# ANIMAL REMAINS EXCAVATED AT JAFAR ABAD AND TU ALİ SOFLA KURGANS, NORTHWEST IRAN (2010 AND 2013 SEASONS)

## JAFAR ABAD VE TU ALİ SOFLA KURGAN KAZILARINDA ELE GEÇEN HAYVAN KEMİK KALINTILARI, KUZEYBATI İRAN (2010 VE 2013 SEZONU)

**Makale Bilgisi**
Başvuru: 7 Şubat 2018
Hakem Değerlendirmesi: 5 Mart 2018
Kabul: 21 Aralık 2018
DOI Numarası: 10.22520/tubaar.2018.23.006

**Article Info**
Received: February 7, 2018
Peer Review: March 5, 2018
Accepted: December 21, 2018
DOI Number: 10.22520/tubaar.2018.23.006

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**Keywords:** Eurasian Nomadic Warrior Groups, Kurgans, Animal Burials, Bone Tools
**Anahtar Kelimeler:** Avrasya Atlı Göçebe Savaşçıları, Kurgan, Hayvan Gömüleri, Kemik Eserler

## ABSTRACT

*Included among the coherent archaeological data that gives archaeologists the best insight into intangible facets of past cultures, in particular nomadic groups, are burials and mortuary customs. Study of kurgans and associated material culture will shed a blaze of light on the chronology, ethnography, social classes, subsistence system and dietary diversity of the so-called Eurasian Warrior Nomads, bringing further aspects of their culture into light. The present paper explored the animal remains attested in the kurgans of Jafar Abad and Tu Ali Sofla in the southern Aras River Basin of Northwest Iran. Thus, the animal burials and the grave goods made of animal bones and marine animals, which account for a major part of the recovered assemblages, are presented and discussed here.*

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## ÖZET

*Mezarlardan ele geçen Arkeoloji veriler çok değerli bilgiler vermektedir. En önemlisi göçebe halkların bir çok yönlerini aydınlatmaktadır. Avrasya Atlı Göçebe Savaşçılarının önemli mimarisi olan Kurgan mezarlarında ele geçen Arkeolojik verilerin ışığında ise bu kavimin hakkındaki sosyal tabakalanmanın oluşumu ve nedenleri, etnografya, ekonomi, kronoloji, ölü gömme gelenekleri, diyetsel çeşitlilik ve ilaveten bir çok karanlık nokta aydınlatılmaktadı. Bu çalışmada Kuzey Batı Iran'da Araz Nehir kıyısının güne kısmında yer alan Jafar Abad ve Tu Ali Sofla Kurganları'ndan ele geçen kemik buluntular üzerinde inceleme ve değerlendirme yapılacaktır. Ele geçen kemik buluntuların araştırma sonucunda hayvan gömüleri ve hayvan'dan yapılmış eserler olarak iki gurub olarak tespit edilmiştir.*


Map 1: Location of Jafar Abad and Tu Ali Sofla Kurgans / *Jafar Abad ve Tu Ali Sofla Kurgan Kazı Bölgesi*

## Introduction

Archaeological studies to reconstruct the life structures of the Eurasian Nomadic Warrior[1] (ENW) groups who were instrumental to the genesis of many aspects of the ancient Near East require extensive investigations into their economic, social, ritual, and cultural functions by virtue of the material culture they have imparted to us. Indeed, taking inferential approach appears to be rather impracticable in this constructional endeavor because herding as a distinct type of economic practice by no means required any tangible tools. In the Bronze Age, the economy of these communities was strongly influenced by environmental conditions, ecosystem and ecological settings. Animal husbandry and transhumant herding was the backbone of this economy, especially in the early Iron Age, and the respective populations relied for various aspects of their existence on animals in particular livestock. Not only the latter was the major, and sometimes perhaps the sole, food source, but also such animal products as fleece and hide, wool, bone and horn provided the mandatory raw material for making indispensable items like garments. Archaeological work in the Black Sea, Caspian littoral steppe, northern Ural, northern Caucasia and northwest Iran evince these regions maintained contacts with the Eurasian Steppe Belt by means of the ENWs.[2] Farm animals, especially horse, served as a means of transportation and migration and were instrumental in the annual migrations, transportation of individuals and controlling flocks on horseback as was required by the need to guard herds in the course of migration. Further, domestic animals would have been worth a king's ransom and were emblems of sustenance, power, distinction and wealth, and marked tribal and cultural identity of a community or a tribe.[3] Inclusion of animals in mortuary practices and burials and the use of animal figures as a distinct art style among these groups, particularly the Scythians and Cimmerians, per se point to the fact that animals in general, both domestic and wild, were to these groups not only utilitarian but also meritorious.

Thus, here we will attempt to present a picture of the economic, social, ritual, and cultural activities of these communities in the southern Aras cultural region in terms of an analysis of faunal remains recovered in the excavations of the kurgans in Jafar Abad and Tu Ali Sofla[4] (Map 1) in the two seasons of 2009 and 2011[5].

[1] İravani Ghadim 2008: 21-23.

[2] Shishlina/Golkov/Orfinskaya 2000: 109-110.

[3] Kent Hanks 2003:60.

[4] The village of Jafar Abad and Tu Ali Sofla lies in the Khodafarin County. Located 230 km northeast of Tabriz, the county with a population of about 45.000 is in the northern Arasbaran (Qara Dagh) region and borders the Republic of Azerbaijan. The Arasbaran region lies in northwest Iran, in the northern quadrant of East Azerbaijan Province. The region is bounded by the Aras to the north, Tabriz and Heris Counties to the south, Meshkinshahr County and the Moghan region to the east, and Marand County to the west. The main factor affecting the regional climate is the Aras river, which also furnishes the local water supply. The kurgans excavated at Jafar Abad and the nearby village of Tu Ali Sofla are dated to 1200-800 BC by the pottery assemblages.

[5] Iravani Ghadim 2011b: 191-219; Iravani Ghadim 2012;

## Excavated Kurgans Associated with Animal Remains

Of the total of 40 kurgans belonging to the EWNs identified on the southern bank of the Aras in northwest Iran, 13 were opened and 8 were found to contain animal evidence (i.e. Kurgans 1, 2, 7, 8, 9, 10, 11, 13). The related evidence falls into two general categories of animal burials, and bone objects and tools.

### Kurgan 1

*Coordinates: UTM Coordinates Zone 38s latitude 658333 north, longitude 4329663 east*

Kurgan 1 covered Grids 2T, 2U, 2V, 3T, 3U, 3V, 4U, and 4V in the grid system that was stacked out. Formed in a full oval shape oriented north-south, it measured 17.40 m south-north x 16.20 m east-west, with a maximum altitude of 313.40 m.

Stones used in the construction of the kurgan showed a higher density in the northern and southern flanks than the center, where an east-west running, curved corridor devoid of stones was located. The circular mass of stones forming the northern flank, labeled Context 1, comprised Grids 2T and 2U and also extended 0.35 m into the southern corners of Grids 1T and 1U. The central rectangular corridor, Context 2, covered Grids 3T, 3U and the southern 0.80 m of Grids 2T and 2U (Photo 1). Tagged as Context 3 was the northern stone heap that as an irregular circle lay in Grids 3T, 3U and 4V, being 63 cm from Grids 2T and 2U and 25 cm from Grids 5T and 5U. Representing the main pit cut for burial, Context 4 was identified in the northern half of the kurgan, beneath Context 1. It was 2.86 m east-west and 1.50 m north-south and lay at an altitude of 312.57 m in Grid 2U, some 0.60 m from Grid 3U to the south and 0.20 m from Grid 2V to the west. The continued excavation brought to light at an altitude of 312.21 m a feature in the form of a sandy road that bisected the kurgan into eastern and western halves. The eastern half occupying Grids 2U, 2V, 3U, 3V, 4U, and 4V received the designation Context 6; and the western half falling in Grids 2U, 2V, 4U, 2T, 3T was tagged Context 7.

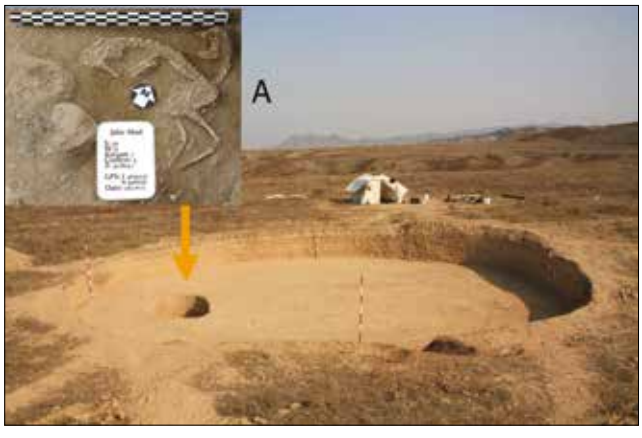


Photo 1: Kurgan 1 (A-A Complete Sheep Skeleton in Context 2) / *Kurgan 1 (A-Komple Bir Koyun İskeleti, Context 2).*

The animal burial attested in Kurgan 1 consisted of a complete sheep skeleton in the eastern Context 4 in an east-west axis within Grid 2U, some 0.60 m from Grid 3U and 0.20 m from Grid 2V, at an elevation above sea level of 312.22 m. The animal was apparently sacrificed by a violent blow to the head as no traces of butchering occurred. Skulls of two other offered sheep were found lying underneath the skeleton once it was completely removed.

