ARCHAEOLOGY OF ARMENIA IN REGIONAL CONTEXT

National Academy of Sciences of Republic of Armenia
Institute of Archaeology and Ethnography

ARCHAEOLOGY OF ARMENIA IN REGIONAL CONTEXT

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to the 60th Anniversary of the Institute of Archaeology and Ethnography
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Edited by
Pavel Avetisyan and **Arsen Bobokhyan**

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The present volume reflects recent achievements of Armenian archaeology realized by local and international specialists. It is the result of a conference dedicated to the 60th Anniversary of the Institute of Archaeology and Ethnography, NAS RA held in Yerevan during 2019. The Institute is a multi-profile scientific organization, which conducts fundamental and applied investigations in the fields of archaeology, cultural anthropology, folklore studies, ethnosociology, epigraphy, archaeobiology, physical anthropology. As the national center of investigation of material and non-material cultural heritage, the Institute tries to provide scientific parity to the leading regional and international centers in the above-mentioned spheres.

Cover - Martiros Saryan, Mt. Aragats, 1929

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The Institute of Archaeology and Ethnography: Past and Present

Pavel Avetisyan, Arsen Bobokhyan

Institute of Archaeology and Ethnography, Armenia

Abstract. The Institute of Archaeology and Ethnography was founded in 1959. It is a multi-profile scientific organization, which conducts fundamental and applied research in the fields of archaeology, cultural anthropology, folklore studies, ethno-sociology, epigraphy, bio-archaeology, physical anthropology. The most part of the resources of modern Armenian Studies, in particular Armenian history, spiritual and material culture, economy, household, is practically given to the Institute. As a result of many expeditions, new objects of archaeological heritage are revealed every year in different regions of the Republic. Excavations with restoration projects have gained large capacity. Hundreds of epigraphic inscriptions of the Armenian Highland and colonies have been collected, deciphered and interpreted. Armenian household and customs, ethnographic manifestations of material and spiritual culture, traditional and modern public relations, beliefs, rituals and worship were investigated. Enormous amounts of material of various genres of folklore have been recorded, studied, and published. Fundamental research has been done in the fields of Armenian mythology and epic folklore. Both Armenian archaeology and other disciplines are strongly integrated into the projects and research works of international scientific centres. As a result of these works series of publications emerged as well as numerous monographs and thousands of articles in Armenian and international prestigious journals.

Keywords: Armenian Academy of Sciences, Institute of Archaeology and Ethnography, investigation of material and non-material culture, inner potential, international collaboration.

Introduction

Archaeology, ethnography, folklore studies and epigraphy are among the most important fields of study of material and spiritual culture of Armenia. The investigations of these directions of Armenian Studies for the last half century have been mainly conducted at the Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia. The institution was founded in 1959, based on archaeological department and the ethnography group of the Institute of History, Armenian Academy of Sciences. In 1961, the folklore studies department of the Institute of Literature was transferred here. Subsequently, other subdivisions emerged at the Institute, such as the Anthropological Laboratory (1973) and other units.

Currently, the Institute is a multi-profile scientific organization, which conducts fundamental and applied investigations in the fields of archaeology, cultural anthropology (ethnography, ethnology and anthropology), folklore studies, ethno-sociology, epigraphy, archaeobiology, physical anthropology.

The strategic goal of the Institute is the provision of the scientific parity to the leading regional and international scientific centers in the above-mentioned spheres, as the national center of investigation of material and non-material cultural heritage.

Structure of the Institute

The current structure of the institution has been formed during long existence of the Institute of Archaeology and Ethnography, due to the efforts of its leaders B. Arakelyan (1959 – 1988), G. Tiratsyan (1988 – 1993), A. Kalantaryan (1993 – 2006) and P. Avetisyan (2006 to date).

The Institute consists of the following ten departments: “Early Archaeology of Armenia”, “Archaeology of Ancient Armenia”, “Archaeology of Medieval Armenia”, “Armenian Epigraphy”, “Armenian Ethnography”, “Ethnography of Modernity”, “Ethno-Sociology”, “History and Theory of Armenian Folklore”, “Textology of Armenian Folklore”, “Diaspora Studies”, as well as four research groups: “Applied Ethnography”, “Archaeological Investigation in New Constructions”, “Archaeobiology”, “Excavations and investigations of the Karashamb Necropolis.” This system of sub-divisions, which was created in accordance with the scientific directions of the institute, has been operating since the 1960s. The research groups have

Fig. 1. The expedition of Ani with guests. Seated from left: Taragros, Ashkharbek Kalantar, 1910s (Family archive of Ashkharbek Kalantar, photo 6, provided by V. Gurzadyan).

Fig. 2. Nikolay Marr while observing vishaps in the Geghama mountains (Ughtuakunk), 1911 (Photo archive of the St. Petersburg's Institute for the History of Material Culture, fund 23, photo Q 560–39).

Fig. 3. Ashkharbek Kalantar while observing the petroglyphs of Aragats, 1920s (Archive of the History Museum of Armenia, Collection of Ashkharbek Kalantar, photo 8551).

been formed since 2007 based on sub-projects and research themes. In parallel, investigations are carried out by thematic (contractual), targeted, grant-funded research groups. Since 2010, the Institute has been conducting research at the International Laboratory (LIA), founded with the French National Centre for Scientific Research (CNRS). In 2017, in cooperation with the Institute for International Cooperation of the German Adult Education Association (DVV) the "Centre for Oral History" was established. To the temporary research groups also belong the archaeological expeditions organized by the Institute. Majority of the Institute's joint international cooperation projects are conducted by the researchers of the other institutes of the NAS RA, YSU and international scientific centers.

The research carried out in the above-mentioned subdivisions are served by the laboratories of "Restoration and Cameral Processing" and "IT Processing", the archive and the library, which in recent years have been actively engaged in the digitalization works of existing materials.

Such a structural subdivision is conditioned by peculiarities of the research carried out at the Institute, which allows the implementation of scientific-research projects according to the following components: 1. Fundamental and applied research, 2. Archaeological, epigraphic fieldwork, ethnographic and folkloristic surveys for data-gathering, 3. Restoration, documentation (photographs, drawings, line art) and museification (registration, scientific description, determination of cultural-chronological affiliation of the excavated artifacts) of archaeological cultural values, 4. Analytical-laboratory investigations, 5. Geodesic mapping and architectural measurements, 6. Processing, digitalization and investigation of archive materials, 7. International cooperation, 8. Publication of scientific investigations, 9. Staff preparation and training, 10. Organization of conferences, seminars and round tables, 11. Organization of summer schools, 12. Digitalization and creation of the electronic database of archaeological heritage resources, 13. Creation of the electronic database of ethnographic heritage resources and data, 14. Launching of the website, 15. Dissemination and promotion of the material and non-material cultural heritage and scientific results of the Institute in Armenia and abroad, 16. Implementation of projects for strengthening, improving and museuification of the excavated archaeological sites.

In order to optimize the system of the structural subdivision of the Institute, it is planned to expand the number of research groups, taking into account the large number of interdisciplinary research themes.

The scientific staff of the Institute are 120 people, of which one is a corresponding member of the NAS RA, 10 are Dr Habil. and 77 are PhD. The Institute has a professional council for the defense of doctoral dissertations.

Scientific Policy

The scientific staff of the Institute is currently involved within the broad program "Issues of the Perspective Development of Armenian Archaeology, Ethnography, and Folklore Studies". It consists of 10 sub-projects: 1. "The Earliest and Ancient Armenia: excavations and investigations of archaeological sources", 2. "Excavations and investigations of Karashamb necropolis (2016_2020)", 3. "Preparation and publication of the volumes of "Corpus of Armenian Epigraphy", 4. "The Traditional and the new in Armenian culture: issues of preservation and development", 5. "Everyday life in the past and present: anthropological study", 6. "Applied ethnography", 7. "Socio-cultural processes in Armenia (Tradition and modernity)", 8. "Armenian folklore: comparative and typological investigations", 9. "Parallel investigations of the main motives and plots of Armenian fairy tales", 10. "The main directions of the comparative research of the Armenians in their own and foreign environments: issues and perspectives of investigation", which in their turn consist of 121 individual and group research topics.

Current scientific policy of the Institute aims at strengthening and multiplying the material and technological potential of fundamental and applied investigations. Among the key elements of the Institute's scientific policy are the development and implementation of programs for the provision of additional financial and technical resources for the research, carried out within the framework of the themes, widely accepted in scientific community; the organization of the internal financial support for the increase of the mobility and publication of scientific results of the employees; the provision and financing of exchange of scientific-technological information; creation of the network system. In the last two years complex works are conducted with the aim of creation of new types of "landscape museums" for promotion of tourism, based on research, as well as conservation and museification of excavated sites.

Majority of the employees of the Institute are regularly published in prestigious international journals and periodicals. E. g., between 2012 and 2017

Fig. 4. The Expedition of the Committee for Preservation of Monuments of Armenia headed by Ashkharbek Kalantar (second from left) in Armavir, 1920s (Family archive of Ashkharbek Kalantar, photo 19, provided by V. Gurzadyan).

