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ARCHAEOLOGY

HENRIK DANIELYAN*
PhD student in Archaeology
Institute of Archaeology and Ethnography NAS RA
henrikh.danielyan@gmail.com

THE PROBLEM OF TYPOLOGY AND DATING OF «CYCLOPEAN» FORTRESSES IN ARMENIA

Key words: "Cyclopean structures", typology and dating, Early Bronze Age, Middle Bronze Age, Late Bronze – Early Iron Age, Middle Iron Age, Early Armenian Period.

The defensive system of the Bronze and Iron Ages of the Armenian Highlands are among the little studied archaeological problems. In specialized literature, these buildings are known as "Megalithic structures", "Cyclopean fortresses", "Cyclopean structures". Armenian authors of the 19th–20th centuries call them "Achkatarean"[1], "Berdshen". The term "Cyclopean structure" was first used as an architectural term by H. Schliemann, who describes similar monuments in Mycenaean civilization. This type of structures is located in relatively high places (at an altitude of 800–2300 m above sea level) near springs or rivers, represented by huge stone walls from large polygonal stone blocks, sometimes in their natural form, carefully connected to each other, ensuring the continuity of the wall[2]. The fortifications of the Armenian Highlands are close in their architecture to the corresponding examples of the Mycenaean and Hittite worlds in terms of fortifications and, especially, in construction.

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[1] **Աւդալբեգ** 1914, 165–188 .

[2] **A Dictionary of Archeology** 1999, 187; **Ching** et all, 2011, 801.

Typology of Defensive Systems

Architect T. Toromanyan was the first researcher to study the typology and classification of fortified structures. He analyzed archaeological sites such as Armavir, Hadzhihalil (now Tsakhkaovit), Adyaman (now Garnahovit), Kapli (now Gusanagyuh), Ambert, Zeyva (now Metsamor), Vari berd, Veri berd in Lernakert, Oshakan, Mahmujuh (now Pemzashen), Armatlu (now Tufashen), Talin, Kirch dagirman (now Hnaberd), Gyavurkala (now Lazaravan), Ahzhakala (now Tsakhkalanj), Kyznauz (now – Aragats), Aghavnatun, Akhtamir (now Voskevaz 1), Dovri, Hajikara (now – Aygeshat), Haramlu, Franganots (now Amberd in the Armavir region), Kotur, Shamiram (now Shamiram 1), Tahmustapa (in Kars region), Marmashen (Cf. Fig. 1). The typology he created is based on an analysis of the architectural features of structures. A trasological analysis of the stone, which was used as a building material in the construction of defensive structures, was performed. T. Toromanyan identified three chronological groups – primitive, pre-Christian and late. The buildings of the first group are characterized by large unprocessed stone blocks, the walls of the structures do not have regular rows and look like stone clusters. Masonry is single-faced. T. Toromanyan designates these stone clusters as fences. The structures of the second group are characterized by walls composed of large stone blocks, with faintly marked traces of processing. Rows of stones are traced in the masonry of the walls, the masonry is double-faced, with a backfill between the walls. The buildings of the third group are characterized by a slight decrease of stones in size, the stones are given a shape that is close to rectangular. Iron tools were used for processing stones. T. Toromanyan does not give an accurate dating to the buildings of the first group, referring them to the prehistoric period (the era of primitive society or the Neolithic). He does not date the buildings of the second group either, and dates the buildings of the third group to the Iron Age and Urartu[3] (cf. Fig. 2: 1–4).

In 1927, T. Avdalbegyan studied the surroundings of the city of Nor Bayeazet (present-day Gavar), where a cuneiform inscription was found near the Berdi glukh fortress. These studies cover almost entire western Sevan. He studied about ten defensive structures. Among the studied buildings, he distinguishes fortresses with single-faced masonry made of large stone blocks, calling them “fences”. He calls the second group “fortress walls” made of large stones, with double-faced

[3] **Թորամանյան** 1942, 11–40:

masonry and small stones inside the wall. The width of these walls is on average 3 m[4].

I.I. Meshchaninov also developed the typology of defensive system and masonry walls. He studied the fortifications of the north-eastern part of the Armenian Highlands, mainly the south-eastern slopes of the Geghama and northern slopes of the Vardenis mountains, the northern part of the Mrav and eastern foothills of the Sevan ridges and distinguished three groups: the masonry is made of uncut large blocks of stone, made in several rows; double-faced masonry with backfill between the walls with small stones; masonry is made of processed stones, tightly fitted into each other. In addition, I.I. Meshchaninov gave a chronology of those groups – he dated the archaeological sites of the first and second groups by the Bronze and Iron Ages, the pre-Urartian and Urartian periods, he considered the archaeological sites of the last group to be the early medieval feudal castles[5]. I.I. Meshchaninov also gave the layout of the defensive system, identifying three types: the first type includes settlements located in the fortress (for example, Tashburun, Chatakh, located in the northern part of the foot of Ararat); the second type includes settlements located both inside the fortress and outside (for example, Kirkh Dagerman (now Hnaberd), located on the northern slope of Aragats); the third type includes archaeological sites with a citadel located on a cliff near a cape or plateau, their settlements are located around the citadel and surrounded by a wall (for example, Kishlak, the current Artsvakar 1, located on the western shore of Lake Sevan). Also I.I. Meshchaninov distinguishes three types of masonry of the Urartian fortresses[6], based on planigraphy.

In 1927–1934 I. Jafarzade conducted a large archaeological research at the northern foot of the Mrav ridge, the eastern slopes of the Sevan ridge and the campaigns adjacent to them. His main purpose was to fix megalithic structures and the area of their distribution. I. Jafarzade collected about 60 "cyclopean structures" and divided them into four groups that differ in chronology and architectural features. The first and the most archaic group includes structures built of the largest stones, with only one ring of walls. He included in this group

[4] **Ավդալբեգյան** 1927, 204:

[5] **Мещанинов** 1932, 14–17.

