and by digging a number of soundings on the high mound. This research suggests that Ubaid period occupation is restricted to a relatively small area on the eastern and southern slopes of Kenan Tepe’s high mound (Parker et al. 2006). With these data in hand, UTARP team members focused Ubaid research during the 2005 and
2006 field seasons on broadening our horizontal exposures and processing the Ubaid material excavated in previous seasons.

Area D Trenches 5 and 9

In a previous report we outlined our earlier discovery of part of a well-preserved domestic structure in trench D5 (figures 3 [Parker and Dodd 2005]). Two rooms from this structure (which we refer to as Ubaid Structure 1) protruded into this trench from its south baulk. North of these rooms we excavated a large and well-preserved outside work surface that contained a variety of domestic debris *in situ*. This surface was covered by thousands of compacted plant pseudomorphs. Examination of the structure and morphology of these pseudomorphs suggests that they are remains of barley or wheat chaff. In part of the trench this organic mass covered the pseudomorphic remains of a very finely made grass mat. The same surface also yielded numerous examples of painted fine and unpainted coarse Ubaid pottery, obsidian and chert lithics, a bone bead, a stone pendant in the shape of a fish, two bone awls, several spindle whorls, three fish net weights and a fragment of a ground obsidian bowl (for a complete description see Parker and Dodd 2005). Carbon samples taken from this surface, and from a fireplace on this surface, together with a preliminary analysis of the ceramics from these and neighboring contexts, confirmed that these remains belong to the Late Northern Ubaid cultural complex dating to approximately 4600 BCE. These discoveries prompted us to open two new trenches to the south (D8) and east (D9) of trench D5 in the 2004 field season (figures 3 and 4). The goal of these operations was to expose more Ubaid contexts in and around Ubaid Structure 1. We also continued excavation in trench D5 in an attempt to unearth any earlier architecture that might lie under Structure 1. We continued to pursue these goals during the 2005 and 2006 field seasons.

Research in trenches D5 and D9 did not yield the results we had hoped for. We did not encounter earlier architecture below Ubaid Structure 1, nor did we find more contexts contemporary with Ubaid Structure 1 in trench D9. Instead, excavations in trench D5 revealed thick deposits of ashy fill with only a few ephemeral traces of architecture. A sounding that we began at the end of the 2004 field season and continued during the 2005 field season suggests that these layers of fill continue for at least another 1.5 meters below the current elevation of the trench. Remains in the D5 sounding are characterized not by architecture, but instead by a number of ashy layers and at least two hearths.

In our previous report we described the Late Chalcolithic oven/kiln that must have destroyed any remains of Ubaid Structure 1 that may have extended into trench D9 (Parker *et al.* 2006: 77-9). During the 2005 field season we chose to continue excavations in D9 in hopes of unearthing earlier Ubaid period levels. This research revealed that during the Ubaid period, the edge of Kenan Tepe’s main mound was buried several meters within the existing mound. This ancient edge of the mound is now clearly visible cutting through trenches D5 and D9 from the northwest to the southeast. These data suggest that before the construction of Ubaid Structure 1, this area, which was literally on the edge of the main mound during the Ubaid period, contained only fireplaces and possibly outside work areas.
Area D Trenches 8 and 10

Suspecting that the area to the south of trench D5 may contain more remains of 
Ubaid Structure 1, we began a 5 by 10 meter excavation unit (designated trench D8) south 
of trench D5 during the 2004 field. Since trench D8 began at the same level on the slope of 
the mound as trench D5, we knew that it will take at least two field seasons to reach the 
Ubaid levels. (These layers lie some 2.5 meters below ground surface on the uphill side of 
the trench). Much to our delight, we reached two phases of extensive and well-preserved 
Ubaid architecture in trench D8 at the beginning of the 2005 field season. This discovery 
prompted us to open another trench (D10) just south of trench D8 (figures 3 and 4).

The results from these trenches are truly impressive. The first architecture we 
encountered was slightly higher in elevation than the remains of Ubaid Structure 1 in 
trench D5 (described above). Ceramic analysis nevertheless confirmed that these remains 
belong to the Late Northern Ubaid cultural complex. This architecture consisted of two 
groups of mud brick walls running roughly north-south and east-west (figure 5, this 
architecture is hereafter referred to as Ubaid Structure 2). These walls intersected at 
roughly right angles forming a series of small square or rectangular chambers or cells 
measuring between 1 and 1.5 meters in width. In the north half of trench D8 these walls 
formed five such cells. They were separated from a similar group of cells in the southern 
part of the trench and extending into the neighboring trench (D10) by an earthen surface 
(assigned locus 93) measuring approximately 2 meters north-south by 3.5 meters east-
west. Surface L93 was characterized by several concentrations of ash, flat lying late 
Ubaid ceramic sherds and, in the southwest corner, a concentration of yellowish clay. A 
large concentration of stones in a fine silt matrix was discovered lying directly on the 
eastern portion of surface L93. A variety of ceramics, limestones and a few animal bones were 
discovered within this concentration of stones. A carbon sample taken from this surface 
yielded a 2-sigma calibrated date of 4700-4460 BCE (Table 1).

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Measured Radiocarbon Age</th>
<th>13C/12C Ratio</th>
<th>Conventional Radiocarbon Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta – 208202 SAMPLE: D.8.93.1</td>
<td>5720 +/- 50 BP</td>
<td>-24.4 o/oo</td>
<td>5730 +/- 50 BP</td>
</tr>
<tr>
<td>ANALYSIS: AMS-Standard delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 SIGMA CALIBRATION: Cal BC 4700 to 4460 (Cal BP 6650 to 6410)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta – 208204 SAMPLE: E.2.134.10</td>
<td>5770 +/- 40 BP</td>
<td>-24.2 o/oo</td>
<td>5780 +/- 40 BP</td>
</tr>
<tr>
<td>ANALYSIS: AMS-Standard delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 SIGMA CALIBRATION: Cal BC 4720 to 4520 (Cal BP 6670 to 6470)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta – 208205 SAMPLE: F.2.2065.10</td>
<td>4530 +/- 50 BP</td>
<td>-26.0 o/oo</td>
<td>4510 +/- 50 BP</td>
</tr>
<tr>
<td>ANALYSIS: AMS-Standard delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 SIGMA CALIBRATION: Cal BC 3360 to 3020 (Cal BP 5310 to 4970)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta – 208206 SAMPLE: F.19.14.6</td>
<td>4330 +/- 40 BP</td>
<td>-25.3 o/oo</td>
<td>4330 +/- 40 BP</td>
</tr>
<tr>
<td>ANALYSIS: AMS-Standard delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 SIGMA CALIBRATION: Cal BC 3020 to 2890 (Cal BP 4970 to 4840)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Carbon dates.
The cells on either side of surface L93 contained discrete groups of in situ remains, including grain pseudomorphs in at least two, ceramics in one and a burial in another. The grain pseudomorphs (discovered in L82 and L88) were identical to those excavated in trench D5 during the 2001 and 2002 field seasons. The burial (L90) which was discovered in cell L87 presents an interesting problem. Although the skull and many of the disarticulated small bones of the hands and forearms were within cell L87, the long bones of the legs extended into, not under, the mud bricks that made up wall L70 (figure 6). (For analysis, see below under “Burials.”) Several factors suggest that this was a secondary burial. First, the skeleton was disarticulated. Second, only the skull, some of the arm bones and the leg bones were included in this inhumation. These factors, plus the very unusual position of the bones, partially within cell L87 and partially contained in the matrix of wall L70, strongly suggest that these remains were purposefully deposited as a secondary inhumation during the construction of Structure 2.

In the southern portion of trench D8, a second set of intersecting mud brick walls formed two more small cells. These walls proceeded into the neighboring trench D10. The Ubaid architectural remains in trench D10 were partially destroyed by several large pits (figure 4. Also see figures 5 and 7). Nevertheless, the Ubaid period walls clearly demarcated at least one more rectangular cell. Although a large pit cut into this cell, what remained suggests that the interior of the cell had at some point been filled in with mud bricks, creating a mud brick platform, surface or foundation. Because of the disturbed nature of the contexts in and around the southern portion of Ubaid Structure 2, we cannot say with certainty whether or not these bricks belonged to the original construction of Ubaid Structure 2 or if they were a later addition. However, further excavation in trench D8 revealed that some of the cells of the earlier Ubaid Structure 1 had been filled in with mud bricks to facilitate the construction of Ubaid Structure 2. This being the case, we suspect that these bricks are a later addition. If this hypothesis is correct, a third phase of Ubaid architecture post-dating Ubaid Structure 2 may have been destroyed by erosion and/or later construction on this part of Kenan Tepe’s main mound.

The cells formed by the various sets of walls unearthed in trenches D8 and D10 are obviously too small to have been used as living spaces. Instead, we believe they served as storage chambers that together formed two free-standing storage buildings. We interpret the surface between these two groups of walls and cells as a courtyard or work area between two cell-plan storage structures. This type of construction is not unprecedented. Parallels dating to the Ubaid period can be found in Syria at the sites of Tell Kosak Shamali (Nishiaki 1999) and Tell al-’Abr (Hammade and Yamazaki 1995). Other sites like Tell Mashnaqa and Hammam et-Turkman may also have had similar architecture during the Ubaid period (Akkermans and Schwartz 2003). This type of architecture is also not unknown in Iraq. At Tell Adaba, for example, similar small cell rooms have been excavated some of which, like Kenan Tepe, contained the remains of grain (Jasim 1989). In southern Iraq, similar structures have been excavated at the site of Tell el’Oueili (Huot 1989).

Ubaid Structure 2 was exceptionally well preserved. Only at its southern end (the portion contained in trench D10), was the architecture disturbed by later pits. All in all,
Ubaid Structure 2 measured more than five meters in width (east-west) and 14 meters in length (north-south) (figures 5 and 7). After removing Ubaid Structure 2, we came upon an earlier group of walls and cells that very closely mirrored the northern half of Ubaid Structure 2 (figure 8). These remains were discovered at the precise elevation of the portion of Ubaid Structure 1 unearthed in previous seasons in trench D5. Furthermore, the fact that the alignment and position of the walls entering the baulk between trenches D8 and D5 line up with the position of the walls in trench D5 confirms that this set of architectural remains does in fact belong to Ubaid Structure 1. Although these remains are almost identical in position and character to the northern half of Ubaid Structure 2 described above, we did not unearth similar architecture in the southern portion of trench D8 or in any of trench D10. There are two possible explanations for this. First, since we were not able to continue far beyond the foundations of Ubaid Structure 1 before the end of the 2005 field season, it is possible that more architecture still lies unexcavated in the southern portion of trench D8 and in trench D10. The second, and perhaps more likely explanation is that Ubaid Structure 1 was considerably smaller than Ubaid Structure 2.

Area E Trench 2
We first began excavation in Area E during the 2000 field season when we opened a 2 by 2 meter sounding in the area of a modern disturbance on the southeastern slopes of Kenan Tepe’s high mound (figure 3). In the 2004 field season, we expanded this sounding into a 5.5 by 3.5 meter trench. The trench was again expanded in the 2005 and 2006 seasons. The trench now measures approximately 6 by 8 meters. Since trench E2 still consisted of two parts (the original sounding and the expansion begun in 2004) at the beginning of the 2005 field season, we concentrated our efforts on bringing down the expanded part of the trench to the level of the bottom of the sounding. The first few weeks of the 2005 field season thus revealed a street and the corner of a structure dating to the Late Chalcolithic period. Once these remains were removed, we came down on a small portion of another multi-celled Ubaid period building (figure 9). This building, which we will refer to as Ubaid Structure 3, was located in the southwestern corner of trench E2. Although partially disturbed by several later pits, we discovered the northeastern bearing wall of this structure, one complete cell and portions of at least one more cell. The northeastern half of the trench consisted of a large well-preserved outside work surface that contained numerous ceramics, lithics and animal bones in situ. A carbon sample taken from this surface (L134) yielded a 2-sigma calibrated date of 4720-4520 BCE (Table 1).

We have obvious parallels for the remains discovered in trench E2 from other trenches at Kenan Tepe. Although the architectural remains in E2 are not extensive, they clearly belong to the same type of building as those discovered in trenches D5 and D8. The outside surface covering the northeastern half of trench E2 is paralleled by a similar surface uncovered in trench D5 during the 2001 and 2002 field seasons. Interestingly we also have a burial (E.2.146.6) in trench E2 that is partially contained within the walls that make up Ubaid Structure 3. In this case however, these were the remains of an adult female who was buried in a large ceramic vessel (figure 10). (For analysis, see below
under “Burials.”) Unlike the burial in trench D8, this appears to have been a primary
inhumation. The body was well articulated and the skeleton was complete. Our
assumption is that the body was inserted into the vessel (head first) and that the vessel
was then placed in the cell during the construction of Ubaid Structure 3.

Area I Trench 2
During the 2004 field season we opened a new 1 by 4 meter trench in Area I. The
purpose of this exploratory trench was to determine if Ubaid and/or Late Chalcolithic
remains extend under Kenan Tepe’s high mound. Trench I2 was excavated in two steps.
The first consisted of the northern 2 meters of the trench and the second consisted of the
southern 2 meters of the trench. Both of these steps were excavated to approximately 2
meters below ground surface. In our previous report, we concluded that the Ubaid and Late
Chalcolithic settlements do not extend under the main mound (Parker and Dodd 2005).
After considering these data again, Lynn Dodd suggested that we test this hypothesis by
excavating a 1 by 1 meter sounding in the upper step of trench I2. We therefore dug this
sounding another 2.75 meters. This sounding produced no Ubaid or Late Chalcolithic
sherdos or architectural remains. Thus we can now say with much more certainty that
remains from both of these periods do not extend under Kenan Tepe’s main mound.

Area F Trench 6
In our previous reports, we mentioned that a handful of Ubaid ceramic sherds
were discovered at the bottom of trench F6 in Kenan Tepe’s lower town (Parker and
Dodd 2005: 71). If these sherds betray the existence of Ubaid architecture in Kenan
Tepe’s lower town, then this would drastically affect our calculations of the size of Kenan
Tepe’s Ubaid period settlement. During the 2005 field season we extended trench F6 in
an effort to clarify this question. Excavation in this trench did not produce any Ubaid
ceramics and no substantial architecture was discovered. Based on these data, we
conclude that Kenan Tepe’s Ubaid period settlement did not extend into Kenan Tepe’s
lower town.

The Late Chalcolithic Period: Excavation Summary

Late Chalcolithic research during the 2005 and 2006 field seasons concentrated on
new and existing trenches in Area F. Area F is located on a flat terrace approximately 23
meters above the Tigris River northeast of Kenan Tepe’s main mound (figure 1). Previous
work on this part of the site has revealed Late Chalcolithic occupation ranging from the
LC 3 (ca. 3600-3400 BCE) through the LC 5 (ca. 3400-3000 BCE [Rothman 2001]). In
our previous reports, we subdivided the excavated contexts from Area F into seven levels,
which generally correspond to occupational layers (Creekmore 2007; Parker et al. 2003,
2006; Parker and Dodd 2005). In 2004, we clarified the chronology of the lower town by
completing excavations in trench F1 (Parker et al. 2006). During the 2005 season, we

\[\text{Based on 2-sigma calibrated dates derived from wood charcoal. The full range of dates are published in Parker et al. 2003: Table 2.}\]
concentrated on broad exposures to uncover a wider range of occupational layers and elucidate the nature of settlement in this area of the site. To do so we focused on four new trenches (F19, F20, F21, F22) and continued excavation in four existing trenches (F2, F7, F8, F9). The contexts uncovered since 2004 span Levels 1 through 5 and date between ca. 3360-2890 calibrated BCE (Table 1).

**Trenches F19, F20, and F22 (Levels 1-4)**

To uncover the source of a mud brick wall collapse and earthen surface previously excavated in trench F1 (Parker et al. 2003), UTARP team members opened three trenches on the eastern, western and southern edges of trench F1 in 2005 (trenches F19, F20, and F22 respectively [figure 3]). The contexts uncovered in these new trenches span Levels 1-4, roughly the Late Chalcolithic-Early Bronze Age transitional period.

Level 1 includes intersecting pits (L6, L13) in trench F22 that contained the buried remains of two individuals. The first individual (F.22.6.1 individual 1) consisted of a nearly complete articulated skeleton with flexed legs and knees rolled to the north. A bronze pin (F.22.6.2 see below under “Small Finds”) with a straight shaft and ball head was uncovered near the legs. The second individual (F.22.6.1 individual 2), who was probably interred as a secondary burial, disturbed the skull and left arm of Individual 1 (see below under “Burials” for discussion). Fragments of a pedestal base with vertical burnish, carinated bowl with simple rim (figure 11 D), and a fine ware plain rim bowl with corrugated exterior (figure 11 G) were recovered inside the first burial pit. These burials are similar to other flexed and extended simple pit inhumations uncovered throughout Area F (in trenches F1, F5, F7 and F14) either adjacent to or cutting expansive cobblestone surfaces characteristic of Level 2.

The F22 burials should probably be grouped together with a burial from the southwest corner of F1 for the following reasons. First, spatially they are very close together. Second, there is only a 20cm difference in their elevations. And third, they are similarly oriented along the same east-west axis. It is possible that these burials were intentionally placed in or over an earlier structure in trenches F19, F20 and F22 (see below).

A heavily disturbed burial from F19, in which only the skull, teeth, and extremities (fingers/toes) were preserved, is also tentatively placed in Level 1. Level 2 consists of cobblestone surfaces mostly devoid of cultural material and pits in F20 (L4) and F22 (L4) containing burnt pottery, animal bones, flint and obsidian debris. These cobblestone surfaces were constructed over a fill layer in F19 and F20 composed of burnt mud brick slump and occupational debris that corresponds to Level 3.

The most significant architecture comes from Level 4, where we unearthed portions of a large, probably domestic, structure partially excavated in previous seasons. The portion of the structure thus far excavated measures approximately 7 by 9 meters. The south wall lies in F22, where two sets of east-west running walls (L11 and L17; L16 and L21) adjoin to form a double wall, perhaps for two abutting buildings. A small wall stub (L22), which is probably a blocked doorway, forms a passage with the southern end.