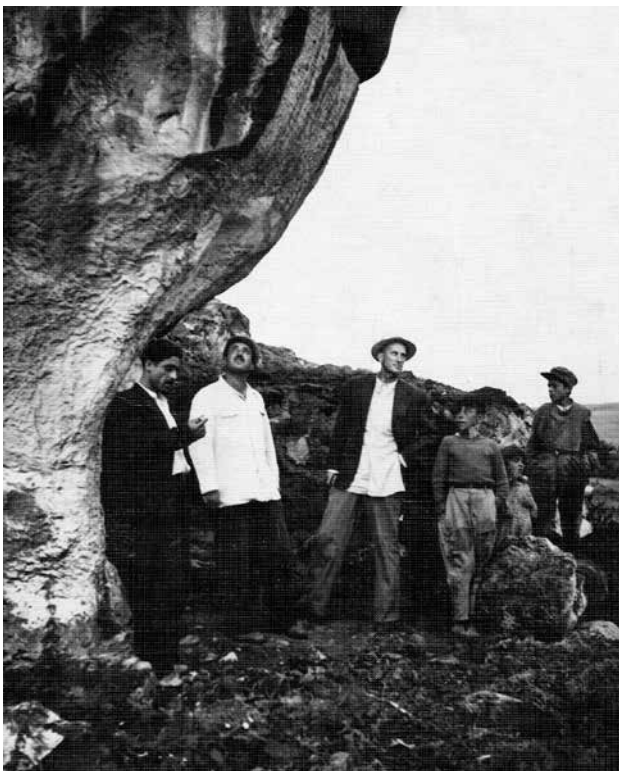

Fig. 5. The Armenian-Russian expedition headed by B. Piotrovsky (second from left) investigating cyclopean fortresses in Tsovinar, 1930–1931 (Family archive of Telemak Khachatryan, photo 1, provided by F. Babayan).

researchers of the Institute have authored more than 100 monographs (11 of which have been published abroad) as well as 980 articles published in periodicals and journals (370 of which abroad).

The Institute is actively undertaking the restoration of cultural values. For example, only in 2017 artifacts from 27 sites excavated in different years have been restored (540 vessels, 240 metal objects, 200

Fig. 6. The expedition of Amberd headed by Hovsep Orbeli, 1935 (Photo archive of the Dvin Museum, photo 19, provided by A. Zhamkochyan and N. Hakobyan).

Fig. 7. Armenian scholars and students in Dvin, headed by Smbat Ter-Avetisyan (seated second from left), 1932 (Photo archive of the Dvin Museum, photo 21, provided by A. Zhamkochyan and N. Hakobyan).

Fig. 8. The expedition of Dvin: Smbat Ter-Avetisyan (in the middle) with colleagues and workers, 1939 (Photo archive of the Dvin Museum, photo 23, provided by A. Zhamkochyan and N. Hakobyan).

bone and stone objects, 2,600 glass beads have been cleaned and preserved, about 68,000 pottery fragments have been cleaned).

The Institute has always been in active contact with institutions of higher education. The highly qualified employees of the Institute are teaching in various universities of the Republic of Armenia. A number of YSU employees jointly conduct research themes at the Institute. Members of the Institute often give lectures at international universities.

Preservation and preparation of archaeological sites for touristic purposes is an important task for the Institute. In this sense, the Institute is constantly monitoring the state of preservation of the archaeological heritage in the territory of the Republic. An agreement is signed with the entities, conducting large-scale earthworks to investigate the sites and decide their further destiny in accordance with the law. The Institute conducts contractual investigations on restoring sites, as well in projects aimed at promoting tourism. At

Fig. 9. The expedition of Dvin: Second row from the bottom, third from left: Harutyun Mnatsakanyan, followed by Karo Ghafadaryan, Babken Arakelyan, Yevgenia Musheghyan, 1946 (Photo archive of the Dvin Museum, photo 31, provided by A. Zhamkochyan and N. Hakobyan).

Fig. 10. Academic Guests in Dvin, headed by Hovsep Orbeli (in the middle) 1950 (Photo archive of the Dvin Museum, photo 54, provided by A. Zhamkochyan and N. Hakobyan).

the same time, the Institute itself often participates in grants aimed at the improvement and museification of excavated sites (Areni 1).

An important role is given to the provision of informational network. The Institute's library operates in accordance with the rules, connections and open resources provided by the Fundamental Library of the National Academy of Sciences of the Republic of Armenia. There is a special page on the website of the Institute for the news, advertisements, grant competitions, invitations for the conference participation. Information on the scientific achievements of the Institute is regularly presented in the media and during press conferences.

The most important part of the Institute's activity is international cooperation, which is carried out in three main directions:

1. Organization of joint archaeological fieldwork projects. The Institute cooperates with 30 scientific centers in 13 countries (implementation of joint projects,

Fig. 11. The expedition of Dvin: Second row from the left: Karo Ghafadaryan, followed by Harutyun Mnatsakanyan, ..., Margo Vahanyan; behind K. Ghafadaryan: Vahritsch Ghazazyan; among those seated on the floor the first from the right: Stephan Yesayan, third: Grigor Kocharyan, 1952 (Photo archive of the Dvin Museum, photo 36, provided by A. Zhamkochyan and N. Hakobyan).

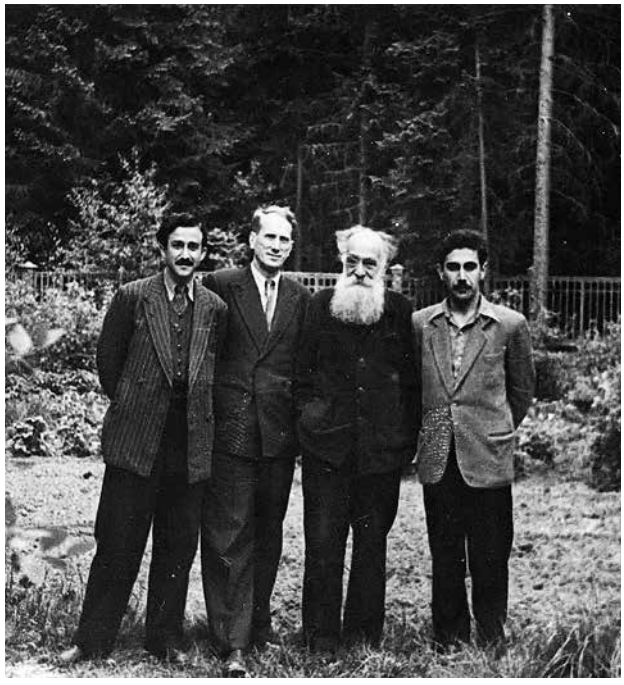

Fig. 12. The benefactors of Armenian Archaeology. From right to left: Gevorg Tiratsyan, Hovsep Orbeli, Boris Piotrovsky, 1950s (Family archive of Gevorg Tiratsyan, photo 3, provided by N. Tiratsyan).

organization of joint archaeological expeditions, participation of scientific groups or individual scientists in the research carried out in Armenia, implementation of laboratory analyses), which include the Department of Anthropology of Cornell University, the Department of Anthropology of Purdue University, the University of Central Florida (Orlando), the University of Connecticut, the University of North Carolina, the University of Los Angeles of California, the University of Chicago, the New York University, Smithsonian Institution (USA), the Maison de l'Orient et de la Méditerranée, Laboratoire Archéorient of Lyon-2 University CNRS, the University of Sorbonne (France), the University of Tubingen, the University of Munich, the Free University of Berlin, the University of Halle, the Manheim Archaeometry Centre, the Max Planck Institute (Germany), the International Association for Mediterranean and Oriental Studies (ISMEO), the Ca Foscari University of Venice, the Italian Institute of Human Paleontology (Is.I.P.U, Italy), the University College Cork (Ireland), the University of Haifa (Israel), the University of Sheffield, the University of Winchester (UK), the Tokai University (Japan), the University of Adelaide (Australia), the University of Warsaw (Poland), the Institute of Archaeology of Prague (Czech Republic), the Free University of Innsbruck (Austria), the Institute for the History of Material Culture, Russian Academy of Sciences (Russian Federation). In the framework of field research projects implemented with various scientific centers abroad, for example, during 2017 – 2018 sixteen joint archaeological expeditions were realized, including Armenian-American (4), Armenian-German (3), Armenian-French (3), Armenian-Italian (2), Armenian-Russian (1), Armenian-Japanese (1), Armenian-Austrian (1), Armenian-Polish (1), Armenian-Czech (1).

2. Collaboration with the scientific centers in conducting of laboratory analyses. Within the framework of joint projects, a large number of artifacts are sent for analyses to various scientific centers operating outside the contract. In this case, the opportunities and financial resources of international colleagues, who are parties to the contract, are used.

3. Publication of monographs and articles including materials, obtained during the research projects conducted in Armenia.

Along with the above, great attention is paid to the development of the information system of scientific cooperation: creation of joint electronic archives, catalogues, book exchange.

Since 2010, as already mentioned above, within the Institute is operating the LIA international labora-

tory, created in cooperation with the French National Centre for Scientific Research. It provides unprecedented opportunities to cooperate and organize various research projects with researchers from French institutions and the Institute of Geological Sciences of NAS RA.

