New Evidence from Neolithic to Achaemenid Periods in North-Western Iran: Excavations at Kul Tepe (Hadishahr), Second Preliminary Report (2013)

Akbar Abedi*

Department of Archaeometry, Tabriz Islamic Art University Hakim Nizami Ganjavi

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The site of Kul Tepe is located near the city of Hadishahr, in Eastern Azerbaijan Province. It is an ancient multi-period mound, having an extension of about 6 hectares and rising 19 meters above the surrounding land. The second season of archeological excavations at the site, carried out in 2013, aimed at clarifying its chronology and its settlement organization. In the meantime it aimed at elucidating fundamental questions concerning the transition process from Late Chalcolithic to Early Bronze Age, at identifying different cultural horizons (including Proto-Kura-Araxes and Kura-Araxes I periods) and also at outlining cultural conditions of the region during prehistoric and historic periods. The present paper exposes briefly the main stratigraphic, architectural and material data from the site. On the basis of the results from the first and the second seasons of excavation, it is argued that Kul Tepe possessed cultural material pertaining to Late Neolithic/Early Chalcolithic (Dalma), Late Chalcolithic (Pisdeli=LC1; LC2 and LC3=Chaff-faced Ware), Proto-Kura-Araxes and Kura-Araxes I, Early, Middle, Late Bronze Age, Iron III, Urartian and Achaemenid periods.

Keywords: *Kul Tepe, Northwestern Iran, Radiocarbon dating, Prehistoric period, Updated Chronology.*

Introduction

The site of Kul Tepe (E 45° 39' 43" - N 38° 50' 19"; 967 m asl; Figures 1:1-2, 2) is located near the city of Hadishahr, 10 kilometres further to the south of the Araxes River. Kul Tepe is a multi-period mound about 6ha in extent and rising 19m above the surrounding land. The site was originally discovered by an expedition to the East Azerbaijan Province in 1968 under the supervision of Kambakhsh Fard (Kambakhsh Fard 1968), and was later reported by Kleiss and Kroll, Kroll, Edwards and Omrani (Kleiss and Kroll 1992; Kroll 1884; Edwards 1986; Omrani 1994). Kul Tepe is located precisely in the north-western corner of Iran, which represents the gateway between southern Caucasus and northwestern Iran. It is about 50 km from the famous site of Kültepe of Nakhchivan. Kul Tepe is located next to a broad valley, at the core of the highlands and the crossroads of major routes linking the Iranian plateau to Anatolia and the Caucasus to Northern Mesopotamia (Figure 1:2). This strategic location is further enhanced by the region's wealth in natural resources, which include rich copper and salt deposits. The first season of excavation at Kul Tepe was carried out in June-August 2010 (70 days of fieldwork) (Abedi *et al.* 2014). Because of the huge presence of materials and deposits more soundings and excavations were needed for a better understanding of the cultural situation of the region. A second season of excavations was conducted during August-October 2013, to complete the understanding of the region and extend the area to be studied.

A History of Archaeological Research in the Northwest Iran

The initial excavation in north-western Iran concerning to Kura-Araxes culture was made by Prof. Earp who opened four Bronze Age tombs in 1903 (Crawford 1975) and T. Burton-Brown who spent six weeks excavating in eight separate trenches at the prehistoric site of Geoy Tepe in western Lake Urmia in 1948 (Burton-Brown 1951). Their works continued with new methodologies by Charles Burney whose work was focused on the very famous site of Yanik Tepe. With his excavations

*Corresponding author. E-mail address:akbar.abedi@tabriziau.ac.ir

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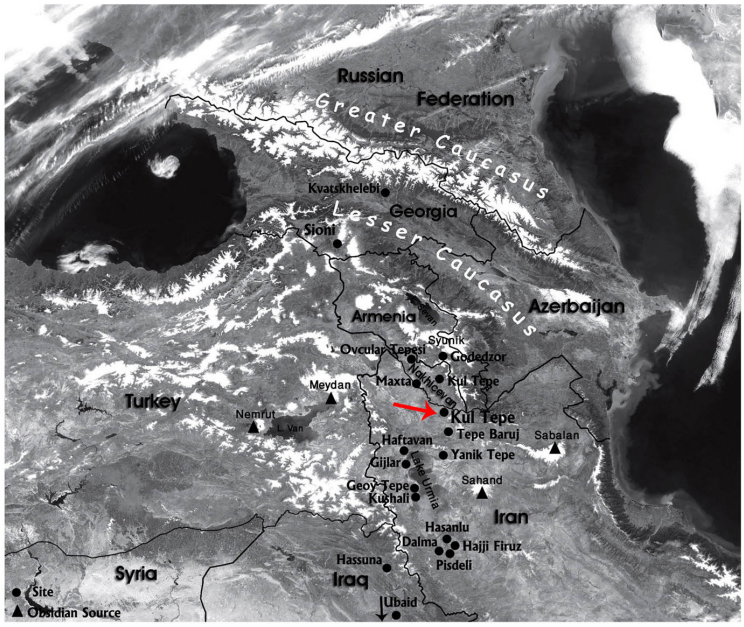


***Fig. 1:1**. General view of Kul Tepe; view from north; **Fig. 1:2.** Map showing the locations of Kul Tepe with the sites mentioned in the text*

at Yanik Tepe, Charles Burney gave us the first evidence for the Kura-Araxes culture in north-western Iran (Burney 1961a, 1961b, 1962,1964; see also Summers 2013b).

Long-term archaeological investigations in north-western Iran continued at other sites such as Hasanlu in the western Lake Urmia region, directed by Robert Dyson (Dyson 1965, 1968, 1972; Dyson and Muscarella 1989), Hajji Firuz (Voigt 1983), Dalma (Hamlin 1975) and Pisdeli (Dyson and Young 1960). Studies subsequent to these early excavations led to the identification of the Late Neolithic period in Hajji Firuz (sixth millennium BCE), previously regarded as belonging to the cultural horizon of Hassuna in Mesopotamia (Voigt 1983). Chalcolithic cultural material excavated at Dalma (5000–4500 BCE) was also comparable with that of the Halaf and Ubaid cultures in southern Mesopotamia (Oates 1983). The Dalma period

was followed by Pisdeli Culture (4500–3900/3800 BCE), which was contemporaneous with the Late-Ubaid/Post-Ubaid horizon. Geoy M/Gijlar C culture (4000–3500 BCE) represents the final phase of the Chalcolithic period in north-western Iran, excavated and reported from Gijlar, Geoy M and Trench M at Yanik Tepe (Helwing 2004). The material culture Yanik (Kura-Araxes), which takes its name from the Bronze Age site of Yanik Tepe, belongs to the Early Trans-Caucasian or Kura-Araxes culture (second half of the fourth to end of the third millennium BCE), which spread through the Caucasus and the Urmia Basin. Its origin is unknown, but it has been documented in the valleys and foothills of three Caucasian republics (Azerbaijan, Armenia and Georgia), as well as north-western and western Iran, eastern Anatolia and the Levant (Sagona 1984; Kushnareva 1997; Rothman 2003; Batiuk 2005; Kohl 2007; Abedi *et al.* 2009; Gopnik and Rothman 2011; Batiuk 2013). During the final phase of prehistory in north-western Iran, this region experienced the Middle and Late Bronze Age culture (2200/2000 to 1500 BCE) known as Urmia Ware, including painted monochrome and polychrome pottery. In the first half of the second millennium BCE, Urmia Ware extended over the Urmia Basin and has been found in Haftavan VIB (Edwards 1981, 1983, 1986). Despite the general similarity between Urmia Wares, different regional names are used; for example, in eastern Georgia pottery of this type is known as Trialeti-Vanadzor culture (Smith *et al.* 2009), in Azerbaijan as Uzarlik culture (Kushnareva 1986), and in Armenia as Karmirberd-Sevan culture (Abedi *et al.* 2009).

In addition to the abovementioned projects in north-western Iran, other excavations and surveys carried out during recent decades in the Lake Urmia Basin included Geoy Tepe (Burton-Brown 1951), Kordlar Tepe (Kromer and Lippert 1976; Lippert 1976), Tepe Dinkha (Dyson 1967a; Hamlin 1974), Haftavan Tepe (Burney 1970a, 1970b, 1972, 1973, 1974, 1975, 1976a, 1976b, 1979a; Edwards 1981, 1983, 1986), Tepe Ahranjan (Tala´i 1983), Tepe Gijlar (Pecorella and Salvini 1984, Belgiorno *et al.* 1984), Kul Tepe of Marand (Kroll 1990), and Gol Tepe (Tala´i 1984). In addition, surveys were undertaken in north-western Iran (Kambakhsh Fard 1967, Soleki 1969, Soleki and Soleki 1973, Swiny 1975, Pecorella and Salvini 1984), the Salmas