[6] Some of these fortresses are called Urartian, but some of them date back to an earlier period.

such archaeological sites as, Nagara-dag, Choban-dashi, etc. The second group included structures made of similar large stones, having two or three rings of walls, for example, Molla-Abdullah-Bulagi, Azor-Kalacha, Bash-Kalacha, and others. The third group was represented by structures made of medium-sized stones having one, two, or three wall rings. Sometimes inside those structures there were partitions by walls made of small stones into several sections. In some cases, there are tumulus-like structures in them. Annexes with the appearance of rooms are found on the outside of the main wall of the structure, for example, Chakhrel-kalacha, Kulun-kalacha, Ayak-kalacha, etc. The fourth, the latest group (of the late Middle Ages), includes structures made of small stones with one ring of walls[7]. The constructions of all groups, except the fourth, the researcher dates to the Bronze Age, i.e. II millennium BC and for the most part I millennium BC[8]. The dates are based on surface material collected by the researcher during agricultural work carried out on the territory of burial grounds located nearby. Subsequently, I. Jafarzade implemented excavations at several archaeological sites (Nagara-dag and Choban-dashi) to confirm his conclusions. However, the excavations did not give vivid results[9].

Another researcher who dealt with the typology of defensive structures was B.B. Piotrovsky. In 1930, A. Ajyan, L. Guzalyan and B.B. Piotrovsky carried out works on the northern and north-eastern slopes of Aragats. The works were carried out in this place, because it was known that there were ten «cyclopean fortresses», several partially excavated burial grounds in this area and two cuneiform inscriptions were found here. The aim of the work was to group defensive structures according to chronological characteristics. A topographic survey of the area, photo and graphic fixation was performed. The Researchers determined that the fortresses, having similar features, were not identical, each of them had its own characteristics and distinctive features. The defining signs were designated - 1) the choice of location for the fortress; 2) the location system of the settlement at the fortress; 3) the method of use and treatment of building material; 4) the method of construction and the system of fortress walls; 5) the nature of the surface material, mainly ceramic sherds. Three groups were

[7] **Джафарзаде** 1938, 50.
[8] **Джафарзаде** 1950, 100.
[9] **Расулоглы** 1993, 96.

identified based on these characteristics. All of them have similar features – the similarity of their location and the homogeneity of the building material.

The first group of archaeological sites dates back to I millennium BC, and is defined as rural settlements. The second group includes settlements within their walls, urban settlements. Archaeological sites of this group have distinctive features in the landscape – it is a hill with a wide upper platform, one side of which sometimes does not represent a steep slope, but descends with an even slope to the hollow used to supply the fortress. Traces of the canal with the remains of a stone dam are visible in Kirkh dagirman. Archaeological sites of the third group date back to the early Middle Ages[10] (cf. Fig. 1).

In 1931–1932 the same expedition worked on the western shore of Lake Sevan, where in the vicinity of the city of Nor Bayazet (now Gavar), in the Berdi Glukh fortress, the above-mentioned cuneiform inscription was found. The aim of the work was to study the complex of the fortified settlement Berdi Glukh and its environs. In particular, the villages of Kishlak and Mrtbidzor, located downstream of the Gavaragert River, were studied. In addition to the above-mentioned defenses, other fortresses were located in this area (cf. Fig. 1).

The most representative archaeological sites of the first group identified by the researchers were the fortress of Hadzhikhalil, Horom 1, Sogutlu (now Sarnaghbyur), the second – Kologran (currently Tsovinar), Nor Bayazet, Atamkhan (now Vardadzor). These complexes date back to the Urartian time, and are connected with cuneiform inscriptions. Apparently, the settlements of the second group existed simultaneously with the late settlements of the first group. In the fortresses of the second group, a citadel stands out clearly inside. The third group – the urban settlements, for example, Horom 2, Kirkh Dagirman – have the character of urban settlements, the fortresses of this group preserved the archaic structure of the walls, and the citadel still remains within the general fence. An exact dating of this group of monuments is not possible. The fourth group dates back to the period of the early Middle Ages; these buildings have the character of feudal castles[11].

In the 1950s and 1960s G. Mikaelyan studied the "cyclopean fortresses" of Lake Sevan from the point of view of the military significance of defensive

[10] **Аджян** и др.1932, 61–64.

[11] **Пиотровский** и др. 1933, 50–59.

structures and conducted a few small excavations. He divided the fortifications into four groups based on their chronological features and the analysis of the collected archaeological material. The first group includes simple structures made of uncouth large stone blocks, without mortar. If the wall masonry is double-faced, then there is no backfill between the walls. The settlements were either surrounded by a wall, or the external walls of the outer houses were connected, due to which the whole settlement became fenced. G. Mikaelyan assigns the constructions of the first group to the period of the turn of the 5th–4th millennia – the middle of the 3rd millennium BC. The second group includes border walls and fortresses with a citadel. These archaeological sites date back to the 2nd half of the 3rd millennium to the 7th century BC. Archaeological sites of the third group belong to the Urartian period and date to the period from the 9th to the 6th centuries BC. In this epoch, powerful fortresses were being built, which were large strong points. The author refers to the fourth group all the fortresses that were built during the inception of the early Armenian state, in the Hellenistic and early medieval periods[12].

In the 1970s and 1980s T. Rasuloglu, on the example of a number of cyclopean structures excavated by him on the northern slope of the Mrav ridge, divided them into three groups based on the height at which they are located. The first group were defensive structures located in easily accessible places at low altitude. The second group includes defenses located in the hills and mountain slopes of medium height. The third group includes structures located in high solitary mountains, mountain ranges or passes. His excavations showed that the thickness of the cultural layer on the archaeological sites of the first group is 1.2–2.0 m, on the archaeological sites of the second group – 0.6–0.8 m, and on the archaeological sites of the third group, the cultural layer is either absent or slightly present. The first and second groups of archaeological sites have broad cemeteries, numerous burial grounds, stone boxes, tumuli. In the third group, cemeteries were not found. The author comes to a conclusion about the different functional purposes of "cyclopean fortresses", highlighting settlements, defensive structures and corrals for large and small livestock[13] (cf. Fig. 1).

[12] **Միքայելյան** 1968, 50–51.
[13] **Расулоглы** 1993, 81–82.

In the late 1990s, A. Smith studied the planigraphy of the defensive structures of the Ararat and Shirak plains. He divided the fortifications into 4 typological groups: Shamiram, Pemzashen, Tsakhkaovit, and Sevan.