In 2018, the Smithsonian Folklife Festival, characterized by prestigious and long-standing traditions, took place in Washington National Park, where one of the two projects presented was dealt with Armenia. According to the preliminary calculations by Smithsonian Institution, in 2018 the number of visitors has reached eight hundred thousand. Armenia is the only country in the region presented in the program of the Festival. The project "Armenia: Creating Home", which included about 80 participants from Armenia and more from the Armenian community of America, through exhibitions, trainings, discussions, and performances shared the feeling of home with the visitors during 10 consecutive days. The program had two components – feasting and crafts (food, winemaking, folk music and dance, stone and wood carving, blacksmithing, ceramic production, embroidery, weaving skills and experience). The team of project coordinators consisted of scientists from the Institute and a specialist from the Smithsonian Institution. The Smithsonian Institution has also partnered with the USAID-funded "My Armenia" tourism project collaborating with the team of researches from the Institute.

The Main Directions of Scientific Research

As we have already mentioned, the Institute mainly conducts research on three disciplines and their branches: archaeology, ethnography and folklore studies.

Archaeology. Archaeological excavations in Armenia began in the second half of the 19th century and the beginning of the 20th century. The first significant event contributing to the establishment of Armenian archaeology at the end of the penultimate century and the beginning of the last century were the archaeological excavations conducted in Ani under the direction of N. Marr and H. Orbeli and with participation of such devotees of Armenian Studies as Ash. Kalantar, T. Toramanyan, S. Ter-Avetisyan, Gr. Ghapantsyan and others. The excavations in Ani were also a great stimulus for the scientific investigation of Armenian epigraphy.

During the short existence of the First Republic of Armenia in 1918 – 1920, the authorities made some attempts towards archaeological investigations and

Fig. 13. The expedition of Lchashen. First from left: Harutyun Mnatsakanyan, seventh: Frina Babayan, eighth: Seda Devejyan, 1958 (Family archive of S. Devejyan, photo 47).

Fig. 14. Stephan Yesayan (first from left) in Lchashen, 1950 (Family archive of Stephan Yesayan, photo 1, provided by H. Avetisyan).

Fig. 15. The expedition of Garni. First from left: Zhores Khachatryan, second: Grigor Karakhanyan, sixth: Babken Arakelyan, eleventh: Gevorg Tiratsyan, 1950s (Family archive of Gevorg Tiratsyan, photo 3, provided by N. Tiratsyan).

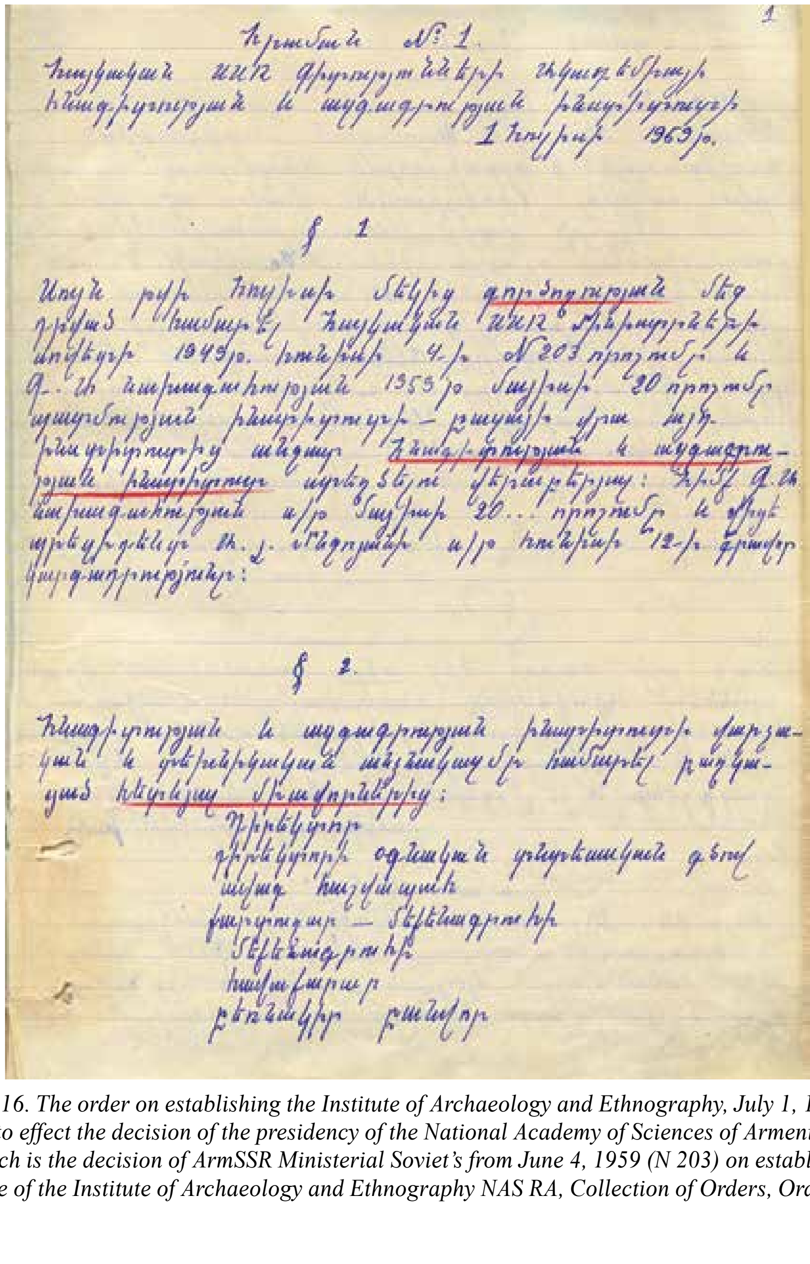

Fig. 16. The order on establishing the Institute of Archaeology and Ethnography, July 1, 1959. This order sets into effect the decision of the presidency of the National Academy of Sciences of Armenia (May 20, 1959), in response to which is the decision of ArmSSR Ministerial Soviet's from June 4, 1959 (N 203) on establishing the Institute (Archive of the Institute of Archaeology and Ethnography NAS RA, Collection of Orders, Order N 1).

Fig. 17. The researchers of the fortresses in Tavush region: Stephan Yesayan (from left) and Gedeon Mikayelyan, 1960s (Personal archive of Grigor Grigoryan, photo 1, provided by G. Sargsyan).

Fig. 18. Harutyun Martirosyan during the investigation of the petroglyphs of Geghama mountains, second half of the 1960s (Family archive of Harutyun Martirosyan, photo 2, provided by A. Martirosyan).

Fig. 19. The expedition of Argishtikhinili: From left: Onik Khnkikyan, Rafik Torosyan, Seda Devejyan, Hasmik Israyelyan, Harutyun Martirosyan, Harutyun Mnatsakanyan, 1960s (Family archive of S. Devejyan, photo 3).

Fig. 22. Emma Khanzadyan during the excavations of Jrahovit, 1970s (Photo archive of Emma Khanzadyan, Institute of Archaeology and Ethnography, photo 3, provided by V. Melikyan).

Fig. 20. The expedition of Garni: From left: Zhores Khachatryan, Aleksandr Sahinyan, Gevorg Tiratsyan, Amina Kanetsyan, Babken Arakelyan, Inessa Karapetyan, an English couple, Felix Ter-Martirosov, Grigor Karakhanyan, 1969–1970 (Personal archive of Amina Kanetsyan, photo 14).

Fig. 21. The staff of the Institute of Archaeology and Ethnography in Artashat. From left: Felix Ter-Martirosov, Levon Petrosyan, Knarik Khanaghyan, Suren Hobosyan, Zhenya Khachatryan, Harutyun Martirosyan, Hasmik Margaryan, Nikolay Harutyunyan, Karen Melik-Pashayan, Lilya Vardanyan, Emma Petrosyan, Ruben Karapetyan, Svetlana Vardanyan, Derenik Vardumyan, Yuriy Mkrtumyan, 1971 (Archive of the Ethnography Department of the Institute of Archaeology and Ethnography, photo 53).

preservation of monuments. Steps were taken to set up an archaeological commission; the National Museum and the Committee of Antiquities of Armenia were established.

Armenian archaeology significantly flourished during the Soviet period. In 1920s and 1930s, excavations were carried out by E. Bayburdyan, T. Toramanyan, Ash. Kalantar, E. Lalayan in Shengavit, Vagharshapat, Armavir, the Sevan basin and elsewhere. In the following decades significant results were obtained during the excavations of the fortress of Amberd (H. Orbeli, 1936) and Dvin (S. Ter-Avetisyan, 1937).

Archaeological investigations gained steam after the World War and the following decades, which

Fig. 23. The expedition of Metsamor. The fourth standing from right: Emma Khanzadyan, sitting second from right: Garegin Tumanyan, 1985 (Photo archive of Emma Khanzadyan, Institute of Archaeology and Ethnography, photo 2, provided by V. Melikyan).

Fig. 24. Excavations of the tomb no. 62 at Lori Berd. In the centre: Seda Devejyan, 1980s (Family archive of Seda Devejyan, photo 6).

Fig. 25. The expedition of Armavir. Seated, first row, from left: Vasil Zinjirjyan, Mariam ...., Inessa Karapetyan, Amina Kanetsyan; second row, seated, from left: Simon Hmayakyan, ..., ..., Aram Hakobyan, Gevorg Tiratsyan, ..., Hasmik Margaryan, third row: Hayk Hakobyan, 1980s (Personal archive of A. Kanetsyan, photo 8).

was greatly facilitated by the establishment of the Institute of Archaeology and Ethnography in 1959. The Institute has achieved significant results in the fields of investigation of anthropogenesis, the processes of the formation of early agricultural societies, the study of the history and culture of Ancient and Medieval Armenia, which are a result of a long-period and large-scale investigations (only in the post-Soviet period, from 1990 to date, more than 250 unit excavations were carried out).