---

6 Thanks to Andrew Creekmore for advancing this interpretation.
of the west wall (L11) of the structure in trench F20. A poorly preserved mud brick wall (L10), 2 meters in length with a cobblestone foundation represents the extension of the southern wall of this structure into F19. We uncovered a plethora of burnt mud bricks with plastered sides scattered across the entirety of this area, which, when combined with evidence for burning in adjacent trench F1, confirms our previous assessment (Creekmore 2007:83; Parker and Dodd 2005:75) of a massive conflagration.

A baked mud plaster surface, a portion of which we previously uncovered in F1 (Creekmore 2007:83-4), represents a living space within this structure. This surface was preserved across F19, F20, and F22 and was bonded to the walls within these trenches. The ceramics recovered from above this surface and from the surrounding contexts in trenches F20 and F22 are representative of local Late Chalcolithic and Early Bronze Age transition at Kenan Tepe. Of the ceramics that have been analyzed, the most common are coarse chaffy cook pots, holemouth jars with simple squared rims (figure 11 M), carinated or hemispherical cups with beaded rims (figure 11 L, O), hammerhead rim bowls (figure 11 J), and thicker fabric storage jars (figure 11 N). Two complete vessels—a carinated, slightly beaded rim pot (figure 11 F) and a flat-base bowl with an open simple rim (figure 11 I)—derived from an additional trench (F21) that was excavated in the westernmost extension of Area F. A mix of chaff and calcareous and micaceous grit tempers is dominant, except in the fine ware vessels where only very small grit or no temper appears (see below). Horizontal and vertical burnish is also present, but rarely any wash, slip or paint with the exception of a grey burnished ware (figure 11 C). Decorations are limited to incised patterns. Two body sherds with this decoration (figure 11 A, B) could be fragments of a chevron design, of which a complete vessel with this incised pattern was excavated in trench F7 (see below and figure 12 C). Fine ware or Kenan Tepe “Type 7” vessels are also among this corpus. These ceramics vary in shape from necked juglets with tiny beaded rims (figure 11 K) to larger open bowls and/or cups distinguished by parallel, linear incised decorations on the exterior body (figure 11 E, G). This form is very similar to Ninevite 5 type vessels from Salat Tepe (Ökse et al. 2001: figure 7: 10), Aşağı Salat (Şenyurt 2002: figure 6:2, figure 14), and Tell Brak (Matthews 2003: figure 5.57: 17).

Trenches F2, F7, F8, F9 (Levels 4-5)

The majority of contexts excavated over the last two seasons coincide with Level 4 and are characterized by superimposed structures, mud-plastered floors, debris-filled pits, and primary burials. Trench F2 contains two phases of mud brick walls, plastered surfaces, and compacted pebble floors. The earlier phase (phase B) consists of a well-preserved structure with plastered mud brick walls (L2050, L2064), one of which was half a meter thick (L2050) and a plastered niche or platform (L2051 [figure 15]). Multiple superimposed plaster surfaces, which also contained grain pseudomorphs (L2056), represent the interior occupation levels of the structure, while a pebble surface (L2049) corresponds to the exterior levels. A 2-sigma calibrated carbon date derived from an interior surface places this structure within the end of the Late Chalcolithic or LC 5 period (Table 1). Unfortunately the plastered inside surfaces did not yield much in the way of artifacts except for a rectangular stone bead. However, other debris in and around this structure did contain numerous finds, including loom weights, grinding stones, and an
animal figurine. These data suggest that small-scale domestic activities, such as cloth manufacture, processing of agricultural products, food preparation, and perhaps household rituals, were performed in association with this structure.

Three features cut into this interior surface. One (L2066) is a pit filled with small pieces of coarse ceramics, plaster fragments, and a heavily damaged ceramic animal figurine (F.2.2066.6). (See below under “Figurines.”) Another is a shallow pit (L2067) covered by a compact black ashy surface into which a complete string-cut base bowl was set (L2070) (figures 14 and 13 A). The last and larger pit (L2042) cut both the plaster surface and the niche, and was filled with mud brick debris, pottery fragments, and a cylinder seal (F.2.2042.7). (See below under “Seals”.) At the base of this pit, UTARP team members uncovered portion of a child inhumation. It is unclear whether these pits (L2066, L2042) are contiguous with the above-mentioned structure. However, surface L2065 connects smoothly with the black ashy layer and does not cover the string-cut base bowl, suggesting that this enigmatic feature was in use during the life of the structure, or at least, the final phase of the interior surface. The function of this sunken bowl feature is unclear, although ashy remains adhering to the interior surface of the bowl suggest the presence of fire or burning at some point around this feature.

This structure is not reused during the later occupation phase (A). Instead, we uncovered an L-shaped mud brick wall (L2034), preserved to only two courses, with an adjacent mud brick platform (L2033) and pebble surface (L2035). Though poor preservation may be an issue, we cannot rule out the possibility that this L-shaped wall was never a portion of a four-sided structure, but instead served as some type of retaining or separation wall.

All contexts excavated in trench F7 during the 2004 and 2005 field seasons correspond to Level 4. A carbon date of 3360-3020 BCE taken from a large pit in F7 in 2002 and the plastered surface from F2 dated to 3360-3020 BCE provide a terminus post and ante quem for these contexts, placing them firmly within the last centuries of the fourth millennium BCE. Level 4 contexts unearthed in 2005 in trench F7 comprise at least five separate building phases (phases A-E) generally distinguished by a series of small overlapping walls, pebble surfaces, and plaster floors cut by later pits and burials.7

The earliest phase (E) is composed of a 1.5m long mud brick wall stub bonded on its southern face to a heavily burnt mud plaster surface. On its eastern side, the floor slopes up to meet a door socket. Directly adjacent is a sunken plaster pit measuring 55 cm in diameter and 5 cm in depth. The heaviest concentration of burning and fired material, including ceramics and animal bones, come from this feature suggesting that it was used as a fire pit. Encompassing this surface, but at a higher elevation, was a 3 by 0.5 meter mud brick wall (L7209) that is a combination of two walls joined at a corner (Phase D). To the north of this wall is a compacted clay surface with flat-lying ceramic fragments and rounded river pebbles.

This architecture does not continue into the following phase (C), which consisted of a number of disjointed features including wall stubs (L7202, L7201) and a large pit.

---

7 Note that these phases should be considered tentative until such time as further research can be carried out.
A burial (F.7.7200.1) either belongs to this phase or the following one (B), when a multi-roomed structure opened onto a courtyard. This structure (L7178) was composed of multiple connecting walls forming two magazine-type rooms roughly 1 meter wide and 2.5 meters long. Flimsy construction, lack of a floor, and minimal debris suggest this building may have been used for keeping animals or as temporary agricultural storage. Our assumption is that an adjacent structure (L7163, L7154), only the corner of which falls within F7, served as the primary living space. The latest phase (A) was a single-room structure consisting of walls (L7160, L7158) and a compacted pebble floor (L7169) with a door socket (L7152.4). A cache of footed vessels (figure 12 B-C, G-I) and Ninevite 5 forms characteristic of the Late Chalcolithic-Early Bronze Age transition were associated with these features.

A notable feature in F7 is a brick-lined burial (L7221) found adjacent to the Phase B buildings (figure 16). Composed of three courses of burnt and unburnt brick, this inhumation consisted of an adult female in a flexed position on her left side with an east-west orientation (See below under “Burials.”) Her arms bent so that the hands rested beside the face. No evidence of a roof or cover was discovered. It is unclear whether this was originally a brick-lined pit (similar to the above-mentioned adolescent burial [F.7.7200.1]) or a freestanding structure. When compared with other Late Chalcolithic tombs in southeast Anatolia and northern Iraq, the possibility that this represents a freestanding structure seems more likely. The “libn” burials at Tepe Gawra levels VIII to XIA/B (Rothman 2002, Tobler 1950), though dating from an earlier phase (LC 2-3; 3900-3700 BCE), are a good example of rectangular stone and mud brick tombs of the Late Chalcolithic. An even more striking parallel is Tomb J at Korucutepe Stratum XXXIX, dating to the very end of the fourth millennium (van Loon 1975). In this case, the rectangular mud brick tomb most probably had a wooden roof covering a single female, also flexed on her left side in an east-west orientation with arms bent and hands resting adjacent to her face. Unlike the example from Kenan Tepe, which contained no grave goods, Tomb J at Korucutepe had a rich funerary assortment including a variety of silver jewelry and limestone bead decoration from the individual’s clothing.

In trench F8, Level 4 contains a single-course mud brick wall (L8034) with a possible doorway. This wall does not continue into trench F2 to connect with L-shaped wall L2034, but their orientation is similar, suggesting perhaps different building phases of the same structure or contiguous features. The fill surrounding this wall included a worked stone and pot stand. Level 4 in trench F9 yielded a one-course mud brick wall (L9035) and a small rectangular pebble surface (L9036), in whose suprasurface fill a bronze needle or pin was uncovered (F.9.9036.4). (See below under “Small Finds.”) Whether these features are contiguous with an adjacent deep pit (L9045) extending from the north baulk is unclear. The northern half of this pit was uncovered in trench F7 (L7146). A heavily disturbed burial (L9042) from the southwest corner of trench F9 partially obscured by the baulk may be associated with this level.

During the 2005 season, UTARP team members only reached Level 5 in trench F9. It consists of a modest building of packed mud pisé construction (L9052). An entrance, marked by a door socket, is located on the southern side along with a plaster surface (L9051) that abruptly ends at the threshold. A packed mud surface covered with...
white pseudomorphs (L9049) continues inside the structure where just inside the doorway, it noticeably slumps. Upon further excavation, we discovered that this floor sealed a 1-meter deep pit (L9055) which accounted for this slumping. Inside the pit were hammerhead rim bowls (figure 13 G), a carinated cup with beaded, incurved rim (figure 13 D), lithics, shell, and animal bones. A later pit (L9045) cuts the entire structure.

Ceramics from these trenches are similar to other Level 4 contexts from the rest of Area F. This includes globular cook pots with straight necks and slightly everted rims, chaffy open platters (figure 13 F), hammerhead rim bowls (figure 13 G, H), holemouth vessels with thickened rims (figure 13 K), and carinated cups with small beaded rims (figure 13 D). The string-cut base bowl (figure 13 A) from trench F2, though similar in shape and manufacture with “Uruk-type” coarse conical bowls from Hacinebi (Stein et al. 1996: 234, figure 22 G-H; Pearce 2000: 120, figure 13 b), is more comparable to mass-produced coarse bowls with inward bevelled rims at Arslantepe VII and VIA (Frangipane 1993: 147, figure 9: 6, 10). In addition, a distinctive jar with triangular lug-handles (figure 12 D) is similar to cook pot examples from Norşun Tepe (Gülçür 2000: Abb. 45 Griffllappen). Other examples of this type of lugged jar from Salat Tepe (Ökse 1999: figure 4), and Kurban Höyük IV (Algaze 1990: 329, pl. 135) are dated to the Early Bronze Age, though in the case of Kurban, to the end of the period (EBII-III).

Late Chalcolithic-Early Bronze Age transitional fine wares are also present; the best examples come from a cache of whole vessels uncovered in trench F7 (Level 4, Phase A) adjacent to a small structure (L7160, L7158). A deep footed bowl with thumbnail impressed decoration around the exterior bottom of the bowl (figure 12 B) held another smaller footed bowl with incurved rim (figure 12 I), and two fine ware ring base bowls (figure 12 G and H), one with a parallel incised linear design (figure 12 G). These ring base bowls have clear parallels with Ninevite 5 examples at Salat Tepe (Ökse et al. 2001: figure 7: 4, 10), Aşağı Salat (Şenyurt 2002: figure 6: 2, figure 14), and Tell Brak (Matthews 2003: figure 5.57: 17). Likewise, thumbnail impressed designs are also known at Kurban Höyük VI (Algaze 1990: 251, pl. 23 N, O) though these are reserved slip examples. Directly associated with this whole vessel cache was a complete footed jar with straight rim, slightly everted neck, and rounded body with distinct shoulder (figure 12 C). On this vessel’s shoulder is an incised chevron or zigzag design between two groupings of parallel incised lines. A single band of incised cross-hatching on vessel shoulders is also known at Arslantepe VIA (Frangipane 2000: figure 8) and other Early Bronze Age I sites from the Karababa basin (Gerber 2000: 215, Abb. 3: 10).

Preliminary Assessment of the Faunal Remains from the Ubaid Period

Although certain aspects of Ubaid material culture (i.e.; ceramics and architecture) are relatively well investigated, there has been little focus on zooarchaeological research. This is primarily due to the limited number of excavations at Ubaid sites (Huot 1989; Jasim 1985, 1989; Roaf 1988). In addition, the many Ubaid sites in southern and central Iraq, such as Abada, Eridu, ‘Oueili, Madhhur, Ur and al-‘Ubaid, were excavated before the systematic collection and analysis of faunal remains became the norm. As a result, few preliminary or final publications on Ubaid faunal material have been published.
(Beech and Husaini 2005; Gourichon and Helmer 2003; Zeder 1995). The following analysis is a preliminary assessment of the multiphase faunal assemblage from the Ubaid settlement at Kenan Tepe. The goal of the analysis, when completed, will be to understand patterns of change between the various phases of Ubaid occupation at Kenan Tepe. Given the differences in settlement structure especially between Ubaid Phase 1 and Ubaid Phase 2 and 3, this analysis will hopefully contribute to an understanding of changing degrees of mobility and sedentism at the site. The location of Ubaid structures in areas D and E also provides an opportunity to examine variation in animal management practices and social or economic status within the settlement during each specific phase.

Context

The stratigraphic and architectural evidence from the Late Ubaid settlement at Kenan Tepe (4720-4460 BCE) suggests multiple stages of occupation. Faunal samples from all appropriate contexts in each phase were exported during the 2006 field season. This report represents the analysis of a subsample of these data. The analyzed sample derives from the deepest excavated portion of trench D5 and probably represents the earliest phase of Ubaid occupation at the site (Kenan Tepe’s Ubaid Phase 1). There appears to be no architecture in this phase, leading to the hypothesis that this settlement was small and/or composed of largely impermanent structures (Parker et al. 2006: 74-5). The features and artifactual remains (including grinding stones, surfaces and a hearth) suggest that this was an outdoor work area.

The analyzed samples emanate from a number of stratigraphic contexts including two plaster surfaces (L5227 and L5225), a hearth feature and a compact unplastered surface (L5228), which likely represents an activity area associated with the hearth. A layer of debris (L5226) laid above these loci, and two grinding stones recovered near the hearth within this debris indicate a link between these deposits. A later layer of fill (L5220) sealed this area and was included in the analysis to increase the sample size and provide contextual diversity. The samples analyzed were collected by hand during excavation or were caught in a quarter-inch mesh during screening. These recovery techniques clearly bias the samples against small species and elements, which will hopefully be recovered in the microarchaeology samples currently being processed at the University of Utah. The faunal assemblage was divided into two subsamples: one from the general fill layer (locus 5220; hereafter referred to as the fill sample) and one from the underlying work surface and hearth (loci 5225-5228; hereafter referred to as the hearth sample).

The Faunal Data

The assemblage analyzed consists of 631 fragments, of which 392 (62%) were identifiable to class, genus or species (Table 2). Material that was not identifiable to genus or species was grouped into three size categories: small mammal (i.e.; caprine size), medium mammal (i.e. pig size) and large mammal (i.e.; cow size). The fill sample consisted of 221 identifiable specimens, and the hearth sample included 171 identifiable specimens.
Table 2: Total list of species identified in the analyzed faunal assemblage

<table>
<thead>
<tr>
<th>Species</th>
<th>TNF</th>
<th>%</th>
<th>Weight</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos taurus</td>
<td>46</td>
<td>7.29</td>
<td>558</td>
<td>25.32</td>
</tr>
<tr>
<td>Capra hircus</td>
<td>2</td>
<td>0.32</td>
<td>11</td>
<td>0.50</td>
</tr>
<tr>
<td>Canis sp.</td>
<td>2</td>
<td>0.32</td>
<td>21</td>
<td>0.95</td>
</tr>
<tr>
<td>Cervus elaphus</td>
<td>3</td>
<td>0.48</td>
<td>235</td>
<td>10.66</td>
</tr>
<tr>
<td>Ovis aries</td>
<td>3</td>
<td>0.48</td>
<td>23</td>
<td>1.04</td>
</tr>
<tr>
<td>Ovis/Capra</td>
<td>140</td>
<td>22.19</td>
<td>522</td>
<td>23.68</td>
</tr>
<tr>
<td>Sus sp.</td>
<td>17</td>
<td>2.69</td>
<td>72</td>
<td>3.27</td>
</tr>
<tr>
<td>Testudo sp.</td>
<td>1</td>
<td>0.16</td>
<td>12</td>
<td>0.54</td>
</tr>
<tr>
<td>fish</td>
<td>4</td>
<td>0.63</td>
<td>3</td>
<td>0.14</td>
</tr>
<tr>
<td>small mammal</td>
<td>108</td>
<td>17.12</td>
<td>229</td>
<td>10.39</td>
</tr>
<tr>
<td>medium mammal</td>
<td>15</td>
<td>2.38</td>
<td>91</td>
<td>4.13</td>
</tr>
<tr>
<td>large mammal</td>
<td>51</td>
<td>8.08</td>
<td>336</td>
<td>15.25</td>
</tr>
<tr>
<td>indeterminate</td>
<td>239</td>
<td>37.88</td>
<td>91</td>
<td>4.13</td>
</tr>
<tr>
<td>Totals</td>
<td>631</td>
<td>100.00</td>
<td>2204</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Preservation of the samples was relatively good as most bones showed little wear or decay. The evaluation of wear stages was modeled after Behrensmeyer (1978). Most specimens are in moderate wear, and the hearth sample shows particular consistency across loci (50% to 80% of specimens in moderate wear). Large mammals, including cattle, appear more weathered than sheep/goat and the small mammals. Although this pattern may coincide with a higher percentage of gnawing in the large mammals, most of the gnawed large mammal and cattle fragments do not show a high degree of weathering. Most of the heavily gnawed and heavily weathered bones belong to sheep/goat and small mammals. Variation in the depositional treatment of different species could have created this pattern, or perhaps, sheep/goat remains were more available to carnivores. The total assemblage shows little indication of extreme trampling or fragmentation (most fragments are 4-5cm in length).

After taking indeterminates out of consideration, the proportion of species present in the total assemblage suggests a reliance on domesticated sheep/goat (37%), cattle (12%), and to a much lesser degree pig (4% [figure 17]). The combination of small ruminants, cattle and pig is a common pattern of animal management in the post-Neolithic Near East. There are also a few rarer undomesticated species represented in these samples, which suggests some reliance on wild resources.