The most prominent aspect of Shamiram type fortresses is their location at the edge of promontories, surrounded on all sides but one by steep drops into river gorges. Fortification construction is generally limited to a wall (or series of walls) which defends the single route of access, relying on natural precipices of the promontory for the defense of other approaches. The masonry at Shamiram type sites is generally restricted to medium-sized, unworked stones set without defined courses. Archaeological sites such as Shamiram and Garni 2 belong to this type.

Pemzashen type fortresses are located in both promontories and atop isolated rock outcrops. Some of them are defended by a single fortification wall set in a circuit, at the top of the outcrop. Pemzashen type fortresses often incorporate steep rock cliffs into the fortification design. The layout of Pemzashen type fortresses is conditioned by the contours of the terrain. Fortification lines closely follow contours, paralleling the steep slopes of the outcrops and hills they cap. This suggests quite strongly that such fortresses were planned in relation to the topography of the site. Archaeological sites such as Pemzashen, Aragatsotan, Tsitsernakaberd belong to this type.

Tsakhkahovit type fortresses were true «cyclopean» structures with large, roughly shaped stone blocks set in irregular courses. The fortifications were set in multiple circuits descending the slope of the citadel. The circuits of Tsakhkaovit fortifications closely parallel the contours of the terrain. However, we also find cross walls at a number of these sites. These cross walls, with few exceptions, run perpendicular to the terrain and may have served as proto-bastions. Archaeological sites such as South Horom, Tsakhkaovit, Keti, Garnaovit South belong to this type.

The Sevan type includes fortifications which use buttresses to add additional support to the engineering of the fortification walls (which are appreciably thicker than any other group) and to divide the wall face, providing additional lines of sight for defenders against potential attackers. Regular angles bespeak a significant investment in planning the outline of the construction independent of the immediate contours. In most cases, the line of walls no longer follows the terrain,

suggesting that design gained increasing independence from specific locales. Archaeological sites such as Pokr Berd, Mets Bert belong to this type[14] (Fig. 3).

In 1996 a collective work "Architecture of the Armenian Highlands in Early Class Societies and State Formations (in the last quarter of the 3rd millennia BC – the beginning of the 1st millennia BC)" was published. A typology of the defensive structures of Armenia and the adjacent territories of the pre-Urartian period (Bronze and Iron Ages) was given in the first chapter (authors G. Areshyan, K. Kafadaryan) of this book. This typology is based on the location of the defensive structure, so three groups were identified – located on a hill, on a cape, on a mountain plateau. The fortresses of the first group are located on the tops of the hills, have a rounded or oval shape in plan, while walls were not erected in hard-to-reach areas, in places of sharp cliffs. If a settlement existed at this fortress, then it was located behind the fortress wall, on the slope and at the foot of the hill. There are planographic differences within this group - for example, there are fortresses with several entrances, fortresses, the entrances of which are fortified with towers and buttresses. Archaeological sites such as Zolak, Vardadzor 2 belong to this group. The fortresses of this group were intended for all-round defense. There are three subtypes in this group. The fortresses of the first subtype have one ring of walls (Topkar, Tufashen). The fortresses of the second subtype have a second line of walls located in the natural or artificial terraces of the hill. The citadel is located not only at the top of the hill, but also includes its slopes. Examples of fortresses of this subtype are Veri berd in Lernakert. The third subtype of this group includes fortresses that have multiple lines of walls located in terraces on the hillsides and reaching the foot, which are interconnected by entrances. Examples of such fortresses are Tsakhkaovit, Masmalar.

Fortresses of the second group are located at the edge of the gorges, and settlements are located in the territory of the cape around the fortress. The planigraphy of the fortresses of this group is different. Several subtypes can be distinguished. In the first subtype, several variants of the planographic structure can be included. There are cases when the fortress wall is solid, including from the side of the gorge (for example, Ashkala), while the entrance to the fortress is not further fortified. It is another variation when the part of the fortress, facing

[14] **Smith** 1999, 86–93.

the cliff side, had no walls, while the entrances were additionally reinforced with towers. Examples of such fortresses are Mets Berd, Tsoghamarg II. In the second subtype, fortresses with several protection belts can be included. The citadel is located at the edge of the cliff, and it is surrounded by another wall. In addition, the walls stand on terraces, on the slopes of the cape, the settlement also has its own fortress wall.

The fortresses of the third group are located on a plateau between the gorges, have a mostly triangular shape in plan: the fortress is located in the narrow part, the settlement is located in the wide part. The defensive walls are powerful, have additional fortifications in the form of solid towers and buttresses. The entrances to the fortress were mainly located on the side of the edges of the ravine or gorges. This group includes such fortresses as Tsoghamarg I and Shish Blur. Shish blur has additional elements of fortification - trenches are cut down in the isthmus between the cape and the mountain plateau. The fortresses located not only in the plateau area but also in the cape included in this group, too. Some of the fortresses have two walls parallel to each other, one of which is located in the terrace of the plateau slope (for example, Ujan 2, Lusakert, Beshtasheni, Pokr berd, Motkan). In addition to the typology of defensive system, G. Areshyan and K. Kafadaryan also developed a typology of fortresss walls, according to the nature of the masonry[15] (Cf. Fig. 1).

In 1994, an archaeological expedition for studying the archaeological sites of the Sevan basin investigated the defensive system of the Bronze and Iron Ages and their functional significance. As a result, the complexes were divided into three types, the classification was made taking into account the size, position and functionality. The first type includes protected settlements – fortified cities that have walls, a large area, and, therefore, had a large population. Archaeological sites such as Norabak 1, Kol pal, Tsovak, Vardenik, Mtnadzor, Nagarakhan, Sangar belong to this type. Only three of these have a citadel (Tsovak, Nagaraham, Sangar), and only four were administrative centers.