### Kurgan 2

*Coordinates: UTM Coordinates Zone 38s latitude 658870 north, longitude 4329577 east*

Extending over Grids DX48, DY48, DX49, DY49, the kurgan lay on the south side of the old road connecting Jolfa to Parsabad. Also in an oval shape, it was 7.60 m on the east-west and 6.20 m on the north-south axis, with its highest point being at 327.93 m above the sea level (Photo 2). The overlying heap, labeled Context 1, further extended some 0.25 m over the southern edges of Grids DY47 and DX47 and 0.75 m over the northern edges of Grids DX50 and DY50.

In the lower levels, a regular architectural structure was encountered at the center of the kurgan in Grids DX48, DY48, DX49 and DY49 and labeled Context 2 as it accounted for a regular context, spanning from 327.98 m to 327.14 m above sea level. This clearly cut circular context was level with the surrounding lands. The trench was carried further down to reveal the east-west triangular Context 3, which was the main grave. It lay in

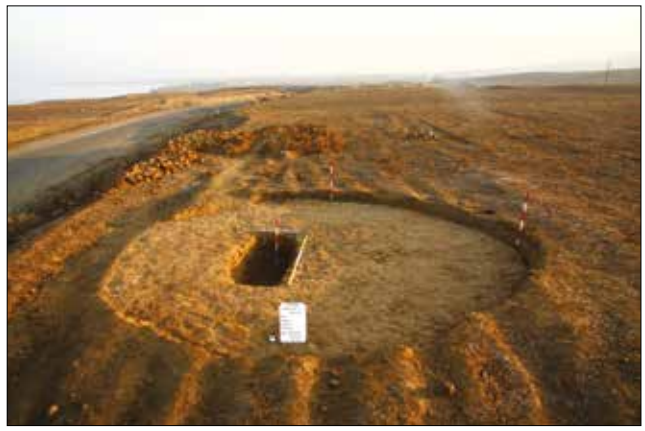

Photo 2: Kurgan 2 / *Kurgan 2.*

Iravani Ghadim 2013a: 217-236; Iravani Ghadim, 2013b; Iravani Ghadim 2014: 87-106; Iravani Ghadim, 2015: 89-111.

Grids DX48 (0.50 m from its south and 100 cm from its west sides) and DY48 (0.50 m from its south and 4.00 m from its east sides). It measured 4.00 m east-west and 1.20 m north-south, beginning from 327.14 m and ending at 326.01 m elevation above sea level. Scattered animal (goat) bones were found within Grids DY48 and DX48, at the elevation of 326.01 m.

## Kurgan 7

*Coordinates: UTM Coordinates Zone 38s latitude 658316 north, longitude 4329408 east*

It lay in Grid W42 (0.70 m from east and 0.80 m from north sides). Labeled Context 1, the oval heap oriented east-west, measuring 4.10 m in longer and 2.20 m in shorter axis, with its highest point reckoned at the altitude of 337.00 m. Some 0.80 m from the east and 1.30 m from the north side of the grid was encountered an east-west aligned context with different soil texture and color. It measured 3.10 m long and 0.70 m wide and was located at an altitude of 335.90 m. This was the main burial pit and was designated Context 2.

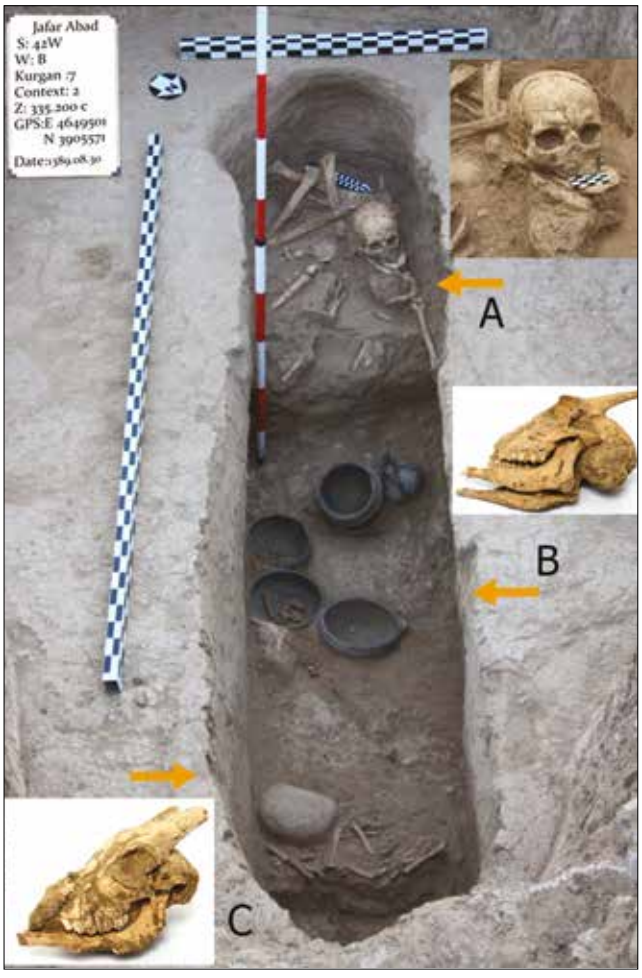


Photo 3: Kurgan 7, Context 2 (A- Human Skull; B- Goat Skull; C- Goat Skull) / *Kurgan 7, Context 2 (A- Gömülü Bir İnsan Kafatası; B- Keçi Kafatası; C- Keçi Kafatası).*

The burial pit contained 2 goat and 3 sheep skulls, not to mention a buried human skull (Photo 3). The latter lay in the western quadrant of the context, 4.80 m from the east and 1.40 m from the north corner of the grid. Included among the finds from this context was a 10 cm long and 5 cm wide necklace, formed from beads of carnelian and paste as well as 12 worked shells.

## Kurgan 8

*Coordinates: UTM Coordinates Zone 38s latitude 658662 north, longitude 4329751 east*

This vast kurgan stretched over Grids CH12, CI12, CJ12, CH13, CI13, CJ13, CH14, CI14, CJ14. It lay 452 cm from the west corner of Grid CH13, 226 cm from the east corner of Grid CK13, 1.52 m from the north corner of Grid CK12, and 1.82 m from the south corner of Grid CJ14.

Sharing the same oval morphology, it lay on the south side of the old Jolfa-Parsabad road. The highest point registered an altitude of 318.30 m. Again, the projecting heap was named Context 1, whose removal revealed a large regular structure in the form of a platform, Context 2, at the central axis of the kurgan, on which the lion share of the burial gifts was placed. Measuring 1.75 m in the longer east-west and 0.75 m in the shorter north-south axis, Context 2 was recorded in Grid CJ14, some 3.33 m from the east and 0.32 m from the north of the grid, at an elevation above sea level of 317.48 m. At the altitude of 317.78 m in Grid CI14 (0.17 m from the north and 3.17 m from the east sides) was attested the east-west oriented Context 3, running 0.60 m in north-south and 0.50 m in east-west. Further work drew light on a northwest-southeast feature, which was the burial pit dubbed Context 4. It measured 1.90 m x 0.69 m and was located in Grids CJ13 (4.38 m from the east and 3.80 m from the south side) and CI13 (3.48 m from the west and 3.80 m from the north side), and began from the altitude of 317.01 m and ended at 316.02 m.

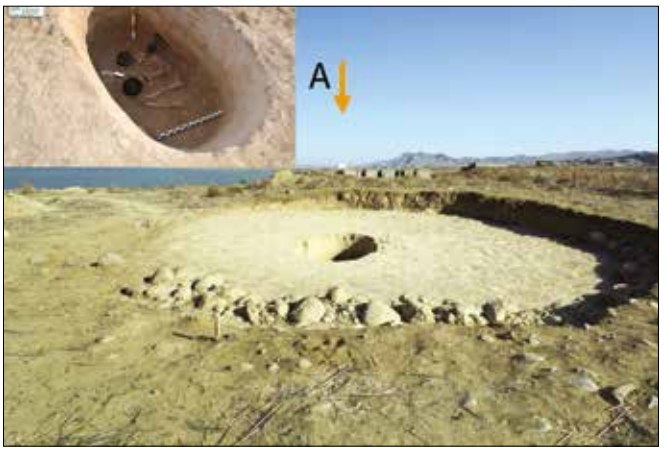


Photo 4: Kurgan 8 (A- Middle-Aged Female Skeleton in Context 4) /*Kurgan 8 (A- Orta Yaşlı Kadın İskeleti, Context 4).*

In Context 4 and around the skull of the recovered skeleton there were scattered skeletal remains of a goat as an animal burial (Photo 4), while Context 2 provided objects fashioned out of animal bones, including a music instrument in tortoise carapace and a bone pick as well as 6 gastropod shells used as personal ornaments.[6] Of the latter, 5 represent the Helix sp., with the remaining one belonging to a Pupila.

