



REVIEWING THE ANTHROPOMORPHIC STELAE: PEOPLE IN IRON AGE MONUMENT FROM SOUTH CAUCASUS

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ABSTRACT: Anthropomorphic stelae and related archaeological findings represent some of the most significant advances discovered during the archaeological excavation of the Iron Age monument in the South Caucasus (in Nagorno Karabakh), particularly in the village of Nor Karmiravan (Papravend)¹. During the excavations conducted in 2016-2018 near the anthropomorphic stelae in the area of the village of Nor Karmiravan, Martakert (Aghdara) region, our team documented a wide range of archaeological, anthropogenic, and archeozoological materials. Among these finds were rectangular, flat, longitudinal slabs that describe anthropomorphs through their dimensional and sculptural processing, in addition to the stelae themselves. This paper attempts to present the results of the excavations at the Nor Karmiravan monument and to analyze the social attitudes and motivations of the Iron Age people of the South Caucasus toward these stone monuments.

Keywords: Archaeozoology; Anthropology; Iron Age; anthropomorphic stelae.

1. INTRODUCTION

Anthropomorphic stelae, characterized by the depiction of human-like figures, are a remarkable testament to the cultural and artistic expressions of ancient societies. Created primarily during the Iron Age and earlier, these monumental stelae are found primarily throughout Europe. They offer invaluable insights into the beliefs, rituals, and social structures of past cultures. Despite their importance, while there has been considerable research on these stelae (Gutherz et al., 1998; Koukouli-Chrysanthaki, 2007; Vierzig, 2017), there remain gaps in understanding their regional variation and symbolic complexity.

The Caucasus region, with its rich cultural heritage and diverse archaeological landscape, has long fascinated researchers exploring the manifestations of ancient civilizations. Among the most intriguing archaeological finds in the Caucasus are anthropomorphic stelae, which serve as tangible links to the beliefs and practices of Iron Age societies in the region. Adorned with human-like features, these monumental stone stelae stand as iconic symbols of cultural expression and religious significance (Ivanov, 2016; Kharitonov, 2017; Petrov, 2018; Smith, 2019).

Despite their prominence, scholarly research on anthropomorphic stelae in the Caucasus has been relatively sparse, leaving much of their meaning and context shrouded in mystery. However, a handful of studies have emerged that offer valuable insights into the typology, distribution, and cultural implications of these enigmatic monuments.

This region boasts a rich archaeological heritage that spans millennia. Among its most fascinating relics are the Iron Age anthropomorphic stelae, which serve as poignant reminders of the cultural, religious, and artistic practices of ancient societies. These imposing stone monuments, adorned with human-like features, stand as enduring symbols of the region's cultural identity and spiritual beliefs (Yeranyan, 2021a, 2021b).

Despite their importance, scholarly attention to Iron Age anthropomorphic stelae for this region has been relatively limited, with only a handful of studies exploring their complexities and cultural implications. Recent archaeological efforts, however, have begun to shed light on these enigmatic structures, providing new insights into their typology, distribution, and socio-cultural significance within the Armenian landscape.

In 2016, a significant discovery was made by a local resident near the village of Nor Karmiravan in the

¹ The study focuses on a monument located in Nagorno-Karabakh, a region marked by conflict between Armenia and Azerbaijan. Following the trilateral ceasefire agreement of November 9, 2020, these territories came under Azerbaijani control. The article presents the names of the settlements in both the Armenian and Azerbaijani forms at the time of first mention, while retaining the original names as documented during the research period.



Fig. 1 - The concentration of stelae in one area: the view before excavations.

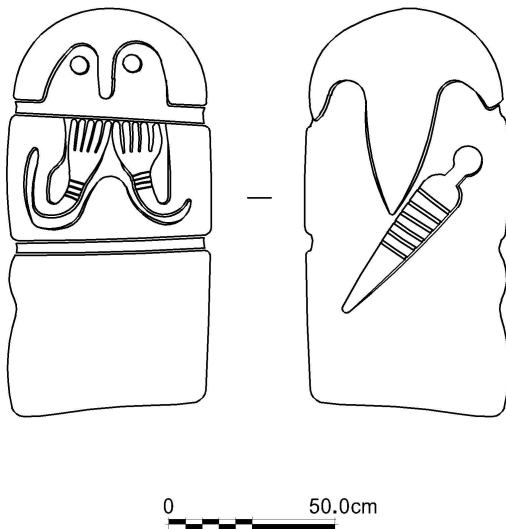


Fig. 2 - Anthropomorphic stela, Bakhshun-tapa.

Martakert region. About a dozen anthropomorphic stelae or fragments of them were accidentally uncovered. The concentration of these stelae in one area, together with certain features of the surrounding landscape, suggested that this site might be the original site of their creation and use (Fig. 1). To determine this, excavations were conducted in the vicinity of the stelae and the nearby dug water channel. From 2016 to 2018, the Artsakh Archaeological Expedition conducted these excavations under the auspices of the Institute of Archaeology and Ethnography of the National Academy of Sciences of the Republic of Armenia.

The purpose of this study is to comprehensively examine the stelae of Nor Karmiravan, to evaluate their archaeological context through excavation, and to determine whether they are in situ or have been relocated.

By studying these stelae, valuable insights can be gained into their date of origin, purpose, and connection to Iron Age communities in the region.

2. MATERIALS AND METHODS

2.1. Anthropomorphic stelae of Artsakh

The stelae under discussion are flat, elongated slabs that represent anthropomorphic features through their sculptural and dimensional characteristics. These slabs are divided into three sections by two horizontal chamfers that delineate the head, torso, and lower part of the body (Fig. 2).

The observed stelae were found scattered over a longitudinal region that includes both highland and steppe terrain and extends for approximately 30-40 kilometers. They are mainly located in the northeastern areas of Artsakh (Karabakh), near Martakert, Tigranakert, and the adjacent settlement of Gyavurkala (Yeranyan, 2021a). During the Soviet era, several stelae from this area were transferred to the Historical and Geological Museums of Stepanakert and Martakert for preservation, while some remained in their original outdoor locations.

2.2. Methods

The study of this topic has been conducted through a synthesis of interdisciplinary methodologies. First, archaeological excavations were used to collect data. Subsequently, the artifacts unearthed were subjected to iconographic analysis using the historical-comparative method. AMS ^{14}C dating was then used to establish the chronological framework of the tomb through laboratory analysis of samples taken from the archaeological materials.

The human remains were analyzed in the laboratory of the State Non-Commercial Organization "Service for Protection of Historical Environment and Museum Reserves" (Republic of Armenia). After cleaning and reconstruction of skeletal elements, the state of preservation (Connell, 2008) and representation (Buikstra & Ubelaker, 1994) were documented. Subsequently, age-at-death estimation, sex determination (Ubelaker, 1979; Buikstra & Ubelaker, 1994; Mays, 1998; White & Folkens, 2005), and skeletal stature estimation (Pearson, 1899; Trotter & Gleser, 1962) were per-



Fig. 3 - General view of the excavations carried out around the water canal.