In particular, the excavations and investigations of the artefacts, raw material sources and environmental conditions of various Palaeolithic sites (Yerevan 1, Lusakert, Hatis, Kasakh, Debed Gorge, etc.), have

Fig. 26. The expedition of Hoghmik. From left: Gevorg Tiratsyan, Hayk Hakobyan, Inessa Karapetyan, Amina Kanetsyan, Ruben Vardanyan, 1982 – 1983 (Personal archive of A. Kanetsyan, photo 15).

Fig. 27. The expedition of Dvin. From left: Aram Kalantaryan, Gayane Kocharyan, Aghavni Zhamkochyan, Frina Babayan, Nyura Hakobyan, 1980s (Photo archive of the Dvin Museum, photo 11, provided by A. Zhamkochyan and N. Hakobyan).

Fig. 28. Epigraphists investigating a khachkar. From left: Levon Avagyan, Gagik Sargsyan, Grigor Grigoryan, Husik Melkonyan, 1990s (Personal archive of G. Sargsyan, photo 8).

revealed the main features and peculiarities of the earliest phases of human occupation in the Highlands, the geographical, ecological, economic aspects of the spread of *Homo sapiens* in the Highlands, the main characteristics of the subsistence strategy of the Upper Palaeolithic societies (B. Yeritsyan, H. Ghazaryan, B. Gasparyan).

Dozens of archaeological cultures, dated between $7^{th} – 1^{st}$ millennia BC, the peculiarities of their development, the process of formation early complex societies were discovered, described and characterized.

Due to excavations of a number of Neolithic and Chalcolithic settlements (Teghut: R. Torosyan, Masis Blur, Adablur: G. Areshyan, Aratashen, Aknashen: R. Badalyan, Nerkin Godedzor: P. Avetisyan, Areni 1: B. Gasparyan) the dynamics of the formation of early agricultural societies during the $7^{th} – 4^{th}$ millennia BC were revealed. The issues related to the economy, trade, cultural relations were discussed. From the point of view of enlightening of the Bronze and Iron Age cultures and patterns of social developments, investigations of the artefacts from the excavations carried out by own expeditions of the Institute (pre-Urartian Karmir Blur: H. Martirosyan, Jrahovit and Metsamor: E. Khanzadyan, Harich: T. Khachatryan, Aygevan: S. Yesayan, Mokhrablur: G. Areshyan, Horom and Gegharot: R. Badalyan, Agarak: P. Avetisyan) are of a great importance. Important data for chronology and periodization of these periods were obtained during excavations of cemeteries in various regions of Armenia (Lori Berd: S. Devejyan, Lchashen: L. Petrosyan, Oshakan: S. Yesayan, A. Kalantaryan, Karashamb: V. Hovhannisyan, Talin: P. Avetisyan, Tsaghkalanj: F. Muradyan, Horom: R. Badalyan, Syunik: O. Khnkikyan, etc.).

The major settlements of the Van kingdom (Karmir Blur: B. Piotrovsky, Argishtikhinili: H. Martirosyan, Oshakan: S. Yesayan, A. Kalantaryan, Dovri: S. Hmayakyan), Classical, Hellenistic and Medieval periods, as well as Armenian capitals (Artashat, Dvin, Garni, Armavir, Karchaghbyur, Hoghmik, Beniamin, Tigranakert of Artsakh, Yervandashat: B. Arakelyan, G. Tiratsyan, K. Ghafadaryan, A. Kalantaryan, J. Khachatryan, F. Ter-Martirosov, I. Karapetyan, H. Petrosyan, H. Hakobyan) were investigated.

Fundamental researches have been carried out in medieval monastery complexes (Vahanavank: G. Grigoryan, Khamshi Monastery: G. Karakhanyan, Marmashen: S. Harutyunyan, Ushi, Harich: F. Babayan, Akori, Aghitu, Handaberd: H. Petrosyan, Tsakhats Kar: H. Melkonyan, Teghenyats: G. Sargsyan, etc.).

Fig. 29. The first international excavations at Horom. From left Ruben Badalyan, in the centre: Phillip Kohl, behind of whom: Christopher Edens, 1990 (Personal archive of R. Badalyan, photo 1).

Multi-layered manifestations of material and spiritual culture of Classical and Christian Armenia were investigated (B. Arakelyan, K. Ghafadaryan, G. Tiratsyan, G. Karakhanyan, A. Kalantaryan, J. Khachatryan, S. Harutyunyan, F. Babayan, A. Zhamkochyan, N. Hakobyan, F. Ter-Martirosov, H. Petrosyan, I. Karapetyan, H. Melkonyan, M. Zardaryan, G. Kocharyan and others).

In the framework of the cooperation with the Universities and scientific centres of the United States, France, Germany, Italy, Belgium and Austria archaeological investigations have been carried out in different regions of Armenia, which have thoroughly updated the archaeological sources of the earliest cultural history of the Armenian Highland. Numerous monographs and articles in international languages have been published (R. Badalyan, P. Avetisyan, S. Hmayakyan, B. Gasparyan, M. Zardaryan and others).

Thousands of epigraphic inscriptions from the Armenian Highland and colonies outside the country were collected, deciphered and interpreted (K. Ghafadaryan, S. Barkhudaryan, G. Grigoryan, A. Manucharyan, A. Shahinyan, S. Avagyan, S. Saghumyan, G. Sargsyan and others).

The results of the Institute's scientific investigations in the fields of archaeology and epigraphy are presented in the series of "Archaeological Excavations in Armenia", "Archaeological Monuments of Armenia", "Corpus of Armenian Epigraphy" and in numerous monographs. Due to the research conducted at the Institute, new systems of periodization and chronology have been developed, which have been adopted and used not only in Armenian but also in regional context.

Ethnography. Ethnography as an independent discipline was formed in Armenia during the 19th century, although the accumulation of ethnographic knowledge began earlier. The most important ethnographic data about the population of the earliest period of the Armenian Highland is obtained through archaeological excavations. Ethnographical accounts on the earliest population of the Highland are preserved in Assyrian and Urartian cuneiform inscriptions. Significant information on the economic occupations, customs, rituals, and beliefs provide the Graeco-Roman historical sources (Herodotus, Xenophon, Strabo, Tacitus and others). There are remarkable ethnographic data in the works of Armenian historians (Agatangelos, P. Buzand, M. Khorenatsi, Gh. Parpetsi, M. Kagnakatvatsi, T. Artsruni, A. Lastivertsi, K. Gandzaketsi, St. Orbelyan, A. Davrizhetsi, Zakaria Sarkavag and others).

From the beginning of the 19th century a number

Fig. 30. The first international excavations at Horom.
From left Ruben Badalyan, from right David Stronach, 1992 (Personal archive of R. Badalyan, photo 3).

of Armenian authors (J. Inchichyan, M. Taghiadyan, Kh. Abovyan, M. Bzhshkyan, J. Alishan and others) begun to write both ethnographic memoirs and accounts on the Armenian live and customs of their time. In the second half of the 19th century various articles on Armenian ethnography were published in the periodicals of Armenia and several Armenian cultural centres (Vagharshapat, Shushi, Alexandrapol, Tiflis, Moscow, St. Petersburg, Constantinople). In 1860s systematic ethnographic investigations were carried out by G. Srvandztiants, who wrote and published ethnographic and folkloristic valuable observations. He was followed by devotees of Armenian ethnography and folkloristics A. Sedrakyan, G. Sherents, H. Alaverdyan, H. Nazaryants, V. Ter-Minasyan, G. Ter-Alexandryan and others.

Based on the works of G. Srvandztiants, in 1887 G. Khalatyants compiled and published a scientifically based "Ethnographic Questionnaire" in Moscow, the aim of which was the collection of ethnographic materials. Based on it E. Lalayan carried out extensive ethnographic investigations at the end of the 19th century and beginning of the 20th century. Due to his efforts in 1906 the "Armenian Ethnographic Society" was founded in Tiflis, in 1895 – 1916 the "Ethnographic Journal" was published in 26 volumes. Remarkable ethnographic materials were circulated in nine volumes of the "Eminyan Ethnographic Collection" journal (1901 – 1913). During this period, significant investigations have been carried out by devotees of Armenian culture (S. Haykuni, A. Yeritsyan, G. Ter-Hovhannisyan/Kajberuni, S. Yeghiazaryan and others).

At the end of the 19th century folklore studies and ethnography have gradually separated, becoming separate disciplines.

During the Soviet period productive ethnographical investigations were carried out by E. Lalayan, St. Lisitsyan, Kh. Samuelyan and others. Ethnographic studies were realized at the History Museum of Armenia (since 1920), the Institute of History of Culture of Armenia (since 1926), the Institute of History (since 1953), the Institute of Archaeology and Ethnography (since 1959), the History Museum of Ethnography of Armenia (since 1978) as well as at the Department of Archaeology and Ethnography of Yerevan State University.

In 1946 St. Lisitsyan's "Ethnographic Questionnaire" was published which greatly contributed to the methods of registration of field ethnographic data. Based on the materials collected by St. Lisitsyan in Artsakh and Syunik, the fundamental studies "Armenians of Zangezur" (1969) and "Armenians of Nagorno Karabakh" (1992) were published.

