

## NEW ANTHROPOLOGICAL MATERIALS OF THE ANTIQUITY PERIOD FROM SOUTHEASTERN AZERBAIJAN

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### Abstract

This article examines the anthropological remains recovered from Jar Burial No. 1 of the Eminli necropolis, discovered near the village of the same name (Masally District, Republic of Azerbaijan). Jar Burial No. 1 is dated within the 1st century AD. The assemblage submitted for scientific analysis includes a well-preserved cranium with mandible, as well as postcranial bones belonging to an adult male. The anthropological material was studied using traditional methods in physical anthropology (craniometry, osteometry, paleopathology), complemented by laboratory-analytical procedures, data systematization, and forensic-medical methods. The cranium belonged to an adult male (50+ years), dolichocranial in form, representing the southern branch of the Caucasoid race and the Caspian anthropological type. A traumatic perimortem lesion was identified on the right temporal bone—an elongated oval perforation measuring 55 × 13 mm—with no evidence of healing or reparative activity. The injury was likely inflicted by a sharp, heavy weapon such as an iron axe or dagger/sword, which penetrated the bone and resulted in instantaneous death. Pathologies observed on the maxilla include an abscess, periodontitis, antemortem tooth loss, pronounced dental wear, and caries; on the mandible, antemortem tooth loss and dental calculus. The cranium exhibits an external occipital protuberance of Type 3 (according to the classification by İ. N. Gülekon and H. B. Turgut), a sutura supranasale, and indicators of cold-stress response (vascular impressions on the frontal tubers). Markers of musculoskeletal stress were recorded on the humerus and radius. The man's stature was estimated at 169–171 cm. The left femur shows a set of traits characteristic of mechanical stress associated with horseback riding—a so-called “rider's complex.” Degenerative changes include spinal osteoarthritis. The individual from Eminli was a local inhabitant of the southeastern part of ancient Azerbaijan, then Atropatene. The weapon-related fatal trauma, physiological stress markers, and tall stature all suggest that he was a professional warrior. It is plausible that he died in armed conflict or combat, after which he was honorably interred in a jar burial accompanied by rich grave goods in accordance with contemporary funerary traditions.

**Keywords:** Azerbaijan, Archaeology, Physical Anthropology, Atropatene, Trauma, Paleopathology

### INTRODUCTION

The present publication examines the anthropological materials recovered from Jar Burial No. 1, discovered in 2022 during agricultural work in the vicinity of the village of Eminli (Masally District, Republic of Azerbaijan).

The Eminli necropolis is located 100 meters south of the village bearing the same name. At present, two additional jar burials (Nos. 2 and 3) have been investigated at the site.

This study aims to analyze a newly discovered anthropological specimen from the territory

of the Masally District and to compare it with synchronous craniological series and individual skulls from across Azerbaijan.

The relevance of the work lies in introducing into scholarly circulation the cranium of a male individual bearing traces of traumatic injury—an observation not previously documented in paleoanthropological materials from Azerbaijan. In addition, the study records several structural characteristics of the skeleton—markers of physiological stress that shed light on the life, activities, and everyday conditions of the ancient

population of Atropatene, as well as various pathologies associated with the period.

It should be emphasized that the southeastern regions of the country remain virtually unstudied in physical anthropology, and the materials described in this publication constitute the only available anthropological evidence from this area of the Republic of Azerbaijan.

The novelty of the research lies in the comprehensive analysis of the cranium and postcranial bones using methods of craniometry, paleopathology, and forensic science.

For the first time in anthropological material from Azerbaijan, markers associated with habitual horseback riding (the so-called “rider’s complex”) have been documented.

Studies of this type are well established in global anthropological practice. In Azerbaijan, we likewise aim to conduct a full-scale examination of anthropological specimens, employing the full range of modern scientific methodologies.

## MATERIALS AND METHODS

The material submitted for analysis consists of a well-preserved cranium with mandible, as well as the postcranial bones of an adult male from Jar Burial No. 1. The present author examined all materials.

Jar Burial No. 1 of the Eminli necropolis is dated to the 1st century AD. The necropolis is located in the northeastern part of ancient Atropatene. The funerary assemblage reflects both local cultural traditions and Sarmatian–Alan influences. It includes two ceramic vessels, an iron dagger, an iron knife, two bronze earrings, a bronze belt buckle, and a silver coin—a drachm of the so-called “Gotarzes type” minted at Ecbatana in Parthia—found near the mandible (Agalarzade, Kerimov & Kirichenko, 2023).