Fig. 4 - Aerial photograph of the tomb (photo by A. Mkrtchayn).

formed. The presence of pathologies, skeletal anomalies, and non-metric traits were noted (Aufderheide & Rodriguez-Martin, 1998; Ortner, 2003; Mann & Hunt, 2005; Waldron, 2009; Spiros, 2019). In addition, skeletal features identified in the literature as functional adaptations or stress markers have been documented (Robb, 1998).

In addition, archaeozoological materials are examined at the Archaeozoological Laboratory of the Institute of Archaeology and Ethnography of the National Academy of Sciences of the Republic of Armenia.

2.3. Nor Karmiravan site (NKS)

The village of Nor Karmiravan is located in the Martakert region, nestled in the lower valley of Khachenaget. In 2016, the first anthropomorphic stelae were unearthed in the village. Further exploration revealed the presence of about a dozen complete or fragmented anthropomorphic stelae. The majority of



Fig. 5 - The jar was found at the bottom of the water canal.

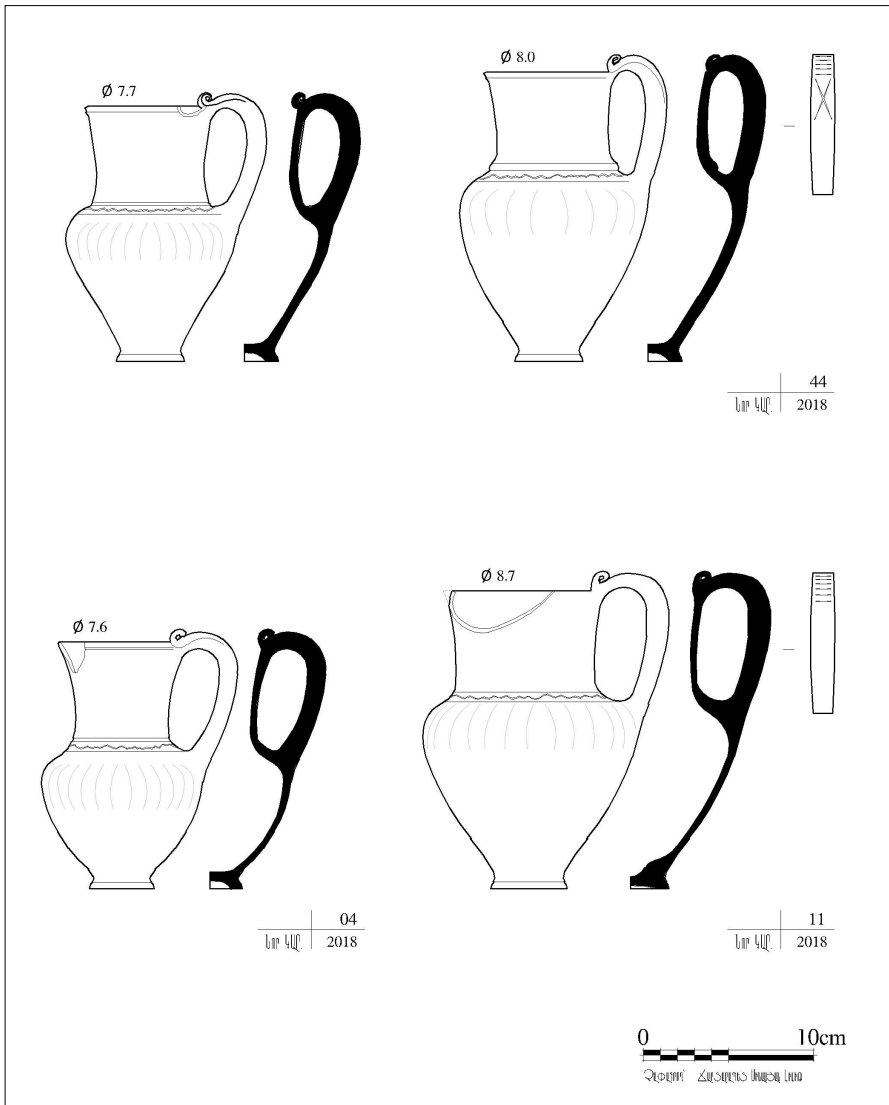


Fig. 6 - The single-handled small jugs.

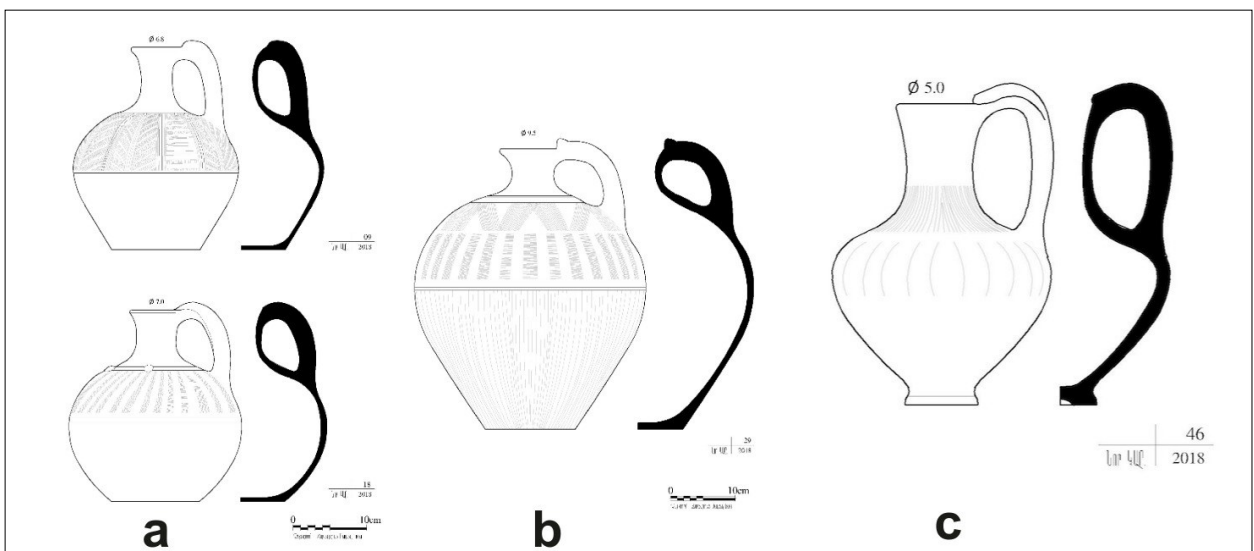


Fig. 7 - Different Single-handled large jugs.

these stelae were clustered in a single area, with two additional stelae located 100-150 meters northeast of the main group. In addition, two stelae were uncovered in the courtyard of a village residence and one stela was discovered during construction activities. In addition, several fragments were found in the surrounding area.

Prior to these excavations, about twenty similar anthropomorphic stelae had been documented in this region (Khalilov, 2004: 100-104). The stelae discovered in the village of Nor Karmiravan do not show any distinctive features that would distinguish them from others found within the same series.

2.4. Excavations

From 2016 to 2018, excavations were conducted at two primary sites:

- a. At the main collection site of the NKS stelae.
- b. Approximately 200 meters northwest of the NKS, near a canal built in the second half of the 2000s.