In 1959, with the establishment of the Institute of Archaeology and Ethnography, the Department of Ethnography was headed by the devotee of the Armenian scientific ethnography D. Vardumyan (till his death in 2005). The representatives of the middle generation (D. Vardumyan, V. Bdoyan, E. Karapetyan, K. Melik-Pashayan, A. Odabashyan, K. Seghbosyan, L. Petrosyan and others) made a great contribution to the establishment of the Armenian ethnography and its recognition by international scientific community. In 1950s the Armenian economic life and customs were fundamentally investigated.

Dozens of investigations on material and spiritual culture, public relations, public transport, beliefs, rituals and worship of Armenian people have been carried out and published. Among them are noticeable "Agriculture in Armenia" by V. Bdoyan (1972), "Methods of Livestock Breeding in Eastern Armenia" by Yu. Mkrtumyan (1974), which are devoted to the main occupations of the Armenian people – agriculture and animal husbandry. Religion, folk holidays, beliefs, entertainment, dance and theatrical performances also became the subjects of separate investigations. These spheres have been reflected in ethnographer-philologist Srb. Lisitsyan's "Ancient Dances and Theatrical Performances of Armenian people" (1958, 1972, in Russian), "Ancient Armenian Dances" (1983, in Russian), K. Melik-Pashayan's "Worship Goddess Anahit" (1963), A. Odabashyan's "New Year in the Calendar of Armenian People" (1978), V. Bdoyan's "Armenian Folk Games" (1963 – 1983) valuable monographs. By Armenian ethnographers was prepared the section "Armenians" of the volume "Peoples of the Caucasus" to be published in the series "Peoples of the World" in Moscow in 1962 (in Russian), while in 2012 the volume "Armenians", written by Armenian ethnographers, emerged again in Moscow in the framework of the series "Peoples and Cultures".

In 1971 the Institute of Archaeology and Ethnography established the series "Armenian Ethnography and Philology", the 26 volumes of which include dozens of ethnographic studies and data kept in the archives of the Institute. In 2007 within the framework of the investigation and preservation of non-material cultural heritage, the Institute started publishing the series "Ethnographic and Folklore Heritage", in which materials which are kept in the archives of the Institute are revealed.

The new generation of Armenian ethnographers (Y. Mkrtumyan, L. Vardanyan, E. Petrosyan, J. Khachatryan, R. Vardanyan, R. Nahapetyan, A. Petrosyan, L. Abrahamyan, H. Sargsyan, Z. Kharatyan, H. Kharatyan, S. Hobosyan, S. Poghosyan, A. Stepanyan, H. Marutyan, A. Mkrtchyan, S. Mkrtchyan, A. Poghosyan, A. Israelyan, K. Bazeyan, A. Tadosyan, M. Galstyan, M. Gabrielyan, A. Dabaghyan, N. Margaryan, G. Shagoyan and others) continue the scientific research, combining traditional and modern Armenian cultural relations, actively cooperating with various international centres. After the declaration of independence of Armenia the direction of ethnographic research changed significantly, and new research approaches and methods began to be implemented. In addition to investigation of traditional cultural complexes, new ethnographic topics have come to the forefront of Armenian ethnography turning it more in direction of modern ethnology or/and anthropology.

Fig. 31. The Armenian-Italian expedition investigating the Sevan basin. Sitting from left: Pavel Avetisyan, Raphaelle Biscione, Ashot Khachatryan, Mkrtich Zardaryan, standing from left: Nora Yengibaryan, Garegin Tumanyan, Hovhannes Sanamyan, Simon Hmayakyan, Aharon Poghosyan, 1995 – 1996 (Personal archive of S. Hmayakyan, photo 35).

Folkloristics: Since the establishment of the Armenian Academy of Sciences, the main investigations of Armenian folkloristic culture were conducted in the Department of Armenian Folklore of the Institute of Literature after M. Abeghyan. Since 1960 these investigations have been transferred to the relevant department of the Institute of Archaeology and Ethnography, headed by A. Nazinyan. Since 1972, the study of the oral tradition of the Armenian people has been concentrated in the newly established two departments of the Institute: Theory and history of folklore studies (headed by S. Harutyunyan) and Textology of folklore studies (headed by A. Nazinyan).

The study of Armenian folklore culture was carried out in different directions: 1. data collection, 2. union compilation of originals, 3. recording, publication and investigation of "Sasna Tsrer" plots, 4. history of recording and investigation of the Armenian folklore, 5. investigations of interconnections of folklore and fiction, 6. textology of folklore and investigation of various issues related to it, 7. collection and investigation of memoirs of witnesses of the Armenian Genocide and Turkish language papers dedicated to the Genocide, 8. publication of scientific heritage of famous Armenian philologist-folklorists.

The first important direction is the collection of data, which was carried out through regular organized complex and targeted scientific expeditions and indi-

Fig. 32. Members of Kotayk Survey Project expedition and guests at Solak 1 site, 2016 (Photo from expedition's archive).

Fig. 33. Winners of the 2019 European Heritage/Europa Nostra Awards. Group photo of the 27 winners of the 2019 European Heritage/Europa Nostra Awards; Europa Nostra's Executive President Hermann Parzinger; Europa Nostra's Vice-President Bertrand de Feydeau; and the Chairs of the Heritage Awards Juries. Laureates in the Category "Research" Arthur Petrosyan (second row, third from the left) and Roberto Dan (fourth row, second from the left) represent the Armenian-Italian Kotayk Survey Project (Photo: Felix Q Media / Europa Nostra).

vidual trips. Numerous data of different genres of folklore have been recorded from various ethnographic regions of Armenia and from the Armenian populated areas outside Armenia. Valuable records of individual folklore collections have been obtained, which have been supplemented by the folklore archive of the Institute of Archaeology and Ethnography, serving as a basis for various types of folklore research.

The second important direction is the compilation and investigation of scientific collections of separate genres of folklore. The collections of Armenian proverbs (A.Ghanalanyan, "Armenian Aratsani", 1951) and traditional conversations (A.Ghanalanyan, "Traditions Book", 1969) were compiled and published. Among the other significant collections are M.Mkrtchyan's "Armenian Folk Songs of Wandering" (1961), S.Harutyunyan's "Armenian Folk Riddles" (1965), A.Ghazinyan's "Armenian Folk Songs of the War and Soldiers" (1989), R.Grigoryan's "Armenian Folk Lullabies and Children Songs" (1970), "Armenian Magic and Folk Prayings" compiled and edited by S.Harutyunyan (2010).

From 1959 to the present, the multi-volume scientific publication "Armenian Folk Tales" has been compiled and published, edited by the academician H.Orbeli and A.Nazinyan. 18 volumes have been published thus far.

In 1950–1960s a new direction began to study and publish the Armenian folk epos "Sasna Tsrer". About 110 new plots of the heroic epic tale have been published, most of which in four volumes. In 1975 a monograph "Analythical Comparison of "Sasna Tsrer" Plots" was published by A.Sahakyan and in 1977 S.Harutyunyan's selected ten plots of "Sasna Tsrer" together with investigations. New studies concerning the epic tale have been published.

The next direction is the investigation of the history of Armenian folklore. Among the significant publications are A.Ghanalanyan's "Episodes of the History of Armenian Folklore" (1985), S.Harutyunyan's "Manuk Abeghyan: Life and Work" (1970), V.Svazlyan's "Sargis Haykuni" (1973), S.Vardanyan's "Tigran Navasardyan's contribution to Armenian Folklore" (1991) and "The Life and Work of M.Miansaryants"(2004), etc. In 2010 S.Harutyunyan's textbook "Essays on Folklore Studies" concerning the history and theory of Armenian folklore was published.

Also separate studies appeared on various genres of Armenian folklore and the investigation of individual issues. S.Harutyunyan's monographs "Armenian Folk Riddles" (1960), "The Genre of Cursing and Blessing in Armenian Folklore" (1975), "Armenian Mythology" (2000) are especially significant.

One of the directions of the study of Armenian folklore culture are the interrelations of folklore and fiction which has been investigated since the 1930s by A.Ghanalanyan.

Other important directions are the investigation of textology of folklore studies and various related issues, as well as the publication of the scientific heritage of famous Armenian philologists and demographers.

In addition to scientific collections and local folklore collections, which are of great textual value, it is worth mentioning the list of motives of Armenian folk tales, in all its variants, in comparison with the international motives (thematic research group, directed by T.Hayrapetyan), the compilation of which will be finished soon. This would be of great importance for the comparative study of Armenian fairy tales.

Conclusions

Nowadays, the most part of the resources of modern Armenian Studies, in particular Armenian history, spiritual and material culture, economy, household, is practically given to the Institute of Archaeology and Ethnography, NAS RA. Archaeological excavations within the Armenian Highland provide vital resources for the development of Armenian Studies. Due to continuous investigations since 1959 to date, an Armenian school of research of material and spiritual cultural heritage of Armenia has been established. The data base of cultural history of Armenia since Palaeolithic until the first state formations of Bronze and Iron Ages, as well as later periods has been essentially enriched and supplemented. Due to collaboration with international scientific centres, large-scale analyses have been carried out, which provide qualitatively new data for the study of the history, economy and culture of Ancient Armenia. A number of investigations have been published in international languages.