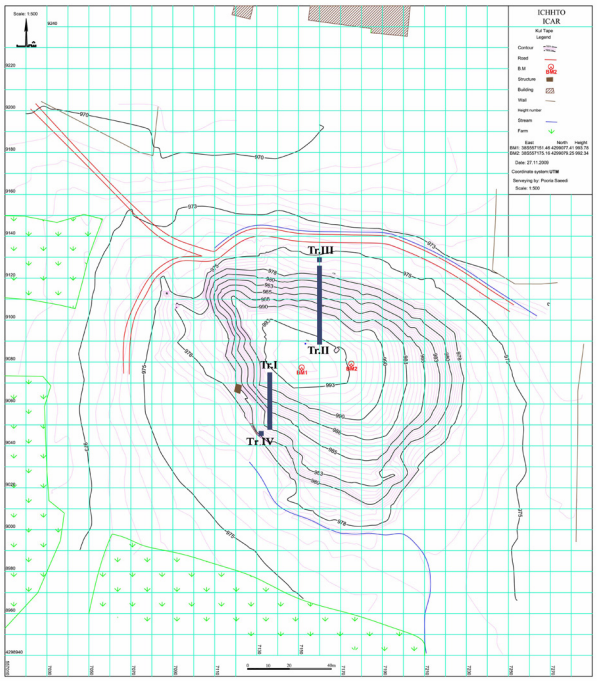


Fig. 2: *Topographic map of Kul Tepe; location of trenches during 2010 and 2013 excavations*

valley (Kearton 1969, 1970) and the Solduz plain (Dyson 1967b), around Lake Urmia (by a German team) (Kleiss and Kroll 1979, 1992, Kroll 1984, 2005) and in the Meshkin Shahr area (Burney 1979b, Ingraham and Summers 1979). Since the 1979 Revolution in Iran, archaeological research has included Early Bronze Age settlement patterns and site distribution in north-western Iran (Omrani 2006, Omrani *et al.* 2012, Summers 2013a), survey in Eastern Azerbaijan province (Biscione and Khatib Shahidi 2006, Khatib Shahidi and Biscione 2007), systematic survey at Tepe Baruj (Alizadeh and Azarnoush 2003a, 2003b) and the Mughan plain (Alizadeh and Ur 2007), and excavations at Lavin Tepe (Nobari *et al.* 2012), Nader Tepesi (Alizadeh 2007), Qosha Tepe in the Meshkin Shahr area (Nobari and Purfaraj 2005), Kohne Pasghah Tepesi (Maziar 2010), the Iron Age cemetery of Masjed Kabood in Tabriz (Nobari 2000 [1379], 2004 [1383]), Qale Khosrow and Ardebil Survey (Azarnoush *et al.* 2006), Qalaychi and Tepe Rabat (Kargar 2005, Kargar and Binandeh 2009), Zardkhaneh of Ahar (Niknami 2011), and Köhne Shahar (Ravaz) (Alizadeh *et al.* 2015). Apart from these excavations and surveys, there have also been many others still waiting proper publication.

The main problem for archaeology in north-western Iran is the lack of systematic and intensive excavations and surveys and the shortage of reliable publications, as well as inaccurate and un-calibrated dating of old excavations, as well as a shortage of multidisciplinary works. During recent years, most excavations in north-western Iran took place in the course of salvage and dam archaeological projects. In this present paper we will try to briefly describe the main stratigraphic, architectural and material data from second season of excavation at Kul Tepe Hadishahr.

Field Methodology

Prior to excavation, the site and parts of the sounding area were surveyed and mapped, and a grid system of 10×10 m squares was superimposed on the site (Figure 2). One of the first things we did was try to track occupation by looking at the distribution of potsherds in different parts of the site, while also selecting the best places for soundings. Excavations at Kul Tepe were conducted from August-October 2013 (60 days of fieldwork). The initial aims were to establish the periods of occupation and to obtain a stratigraphically controlled ceramic sequence for the Jolfa region and the northern part of north-western Iran. More specifically, Kul Tepe was excavated for two main reasons:

1) To determine the presence of Late Chalcolithic followed by Early Bronze Age occupation levels;

2) More importantly, to test the presence of a probable "transition" period between the Late Chalcolithic and Early Bronze Ages and the existence of Proto-Kura-Araxes and Kura-Araxes I periods.

Excavations at Kul Tepe were conducted in four trenches across the site: Trench I and IV, opened on the southern part of the mound; and Trenches II and III, on the northern slope of the mound. Trenches I (Figure 3) and II were small (ca. 2×2 m) stepped trenches, and Trench III and IV (Figure 4) were a 2×2 m deep trench. Trenches I, II and III were opened during the first season and unfinished step trench I and deep trench IV continued during the second season of excavations.

Trench I is a 2 m-wide step trench oriented south-north along the southern slope of the mound. Six steps were made during the first season of excavation. Thirteen metres of excavations revealed Early, Middle and Late Bronze Age, Iron III, Urartian and Achaemenid levels. Everything below the 8 m from bench mark point contained Early Bronze Age materials. We were unable to reach virgin soil in Trench I during the first season (Figure 3). Trench II was located on the rough 15 m-high section which had been created by bulldozing into the northern slope of the mound. It is a 2 m-wide step trench oriented south-north and continues as Trench III, a 2×2 m deep sounding. Finally, Trench II reached with eight steps the surface of Trench III. The sequence of the site comes from the step trench (Trench II) and deep trench (Trench III), which covered a very reliable 24 m stratigraphic sequence for the site. Also Trench IV is a deep trench opened during second season and exactly opened at the end of Trench I and revealing more than 27 m of archaeological evidence and materials of the site from fifth to first millennium BCE cultures of the region (Figure 4).

All identified finds, artefacts, and faunal remains were collected and properly stored. Environmental sampling during the evaluation targeted a representative range of contexts from each phase and focused on contexts with high potential for botanical survival. The site code Kul.T.J.2013 has been assigned to all works undertaken after the excavation. This code is used to label all recording sheets, plans and finds. All archaeological finds from the excavations remain at the Kul Tepe Archaeological Project's camp in Hadishahr.

Kul Tepe: Stratigraphy and Sequence

The first and second seasons of excavation established eight main occupation periods so far. They correspond to the Late Neolithic / Early, Middle and Late Chalcolithic; Early, Middle



Fig. 3: *Step Trench I; stratigraphic section of Trench I sounding*

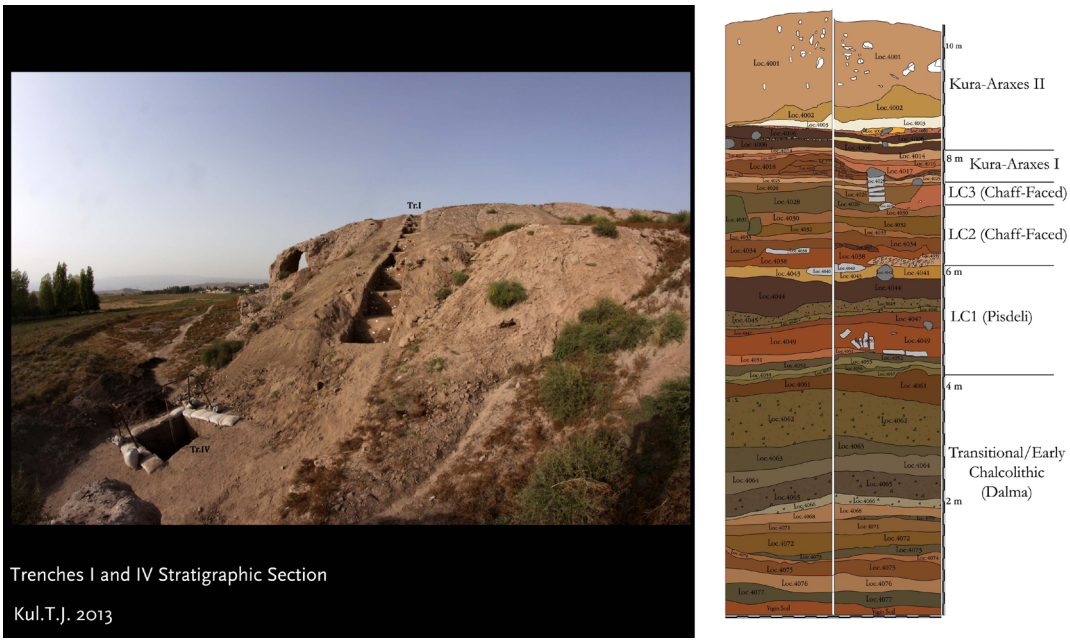


Fig. 4: *Deep Trench IV; stratigraphic section of Trench IV soundings*

and Late Bronze Age; Iron Age III, Urartian and Achaemenid periods (Abedi and Omrani 2015; Abedi *et al.* 2014) (Figure 4).

1. Kul Tepe VIII (5000–4500 BCE): Early Chalcolithic (Dalma)

The lowermost and earliest layers of Kul Tepe, which cut down into the sedimentary virgin soil (at a depth of 10.4 m) are related to the Early Chalcolithic period, known as the Dalma/Hasanlu IX period in north-western Iran's chronological table. According to the stratigraphic section in Trench IV, 3.7 metres at Kul Tepe were related to this period (Figure 4).

Buildings

Only one architectural phase and structure was brought to light in these layers, at a depth of 6.7 m from the radix point of Trench IV. It consists of post-hole signs of structure made of pisé and about 22 cm in diameter and 5 cm depth. According to whole structure of this Locus, it seems to be a tent-like structure with wattle and daub building, used during this period.