The Hearth Sample

The species representation from this sample tracks the visible trend in the total analyzed assemblage (Table 3a). Without considering indeterminates, sheep and goat comprise slightly less than half the total identified specimens, while cattle are the second most represented animal (20%). Pigs (2%) are only slightly more prevalent than the other represented species. The distribution of these three key species varies slightly by context. Most of the pig remains (75%) originated from the hearth surface (locus 5225), while cattle bones occurred primarily in the debris overlying the work surface (locus 5226). The proportion of sheep and goat within all the loci, however, is roughly equivalent (41% to 58%).
Table 3a: Species list from the hearth sample (loci 5225-5228).

<table>
<thead>
<tr>
<th>Species</th>
<th>TNF</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bos taurus</em></td>
<td>34</td>
<td>11.37</td>
</tr>
<tr>
<td><em>Capra hircus</em></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>Canis sp.</em></td>
<td>1</td>
<td>0.33</td>
</tr>
<tr>
<td><em>Cervus elaphus</em></td>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td><em>Ovis aries</em></td>
<td>1</td>
<td>0.33</td>
</tr>
<tr>
<td><em>Ovis/Capra</em></td>
<td>74</td>
<td>24.75</td>
</tr>
<tr>
<td><em>Sus sp.</em></td>
<td>4</td>
<td>1.34</td>
</tr>
<tr>
<td><em>Testudo sp.</em></td>
<td>1</td>
<td>0.33</td>
</tr>
<tr>
<td>fish</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>small mammal</td>
<td>35</td>
<td>11.71</td>
</tr>
<tr>
<td>medium mammal</td>
<td>8</td>
<td>2.68</td>
</tr>
<tr>
<td>large animal</td>
<td>10</td>
<td>3.34</td>
</tr>
<tr>
<td>indeterminate</td>
<td>128</td>
<td>42.81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>299</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

An age estimate based on epiphyseal fusion and tooth eruption was given for each specimen where appropriate (Bökönyi 1972; Silver 1969). The age range at which fusion or eruption occurs varies within and between populations and can be influenced by nutrition, sex and environment. In order to avoid these problems, we grouped the data into three broad categories (juvenile, subadult and adult), which reflect phases in the animal’s life. Even at this level of abstraction, many of the samples were in an ambiguous intermediate phase. For example, the scapula and pelvis fuse very early in development, and a fused scapular element will not provide high resolution age data. The resulting sample (24 specimens, 14% of total identified) is very small and can only give a rough approximation. Due to the small sample size, this discussion is restricted to sheep/goat remains. Juvenile and subadult animals are equally represented, and the sample shows a general prevalence for adult animals. No extremely infantile animals were present, and it is possible that preservation issues influenced the representation of young animals. All the juvenile bones appear in the area surrounding the hearth, while the other age classes are equally divided between the work surface and the overlying debris.

The age data from this sample may provide evidence that animals, especially young, were kept near the settlement. It is possible that vulnerable young animals were managed onsite for protection. It is also possible to interpret this data in terms of food preferences and culinary practices. These are issues that will be examined in greater depth after more data have been analyzed. This assemblage includes a significant number of teeth, and we hope to gain more accurate ageing data for the entire Ubaid assemblage by analyzing these remains using tooth wear stages (Payne 1973).

Although it is impossible to appreciate the extent to which fishing or hunting may have contributed to the diet or economy of Kenan Tepe’s Ubaid inhabitants, the presence of nondomestic species allows limited inferences. There are three red deer (*Cervus elaphus*) fragments (figure 18 A) within the analyzed sample. These are all from a single individual and represent a complete right metatarsal. The plastron of a turtle (*Testudo sp.*)
was also identified. Although there is no evidence for processing on these elements, they reveal other potential resources available to the early Ubaid settlement.

The presence of a radial shaft from a medium-sized canid (*Canis sp.*) provides direct evidence for the presence of dogs at the Ubaid settlement. However, it is likely that dogs and other carnivores were far more common than most faunal assemblages suggest. Gnaw marks and gastric etching are an indirect, though often very visible, indication of the presence of dogs on site (figure 18 B). The occurrence of carnivore gnawing in this sample is relatively rare, occurring on only six fragments. All size categories are represented amongst the gnawed bones. Although the sample is too small to arrive at anything more than working hypotheses, over half the gnawed bones are from the animal’s forequarters (humeri, radius and ulna). This may represent differential discard patterns between different elements and species. This evidence indicates that dogs had access to this area and played a role in the deposition and preservation of faunal elements.

Most of the specimens in this sample could be identified to skeletal element, although 39% were indeterminate. After taking the indeterminate portion out of consideration, over half of the sample is composed of cranial and teeth elements (Table 4a). The representation of other skeletal elements is considerably lower, although these elements appear in roughly equivalent frequencies (1% to 6%). The only deviation from this pattern is in the work area surrounding the hearth (locus 5228). In this location, there are fewer element types present, and metapodia (11%) and vertebrae (9%) appear more frequently. Depending on factors of preservation, this may represent food processing techniques or discard patterning in the vicinity of the hearth.

There is also some variation in the element representation between species (Table 4a). The three main species (sheep/goat, cattle and pig) are dominated by cranial elements. Cattle are minimally represented by other elements, and there is a complete lack of hindquarter elements. Sheep/goat, however, are equally represented by both fore and hindquarter elements and have a much lower occurrence of axial elements. Pig is exclusively represented by cranial and forequarter elements, although the spread is much more even if the medium mammal elements are taken into consideration. It is likely that species were being treated differently in terms of butchery and consumption practices. While the meaty limb elements of sheep/goat were processed or discarded in this area, the cattle elements show a different pattern, focusing instead on the head, spine and feet.

The only direct evidence for human modification comes from three fragments with distinct cut marks. The specimens include an ilium/ischium from a male sheep/goat, a sheep/goat scapula and a sheep/goat ulna (figure 18 C). The placement of the marks (along the acetabulum, on the neck of the scapula and on the olecranon) on these elements is suggestive of the disarticulation process. This indicates that butchery activities or the disposal of butchery or cooking debris occurred in this area.

There is only a single burnt fragment in the sample. It is a calcined (bluish black color) long bone of a small mammal. It most likely represents cleaning debris from the use of the hearth. The lack of burnt bones in the assemblage clearly reveals that the presence of a hearth does not necessarily correspond to cooking debris. In fact, due to the impalpability of charred bone, heavy burning in a faunal assemblage rarely represents cooking behavior. The absence of burning may instead suggest that cooking refuse was
disposed of elsewhere, cooking techniques focused on boiling or that this particular hearth was not used for the preparation of animal food.

The Fill Sample

The species recorded in this sample were primarily domesticated sheep/goat (21.08%), cattle (3.61%) and pig (3.92% [Table 3b]). In addition, the vertebral centrum from a large fish (figure 18 D) and an almost complete dog ulna (Canis sp.) were recorded. The dog ulna came from a medium-sized animal.

<table>
<thead>
<tr>
<th>Species</th>
<th>TNF</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos taurus</td>
<td>12</td>
<td>3.61</td>
</tr>
<tr>
<td>Capra hircus</td>
<td>2</td>
<td>0.60</td>
</tr>
<tr>
<td>Canis sp.</td>
<td>1</td>
<td>0.30</td>
</tr>
<tr>
<td>Cervus elaphus</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ovis aries</td>
<td>2</td>
<td>0.60</td>
</tr>
<tr>
<td>Ovis/Capra</td>
<td>66</td>
<td>19.88</td>
</tr>
<tr>
<td>Sus sp.</td>
<td>13</td>
<td>3.92</td>
</tr>
<tr>
<td>Testudo sp.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>fish</td>
<td>4</td>
<td>1.20</td>
</tr>
<tr>
<td>small mammal</td>
<td>73</td>
<td>21.98</td>
</tr>
<tr>
<td>medium mammal</td>
<td>7</td>
<td>2.12</td>
</tr>
<tr>
<td>large animal</td>
<td>41</td>
<td>12.35</td>
</tr>
<tr>
<td>indeterminate</td>
<td>111</td>
<td>33.43</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>332</td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Table 3b: Species list for the fill sample (locus 5220)

During the recording phase, a wide variation in the size of cattle bones from this sample was noted. These differences could be attributed to age or sex. Age information was derived for the specimens identified as cattle and sheep/goat using fusion and eruption data. To address the size differences in the cattle bones, body size criteria were used to verify/evaluate age data. The determination of body size is not a straightforward process, but it can be a valuable complement to age data. Measurements were taken according to von den Driesch (1978), but the sample is too small to provide useful data. For preliminary purposes, the relative body size of bones identified to element and species was utilized instead. The body size of a specimen was determined to be small, medium or large in comparison with similar speciable elements throughout the entire assemblage.

Cattle bones were distributed between medium and large body sizes. In terms of age, at least 25% of the specimens were juveniles and 25% were subadults. The presence of a large juvenile and several small subadults suggests that the body size of the cattle does not necessarily correlate with age. Size differences may instead be related to sexual dimorphism, and it is possible that with larger samples we will be able to better explain the size differences within the cattle population. In the sheep/goat category, there were at least two adult animals and one juvenile animal. Sheep/goat ages seem to correlate well with estimated body sizes. The juvenile animal was recorded as small, and the adult animals were mostly medium sized. The pig specimens, none of which offered ageing
data, came from small and medium sized individuals. The small class was significantly smaller in comparison with the medium class.

Most of the identified fragments were from either long bones or cranial elements (Table 4b). Long bones comprised 41% of all the fragments identified to skeletal part, and cranial fragments represented 40%. Ribs, vertebrae, carpal/tarsal, pelvis and scapula fragments altogether made up 20% of the skeletal parts identified. Ribs, vertebrae, pelvis and scapula may be missing due to poor preservation. However, carpals and tarsals, which are much denser bones, are unexpectedly rare. Heavy carnivore activity might have caused this trend. The frequency of meat-bearing body parts is quite high, and the most frequently identified long bones were humeri (20% of all long bones identified to element). Radii and femora were quite frequent as well (18% and 16% respectively of all long bones identified to element). The relative frequency of the metapodia was also significant at 13%, and these elements were more frequent than tibia and ulna fragments. The relatively high frequency of metapodia may mean either that animals were butchered in the area or that the entire skeleton was used by the site occupants. Although the presence of small mammal metapodia may be elevated because of their use as bone tools, cow-sized metapodia may suggest food production and consumption. These large mammal metapodia may have been selected for marrow extraction, and the analysis of break patterns for grease extraction is an area of future research.

<table>
<thead>
<tr>
<th>Elements</th>
<th>Hearth Sample TNF</th>
<th>TNF %</th>
<th>Fill Sample TNF</th>
<th>TNF %</th>
</tr>
</thead>
<tbody>
<tr>
<td>cranial</td>
<td>63</td>
<td>21.07</td>
<td>48</td>
<td>14.46</td>
</tr>
<tr>
<td>teeth</td>
<td>53</td>
<td>17.73</td>
<td>55</td>
<td>16.57</td>
</tr>
<tr>
<td>scapula</td>
<td>5</td>
<td>1.67</td>
<td>4</td>
<td>1.20</td>
</tr>
<tr>
<td>vertebrae</td>
<td>7</td>
<td>2.34</td>
<td>9</td>
<td>2.71</td>
</tr>
<tr>
<td>femur</td>
<td>7</td>
<td>2.34</td>
<td>8</td>
<td>2.41</td>
</tr>
<tr>
<td>radius</td>
<td>4</td>
<td>1.33</td>
<td>9</td>
<td>2.71</td>
</tr>
<tr>
<td>phalanx</td>
<td>3</td>
<td>1.00</td>
<td>6</td>
<td>1.81</td>
</tr>
<tr>
<td>carpals/tarsals</td>
<td>2</td>
<td>0.67</td>
<td>9</td>
<td>2.71</td>
</tr>
<tr>
<td>humerus</td>
<td>7</td>
<td>2.34</td>
<td>10</td>
<td>3.01</td>
</tr>
<tr>
<td>rib</td>
<td>6</td>
<td>2.01</td>
<td>23</td>
<td>6.93</td>
</tr>
<tr>
<td>ulna</td>
<td>2</td>
<td>0.67</td>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>pelvis</td>
<td>5</td>
<td>1.67</td>
<td>5</td>
<td>1.51</td>
</tr>
<tr>
<td>metapodial</td>
<td>11</td>
<td>3.67</td>
<td>13</td>
<td>3.92</td>
</tr>
<tr>
<td>tibia</td>
<td>5</td>
<td>1.67</td>
<td>4</td>
<td>1.20</td>
</tr>
<tr>
<td>plastron</td>
<td>1</td>
<td>0.33</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>long bone indet.</td>
<td>17</td>
<td>5.69</td>
<td>48</td>
<td>14.76</td>
</tr>
<tr>
<td>indeterminate</td>
<td>101</td>
<td>33.78</td>
<td>77</td>
<td>23.19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>299</strong></td>
<td><strong>100.00</strong></td>
<td><strong>332</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Table 4a: List of identified elements per species from the fill sample.
Table 4b: List of identified elements per species from the hearth sample.

The presence of a *Canis sp.* in this sample correlates with the occurrence of gnawing on many of the bones. In most cases, the degree of gnawing is heavy. A larger percentage of the medium and large mammal fragments (including pigs and cattle) appear gnawed as compared with small mammals (including sheep/goat), probably because gnawed bones from small mammals did not preserve. These small mammal bones might have been either digested by dogs or gnawed so heavily that it is impossible to recognize the size or the shape of the fragments. There is no evidence for digested bones in this assemblage, which may suggest that this area was kept clean of fecal matter. Gnawed bones are mostly shaft fragments, rather than epiphyseal ends. It seems that these gnawed shaft fragments are the leftovers, which were discarded after the epiphyseal ends had been broken into smaller pieces or completely digested by dogs/carnivores. Consequently, it is difficult to determine whether the gnawed bones belonged to young or mature animals.

There is slightly more evidence for human modification of bones in this sample than in the hearth sample. Two bone fragments show evidence of being worked, and another was polished into a bone point (figure 18 E). The bone point is a small mammal long bone, possibly a sheep/goat metapodial. The two worked bone fragments are from sheep/goat metatarsals. One of these also has cut marks located near the distal end. In addition to this bone, there are three sheep/goat long bones with cut marks on the distal end and a medium mammal rib with cut marks on its proximal end.

The sample includes a single burnt specimen. It is identified as a radius shaft fragment of a small mammal. It is carbonized (black) on one end, while the opposite end is unburnt. The localization of the burning suggests either unintentional exposure to fire or the roasting of meat while still attached to the bone (Buikstra and Swegle 1989). The fact that no other burnt fragments are present supports the interpretation of cooking or discard patterns proposed above in the discussion of the hearth sample.

**Conclusion**

The preliminary analysis of this sample of the Ubaid faunal assemblage from Kenan Tepe provides some interesting insights into the earliest phase of Ubaid occupation at the site. It is clear that the inhabitants relied primarily on domesticated sheep and goat, with a lesser emphasis on domesticated cattle and pigs. Wild taxa, however, represent a further component of the Ubaid subsistence adaptation. Although the proportion of red
deer, turtle and fish is relatively small, the presence of these wild species points toward
the exploitation of diverse animal resources from the surrounding environment. Kenan
Tepe occupies a position overlooking the Tigris River at the foothills of the Taurus
Mountains, and based on the faunal remains, it is likely that the Ubaid inhabitants had
access to a wide array of subsistence options. It is possible to envision a community in
which caprine herds grazed on surrounding pastures, while cattle and pig, which were
well suited to the site’s environment, served as a valuable secondary food source. Wild
taxa and riverine resources provided a further supplement to the Ubaid diet in this early
period. To better understand the utilization of wild resources at Ubaid Kenan Tepe, a
coordinated analysis of microfauna extracted from samples of floors and from flotation
samples and groundstone fishing weights will attempt to clarify the role of fishing in the
community’s subsistence adaptation.

On the small scale, the comparison of the different contexts within the initial level
of Ubaid occupation has provided a means of examining variation within a single phase.
In general, the two subsamples share the same basic pattern of species and element
distribution. Although human use of this space might have changed over time, there is no
indication for a change in subsistence practices. Much of the differences between the two
samples can be attributed to taphonomic processes, and it seems that the fill sample was
subject to greater fragmentation and weathering. This has implications for how clean the
area was kept during the accumulation of the fill as well as for how long bones were
exposed to the elements or to carnivores.

The faunal assemblage from the hearth sample reveals some of the activities that
may have occurred in this area, and this is particularly valuable given that there appears
so far to be no permanent architecture in this phase. As is often stated, many processes
can produce the same result, and thus, it is impossible to identify the exact nature of the
activities that occurred in the vicinity of the hearth. However, the data suggest that
butchery or food processing were carried out in this area. Although it is also possible that
this served as a discard area either during the use or the abandonment of the site, the
presence of a hearth and associated groundstones supports the interpretation that food-
related activities occurred in this vicinity.

Due to the limited sample size the conclusions presented in this section should be
considered preliminary. Once the full assemblage of Ubaid bones has been analyzed we
will be in a much better position to make more definitive statements about food processing,
consumption patterns and animal management strategies at Ubaid Kenan Tepe.

An Analysis of the Burials from the 2004 and 2005 Field Seasons

The following section details the analysis of the skeletal remains from 17 burials
excavated during the 2005 field season and one burial excavated during the 2004 field
season. These remains were analyzed during the 2006 field season. The burials were
recovered from four separate areas of the site and span the era between the Middle
Chalcolithic (Ubaid period) and the Early Bronze (ca. 4600 – 2800 BCE). Burial context
along with the condition of remains are described below. Where possible, the sex, age,
stature and pathologies of each individual are also described. All information on the
skeletal remains was collected following the methods detailed in Buikstra and Ubelaker (1994). The morphological characteristics of the pelvis and cranium were used to determine sex. In juveniles, age was estimated primarily through the dental eruption and development patterns outlined by Ubelaker (1989). These estimates were also supported by observations of epiphyseal union. Due to the poor preservation of many of the skeletons, the age of adults was estimated using cranial suture closure (Lovejoy et al. 1985). When no other option remained, dental attrition patterns following the descriptions in White and Folkens (2005) were utilized. Where skeletal preservation allowed, stature was calculated based on equations for white males and females outlined in Trotter (1970) and Ousley (1995). It should be noted that these equations are based on modern populations and are not derived from any population specific to Mesopotamia or Anatolia. They should, therefore, be treated as gross estimates.