2.4.1. Excavation of the Water Canal Site

During the first year, excavations were conducted simultaneously at both sites. While exploring the area around the stelae, a single jar was discovered at the bottom of the water canal (Fig. 3). This jar appeared to be unfinished, with a portion of the bulging belly broken. Beneath the broken area, two carved zones filled with diamond-shaped patterns adorn the bulging section, while carved, dotted triangular and circular patterns are found at the four corners below the broken area.

Excavations confirmed an underground burial at a depth of 1.1 meters at this site. Anthropological remains consisted of a skull and various skeletal fragments, along with the discovery of 18 jars of different shapes, as well as beads made of paste, sardion and bronze were discovered. However, the archaeological material was incomplete and the integrity of the skeleton was violated; some bones were found under the skull, while others were scattered around the sides of the jars (Fig. 4). It is believed that the position of the skeleton was disturbed by the construction of the canal. The excavation also yielded a significant quantity of shells and beads made of iron, paste, and sardion. In addition, four single-handled jars, one unhandled jar, three jugs and a butter churn were found.

The material found is typical of the materials with a black shiny torso found in this region and other stelae in the region, some of which can be dated to the 9th-8th centuries BC, and others to the 7th-6th centuries BC. It should also be noted that while the excavations confirmed only one burial, pottery found by chance in other areas during the construction of the canal in previous years by the Artsakh archaeological expedition was also authenticated. (Petrosyan et al., 2008).

2.4.2. Tomb excavations

The next and most important excavation site was the area around the stelae collection, where a grave was excavated. During the excavations in 2018, a cromlech armor with a circular ground plan and a diameter of 11 meters was uncovered. After removing the upper layer of soil, which was about 50-70 centimeters thick, it be-

came clear that the burial pit was located approximately in the center of the cromlech. The underground chamber had a rectangular shape with a 30-degree deviation in an east-west direction. It was 6.4 meters long and 1.6 meters wide. Notably, the burial chamber had a distinct slope along its longitudinal axis (Fig. 5).

In the northeastern part of the burial chamber, the fragmented skull of the deceased was unearthed at a depth of 70 centimeters. The entire layer was densely filled with animal bones, while mollusk shells were documented in a layer approximately 30 centimeters deep. In addition, in the western part of the burial chamber, a horse burial was uncovered, accompanied by fragments of a bridle and decorative elements.

It is noteworthy that burials with a similar structural layout are not uncommon in this region. The kurgans with single burials are a characteristic feature of the Ivanyan (Khojaly) cemetery and form a separate subgroup (Kushnareva, 1970).

3. RESULTS AND DISCUSSION

3.1. Findings

The burial artifacts discovered in the NKS tomb can be divided into several groups, including beads, weapons, a horse bridle, horse grooming accessories, and pottery. A total of 41 jars belonging to the same historical period were unearthed. The pottery can be further classified as follows:

3.1.1. Small single-handled jugs

These jugs have a small base, a narrow waist, and a neck that begins at the shoulder and flares upward in a trumpet shape. The handle is attached to the lip with an outward spiral (Fig. 6). This type of pottery is particularly characteristic of Iranian ceramics, which evolved from earlier Iranian styles and reached its final form by the end of the 2nd millennium BC (Young, 1965; Pogrebova, 1977). Similar examples have been found at various Iranian sites such as Hasanlu V, Giyan I, Gyoytepe, and Khorvin-Chandar (Pogrebova, 1977).

3.1.2. Single-handle large jugs

- a. These relatively small jugs have a spherical body with a narrow, elongated neck and an outwardly flared lip. The round handle extends from the lip and is attached to the center of the body. Some examples have convex horizontal patterns on the body, decorated with polished spruce decorations (Fig. 7a). Similar jugs have been dated to the 9th century BC in Iranian sites (Medvedskaya, 1982) and have also been found in Armenian stela sites such as Sarapat, Vanadzor, Astghi-blur, Voskehask, Skhtorashen (Kushnareva, 1957) and surrounding - Khojaly (Petrosyan, 1993) Martakert (Asryan, 1973) etc.
- b. Glasses with a flat bottom, convex from the middle and ending with a short neck. The lip widens outward and the handle, round in section, starts from the lip and is attached to the bulging shoulder of the body. In the convex part, these jugs have horizontal and vertical line patterns made by polishing (Fig. 7b).
- c. Small, flat-bottomed jugs with a widening toward the center of the body, a narrow, elongated, trumpet-



Fig. 8 - Double-handle jugs.



Fig. 9 - No-handle jugs



Fig. 10 - (a) No-handle jug; (b) Single-handle jug; (c) Double-handle jug.

shaped neck, and an outwardly curving lip. The flat, cut handle begins at the lip and is attached to the lower part of the neck of the body (Fig. 7c).

3.1.3. Double-handled and handleless jugs

One example of each type was recorded. The double-handled jug has vertical, rounded rims attached to the convex body (Fig. 8). Carved bands decorate the central part of the neck and the broad part of the body. Similar jars have been found at Redkin Lager and are dated to the 8th century BC. The discovered no-handle jug has a black dull surface, with a widening in the middle of the body, a small seat, and an indented bottom with a black matte surface (Fig. 9) with a hole in the neck. Vertical polished ornaments are present in the central part of the body.

3.1.4. Jugs found in the tomb.

The pottery found in the tomb can be divided into three groups: single-handled, double-handled, and unhandled (Fig. 10 a, b, c). These ceramics are similar to earlier types dating to the 3rd to 2nd millennia BC. in the North Caucasus (Kushnareva et al., 1994) and have also been found at sites such as Shirakavan, Keti, and Angeghakot dating to the 8th to 7th centuries BC. (Khnikyan, 1993). The 8th to 7th century BC pot type was the most reasonable date for the pottery found in the NKS.

Two particularly noteworthy discoveries from the tomb are the two rhytons. These are similar to the traditional rhytons characterized by their trumpet-shaped necks connected to animal-shaped torsos. However, they differ from typical examples by their elbow-shaped connection systems that widen to the floor (Fig. 11). One rhyton (the smaller one) is decorated with radial mat patterns, while the torso of the other is connected to the ground by three buckled belts. Similar silver rhytons have been found in Iranian monuments of the Achaemenid period (Bashash, 1997).

Butter churn: A gray, elongated design and wide, flat-bottomed churn was discovered (Fig. 12). It has a nail curve and a horizontal handle near the spout. Such jars have a wide spatial and temporal distribution and are commonly found in monuments dating to the first quarter of the 2nd to 1st millennium BC, with no specific dating characteristics (Summers & Burney, 2012).

Brick-colored bowl: The only three-legged bowl unearthed (Fig. 13) has a short, vertical handle extending from the lip and is rounded in section. Similar bowls have been unearthed in other monuments throughout the territory of Artsakh, such as Chaylu and the Iron Age tombs of Shushi (Asryan, 1973).

Under the northeastern wall of the tomb, the excavation team uncovered a jar with a spherical body and lip opening outward. The jar contained archaeobotanical material to a depth of 50 centimeters. Similar pitchers have been documented in numerous Late Bronze Age monuments in the region (Torosyan et al., 2002).