Fortresses of the second type are defensive bases with fortified walls, probably having a permanent garrison and population. Archaeological sites such as Norabak 2, Jagahadzor, Kare dur, Bruti berd, Tsovinar, Aloyi kogh, Kyurdi kogh, Martuni, Al berd, Joj kogh, Bardzerashen, Bely Klyuch, Tatev, Berdi dosh,

[15] **Արեշյան, Ղաֆադարյան** 1996, 33–68:

Negh bogaz, Kra belong to this type. Several subtypes are distinguished: fortresses with a citadel (Jagahadzor, Martuni, Joj kogh), represented the residence and could be administrative centers (Jagahadzor). The second subtype includes fortresses with a predominantly civilian population – Kare dur, Bruti berd, Aloyi kokh, Kyurdi kogh, Al berd, Bardzerashen, Negh bogaz. The third subtype includes fortresses – military bases that controlled roads, mountain gorges and passes. Mainly the garrison was located in such fortresses. Fortress Norabak 2, Tsovinar, Bely Klyuch, Tatev, Berdi dosh, Kra belong to this subtype.

The third type includes military bases - observation posts. They were small fortresses located in roads, mountain gorges, not far from protected settlements and guarded the surroundings and settlements. Fortresses such as Murad khach, Heri berd, Kare dzi, Berdi dar belong to this type[16] (Fig. 1).

During the work of the Armenian-Italian expedition (early 2000s), the architect H. Sanamyan added the fourth type of defensive system to the typology of G. Areshyan and K. Kafadaryan. This type includes structures built on the slopes, having walls around the perimeter[17]. Having studied the fortifications located on the southern coast of Lake Sevan, he identified six types – round, oval, polygonal, triangular, rectangular, trapezoidal defenses[18]. He also divided the fortress walls into 6 groups – rectilinear; curved; rectilinear-broken walls that in their turn are divided into two subtypes – broken, with small angles, in accordance with the landscape and broken with straight angles, forming a kind of buttress or tower, offering the possibility of protection. The fourth group includes walls with projections, mainly formed because of the difference in the width of the outer side of the wall, which became the prototype of the buttress and somehow had its functions. The fifth group includes walls with buttresses, perhaps the prototype of buttresses-towers. The walls strengthened with towers are in the sixth group[19]. In addition, H. Sanamyan completed typologies of gates, typologies by design features, etc.

[16] **Հմայակյան, Սանամյան** 2002, 33:
[17] **Sanamyan** 2002, 326.
[18] **Sanamyan** 2002, 327.
[19] **Sanamyan** 2002, 328–329.

The Problem of Dating of Defensive Systems

Before carrying out archaeological excavations on this type of archaeological sites, cyclopean structures were dated mainly by the nature of the masonry. The first serious archaeological work for dating the archaeological sites began in the 1960s. S. Yesayan began a full-scale excavation in north-eastern Armenia, with the aim of fixing archaeological sites at the foot of the Virahayots, Somkhet, Gugarats, Miapor or Murguz ranges. 30 "cyclopean fortresses" were measured in total, some of them were excavated. These archaeological sites were mainly located in mountain forest areas. S. Yesayan not only studied the functional significance, but also grouped the defenses, according to chronological characteristics. The first group is the "cyclopean fortresses" of the Early Bronze Age – the "cyclopean fortresses" of the second (small) Shahlama and the settlement of Jagatsategh (2 half of III millennium BC). The second group includes the "cyclopean fortresses" of the Early Iron Age Poploz-gash, Khortambots, Bartsraberd, Tandzut, Surb Nahatak, a "cyclopean fortresses" in the village of Ordzhonikidze (end of I – end of II millennia BC). The third group includes the fortresses of the Early Armenian period Astghi-blur, Berdategh, Tmbadir, Pilor-pat, Kal-kar, Sev-sev qareri blur, Sev-sev qareri takht, Baghri-khach, Berdakar, Tachar "Salk'ari", the second (small) Shaglama. In general, the considered fortresses date back to the early Armenian period, ca. 6th–4th centuries BC. This is the period following the fall of Urartu, in the bowels of which the birth and formation of the Armenian state took place[20] (cf. Fig. 1).

In 1952, H. Martirosyan conducted archaeological excavations in Garni 2, in the Tahcha area. As a result, it was revealed that both the fortress and the settlement belonged to the era of the Late Bronze – Early Iron Ages[21].

In the 1960s, archaeological work was carried out on the northern and northwestern foothills of the Mrav and eastern slopes of the Sevan ridges, mainly in the of Getabek and Dashkesan regions. The aim of these works was a complex study of cyclopean structures in order to clarify their functional purpose and time of their occurrence. During these works, 20 cyclopean structures were excavated – Nagara-dag, Choban-dashi, Pir kalacha, Beyuk kalacha, Dashli tepe I, Museib, Geydere I, Geydere II, Gyulmamed, Karadag, Arykdam, Greek Kalacha, Bala

[20] **Есаян** 1976, 17–98.

[21] **Խանզադյան** 1969, 124–125:

kalacha, Buyak kalacha, Gzlca Kalacha, Bala Kalacha, Narzan). The most intensive functioning of cyclopean structures as settlements, defensive fortresses, and in some cases as cattle pens, belong to the 11th–9th centuries BC as evidenced by the saturation of the layers of this period. Cultural layers related to the next period – the 8th–7th centuries BC, in view of richness, diversity and power of the cultural layers are noticeably inferior to the lower layers, which indicates a gradual extinction of life on these archaeological sites. Already in the 7th century BC they finally ceased to function. The cessation of the construction of cyclopean fortresses in the 8th–7th centuries BC was apparently associated with frequent invasions of Urartu[22].

In 1973, E. Khanzadyan carried out archaeological work in the Elar fortress. Judging by the stratigraphy presented by the researcher, the fortress wall was erected on the surface of the Early Iron Age layer, while the author dates this object to the beginning of the 3rd millennia BC[23].

In 1975, work was done to create corpuses of historical and cultural monuments of the nations of the USSR. Within this program, the Institute of Arts, Yerevan State University, the Laboratory for the Study of Armenian Studies and the Institute of Archaeology and Ethnography of the National Academy of Sciences of the Armenian USSR, organized systematic surveys of the southern slopes of Mount Aragats and the southern and southeastern parts of Mount Ara. The work was carried out under the direction of G. Areshyan, in addition to him, K. Kafadaryan, A. Simonyan, G. Tiratsyan, A. Kalantaryan, G. Sargsyan and H. Ohanyan took part in the expeditions. The purpose of these works was to register the archaeological sites mentioned in the List of the State Committee for Construction Affairs of the Armenian SSR, to fix the current state and include new archaeological sites[24]. The expedition studied in detail the above-mentioned territories, basically fixed the monuments and dated them by surface material. According to these data, the sites were divided into three chronological groups – from single-layer to multi-layer. As part of these works, archaeological excavations of the Shamiram settlement were also carried out. As a result, it was shown that since the 9th century BC here a huge protected settlement had been formed.