## Kurgan 9

*Coordinates: UTM Coordinates Zone 38s latitude 659000 north, longitude 4330005 east*

Located on the south side of the old Jolfa-Khomarlu road, Kurgan 9 (Photo 5) comprised Grids EF51, EG51, EF52 and EG52. With its typical oval shape, it oriented east-west and measured 87.0 m x 97.0 m, with its highest point registering a GPS altitude of 327.33 cm. The heap of the tumulus, Context 1, ended at the height of 327.17 cm above the sea level.

Photo 5: Kurgan 9 / *Kurgan 9.*

In lower strata a change in the texture and color of a northeast-southwest oriented deposit was noticed at the center of the kurgan, beneath Context 1, in Grid EF51. It had the width of 1.24 m, 1.49 m and 1.45 m in northeast, middle and southwest sides, respectively, and ran a length of 4.18 m. In section it occurred between the altitudes of 327.17 m and 325.36 m from top to down. The northeast end of the context was separated from the north and east sides of Grid EG52 by 1.90 m and 0.85 m, in that order; its southwest end was 3.70 m and 0.50 m from the north and east sides of the grid, in the order given. This was the main limit of the grave and was labeled Context 2. Continued work in the southern quadrant of Context 2, in Grid EF51, uncovered a northeast-southwest oriented feature measuring 1.40 m x 0.80 m tagged Context 3. This was formed as a result of illegal excavations and in section was attested between the altitudes of 327.37 m and 325.47 m.

At the altitude of 325.46 m, Context 2 contained 2 craniums from sacrificed animals, a bull and a sheep, deposited in a northeast-southwest orientation, with their noses facing southwest. The bovine example lay 1.05 m from the east and 1.30 m from the north sides of Grid EF51 and was placed upside down, so that the horns faced downward and the neck and mandible were upwards. Underneath this lay the long femurs of an animal of the same species. The sheep skull lay to the south of the former, 1.05 m from the east and 1.50 m from the north of the grid, with its nose pointing towards southwest. Bone fragments abounded across Context 2 and within the recovered ceramic vessels (Photo 6).

Apart from the animal burial, Kurgan 9 yielded a prism-shaped bone awl in Context 2 at the altitude of 325.56 m (2.10 m from the west and 0.80 m from the south side of Grid EF51).

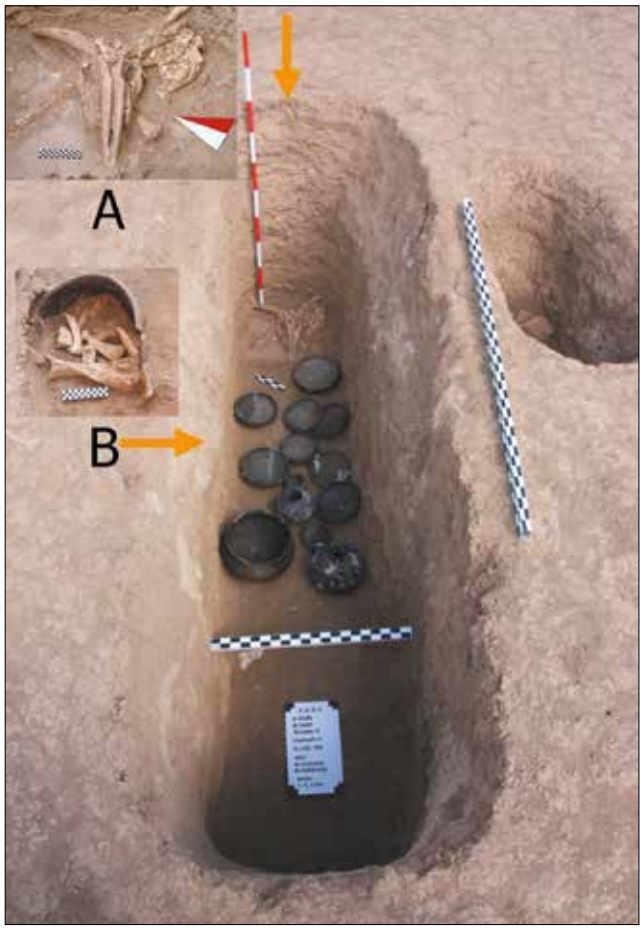


Photo 6: Kurgan 9, Context 2 (A- Bull Skull; B- Vessels Containing Animal Bone Fragments) / *Kurgan 9, Context 2 (A- Sığır Kafatası; B- Çanak Çömlek İçinde Bulunan Hayvan Kemikleri).*

[6] Iravani Ghadim 2011b: 196.

## Kurgan 10

*Coordinates: UTM Coordinates Zone 38s latitude 659200 north, longitude 4329599 east*

The circular kurgan occupied Grids ED85, ED86, EF85 and EF86, between the modern and old communication lines connecting Jolfa to Parsabad, next to the modern road. It measured 7.50 m in the north-south axis and 6.50 m in the east-west axis and lay at the altitude of 350.77 m. Once the overlapping regular heap, made of clay and river cobbles and labeled Context 1, was removed, a context with stones lined regularly to form a rectangle was exposed at the center of the tumulus. It was unearthed in Grid ED86, some 0.15 m from its south and 2.30 m from its north boundaries, measuring 3.10 m x 1.20 m and orienting northeast-southwest. Stratigraphically, the context started from the height above sea level of 349.83 m and terminated at 348.29 m. It constituted the main burial pit and was labeled Context 2. At the altitude of 348.53 m, the northeast corner of the context contained a sheep skull and scattered sheep bones next to ceramic vessels (Photo 7). They occurred in the southwest corner of the grid, 0.80 m from the north and 0.46 m from the east end of it. Pottery vessels containing goat bones lay in the southwest quadrant of the grid, 198 cm from the north and 2.57 m from the west end of it.


Photo 7: Kurgan 10 (A- Goat Skull)/Kurgan 10 (A- Keçi kafatası).

## Kurgan 11

*Coordinates: UTM Coordinates Zone 38s latitude 659173 north, longitude 4329612 east*

With the same morphology and general geographical location as Kurgan 11, it occupied Grids DW81, DX81, DY81, DW82, DX82, DY82, DW83, DX83 and DY83. The kurgan measured 10.11 m in the north-south and 20.12 m in the east-west axis and was located at an altitude above sea level of 349.77. Again constructed of clay and river cobbles, the heap was tagged Context 1. In lower strata a context in the form of an ovoid stone lining, Context 2, was recovered in the western quadrant of the kurgan in Grids DW82 and DX83 at an elevation of 349.02 m (Photo 8). Another one, Context 4, as a circular stone lining would be encountered in the eastern Context 2, at an altitude of 349.02 m. An additional feature, Context 3, was recorded as a fill between the two previous ones, at an altitude of 348.91 m. Contexts 3-4 lay in Grids 81DX, 82DX and 82DW. Context 5 was recorded in Grids 82DX and 82DY at an altitude of 349.01 m, with the dimensions of 3.0 m x 1.6 m in the southern and southeastern kurgan. It was defined as a discrete context because of its different stone structure and the fine and calcareous soil. With the removal of Context 2, another context with a different, finer and calcareous texture, was uncovered in Grids DW82 and DX82 with a length of 3.00 m and width of 1.40 m, starting in section from the latitude of 348.569 m and ending at 347.01 m. It was labeled Context 6 and represented the grave matrix. Here a goat mandible, along with scattered animal bones, was attested at an elevation above sea level of 347.28 m, some 0.26 m from the west and 0.90 m from the north border of the square.

Apart from the animal burial, the assemblage from Kurgan 11 contains 2 objects in animal bone. One, from Grid DW83 Context 6, is a necklace of 14 agate, 66 paste and 13 shell beads. It is 9 cm long and 3 cm wide. The shells are divided into these species: 5 Cardium sp., and 1 Lucinidae sp., and 7 undetermined species. The second find concerns a circular bronze earring, ornamented with

Photo 8: Kurgan 11 / *Kurgan 11*.

a shell bead. The latter has a single central perforation for passing the bronze wire and one additional perforation at each two opposite sides. The shell is from the snail family but it is difficult to ascertain beyond this because of the cutting and polishing work.