In addition to the aforementioned pottery found in various parts of the burial chamber, including under the skull, a small number of broken jar fragments were also discovered. Some researchers suggest that breaking and burying objects in a tomb symbolizes a ritual death,

possibly related to beliefs in the reincarnation of the deceased (Kuftin, 1941; Tumanyan, 2010).

The metal artifacts recovered from the tomb are relatively scarce, consisting of bronze pendants, Scythian-type bronze arrowheads (Fig. 14), several bronze beads, and part of an iron bridle. The arrowheads found are typical of those found in the South Caucasus, known in the literature as "Scythian type" arrowheads (Archaeology of the USSR, 1992: 37, 40, 49, 92, 292-294, 369), dating back to the 8th century BC. However, this type of arrow was used even later (Dyachenko et al., 2000; Genz, 2011). Ilescen dates this type of three-pronged arrow in South Caucasian graves to the 7th-6th centuries BC (Ilescen, 1965).

The iron bridle found near the horse burial showed signs of considerable wear. Among the materials accompanying the horse burial were several parts of a bone bridle with a horse's head at the top, a horse's hoof-shaped end at the bottom, and three hollow holes in the middle. Similar sculptures have been found in monuments in the Black Sea region and Eastern Europe dating to the 7th-6th centuries BC (Kantorovich, 2016).

A pear-shaped granite mace with a hollow hole was found on the tomb floor (Fig. 15), probably made during the earlier Iron Age and commonly found in monuments from the 15th-13th centuries BC (Muhle, 2008; Piller, 2013). The prolonged use of such Middle Bronze Age weapons has been observed in the region, dating back to the XIV-VIII centuries BC (Torosyan et al., 2002).

A fascinating discovery in the eastern corner of the tomb was the abundance of beads made of paste, sardion and bone. Nearly 5,000 beads of various types were found, presumably arranged on a cloth as part of the burial ritual. The tomb also contained a large number of mollusc shells, over 300 of which covered the entire floor.

3.2. Human remains from the burial of NKS

The cranial segment is present but fragmented and incomplete, with missing parts including portions of the temporals, facial bones on both sides, the left ramus of the mandible, and the left mandibular condyle. Skull reconstruction was achieved for a proportion of 80%. The occipital bone was deformed postmortem. The postcranial skeleton is nearly complete but fragmented postmortem, with missing parts including spine bones, some ribs, midshaft of the left ulna, midshaft and upper epiphysis of the right humerus, right scapula, left hip bones, left femur and tibia, upper epiphysis of the right tibia, feet, and hand bones. Only the upper epiphysis of the right femur is presented (Fig. 16).

3.2.1. Age-at-death estimation and sex determination

The age-at-death assessment was based on pubic symphysis morphology scored according to various systems such as Todd (1920) and Brooks & Suchey (1990), as well as auricular surface assessment according to Meindl & Lovejoy (1989). Additionally, cranial vault suture closure was scored on a 4-point scale following Meindl & Lovejoy (1985). The individual was estimated to be between 30 to 40 years old. Sex determination was made based on pelvic and cranial traits, indicating a male.

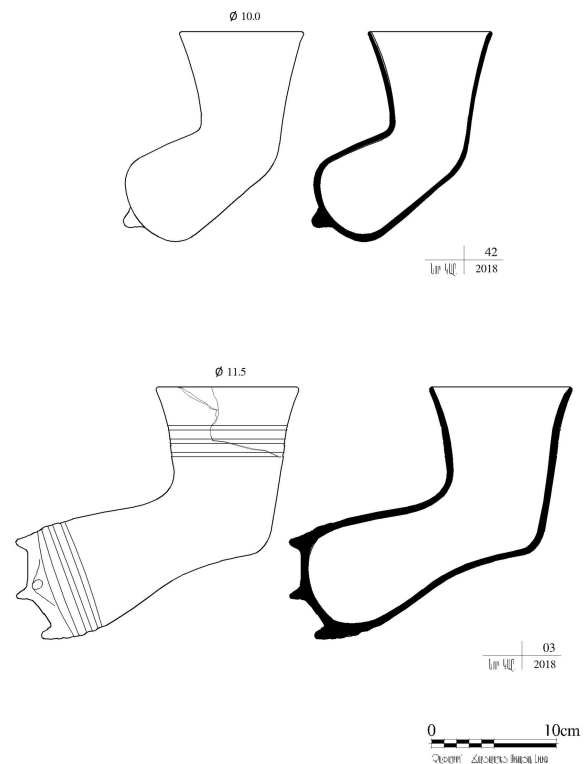


Fig. 11 - Rhytons.



Fig. 12 - Butter churn.

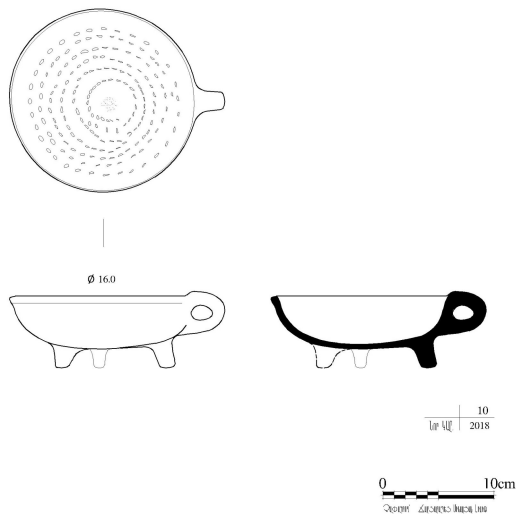


Fig. 13 - The brick-colored bowl.



Fig. 14 - Scythian-type bronze arrowheads.



Fig. 15 - Pear-shaped mace.

3.2.2. Dental pathologies

Moderate physiological dental wear (attrition), one incipient cavity (likely new dental caries development) on the left lower first molar (Fig. 17a), supragingival calculus on upper and lower molars and premolars on the lingual and buccal sides were observed (Fig. 17b, c). The plaque deposition suggests a diet rich in hard fibrous foods of vegetable origin, high in carbohydrates (Lukacs, 1989).

3.2.3. Cranial non-metric features

The two frontal bones are seen due to the complete metopic suture, extending from the bregma to the nasion (Fig. 18). The metopic suture, present in a newborn and typically obliterated by around 7 years of age, occasionally persists as an anatomical variant with little clinical significance (Gardner, 2016). Metopism incidence ranges from 0% to 7% associated with ethnicity (Berry & Berry, 1967), with males showing a higher prevalence (Murlimanju et al., 2011). Persistent metopic suture occurs in conjunction with refining the ability to walk and is suggested to aid in the birthing process for infants with larger brains and is associated with postnatal brain growth and frontal lobe expansion (Falk et al., 2012).

3.2.4. Postcranial non-metric features

A perforation of the coronoid-olecranon septum (septal aperture) in the right humerus has been identified (Fig. 19a). Recent studies indicate that this perforation is a response to hyperflexion rather than hyperextension of the elbow. The apertures form primarily through resorption of the humeral septum at a point where the coronoid process of the ulna would potentially make contact in full flexion (Mays, 2008).