[22] **Алиев** 2009, 113–114.

[23] **Խանզադյան** 1979, 18:

[24] **Արեշյան** և այլք 1977, 266–174: **Արեշյան, Սիմոնյան** 1976, 284–288: **Арешян** 1978, 91–108:

In 1977–1981 R. Torosyan, O. Khnkikyan and L. Petrosyan conducted a survey of settlements and burial grounds of the 3rd–1st millennia BC in the valley of the river Akhuryan (cf. Fig. 1). In particular, a settlement near Shirakavan (second half of the 3rd–1st millennia BC), which included a settlement, a fortress with a necropolis and a cult center, was investigated. The walls of the fortress date back to the 9th–4th centuries BC.

In 1969–1979 L. Petrosyan conducted archaeological research in the villages of Keti and Voskheask. Burial grounds, the settlements of Krakari Sar, Sgnakhner (3rd millennia BC), the unprotected open settlement of Horner (early 3rd millennium BC) and the "cyclopean fortresses" of the 1st millennium BC were investigated[25].

In 1983, in order to date and identify the stratigraphy of the protected settlement Kuchak 1, several pits were laid by L.A. Petrosyan. As a result, it turned out that the settlement was founded in the 3rd millennia BC and lasted until the middle of the 1st millennium BC[26].

In 1988, H. Simonyan carried out archaeological work on the right bank of the river Kasakh, near the town of Ashtarak in the citadel of Berdshen settlement. As a result, it was revealed that the archaeological site belongs to the period of the Middle Bronze Age[27].

Since 1988, under the leadership of H. Avetisyan, excavations of the Urartian fortress Aramus have been conducted. According to excavation materials, Aramus fortress has three chronological dates main stage: pre-Urartian, Urartian, post-Urartian and the main period of activity dates from the 7th to 6th centuries BC[28].

In the 2000s The Armenian-American expedition studied the archaeological sites of the Tsakhkaovit plain. The works showed that on the archaeological sites of the districts of Tsakhkaovit, Gegharot, Aragatsi-berd, Hnaberd, settlement occured at the beginning of the Late Bronze Age, the period of desolation dates to the beginning of the Iron Age, life revived in these territories in the Middle Iron Age, at the turn of the 8th–7th centuries BC[29].

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[25] **Петросян** 1989, 5–30.

[26] **Պետրոսյան** 1993, 61–62:

[27] **Սիմոնյան** 1991, 19–20:

[28] **Ավետիսյան, Ավետիսյան** 2006, 119–129: **Avetisyan** 2012:

[29] **Бадалян** и др. 2005, 109–115; **Бадалян** 2008, 45–68; **Badalyan** et al. 2009, 45–105; **Badalyan** et al. 2020, 61–82.

In 2012, a defensive system was excavated at the archaeological site Agarak 1–3 belonging to the Late Bronze and Early Iron Ages[30].

In 2011–2014 employees of the IAE NAS RA conducted archaeological excavations at the archaeological site Margaovit in the Lori region (A. Gevorgyan)[31] and Sotk 1, Sotk 2, Norabak 1 in Gegharkunik region (A. Bobokhyan). The aim of the work was the dating of defensive system and the identification of their distinctive features. As a result of the work, all the studied defenses were divided into three chronological groups: Early phase – the Sotk 2 fortress represents a construction of the Middle to Late Bronze Age transitional period (ca. 1500 BC) which is characterized by its simple structures, absence of buttresses, pavements and terrace platforms (cf. Fig. 4). Middle phase – Norabak 1, Sotk 2 and Margahovit fortresses represent a more developed building system with typical tower like buttresses, guarding posts at the entrances, pavements and terrace platforms, which should be typical of the Early and Middle Iron Ages (1200–600 BC) (cf. Fig. 5) [32]. Late phase – Sotk 1, Early Armenian (600–400 BC) and Hellenistic (300 BC – 400 AD) periods. Fortress walls in their structure are similar to the walls of the previous period, there also appears semi-cyclical masonry – from partially processed stones of medium size.

Conclusions

The first researchers of cyclopean structures chose the masonry of walls and its character as the basis for dating. One-faced masonry was considered more archaic, two-faced masonry belonged to the Iron Age. Excavations have begun since the 1970s, demonstrating that these structures existed over a long chronological period, and both types of masonry coexisted, and in some territories there is predominantly single-faced masonry – for example, on the northern slope of the Mrav ridge and the western and eastern slopes of the Sevan ridges, the slopes of the Areguni ridge. The buttresses and defensive towers are rare here, but such structures located on the slopes of Aragats and on the western and southern coasts of Lake Sevan, are found everywhere. Currently, the radiocarbon data and GIS analysis show that cyclopean fortresses appeared at the end of the Middle Bronze Age, and their flourishing period dates from the Late

[30] **Թումանյան** 2013, 159–169:
[31] **Գևորգյան** և այլք 2017, 6–24:
[32] **Դանիելյան** 2014, 124–136:

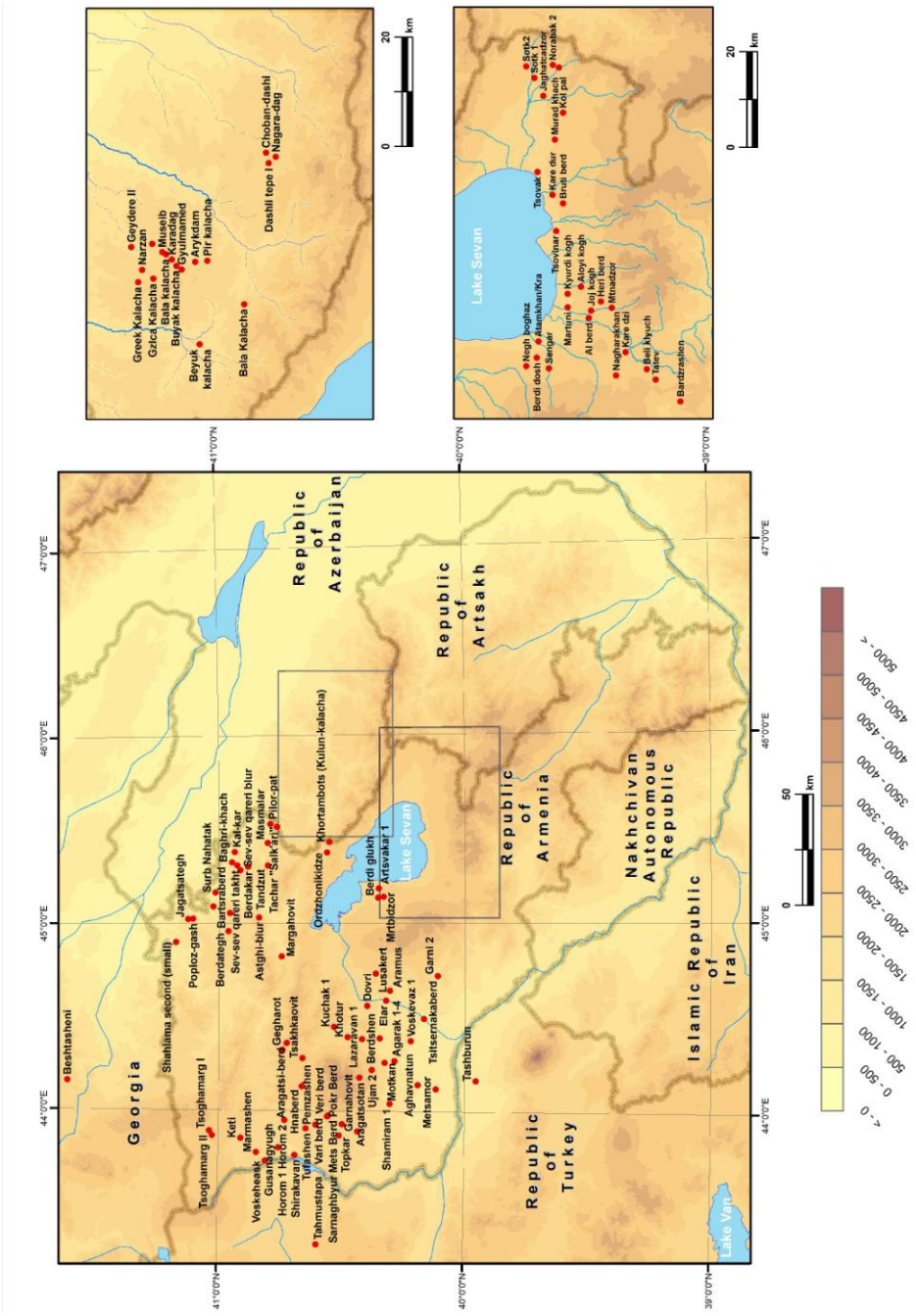

Fig. 1. Map of classified dated and excavated sites (H. Danielyan)

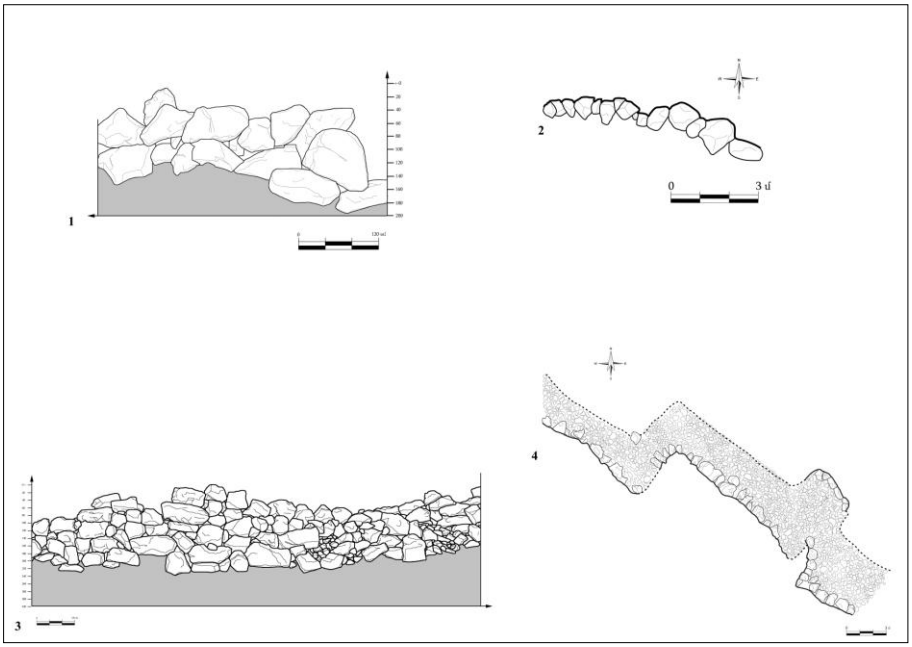

Fig. 2. Types of defensive system: 1-2) Avan 3; 4-5) Lazaravan 1 (South slope Aragats Mountain) (H. Danielyan)