## Kurgan 13

*Coordinates: UTM Coordinates Zone 38s latitude 654038 north, longitude 4324173 east*

The last kurgan associated with faunal evidence occupied Grids R41, R42, S41, S42, S43, T41, T42 and T43. Lying on the south of the Jolfa-Parsabad communication line, it had a rectangular bulging heap extending from east to west, measuring 9.55 m long and 8.18 m wide, at an elevation above sea level of 322.58 m. Constructed of stone and silt and rising 1.65 m from the surrounding lands, the heap was again registered as Context 1. At the altitude of 321.48 m in Grids S42 and T42, an east-west oriented stone structure 5.15 m long and 1.08 m wide was detected (4.70 m from the east and 0.63 m from the north limit of Grid S42). As the main burial pit, it received the designation Context 2 (Photo 9). In Grids R42, S42, R43 and S43 we recovered a stone-lined structure measuring 3.51 m x 118 m in the southern quadrant of the kurgan (4.20 m from the north and 3.82 m from the east side of Grid T42). It lay at an altitude of 321.31 m and was coded Context 3.


Photo 9: Kurgan 13 (A- Context 2) / *Kurgan 13 (A- Context 2).*

In Context 2 Grid S42 was found a horse skeleton facing south with flexed legs. The skeleton was 2.93 m form the east and 4.18 m from the north end of the grid, at an elevation of 320.67 m. Its detached skull was found in the eastern corner of the kurgan together with a number of bones haphazardly scattered over different parts of the latter. Lying to the west and south of the animal skeleton were 2 goat skulls, one with and the other without horns (Photo 10).


Photo 10: Kurgan 13, Context 2 (A- Horse Skeleton; B- Goat Skull; C- Goat Skull; D- Conus Snail Used as Necklace Bead Found in) / *Kurgan 13, Context 2 (A- At İskeleti; B- Keçi Kafatası; C- Keçi Kafatası; D- Conus Salyangozu ve Akık Boncuklarından Oluşan Kolye).*

Other bone materials from Kurgan 13 include 2 horse bits, a button placed at strap crossings of bridle, a bit attachment, and a necklace consisting of shells, snails, and paste and agate beads. The bits, made of bronze and bone, lay at an elevation of 320.92 m and were found 3.25 m from the west and 41.0 m from the south extremity Grid S42.

The bone button was found at the altitude of 320.65 m, 4.35 m from the west and 4.36 m from the north fringe of Grid S42. It resembles a button, with a rounded top and a "shaft" that has 4 perforations. Another perforation exists on its base. Given the functional relation of this piece with the bits, it is believed to have been part of a cheekpiece, through which the straps of bridle passed. The upper part of the piece in question bear incised decorations

There is also a bone tool (bit attachment) from the altitude of 321.10 m, lying 4.85 m from the west and 4.42 m from the north border of Grid S42. The piece is akin to a water tap lever with a central perforation and riveted by a bone nail in one side. It was probably part of a bit.

The last but not the least object is a necklace of 141 agate beads along with 4 shells measuring 2.2 cm x 5 cm, and an ivory fragment measuring 1.6 cm x 2 cm. It was found at the elevation above sea level of 321.04 m in Grid S42 (4.70 m from the west and 0.45 m from the north side). The shells are most probably of Conus species.

## Animal Finds from Kurgans of Jafar Abad and Tu Ai Sofla

### Animal burials

In the course of the two seasons of excavations at Jafar Abad and Tu Ali Sofla we were able to 4 types of animal burials, including goat, sheep, bull and horse, a brief description of which follows.

### Goat

Goat is a strong and highly agile animal. Goats as sacrifices offered to the dead occur in the majority of the kurgans belonging to the nomadic warrior groups of the Eurasian Steppe. The animal is also deemed a major element in the subsistence cycle of these populations.

The excavated assemblage contain goat skeletal remains that come from Kurgan 2 Context 3 (a skull), Kurgan 7 Context 2 (2 skulls/Photo 11-12), Kurgan 8 Context 4 (scattered bones)[7] Kurgan 11 Context 6 (a mandible), and Kurgan 13 Context 2 (2 skulls). Related materials were also recorded within the ceramic vessels in Kurgans 2, 6, 7, 8, 10 and 13.

The sample from Jafar Abad and Tu Ali Sofla parallels those attested in Georgia and Kazakhstan. Goats in South Russia appear to have been slightly taller, while those found in our kurgans are of a smaller build. The latter measure 85-90 cm as opposed to the 110-125 cm stature of those recovered in Russia.

### Sheep

Sheep can survive harsh winters and fodder scarcity and deficiency in desert steppes. Long-drawn journeys enhance its fitness rather than doing any mischief to it. Sheep is an animal of great moment for livestock breeders as one can capitalize on it when it begins to enter the third years of its life. Moreover, as with horses, snow will never hinder its foraging.

Sheep burials as offerings to human dead similarly occur in most of the warrior nomads' kurgans in the Eurasian steppe, and the animal is likewise instrumental to their

Photo 11: Goat Skull (Kurgan 7, Context 2) / *Keçi Kafatası (Kurgan 7, Context 2).*

Photo 12: Goat Skull (Kurgan 7, Context 2) / *Keçi Kafatası (Kurgan 7, Context 2).*

subsistence. In the excavations reported here, a complete sheep burial in an east-west orientation was found in the eastern quadrant of Context 4 in Kurgan 1 (Photo 1A). Close examinations proved the total absence of slaughtering indications; hence, it was potentially killed by a blow to its head.

Sheep were also represented in Kurgan Context 4 (2 skulls), Kurgan 7 Context 2 (3 skulls). Kurgan 9 Context 2 (a skull) and Kurgan 10 Context 2 (dispersed bones).

### Cattle

Cattle have a year-round breeding cycle. In the ancient East, bulls epitomized power and strength. Evidence from kurgans has substantiated bull nurturing as a main aspect of the ENW group's culture and the deposition of bulls as sacrifices.

The animal burial recorded in Kurgan 9 belonged to a bull, which lay in the rectangular limit labeled Context 2. The burial consisted of a bull cranium, deposited with its face downward and its lower part (neck) pointing towards east. The bones lay in situ at the time of excavation. Also, two

[7] Iravani Ghadim 2011b: 196; Iravani Ghadim 2014: 93.

Photo 13: Bull Skull (Kurgan 9, Contexts 2) / *Sığır Kafatası (Kurgan 9, Contexts 2).*

Photo 14: Ceramic Vessels Filled with Animal Bone Fragments (Kurgan 9, Context 2) / *Çanak Çömlek İçinde Bulunan Hayvan Kemikleri (Kurgan 9, Context 2).*

crossed femurs of a bull were found beneath the skull (Photo 13). The remaining parts of the skeleton were recovered within the ceramic vessels in Context 2 (Photo 14).

## Horse

In the latter half of the second millennium BC, horse[8] represented the animal of choice to be tamed by the Eurasian populations.[9] Mares served procreation purposes and provided milk, and stallions would serve as sources of labor and meat once they attained adulthood.[10] Horse had become a symbol of status and an immensely important emblem of power or prestige display for mounted warriors and social groups by the Iron Age.[11] At the beginning of the Bronze Age, the Eurasian Steppe populations buried horses with or at a short distance from the human corpse, though complete horse skeletons are too limited in the related burial context, and it

Photo 15: Bit 1- Eurasian-Type Jointed Snaffle Bit, Consisting of a Bipartite Bone Bar as Mouthpiece and Two Cheekpieces Made of Animal Bone (Kurgan 13, Context 2) / *Birinci Gem; Avrasya Tipi At Gemı, Ağız Kısmı İki Parçalı Bronz ve Hayvan Kemiğinden Yapılmış Çubuk Şeklinde İki Parçalı Yanaklık (Kurgan 13, Context 2).*

Photo 16: Bit 2- Eurasian-Type Jointed Snaffle Horse Bit, Consisting of a Bipartite Bone Bar as Mouthpiece and Two Cheekpieces Made of Animal Bone (Kurgan 13, Context 2) / *İkinci Gem; Avrasya Tipi At Gemı, Ağız Kısmı İki Parçalı Bronz ve Hayvan Kemiğinden Yapılmış Çubuk Şeklinde İki Parçalı Yanaklık (Kurgan 13, Context 2).*

[8] Results of the osteological studies on Chalcolithic sites indicate that the Eurasian populations were first to domesticate horse in the plains of southern Russia in the fourth millennium BC, and that horse raising and exploiting was a tradition that disseminated from this region to other regions (Kuzmina 2010: 118). Botai in Kazakhstan and Dereivka in Ukraine have been the most attractive sites in the pertinent debates (Levine 2005: 7). Existence of wild horses, availability of the required knowledge for breeding, and the need for food, with the horse probably being mainly used as a food source, were the factors that presumably ushered in the domestication of the animal (Kuzmina 2010: 118). Bökönyi believes that horse taming was initially prompted by its use as food resource to provide meat and milk, a claim corroborated by the evidence of slayed horses recovered at several points (Kuzmina 2010: 118). Horse initially appealed to the Chalcolithic man as a food source, and provided the power required for pulling vehicles in the Bronze Age, and final served military purposes in the Iron Age, especially in the first millennium BC .