Ceramics

A total of 696 potsherds were recovered from Period VIII (Dalma) layers in Trench IV. All the pottery is hand made. The pottery is characterised by chaff (137 = 20%) and mixed (549 = 80%) temper. Most of the sherds are well fired (430 = 62%) although there are some under-fired potsherds (266 = 38%). The surface colour is generally characterised by a whitish/yellowish slip (10YR 8/2, 8/3) on the external surfaces. The range is from greyish brown to pink, but the most common colours are shades of very pale brown, pink and reddish yellow. More specifically, the hue of the Dalma Sherds of Kul Tepe falls on Munsell colour charts 5YR, 7.5YR and 10YR. The colours of the monochrome ware ranged from red (10R 6/8; 2.5YR 6/6, 6/8; 5YR 6/4, 6/6; 7.5YR 7/6) (Ext. 61 = 9%; Int. 44 = 6%), grey (7.5YR 6/1, 5/1, 7/1; 5YR 6/1, 7/1) (Ext. 231 = 33%; Int. 224 = 32%) and buff (10YR 5/2, 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, 8/3, 8/4) (Ext. 181 = 26%; Int. 127 = 18%), to pink (2.5YR 6/4, 6/6, 6/8; 5YR 6/6, 6/8, 7/6, 7/8; 7.5YR 7/6, 7/8; 10R 8/3, 8/4) (Ext. 20 = 3%; Int. 4 = 1%), brown/reddish brown (2.5YR 5.6; 5YR 5/1, 5/2, 5/3, 5/4, 5/6, 7/6; 7.5Yr 5/2, 5/3, 5/4, 6/4) (Ext. 85 = 12%; Int. 145 = 21%) and blackened (Ext. 25 = 4%; Int. 11 = 2%). The core of the wall is dark, ranging from grey to very dark grey. Most of the potsherds have a slip treatment (Ext. 345 =

Table 1. *Sequence of Kul Tepe according to 2010 and 2013 Excavations*

Kul Tepe Periods	Cultural Phases	Range (cal BCE)
VIII	Late Neolithic/Early Chalcolithic (Dalma)	5000 — 4500/4400
VII	LC1: Pisdeli /Hasanlu VIII = Post-Ubaid period	4500/4400 — 4350
VIB	LC2: Chaff-Faced	4350-4000
VIA	LC3: Chaff-Faced	4000-3750
V	Kura-Araxes I	3400/3350-3000/2900
IV	Kura-Araxes II, III	3000/2900-2600/2500
III	Middle Bronze Age (Urmia Ware)	2600/2500-2200
II	Iron Age III, Urartian	c. 8th-6th cent.
I	Achaemenid	c. 5th cent.-330.

50%; Int. 324 = 46%) although surface that has been treated with wash (Ext.162 = 23%; Int. 172 = 25%), burnished surface (Ext. 107 = 15%; Int. 86 = 12%) and wet-smoothed (Ext. 0 = 0%; Int. 12 = 2%) was applied in most cases. Other examples have no surface treatment (Ext. 82=12%; Int. 102 = 15%). Wet-smoothed surfaces are matte and have fine ridges as well as fingerprints; the surface was therefore wiped with the hand while it was wet or plastic (Figure 5).

In terms of decoration, comb and groove design (22 = 3%), chaff-faced (41 = 6%) excised (12 = 1.7%), and geometric painted pottery (40 = 6%) are predominant in the assemblage, but most of the potsherds are undecorated (577 = 83%). As far as comb and groove design is concerned, before firing the surface of the vessels has been scraped with a brush or a comb-like tool. In excised decoration, circular or oval knobs have usually been applied below the rim of bowls and jars. Nine broad categories and forms are distinguishable: bowls, pierced bowls, rail rim bowl; jars, jars with everted rims, pierced jars, necked jars, rail rim jars and jars with vertical comb design bases (Figure 5). Brown and black painted geometric decoration are attested on the exterior surfaces of the vessels, while a thin band of paint is applied around the top of the rim. The painted designs are made up of large geometric elements vertically and repeated in sequence around the vessel wall. The designs are all linear, and include chevrons, parallel oblique lines, parallel lines, diagonal lines, crosshatched triangles and squares. In a rare sample the pattern resembles an abstract animal design (Figure. 5).

Lithics

Almost all the lithic industry of this period in Kul Tepe is in obsidian, though there are rare flint and chert pieces. Obsidian was brought to Kul Tepe in the form of nodules, blocks, and blanks and was processed locally, as suggested by numerous waste and core fragments. A lot of tools are found; for example, flakes, blades, scrapers, borers and points. Many sickle blades, displaying gloss on one edge,

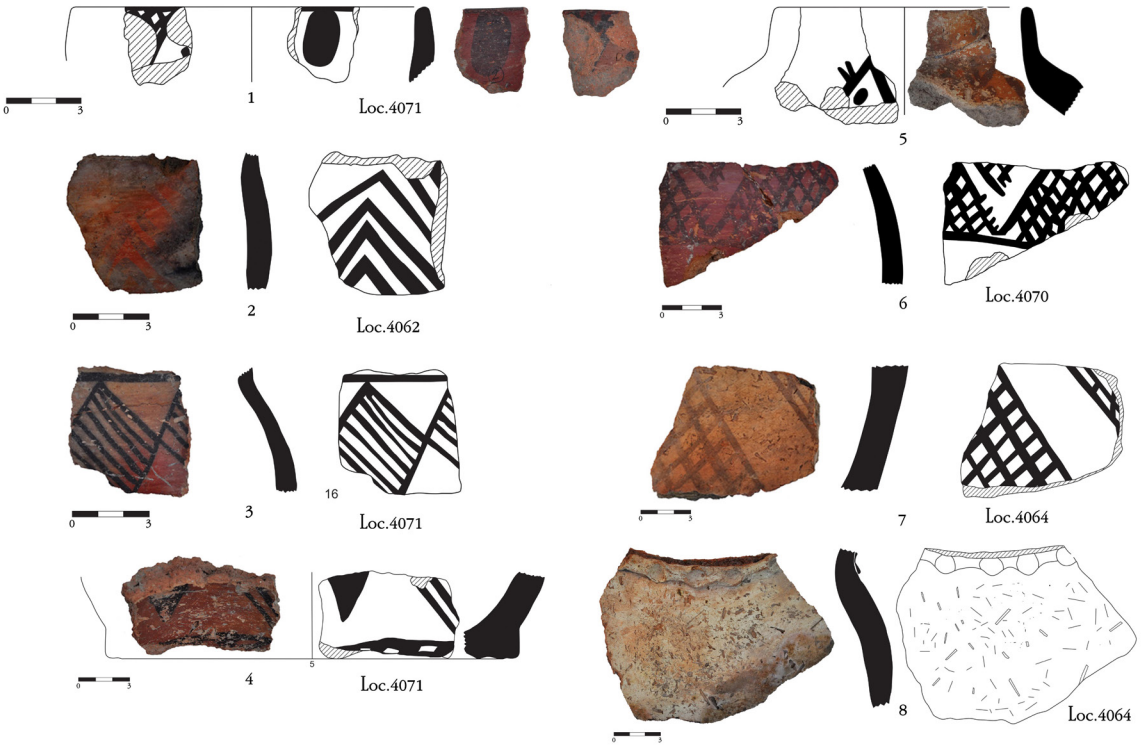


Fig. 5: *Kul Tepe VIII (Dalma) Pottery, Tr. IV*

are present. Utilised flakes and blades as well as side-scrapers and sickle blades appear with greatest frequency in *chaîne opératoire* of Kul Tepe.

Other artefacts

Spindle whorls, bone and ground stone artefacts are found during this period. During the second season more than 11 bone awls (Fig. 16: 7-8), two spindle whorls and one pestle were brought to light. Among the most interesting findings of this period are three clay objects of unknown application, although it seems they may be something like figurines (Figure 17: 1-2).

2. Kul Tepe VII, VIB and VIA: Late Chalcolithic: Introduction

Late Chalcolithic layers were discovered in the deep sounding (Trench III and IV) without any gap after the Dalma materials. According to pottery type, form, design and surface treatment as well as on the basis of the sequence in which they occur, and to other Late Chalcolithic materials of Kul Tepe, three sub-phases have been identified: Kul Tepe VII=Pisdeli (LC1=Post-Ubaid), Kul Tepe VIB= LC2 (Chaff-faced/Chaff-tempered), and Kul Tepe VIA=LC3 (Chaff-tempered) cultures.

2.1 Kul Tepe VII(4500–4200 BCE) (Pisdeli= LC1 Post-Ubaid)

The lowermost layers of the Late Chalcolithic (LC1, Post-Ubaid: 4500–4200 BCE) include black-on-buff so-called Pisdeli type painted pottery. The stratigraphic section in Trench IV indicates that 1.8 m of Kul Tepe deposits relate to Period VII (LC1) (Figure 4). According to C14 absolute radiocarbon dating, a date around 4500–4200 BCE for Period VII at Kul Tepe is suggested.

Buildings

Three architectural phase were recovered from this period, related to a rectangular mud-brick structure (57 x 33x 7 cm) found at a depth of 6.4-6.15 m from the radix point of Trench IV. Only parts of the structure were revealed, in the southern and south-eastern parts of the trench. Another important structure (Locus. 4042) is a stone-built rectangular structure that appeared 5-4.85 m from radix point of Trench IV. It was built from irregular stones with 157 cm length in dimension.