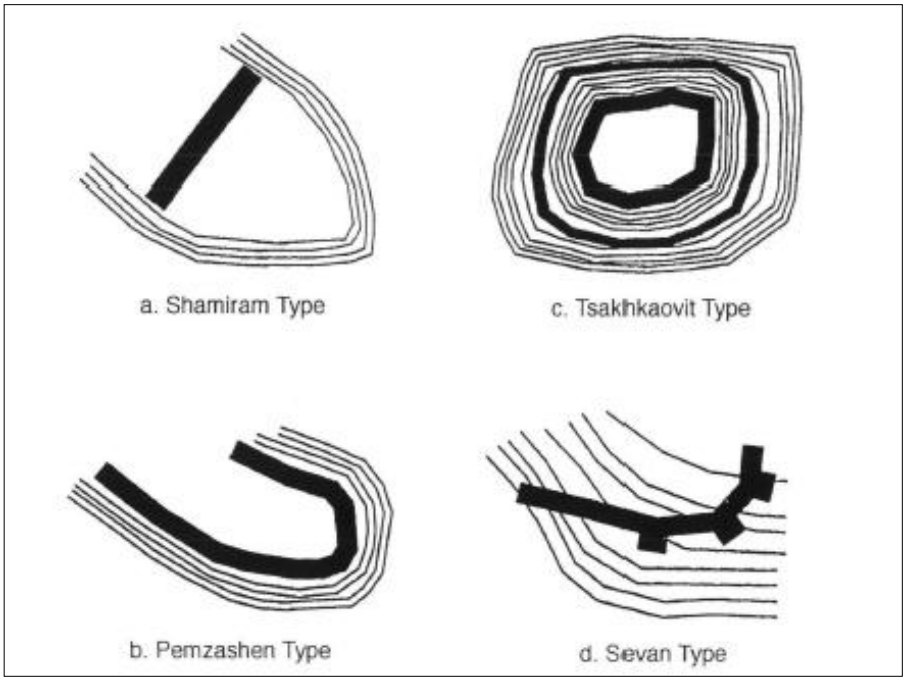

Fig. 3. Planigraphy of the defensive structures (Smith 1999, 87. Fig. 6)

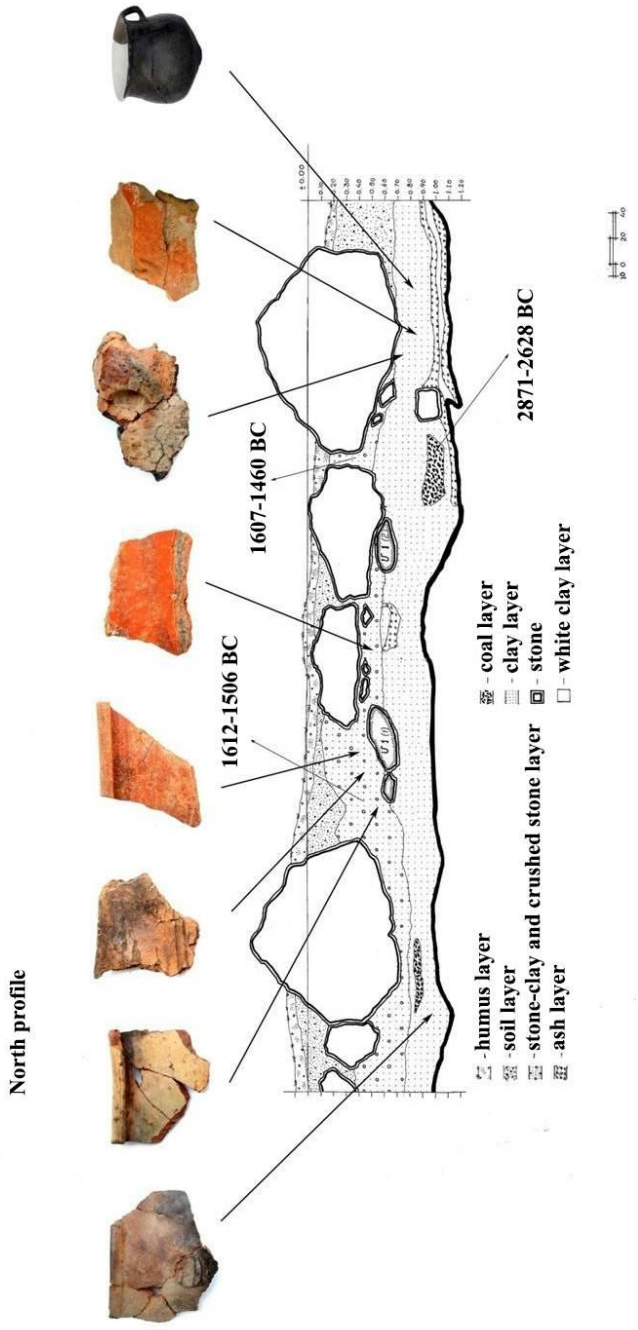

Fig. 4. Stratigraphic section of the site Sotk 2 (H. Danielyan)