[9] Jones-Bley 2000: 136.

[10] Žukauskaite 2009: 34.

[11] Kent Hanks 2003: 100.

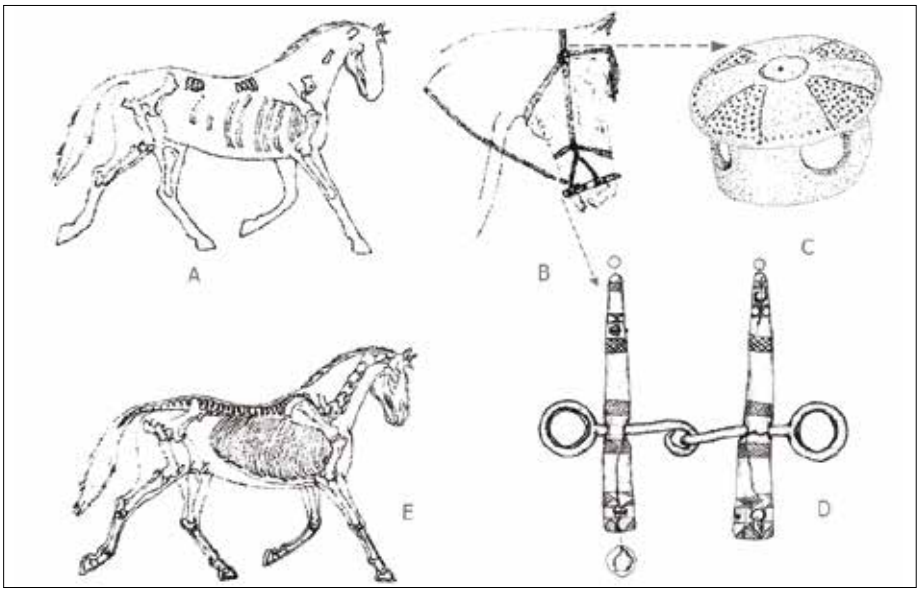


Figure 1: A- The Reconstructed Complete Horse Skeleton Recorded in Kurgan 13, Context 2; B- the Reconstructed Bridle from a Kurgan at Tu Ali; C- Bone Button Placed at Strap Crossings; D- Eurasian-Type Jointed Snaffle Bit, Consisting of a Bipartite Bone Bar as Mouthpiece and Two Cheekpieces Made of Animal Bone; E- The Reconstructed Przewalski's Horse / *A- Kurgan 13, Context 2'De Ele Geçen At İskeletinin Yeniden Yapılandırması; B- Tu Ali Kurganından Ele Geçen At Kafası ve Gemi; C- Kayış Geçişlerine Yerleştirilen Kemik Düğmesi; D- Avrasya Tipi At Gemı, Ağız Kısmı İki Parçalı Bronz ve Hayvan Kemiğinden Yapılmış Çubuk Şeklinde İki Parçalı Yanaklık; E- Przewalski Atının Tamamlanmış Hali.*

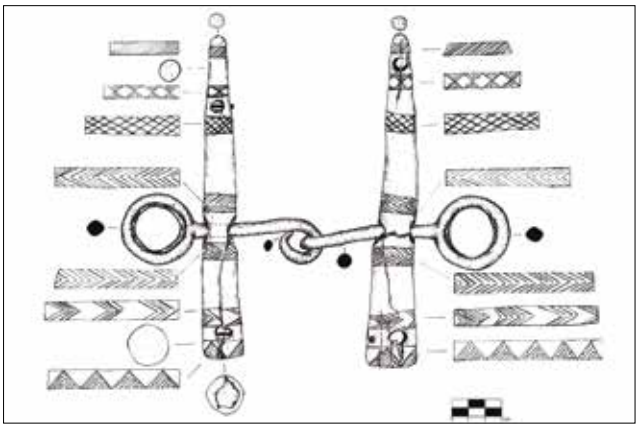

Figure 2: Bit 1- Eurasian-Type Jointed Snaffle Bit, Consisting of a Bipartite Bone Bar as Mouthpiece and Two Cheekpieces Made of Animal Bone (Kurgan 13, Context 2) / *Birinci Gem; Avrasya Tipi At Gemı, Ağız Kısmı İki Parçalı Bronz ve Hayvan Kemiğinden Yapılmış Çubuk Şeklinde İki Parçalı Yanaklık (Kurgan 13, Context 2).*

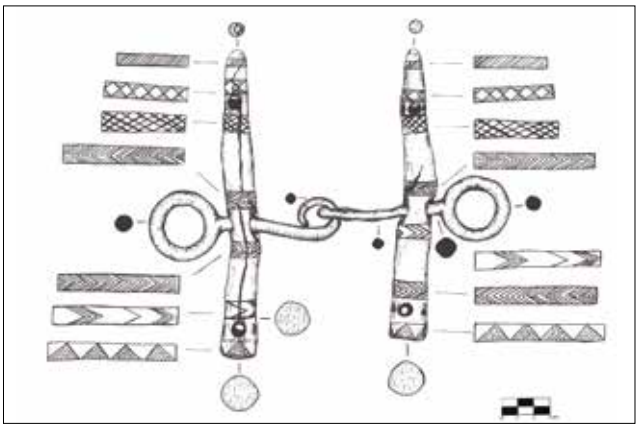

Figure 3: Bit 2- Eurasian-Type Jointed Snaffle Horse Bit, Consisting of a Bipartite Bone Bar as Mouthpiece and Two Cheekpieces Made of Animal Bone (Kurgan 13, Context 2) / *İkinci Gem; Avrasya Tipi At Gemı, Ağız Kısmı İki Parçalı Bronz Ve Hayvan Kemiğinden Yapılmış Çubuk Şeklinde İki Parçalı Yanaklık (Kurgan 13, Context 2).*

is represented merely by a single or more bones. Horses were buried with chariots in the mid-Bronze and with horse tack such as bits, bridles, etc. in the Iron Age.[12]

During the excavations a horse offering facing south and with flexed legs was recovered together with 2 bits (made of bronze-bone) in Kurgan 13, belonging to a female warrior. It occurred in Context 2, the ovoid limit that represented the main grave. The animal offering consisted of a total of 28 in situ bone fragments. The butchered head lay in the eastern corner of the same context. In similar cases in the neighboring regions, the sacrifice would be made through strangling or landing a violent blow to the head, while in our example the animal was slayed. Burying horses was a common practice among the nomadic communities of the third and second millennia BC The materials recorded in our kurgans tend to represent the Przewalski's horse, with a stature ranging between 170-185 cm. The race is characterized by a stocky body and slender legs. Judging by the evidence at hand, the animal buried in Kurgan 13 with its 1.10 m high legs was probably 1.78-1.80 m tall, and therefore parallel the so-called Przewalski's horse, instances of which are also known from Turkmenistan and Kazakhstan (Fig 1A/1B).

[12] İravani Ghadim, 2008: 25-26; Levine/Bailey /Whitwell/Jeffcott, 2000: 126; Levine, 2005: 7.

| Item | Element | Length (cm) |
|---|---|---|
| Bit 1 (Photo 15/Fig 2) | right bronze bar | 10.90 |
| | left bronze bar | 10.42 |
| | right bone cheekpiece | 19.60 |
| | right bone cheekpiece | 17.30 |
| Bit 2 (Photo 16/Fig 3) | right bronze bar | 10.60 |
| | left bronze bar | 10.40 |
| | right bone cheekpiece | 19.20 |
| | right bone cheekpiece | 18.80 |

Table 1. Dimensions of the Horse Bits from Jafar Abad and Tu Ali Sofla /*Jafar Abad ve Tu Ali Sofla'nın At Gemlerinin Boyutları.*

## Objects Made of Animal Bone

### Bits

Bits serve as a chronological hallmark for the culture of the nomadic groups.[13] An exteremely severe environmental catastrophe stroke the Eurasian Steppe in the last quarter of the second millennium BC in the form of a dreadful temperature drop and the genesis of subsequent thick layers of snow and ice that rendered finding food categorically impossible for human and animals. The situation brought about a tremendously significant historical upshot, the foundations of which had been laid in the preceding millennium. The primary innovation was the appearance of horsemen as a result of the invention in the late Bronze Age of a new type of bit, i.e. jointed snaffle bits, examples of which are attested over a vast region extending from the Carpathians to Altai Mountains. The elements of the Scythian metal bits also follow this pattern. With the expansion of equestrianism these groups were able to survive the catastrophe through adopting a new economic approach underpinned by a sort of herding that involved the flocks to undertake far-distance journeys. This resulted in getting access to novel forages and led to the growth of flocks.[14] The groundbreaking replacement of the disc bits with the jointed snaffle bits that took place in about 1300-1200 BC turned the steppe's populations to transhumant herders and warriors, who were constantly migrating with their flocks from one place to another in search of pastures. The invention of the new bit type together with such factors as climatic changes and innovatory techniques of building light dwellings are now considered among the major dynamics that impacted the lives of the inhabitants of the Eurasian steppe.[15] From then on, a type of Eurasian-style bit came to the fore and included a triple pierced element in animal horn or bronze and a double looped mouthpiece resembling a stirrup.[16]

At Jafar Abad and Tu Ali Sofla (Kurgan 13, Context 2), two Eurasian-type horse bits were recovered, each consisting of a bipartite bone bar as mouthpiece and two cheekpieces made of animal bones (Table 1.). The latter with their tapering and curved shapes resemble animal horns and are in both cases decorated with 7 horizontal panels filled with geometric and linear designs as intersecting and oblique lines, and lozenges as well as triangles filled with punctations. In one bit, the bone cheekpieces are 19.6 cm and 17.3 long, respectively. Those on the second have nearly the same length, measuring 19.2 cm and 18.8 cm, in that order.