3.2.5. The metabolic disorder

The metabolic disorder occurs in the case of the individual, in the form of porotic hyperostosis (cribra orbitalia/CO), inactive at the moment of death. Both orbits are affected by CO; however, due to incomplete orbits, the extent of CO could not be accurately determined (Fig. 20). Nonetheless, the presence of porotic hyperostosis suggests poor living conditions, potential chronic health issues, and dietary deficiencies, particularly iron deficiency (Walker et al., 2009).

3.2.6. Postcranial pathologies

Postcranial pathologies were also observed, including intervertebral disc herniation (Schmorl's nodes) on the thoracic vertebral body (Fig. 21). Schmorl's nodes are depressions on the upper and lower surfaces of the vertebral body resulting from vertical intervertebral disc herniation, indicative of spine overloading, frequent weight lifting, maintaining a vertical posture with a burden on the back, repetitive spine bending, etc. (Palfi & Dutour, 1996).

Additionally, a probable stress-related injury at the medial epicondylar apophysis was detected on the left humerus (Fig. 19b). Such injuries typically occur during adolescence, throwing activities are performed near the end of skeletal maturation, when the medial epicondyle is not yet fully fused (12-18 years of age), leading to bony detachments in the area of the medial collateral ligament



Fig. 16 - Skeleton in standard anatomical position



Fig. 17 - (a) New dental caries development; (b, c) Dental calculus on upper and lower molars and premolars.

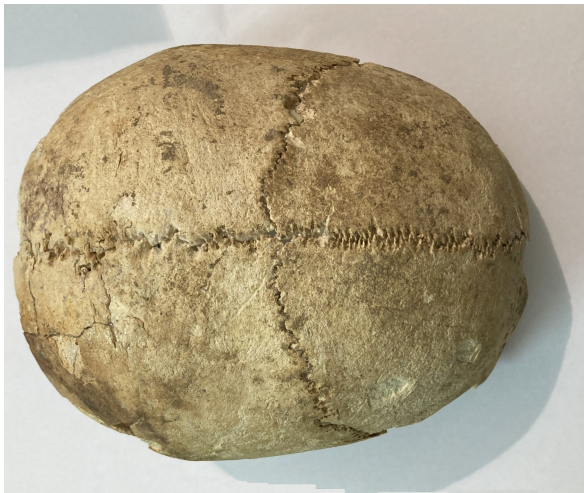


Fig. 18 - Metopic suture (the suture on the frontal bone).



Fig. 20 - Cribra orbitalia (the porous areas in the top of the eye sockets).

insertion. These detachments can be complete in individuals younger than 15 years old and partial in older teens, resulting in the avulsion of one or more bony fragments from the medial epicondylar apophysis (Kijowski & Tuite, 2010). Upon reaching adulthood, healed lesions from such fractures manifest as bony outgrowths or lacunae, depending on whether the avulsed fragment re-united with the condyle (Lewis, 2017). In archaeological remains, these lesions are commonly observed as scars from traumatic events during adolescence, particularly on adult humeri (Villotte et al., 2010).

Given the traumatic and pathological markers evident on the skeleton, it can be inferred that the individual from the NKS tomb experienced various physiological stressors during their lifetime, including spine overloading, potentially frequent weight lifting, and a humeral trauma resulting from adolescent throwing activities.

3.3. Animal remains

The animal remains found at the site predominantly consist of mammal bones. A total of 1319 bone parti-



Fig. 19 - (a) Septal aperture in the right humerus; (b) Injury at the medial epicondylar apophysis on the left humerus.



Fig. 21 - Schmorl's node on the thoracic vertebral body.

cles were examined, with 661 bones successfully identified and 658 remaining unidentified. The majority of identified bones belong to domesticated ungulates, including 6 sheep/goats, 2 cattle (*Bos taurus*), 1 *Bos primigenius*, and 4 horses (*Equus caballus*). Among wild animals, one roe deer was identified, along with one member of the Felidae family (cat/fox) (Hillson, 2009; Prehn et al., 2018) (Tab. 1 and Fig. 22).

3.3.1. Bone Modifications:

Cut and Butchering Marks: Some bones exhibited marks indicating butchering and cutting into smaller parts, with approximately 5% of remains showing such marks. This suggests that animal sacrifice was not a widespread practice solely for obtaining meat or food.

Chewing, Gnawing, and Digestion by Animals: Damage caused by birds and carnivores, as well as traces of digestion (e.g., hydrochloric acid from predator stomachs), were observed on some bones.

Pathology: Several pathological features were noted on animal bones. This proves the site occupiers' cutlery and livestock breeding quality during the given

Age. The recorded anomalous case was the sacral slope and sacral curvature in one individual of sheep/goats (Fig. 23a).

Burning of Refuse: No burnt bones were recorded, suggesting that cooking methods for some of the buried animals involved boiling rather than direct grilling over a fire.

Weathering: Some mammal bones at the site displayed weathering characteristics.

Tools and Artifacts: A few bone-made items, including horse harness fittings, antler fittings, beads, and a perforated pendant made from an incisor, were discovered (Fig. 23b).

3.3.2. Animals' Mortality Age

Using I. Silver's methods, it was estimated that the majority (84.62%) of the animals were adults, with a smaller proportion (15.38%) being 1-2 years old (Don et al., 1969) (Tab. 2).

3.4. Problems of dating of anthropomorphic stelae

As noted above, none of the three dozen or so stelae found in the steppes of Artsakh had been authenticated at their original sites of discovery. Through various excavations and research efforts, we have only been able to confirm the oldest date associated with these stelae (Yeranyan, 2021b).

By conducting a comparative analysis of these stelae with similar ones found in the region, we have tentatively dated the anthropomorphic stelae of Artsakh to the early 1st millennium, specifically between the 8th and 6th centuries BC, although further validation is required. Consequently, the excavation and discovery of these stelae in their original positions has made the issue of dating them an urgent priority.

A critical factor in dating the tombs was the analysis of the archaeological finds. It is noteworthy that many of the pottery sherds were similar to those found in Armenian, Azerbaijani, and Iranian monuments, suggesting a wide spatial and temporal distribution for their possible dating.

Upon examination, it became clear that the stone anthropomorphic stelae from Artsakh share similarities with those found in the North Caucasus, the Black Sea region, the Crimea (Olkhovskii & Yevdokimov, 1994), as well as Meshkin Shahr (Ingraham & Summers, 1979; Burney, 1979; Azarnoush & Helwing, 2005; Piller, 2010), and the well-known stelae from Hakkâri (Sevin, 2005), which, according to various researchers, date from the beginning to the end of the 2nd millennium BC to the 4th-3rd century BC.

Regarding the dating of the NKS tomb, the pottery designs and decorations, with some exceptions, correspond to the pottery of the widely distributed stelae of the region. The discovered pottery dates back to the 8th - 7th and 7th - 6th centuries BC.