**Late Chalcolithic/Early Bronze Burials from Area G**

During the 2005 field season five burials were excavated in Area G (figure 3). Four of these burials were recovered from Trench G7 and, based on ceramic parallels, have been dated to between the Late Chalcolithic V (ca. 3400 – 3000 BCE) and Early Bronze 1 (ca. 3000 – 2800 BCE). The four burials uncovered in Trench G7 were all pithos (pot) burials of young children. The fifth burial was recovered in Trench G9. The dating of this burial is uncertain.

**Individual G.7.25.5**

Skeleton G.7.25.5 was in relatively good condition. The cranial bones were fragmentary with only the left occipital, right parietal and mandible showing considerable preservation. The post cranium is represented by both clavicles, the left scapula, most of the vertebrae and ribs, as well as the manubrium and both os coxae. In addition some portion of every long bone, other than the right radius, was present and only the left fibula was in poor condition. Several epiphyseal ends were also present.

The age of this individual was assessed from observing the epiphyseal union and dental development. The fusion on neural arches and the fusion of the lateral part of the occipital to the squama provide an absolute lower limit of 2 years whereas the fact that the vertebral bodies had yet to fuse to the neural arches places an upper limit of 6 years. However, based on the occlusion and full development of the deciduous dentition combined with the stage of development of the permanent dentition – the upper first molars and the upper first incisors had just initiated root development – a narrower age range of 3 to 5 years is suggested for this individual.

**Individual G.7.28.6**

Skeleton G.7.28.6 was also in relatively good condition. The face and the frontal were absent but the remaining cranial bones and the mandible were well preserved. Both clavicles were present along with the left scapula, both os coxae, and the majority of the ribs (although fragmentary). Only a few vertebrae were present, but all types were represented. As with G.7.25.5 all the long bones were present.
As with G.7.25.5 age was assessed from epiphyseal fusion and dental development. The fusion of the neural arches and the lateral part of the occipital to the squama, combined with the lack of fusion on the neural arches to the vertebral body provided an age range of 2 to 6 years for this individual. Development of the deciduous and permanent dentition, however, narrow this range to 2 to 4 years.

**Individual G.7.38.2**

Individual G.7.38.2 was in poor condition. Few elements were present and only the left femur was well preserved. Some skull fragments were present, as were some elements of the mandible, ribs, a clavicle, vertebrae, the pelvis, a radius, some metatarsals, the left ulna and right femur. Due to the condition of the skeleton, little information other than dental age could be observed. Only the upper right second molar was present from the maxillary dentition, whereas the mandibular dentition was represented by the second right incisor, the right canine and the right second molar. Despite the few teeth present, it was possible to estimate dental age based on the developmental stages of the deciduous dentition and the presence of the permanent incisors in the crypt. Based primarily on the root development of the lower right second molar and the partial eruption of the lower right canine and second incisor, this individual is estimated to have been a young infant between 1 and 2 years of age.

**Individual G.7.41.2**

Individual G.7.41.2 was also in very poor condition. Excavation only uncovered a partial fragment of the mandible, a few cranial fragments, several rib and vertebral fragments, neural arches and centrum, part of a humerus and some epiphyseal ends of the long bones. As with the previous Area G skeletons, age was determined based on dental eruption pattern and epiphyseal union. Dental eruption presents a mixed pattern for age determination. The development of the upper left first and second deciduous molars and the lower right second deciduous incisor suggest an age assignment of 8 to 16 months, whereas the development of the lower right first deciduous incisor and the upper left first permanent incisor suggest an older age assignment of 1 to 2 years. Although the neural arches of several vertebrae had fused, none of these arches had yet to fuse with the vertebral bodies. The fusion of the neural arches occurs between 2 to 4 years, whereas fusion to the centrum begins around 3 years of age. As age of epiphyseal union is more variable more weight was given to the age determined from dental development. Combining this information an age estimation of 1 to 2 years is appropriate for this individual.

**Individual G.9.5.4**

The G.9.5.4 skeleton was discovered oriented with the head to the east facing north. It was tightly flexed, lying on its right side. The right arm was below the body and bent so that the hand came up in front and covered the face. The placement of the hand in front of the face appears to have been deliberate and is a placement that can be observed in other burials.

This individual was relatively complete and in comparatively good condition. The cranium was almost entirely present except for part of the face. Both clavicles were present,
but only part of the left scapula. C1 and C2 were both present, but only a few thoracic vertebrae were recovered and none of the lumbar. Both os coxae were present, although in poor condition. All the long bones were accounted for and in relatively good condition.

Due to the poor preservation of the pelvis, the sex of this individual was determined based only on characteristics of the cranium. The nuchal crest, glabella and mental eminence were all indeterminate, however, both mastoid processes were quite robust as were the supraorbital margins. These observations, in combination with an observed overall robustness of the skeleton, suggest that this individual was a probable male. Based on the pattern of suture closure from the external cranial vault (most of the sutures showed significant or complete closure), an age range of 35 to 65 is appropriate for this individual. Based on cranial suture closure alone it is not possible to narrow this estimate, however, observations of dental wear and attrition suggest that this individual may fall in the later half of this range.

A paleopathological analysis of this individual revealed that all six lower molars were lost ante-mortem. The alveolar bone in this region had been completely remodeled such that no root sockets remain. As the maxilla was not preserved it was not possible to determine if this tooth loss was mirrored in the upper dentition. The teeth that were present all possessed heavy wear and there was an apical abscess present on the buccal alveolar surface of the lower left second premolar. Further, the medial aspect of the right acetabulum showed focal bone destruction with remodeling. No corresponding pathology was observed on the femoral head, although this was in poor condition. Along the margins of the lunate surface there was minor osteophytic lipping. The anterior surface of both patellas exhibited enthesopathies that projected inferiorly. There was also minor osteophytic lipping present around the inferior and superior margins of the vertebral bodies and minor lipping present along the palmer margins of the phalanges of the hand.

The pathological observations are all indicative of an older individual. The loss of all the mandibular molars along with the presence of the apical abscess and dental wear are indications of poor dental health. In addition, the heavy dental wear may speak to a gritty diet that would have exacerbated dental wear. The minor osteophytic lipping present along the margins of the phalanges, vertebrae, acetabulum and on the surface of the patella, all indicate that this individual had a minor case of osteoarthritis.

Late Chalcolithic Burials from Area F

In the 2005 excavation season nine burials were excavated from Area F, which lies on the northeast side of the main mound. Six of the Area F burials date to the Late Chalcolithic between 3360 and 3020 BCE. The dating of the other three burials is uncertain at this time. A tenth burial discussed here was excavated in 2004 and also belongs to the Late Chalcolithic Period. Five burials are reported from Trench F7.

Late Chalcolithic Burials from Trench F7

Four of these burials were excavated during the 2005 season at Kenan Tepe, while the fifth comes from the 2004 season. All the burials from Trench 7 are primary internments and can be dated to the Late Chalcolithic.
Individual F.7.7150.2

When this individual was excavated the positioning of the long bones suggested a crouched or flexed burial. The skeleton was extremely fragmented and a large degree of reconstruction was required to identify elements. Aside from a few small fragments of the cranium and a part of the mandible, little else was present of the skull. Although most long bones were present only a few were in good condition. The remainder of the post-cranial skeleton was represented only by small fragments of bone.

Due to the fragmentary nature of the skeleton, it was not possible to discern the sex of this individual. However, based on the stages of epiphyseal union of the long bones and dental development it was possible to provide an age range of 15 to 20 years. Both distal ulnar and radial epiphyses were open suggesting that the individual was 18 or younger, whereas the complete fusion of the medial epicondyle of the humerus and the distal end of the right femur would indicate an age older than 15. This estimation agrees with that observed from dental development. The mandibular left third molar is still in the crypt while the maxillary left third molar is still erupting. Based on the dental eruption sequence in Ubelaker (1989), this would indicate an age of 15 to 21. When the two methods are used in concert a conservative age estimate of 15 to 20 years can be assigned to this individual.

Individual F.7.7200.1

This skeleton was discovered in a pit, lined on the north, east and south sides by three separate mud bricks. There is little information that can be derived from this individual, due to the very fragmented nature of the remains. The petrous portion of both temporal bones was identifiable along with several teeth, otherwise there were several assorted unidentifiable fragments of the cranium, long bones and vertebrae. Based on the developmental stages of the dentition present it was possible to provide an age estimate of 18 months to 2 years for this individual. It is of note that this is one of the few child burials at Kenan Tepe that was not interred in a pot. However, if indeed the infant was placed in a mud brick lined pit, it is possible that this was a substitute for a pot and that the infant was, culturally, not treated differently than the other child pithos burials.

Individual F.7.7148.3

This individual was relatively well preserved. However, the entire lower torso and right arm were missing. Likely the burial was disturbed by later construction that cut through the lower half of the burial. The cranial bones are all accounted for and in good condition. Both clavicles are complete but the scapulae are in poor condition. C1 and C2 are both present along with a few other assorted cervical and thoracic vertebrae. The left arm and hand are fully accounted for and in good condition, however, only a few phalanges represent the right hand. This individual was buried in an extended position on the back with both arms bent at the elbows and the hands resting on the clavicle. The arms were not crossed over the chest but instead were bent directly up to the head with the left hand resting on the left clavicle and the right resting on the right side.

As the pelvis was not present, sex determination was based solely on the skull. Aside from the mastoid processes, which were indeterminate, all characteristics indicated
that this individual was a male. Although the pelvis is not present to support this 
designation, the fact that the remainder of the appendicular skeleton is very robust 
supports a sex determination of a probable male. Stature was estimated to have been 
between 5'5" and 5'11" based separate determinations from the lengths of the humerus, 
radius and ulna.

Due to the lack of the pelvis, age estimation was based on suture closure patterns. 
The sutures of the palate ranged from complete to minimal closure and provided a general 
age range of middle to early adult. The external cranial vault sutures are less certain but 
appear to concur with the age derived from the palate suggesting an age range of 25 to 40. 
In support of this determination, the sphen-o-occipital synchondrosis is fused, which 
indicates that this individual was at least 25 year old.

Overall this individual is very robust and lacks any observable degenerative 
changes. All muscle attachments are prominent, and at the attachment for the 
costoclavicular ligament on both clavicles there is a small rounded pit indicative of heavy 
muscle usage.

Individual F.7.7221.8

Individual F.7.7221.8 was discovered in a mud brick lined pit. The skeleton was in 
a flexed position on its left side oriented east to west and facing south. The right leg and 
foot were resting on top of the left leg and foot, while the right arm was resting on the left 
forearm. Also of note, the left hand was positioned so that it rested in front of the face. 
The skeleton was relatively complete but moderately fragmented. The majority of cranial 
bones are represented, albeit in fragments, whereas the mandible was well preserved. The 
post cranial skeleton is represented by the left clavicle and fragments of both scapulae. 
Both os coxae are present to some degree but only a few unidentifiable fragments of the 
vertebrae and ribs are present. All of the long bones and both patella are present and in 
relatively good condition.

In determining the sex of this individual it was possible to use elements of both 
the pelvis and the skull. On the pelvis, both greater sciatic notches were very wide, a 
strong female indicator, and the perauricular sulcus along with the left mastoid process 
and mental eminence of the skull tended toward the female condition. Based on this 
observed morphological pattern it was concluded that this individual was a probable 
female. The stature of this individual was likely between 5'2" and 5'6" based on the 
combined lengths of the femur and tibia.

In order to determine age multiple indicators were examined. The auricular 
surface of both os coxae had suffered some taphonomic damage, but what was observable 
presented a youthful pattern, with billowing visible on the surface and margins that was 
well defined. Examination of epiphyseal union found that while many of the epiphyses 
had fully fused the left humeral head had only undergone partial union as was the case 
with the distal tibia. In addition, the epiphyses for the head of the ribs as well as the 
tubercle had yet to fuse. The sum of these observations leads to an estimation of 15 to 22 
years based on epiphyseal union. When dental eruption was observed, the third molar had 
erupted in the maxilla, but not the mandible. In addition the erupted third molars show no 
wear at all, indicating a recent eruption. Based on the dental eruption pattern an age of 18
to 21 years would seem likely. When the total morphological pattern is taken into account it is appropriate to estimate this individual’s age as between 18 and 22 years of age.

A paleopathological analysis of this individual revealed several areas of abnormal thickness of the cranial vault. The diploe has expanded throughout the posterior portion of the frontal, the medial half of both parietals and the anterior aspect of the occipital. In all regions the diploic expansion has occurred into, but not through, the outer table as there is no observed porosity on the external surface. In some areas expansion of the diploe has also occurred into the inner table. In these regions only a very thin layer of lamellar bone is present. At this time the etiology of this process is uncertain, but will be explored further in later work.

In addition to the biological observations, of potential cultural significance is the presence of a green staining on the left mandibular corpus, the lower left dentition, the internal lamellar bone of the left third metacarpal, several phalanges and the left acromion process. The left maxillary dentition also presents a greenish tinge to the enamel of the teeth. As this burial is from the Chalcolithic it is possible that there was copper or bronze contained within the burial that deteriorated and subsequently stained the bones. Since the body was positioned such that the left hand was either next to or under the head it is possible that the left hand may have contained copper or bronze jewelry, which would account for why only the left hand and left side of the body contained the green staining.

*Individual F.7.7104.1*

Although aspects of many elements are present from this individual the informative value of the skeleton is minimal. Many of the elements are highly fragmented and all are covered in a cement-like calcium carbonate that obscures any surface detail. All cranial elements are present, but only the right temporal and parietal are relatively complete. Both scapulae are present but only the right clavicle was recovered. Both os coxae, as well as the rib cage, are represented by only by undesirable fragments. All long bones are accounted for, but only the left radius is relatively complete.

Due to the condition of the skeleton only a few characteristics of the skull remain to age and sex this individual. Sex was based on the size of the mastoids, supraorbital margin and the mental eminence. Based on the gracility of these features this individual can be classified as a probable female. Stature could only be based on the length of the radius and is estimated to have been between 5’5” and 6’0”.

Unfortunately, there are no reliable indicators of age available for this individual. In the absence of standard age indicators dental wear was utilized to provide a general age range. Dental wear is not highly reliable without a reference sample. However, based on the heavy degree of wear on the maxillary and mandibular dentition this individual is likely a middle-aged to older adult. According to the dental attrition pattern present in White and Folkens (2005) this wear pattern would suggest an individual over the age of 40 years. Also of note, the deltoid tuberosity on both humeri and the bicipital tuberosity on the left radius (the right was not observable) are very well developed. This is an indication of well-developed arm musculature. Similar indications have been observed in other individuals at this site.
Trench F9 Burial

Only one burial was recovered from trench F9 in the 2005 season. This burial dates from the Late Chalcolithic and was discovered oriented face down. The body was flexed with the arms folded up and the hands placed by the skull.

Individual F.9.9042.1

This skeleton was discovered in poor condition and highly fragmented. All cranial elements are accounted for, but none are complete and only the right arm is represented by the long bones, although most of the phalanges for both hands are present, as are the carpal of the left hand.

There are few indicators of sex available. Those present are very robust and strongly expressed indicating that this individual was most likely a male. The left mastoid process is large, the supraorbital margins are very thick and rounded and the mental eminence is square and very prominent. Unfortunately there are no age-related diagnostic elements preserved with this skeleton. Some cranial fragments show signs of open sutures and there is very heavy wear on a majority of the teeth. This suggests that the individual was a middle-aged to old adult.

At the time of death this individual had poor dental health. All teeth have a heavy accumulation of dental calculus and the crowns of both the lower and upper first molars have been completely obliterated by a severe caries. The roots of the upper first molar are also slightly atrophied. There is a large interproximal caries on the lower left first molar. It appears to have originated at the cementum-enamel junction (CEJ) and destroyed much of the interproximal region. Also as mentioned, all teeth contain heavy amounts of wear.

Analysis of the cranial fragments revealed that both the right and left frontal have a large amount of micro- and macro-porosity extending from the orbital margin to approximately three centimeters superior, covering the brow ridges and beyond. There is no sign of reactive bone at the time of death, as all margins are smooth and rounded. Minor amounts of porosity are also observable on the superior surface of the orbits, as is a worm track appearance that may represent healed coalesced foramina. In addition two cranial fragments from the frontal show possible signs of diploic expansion. Neither fragment is excessively thick and one incidence may be occurring near a suture line. In both of these fragments, however, the trabecular bone appears to have expanded into the inner table. Based on these characteristics a general description of porotic hyperostosis and cribra orbitalia is appropriate.

Finally, the posterior aspect of the left distal femur and several carpals and phalanges of both the left and the right hand show arthritic changes. The distal femur presents marked large porosity with coalescence, as well as the presence of surface osteophytes. The phalanges of the hand all present osteophytic lipping of the lateral and medial edges of the plantar surface. The lipping ranges from minor expression along each edge to a more moderate expression with curvature of the spicules. The carpals of the hand also show large degrees of porosity circumferentially on their surface. Most porosity is large (1-2mm) with a substantial amount smaller but still distinctly visible. This pattern of arthritic changes matches most closely with a diagnosis of osteoarthritis.
Trench F19

During the 2005 excavation season only one burial was recovered from Trench F-19. It is possible that this was a secondary burial based on the condition of the remains. Unfortunately at this time the dating of the burial is uncertain.

Individual F.19.4.1

F.19.4.1 consisted primarily of the cranium with some fragments of the ribs and vertebrae, along with two tarsals and eight phalanges. The cranial fragments had undergone heavy postmortem damage and only the right parietal was relatively complete. As a result of the poor condition of the remains it was not possible to estimate sex. The left mastoid process was observable and presented a small female morphology. However as this is the only diagnostic character present it is not sufficient to make a determination. Assigning age to this individual was also problematic. Only a few cranial sutures and dental wear were observable. Without further indicators it is only possible to say that this individual was likely a middle-aged to older adult, based on significant closure of the observed sutures and heavy dental wear.

There are two defects present on the skull: one on the anterior aspect of the left parietal, and the other located anterior and medial on the left half of the occipital. The defect on the parietal is quite large measuring almost 5 cm at its maximum width. The defect is roughly square with rounded corners and is a complete removal of the cranial bone at this point. Unfortunately, the surface of the bone is obscured by the deposition of calcium carbonate and at this point the defect is considered the result of taphonomic processes. The defect on the occipital is considerably smaller and only partially penetrates the external table. It is possible that this defect is pathological, but due to the condition of the cranium at present it is considered taphonomic.