Armenian archaeology is now strongly integrated into the projects and research works of international scientific centres. The results of excavations carried out within the framework of these projects indicate that the territory of the Republic of Armenia (like most of the Armenian Highland) is one of the largest and unique centre of anthropogenesis (Nor Geghi 1, Lusakert, Aghitu), early agricultural societies (Aratashen, Aknashen, Masis Blur, Areni, Godezor), first state formations (Gegharot, Karashamb, Lori Berd). The results of excavations at such sites as Nor Geghi, Areni, Gegharot, Godedzor allow us to reconsider some

processes concerning the spreading of first humans as well as appearance of early complex societies. Of fundamental importance are also the investigations towards the understanding of the issues concerning Urartian and Classical period history and culture (Oshakan, Solak, Aramus, Getap).

Investigations of archaeological sites in Artsakh (Tigranakert) is of a special importance. The excavations of the ancient capitals of Armenia (Armavir, Yervandashat, Artashat, Dvin) and the major commercial and cultural centres of the Bronze-Iron Age (Metsamor, Lori Berd, Karashamb, etc.), Yervandid and Artashesid periods (Garni, Beniamin, Hoghmik) are of fundamental importance for the development of archaeology in Armenia, as well as for revealing historical and cultural environment and values of our country. The archaeological researches are combined with geological, geographical, climatological, biological and archaeometric investigations, which enlarge the borders of our understanding.

Due to various expeditions, new objects of archaeological heritage are revealed every year in different regions of the Republic. Excavations with restoration projects have gained large capacity. Hundreds of epigraphic inscriptions of the Armenian Highland and colonies have been collected, deciphered and interpreted. Armenian household and customs, ethnographic manifestations of material and spiritual culture, traditional and modern public relations, beliefs, rituals and worship were investigated. Enormous amounts of material of various genres of folklore have been recorded, studied, and published. Fundamental research has been done in the fields of Armenian mythology and epic folklore.

As a result of these works series of publications emerged, among which "Archaeological Excavations in Armenia" (23 volumes), "Archaeological Monuments of Armenia" (21 volumes), "Corpus of Armenian Epigraphy" (10 volumes), "Armenian Folk Tales" (18 volume), "Armenian Ethnography and Folklore" (26 volumes), "Culture of Ancient Armenia" (14 volumes), "Armenian Folk Culture" (15 volumes), "Ethnographic and Folklore Heritage" (2 volumes), "Scientific Heritage" (5 volumes), "Memory Ethnology" (3 volumes), "Habitus" (2 volumes), "Anthropological and Archaeological Studies" (2 volumes), "Proceedings of the Institute of Archaeology and Ethnography" (3 volumes) as well as numerous monographs and thousands of articles in Armenian and international prestigious journals.

For further activities of the Institute, we consider it important to observe the provision and further development of the following statements: 1. status of a unique interdisciplinary scientific institution in the field of fundamental research of material and non-material cultural heritage, 2. Wide range of scientific directions, 3. thematic diversity of scientific investigations, 4. high international rating of the Institute, 5. large number of joint research groups and expeditions, based on international (bilateral and trilateral) agreements, 6. large number of laboratory tests carried out within the framework of international scientific cooperation, 7. large number of publications abroad, 8. implication of information technologies, 9. existence of original scientific schools, 10. existence of highly qualified specialists and experts among the staff, 11. large number of young scholars, 12. large number of research works based on contractual and grant basis, 13 large number of applied investigations.

We hope that in the nearest future, based on the existing inner potential and wide opportunities provided through international cooperation, the Institute will record new scientific achievements both in regional and international context.

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A Step Forward to the Neolithization: Early Holocene Sites of the Republic of Armenia

Artur Petrosyan[1], Makoto Arimura[2], Samvel Nahapetyan[3], Dmitri Arakelyan[4], Boris Gasparyan[1]

[1] Institute of Archaeology and Ethnography, Armenia
[2] Tokai University Shonan Campus 3-403, Japan
[3] Yerevan State University, Armenia
[4] Institute of Geological Sciences, Armenia

Abstract. The aspects of Neolithization in the territory of modern Armenia, and the Southern Caucasus in general, continues to be debated due to a large gap in our knowledge of Late Pleistocene/Early to Middle Holocene archaeological sites. Until recently the earliest farming communities are known from the early 6th millennium BC and are attributed to the of so-called "Aratashen-Shulaveri-Shomutepe" cultural tradition of the Late Neolithic. Recent excavations at the Lernagog-1, Areni-1 and Areni-2 sites are therefore likely to provide meaningful information for our understanding of cultural processes in prehistoric Armenia. In particular, a future evaluation of the Lernagog-1 site will contribute valuable data bearing on the unresolved question of the origin of the Neolithic farming settlements which appeared on the Ararat Plain during the 6th millennium BC. Investigations in the last decades have brought to light the first Epi-paleolithic in the Late Pleistocene and Proto-Neolithic sites in the Early Holocene in Armenia, all of which show the existence of mobile populations of hunters and gatherers occupying caves and rock-shelters in the river canyons as well as river terraces and plateaus in high mountain depressions. There is, thus, a problematic chronological and cultural gap between these sites and the Late Neolithic sites. Investigations at three Late Neolithic settlements in Armenia – Aratashen, Aknashen-Khatunarkh and Masis Blur represent the earliest documentation of a food production economy in the territory of Armenia and preserve architecture and ceramic and metal production. The most important issue regarding the Neolithization of Armenia is the relationship between Early Holocene sites in mountainous areas and Middle Holocene Neolithic sites on the Ararat Plain. This is because there is a hiatus between two groups of sites from a chronological point-of-view; C14 dates for this period derived from the Apnagyugh-8 (Kmlo-2) cave range between the 11th millennium BC and the 8th millennium BC, with the youngest around 7,400 BC. This difference indicates a more than 1,300-year hiatus between high elevation Early Holocene sites and Middle Holocene Late Neolithic localities on the Ararat Plain that are dated to the end of the 7th to the first half of the 6th millennium BC. Recent investigations at Lernagog-1 settlement and Areni-2 cave in Armenia brought to light a number of important discoveries that fill this gap.

Key words: Proto-Neolithic, Neolithization in Armenia, Early Holocene, Late Neolithic.

Introduction

Until recently the Early Holocene Proto-Neolithic[1] sites of Armenia were not known and discussions of the question of Neolithization in the territory of Armenia were based only on handful of Late Neolithic-Chalcolithic settlements excavated in the Ararat Plain. Intensive fieldwork activities implemented during last 20 years brought to the discovery of series of Early Holocene sites in Armenia, distributed by stratified cave and rock-shelter as well as open-air sites and settlements around Mt. Aragats (Ararat and Sirak Depressions) and in the Vayots Dzor Region. Among the recorded sites the most important are Kuchak-1 rock-shelter, Gegharot-1 and Aragats-2 open-air sites in the Aparan Depression, Apnagyugh-8 cave in the Kasakh River gorge, Pechka rock-shelter in the Dzoraget River basin (northern Armenia), Yenokavan-2 cave in the Aghstev River basin (north-eastern Armenia), Shirakavan-1 open air site in the Akhuryan River gorge (north-western Armenia), Vahagni-1 open-air site, Aruch-1 and Lernagog-1 (Mastarahegheghat River valley) settlements in the Ararat Depression, Areni-1 and Areni-2 caves in the Arpa River valley (Dolukha-

1 Use of the proto-Neolithic term to distinguish the resources that refer to the early stages of Pre-pottery Neolithic period. Proto-Neolithic term is defined as a historical period, when the fecundation process of so-called "Neolithic revolution" has started (Mellaart 1982, 18; Aurenche et al. 2001, 1191-1202; Gasparyan, Petrosyan 2016, 21-30).