Further precision in dating was achieved through laboratory C¹⁴ analysis of a sample from the burial. Research conducted at the Vilnius Radiocarbon Laboratory

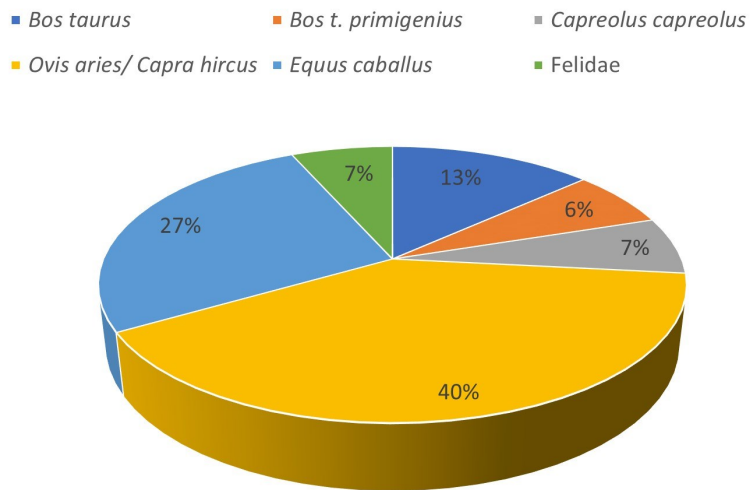


Fig. 22 - Identified species percentage in the site.

indicates that the burial dates to approximately 2486 BP, with a margin of error of ±30 years (fig. 24).

It can be concluded that the tradition of erecting anthropomorphic stelae in Artsakh probably began in the 8th or 7th century BC and continued until the first half of the 5th century BC.

3.5. The possible function of anthropomorphic stelae

Excavations at the NKS tomb, as well as a broader survey of its surroundings, suggest a possible relationship between the stelae and the tomb. It is worth noting that the study of the stone anthropomorphic stelae of Artsakh would have been impossible without comparative material and parallels from the South Caucasus, Iran, the North Caucasus, and the Near Black Sea region (Olkhovskiy & Yevdokimov, 1994). Consequently, these stelae could be placed in a broader East Asian cultural context, while considering the temporal aspect

Species	NISP	MNI
<i>Bos taurus</i>	167	2
<i>Bos t. primigenius</i>	10	1
<i>Capreolus capreolus</i>	13	1
<i>Ovis aries/ Capra hircus</i>	121	6
<i>Equus caballus</i>	326	4
Felidae	2	1

Tab. 1 - Number of identified species (NISP) and Minimum number of individuals (MNI) of animals' osteological remains.

Species	NISP	MNI
<i>Bos taurus</i>	-	2
<i>Bos primigenius</i>	-	1
<i>Ovis aries/ Capra hircus</i>	2	4
<i>Equus caballus</i>	-	4

Tab. 2 - The animal mortality ages.

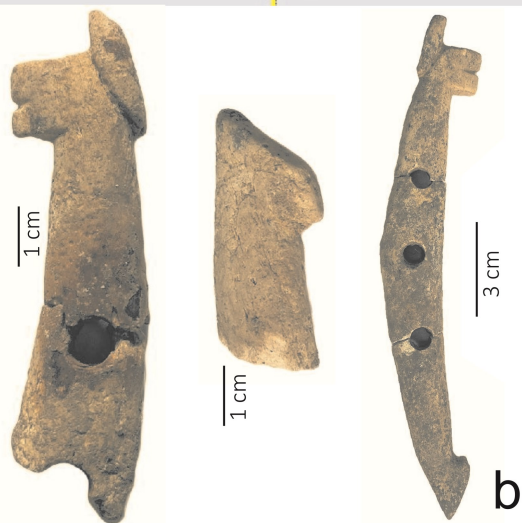
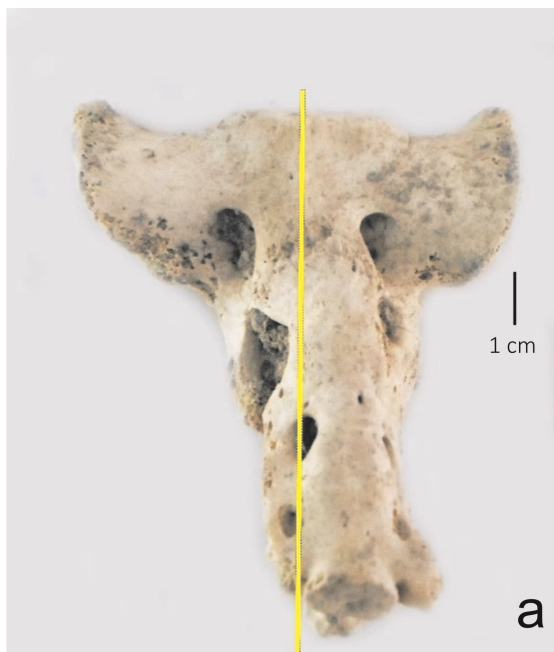


Fig. 23 - Animals bone modifications (a) Pathology traces on bone; (b) Bone-tools.

alongside other contemporary stelae found in Armenia.

Archaeological excavations have revealed various scenarios suggesting that monuments were occasionally erected on burial mounds in Armenia during the Late Bronze and Early Iron Ages (Tumanyan, 2003). Some archaeologists suggest that the anthropomorphic tuff monument over 1.5 meters high discovered at Metsamor may have served as a funerary monument (Khanzadyan et al., 1973).

The NKS stelae were found lying down and may have shifted slightly over time, especially during the Soviet era when irrigation pipes were installed in the area, altering the landscape. These stelae were discovered within the cromlech of the tomb, suggesting their association with the tomb. However, determining the

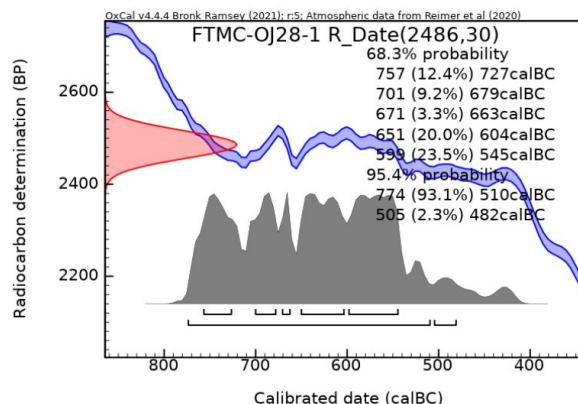


Fig. 24 - The results of the C¹⁴ analysis of human remains.

nature of their relationship, their specific placement within the tomb, and their intended purpose remains challenging at this stage.

Infrared filtered images of the area surrounding the excavated NKS tomb revealed the presence of other tombs nearby. In essence, this area appears to have been a substantial burial ground where the burials were highly regarded and the anthropomorphic stelae in question were erected on site.