As with other older individuals at the site, this individual had poor dental health. All teeth present are worn through to the dentine with several worn down to the root. The upper right second incisor also has a caries that extends from the interproximal region of the canine to cover almost half of the lingual surface.

Trench F21

During the 2005 excavation season a single burial was unearthed in Trench 21. This is one of several infant burials at Kenan Tepe. As with the infant burials in Area G, this individual was interred within a pot.

Individual F.21.6.8

This individual was highly fragmented with few identifiable elements. The cranium is represented by over 50 fragments and the long bones by over 40. Fortunately, several deciduous and developing permanent teeth were recovered making it possible to age this individual. Based on the developmental stages of the permanent dentition an age determination of 2 to 4 years is appropriate. This determination is supported by the observation that the neural arches of the vertebrae were fused but had yet to fuse to the vertebral bodies.
Two individuals were uncovered in Trench 22 during the 2005 excavation season. Both burials were disturbed and the exact temporal context is uncertain. The disturbed context suggests either post-interment disturbance and/or secondary interment.

**F.22.6.1, Individuals 1 and 2**

These individuals were found in two concentrations, one to the west and another to the east. The two crania were discovered lying back to back with Individual 1 facing southeast and Individual 2 facing northwest. The disturbed nature of the burials makes it difficult to be certain of the assignment of some elements, particularly the bones of the hands and the feet. Individual 1 was discovered lying on its back with the legs flexed and the knees turned to the north. Based on excavation notes it appears probable that Individual 1 was interred within a pit and then later Individual 2 was placed on top of Individual 1 disturbing the burial.

Both individuals were in poor condition. The cranium of Individual 1 is only represented by several poorly preserved fragments. There is no mandible present and only fragments of the right clavicle and scapula are present. C1 is complete and there are a few fragments of other vertebrae and the ribs. Both os coxae are represented by small fragments. Other than the left ulna and radius, all the long bones are accounted for, although none are well preserved. Individual 2 is likewise represented by only several cranial fragments, a small part of the mandible, fragments of the left scapula, several rib and vertebrae fragments and parts of all long bones, minus the right ulna.

It is not possible to assign sex to either individual as there are no skeletal elements preserved that can be considered indicative. In addition no long bones are complete enough to attempt a metric estimation. It is possible to provide an age estimation for Individual 1 based on dental eruption pattern and, tentatively, on dental wear. The fact that the upper left third molar is still erupting combined with the pattern of dental wear an age of 16 to 22 could be estimated. However, as both dental wear and third molar eruption time can be highly variable it is only possible to say that Individual 1 represents a young adult. Individual 2, likewise, only has dental wear to rely on as an age indicator. Based on dental wear and attrition Individual 2 likely represents a middle-aged to older adult.

**Ubaid Burials from Areas D and E**

During the 2005 excavation season two burials were recovered from Area D is located on the eastern side of the main mound. Both burials are dated to the Ubaid around 4600 BCE and were discovered in Trench 8.

**Individual D.8.90.1**

The skeleton of individual D.8.90.1 was highly fragmented and the long bones were clearly crushed postmortem. The cranium is fully represented although only the left parietal and temporal are well preserved. The left clavicle is the only bone present for either shoulder and neither os coxae is present. Both the atlas and axis are present, as are
several other fragments of vertebrae and the ribs. All the long bones are present except for the left ulna, although most are represented by small pieces.

Unfortunately, due to the preservation of the skeleton it is not possible to determine sex with any confidence. There are a few features of the cranium that appear gracile and would suggest female but this individual was clearly young and possibly still developing. As a result sex must be considered indeterminate. Age determination was possible utilizing both cranial suture closure and dental eruption. Although the cranium was fragmentary, many of the sutures were well preserved and observable. All observable sutures remain open suggesting that this individual is younger than 18 years. Dental eruption supports this determination. Most of the maxillary dentition was present except for the third molars. The maxilla was damaged at this point and it was not possible to determine if they were present at time of death or if they had yet to erupt. Both second molars were present, but show little to no wear suggesting that they had only recently erupted and that the third molars would still be developing. This pattern would indicate an age of 12 to 18 years. When dental eruption and epiphyseal union are considered an age range of 12 to 18 years is appropriate.

*Individual D.8.54.1*

The skeleton of D.8.54.1 was discovered buried within a ceramic vessel under what was likely a floor surface. The skeleton was highly fragmented, particularly the skull, and all bone had deteriorated appreciably. This individual was aged based on dental development and epiphyseal union. Examination of the dentition revealed that only the deciduous incisors had any significant root development and the lower first deciduous molars had just initiated root development. Based on this developmental pattern an age estimate of 3 to 9 months is appropriate. Observation of epiphyseal union supports this determination as there is no evidence of union in any element.

*Individual E.2.146.6*

Only one burial has been uncovered from Area E, which is located on the eastern face of the main mound. This burial was excavated during the 2005 excavation season. The burial was discovered in Trench 2 within a large pot, partially in a wall, within a cell room of *Ubaid Structure 3*. The skeleton was fairly complete, but fragmentary and had undergone heavy weathering. The cranium was in good condition but the mandible was fragmented. Both clavicles and scapulae were present as were the majority of the vertebrae. Both os coxae and the sacrum were accounted for although only the right os coxae was in good condition. All long bones, including both patellae, were present and in relatively good condition. The cranium, as well as several long bones, contains several severe areas of erosion.

Due to the relative completeness of the skeleton it was possible to base sex on characteristics of both the pelvis and the cranium. The greater sciatic notch was very wide and the preauricular sulcus on the left innominate was deep and wide. Overall the skull was gracile with a minimal expression of the nuchal crest, glabella and small mastoid processes. The supra-orbital margins were also narrow and sharp. The combination of both pelvic and cranial characteristics indicates that this individual was female. Based on
the length of the femur, tibia and fibula this individual is estimated to have been between 4’8” and 5’1”.

It was possible to age this individual from both the auricular surface and suture closure. Both auricular surfaces retain some billowing and have well defined margins. Microporosity is present on both surfaces. The overall morphological pattern suggests a placement of phase 3 to 4 based on the scoring system by Lovejoy et al. (1985), which corresponds to an age range of 30 to 39 years old. There are not enough sutures preserved to provide an actual age estimation. However, the sutures present and observable show minimal to no closure. These observations support an age estimate of younger to middle-aged adult. Based on these observations this individual was likely 30 to 40 years old at the time of death.

As with many of the recovered burials the dental health of this individual was fairly poor. The teeth are heavily worn and there is a large interproximal caries on the upper left third molar at the CEJ. The upper left third premolar has a caries on the tip of the labial cusp and the lower right third molar has a large occlusal caries on the distal-lingual aspect. Also of note, on the medial inferior surface of the left clavicle, there is an oval lytic defect at the attachment site of the costoclavicular ligament. The defect extends from the posterior corner towards the anterior border on an angle. The placement of this defect is consistent with well-developed musculature. This type of defect is similar in function to a well-developed area of muscle attachment. Rather than expanding the area of muscle attachment by bone growth, the attachment area has been extended by encroachment within the bone.

Summary

This report described the 17 burials excavated during the 2005 excavation season at Kenan Tepe, along with one burial excavated in 2004 (Table 5). Burials were recovered from four separate areas around the main mound: 5 from Area G, 10 from Area F (including the 2004 burial), 2 from Area D and 1 from Area E. The burials span the time from the Early Bronze to the Ubaid. Overall the analysis found several instances of poor dental health, arthritic changes in two older individuals, an individual with an irregularly thick cranium and an instance of porotic hyperostosis and cribra orbitalia. In addition, several individuals showed evidence of well-developed upper body musculature. Of the 18 burials 7 were of infants or young children. Regardless of time period all the children were interred within pots, except for one that was buried in a mud brick lined pit. In contrast, the adults were generally buried in a flexed position with the hands placed near or in front of the face. Future research will explore in more detail the health and burial practices at Kenan Tepe.
The Remote Sensing Survey

The goal of the 2005 season’s remote sensing work was to complete coverage of most of the site with gradiometry, to resample some of the grids collected during the 2004 field season at a higher resolution (16 samples per meter instead of 8), and to conduct a resistivity survey on the western side of the tell and in selected spots in the lower town. During the course of the 2005 field season, UTARP team members covered a total of 14 new 20 by 20 meter grids and resampled eight 20 by 20 meter grids with gradiometry. We also surveyed 11 new 20 by 20 meter grids with resistivity. The total area surveyed with gradiometry is now 8800 square meters. Another 4400 square meters were surveyed using resistivity. This coverage is equivalent to 1.32 hectares.

The high resolution coverage of two gradiometry grids showed no substantial differences from the 2004 data, so high resolution coverage was not continued. Resistivity coverage of four gradiometry grids in the lower town yielded results that mostly mirror the gradiometry data. For this reason, we did not continue with resistivity in this area. Instead we focused on the western side of Kenan Tepe’s main mound where the resistivity provided improved resolved of an apparent circuit wall first discovered in trench C5 and additionally exposed in trench C6 after gradiometry revealed its northeastward course.

Collection Conditions

During the data collection the weather was generally hot but varied from moist to dry. Due to unusual early June rainstorms, field conditions for the first few days of
resistivity included topsoil soft enough to be easily penetrated by the probes. However the last few grids became increasingly hard and we ultimately suspended resistivity work due to ground hardness. Gradiometry continued under hot and dry conditions. Dry grass and scrub brush created some obstacles to data collection but these plants were much smaller than during the 2004 season because we started earlier in the year before they had time to grow to large size.

Interpretive Difficulties

Time and resources did not permit ground truthing of the new remote sensing data during the 2005 season. Without additional ground truthing trenches, it is impossible to determine exactly what the various signals in the data indicate. Nevertheless, the new data do allow new and interesting observations that add significantly to our understanding of the remote sensing data from previous seasons. These observations are presented in the following two subsections.

Gradiometry Results

The new gradiometry results are similar to those from the 2004 season. The new work connects the gradiometry data from Area F to the western side of the high mound at Area C (Figure 19). In the new data we see additional dark linear features in the lower town, which we interpreted in our report of the 2004 season as potential pathways or geological features (Figure 20 [Parker et al. 2006:102]). A linear feature on the western slopes of the high mound corresponds in part to a circuit wall exposed in trenches C5 and C6. The new data show signals corresponding to this wall continuing and wrapping around the high mound to the southeast. To the south, signals corresponding to the probable western or outer face of this wall extend to a possible corner in grid block e455 n570 before turning southeast (Figure 21). The inner face of the wall is marked by a bipolar black/white contrast between the bricks and the clay fill to the east of the wall. This bipolar signal is seen in grid blocks e475 n590 to e495 n590. The white signal corresponding to the clay seems to curve southeast in grid block e475 n570. If these inner/outer face signals are correctly interpreted, then the wall is up to 5 to 10 m wide. During the 2004 season, trench C6 extended for several meters east to west but did not locate the western face of the wall, indicating that it is indeed at least several meters wide.

Resistivity Results

The resistivity data in the lower town mirrored the results of the gradiometry (Figure 22). In four grids in Area F to G, the data show a light colored square feature at the northeast edge of Area F, and parts of winding linear features marked by dark signals. On the western side of the main mound the resistivity data gives a nice view of the circuit wall. The relatively raw data shows a wide, light feature that curves on its inner, eastern face, but with an outer or western face that runs southwest to a corner in grid block e475n570 (Figure 23). After additional processing and filtering, the feature becomes less clear in some respects but its eastern face attains a bright white appearance (Figure 24). Based on trench C5, this white line corresponds to the interface between the brick wall and the clay fill to the east of the wall. This white line suggests that the eastern face of the
wall curves to the southeast while the western face corners as described above. The wall’s path to the northeast is not as clear. The inner and outer faces of the wall seem to continue into grid blocks e495 n610 and e515 n610 and perhaps curve to the southeast at this juncture. There is a possible break in the wall in the middle of grid block e495 n610. If this break is genuine then perhaps it represents a gate.

A single resistivity grid block at e535 n570 revealed a probable wall cornering in the southwestern quadrant of the block, and a round anomaly in the northeast quadrant of the grid (Figure 25). Based on findings in adjacent Areas A and B trenches in previous seasons, the linear signal is likely a fieldstone wall dating to the early Iron Age. The round signal may be a pile of stones or pottery, or a pit filled with dense material.

Preliminary Synthesis and Conclusions

Data gathered during the 2005 field season and analyzed during the 2006 season suggest that Kenan Tepe’s Ubaid period settlement was restricted to the eastern portion of Kenan Tepe’s high mound (Areas D, E and the lower portion of our step trench in Area A [figure 3]). Excavations in Area I suggest that Kenan Tepe’s Ubaid period settlement does not extend under Kenan Tepe’s high mound. Given these data we suggest that Kenan Tepe’s Ubaid period settlement was less than 1 hectare.

Excavations during the 2005 field season also gave us data about the chronology of Ubaid period settlement at Kenan Tepe. To begin with, excavations in trench D5 did not unearth architecture predating our *Ubaid Structure 1*. Excavations did, however, uncover a large amount of cultural debris, and several hearths were excavated well below the level of *Ubaid Structure 1*. Thus we are not in a position to say that there was any architecture earlier than *Ubaid Structure 1*, but we can conclude that there was earlier occupation. Whether or not this represents non-sedentary use of the site is impossible to say at this point. Another major issue is the latest Ubaid occupation. As outlined above, we definitely have two superimposed structures in area D. In addition to this, we have some indications that at least one of the rooms in *Ubaid Structure 2* may have been filled in with mud bricks, presumably for the construction of a later building.

From these data we can propose a tentative outline of the Ubaid period occupation at Kenan Tepe. This outline consists of four phases. The earliest phase (phase 1) is thus far restricted to the lowest levels in trench D5. These remains consist of hearths and other cultural debris. Thus far no architecture dating to phase 1 has been recovered. Our second phase includes *Ubaid Structure 1* (which was partially excavated in trench D5 during the 2001 and 2002 field seasons and which was further exposed in trench D8 during the 2005 field season). Associated with phase 2 is the outside work surface excavated in trench D5 and described in detail in Parker and Dodd 2005. Artifacts from this surface show that many domestic activities, including fishing, grain processing and weaving, took place in and around this structure. Phase 3 consists of *Ubaid Structure 2* and associated contexts. This is by far our most extensive Ubaid period exposure. It measures nearly 15 meters by 5 meters and includes what we interpret to be a number of storage rooms and at least one large outside surface. Our final phase, phase 4, is only inferred from the possible filling of part of *Ubaid Structure 2*. If this phase does in fact exist then we are likely to find it upslope.
from trenches D8 and D10. Any remains from this phase that may have existed in trenches D8 and D10 are undoubtedly eroded away. We are not yet in the position to say what the depth of time is between these phases. Nor can we say where in this provisional framework the architecture in E2 belongs. These will have to remain questions for future research.

The fact that we have now excavated parts of three structures with nearly identical cell floor plans suggests that this type of construction was common during the Ubaid period at the site and perhaps even in the region. This hypothesis is strongly supported by parallels, in both construction and in concept, in Syria and the Hatay region of southern Turkey.

The two Ubaid burials excavated during the 2005 field season and analyzed during the 2006 field season bring up several important issues. First, it is clear that the inhabitants of Kenan Tepe utilized both primary and secondary burial techniques during the Ubaid period. Whether or not the use of secondary burials reflects a less-sedentary segment of the population is at this point impossible to say. Second, both of the excavated burials were likely deposited during the construction of the buildings in which they were found. Clearly the inhabitants of these structures wanted to be close to the diseased and may even have seen this type of burial as a way of establishing a kind of spiritual ownership of space.

Although the analysis of the Ubaid faunal material is only partially complete, interesting observations can be drawn from the data compiled thus far. To begin with, it is clear that the earliest (phase 1) inhabitants of the site relied on a variety of domesticated animals for their subsistence including, first and foremost, sheep and goats, and to a lesser extent, cattle and pigs. The clustering of young and subadult sheep and goat remains in the hearth sample suggests that butchering was carried out in that area. The fact that a number of bones in the sample showed evidence of gnawing combined with the discovery of dog bones suggests that the symbiotic relationship between humans and dogs was well established at Kenan Tepe during the Ubaid period. Although domesticated species make up the majority of the sample, the inhabitants of the Ubaid village also utilized wild resources, especially fish, but probably also deer and other terrestrial animals.

The archaeological data uncovered in Area F during the 2005 season and analyzed during the 2006 season suggest a long duration of continuous local Late Chalcolithic occupation and rebuilding in the lower town of Kenan Tepe. This is most apparent in trench F7 where UTARP team members excavated five consecutive phases of architecture with mud plastered and compacted pebble surfaces whose debris – including loom weights, spindle whorls, animal figurines, grinding stone fragments, beads, andirons, and small bone needles – suggest domestic use of this area over time. We have yet to find any concrete evidence for large-scale commercial production or consumption in Area F, despite the occurrence of many large and deep pits containing heavy amounts of ash. Most likely, this is debris from fires that overtook Level 4 occupations in both the northern and southern sectors of Area F, as evidenced by burning and a wall collapse in F1 and heavy burning in F7.

Relatively large structures with 1 to 1.5 m thick mud brick plastered walls in trenches F19, F20, F22 and F2 indicate the first large-scale buildings uncovered in this area. Most previous constructions were flimsy 50 cm wide walls lacking stone foundations and any real definition as a building or room. Items such as cylinder seals
with geometric and floral motifs along with bronze pins are perhaps indicators of some social status or hierarchy. The freestanding, brick-lined burial of an adult female certainly suggests special treatment, as no other Late Chalcolithic burials such as this have been found at the site.

The lack of any characteristic Uruk materials – such as beveled rim bowls, drooping spouted bottles, and reserve slipped wares or nose-lugged jars – at Kenan Tepe is intriguing as the site lies along a major north-south corridor for movement of goods between the Taurus foothills and important downstream polities like Nineveh and Tepe Gawra. This perhaps validates the notion that Nineveh, located at the northern-most point along the Tigris where navigation downstream is feasible, served as the hub for major east-west overland routes across northern Syria to reach the Euphrates (Algaze 1986: 130; Sürenhagen 1986: 15).