### Bit attachment

The bits described above were associated with a bone piece resembling a water tap lever (Kurgan 13, Context 2). It has a central perforation and was riveted by a bone pin on one side. The piece is 4 cm long and 1 cm thick (Photo 17/Fig 4).

### Button

The same context in Kurgan 13 contained a rounded button 4 cm diameter and 2.4 cm high, with 4 holes on the edges and a central perforation at the base. The item was probably part of a bit, where the straps passing through it joined. The top surface bears incised geometric designs forming a swastika. The geometric motifs carved on the bits and the present button, which presumably stood against the horse's cheek, replicate those attested on the ceramics recovered in Kurgan 13 (Photo 18/Fig 5).

### Awl

The bone awl recorded in Context 2 in Kurgan 9 is a cut and polished piece that tapers to a point and resembles a prism. It is 4.5 cm long and 0.5 cm thick (Photo 19/Fig 6).

[13] Koryakova 2006: 16.
[14] Kuzmina 2007: 358.
[15] Kuzmina 2010: 121-122.
[16] Kuzmina 2007: 388.


Photo 17: Bit Attachment Resembling A Water Tap Lever (Kurgan 13, Context 2) / *Kemik Aracı, Bir Su Musluğu Koluna Benzeyen ve At Gemlerinin Bir Aracı (Kurgan 13, Context 2).*


Figure 4: Bit Attachment Resembling a Water Tap Lever (Kurgan 13, Context 2) / *Kemik Aracı, Bir Su Musluğu Koluna Benzeyen ve At Gemlerinin Bir Aracı (Kurgan 13, Context 2).*

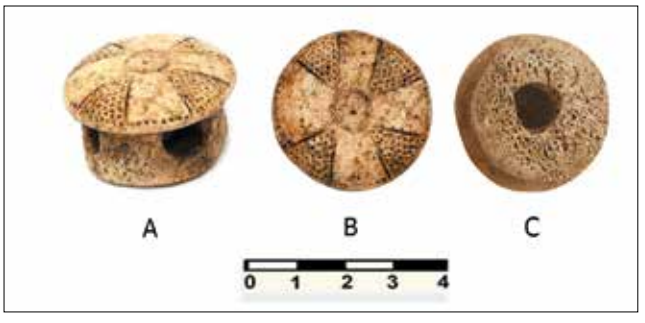


Photo 18: Different Views of the Bone Button Placed at Strap Crossings (A- Side Face; B- Front Face; C- Back Face), (Kurgan 13, Context 2) / *Kayış Geçişlerine Yerleştirilen Kemik Düğmesinin Farklı Görüntüleri (A- Yan Yüz; B- Ön Yüz; C- Arka Yüz), (Kurgan 13, Context 2).*

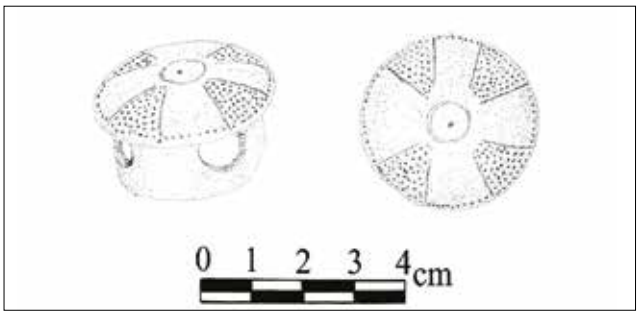


Figure 5: Different Views of the Bone Button Placed at Strap Crossings (Kurgan 13, Context 2) / *Kayış Geçişlerine Yerleştirilen Kemik Düğmesinin Farklı Görüntüleri (Kurgan 13, Context 2).*


Photo 19: The Bone Awl, Kurgan 9, Context 2 / *Kemik Delici, Kurgan 9, Context 2*

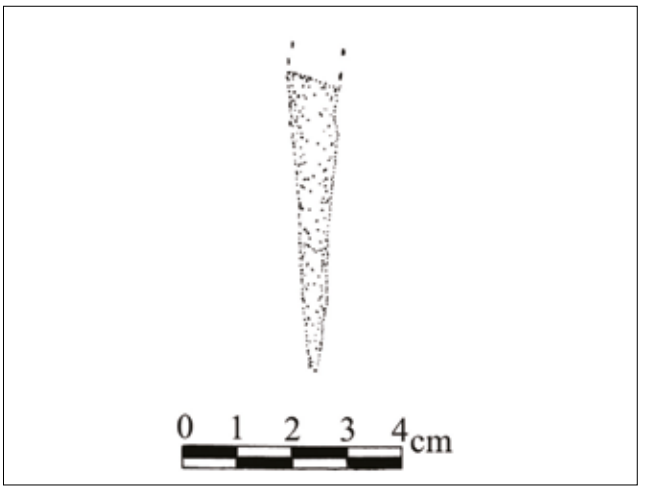


Figure 6: The Bone Awl (Kurgan 9, Context 2) / *Kemik Delici (Kurgan 9, Context 2).*

## Helix Snail

Apart from their dietary value, snails were employed as personal ornaments in prehistory. During the excavations at Jafar Abad and Tu Ali Sofla 5 pierced snails of the Helix genus were unearthed in Kurgan 8 Context 4. Their length ranges between 3-4 cm, and the perforations are 0.5 cm in diameter. These polished pieces belong to aquatic species. They were presumably baked before undergoing such process as cutting, piercing, etc. Existing within the snails were agate and paste (glass paste) beads, evincing their use as part of a necklace (Photo 20).

## Pupilla Snail

Pupilla is a terrestrial species indigenous to the Iranian region of Arasbaran (Qara Dagh). The excavated assemblages include a single instance of the species, recorded in Kurgan


Photo 20: Snails of the Helix Genus Used as Necklace Beads from Kurgan 8, Context 4 / *5 Helix Salyangozun'dan Oluşan Kolye, Kurgan 8, Context 4.*

8 Context 4. It measures 2-3 cm.[17] The upper external edge was pierced after the animal was potentially baked and polished. It was found together with the above examples of the helix genus, and formed a necklace (Photo 21).


Photo 21: Pupilla Snails Used as a Necklace Bead (Kurgan 8, Contexts 4) / *Pupilla Salyangozu Bir Kolye Parçası (Kurgan 8, Contexts 4).*

## Pick

A single bone pick measuring 7.8 cm long, 1 cm thick, and 1.9 cm in diameter was attested in Kurgan 8 Context 2. It was associated with a tortoise shell that was turned into a stringed musical instrument. This fingerpick has an elongated tapering body, which also has a small perforation for hanging. The perforated "handle" is 2.7 cm in diameter and the perforation has a diameter of 0.6 cm (Photo 22/Fig 7).


Photo 22: The Bone Fingerpick (Kurgan 8, Context 4)/Kemikten Yapılmış Mızrap (Kurgan 8, Context 4).

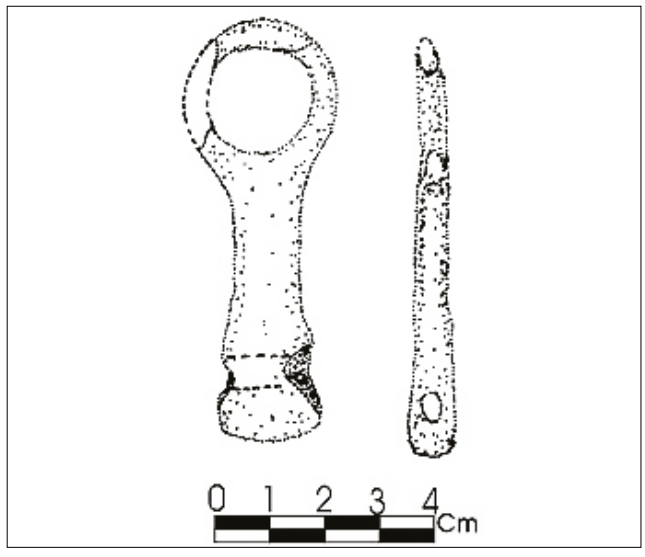


Figure 7: The Bone Fingerpick (Kurgan 8, Context 4) / *Kemikten Yapılmış Mızrap (Kurgan 8, Context 4)*

## Aquatic Animals

The evidence on marine animals recorded from mortuary and occupational contexts furnish illuminating insight into the art, trade and subsistence system of early communities. These animals were primarily used in manufacturing personal ornaments, to which the calcareous shell of mollusks is particularly apposite. The assemblage of mollusks recovered at Jafara Abad and Tu Ali Sofla is dominated by tortoise, snail and shell remains, with the relevant evidence coming from Kurgans 7, 8, 11 and 13.