4. CONCLUSIONS

Research on the NKS stelae provides additional insights that complement our understanding of the Artsakh stelae. To summarize:

- The stelae in question, although fallen and probably slightly displaced, were discovered directly on top of the tomb. Even if they were moved and reassembled later, their archaeological context is known; they were associated with about a dozen tombs in the area. This significant detail adds to our knowledge of anthropomorphic stelae in the South Caucasus.
- The materials unearthed during the excavations have parallels both in Artsakh and in other archaeological complexes in the region dating back to the first half of the 1st millennium BC.
- The tomb, with its distinctive structure and accompanying rich materials, along with similar findings, dates back to the 8th-6th centuries BC.
- Examination of the NKS stelae suggests that it's likely that they were made and erected on site. Two factors lend support to this hypothesis. First, some of the stelae show unfinished details that allow us to infer the carving process and the tools that were probably used. Second, there are large fragments of limestone in the vicinity, which were probably brought to the site for the production of the stelae. Fragments of limestone found within the row of cromlech armor and lying on the surface, created by breaking and separating from larger fragments, further support this notion. It is likely that they were also prepared in situ for the creation of stelae.
- At this stage of research, with only one tomb excavated, it's difficult to determine their exact relationship to

the tomb, including their location and position. However, given the cultural context of the area, the clustering of stelae, and the examination of parallel materials from the region, it's clear that the stelae were originally associated with these tombs.

Moreover, as M. Pogrebova noted, the South Caucasian single-handled jugs, despite their similarities, retain their uniqueness. In particular, the upper part of the handle of Iranian jugs is connected to the body in the middle, while in South Caucasian examples it's often connected near the lip, indicating in-situ production of jugs of this type (Pogrebova, 1977). These jars fell out of use in Iran at the beginning of the first millennium, suggesting a chronology no later than that. Meanwhile, the South Caucasian examples, according to A. Iessen, are dated to the 8th-7th centuries BC., a timeline that also applies to those found in the NKS (Iessen, 1965).

AUTHOR CONTRIBUTIONS

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REFERENCES

- Archaeology of the USSR (1992) - Steppe strip of the Asian part of the USSR in Scythian-Sarmatian times, vol. 10. (in Russian).
- Asryan Y. (1973) - Archaeological novelties in Karabakh. Historical-Philological Journal, 2, 295-300. (in Armenian).
- Aufderheide A.C., Rodriguez-Martin C. (1998) - The Cambridge Encyclopedia of Human Paleopathology, Cambridge University Press, Cambridge.
- Azarnoush M., Helwing, B. (2005) - Recent Archaeological Research in Iran: Prehistory to Iron Age. AMIT, 37, 189-246.
- Bashash R. (1997) - Four features of the inscriptions on objects of Kalamkare Cave. Shush Complete Collection of Archaeological Materials, 13-22.
- Berry C.A., Berry R.J. (1967) - Epigenetic variation in the human cranium. Journal of Anatomy, 101, 361-379.
- Brooks S., Suchey J.M. (1990) - Skeletal age determination based on the *os pubis*: A comparison of the Acsádi-Nemeskéri and Suchey-Brook's methods. Human Evolution, 5(3), 227-238.
- Buikstra J., Ubelaker D. (1994) - Standards for data collection from human skeletal remains. Arkansas Archaeological Survey Research Series 44. Fayetteville.
- Burney C. (1979) - Meshkinshahr survey. Iran, XVII, 155-156.
- Connell B. (2008) - Preservation and archaeological data. In: Human Osteology Method Statement (Ed. by Powers N.), Museum of London.
- Don R., Brothwell E., Higgs S., Grahame C. (1969) - Science in archaeology: a survey of progress and research. Chapter 6. The Ageing of Domestic Animals. Thames and Hudson, London, 283-302.
- Dyachenko A., Skripkin A., Klepikov V., Kubyshev A., Mabe A. (2000) - Excavations of the Aksai Kurgans in the Volga-Don Region. In: Kurgans, Ritual Sites, and Settlements Eurasian Bronze and Iron Age (Ed. by Davis-Kimball J. et al.). BAR International Series. Oxford, 43-62.
- Falk D., Zollikofer C.P.E., Morimoto N., De León M.S.P. (2012) - Metopic suture of Taung (*Australopithecus africanus*) and its implications for hominin brain evolution. Proceedings of the National Academy of Sciences, 109, 8467-8470.
- Gardner S. (2016) - A Persistent Metopic Suture: A Case Report. Austin Journal of Anatomy, 3(1), 1049.
- Genz H. (2011) - The Iron Age in Central Anatolia. In: The Black Sea, Greece, Anatolia and Europe in the first millennium BC (Ed. by Tsetschladzem G.). Leuven - Paris - Walpole. 331-368.
- Guthertz X., Jallot L., Garnier N. (1998) - Exploring the Iconography of Anthropomorphic Stelae in the European Context. European Journal of Archaeology, 5(1), 45-67.
- Hillson S. (2009) - Mammal Bones and Teeth: An Introductory Guide to Methods of Identification (UCL Institute of Archaeology Publications (LCP)), University College London Institute of Archaeology, p. 64.
- Iessen A. (1965) - From the historical past of the Milk-Karabakh steppe. Proceedings of the Azerbaijan Archaeological Expedition, 2, 24-30. (in Russian).
- Ingraham M., Summers G. (1979) - Stelae and settlements in the Meshkin Shahr Plain, Northeastern Azerbaijan, Iran. AMIT, 12, 67-87.
- Ivanov M. (2016) - The Symbolism and Ritual Function of Caucasus Anthropomorphic Stelae. Journal of Caucasian Archaeology, 8(1), 55-72.
- Khalilov M. (2004) - Anthropomorphic steale of Karabakh, "Azerbaijani archaeology", 1-4, 100-104. (in Russian).
- Kantorovich A. (2016) - The image of a horse in the Eastern European Scythian animal style, the Caucasus and the steppe at the turn of the Late Bronze Age and Early Iron Age. In: Proceedings of the international scientific conference dedicated to the memory of Maria Nikolaevna Pogrebova, 89-114. (in Russian).
- Khanzadyan E., Mkrtchayn K., Parsamyan E. (1973) - Metsamor. Yerevan. (in Armenian).
- Kharitonov D. (2017) - Between East and West: The Role of Anthropomorphic Stelae in Caucasus Interactions. Eurasian Archaeology Quarterly, 12(4), 211-228.
- Khnikyan O. (1993) - Tomb excavations in Tsaghkashat village of Tumanyan region. Archaeological works in new buildings of Armenia, I, 86-89. (in Armenian).
- Kijowski R., Tuite M.J. (2010) - Pediatric throwing injuries of the elbow. Seminars in Musculoskeletal Radiology, 14(4), 419-429.
- Koukoulis-Chrysanthaki C. (2007) - Cultural Significance