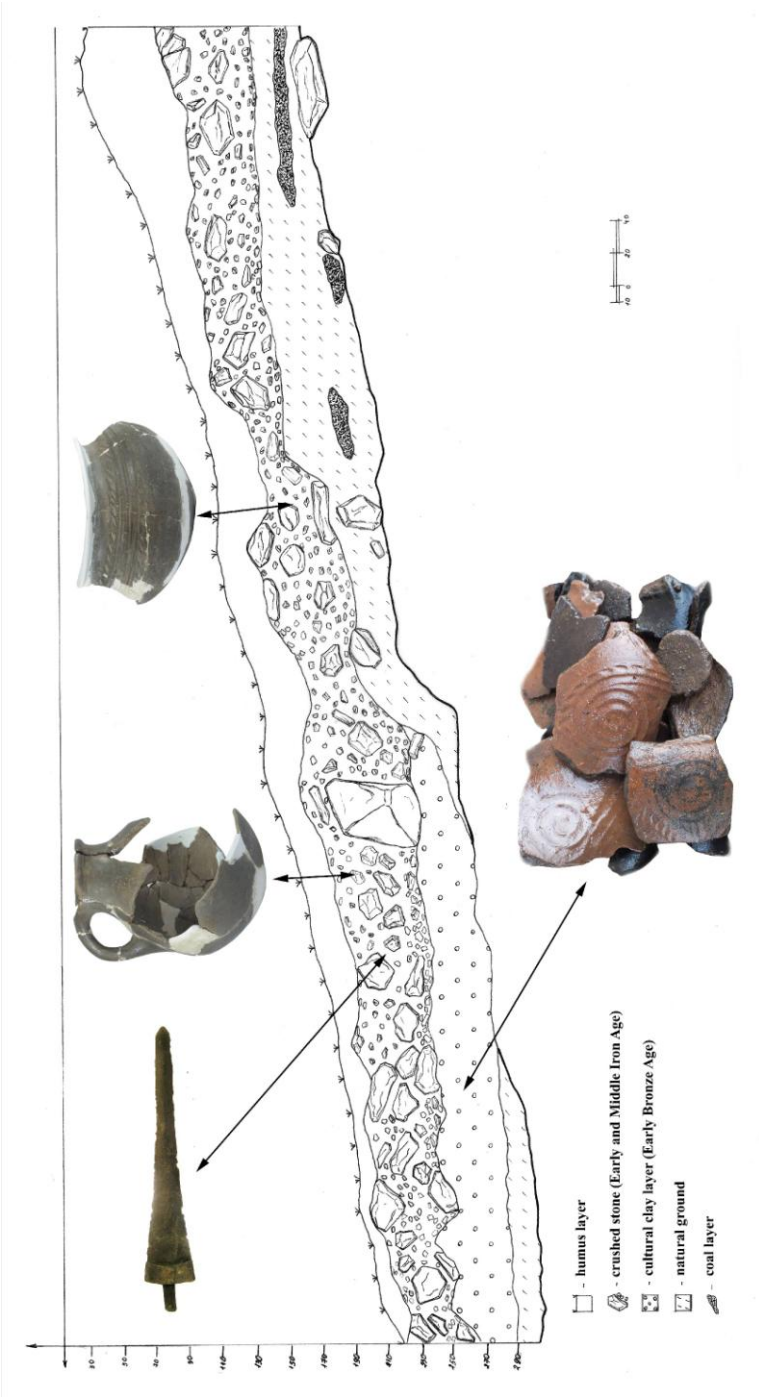

Fig. 5. Stratigraphic section of the site Margahovit (H. Danielyan)

Bronze Age to the Early Armenian and Hellenistic period. In the era of the developed Middle Ages, settlements were formed inside cyclopean structures, and stones of fortified walls were often used for the erection of residential buildings.

Such monumental structures as cyclopean fortresses are among the insufficiently explored ones. A full-scale complex study of cyclopean fortresses is required, including their excavation and mapping in order to reconstruct visibility, road network, and water supply. For the most accurate dating of fortresses, it is necessary to excavate at the locations of the defensive walls.

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ՀԱՅԱՍՏԱՆԻ «ԿԻԿԼՈՊՅԱՆ» ԱՄՐՈՑՆԵՐԻ ՏԻՊԱԲԱՆՈՒԹՅԱՆ ԵՎ ԹՎԱԳՐՈՒԹՅԱՆ ԽՆԴԻՐԸ

ԴԱՆԻԵԼՅԱՆ Հ.

Ամփոփում

Բանալի բառեր՝ «Կիկլոպյան ամրոցներ», տիպաբանություն և ժամանակագրություն, վաղ բրոնզի դար, միջին բրոնզի դար, ուշ բրոնզի և վաղ երկաթի դար, միջին երկաթի դար, վաղ հայկական շրջան:

Հայկական լեռնաշխարհի «կիլոպյան ամրոցները» կառուցված են համեմատաբար բարձր վայրերում (ծ.մ. 800 – 2300 մ բարձրության վրա) գետերի և ջրի աղբյուրներին մոտ, շրջապատված հսկայական պարիսպներով՝ շարված մեծազանգված բազմանկյուն քարե բեկորներով:

«Կիկլոպյան ամրոցները» ուսումասիրող առաջին հետազոտողները ամրոցների թվագրության համար հիմք էին ընդունել պարսպապատերի կառուցվածքը: Մեկերես պարսպաքարերը համարվում էին ավելի վաղ, իսկ երկերես պարսպապատերը վերագրվում էին երկաթի դարաշրջանին: 1970-ական թվականներից սկսված հնագիտական պեղումների արդյունքում պարզ դարձավ, որ այդ կառույցները գոյատևել են բավականին երկար: Որոշ շրջաններում գերակշռել են մեկերես պարսպաքարերը, օրինակ Մռավի լեռնաշղթայի հյուսիսային լանջերին, Սևանի լեռնաշղթայի արևմտյան և արևելյան լանջերին և Արեգունի լեռնաշղթայի լանջերին: Այստեղ որմնահեցերը և պաշտպանական աշտարակները քիչ են հանդիպում, ի տարբերություն Արագած լեռան և Սևանա լճի արևմտյան և հարավային ափամերձ շրջանների, որտեղ դրանք գերակշռում են: «Կիկլոպյան ամրոցները» պատկանում են համեմատաբար քիչ ուսումասիրված հուշարձանների թվին: Այս տիպի կառույցների լիրաժեք և ամբողջական ուսումասիրության համար անհրաժետ են հնագիտական պեղումներ, քարտեզագրում՝ դրանց տեսանելիության դաշտերը, ճանապարհային ցանցը և ջրամատակարարումը վերակազմելու համար: Ամրոցների ավելի ստույգ թվագրության համար անհրաժեշտ են պարպապատերի պեղումներ:

ВОПРОС ТИПОЛОГИИ И ДАТИРОВКИ «ЦИКЛОПИЧЕСКИХ» КРЕПОСТЕЙ АРМЕНИИ

ДАНИЕЛЯН Г.

Резюме

Ключевые слова: «циклопические крепости», типология и хронология, ранний бронзовый век, средний бронзовый век, поздний бронзовый и ранний железный век, средний железний век, раннеармянский период.

Циклопические крепости Армянского нагорья расположены на высоте 800–2.300 м над уровнем моря, возле рек или других источников воды.

Эти сооружения окаймлены огромными крепостными стенами, сложенными из крупных многоугольных каменных блоков, тщательно соединенных друг с другом.

Первые исследователи «циклопических сооружений» датировали их исходя из характера кладки стен. Однолицевая кладка считалась более архаичной, двухлицевая кладка была характерна для железного века. Результаты раскопок, начатых в 1970-х гг., свидетельствуют о том, что эти сооружения существовали на протяжении длительного хронологического периода. В ряде регионов преобладала однолицевая кладка, например, на северном склоне Мравского хребта, западном и восточном склонах Севанских хребтов, на склонах хребта Арегуни. Здесь контрфорсы и оборонительные башни встречаются довольно-таки редко, в отличие от сооружений, возведенных на склонах г. Арагац и западном и южном побережье о. Севан. «Циклопические крепости» относятся к числу малоизученных памятников. Для полномасштабного комплексного изучения «циклопических крепостей» необходимо проводить раскопки и картографирование, чтобы восстановить систему видимости, дорожной сети и водоснабжения. Для более точной датировки крепостей следует задействовать раскопки оборонительных стен.