Ceramics

A total of 791 potsherds were recovered from Period VII (Pisdeli) layers in Trench IV. Most of the pottery is hand-made (785 = 99%). The pottery is characterised by chaff (214 = 27%), grit (3 = 0%) and mixed (574 = 73%) temper. Most of the potsherds are well fired (494 = 62%) although there are some slightly under-fired potsherds (297=38%). More specifically, the hue of the Pisdeli sherds of Kul Tepe falls on Munsell colour charts 5YR, 7.5YR and 10YR.The colours of the monochrome ware ranged from red (10R 6/8; 2.5YR 6/6, 6/8; 5YR 6/4, 6/6; 7.5YR 7/6) (Ext. 44 = 5%; Int. 34 = 4%), grey (10YR 6/1, 6/2; 7.5YR 5/1, 6/1, 7/1; 5YR 6/1, 7/1) (Ext. 261 = 33%; 288 = 37%) and buff (7.5YR 8/2, 8/3; 10YR 5/2, 5/3, 6/2, 6/3, 7/2, 7/3, 8/2, 8/3, 8/4) (Ext. 254 = 32%; Int. 175 = 22%), to pink (2.5YR 6/4, 6/6, 6/8; 5YR 6/6, 6/8, 7/6, 7/8; 7.5YR 7/6, 7/8) (Ext. 84 = 11%; Int. 106 = 13%), brown/reddish brown (2.5YR 5.6; 5YR 5/1, 5/2, 5/3, 5/4, 5/6, 7/6; 7.5Yr 5/2, 5/3, 5/4, 6/4) (Ext. 69 = 9%; Int. 137 = 17%), black (5YR 2.5/1; 7.5YR 2.5/1; 10YR 2/1) (Ext. 7 = 1%; Int. 12 = 2%), and blackened (Ext. 32 = 4%; Int. 30 = 4%). The core of the wall is dark, ranging from grey to very dark grey. Most of the potsherds have a slipped surface (Ext. 582 = 73%; Int. 540 = 68%) often washed (Ext. 70 = 9%; Int. 79 = 10%), burnished (Ext. 29=4%; Int. 28=4%) or wet-smoothed (Ext. 6 = 1%; Int. 18 = 2%). Other examples have no surface treatment (Ext. 104 = 13%; Int. 126 = 16%) (Figure. 6).

In terms of decoration, comb and groove design (33 = 4%), chaff-faced (49 = 6%) excised (5 = 1%), incised (9 = 1%), rail rim (2 = 0%), impressed (4 = 0%) and geometric painted pottery (8 = 11%) are predominant in the assemblage, but most of the potsherds are undecorated (675 = 85%). In the case

of the combed and grooved decoration the surface has been scraped with a brush or a comb-like tool before firing. In the case of the excised decoration, circular or oval knobs have usually been applied below the rim of bowls and jars.

Nine broad categories and forms are distinguishable: bowls, pierced bowls, rail rim bowl; jars, jars with everted rims, pierced jars, necked jars, rail rim jars and jars with vertical comb design bases.

Other artefacts

Bone and grinding materials (pestles, mortars, etc.) constitute other objects in the assemblage. During this season two frith ferrite stone beads, clay figurines, saj, pestles, spindle whorls, bone awls and interesting stone vessels (Figure 16: 2) were brought to light, representing and important evidence for understanding northwestern Iran's inhabitants subsistence.



Fig. 6: *Kul Tepe VII (LC1) Pisdeli type pottery*

Brown and black paint was used to apply geometric designs on the exterior surfaces of the vessels. Usually a thin band of paint is applied around the top of the rim. The painted designs consist of large geometric elements arranged on vertical axes and repeated in sequence around the vessel wall. The designs are all linear, and include chevrons, parallel oblique lines, parallel lines, diagonal, crosshatched triangles and squares (Figure. 6).

Lithics

Like the preceding Kul Tepe VIII Period, during Period VII obsidian lithic artefacts again constitute the main part of the chaîne opératoire. Almost all the lithic industry of this period in Kul Tepe is in obsidian (more than 95%). Utilised flake and blade is the most common tool in the assemblage.

2.2 Kul Tepe VIB and VIA: Introduction

Two main periods can be distinguished, mainly based on ceramic evidence but supported by additional information from other kinds of artefacts. They are LC2= Chaff-faced Ware: 4200–3900 BCE, termed Kul Tepe VIB, and LC3=Chaff-faced Ware: 3900–3700, termed Kul Tepe VIA. According to the stratigraphic section in Trench IV, there are 1 and 1.10 meters of deposits related to Kul Tepe Periods VIB (LC2) and VIA (LC3) respectively (Figure. 4). The chronological framework presented here is based on three lines of evidence:
1) Rim and decoration typology (embedded within the stratigraphic sequence)
2) Pottery technology
3) Radiocarbon dates.

Lithics

Most of the lithic artefacts from Late Chalcolithic at Kul Tepe are made of obsidian. Almost all of the lithic industry of this periods is obsidian (more than 90%), although there are some rare chert/flint specimens. The number of utilised flakes increased during this period, although artefacts like the utilised blade, utilised bladelet, notch, denticulate, side-scraper, end-scraper, burin, point, and sickle blades have also been used.

2.2.1 Kul Tepe VIB (LC2= Chaff-faced Ware) (4200–3900 BCE)

Buildings

Two architectural phases belonging to LC2 were uncovered during the excavations in Trench IV. They consist of two rectangular mud-brick structures, identified at a depth of 4.45 m from the radix point of Trench IV. One of these structures is rectangular, measuring 56×33×7 cm, with an approximately northeast-southwest orientation. This structure is made of two rows of mud-bricks measuring 55x35x10 cm, reaching the western section of the trench (Figure 7: 1-2) The other structure pertaining to this period is close to and parallel to the previous one; it is oriented northeast-southwest as well and includes a 130x35 cm pisé structure (Figure 7: 2). Pottery pavement in Locus 4039 is one of the important phenomena during this period (Figure 7: 3). It is obvious that in such narrow trenches possible vestiges of architecture may be traced only in a very limited manner. The fragmentary state of the various remains makes it difficult to properly interpret architectural features and, consequently, the artefacts found in association with them.

Ceramics

A total of 282 potsherds were recovered from Period VIB (LC2) layers in Trench IV. Most of the sherds are under-fired (173 = 61%) although there are some sherds with well fired (109 = 39%) signs. All of the pottery is handmade and characterised by chaff (10 = 4%), mixed (268 = 95%) and grit (4 = 1%) temper. In chaff-tempered cases, the fabric is tempered with fine to medium chaff, which invariably produces a chaff-faced effect. The colours of the ware range from grey (10YR 6/1, 6/2; 7.5YR 5/1, 6/1, 7/1; 5YR 6/1, 7/1) (Ext. 47 = 17%; 60 = 21%) and red (10R 6/8; 2.5YR 6/6, 6/8; 5YR 6/4, 6/6; 7.5YR 7/6) (Ext. 73 = 26%; Int. 306 = 30%) to pink (2.5YR 6/4, 6/6, 6/8; 5YR 6/6, 6/8, 7/6, 7/8; 7.5YR 7/6, 7/8) (Ext. 22 = 8%; Int. 106 = 13%), buff (7.5YR 8/2, 8/3; 10YR 5/2, 5/3, 6/2, 6/3, 7/2, 7/3, 8/2, 8/3, 8/4) (Ext. 94 = 33%; Int. 77 = 27%), black/blackish (5YR 2.5/1; 7.5YR 2.5/1; 10YR 2/1) (Ext. 3 = 1%; Int. 29 = 10%), brown and light-brown (2.5YR 5.6; 5YR 5/1, 5/2, 5/3, 5/4, 5/6, 7/6; 7.5Yr 5/2, 5/3, 5/4, 6/4) (Ext. 12 = 4%; Int. 11 = 4%), and orange. The section can be monochrome (brown, reddish-brown and buff) but in most cases shows a grey core.

Most of the potsherds have a slip treatment (Ext. 133 = 47%; Int. 111 = 39%) although surfaces treated with either an orange or a brown wash (Ext. 134=47%; Int. 152=54%) or burnishing (Ext. 2 = 1%; Int. 2 = 1%) are attested. Other examples have no surface treatment (Ext. 10 = 4%; Int. 14 = 5%). In this assemblage, combed pottery is typical. Combed and grooved (28 = 10%), high chaff-faced (16 = 6%), excised (4 = 2%) and incised (5 = 2%) are the predominant decoration techniques in the assemblage, but the majority of the potsherds are undecorated (225 = 80%). In the case of the combed and grooved decoration the surface has been scraped with a brush or a comb-like tool before firing. In the case of the excised decoration, circular or oval knobs have usually been applied below the rim of bowls and jars.

Nine broad categories and forms are distinguishable: bowls, pierced bowls, rail rim bowl; jars, jars with everted rims, pierced jars, necked jars, rail rim jars and jars with vertical comb design bases (Figure. 8).