[17] Iravani Ghadim 2011b: 196-216 Res: 56-6; Iravani Ghadim 2015: 109, Fig. K8, 54.

## Musical Instrument

Past populations frequently adapted shells of terrestrial tortoises to make artifacts. The use of marine turtles was less popular possibly because of their rather scarcity and the difficulty involved in their hunting. Yet, this very fact would make the latter variety more precious and prestigious.[18] A turtle shell consists of two parts of the top shell, carapace, and the ventral surface or the plastron. These are joined by the so-called bridge area to shield the entire body of the animal.


Photo 23: A Music Instrument Made from Tortoise Carapace, and the Bone Fingerpick (Left) Found Within It (Kurgan 8, Context 4) / *Kaplumbağa Kabuğundan Bir Müzik Aleti ve Kemikten Yapılmış Mızrap (Kurgan 8, Context 4).*

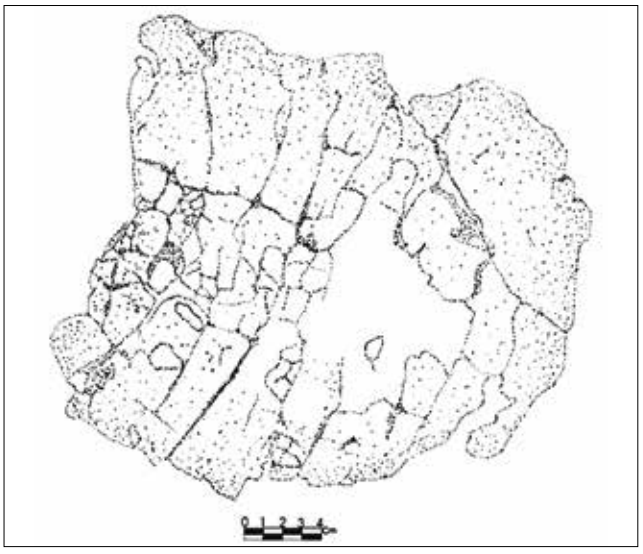

Figure 8: A Music Instrument Made from Tortoise Shell (Kurgan 8, Context 4) / *Kaplumbağa Kabuğundan Bir Müzik Aleti (Kurgan 8, Context 4).*

The turtle shell attested in Kurgan 8 is the carapace of an animal belonging to the family Testudiniae sp. and was adapted to make a stringed instrument by a talented hand. It is 18 cm long and 15 cm wide. It was cut into a circle before being ornamented with incised designs (Photo 23/Fig 8). As stated above, it was found together with a bone fingerpick. It is supposed that the excavated tomb was belonged to a Shaman because of stringed musical instrument introduced from kurgan 8, with numerous and various womanish bronze artifacts.

The instrument is paralleled in a representation on a terracotta tablet from Susa dated to the second millennium BC[19] The tradition of making musical instruments from tortoises shell, an earliest example of which is introduced here, has continued into the modern period, even possibly retaining the ancient forms. Thus, the modern example illustrated in (Photo 24) possibly resembles our example both in its form and the way in is played.

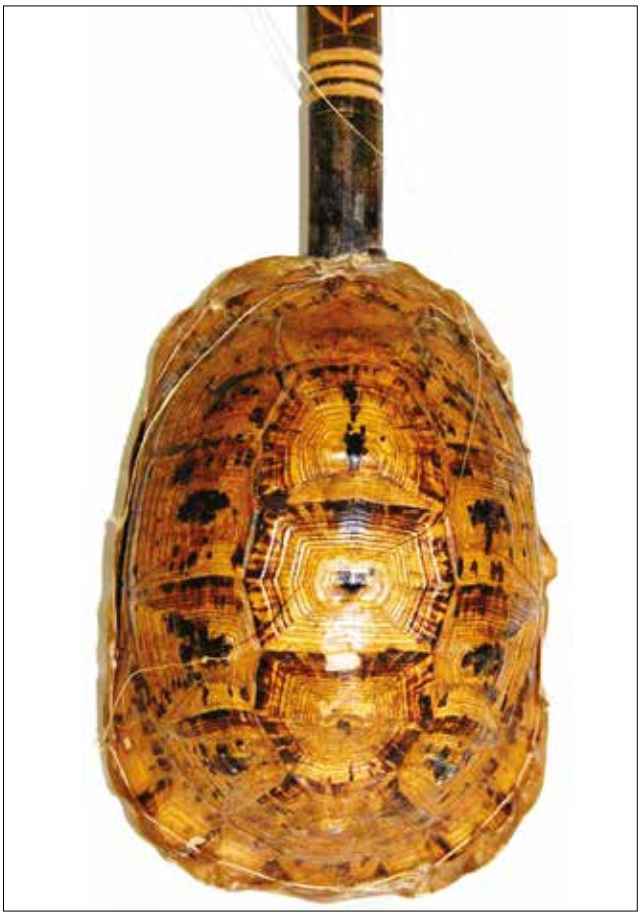

Photo 24: A Modern Example of Instrument Made from Tortoise Carapace, Supposedly Resembling Our Example in Both form and the Way in which it is Played. / *Kaplumbağa Kabuğundan Yapılmış Modern Bir Enstrüman Örneği. Sözde Örneğimiz Hem Biçim Hem Çalma Tekniğiyle Tanıtılan Enstrüman'a Benzemektedir.*

[18] The ancient Romans used a species of terrestrial turtle, Hermann, to make some special artifacts. The Babylonians recorded their texts on the shells of a particular species of green marine turtles, and the Egyptians employed the shells of Trionyx and Tsetudo Kleinmanni. The Greeks made use of the shells of three species of land turtles, Tesudo marginata, T. Hermanni, and T. Graece, all native to the Aegean Sea, in manufacturing harps.

[19] Iravani Ghadim, 2011b: 196-216 Res: 51; Iravani Ghadim, 2011a: 14; Iravani Ghadim, 2015: 109, Fig. K8 51.

Photo 25: Conus Snail Used as Necklace Bead (Kurgan 13, Context 2) / *Conus Salyangozu Kolye Boncuğu Olarak Kullanıldı (Kurgan 13, Context 2).*


Photo 26: Necklace Composed of Beads of Carnelian, Cone Snail (Conus), and Cardium Shell (Trachycardium Egmontianum), (Kurgan 13, Context 2) / *Akik ve Conus Salyangozu Yanı Sıra Cardium Cinsi Deniz Kabuğundan Oluşan Kolye (Kurgan 13, Context 2).*

## Cone Snail (Conus sp.)

A genus of marine gastropod mollusks in the family Conidae, Conus lives exclusively in salty water. It is usually 19-24 mm long, and has a white exterior with an irregular network in brown spread all over the latter[20]. This related species live in shallow, sublittoral areas of the Persian Gulf, Indian Ocean, and Red Sea. The genus has been recorded as perforated annular (doughnut-shaped) discs as necklace beads in the ancient East in the second and first millennium BC

In the excavations reported here, 4 Conus snails used as doughnut necklace beads were found in Kurgan 13 Context 2 (Photo 25-26), and an additional instance occurred in Kurgan 11 Context 5 (Photo 27/Fig 9), here used as an annular pendant for a bronze earring. Still another instance occurred in Kurgan 8 Context 4 again as a doughnut bead, which alongside other glass paste examples formed a necklace (Photo 28/Fig 10). They

[20] Linnaeus 1758: 824.


Photo 27: Cone Snail (Conus) Used as Pendant for a Bronze Earring (Kurgan 11, Context 5) / *Cone Salyangozu (Conus) Bronz Bir Küpede Halka Şeklinde (Kurgan 11, Context 5).*

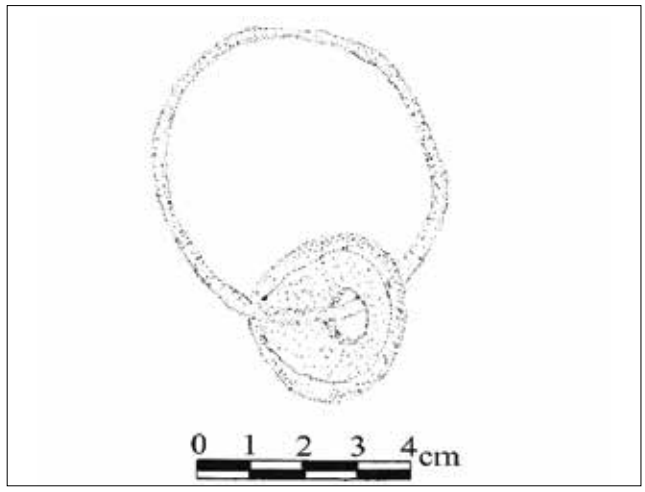


Figure 9: Cone Snail (Conus) Used as Pendant for a Bronze Earring (Kurgan 11, Context 5) / *Cone Salyangozu (Conus) Bronz Bir Küpede Halka Şeklinde (Kurgan 11, Context 5).*

Photo 28: Conus Snail Used Along with Paste and Fruit Beads to form a Necklace (Kurgan 8, Context 4) / *Conus Salyangozu Ve Frit Boncuklariyla Oluşan Kolye (Kurgan 8, Context 4).*

were likewise pierced for stringing and were simply smoothed, after being cut. They would have arrived in the region through the migrations of nomadic groups or via trade.