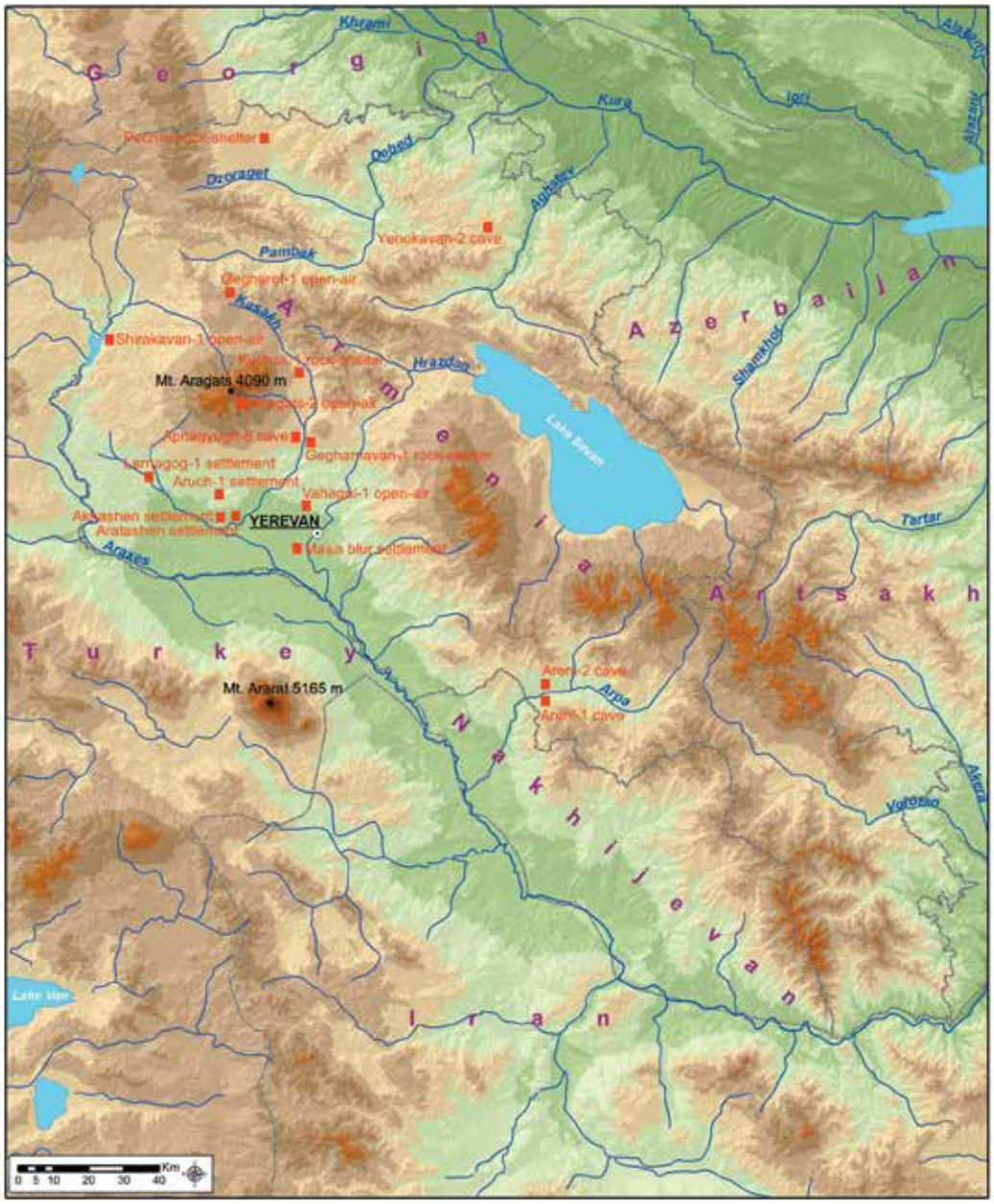

Fig. 1. Map of the main Early and Middle Holocene sites of the Republic of Armenia (Map: D. Arakelyan).

nov et al. 2004; Gasparyan et al. 2005; Aslanyan et al. 2006; Gasparyan 2007; Yeritsyan et al. 2009; Arimura et al. 2009; Arimura et al. 2010; Arimura et al. 2012; Arimura et al. 2014; Chataigner et al. 2012; Chataigner et al. 2014). In parallel the settlements of the Ararat Plain (Aknashen, Aratashen and Masis Blur) were also re-excavated and studied implementing modern archaeological methods and produced reliable chronometric dates spanning the time period between the end of the 7th and first half of the 6th millennium BC (Middle Holocene) (Badalyan et al. 2004; Badalyan et al. 2007; Badalyan et al. 2010; Badalyan, Harutyunyan 2014; Avetisyan, Bobokhyan 2014; Chataigner et al. 2014) (Fig. 1).

Even though the excavations and study of the Early and Middle Holocene sites is pending the accumulated information give us an opportunity to look at the process on Neolithization in Armenia from a new perspective. The data is allowing breaking the Early Holocene archaeological sequence, which is predating the Late Neolithic Aratashen-Shulaveri-Shomutepe sequence of the 6th millennium BC, into two chronological groups or steps. Group 1 or Step 1 with chronometric dates between 11,000–7,300 Cal BC is distributed by seasonal hunting and habitation camps on higher elevations (between 1,700–3,200 m asl) organized inside of the caves and rock-shelters in combination with artificial structures in front of them as well as short-term open-air activities (Fig. 2). Some

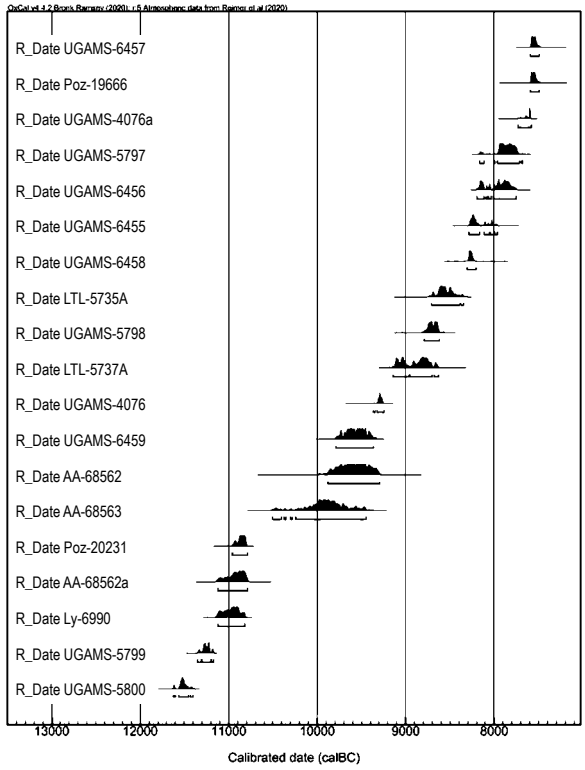

Fig. 2. Table reflecting the C^{14} dates from Apnagyugh-8 cave using the OxCal 4.3.2 calibration program (Armenian-French Archaeological Expedition archive).

shifts in the economic lifeways (storage pits) and technological production of tools (so-called "apnagyugh" or "kmlo" tools) is obvious even though many similarities can be noticed with the lifestyle of the Upper Pleistocene hunter-gatherers. The chronometric dates for Group 2 or Step 2 span between 7,300 – 6,200 Cal BC, distributed by settlements and open-air sites located on the fringes of Mt. Aragats (Lernagog-1) and in the caves located in the Arpa River valley (Areni-1 cave). Sites with ritual function also exist (Geghamavan-1 and Areni-2 caves) (Gasparyan, Arimura 2014; Petrosyan et al. 2014; Khechoyan, Gasparyan 2014; Gasparyan et al. 2020; Arimura et al. 2018; Gasparyan et al. 2020) (Fig. 1). Lernagog-1 contains similar clay architecture with the settlements of the Ararat Plain, meanwhile the lithic productions still remain with the dominance of the "apnagyugh" tools. This is allowing to hypothesize that the origin of the Armenian early farming culture is local even though there is noticeable influence from the southern cultural centres. Unfortunately, the questions of plant and animal domestication are still open and need additional research.

Excavations at the Lernagog-1 Site

Location and stratigraphy. Lernagog-1 is an open-air site, located about 14 km to the west of the provincial centre Armavir on the left bank of the Mastarahegheghat River (Fig. 3). This locality was discovered during our 2013 field season on a moderate slope between the current floodplain and the basalt formation exposed in the valley wall by river activity (Fig. 4). A long rock-shelter has formed within this basalt that is about 100 m long in a north-south direction, while a number of rockfalls derived from this overlying unit lie scattered on the surface of the site (Fig. 4 – 5). The Lernagog-1 locality was initially identified as a prehistoric site because of the presence of obsidian artefacts and other bone fragments collected on the slope; this site was also thought to resemble a rock shelter because of the cliff formed from the basalt formation, in addition to a continuous relatively flat plateau and other archaeological sites that were also found in the vicinity (Fig. 3) (Arimura et al. 2018).

The samples from excavations were subjected to radiocarbon dating; results indicate occupation during the early 7th millennium BC, the expected period of the Early Holocene (Fig. 6).

Observations revealed a series of geogenic greyish blown sediments to a depth of around 50 cm from the surface, including a relatively small number of materials that had accumulated at a slant against the present-day surface slope (i.e., layers 1– 2 in the eastern profile: Fig. 7). Although several potsherds that are probably from the Chalcolithic period were amongst the artefacts recovered from these layers, no further pottery was discovered at lower levels, while in the northern half of the excavation area, sediment (including rockfalls) comprised of huge basalt blocks was unearthed from levels between 50 cm and 100 cm below the surface (layer 5 in the northern profile: Fig. 7). Obsidians were also collected from these sediment layers that often-had weathered surfaces; the state of sediment accumulation and the nature of these obsidian artefacts indicates that this layer probably resulted from spalling of the basalt formation. The number of archaeological findings increased in the level under this 'collapse layer'; concentrations of objects were very often found at this depth, alongside charcoals and ashes (i.e., layer 4 and layer 6 of the eastern profile: Fig. 7). Animal bones in particular were relatively abundant at this level, although most were quite fragmentary. As these rich layers are more horizontally accumulated than their upper counterparts, it is likely that the palaeo-topography of this site was different from the modern landscape, probably a flat location by side of a river (Arimura et al. 2018).