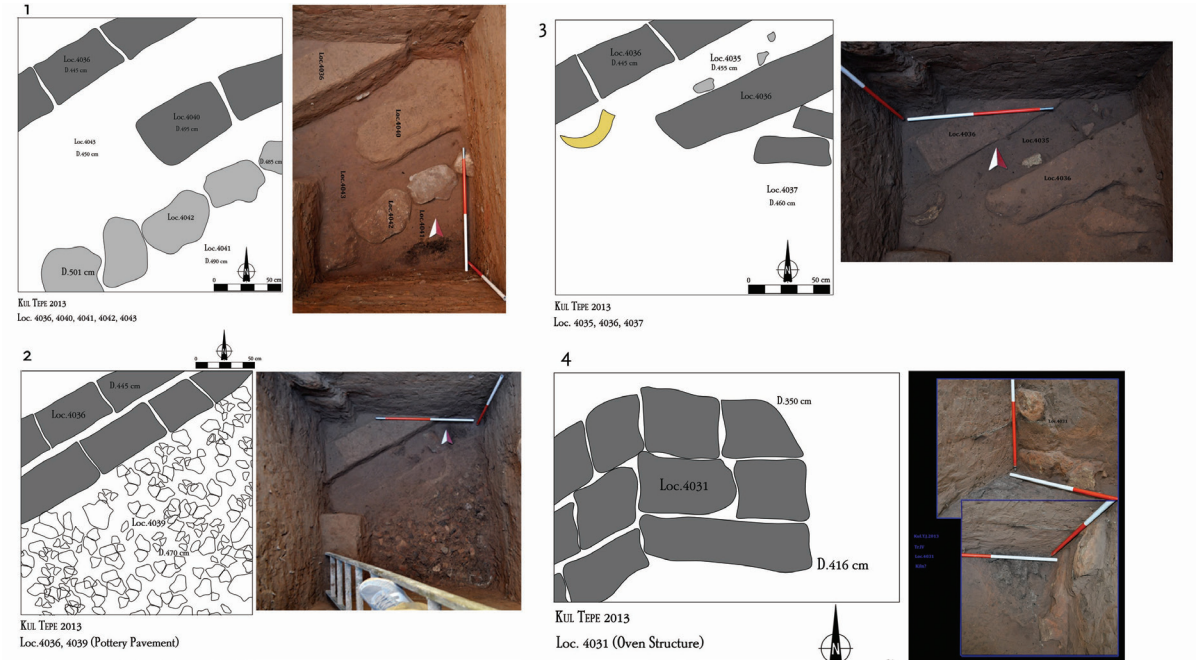


Fig 7: *Late Chalcolithic architectural structures*

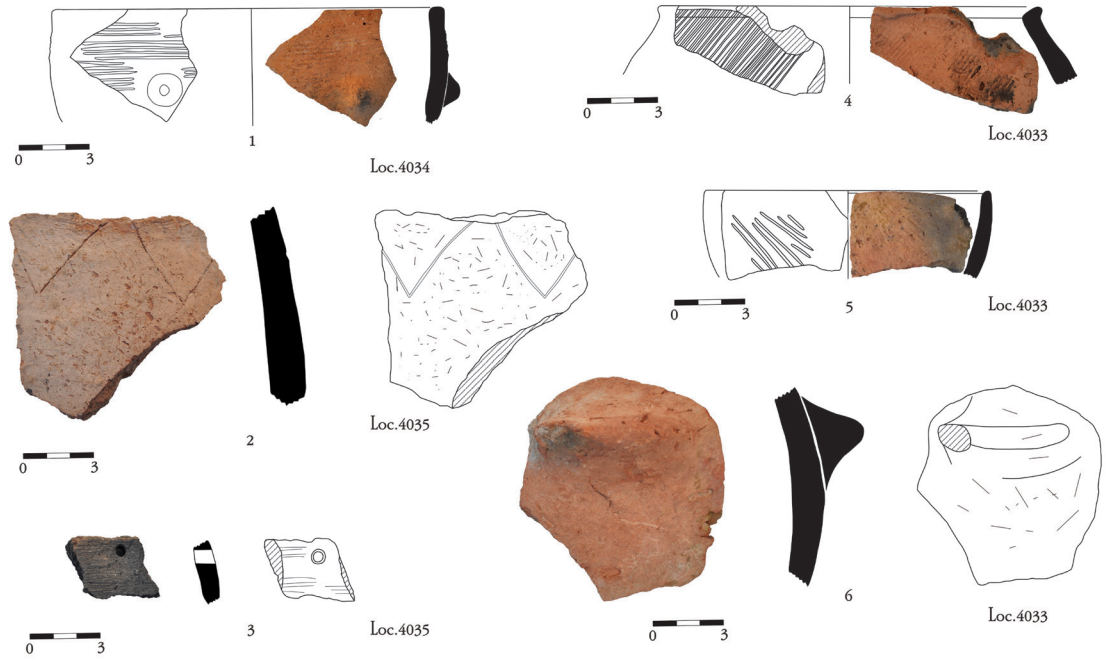


Fig. 8: *Kul Tepe VIB (LC2) chaff-faced type pottery*

2.2.2 Kul Tepe VIA (3900–3700BCE) (LC3= Chaff-faced Ware)

Buildings

One main architectural phase was unearthed at the Kul Tepe phase VIA in Trench IV. This structure (Locus. 4031) is a mud-brick oven that appeared at the depth of 350-416 cm from the radix point of Trench IV. It was built from three rows of 50 x25 cm mud-bricks. It is completely heated and the colours of the mud-bricks range from yellow to burnt brown (Figure. 7: 4). Unfortunately, due to the limitations of excavation in Trenches II, it is impossible to discuss further the architecture of this period.

Ceramics

A total of 371 potsherds were recovered from Period VIB (LC2) layers in Trench IV. Most of the sherds are under-fired (199 = 54%) although there are some sherds with well fired (172 = 46%) signs. All the pottery is handmade and characterised by chaff (9 = 2%), mixed (351 = 95%) and grit (11 = 3%) temper. In chaff-tempered cases, the fabric is tempered with fine to medium chaff, which invariably produces a chaff-faced effect. The colours of the ware range from Grey (10YR 6/1, 6/2; 7.5YR 5/1, 6/1, 7/1; 5YR 6/1, 7/1) (Ext. 83 = 22%; Int. 90 = 24%) and red (10R 6/8; 2.5YR 6/6, 6/8; 5YR 6/4, 6/6; 7.5YR 7/6) (Ext. 48 = 13%; Int. 53 = 14%) to pink (7.5YR 7/3, 7/4, 8/2, 8/3, 8/4; 5YR 7/3, 7/4, 7/6; 2.5YR 6/4, 6/6, 6/8; 5YR 6/6, 6/8, 7/8; 7.5YR 7/6, 7/8) (Ext. 102 = 27.5%; Int. 103 = 27.75%), buff (7.5YR 8/2, 8/3; 10YR 5/2, 5/3, 6/2, 6/3, 7/2, 7/3, 8/2, 8/3, 8/4) (Ext. 92 = 25%; Int. 83 = 23%), black/blackish (5YR 2.5/1; 7.5YR 2.51; 10YR 2/1) (Ext. 16 = 4%; Int. 8 = 2%), brown and light-brown (2.5YR 5/4, 5/6; 5YR 4/3, 4/4) (Ext. 21 = 6%; Int. 34 = 9%), blackened (Ext. 6 = 2%; Int. 0 = 0%) and plum (Ext. 2 = 0%; Int. 0 = 0%). The section can be monochrome (brown, reddish-brown and buff) but in most cases shows a grey core. Most of the potsherds have a wash treatment (Ext. 219 = 59%; Int. 243 = 66%) although a slip treatment (Ext. 134=36%; Int. 100=27%) and a burnished surface (Ext. 7=2%; Int. 1=0%) is attested in most cases. Wet-smoothing (Ext. 4 = 1%; Int. 4 = 1%) is used in rare cases. Other examples have no surface treatment (Ext. 7 = 2%; Int. 23 = 6%). In this assemblage, combed pottery is typical. Combed and grooved (22 = 6%), excised (4 = 1%) and incised (5 = 2%) are the predominant decoration techniques in the assemblage, but the majority of the potsherds are undecorated (225=80%). In the case of the combed and grooved decoration the surface has been scraped with a brush or a comb-like tool before firing. In the case of the excised decoration, circular or oval knobs have usually been applied below the rim of bowls and jars. Nine broad categories and forms are distinguishable: bowls, pierced bowls, rail rim bowl; jars, jars with everted rims, pierced jars, necked jars, rail rim jars and jars with vertical comb design bases (Figure 9).

Other artefacts

Grinding material (pestles, mortars, querns, hand-stones) alongside bone awls and stone bead (Figure 16: 6), constitute other findings from Kul Tepe during this period. Special finds have been brought to light from Late Chalcolithic layers that resemble artefacts like weight scales.

3. Kul Tepe V: Kura-Araxes I; The Evidence of Early Stage of Kura-Araxes Culture at Kul Tepe; Kura-Araxes I (3400/3350 –3100/3000 BCE) Period; ***Change or Continuity?***

An important, enigmatic and in some cases problematic phase at Kul Tepe is the Kura-Araxes I period. Kura-Araxes I or Kul Tepe V period has been reached only in a narrow sounding. According to both the ceramic assemblage and radiocarbon dates, these earliest levels of Kura-Araxes culture at Kul Tepe can be dated around 3350-3100/3000 BCE. About 3.5 m of layers in the stratigraphic section of Trench III include this transitional period (Figure 4). “The Kura-Araxes I period” is currently almost a vague term, because we know little or nothing about the cultural and social processes taking place in the first quarter and the middle of the fourth millennium BCE in north-western Iran and the Southern Caucasus.

Kul Tepe’s pottery repertoire shows some changes and continuity between the painted pottery

of Pisdeli, Chaff-faced Ware and subsequent monochrome black/brown burnished ware of the Kura-Araxes I. One of the most interesting discoveries was the fact that the Kura-Araxes I strata were directly preceded by the earlier LC3 occupation level at the site. No gap in occupation and stratigraphy is indicated. But there is a gap of about 300-350 years between this two periods.

A most interesting discovery was the fact that these Kura-Araxes I strata were directly preceded by the earlier LC3 occupation level at the site. No gap in occupation is indicated. A crucial phase at Kul Tepe is the Kura-Araxes I (Period V), because



Fig. 9: *Kul Tepe VIA (LC3) chaff-faced type pottery*

we know little or nothing about the first stage of the Kura-Araxes culture in North-Western Iran. The Kura-Araxes I phase was evidenced only in Trench IV (Figure 4). These strata (ca. 1 m thick) were directly overlaying the earlier Late Chalcolithic occupation, but the absolute radiocarbon dates show a 300-400 year chronological gap occurring between the two phases.

Another important finding during this period were huge matt signs in different layers of Trench IV, most likely were reminiscent of wattle and daub structures of the Kura-Araxes I period in NW Iran.

Buildings

A main phase of architecture is attested by the remains of a heated structure (oven?) (70 cm in diameter and 25 cm in depth) (Locus.4024), which belongs to the Period V (318-340 cm deep in Trench IV).