Small Finds

During the 2004 and 2005 excavation seasons several interesting small finds were recovered from all areas of the site. A sampling of many of these finds, which were processed during the 2005 and 2006 field seasons, are presented here. The goal of this section is to explore how the most interesting objects fit into the overall lifeways at Kenan Tepe. Thus, artifacts are examined in categories related to use, rather than material. Because of this organization, artifact types, such as spindle whorls, are separated into the relevant time periods, and discussed with other spinning and weaving related artifacts. This results in a more comprehensive format for those interested in the artifacts as they existed in collections in time. Each represented time period has a different configuration of artifact types. The small finds emanating from Ubaid contexts are primarily related to spinning and weaving, but there is one example of a hunting tool. The two Chalcolithic small finds included in this report are a pot stand and a fragment of a stone cup, both of which are related to food preparation and consumption practices. The Early Bronze Age is represented by a number of artifacts whose function ranges from ornamentation and cooking, to possible mnemonic devices. The single Middle Bronze Age artifact presented here is related to spinning and weaving activities. Our final category for the small finds are those that cannot be assigned to a specific time period. This collection includes a possible food preparation implement, a general tool, an ornament and a cache of over 100 rock crystal, stone and bone beads.

The Ubaid period

The Ubaid artifacts described in this section are implements used during spinning and weaving and hunting (Figure 26). Representing the spinning and weaving activities, three spindle whorls discussed here have interesting impressed and incised decorations. Both the D.8.58.12 and D.10.30.8 spindle whorls are decorated on their bases with “pin prick” marks, while the E.2.18.11 spindle whorl has small vertical incised lines around its circumference. The first pin prick spindle whorl (D.8.58.12) is conical in shape with its base decorated with three roughly concentric circles of pin pricks around the center hole (Figure 26A). The ceramic fabric is chaff tempered and there is evident wear and damage
around the lip of the hole. The spindle whorl weighs 12g and has a diameter of 3.25cm and height of 1.8cm. This artifact was recovered from a large pit in an Ubaid context that also contained animal bone and pot sherds, refuse of food preparation.

The second pin prick spindle whorl (D.10.30.8) is lentoid in shape, with three concentric rings of punched holes decorating one face (Figure 26B). Due to the shape of the artifact, it is not clear which face was to be the top or the bottom. The distances between the punched holes, as well as between the rings, are irregular. The spindle whorl weighs 9.65g and has a diameter of 2.7cm and a thickness of 1.5cm. The diameter of the suspension hole is 0.45 cm.

The third ceramic spindle whorl discussed here is E.2.18.11 (Figure 26C). This hand-formed lentoid spindle whorl is decorated with a series of notches around its circumference. A break cuts away one part of the disk, and a chip eliminates a few of the notched decorations. The center hole has a pronounced lip at one opening, but a combination of chipping and wear has reduced its sharpness. The thickness of the whorl is variable. There is also evidence of burning on the surface, most likely related to production. The spindle whorl weighs 11g and has a diameter of 3.4cm with its thickness varying from 0.7 to 1.4 cm. The diameter of the suspension hole is 0.6 cm.

The final spinning/weaving artifact for the Ubaid is a bone spindle-whorl/loom weight (E.2.65.16 [Figure 26D]). This artifact is created out of trabecular bone from the head of a femur or humerus. The designation of this artifact was difficult because its shape is characteristic with what we have designated as spindle whorls in the past, but the material is distinctive. Further, larger objects (this object is twice the size of what is normally described as a spindle whorl), are generally designated as a loom weights based on size. However, this object is made out of light, trabecular bone, and while heavier than the smaller ceramic spindle whorls, it is not quite as heavy as loom weights tend to be. The artifact is circular with a truncated, conical shape. The shape and surfaces are very regular, and minimal evidence of wear is present. A small area on the bottom surface of the artifact is damaged. The artifact weighs 19.65 g and ranges in diameter from 2.7 to 4.6 cm with a thickness of 1.6cm. The diameter of the suspension hole is 1.0 cm.

The last artifact from the Ubaid period to be discussed is a hunting tool. D.5.5190.27 is a small, stemmed projectile point that was fashioned out of black obsidian and bifacially flaked. The point was carefully worked and the bottom third is a small stem, probably designed for hafting the point onto a shaft. The point weighs 2.0 g and has a length of 2.5cm by 1.0 cm for width and .35cm for thickness. The diminutive size of this point suggests that it was not hafted onto a large tool such as a spear, but onto something much smaller, such as an arrow, and possibly intended for the hunting of smaller animals, such as birds.

*Chalcolithic Period*

The Chalcolithic period is represented by two consumption-related artifacts; a stone cup and a ceramic pot stand. The pot stand (F.8.8038.4/5) was repieced from four fragments and is approximately 75% complete, missing two of the supporting arms and a portion of the base. The object is formed by a bell-shaped base merging up into a thick
column with four outstretched “arms” (Figure 26E). The shape of the artifact suggests that it was designed to support an object on top of these arms. The base of the pot stand is flat and circular, tapering up into the main shaft of the column. Just over halfway up the column there is a horizontal hole piercing the column from front to back, with a diameter of 0.8 cm. The top portion of the column is square, and the four arms radiate out evenly from the four corners. The two missing arms are broken where they would join with the column. The extant arms are knob-like in shape with smooth and rounded tips. The depth of the space created by the arms is shallow. The ceramic fabric is coarse and its surface is smooth except for chaff-temper voids. The surface is also somewhat irregular as a result of being handmade. Aside from the aforementioned breakage, there is a chip from the uppermost tip of one of the remaining arms, which also appears to have been burnt. The pot stand probably did not support large vessels, as this would have exceeded the support possible from the four small arms. The object weighs 560 g and has a base diameter of 9.3 cm and a neck diameter of 5.0 cm. The approximate height of the artifact including the arms is 13.1 cm. The maximum width between the tips of the arms, based on the two extant examples, is 9.7 cm. The width of the top of the artifact just below the extension of the arms is 6.2 cm. The arms each have an approximate thickness of 3.3 cm.

The next small find belongs either to the Late Chalcolithic period or the Early Bronze Age. Chalcolithic material was found just below this locus, but no date inferences were possible. Therefore, this find was placed in this section at the hinge point between the Chalcolithic period and the Bronze Age. G.7.6.5 is a fragmentary rim from a finely ground stone cup. The cup has a straight rim that tapers from the inner lip towards the base. Even though the fragments do not indicate the shape of the vessel’s base, the existing profile indicates a vessel with flaring walls that could form a conical cup. The stone is dark and has streaks of white running though it in various directions. It also has a fine grain and the fragments have smooth surfaces with a slight sheen. The exterior surface is covered by fine, random, vertical scratches, indicating the soft nature of the stone. The interior surface is largely covered by encrustation, thus covering any internal evidence of use wear. The cup fragments weigh a total of 55 g and have combined measurements of approximately 6 cm in length by a height of 5.3 cm. The thickness of the ground stone vessel varies from 0.45 to 0.5 cm. The reconstructed diameter of the vessel at the rim is 9 cm.

Early Bronze Age

In terms of small finds, the Early Bronze Age is the most well represented of the time periods in this report. The objects recorded here include examples of ornamentation, possible mnemonic devices, a cooking implement, a miniature “vessel,” and two tools (one of chipped stone and one of metal).

The ornamentation artifacts are represented by a shell bead, a bone pendant/tool and two metal pins. The white shell bead (G.7.7.8) is a fragment of a flat spacer bead, consisting of four parallel, conjoined tubes with one finished end preserved. The tubes are formed by grooves cut lengthwise into both the upper and lower surfaces of the rectangular bead. Each tube is perforated lengthwise by a drilled hole. The surfaces and edges have been deliberately flattened, particularly towards the finished end of the bead.
In contrast, at the broken end, the tubes retain a more rounded cross section. Similarly, the sides of the grooves are more angular at the finished end and curved/rounded at the broken end. The object may have been broken during production, thus explaining the differing levels of smoothness at either end of the bead. The natural grain of the material runs parallel to the long axis of the tubes, and in some places the surface is worn smooth to a slight sheen. The bead weighs less than 1.0 g and is 1.2 cm in length with a width of 1 cm. The thickness is 0.27 cm at the widest part of the tubes. Parallels of this artifact can be found in Oates, et al. 2001 (figure 473, no. 59[frit]); Oates, et al. 1997 (figure 225, nos. 62 and 63[frit, faience]).

The second ornamentation object is a bone pendant/tool (C.1.1131.40 [Figure 26F]). This bone artifact has been ground and fashioned into a key-shape with a hole through one end, possibly for suspension. The pierced end is circular and tapers toward a point. The point is chipped, however, and the exact shape and sharpness of the artifact cannot be known. The thickness of the object is uniform throughout, but the various surfaces reflect the orientation and shape of the bone. Along its short axis, there is a slight arc from the original bone shape, indicating that this material was taken from the shaft of a long bone, such as a humerus or a femur. The surface is polished smooth. The central hole is drilled asymmetrically, with one side deeper than the other. This indicates that the hole was biconically drilled. The hole indicates that the object could have been suspended, but there was not significant use wear to indicate that this had been the case. The object could also have been used as a tool, such as an awl, to pierce soft materials, such as leather. The artifact weighs 2.1 g, with a length of 3.5 cm and a width ranging from 1.5 to 0.5 cm from shaft to head. Its maximum thickness is 0.55 cm.

The final two Early Bronze Age ornamentation artifacts are two bronze pins, both from burial contexts. (For further information on the burials, see above.) G.7.59.1 is a long bronze pin, measuring 11.7 cm in length (Figure 26G). The head of the pin is formed into a flat fan-shape, and the tip tapers into a fine point that is now corroded. The pin’s head measures 1.15 cm in width with a thickness of 0.25 cm. Heavy corrosion covers most of the object, excluding a small part near the head, where a broken section reveals the remaining core. Without corrosion, the color of the metal based on a Munsell chart was 2.5YR 5/2 or weak red. The pin weighs 8.1 g and varies in thickness over the pin’s body from 0.2 to 0.6 cm.

The second pin was also found in relation to a burial, but from Area F. F.7.7117.7 is a thin bronze pin or needle that has been bent at a 90 degree angle in two places and gradually tapers to a point (Figure 26H). The head of the pin forms a broad, flat eye with a rounded end. The hole of the eye appears as an indentation on one side and does not pierce completely through the metal. The corrosion, perhaps deceptively, appears to be minimal. There are no exposed sections of the actual metal, and a Munsell recording of the surface color was GLEY 1 5/N gray. The pin weighs 3 g and if straight would measure 9 cm in length. The width of the head is 0.45 cm with a thickness of 0.25 cm.

To describe an artifact as a mnemonic device can be a difficult task, and it should be stated here that there have been no studies on Kenan Tepe artifacts for this type of use. However, other analyses on these types of worked sherds have been conducted and have theorized about their use as memory tools (Costello 2000, 2002). It is with these studies in
mind that we hypothesize that the following two worked sherd disks could have served a similar function.

The two worked sherd disks were recovered from Early Bronze Age contexts in Area C, on the westernmost side of the mound proper. Of the two, one could be described as a jeton and the second could represent a lid that was later worked as a jeton, or sherd disk. The first worked disk discussed is C.1.1110.6. The fabric of the artifact’s body is thick, coarse and micaceous ceramic with fine chaff temper. The disk was shaped by chipping and working a broken sherd from the original vessel into a circular shape. The jeton weighs 80 g with a diameter ranging between 5.4 and 6.0 cm, and a maximum thickness of 2 cm. Preserved on this jeton are four parallel, combed grooves that curve slightly across the object’s face. Further, two incised or punched circles are included in the design. The topmost circle is placed on top of the bottommost of the curved lines near the sherd’s edge. This indicates that the combed lines were applied first and the circles second as one overlaps the other. The second circle touches, but does not overlap the first, at the disk’s lower left-hand side. A third circle may be partially preserved at the lower left of the jeton, but that area of the object is damaged and further observation is difficult. The combined width of the four combed grooves is 1.5 cm and the diameter of the circles is 1.2 cm.

C.1.1120.4 is the second worked ceramic disk. The disk is roughly circular in shape, but only a portion of the edge is round and smooth, the rest is chipped and broken. It is unclear if the chipping was done to shape the sherd for original use (as a lid?), or if the chipping was done after breakage of the original form had occurred. At the center of the “top” of the disk is a small knob of raised clay. If this object was designed as a lid, this knob may have been part of the original design. However, there is no evidence of burning or smoke discoloration on the sherd. Therefore, if it was used as a lid, this was not in conjunction with a cooking vessel or any other vessel used over fire. If, however, this object was not designed as a lid, the “knob” could be a raised design from when this sherd was a part of a larger vessel. As with other jetons (Costello 2000, 2002), it is often the case that special designs or decorations are centered on the worked disk. This could be the case for this artifact. The bottom face has a shallow and incomplete groove running in a circle around the edge of the piece. In combination with the chipping to shape the object, this groove could have been used to guide the breakage in the formation of a disk-shape. The disk weighs 32.25 g and ranges in diameter from 5.5 to 6.3 cm. Its maximum thickness is 5.5 cm. The “knob” has a diameter of 0.9 cm and its height from the surface of the disk is approximately 0.5 cm.

The artifact related to cooking practices during the Early Bronze Age at Kenan Tepe as described here is a ceramic andiron (F.7.7173.14). This object may have helped to support vessels over or in a cooking fire, to support the fire itself, or to assist in keeping the fire contained within the hearth. The andiron was severely damaged during deposition and was recovered in fragments that have for the most part been refitted, although a good amount is missing. The base and top of the artifact are flat, elongated ovals, with a column-shaped body that is ovoid in cross section. The base surface is much rougher than that of the top, though it is unclear if this is related to use or to production. Because it was handmade, the dimensions of the andiron are variable throughout the
body. Similar to the Chalcolithic pot stand (F.8.8038.4/5), this artifact is pierced horizontally through the upper part of its body, from wide face to wide face. The surface around this hole is elevated, possibly to support the object itself around this weaker area. A small, rounded shelf protrudes from the lower part of one of the thinner sides of the column. The andiron weighs 1.18 kg and has a height of 19 cm. The base is 11 cm in length by 5 cm in width. The top of the andiron measures 8.4 cm in length with a width of 3.6 cm. The shelf on the narrow side measures 4.3 cm in length with a width of 2.2 cm. The diameter of the hole is unclear due to damage to the artifact.

Two Early Bronze Age artifacts are described here as general tools: a lithic blade and a metal wedge or awl. The well-constructed, bifacial chert blade was recovered from an Early Bronze Age context in Area G (Figure 26I). G.7.52.2 is trapezoidal in cross section with three faces on the anterior side and two faces on the posterior. Of the three anterior faces, one edge is significantly broader than the other. The more shallow edge is carefully flaked on the posterior side, the only example of retouching on the blade. Approximately 21 “teeth” have been added to this denticulate edge, creating an exceptionally sharp cutting surface. The lack of retouching on the opposite edge could indicate that this was hafted into a handle. The blade is slightly curved from tip to end due to the shape formed when struck from its core. The Munsel color of the stone registered at 10YR 4/1, Dark Gray. The blade weighs 22.4 g and measures 9.8 cm in length and 2.6 cm in width and has a thickness of 0.75 cm.

The second tool from the Early Bronze Age is C.2.2167.7, a bronze wedge tip. It is unclear what this artifact was used for, but it is wedge-shaped and could have been used for a number of awl (piercing) or chisel (flaking or stripping) activities. At the broken end of the artifact, the cross section is square, but this tapers on two sides into a wedge tip. The artifact appears to have minimal corrosion damage. The color was recorded as GLEY 4/5 G or dark greenish gray. The wedge tip weighs 3.3 g and measures 2.8 cm in length and 0.45 cm in width. The thickness of the artifact varies from 0.2 to 0.5 cm.

The final Early Bronze Age small find to be discussed does not fit easily into any category. F.7.7173.4 is a miniature ceramic “vessel” that resembles a small cup with straight sides and a flat base. There is also a small, straight hole (approximately 0.1 cm) piercing the center of the base. Because of this hole, the vessel may in fact have been an object that was suspended by a cord for ornamentation or decoration, but its actual use is a mystery. The thickness of the walls varies, as it was hand made, and the rim is fairly straight. The artifact weighs 12.2 g and has a height of 2.2 cm. The exterior diameter measured at 2.6 cm with the interior diameter at 1.9 cm. The thickness of the walls approximates to 0.4 cm.

**Middle Bronze Age**

One Middle Bronze Age small find is a spinning or weaving implement, but unlike the Ubaid examples discussed above, D.8.30.14 is a wagon wheel style spindle whorl (Figure 26J). The interesting characteristic of this spindle whorl or loom weight is that it has a thick “axel” protruding on both sides. The axle joins the horizontal disk in a smooth curve on both faces, and a hole penetrates the center of the axle, with the disk becoming thinner towards its perimeter. This style of spindle whorl, or possibly loom
weight, is different from the general conical or lentoid small spindle whorls often found at the site. This hand-formed ceramic disk shows chaff temper and calcareous inclusions. The artifact weighs 155 g and has a diameter of 8.5 cm. The axle is 4.4 cm in length with a diameter of 2.4 cm and the piercing hole has a diameter of 0.6 cm.

The final small find from the 2005 field season is a small ceramic pot filled with metal coils and beads of shell, rock crystal and bone (G.9.19.1). The vessel was recovered from an area of particularly dense fill without any other artifactual or feature context. The vessel was undecorated and no evidence of a lid or possible cover for the vessel was recovered. A brief description of the contents of the vessel follows (Table 6). Two metal coils (G.9.19.1.1-2) found inside the vessel were probably formed from lead or silver, though they are highly corroded. Four ground rock crystal pendants (G.9.19.1.2-5) were also recovered, shaped into roughly teardrop profiles with a small perforation across the top of each for suspension. The four drilled shell beads (G.9.19.1.6-9) appear to have been drilled for stringing or attachment to material rather than for suspension as the rock crystal pendants were. Two tubular or cylindrical drilled shell beads (G.9.19.1.10-12) were recovered. Two ground stone beads (G.9.19.1.11-12) of a greenish gray material, probably serpentine, were drilled lengthwise for stringing. A majority (n = 85) of the beads found in the vessel are drilled, disk beads (G.9.19.1.13-20) formed of various shades of rock crystal. Often the edges of these disk beads were chipped and ground for shaping. The colors range from translucent and white varieties through brown and reddish hues. The final bead from this cache is that of G.9.19.1.21, the bone, possibly vertebral, of a small animal that shows evidence of having been suspended through a naturally occurring hole.