Figure 10: Conus Snail Used Along with Paste and Fruit Beads to form a Necklace (Kurgan 8, Context 4) / *Conus Salyangozu ve Frit Boncuklariyla Oluşan Kolye (Kurgan 8, Context 4).*

## Cardium (Trachycardium Egmontianum sp.)

This whitish species with strong radial ribs lives in the Caspian Sea and is represented in the assemblage of small finds by 4 instances that occurred in Kurgan 11 Context 6 (Photo 29/Fig 11). The perforated pieces formed a necklace along with other beads. Given the far distance between their discovery point and actual habitat, about 500-700 km, one may conjecture that they made their way into the region through the same trajectory.

## Lucinidae sp.

Lucinidae is a bivalve species of the Caspian Sea shells. The instance was recovered in Kurgan 11 Context 6 (Photo 29/Fig 11). Also, necklace composed of carnelian and paste beads as well as 12 worked shells Lucinidae sp. in Kurgan 7 Context 2 is identified (Photo 30/Fig 12). It was perforated for stringing and was slightly polished. As stated above, it was used in a necklace that apart from those listed above, contained other shell beads which were unidentifiable because of their polished surface. The above scenario may apply to its arrival in the region.

## Conclusions

Study of kurgans and the small finds coming from these burial contexts as the sole architectural evidence of the nomadic groups may to some extent reveal the social, economic, ritual and cultural complexities of these populations. Animal skeletal remains and objects made of related material are a major component in the assemblage of small finds recovered during the excavations at Jafar Abad and Tu Ali Sofla kurgans. They cast light on the subsistence system and the diverse diet of the builders of the kurgans, but also reveal that the nomadic groups responsible for their erection were acquainted with their surrounding environment and appreciated the significance of animals beyond their mere economic importance, as every single items recovered from these mortuary context were used quiet purposely.

Photo 29: Necklace Made from Carnelian and Paste Beads as well as Cardium (Trachycardium Egmontianum Sp.) Shells and 7 Worked Shells Lucinide (Kurgan 11, Context 6) / *Akik ve Frit Boncuklarının Yanı Sıra 4 Cardium Cinsi Deniz Kabuğu ve 7 Adet İşlenmiş Lucinide Deniz Kabuğundan Oluşan Kolye (Kurgan 11, Context 6).*

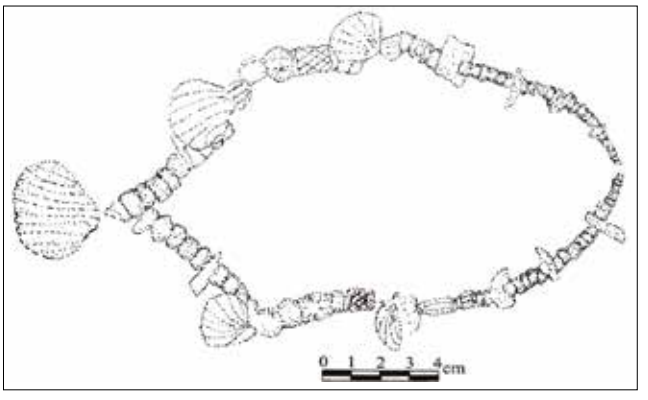

Figure 11: Necklace Formed from Carnelian and Paste Beads as well as Cardium (Trachycardium Egmontianum) Shells (Kurgan 11, Context 6) / *Akik ve Frit Boncuklarının Yanı Sıra 4 Cardium Cinsi Deniz Kabuğundan Oluşan Kolye (Kurgan 11, Context 6).*


Photo 30: Necklace Composed of Carnelian and Paste Beads as well as 12 Worked Shells Lucinide (Kurgan 7, Context 2) / *Akik ve Frit Boncuklarının Yanı Sıra 12 Adet İşlenmiş Lucinide Deniz Kabuğundan Oluşan Kolye (Kurgan 7, Context 2).*

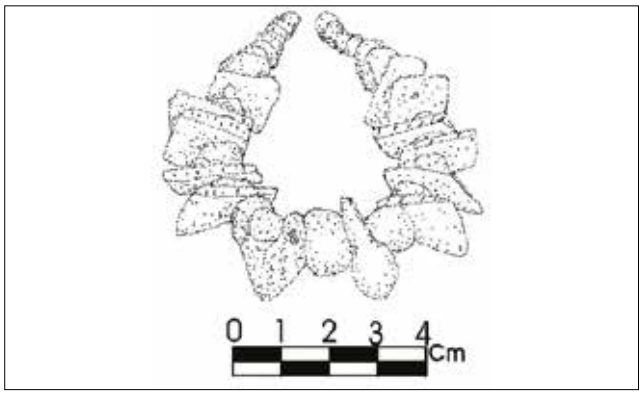


Figure 12: Necklace Composed of Carnelian and Paste Beads as well as 12 Worked Shells Lucinidae (Kurgan 7, Context 2) / *Akik ve Frit Boncuklarının Yanı Sıra 12 Adet İşlenmiş Kabuktan Oluşan Kolye (Kurgan 7, Context 2).*

Zooarchaeological studies have demonstrated a rise in the population of horses in the herds for the late Bronze Age because as pastures began a diminishing trend the horses would enable the local inhabitants to take their herds to farther distances for grazing. The dropping temperature and the unfavorable environmental conditions triggered immensely important impacts and trailblazing consequences, the in reality had begun from the former centuries. The principal advance was the spread of equestrianism in the steppe, which was an upshot of bring into play the jointed snaffle bits that emerged in the late Bronze Age. Larger horse and sheep flocks (which would cover longer distances and find their food even in snow covered lands) and improved handling abilities while riding, a mandatory requirement for guarding the herd during migratory journeys, turned the Eurasian steppe's inhabitants warrior nomads and quasi-nomads, who instead of urbanism and sedentary life, moved towards herding and transhumance. Although the pattern of this shift was not identical throughout the steppe, the enhanced new life style encompassed yearly migrations, application of light dwelling and proper and portable utensils, and raising horses and sheep. For the first time special riders equipped with weapons emerged in the late second BC The culture rapidly spread across the steppe, from the Ural Mountains through Altay. Based on the major cultural traits attested in a vast region stretching from the Caucasian mountains to southern Uzbekistan, Tajikistan and Turkmenistan, many archaeologists and physical anthropologists believe that these late second millennium BC migrations were southwards to the Central Asia, northern India, Caucasia, Anatolia and northwest Iran (in the latter case, evidenced by the Jafar Abad and Tu Ali Sofla kurgans on the southern bank of the Aras). The ENW's culture is typified by the presence of horses and in general the livestock such as goat and cattle, developed horse bridles, kurgan burials with offered sacrifices, and occasional horse burials in kurgans. A highly intriguing pattern with regard to animal burials in kurgans concerns the deposition of animal skulls, whose diverse forms of practicing in ritual context is all too well-known.

The Aras River region in northwest Iran was taken as a safe corridor by the migrating ENW groups in the late second and early first millennium BC, and it was in the same region that the kurgans of Jafar Abad and Tu Ali Sofla were identified and excavated. Faunal data recorded for these kurgans split itself into two general classes of animal burials and objects made from faunal remains. The first class consists of goat, sheep, bull and horse. Besides attesting to the dietary diversity and the subsistence nature of the economy of the Eurasian Warrior Nomadic groups, involvement of these animals in mortuary practices highlights the high respect they were held in by these transhumant communities.

Comprising a button, a bit attachment, an awl, bits, personal ornaments, and a stringed musical instrument, the second class bears witness to these nomadic groups' conversance with the regional ecosystem and fauna. The archaeometric analyses of the bits, ceramic vessels, etc., to be presented in detail in a forthcoming paper, date the kurgans to 1200-800 BC. While it is extremely difficult to distinguish the Cimmerian cultural material from that of the Scythians, we credit the latter people with the erection of the kurgans in question. And, although this timespan in the archaeology of Iran tends to be associated with the Scythian culture, were prefer an Early Scythian attribution for these kurgans.

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