The craniological material (Table 1) was studied according to the standard paleoanthropological methodology of R. Martin (Alekseev & Debets, 1964; Martin & Saller, 1957). Biological sex was determined based on cranial morphology and the structure of the pelvic bones (Alekseev, 1966). Age at death was estimated from the degree of cranial suture obliteration and dental wear (Buikstra & Ubelaker, 1994).

Pathological observations were conducted using a range of established scientific methods (Aufderheide & Rodriguez-Martin, 1998; Buikstra & Ubelaker, 1994; Buikstra, 2019; Buzhilova, 1995;

Gülekon & Turgut, 2003; Mann & Hunt, 2012; Mann, Hunt & Lozanoff, 2016; Ortner & Putschar, 1981; Robb, 1998; Smith, 2017; Ubelaker, 1978; Ushkova, 2020; Waldron, 2008).

The traumatic lesion was examined in accordance with methodological approaches employed in contemporary forensic medicine (Çeker, 2022; Kryukov, 1998; Robb, 1998) and paleopathology (Balabanova & Pererva, 2007; Balabanova & Pererva, 2019; Buzhilova, 1998; Lovell, 1998; Ortner, 2003; Razhev, 2013).

Stature estimation was carried out using the length of the femur and tibia, following the tables proposed by anthropologists E. Breitingner and A. Bach (Bach, 1965; Breitingner, 1937).

A set of traditional scientific methods was applied throughout the study, including laboratory-analytical procedures. During publication preparation, the material was systematized in accordance with established academic principles.



**Fig. 1.** Male skull with mandible from Jar Burial No. 1 of the Eminli necropolis (photograph by the author)

During the work, craniometric measurements were taken, and the cranium, skeletal elements, and the traumatic defect on the skull were photographed in multiple projections.

A traumatic lesion is present on the right temporal bone of the skull (Fig. 3)—a perimortem



**Fig. 2.** Male skull from Jar Burial No. 1 of the Eminli necropolis (photograph by the author).

injury, with the parietal margin missing. The edges of the bone at the site of the wound are sharp and unhealed. The injury was most likely sustained immediately before death and resulted from a blow delivered by a heavy object with a sharp edge. As a result, the upper part of the temporal bone was fractured, forming a characteristic elongated oval perforation measuring  $55 \times 13$  mm. No traces of healing or reparative processes were observed.

## RESULTS

The cranium (Figs. 1–2) belonged to an adult male aged 50+ years (Buikstra & Ubelaker, 1994). It is in satisfactory condition and is dolichocranial, characterized by a considerable cranial length, a small cranial width, and a huge cranial height and diameter of the cranial vault. The forehead is of medium breadth. The face is of medium width, high, and moderately profiled in its upper part and strongly profiled in its lower part; according to the facial index, it is leptene.

The orbits are moderately high, not wide (from mf), and hypsiconch. The nose is of medium width, high, strongly projecting, and mesorhine. The bigonial width of the mandible falls within the average range of the trait. The male cranium most likely belonged to the southern branch of the Caucasoid race and corresponds to the Caspian anthropological type.

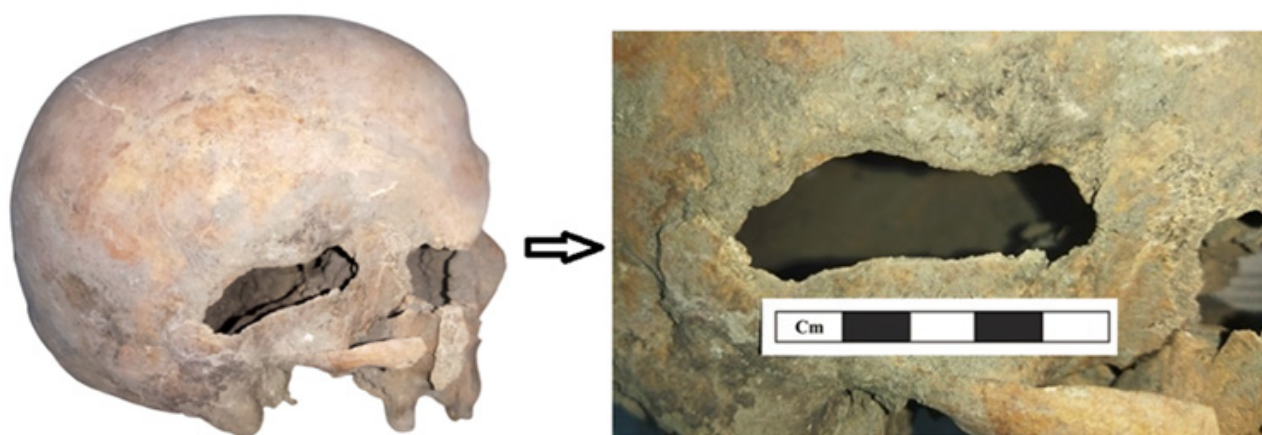
The weapon was most likely a sharp, heavy instrument—an iron axe or a dagger/sword—that penetrated the bone, causing instantaneous death. The force of the blow can be inferred from the fractures extending to the left and right of the injury site; the bone itself had been destroyed. The trauma belongs to the category of penetrating cranial injuries.