<table>
<thead>
<tr>
<th>KT #</th>
<th>Quantity</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1-2</td>
<td>2</td>
<td>Broken metal coil, possibly for hair ornamentation. Probably lead or silver. GLEY 1 3/N very dark grey.</td>
<td>D=1.7cm; T=.2cm; H=2cm; WE=2.3g</td>
</tr>
<tr>
<td>2-5</td>
<td>4</td>
<td>Ground rock crystal pendants. Translucent with some imperfections. Roughly teardrop shaped with holes drilled for suspension. Beads range in color from clear transparent to transparent yellow.</td>
<td>2) H=2.6cm; WI=1.35cm; T=.95cm; WE=4g 3) H=2.65cm; WI=1cm; T=1cm; WE=2g 4) H=1.7cm; W=1.05cm; T=0.85cm; WE=2g 5) H=2.05cm; WI=.9cm; T=.6cm; WE=1.9g</td>
</tr>
<tr>
<td>6-9</td>
<td>4</td>
<td>Shell beads with hole through top portion of spiral. Allows for horizontal stringing, not suspension. Shells heavily worn and vary in size. 10YR 8/1-2 white to 7/3 pale yellow.</td>
<td>6) H=3.4cm; WI=0.5-2.1cm; WE=7.25g 7) H=1.8cm; WI=0.6-1.4cm; WE=1.8g 8) H=1.35cm; WI=1.3cm; WE=0.9g 9) H=0.7cm; WI=1.3cm; WE=0.3g</td>
</tr>
<tr>
<td>10.1-2</td>
<td>2</td>
<td>Cylindrical drilled shell beads. 10YR 8/3 pale yellow 10YR 7/3 pale yellow</td>
<td>1) H=0.85cm; D=.45cm 2) H=.8cm Both WE=0.125g, D=.4 cm</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>Cylindrical drilled stone bead, with ends cut diagonally, resembling a parallelogram. Greatest diameter in the center, tapering to both ends. Serpentine. GLEY 1 6/5G greenish gray.</td>
<td>L=2.5cm; WI=0.6-0.85cm; DH=.35cm; WE=2.75g</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>Oval drilled stone bead, with a rounded triangular cross-section. Serpentine. GLEY 6/10GY greenish gray.</td>
<td>L=1.2cm; WI=0.9cm; DH=0.25cm; WE=1.6g</td>
</tr>
</tbody>
</table>
Figurines

The 2004 and 2005 excavation seasons added 19 additional figurines to the Kenan Tepe corpus. These data were analyzed during the 2006 season. The following section will introduce these new figurines in categories based on their associated time period (Figure 27). A fourth category for figurines from insecure contexts is also included.

**Ubaid Period**

The only Ubaid period figurine found so far is E.2.145.7 (Figure 27A). This figurine originally represented a horned animal, probably a sheep or a goat. The figurine’s head broke from its body right at the join with the neck. Further damage is found on the horns, with most of the right horn/ear missing, as well as the top of the left horn/ear and a chip from the tip of the nose. The head measures 3.8 cm in width at the horns and has a maximum height of 3.3 cm. The individual horns are .9 cm wide and the head measures 2.85 cm deep from nose to back. The break at the neck where the head would have connected to a body is 2 cm in diameter.

The ceramic figurine was carefully made and formed by hand. The left horn curves forward from the head towards the pinched nose. The figurine was also painted in two colors, red-brown and gray. A red-brown collar encircles the neck on the proper right side, but is worn away on the left. Gray paint was used to indicate two eyes, a mouth and a series of small markings on the forehead. These markings continue back on the head until they stop between the horns. The horns and spotted features could represent a sheep,
goat or even a cow. However, due to the reduced snout, this figurine probably represents a spotted sheep or goat.

**Chalcolithic Period**

Figurines from the second category of figurines recovered during the 2004 and 2005 field seasons (and analyzed in 2006) were found in the lower town area off the mound on the north eastern portion of the site. This area is comprised mainly of Chalcolithic materials and dates roughly to the last half of the 4th millennium BC. All six figurines are ceramic and have sustained at least minor damage. Five of the figurines are either whole or partial animal representations, with the sixth being damaged beyond recognition. Within the general animal category, the majority of these figurines appear to represent either caprids or equids. F.1.1131.4 (Figure 27B) appears to be a representation of a wooly haired caprid, F.7.7162.4 appears to represent a recumbent quadruped that could be either caprid or small equid, and F.7.7139.4 (Figure 27C) could be a stylized equid head. The remaining two animal figurines are too general in characteristics to be applied to any specific animal category, but do seem to represent quadrupedal animals (F.2.2061.25 and F.2.2066.6).

The first of the animal figurines to be discussed is F.1.1131.4, the wooly caprid (Figure 27B). The hand-formed quadruped figurine has a thick and compact body with short and pointy rear legs. This figurine measures 3.2 cm in length by 2.1 cm in width and weighs 12 g. The ceramic fabric is very hard and the object was burned during production. Its head is missing, and the two front legs are broken off at the join with the body. There is pronounced posterior curvature with a stubby tail on top. The neck/chest area of the animal is significantly thick relative to the rest of the body. The back has a gentle curve between the neck and the tail. The majority of the animal’s body, excluding the tail, rump and hind legs, is covered with small, irregularly-shaped, impressed dots that could represent either wooly hair or pigmented spots on the animal’s coat. On the proper right side there is a clear demarcation where the spots cease just at the hind leg, while on the left, the spots continue towards and past the rear leg. These spots continue onto the animal’s underbelly. The overall appearance suggests a rather portly, hairy sheep or goat. Parallels for the surface decoration of this figurine can be found in Oates et al. 2001 (figure 489, no. 74).

Figurine F.7.7162.4. appears to best represent a recumbent quadruped, possibly either a caprid or a small equid, such as a donkey. The figurine is mostly complete, with only the tip of the right horn broken. The hand-formed animal consists of a tubular body, with appendages that appear to have been pinched with three fingers while being held upside-down. These four “folded under” legs are formed as small, pulled, ridges of clay running lengthwise on either side of the underbelly. The posterior is the widest part of the figurine’s body. After a short neck, the head faces front and was formed by pinching the clay to create a short muzzle. Two horns or ears point up and to the back, forming a wide U-shape when viewed from the front. The figurine measures 4.9cm in length by 2.9cm in width. The posterior is 1.9 cm in width, which is also the width of the horns at their widest part.
The third Chalcolithic animal figurine is F.7.7139.4, a possible horse’s head (Figure 27C). This object is handmade of a coarse ceramic fabric with heavy chaff temper. If our interpretation of the figurine as a horse’s head is accurate, the form is represented by a long, cylindrical head that extends down into a neck. The posterior portion of the figurine is broken, so further information of the shape is not possible. One side of the head is broken, while the other preserves what may be an ear. At the end of the neck, the right shoulder area is broken, but part of the left shoulder is preserved. When viewed from above, the long, narrow snout expands out at the cheek/forehead area, again mimicking the possible outline of a horse’s head. The long snout ends in a short and flattened area that would have been the nose and mouth, but which is not indicated on the figurine. The object measures 8.1 cm in length by 4.6 cm in width, with a maximum height of 5.8 cm.

The remaining three figurines are not easily classified into a taxonomic category. The first of these is F.2.2061.25, a relatively complete, handmade figurine of a quadrupedal animal (Figure 27D). The figurine is approximately 75% complete, missing the front of the torso with two short front legs, and also incurring chips to the tips of the ears/horns and the front of the face. The horizontal body is long and tubular with a slight rise indicating the posterior. The two rear legs are small pinched knobs and not proper appendages. The back slopes up through the thick neck to the head. The face seems to have been pinched together from the head, leaving a flattened area between the ears/horns. There is a pebble inclusion over the right side of the animal’s rump and the object was burnt during production. The figurine measures 4.2 cm in length by 1.6 cm in width, with the height at the head approximately 2.8 cm.

Figurine F.2.2066.6 is also that of a quadruped, but only the torso survived antiquity and further designation is not possible. This handmade figurine is missing all four legs and its head. Due to the level of damage, any interpretation of what it might have represented is not possible. Only the rise of the back into the neck and part of the left hip give any shape to the fragment. The surviving portions of the figurine measure 2.6 cm in length with a width of 1.9 cm. The height ranges from 1.3 to 1.9 cm from back to front.

The final Chalcolithic figurine to be discussed here (F.7.7162.6) is also highly damaged and cannot be interpreted as to what it might have represented. At one end there is a small circular surface (partially broken) that forms the end of a shaft. The shaft expands considerably to a globular end with six breaks indicating protruding elements now lost. There is further damage to the figurine body in the form of a long break along this main shaft. The figurine measures 4.4 cm in length and varies in width from 1.5 cm to 3.4 cm.

Middle Bronze Age

The Middle Bronze figurines were all recovered from Area D, on the eastern face of Kenan Tepe’s high mound. This period as represented at Kenan Tepe, ranges from approximately 1800-1700 BCE. Area D has produced a large number of figurines, and six more were recovered during the 2004 and 2005 excavation seasons. Of the six figurines, five are of quadrupedal animals and one appears to be a pedestaled foot from a figurine or possibly from a vessel.
The first of these handmade, ceramic figurines is D.10.4.4, representing a sheep (Figure 27E). The figurine is approximately 80% complete, missing both front legs, the tips of the ears, and a chip to the proper right side of its nose. The animal’s head is pinched into a sharp muzzle at the front and slopes downward from the ears. The portions of the surviving ears curve forward from the head towards the nose. The animal has a thick, cylindrical torso with a straight, relatively thin belly, and the back arches slightly towards the posterior. The posterior of the animal is relatively flat and it retains a short, down-turned tail. It is the tail shape that differentiates this sheep figurine from that of a goat. Goat tails tend to stand upright while that of a sheep is down-turned. The figurine is 10.3 cm in length with a maximum height at the head of 5.3 cm and a maximum width of 4.3 cm.

The D.8.2.5 figurine, however, does appear to represent a goat (Figure 27F). The quadruped figurine is hand-formed. This figurine is also approximately 80% complete, but is missing its head and left front leg. Other damage includes chipping at the inside of the right front leg, to the left side of the torso, and to the right rear hoof. The surface is irregular, but there is a slight indication of a ridge running lengthwise along the back towards the head. Most diagnostic about this figurine is again, the tail. A short, pointed tail curls up onto the back of the animal and rests off axis towards the proper left side. This sort of up-turned tail is indicative of a goat rather than a sheep. The belly of the animal is rounded and full, hanging down slightly. The back is arched between neck and tail, and the posterior is also relatively rounded into the rear legs. The maximum dimensions of the figurine are 3.6 cm in length, 1.6 cm in width and 2.3 cm in height.

The third figurine to be discussed here is D.10.11.9, a relatively large ceramic figurine of a quadruped (Figure 27G). The figurine measures 10.7 cm in length with a maximum height of 7.6 cm. It varies in width from 3.7 cm in the torso to 5.4 cm at the posterior of the animal. The figurine was damaged and is missing its right leg, as well as its head which is broken at the neck. The body is formed as a relatively slender cylinder with long narrow legs. The rear leg extends down in a straight line while the front left leg curves at a slightly forward angle and then bends down. The left front leg is significantly shorter than the rear leg. The figurine also sports a small tail.

If the D.10.11.9 figurine’s missing legs are of the same dimensions as the extant examples, when set down, the figurine would have a distinctive frontward leaning pose. There is not enough of the neck remaining to see if the figurine’s head would also match such a gesture. The longer legs suggest that this could have represented a cervid, deer, or equid, but the short tail seems to rule out any species of the horse family. A tentative identification based on the figurine’s stature and tail is that it represents a more slender animal, with long legs and a short tail, such as a deer.

The remaining two quadrupedal animal figurines from Middle Bronze Age contexts are both highly damaged, but there is enough surviving material to categorize them as animals and as having four limbs. D.10.6.5 is the smallest of the figurines, measuring 3.8 cm in length, 1.7 cm in width and 2.6 cm in height. The figurine was pieced together from two fragments and consists of a relatively narrow torso and a single front leg. For its small size, the figurine was carefully hand formed and appears to have been burnt during production. The only remaining detail of the body is that the belly of the
animal hangs down slightly, but the back is straight. The right front leg is wide in relationship to the rest of the body and splays outwards.

The last animal figurine to be discussed is highly damaged with a good amount of its surface covered in calcareous accretions, covering any distinguishing characteristics that could be present. However, despite these defects, the shape of the D.8.15.4 figurine as a quadrupedal animal is still clear. The hand-formed figurine has a long, cylindrical torso that rises noticeably towards the rear, which is also broken. A long neck extends forward at a gentle angle from the body. The head tilts downward and is formed by pinching the sides, leaving a thin nose and a flat forehead between protruding ears or horns on the side of the head. At the back of the head, behind the ears/horns is a shelf-like protrusion. The tip of the nose, proper right ear/horn, rear/tail, and all four legs are broken. Where not covered with encrustations, the micaceous fabric is marked by air holes, chaff temper, and pebble inclusions up to 0.5 cm. The figurine measures 5.6 cm in length and survives to a height of 3 cm. The body is highly damaged and only survives to a width of 1.6 cm, with the width of the head measured at 1.9 cm.

The final Middle Bronze Age figurine to be examined here is that of a pedestal from a figurine or from a vessel (D.6.72.5). The basic form is a broad, flat-based foot from which extends a rounded belly or vessel basin. The edges of this rounded area are broken, but a small amount of finished surface remains. This finished surface could represent the interior of the vessel basin. However, the most curious element is that this interior area is joined to the exterior side of the leg in one small part over the top. One possibility for the original object would be a multi-footed piece that has a circular basin set into it. The figurine measures 7 cm in height, with the body width at 5.4 cm and a thickness of 4.1 cm. The base of the foot of the figurine/vessel is 4.6 cm in length by 2.7 cm in width.

Figurines from Mixed Contexts

The following six ceramic figurines come from unclear contexts and cannot be linked to any time period. However, they still hold interesting information for the corpus of Kenan Tepe figurines as a whole and can broaden our understanding of, in this case, faunal iconography and the importance of specific animals and types of animals for the ancient inhabitants.

The first three of the mixed context figurines are all miniature in size, but appear to represent quadrupedal animals. They all have similar builds with compact bodies and short, stubby legs. Figurine D.5.5150.4 is only represented by the rear half of an animal body and has a broken tail (Figure 27H). The torso is thick and tubular, with two very short and stubby rear legs. A straight and relatively thick tail extends horizontally from the posterior of the figurine, but is broken, so the original tail length is uncertain. This figurine is also unusual for the Kenan Tepe collection in that it has an impressed anus just below the tail, measuring 0.35 cm into the body of the figurine. The figurine measures 3 cm in length by 1.6 cm in width. The maximum height is 1.7 cm.

Figurine D.9.4.9 is similar to the above D.5.5150.4 figurine in its compact size and relatively robust body frame relative to its size (Figure 27I). The figurine is approximately 75% complete, missing the neck and head of the animal. The figurine's
body is quadrupedal, and the legs are simple pinched protrusions. There is a hint of a short tail hanging between the rear legs. There is a large, kidney-shaped white stone inclusion on the proper right side resulting in some cracking and splattering. The figurine measures 2.8 cm in length by 1.4 cm in width. The maximum height is 1.75 cm. The short, compact shape of the body could represent a short compact animal, such as a pig, or instead could simply be a miniature representation of a larger, compact animal such as a bull or ram.

The third miniature figurine is that of E.2.41.1. This handmade figurine was significantly damaged and is missing its head, left front leg, and both rear legs. The tail also shows a break close to the body. The torso is tubular and roughly formed, with the right front leg created as a simple conical protrusion. The somewhat flattened back extends into a tail that curves slightly to the animal’s right side. The figurine measures 4.4 cm in length by 2.9 cm in width, with a maximum height of 2.9 cm. The body shape suggests an animal with longer legs and tail, different from what has been seen on caprid figurines. This instead could represent an animal with a more mobile tail such as a dog, cow, or horse.

The next two mixed context figurines resemble caprds or cattle in their body shapes and other distinctive characteristics. The first figurine to be discussed here is G.7.24.5 (Figure 27J). This figurine retains its head, neck and front legs. The head is most distinguished by its wide, horizontal horns/ears and two eyes that are impressed into the forehead. The mouth/snout is broken, and further diagnostic elements from the face are therefore missing. The thick neck merges into the front shoulders with little differentiation except for a groove circling the neck, possibly indicating a collar or other form of tethering. This groove does not completely encircle the neck, but stops just under the chin. Two short front legs are pinched from the bottom, both of which are broken off. The figurine measures 3.3 cm in length by 2 cm in width. The width of the horns/ears at the breaks is 2.7 cm, and the figurines maximum height is 2.4 cm. This figurine probably represents a smaller horned animal such as a sheep or goat.

The second, probably caprid, figurine from the mixed context portion of the collection is that of D.8.52.8. This figurine is hand formed to represent a very robust animal. Only the front half of the object survived deposition, and calcareous accretions cover much of its surface. The head of the animal is topped by two flattened round parts resembling curled horns or ears, and the rest of the face and mouth are formed but undefined. A flattened triangular area at the top of the head between the horns tapers as it extends into a ridge along the back. The neck is thick and extends behind the head as a thick upper bulge above the torso. The front legs are short, rounded protrusions, not extending beyond the animals body. In cross section, the torso is teardrop in shape, with the widest portion forming the animal’s belly. The figurine measures 6 cm in length with a width of 2.7 cm and a height of 2.8 cm. The width of the head measures 2.8 cm and the height of the torso at the break is 3 cm, and it weighted 69.3 g. The robustness of the overall body shape and the features of the animal’s head and neck suggest this figurine represented a sturdy, strong animal, such as a ram or a bull.

The final artifact to be discussed in this report is G.9.15.5. This figurine is highly damaged and characteristics of what it may have represented are lacking. The figurine
consists of a narrow torso, leading into a thick and rounded end with two protrusions (one partially broken) extending out from the central portion suggesting legs. A small pinched tail points up from between the figurine’s legs, and the rest of the object is formed from irregular bumps and ridges. The figurine measures at 3.5cm in length with a width at the legs of 2.6cm. The width at the smallest point of the torso is 1.1cm and its maximum height is 1.9cm. If oriented horizontally, this could represent a quadrupedal animal with a broad posterior and narrow torso. If oriented vertically, this could represent a seated figure, with legs outstretched and again the narrow torso. Without further evidence for this figurine, other analysis is not possible at this time.