Ceramics

The bulk of the Kul Tepe V pottery (828 ceramic potsherds) can be described as including a monochrome burnished ware that occurs alongside with Chaff-faced or Chaff-tempered pottery reminiscent of the Chalcolithic traditions. The latter can be interpreted as evidence for a probable transition from Late Chalcolithic to Kura-Araxes I, since some elements of the Late Chalcolithic are also visible in the Kura-Araxes I (Figures 10-11). The pottery shows variety in shape and mainly consists of: simple jars with incised decoration; deep jars with an S-shaped profile, high, pronounced shoulders and an everted rim; large jars with slightly concave profiles on wide flat and concave bases. The other pottery types include: jars with a narrow neck and everted rim; jars with a cylindrical neck, an everted rim and Nakhichevan-Lug (Figures 10-11).

"Manufacture" refers to the method of constructing a vessel. A distinction is made between hand-made pottery (805 = 95%) and pottery that made with tournettes or slow-turning wheels (23 = 5%). Most of the Kul Tepe V pottery is hand-made. Temper is defined as grit (217 = 23%) and mixed (558 = 67%) temper. During this period the frequency of grit inclusion increases dramatically. Several kinds of surface treatment were applied for in the case of the Kul Tepe V (Kura-Araxes I) pottery. Most of the potsherds have a burnished surface (Ext. 176 = 21%; Int. 83 = 10%) and some of them indicate the use of slip (Ext. 353 = 43%; Int. 324 = 39%) and or wash (Ext. 274 = 33%; Int. 365 = 44%) treatment. Some samples show no treatment (Ext. 4 = 1.79%; Int. 6 = 2.7%). "Colour" refers to the exterior surface colour of a potsherd or a vessel. The range of colours of the Kul Tepe V pottery is limited to seven categories: grey, black and red, buff, pink, brown and blackened. The range of colours of this pottery assemblage was broadly defined by using the Munsell Soil Color Charts. More specifically: Grey (7.5 YR 6/1; 10YR 5/1) (Ext. 270 = 33%; Int. 295 = 36%), black (Ext. 120 = 14%; Int. 43 = 5%), and red (5YR 6/6, 5/8; 2.5YR 5/6, 5/8) (Ext. 114 = 14%; Int. 137 = 17%), to buff (7.5YR 8/2, 8/3; 10YR 5/2, 5/3, 6/2, 6/3, 7/2, 7/3, 8/2, 8/3, 8/4) (Ext. 138 = 17%; Int. 92 = 11%), pink (7.5YR 7/3, 7/4, 8/2, 8/3, 8/4; 5YR 7/3, 7/4, 6/6, 6/8, 7/6, 7/8; 2.5YR 6/4, 6/6, 6/8; 7.5YR 7/6, 7/8) (Ext. 85 = 10.25%; Int. 113 = 13.65%), brown (5YR 5/4, 5/6) (Ext. 93 = 11%; Int. 145 = 17%), and blackened (Ext. 7 = 1%; Int. 3 = 0%).

Small Finds

This period is important in NW Iran chronological table because this is the starting point of the very famous Kura-Araxes culture. During this period two portable hearth have been brought to light for the first time in NW Iran. Other finds include spindle whorls, clay figurines and grinding material (pestles, mortars, querns, hand-stones). Grinding slabs and pestles made of basalt have surfaces smoothed and polished by use; the nearest sources of basalt are found in the Alamdarchai River, 4-5 km from the site.

4. Kul Tepe IV (3000–2500 BCE): Kura-Araxes II-III (Early Bronze Age)

At Kul Tepe, ca. 2.6 m of the archaeological deposits excavated in Trench IV and ca. 10.85 m

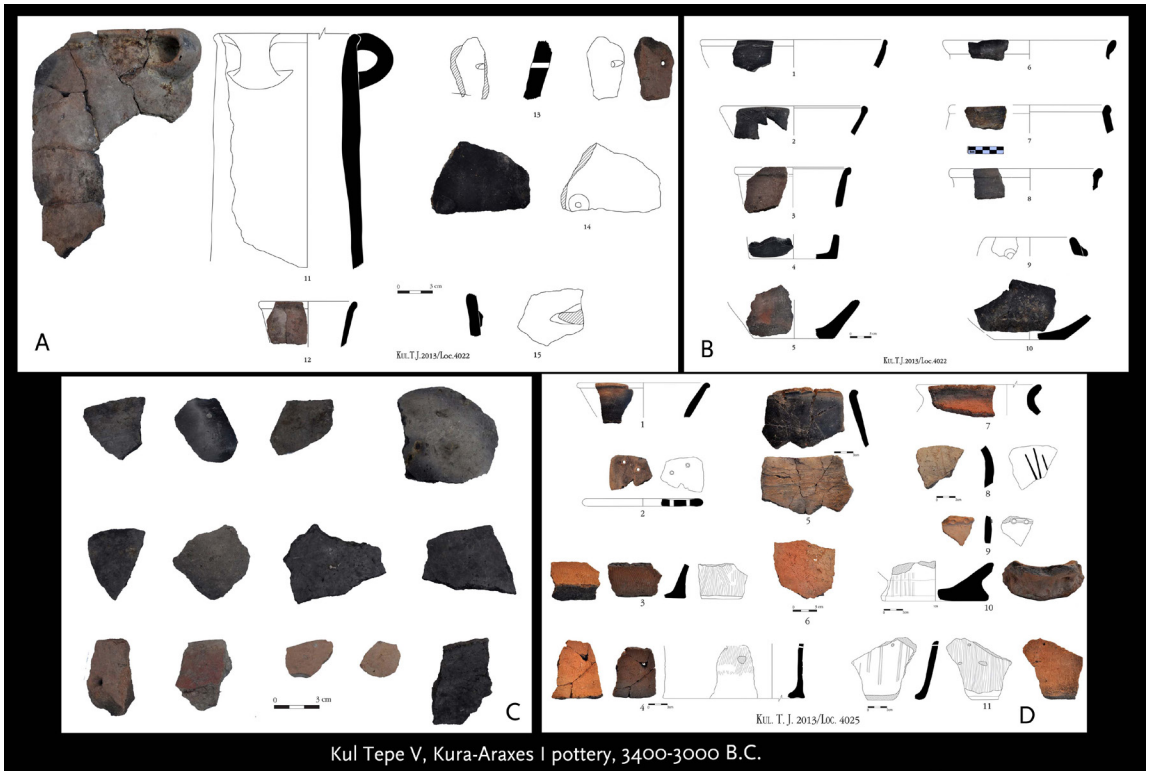


Fig. 10. *Kul Tepe V (Kura-Araxes I) pottery*



Fig. 11. *Kul Tepe V (Kura-Araxes I) pottery*

of the deposits in Trench I (Kura-Araxes II and III layers) were found (Figures 3-4). A total of 13.45 m of the 27 m of Kul Tepe cultural deposits belong to Kur-Araxes II and III layers. Finds included: 1) diagnostic Grey-Black Burnished Ware; 2) typical circular house/circular shaped buildings of mudbrick, wattle and daub and stone; 3) standardised horned animal figurines; 4) military and ornamental bronze objects; 5) standardised stone obsidian tools.

Buildings

The second season of excavations in Trenches IV and I should be considered as a collection of architecture in Kura-Araxes culture at Kul Tepe, since 19 building phases were excavated in Trenches IV and I. 19 building phase includes five stone-built (four round structures and one rectangular), and 14 mud-brick and pisé structures (five circular mud-brick and nine rectangular structure) (Figure. 12-13). Apart from mentioned structures and features three typical oven, two kiln and four mud-brick platform have been brought to light during this period in Trenches I and IV.

Ceramics

A total of 1025 ceramic potsherds and several complete vessels were recovered from the Kura-Araxes II and III layers at Kul Tepe. While the most part of Kul Tepe IV pottery is hand-made (1023 = 99%), some fragments (1%) bear traces of slow-turning wheel. Grit-tempers are prevailing (664 = 65%) and some other sherds are mix tempered (35%). Several kinds of surface treatments were applied on the Kul Tepe IV pottery. Most of the sherds have a burnished surface (Ext. 304 = 30%; Int. 129 = 13%), while some sherds are slipped (Ext. 322 = 31%; Int. 689 = 67%) or, rarely, washed (Ext. 382=37%; Int. 140=14%), while only a minority of sherds lacks treatment (Ext. 20 =2%; Int. 55 =5%). The range of colour of the Kul Tepe IV pottery is limited to fourcategories: grey, black and red, buff and brown (Figure 14).

Small Finds

According to 13.45 m archaeological deposits during Kul Tepe IV, various objects appeared during different phases. An extraordinary find of the second season was a cylinder seal dated back to 2800 BCE (Kura-Araxes II period). This is the first time that a cylinder seal is reported from a Kura-Araxes archaeological horizon (Figure. 15). Other special and small finds of Kul Tepe IV includes ten animal figurines (ram and bull), two stone beads and one marble bead, grinding material (pestles, mortars, querns, hand-stones; more than 26), two portable hearth typical of the Kura-Araxes culture, five spindle whorls, two bone awls, one complete miniature vessel. Apart from mentioned materials, three bronze objects alongside with three slags have been brought to light during the second season of excavations. Five typical complete Kura-Araxes ware appeared from Kul Tepe IV.