- and Regional Variations in European Anthropomorphic Stelae of the Iron Age. *Archaeological Review from Cambridge*, 22(2), 87-102.
- Kuftin B. (1941) - Archaeological excavations in Trialeti, vol. 1. Tbilisi. (in Russian).
- Kushnareva K. (1957) - Some monuments of the Late Bronze Age in Nagorno-Karabakh. *Soviet Archaeology*, XXVII, 135-177. (in Russian).
- Kushnareva K. (1970) - Khojaly burial ground. *Historical and Philological Journal*, 3, 109-124. (in Russian).
- Kushnareva K., Markovin V., Djafaradze O., Mikhaylovich M. (1994) - Bronze Age of the Caucasus and Central Asia. Moscow. (in Russian).
- Lewis M. (2017) - *Paleopathology of Children: Identification of Pathological Conditions in the Human Skeletal Remains of Non-Adults*. Academic Press, London.
- Lukacs J.R. (1989) - Dental Palaeopathology. Methods for reconstructing Dietary Patterns, in: Iscan, M.Y., Kennedy, K.A.R. (eds), *Reconstruction of Life from the Skeleton*, Wiley-Liss Publisher, New York, 261-286.
- Mann R.W., Hunt D.R. (2005) - *Photographic Regional Atlas of Bone Disease: A Guide to Pathologic and Normal Variation in the Human Skeleton*. Springfield: Charles C. Thomas Publisher.
- Mays S. (1998) - *The Archaeology of Human Bones*. Routledge, London.
- Mays S. (2008) - Septal apertura of the humerus in a medieval human skeletal population. *American Journal of Physical Anthropology*, 136, 432-440.
- Medvedskaya I. (1982) - Iran: Iron Age I. *BAR International Series*. Oxford.
- Meindl R.S., Lovejoy C.O. (1985) - Ectocranial suture closure: A revised method for the determination of skeletal age at death based on the lateral-anterior sutures. *American Journal of Physical Anthropology*, 68(1), 57-66.
- Meindl R.S., Lovejoy C.O. (1989) - Age changes in the pelvis: Implication for paleodemography. In: *Age markers in the human skeleton* (Ed. by İşcan M.Y.). Charles C. Thomas, Springfield. 137-168.
- Muhle B. (2008) - *Vorderasiatische Keulen und ihr Umfeld vom 9. bis ins frühe 1. Jt. v. Chr. Typologie und Deutung*. PhD Thesis dissertation. Ludwig-Maximilians-Universität, München. (in German).
- Murlimanju B.V., Prabhu L.V., Pai M.M., Goveas A.A., Dhananjaya K.V., Somesh M.S. (2011) - Median frontal sutures-incidence, morphology and their surgical, radiological importance. *Turkish Neurosurgery*, 21, 489-493.
- Olkhovskiy V., Yevdokimov G. (1994) - Scythian sculptures of the 7th-3rd centuries BC. Moscow.
- Ortner D.J. (2003) - *Identification of Pathological Conditions in Human Skeletal Remains*. Academic Press, Oxford.
- Pálfi G., Dutour O. (1996) - Activity-induced skeletal markers in historical anthropological material. *International Journal of Anthropology*, 11(1), 41-55.
- Pearson K. (1899) - Mathematic contributions to the theory of evolution. V. On the reconstruction of the stature of prehistoric races. *Philosophical Transactions of the Royal Society*, ser. A, 192, 169-244.
- Petrosyan L. (1993) - Excavations in Sarapat, Archaeological works in new buildings of Armenia, I, Yerevan, 90-96. (in Armenian).
- Petrosyan H., Khachatryan Zh., Piliposyan A., Hakobyan A., Safaryan V., Kirakosyan L. (2008) - The first results of the archeological research of Tigranakert in Artsakh and its surroundings in Artsakh. *The Culture of Ancient Armenia XIV*, 187.
- Petrov S. (2018) - Exploring the Cultural Landscape: Anthropomorphic Stelae in the Caucasus Highlands. *Caucasian Studies Journal*, 4(3), 127-145.
- Piller C.K. (2010) - Northern Iran in the Iron Age II and III: a neighbor of Urartu?, "Aramazd" *AJNES*, V/2, Yerevan, 53-75.
- Piller C.K. (2013) - The Caucasian connection - Reflections on the transition from the Late Bronze to the Early Iron Age in Northern Iran and its connections to the Southern Caucasus. *Schriften des zentrums für Archäologie und Kulturgeschichte des Schwarzmeerraumes*, 22, 305-317
- Pogrebova M. (1977) - Iran and South Caucasus during Early Iron Age. Moscow. (in Russian).
- Robb J.E. (1998) - The interpretation of skeletal muscle sites: a statistical approach, *International Journal of Osteoarchaeology*, 8(5), 363-377.
- Prehn N., Feneru F., Rochester J. (2018) - *Beginner's guide to identifying British mammal bones*. Natural History Museum, London.
- Sevin V. (2005) - Who were the Naked Warriors of Hakkari? *AMIT*, 37, 163-166
- Smith A. (2019) - Anthropomorphic Stelae of the Caucasus: A Comprehensive Survey. *Caucasus Archaeology*, 15(2), 89-112.
- Spiros M.C. (2019) - Standardization of Postcranial Non-metric Traits and Their Utility in Ancestry Analysis. *Forensic Anthropology*, 2(1), 29-44.
- Summers G., Burney C. (2012) - Late Iron age pottery from Northwestern Iran: the evidence from Yanik Tepe. *Anatolian Iron Ages*, 7, Peeters, Leuven, Paris, 269-315.
- Todd T.W. (1920) - Age changes in the pubic bone. I. The male white pubis. *American Journal of Physical Anthropology*, 3(3), 285-334.
- Torosyan R., Khnkikyan O., Petrosyan L. (2002) - Old Shirakavan, Yerevan. (in Armenian).
- Trotter M., Gleser G. (1962) - Estimation of stature from long bones of American whites and Negroes. *American Journal of Physical Anthropology*, 10, 469-514.
- Tumanyan G. (2003) - The structure of Late Bronze Age tombs in Armenia, *Historical-Philological Journal*, N1, Yerevan, 166-185. (in Armenian).
- Tumanyan G. (2010) - Remarks on some issues related to the goods of late bronze age burials of Armenia, *Historical-Philological Journal*, 3, 147-160. (in Armenian).
- Ubelaker D.H. (1979) - *Human Skeletal Remains Excavation, Analysis and Interpretation*. Taraxacum, Washington D. C.
- Vierzig L. (2017) - Anthropomorphic Stelae in European Prehistory: A Comprehensive Study. *Journal of European Archaeology*, 20(2), 145-167.
- Villotte S., Churchill S.E., Dutour O.J., Henry-Gambier

- D. (2010) - Subsistence activities and the sexual division of labor in the European Upper Paleolithic and Mesolithic: Evidence from upper limb enthesopathies. *Journal of Human Evolution*, 59(1), 35-43.
- Waldron T. (2009) - *Palaeopathology*. Cambridge University Press, Cambridge-New York.
- White T.D., Folkens P.A (2005) - *The Human Bone Manual*, Academic Press, Amsterdam-Boston.
- Walker P.L., Bathurst R.R., Richman R., Gjerdrum T., Andrushko V.A. (2009) - The causes of porotic hyperostosis and cribraorbitalia: a reappraisal of the iron-deficiency-anemia hypothesis, *American Journal of Physical Anthropology*, 139(2), 109-125.
- Yeranyan N. (2021a) - Two stone anthropomorphic stelae from Jujevan, Middle East. history, politics, culture, VIII, Yerevan, 73-78 (in Armenian).
- Yeranyan N. (2021b) - Main Results of the Study of Anthropomorphic Stelae in Artsakh, *Archaeology of Armenia in regional context*, Yerevan, 248-254.
- Young C. (1965) - A comparative ceramic chronology for Western Iran. 1500-500 BC, "Iran", Vol. III, 8-9.

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