These newly added figurines bring the total corpus of the Kenan Tepe collection up to 56. While there is a good deal of variation between time periods and across the site, the majority of figurines depict animals, most of which are livestock animals such as sheep, goats and cattle. Notably, none of the figurines can be identified as pigs. Future investigation into these figurines will focus on the interesting accumulation of figurines from the Middle Bronze Age contexts in area D. Information on earlier recorded figurines can be found in Parker and Dodd (2005).

Seals

During the 2004 and 2005 field seasons at Kenan Tepe, three cylinder seals and one seal impression were added to the body of glyptic and related artifacts already recovered (Figure 28). Among the already published objects from this collection were nine sealings, or pieces of clay used to “seal” an object (Parker and Dodd 2005). The majority of the Kenan Tepe sealings only retain evidence of materials used in conjunction with the act of sealing, such as cord (A.9.23.5, F.8.8007.8076, F.13.8.13, A.9.5.22.1), reeds (C.1.1070.32) and netting (F.7.7067.165). A number of these sealings also retain fingerprints, the last gesture of the action recorded in clay. In only one of these examples, however, was a seal impression recorded (A.9.5.21.1; Parker and Dodd 2005). This sealing was impressed with a geometric design, but was only partially preserved. The presence of a seal impression is very important since it not only preserves the image from the seal, but also shows what types of material were impressed with specific seals.

From the 2005 field season, a second seal impression was added to the Kenan Tepe collection (C.1.1109.14 [Figure 28A]). This example, however, was impressed on a broken piece of pottery rather than on a sealing. The original wheel-formed vessel was comprised of a coarse, micaceous, chaff-tempered fabric. It would have been a relatively sturdy and secure vessel with little surface porosity and strong, thick walls (1.45 cm). The sherd itself is triangular in shape (9.5 x 5.1 cm) and weighs 85 g. The seal’s decoration is preserved in two parallel but incomplete rolled impressions. Based on the size of the impression and its length at repetition of the image, the seal itself was probably 3.6 cm in height and 6.85 cm in circumference. Whatever its original use, the vessel was broken and the sherd was placed in a plastered floor/surface of a house in the Early Bronze age, roughly the late 3rd millennium BC.

The C.1.1109.14 impression was made when the ceramic fabric was still plastic enough to receive the impression, but not so wet as to let the seal sink into the clay. The
detail of the impression is high and the impressed lines are sharp, distinct and fairly deep. The upper and lower borders of the rolled impression do not press deeply into the vessel’s surface, but instead blend smoothly into the unimpressed portion of the sherd. As indicated by the sheen in the spaces between the impressed figures, the rolling was continuous. This sheen was created from the pressure exerted on the seal during impression. The two partial impressions, upper and lower, each contain a different part of the complete decoration. The upper rolling preserved on the sherd partially depicts the lower portion of the impression, while the lower rolling preserves a more complete depiction of the top portion of the seal. By combining the two, it is possible to create a representation of what the impression would have looked like in toto (Figure 28B).

Depicted in the seal impression is an extraordinary hunting/combat scene. Before repeating, from right to left there are three figures: a bird-man, a monster (feline?), and a stag. Only the head, chest, and arms of the bird-man are impressed in the lower rolling. The head, with a beak-like face and two feather-like projections from the top and back of its head, is seen in profile and faces to the left. A straight, thick neck joins the head to the frontal chest, which is depicted suggesting the appearance of ribs. The bird-man’s arms are both extended horizontally, but the proper left arm bends down at the elbow and the proper right arm turns up at the elbow. Both hands are shown with three open fingers/claws, with the proper right hand holding what may be a vertical staff/weapon or possibly the tail of the monster. Parts of the bird-man’s feet and possibly a portion of tail are preserved in the upper impression. The figure’s feet turn to the left. One of the feet is only preserved by the indication of a heel, while the other indicates a down-turned claw and a thick leg.

Of the monster figure, only the head and upper portion of the body are preserved in the impressions. The head is in profile, facing to the left, and is depicted as a snarling open mouth with fangs/teeth and a nondescript oblong head. The ornamentation at the back of the head suggests a protrusion, such as an ear, horn, feather or bound segment of hair. The forelegs of the monster are placed on the back of the stag, which it grasps with two-taloned appendages.

The stag can be pieced together from both the top and bottom impressions. It rears to the left, but it is difficult to determine whether its head is turned to the right to face its attacker or away to the left. A notched-horn sprouts from the top of its head and curls down and around to the right. Each leg ends in a blunt hoof. The hind legs are placed on the imagined ground line, but the stag’s forelegs are in the air, rearing from the attack. The rest of the body consists of a straight and thick torso with a rounded posterior. The monster is depicted grasping the stag at the back just below the neck.

The remaining additions to the Kenan Tepe glyptic collection are three ceramic cylinder seals, two of which date to the Chalcolithic period (F.2.2042.7 and F.7.7109.6). These two Chalcolithic seals both depict abstract geometric and/or vegetal motifs. The F.2.2042.7 seal was damaged post-deposition, leaving large chips in the seal’s surface (Figure 28C). The chips on the face are sharp, indicating that they were not present during use. The two large chips are on opposite sides of the upper decorated seal surface, and a small gash cuts part of the edge. Both sides of the seal, as well as one end, are slightly concave. The seal is perforated lengthwise by an off-center hole with displaced clay
surrounding the hole on either end, producing a messy finish. The seal is 2.4 cm in length, with a diameter ranging from 1.75 to 1.9 cm.

The seal’s decoration is contained within a band formed by two incised lines, one encircling each end of the seal. These lines are not straight, but are rather wobbly in their execution. Framed by these lines are two rows of the linear vegetal pattern. This pattern consists of repeated clusters of four or more lines that come together, but do not join or overlap near the middle of the register. These clusters then widen into a fan shape towards either of the above mentioned boundary lines. Thus, each row appears as clustering leaves, palm fronts, or perhaps reeds spreading out towards the two ends of the seal. As seen in Figure 28C, the uppermost register of the seal contains four of the line clusters, two having been damaged. The bottom register contains five of these complete clusters.

The second Chalcolithic seal (F.7.7109.6) is decorated with an incised wavy line pattern (Figure 28D). The shape of the seal is not uniform and the sides are relatively concave. The seal measures 2.9 cm in length and has a maximum diameter ranging from 1.65 to 1.8 cm. The surface of the seal is chipped, worn, and cracked in places, with calcareous accretions concealing some of the surface. Further, the ends of the seal are not flat, but slightly depressed in the center with a single hole perforating the seal lengthwise.

The seal is decorated with seven to nine incised, parallel, wavy lines that change direction across the face of the seal. The number of incised lines varies due to use of space on the seal. In some places the lines come so close that some merge together. At what was perceived as the bottom portion of the impression, angled lines are inscribed, forming multiple, stacked shapes like the top angle of a triangle. These lines were incised into the seal giving the impression of the zigzagged line motif continuing down off the register. Where the lines change directions in the main decoration, one end creates a series of sharp angles where the lines begin and end but do not always join. The middle sections drop down and then curve up, often creating thicker lines at the base of the curve. The overall appearance is a series of “u” shapes with the tips touching, rather than smoothly waving lines. Parallels for this seal can be found in Lapp 1989 (figure 1) and Porada 1970 (no. 140).

The final ceramic seal to be discussed here is D.5.5182.10 (Figure 28E). This seal was discovered in a mixed context pit, possibly dating to the Middle Bronze Age. The greatest diameter of the seal is in the central area measuring 2.05 cm. Both the top and bottom are slightly smaller in diameter. Where the ceramic surface is not marked by damage or voids, it is smooth with a slight sheen. Several cracks and chips follow the weaknesses of the incised decoration, and a white stone inclusion appears in one of the outer incised lines. An off-center hole perforates the object lengthwise.

The incised design consists of two registers of zigzagged lines framed by three horizontal lines, one each at the top and bottom as well as one horizontally bisecting the registers in the middle. In what was illustrated as the top register, the zigzag line is continuous, while in the second register the beginning and end of the pattern are not connected. Instead, two parallel incisions are left without joining into the rest of the system. Parallels for this seal can be found in Matthews (1997, no. 412).

It should be stated here, however, that this object may not actually be a seal; it might be a bead. The possible change in object classification is due to the inconsistency in
length of the artifact. The seal/bead ranges in length from 2.2 to 2.35 cm from side to side. If the object is a bead and were suspended on a cord, the effect would be like a small segment of a ring-like shape. This same discrepancy in length would also cause the object, if used like a seal, to produce a lopsided or curved impression.

With these additions, the total corpus of seals and related artifacts is increased to two stamp seals, eight cylinder seals, two seal impressions and eight possible sealings. (For further information on seals and related artifacts previously published, please see Parker and Dodd 2005). Future analysis will focus on the entire corpus of seals and related artifacts.

References Cited


Fig. 1. View of the site of Kenan Tepe facing north.

Fig. 2. Map of southeastern Turkey with enlargement showing the Upper Tigris River region with the location of Kenan Tepe.
Fig. 3. Topographic map of Kenan Tepe showing the location of excavation areas and trenches.
Fig. 4. View of trench D8 showing the remains of Ubaid Structure 2.

Fig. 5. Plan of Ubaid Structure 2.
Fig. 6. Secondary burial (L90) from Ubaid Structure 2. These remains were placed partially within cell L87 and partially within the mud bricks that made up wall L70.

Fig. 7. View of trench D10 and the southern portion of trench D8 illustrating the southern end of Ubaid Structure 2 and possible later (Phase 4) construction.

Fig. 8. Plan of Ubaid Structure 1.
Fig. 9. Plan of Ubaid Structure 3.

Fig. 10. Photograph showing Ubaid pot burial (E.2.146.6) discovered in Ubaid Structure 3.
Figure 11 descriptions

A. F19 L9 KT8 #2: Pinkish gray exterior surface (7.5YR 6/2). Black interior surface and fabric (10YR 2/1). Decorated with parallel vertical and horizontal incised lines. Fine white grit and large chaff temper.

B. F22 L4 KT3 #4: Reddish brown exterior surface (2.5YR 4/3). Dark gray interior surface (7.5YR 4/1). Dark red fabric (2.5YR 3/6). Linear incised decoration with evidence for paint and burnished exterior. Large grit temper with some fine micaceous grit.

C. F19 L12 KT2 #3: Very dark gray exterior surface (10YR 3/1). Grayish brown interior surface (10YR 5/2). Black fabric (2.5YR 2.5/1). Gray (2.5YR 5/1) painted (?) decoration beneath rim. Fine micaceous grit temper. Burnished exterior and interior surfaces.


E. F19 L12 KT2 #5: Pale yellow exterior and interior surface (2.5YR 7/3). Light yellowish brown fabric (2.5YR 6/4). Fine ware bowl (Type 7) with three parallel incised lines on exterior. Very fine grit temper.

F. F21 L2 KT4 #1: Light brown exterior and interior surface (7.5YR 6/4). Whole carinated bowl with slightly beaded rim and round base.

G. F22 L6 KT3 #1: Light red exterior surface (2.5YR 5/6). Red interior surface (2.5YR 6/6). Reddish yellow fabric (5YR 6/8) with no core. Fine ware plain rim bowl with smoothed exterior and corrugated outside surface. Horizontal burnish on exterior. Fine to medium chaff and very fine micaceous grit temper.


K. F22 L4 KT3 #1: Pale yellow exterior surface (5YR 8/4). Pale yellow interior surface (5YR 7/4). Pale yellow fabric (5YR 8/3) with little to no fine grit temper. Fine ware vessel (Type 7) with straight neck and everted rim.


N. F22 L4 KT1 #1: Pink exterior surface (7.5YR 7/4). Strong brown interior surface (7.5YR 5/6). Dense yellowish red fabric (5YR 8/8). Abrupt transition to black core (5YR 2.5/1). Medium to large white grit and medium chaff temper. Some chaff facing.

Fig. 11. Late Chalcolithic ceramics from trenches F19, 20, 21, and 22.
Figure 12 descriptions

A. F7 L7208 KT6 #2: Pink exterior surface (7.5YR 7/3). Pink interior surface (7.5YR 7/4). Reddish yellow fabric (5YR 7/6). Dense fabric with fine white grit and small to medium chaff.

B. F7 L7151 KT9 #1: Pedestaled bowl with vertical exterior burnish.


D. F7 L7208 KT6 #5: Brown exterior surface (7.5YR 5/4). Light brown interior surface (7.5YR 6/4). Reddish yellow fabric (7.5YR 6/8) grading to very dark gray core (7.5YR 3/1). Necked jar with everting rim and horizontal lug extending from rim. Coarse ware with fine to coarse white grit and medium to large chaff.


G. F7 L7151 KT26 #1: Pale yellow exterior and interior surface (2.5YR 7/3). Pale olive core (5YR 6/3). Complete fine ware (Type 7) incurved rim bowl. Very fine chaff temper. Two parallel incised lines on exterior body.


Fig. 12. Late Chalcolithic ceramics from trench F7.
Figure 13 descriptions


C. F8 L8034 KT1 #6: Light red exterior surface (2.5YR 6/6). Light reddish brown interior surface (2.5YR 6/4). Red fabric (2.5YR 5/8) grading to reddish gray core (5YR 5/2). Fine chaff and fine to medium grit temper.

D. F9 L9055 KT1 #1: Red exterior surface and fabric (2.5YR 5/6). Light red interior surface (2.5YR 6/6). Carinated cup with small beaded rim. Fine to medium chaff and mica/calcareous grit temper.


F. F8 L8034 KT1 #2: Light red exterior surface (2.5YR 7/6). Light red interior surface and fabric (2.5YR 6/6). Medium to large chaff and large black and white grit.


I. F8 8034 KT1 #4: Light red exterior and interior surface (2.5YR 6/6). Light red fabric (2.5YR 6/6). Fine to medium calcareous grit and large chaff temper. Some chaff facing.


N. F2 L2042 KT1 #4: Light brown exterior and interior surface (7.5YR 6/3). Reddish yellow fabric (7.5YR 6/6). Abrupt transition to dark gray core (7.5YR 4/1). Large, coarse chaff and white angular grit temper. Coarse ware with smoothed exterior.
Fig. 13. Late Chalcolithic ceramics from trenches F2, F8, and F9.
Fig. 14. Circular pit feature with string-cut base bowl in trench F2 (shown after sectioning).

Fig. 15. Overview of Chalcolithic Level 4 architecture.
Fig. 16. Late Chalcolithic brick-lined burial (L7221) in trench F7 facing east.

Fig. 17. Graph showing the proportion of identifiable species present in the sample analyzed.

Fig. 18. Faunal remains of particular note.
Fig. 18A. *Cervus elaphus* right metatarsal.
Fig. 18B. Heavily gnawed large mammal calcaneus.
Fig. 18C. Sheep/goat scapula with cut marks on neck.
Fig. 18D. Fish centrum.
Fig. 18E. Bone point made from a sheep/goat long bone.
Fig. 19. Combined gradiometry from 2004 and 2005 seasons superimposed on the topo and tin map.
Fig. 20. Combined gradiometry from 2004 and 2005, closer view with the 20m by 20m collection grid marked.

Figure 21. Copy of figure 20 with features marked. Features include: square feature at NE end of area F, winding linear features in the lower town, and linear features on the western side of the tell. The probable wall course in area C is marked by a dashed line for the outer face and a solid line for the inner face.
Fig. 22. Resistivity from 2005 season superimposed on the topomap with the 20m by 20m collection grid marked.

Fig. 23. Close view of raw resistivity data from the western side of the tell in Area C.
Fig. 24. Close view of processed resistivity data from the western side of the tell in Area C.

Fig. 25. Copy of Figure 22 with features marked. Features include: linear and square features in the lower town, a wall and round feature on the top of the tell. The wall on the western side of the tell is marked by a straight line for its outer face, and a curving line for its inner face where the clay layer to the east contrasts with the wall to the west.
Fig. 26. Small finds from Ubaid, Chalcolithic, Early and Middle Bronze Age contexts.

Fig. 26A. D.8.58.12 Ubaid period spindle whorl with basal pin prick design.

Fig. 26B. E.2.65.16 Ubaid period bone spindle whorl.

Fig. 26C. D.10.30.8 Ubaid period spindle whorl with basal pin prick design.

Fig. 26D. D.8.30.14 Middle Bronze Age “wagon wheel” spindle whorl.

Fig. 26E. F.8.8038.4/5 Chalcolithic period ceramic pot stand.

Fig. 26F. G.7.52.2 Early Bronze Age lithic blade.

Fig. 26G. G.7.59.1 Early Bronze Age metal pin from a burial.

Fig. 26H. F.7.7117.7 Early Bronze Age metal pin from a burial.

Fig. 26I. C.1.1131.40 Early Bronze Age bone pendant or tool.
Fig. 27. Figurines from Ubaid, Chalcolithic, Middle Bronze Age and Mixed contexts.
Fig. 27A. E.2.145.7 Ubaid period painted figurine head in the shape of a horned animal.
Fig. 27B. F.7.7139.4 Chalcolithic period figurine.
Fig. 27C. F.2.2061.25 Chalcolithic period figurine of a recumbent animal.
Fig. 27D. D.10.11.9 Middle Bronze Age figurine of a standing quadruped.
Fig. 27E. D.8.2.5 Middle Bronze Age figurine of a standing goat.
Fig. 27F. D.10.4.4 Middle Bronze Age figurine of a standing caprid.
Fig. 27G. D.5.5150.4 Mixed context figurine of a stocky animal.
Fig. 27H. G.7.24.5 Mixed context figurine of an animal with a “collar.”
Fig. 27I. D.9.4.9 Mixed context figurine of an animal.
Fig. 28. Seal and seal impressions from the 2004 and 2005 field seasons.
Fig. 28A. C.1.1109.14 impressed pottery sherd.
Fig. 28B. Reconstruction of seal impression from C.1.1109.14 impressed pottery sherd.
Fig. 28C. F.2.2042.7 cylinder seal with vegetal motif and seal impression.
Fig. 28D. F.7.7109.6 cylinder seal with wavy line motif and seal impression.
Fig. 28E. D.5.5182.10 cylinder seal with geometric motif and seal impression.