SCIENTIFIC ANALYSES

Radiocarbon Dates

Forty-seven and 101 dating samples were collected during the first and second seasons of excavation in order to outline a 14C chronology for the sequence of occupation at the site. Sixteen samples from the Chalcolithic and Early Bronze Age periods were submitted to the Università del Salento, Dipartimento di Ingegneria dell'Innovazione, Centro di Datazione e Diagnostica (CEDAD) laboratory. A total of six dates have been obtained till now and processing of the other samples is in progress. All the radiocarbon samples were dated using Accelerator Mass Spectrometry (AMS). These dates are of great value in interpreting the material record from Kul Tepe and illustrate well the potential of this new method for addressing problems in archaeological research of north-western Iran and the Southern Caucasus. The AMS dates are plotted in stratigraphic order in Table 2. The AMS dates themselves form a good series in the correct sequence. The standard deviations for the CEDAD dates are ± 40 years, indicating that conventional 14C techniques can still offer a tightly defined determination. The standard deviations for

Table 2. *Radiocarbon dates of Kul Tepe from different periods.*

Period	Phase	Trench IV Locus	Depth (m)	Lab. ref.	BP	cal BCE (95,4%)
VIII	Early Chalcolithic (Dalma)	4077	10.40	LTL-14991A	5939 ± 45	4934-4718
VIB	LC2: Chaff-Faced	4026	3.48	LTL-14990A	5232 ± 35	4226-3965
VIA	LC3: Chaff-Faced	4025	3.36	LTL-14989A	5110 ± 45	3988-3791
V	Kura-Araxes I	4024	3.30	LTL-14446A	4371 ± 45	3270-2890
V	Kura-Araxes I	4022	3.08	LTL-14445A	4465 ± 45	3350-2940
IV	Kura-Araxes II-III	4006	2.41	LTL-14444A	4129 ± 50	2880-2570
Period	**Phase**	**Trench III Locus**	**Depth (m)**	**Lab. ref.**	**BP**	**cal BCE (95,4%)**
VIII	Early Chalcolithic (Dalma)	3028	7.80	LTL-13047A	5647 ± 50	4594 – 4359
VII	LC1: Pisdeli / Hasanlu VIII	3022	4.55	LTL-13046A	5590 ± 40	4494 – 4350
VIB	LC2: Chaff-Faced	3018 3014 3008	3.43 2.35 1.20	Ly-10439 LTL-13045A Poz-61372	5360 ± 30 5350 ± 35 5335 ± 30	4326 – 4056 4322 – 4053 4260 – 4050
VIA	LC3: Chaff-Faced	3005	0.53	LTL-13047A	5230 ± 45	4228 - 3962
Period	**Phase**	**Trench II Locus**	**Depth (m)**	**Lab. ref.**	**BP**	**cal BCE (95,4%)**
VIA	LC3: Chaff-Faced	loc.2055 loc.2053	14.45 13.51	LTL-13043A Poz-61373	5126 ± 45 5065 ± 30	4037 – 3797 3956 – 3792
V	Kura-Araxes I	loc.2044 F2036	11.45 10.78	LTL-14447A LTL-13042A	4430 ± 45 4502 ± 45	3340 – 2920 3358 – 3030
IV	Kura-Araxes II-III	loc.2030	5.25	Ly-10440	4175 ± 30	2884 – 2638
III	Middle Bronze (Urmia Ware)	loc.2020	loc.2020	Poz-61374	3845 ± 30	2456 – 2204
II	Iron Age III / Urartian	loc.2009	loc.2009	Poz-61376	2170 ± 30	360 - 116
Period	**Phase**	**Trench I Locus**	**Depth (m)**	**Lab. ref.**	**BP**	**cal BCE (95,4%)**
III	Middle Bronze (Urmia Ware)	1036	3.30	Poz-61377	3985 ± 30	2576 - 2462

the AMS dates are calculated on a different basis, and are intended to be largely inclusive (Gillespie *et al.* 1985: 237). CEDAD assures the accuracy of its services by the standard measurements provided by international normative organisations (like IAEA) and by comparing its own results with those obtained in other countries (Reimer *et al.* 2004; Reimer *et al.*2009). The CEDAD laboratory is now able to quote standard deviations equivalent to an error of ± 40 years. These dates indicated that Kul Tepe was



Fig. 12. *Kul Tepe IV (Kura-Araxes II and III) structures in Trench I*

occupied from ca. 4700 BCE to 3200 BCE. Details are shown in Table 2.

Palaeobotany

Some of the most important finds for reconstructing ancient environments are the

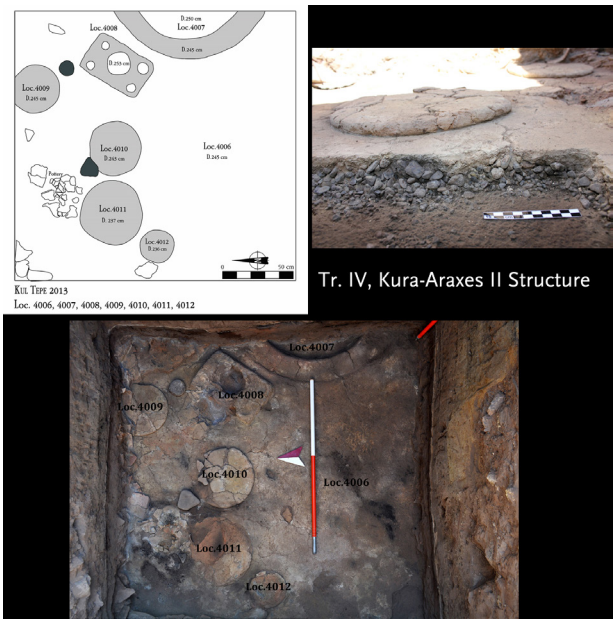


Fig. 13. *Kul Tepe IV (Kura-Araxes II) structures in Trench IV*

biological remains revealed through soil flotation analysis. Any locus with carbon remains or ash pockets should be floated for seed and micro-faunal materials. In addition to dry sieving, which generally yields small pottery fragments, flint debitage and micro-fauna, a program of soil flotation will retrieve charred paleobotanical remains. In addition to the botanical remains (the "light fraction"), all residue from flotation (the "heavy fraction") will be separated for analysis of activity areas. To ensure the collection of statistically meaningful samples that can be used for further comparative analysis (both spatial and temporal), a fixed flotation routine must be maintained. This project employed the froth flotation method, in which soil samples are placed in a water tank, with the light fraction captured in a fine sieve (0.5 mm), and the heavy fraction in a coarse sieve (4 mm).

The flotation tank was situated and used in the camp garden. In order to maintain adequate water pressure, the machine was designed to recycle water in a closed system. After each 30-litre of sample the water in the barrel was changed to ensure against contamination (Table 3).

Apart from flotation sampling, phytolith, palynology and soil samples were extracted and subsequently stored at the Kul Tepe camp for further detailed study in the future.