**Table 1.** Craniometric measurements of the male skull from Jar Burial No. 1 of the Eminli necropolis

Martin No.	Male, 50+ years
1	192
8	137,5
5	105,3
9	98
17	142,9
20	128,3
40	93
45	133,3
48	75
51	40
52	35
54	26
55	54
8:1	71,6
48:45	56,3
52:51	87,5
54:55	48,1
77	135,2
$\angle$ Zm	127,6
75 (1)	29
66	98

Pathological conditions were observed on the maxilla (Figs. 4.1–4.2): an abscess, periodontitis, antemortem tooth loss, pronounced dental wear, and caries.

On the mandible (Figs. 4.3–4.4), antemortem tooth loss and dental calculus were recorded. All of these pathologies can be interpreted in relation to the dietary habits of the man from Eminli.



**Fig. 3.** Traumatic lesion (photograph by the author)



**Fig. 4.** Dental pathologies: 1 – abscess, periodontitis; 2 – dental wear, antemortem tooth loss, caries; 3 – antemortem tooth loss; 4 – dental calculus.

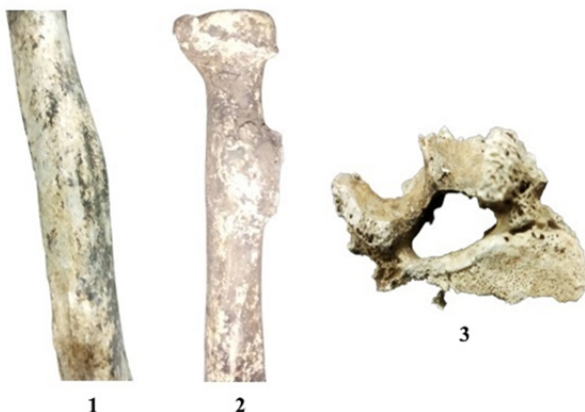
The cranium exhibits an external occipital protuberance of Type 3 (Fig. 5.2) according to the classification of İ.N. Gülekon and H.B. Turgut (Gülekon & Turgut, 2003), a sutura supranasale, and markers of cold-stress response—a vascular reaction expressed on the frontal tubers (Fig. 5.1).



**Fig. 5.** 1 – *sutura supranasale*; 2 – external occipital protuberance, Type 3 (photographs by the author).

Markers of musculoskeletal stress were recorded on the humerus and the radius.

On the humerus, a pronounced deltoid tuberosity is present, and on the radius, a well-defined attachment site for the *m. biceps brachii* muscle was observed (Fig. 6.2).



**Fig. 6.** Pathologies of the postcranial skeleton: 1 – deltoid tuberosity; 2 – attachment site of the *m. biceps brachii*; 3 – spinal osteoarthritis (photographs by the author)

Among the postcranial pathologies, spinal osteoarthritis should be noted (Fig. 6.3). A series of traits observed on the left femur (Fig. 7) reflect

mechanical stress, most likely associated with habitual horseback riding—the so-called “rider’s complex” (Radi et al., 2013; Ushkova, 2020; Wentz & de Grummond, 2009). The stature of the man from Jar Burial No. 1 of the Eminli necropolis was estimated at 169–171 cm (Bach, 1965; Breitingen, 1937).

## DISCUSSION

The anthropological material from the village of Eminli is, at present, the only specimen originating from the Masally District of Azerbaijan. It should be emphasized that the southeastern regions of our republic remain virtually unstudied from the perspective of paleoanthropology. In our possession, we have only a single male skull from a jar burial in the Neftchala District, which belonged to a representative of the Balkan–Caucasian minor race (Kirichenko, 2020, pp. 47–48), as well as a female skull studied by anthropologist R. M. Kasimova from a jar burial in the Salyan District. The latter specimen represented the Pamir–Ferghana anthropological type. The woman was most likely a Sarmatian, who had married a local inhabitant and was subsequently buried according to the local funerary tradition—in a jar [27, p. 34] (Qasimova, 1997, p. 34).