Fig. 14. Kul Tepe IV (Kura-Araxes II and III) pottery assemblage



Fig. 15. Typical Cylinder Seal from Kul Tepe IV (Kura-Araxes II) layers



Fig. 16. Small and special finds of Kul Tepe during second season of excavation

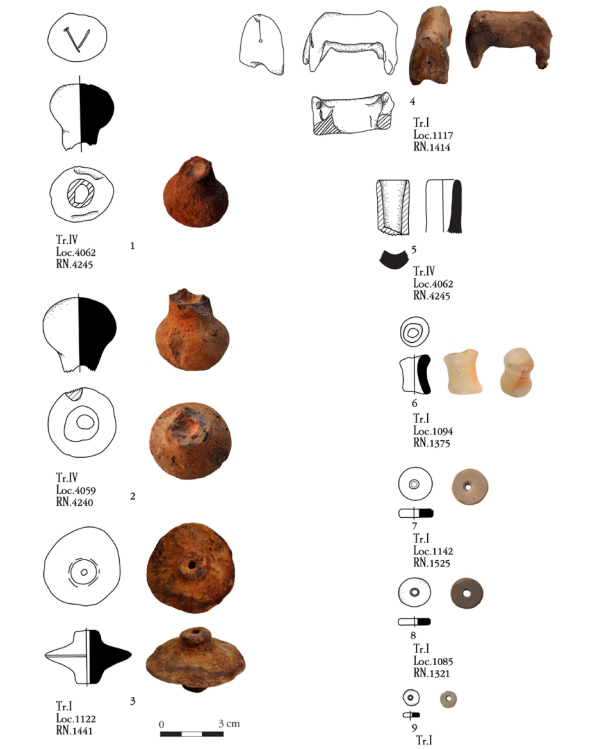


Fig. 17. Small and special finds of Kul Tepe during second season of excavation

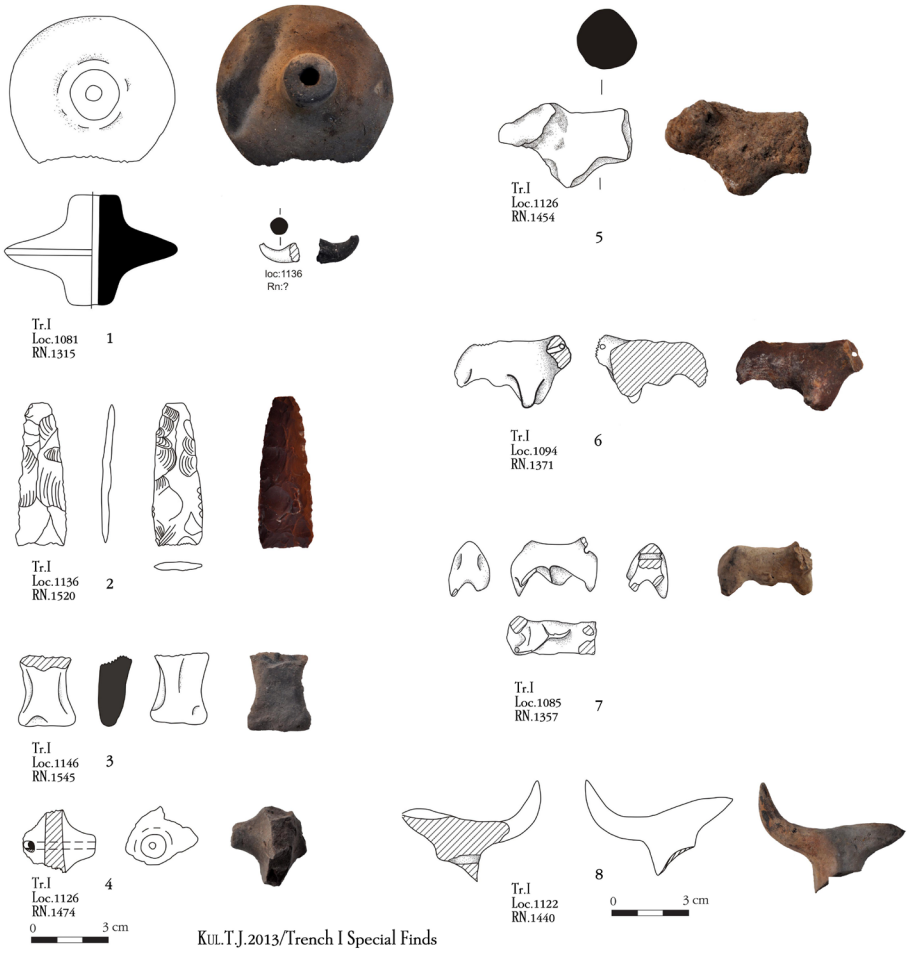


Fig. 18. *Small and special finds of Kul Tepe during second season of excavation*

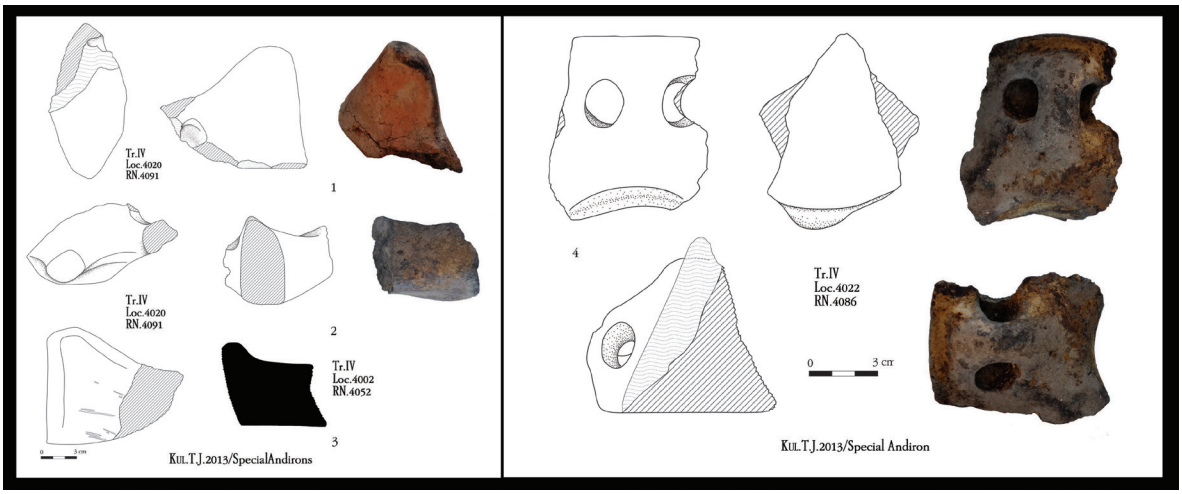


Fig. 19. *Portable hearth and special andiron from Kura-Araxes II period in Kul Tepe*

Table 3. *Flotation samples details of second season in Kul Tepe*

Trench	Selected Locus / Feature	Liter for flotation	Total
I	22	Average: 30 Liter	660 Liter
IV	20	Average: 30 Liter	600 Liter

Zooarchaeology

Bone samples were also collected from different loci during the excavations in Trenches I, II and III and then submitted to CNRS for detailed studies by Marjan Mashkour. Based on 24 m of archaeological deposits from different periods, this research compares and contrasts animal-based subsistence practices from the Dalma to the Achaemenid periods (5000–300 BCE) in order to explore change and continuity in animal use over time in Kul Tepe. All the samples are currently being processed in the laboratory.

Micromorphology

Micromorphology is the branch of soil science that is concerned with the description, interpretation and, to an increasing extent, the measurement of components, features and fabrics in soils at a microscopic level (Bullock *et al.* 1985). Optical microscopy is one of the few techniques that allows us to examine the soil and is components in situ, unaltered and undisturbed by preparation or analytical procedures.

Samples for micromorphology were collected by cutting blocks from different layers (floors, pits, middens, etc.) and wrapping them in plaster bandages, tissues and tapes to avoid alterations. In total, 20 deposits were selected from stratigraphic sections: eight from Trench I, eight from Trench II and four from Trench III. The micromorphological samples may reveal the origin and environment of the deposition of sediments, land-use practices, anthropogenic materials and features (for example, ash, cremation, floors, microartefacts), the origin of clays (for example, from mud brick or natural downwards migration through the soil or sediment), the presence of carbonates, gypsum, pyrite, salts, and so on; vegetation cover, post-depositional processes (including pre- and post-soil formation processes), and burning (its impact on the archaeological record, type of fuel, temperature, and so on). All of the samples are undergoing the processes of thin sectioning and detailed analysis.

GC/MS; SEM;ICP-MS and Lead Isotopic Analysis of Metal Objects from Kul Tepe

Since the first season of excavations yielded significant metal objects including weapons, ornaments, moulds, and a furnace, more detailed studies are needed. In order to gain a better understanding of the ancient metallurgy of north-western Iran during the fourth and third millennia BCE, metal samples were submitted to Archaeometry Department of Tabriz Islamic Art University. The analyses are in their final stages and will be published soon.

Petrography of Late Chalcolithic and Early Bronze Age Pottery from Kul Tepe

Twenty samples were submitted to the Archaeometry Department of Tabriz Islamic Art University for petrographic and mineralogical analyses. Petrography is relatively fast and inexpensive in comparison to other techniques used to identify geological sources, manufacturing techniques and regional differences. Our main objective is to investigate the possible change occurring during the transition from Late Chalcolithic to Early Bronze Age in pottery manufacturing techniques and the petro-fabric of the potsherds. All the samples are currently being processed.

Conclusion

The 2013 field season at Kul Tepe accomplished all its primary archaeological goals and made significant progressess toward a better

understanding of the structure of the settlement and its occupational history from the end of sixth to the third millennium BCE. The results of our second field season of excavations and surface survey suggest that Kul Tepe can play a key role in defining for the Late Neolithic, Early Chalcolithic (Dalma), LC1-3 (Pisdeli and Chaff-Faced Cultures), Kura-Araxes I, II and III sequence of material culture and chronology for the Jolfa plain and Northern parts of NW Iran.

Kul Tepe is located next to a broad valley, at the core of the highlands and the crossroads of major routes linking the Iranian plateau to Anatolia and the Caucasus to Northern Mesopotamia. This strategic location is further enhanced by the wealth in natural resources of the region, which boasts rich copper and salt deposits. A comparative analysis of data demonstrates that Kul Tepe had broad interregional relations with Northern Mesopotamia, the Jezireh region, the Upper Euphrates, Eastern Turkey, and some parts of Iran and the Caucasus during the Late Chalcolithic period. Likewise, in the Early Bronze Age, there are indications that Kul Tepe had cultural relations with sites in the Trans-Caucasus and Eastern Anatolia on the one hand and Lake Urmia Basin and Zagros on the other. The appearance of Urmia Ware testifies to the connections with Lake Urmia basin and the Caucasus region in the Middle and Late Bronze Age. Moreover, remains from Iron III are also comparable with Lake Urmia Basin, the Caucasus region and most sites in North-Western Iran.

Available data, fresh 14C radiocarbon dates from recent excavations in NW Iran provide a welcome opportunity to reassess the chronology of the 5th, 4th and 3rd millennium BCE chronology. From what is currently available, we suggest that the Dalma period lasted some 500 years, and dates to between ca. 5000-4500 cal. BCE. During mid-fifth or slightly later (Post-Ubaid: 4500-4200 B.C) black on buff so-called Pisdeli culture (LC1=Kul Tepe VII VII) was gradually replaced in the whole southern, western and northern regions of the Lake Urmia Basin. Late-5th millennium chaff-tempered or chaff-faced ware appears alongside Ubaid-related black on buff during LC 2-3 (Kul Tepe VIB and VIA, Dava goz III: 4200-3800 B.C) in NW Iran. From what is currently available, we suggest that the Kura-Araxes period is dated between ca. 3350 – 2600/2500 BCE.

To sum up, the emerging picture suggests that the CFW system, whose focus was the highlands, was progressively challenged during the 4th millennium in the North as in the South, respectively by the Kura-Araxes and the Uruk expansions. After a period of coexistence with both, the CFW culture was superseded in the highlands by the Kura-Araxes phenomenon, whose driving forces probably had some decisive advantage over its regional neighbours: judging by the importance of metallurgy and mining activities in the Kura-Araxes world, this advantage could be interpreted as a technological one (Marro 2010).

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