**Fig. 7.** Development of muscular relief on the femur. Traits of the “rider’s complex” (photograph by the author).

The male crania from the jar burials of Mingəçevir belonged to the Caspian anthropological type (Kirichenko, 2020, p. 46), as does the male skull from Jar Burial No. 1 of the Eminli necropolis.

The skull exhibits a penetrating traumatic injury inflicted by a type of bladed weapon. It is possible that the murder weapon was a dagger or another implement with a sharp, pointed tip.

The man from the jar burial experienced significant physical exertion during his lifetime, and spinal osteoarthritis was also recorded.

Spinal osteoarthritis is a pathological condition characterized by the degeneration of cartilage and bone, leading to swelling and pain. In most cases, the disease affects individuals of middle and advanced age. Some risk factors for its development include: trauma; excessive physical strain; excess body weight; congenital spinal anomalies; impaired blood supply (such as vascular atherosclerosis); diabetes mellitus; metabolic disorders; and age-related physiological changes (Such as Osteoarthritis of the spine).

Considering the man's age, physical exertion, and lifestyle, it is not surprising that this condition developed.

The penetrating injury identified on the left temporal bone of the cranium is the first such trauma ever recorded in anthropological material from the territory of Azerbaijan.

Similar types of injuries have been documented in paleoanthropological assemblages of the same period across Eurasia (Balabanova & Pererva, 2019).

It is possible that the man fell victim to one of the Sarmatian–Alan incursions that passed through Atropatene into Parthia in pursuit of military plunder.

Historical sources describe the most devastating Alan raid of 72 AD, during which the nomads “ravaged the land and returned home with a large number of captives and other booty” (Gabuev, 1997, p. 32).

The political situation in Parthia during this period was also unstable: a struggle unfolded between King Gotarzes II (38–51) and his co-ruler Vardanes I (38–47/48), followed by the appearance of a new claimant to the throne — Meherdates, son of Vonones I (6/7–12). It is known that Gotarzes II enlisted various allies; his victory was supported by the Dahae and the Hyrcanians (14, pp. 150–155). It is not impossible

that inhabitants of Atropatene were also among those who aided the king.

Thus, the man from Eminli may have fallen in one of the battles of this Parthian civil conflict, after which his remains were transported back to his homeland and interred with a rich funerary assemblage. It is also worth recalling the silver coin — the “Charon's obol” — from the Ecbatana mint found in the burial, as Gotarzes II was known to reward warriors with such coins for their service generously.

Coins of the “Gotarzes type” from the Ecbatana mint were widespread during this period in the South Caucasus, where they predominated, and they are also known from the North Caucasus (Golenko & Radzhabli, 1975).

## CONCLUSION

Anthropological analysis of the male skull from Jar Burial No. 1 of the Eminli necropolis suggests that the individual was likely a local inhabitant of the southeastern region of ancient Azerbaijan, corresponding to Atropatene during the Classical period.

The stress markers observed on the skeletal remains indicate that he experienced substantial physical strain throughout his life.

A series of dental pathologies suggests that his diet probably included large quantities of plant and animal food, as well as poor-quality water, presumably containing marine salts. This is unsurprising given the site's proximity to the Caspian Sea.

The primary occupations of the local population—both in antiquity and today—were agriculture and animal husbandry, which traditionally formed the basis of the regional diet. The markers of cold stress indicate that the man was exposed to low temperatures during his lifetime. He was tall for his time and was likely a horseman.

The presence of weapons in Jar Burial No. 1, the fatal combat-related injury, the physiological stress markers, and his tall stature collectively suggest that the buried individual was a warrior. In that turbulent historical period, individuals were often required to combine agricultural labor with the role of defender.

Likely, the man from Jar Burial No. 1 of the Eminli necropolis died in armed conflict, after which he was honorably interred in a jar, accompanied by a rich funerary assemblage, in accordance with the burial customs of his time.

The historical circumstances surrounding the death of the Atropatenian warrior may have included Sarmatian–Alan raids moving southward through the territory of southeastern Azerbaijan, or the civil conflicts in Parthia associated with struggles for the throne.

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