In order to reach the basal layer at this site, we performed a sounding 1 m by 1 m deep within Square H15

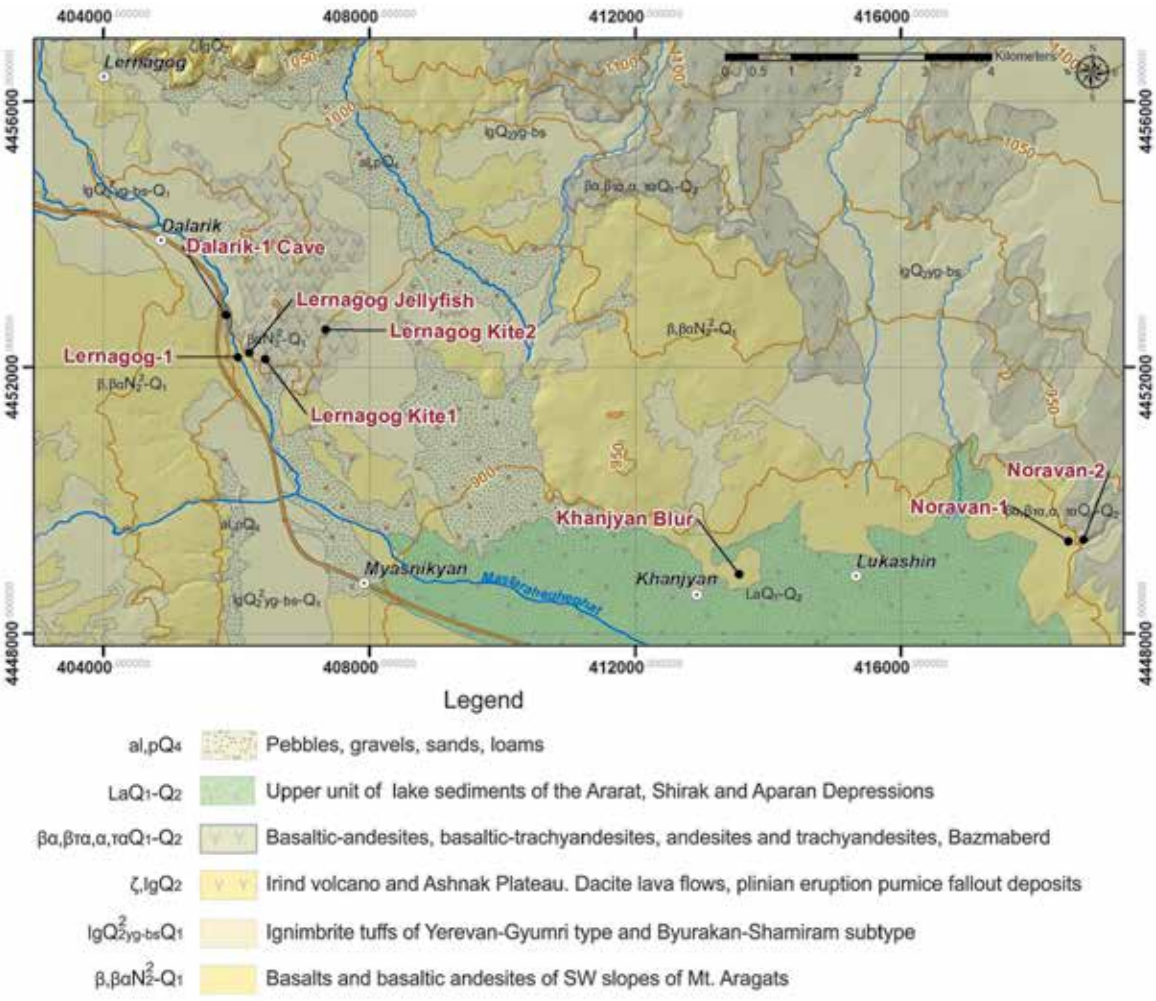

Fig. 3. Map showing the location of the main archaeological sites and the geological context within the Lernagog area (Map: D. Arakelyan).

which revealed some accumulated clay resulting from earthen construction (layer 7 in the eastern profile: Fig. 8, see below). A series of natural alluvial deposits were finally uncovered at a level about 150 cm below the surface, (layer 10 in the eastern profile: Fig. 7).

During 2017 season structural remains were identified. The main purpose of successive excavations at Lernagog-1 was to complete the earthen structure (Str. 1) of the Early Holocene, discovered in 2017 (Fig. 8).

Structure 1. Initial season work has confirmed the plan of Str. 1 (Fig. 8–9): it has two cells (R1 and R2). The wall measures 30–40 cm wide. There is no special treatment for the floor but there is a relatively hard-compact ground inside the wall. R2 is an oval room with 2 m long, and the northern part is mostly destroyed by colluvium including large basalt blocks fallen from the cliff behind the site (Fig. 7, 9). In the western part there is a clayish rump in the floor level. R1 is smaller room in irregular form than R2. The function of Str. 1 is unknown. We could find only obsidian lithics (mainly debitage) inside the structure, while there are relatively few materials outside the Str. 1. Judging from the small size of the construction, it is unlikely to be a residential structure (Fig. 8–9).

The south side of Str. 1 shows the lower density of the obsidian artefacts. Additionally, some compact clayish soil is deposited in this area (possibly collapsed wall) (Arimura et al. 2018).

Structure 2. In the southern part of the excavation area, an oval structure made of clay was discovered in 2018 (Str. 2). It became clear during removing of the wall that the plan of Str. 2, which was recognized in the last season, should be a little modified (Fig. 8–9): Str. 2 is an oval house with 6 m in diameter. The wall is constructed by sandy clay and, in some parts, mixed with basalt cobbles. Sandy clay was also found in the floor level inside and outside the structure. To follow this floor, we newly opened the area of G/F/E-17/18/19/20 (3×4 m). Similar sandy floor was found there on the slope (Fig. 8–9). The dating of Str.

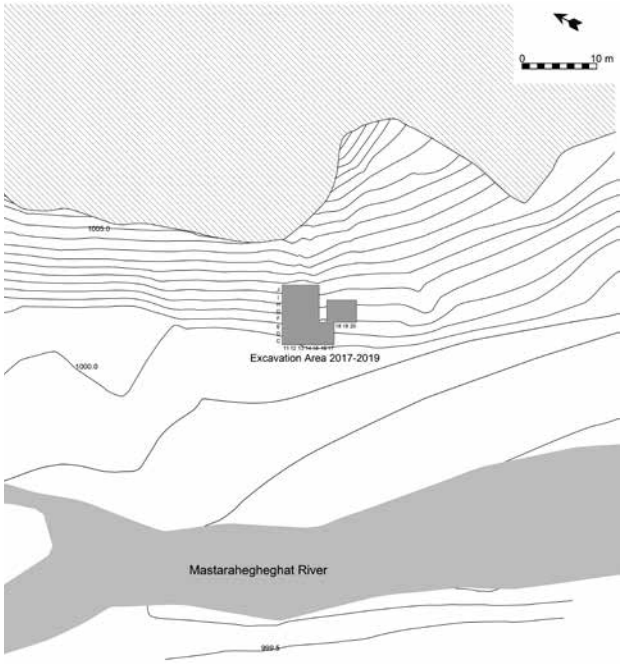

Fig. 4. Topography of the Lernagog-1 settlement and the grid area (Map: M. Arimura).

Fig. 5. Main view of the Mastaraheghegat River valley and the position of the Lernagog-1 settlement on the slope, between the basalt cliff and the floodplain (Armenian-Japanese Archaeological Expedition archive).

2 with clay floor is not clear yet because no sample for C14 dating is available in this area. However, small potsherds, probably of the Chalcolithic period, were only found in this area, which indicates its age to Str. 2.

Finds. The vast majority of artefacts recovered to date from Lernagog-1 are obsidian lithics. Research on the artefacts of this type collected over two seasons is ongoing; preliminary information about this lithic assemblage includes the fact that around 10,000 pieces of obsidian have so far been recovered from excavations. Obsidian pieces that retain a cobble cortex are particularly abundant; such obsidian cobbles are available nowadays across the floodplain in front of the site. These cobbles are rolled from the upper Mastaraheghegat River from a range of Arteni sources, one of the biggest obsidian sources in Armenia that was intentionally used from prehistoric times onwards. Observations show that although the inhabitants of Lerngog-1 were easily able to obtain lithic raw materials near to this site, they nevertheless probably used rocks from other sources in spite of this rich environment as evidenced by the presence of pieces with flat nodular cortices from primary outcrops. A test-survey of 190 samples collected from Trench 2 during the 2015 season demonstrates that although the majority were derived from Arteni sources a number of others including Hatis and Tsaghkunyats-Ttvakar obsidians were also in use at the Lernagog-1 site[2].

The bulk of these obsidians can be classified as debitage, and tools are rare within our sample (around 3% of the total assemblage). The obsidian assemblage from Lernagog-1 does not exhibit any significant differences between different levels on the basis of techno-typological features and the whole assemblage can therefore be regarded as representative of a single lithic industry. The obsidian pieces collected to date can be characterized as a blade-oriented industry; numerous blades in this case were obtained via percussion using single-platform cores, although pressure blades also occur that comprise quite regular forms with parallel arises and lateral edges. A single bullet core (Fig. 10: 1) was collected from within the material concentration in Square J11 and evidences the on-site production of blade (lets) using the pressure

2 A portable x-ray fluorescence (PXRF) analysis of these obsidians was performed by Dr. Ellery Frahm (Yale Initiative for the Study of Ancient Pyrotechnology, Department of Anthropology, Yale University). Data show that the source proportion for these obsidians is Pokr Arteni (93.7%), Mets Arteni (4.7%), Hatis (1.1%), and Tsaghkunyats-Ttvakar (0.5%).

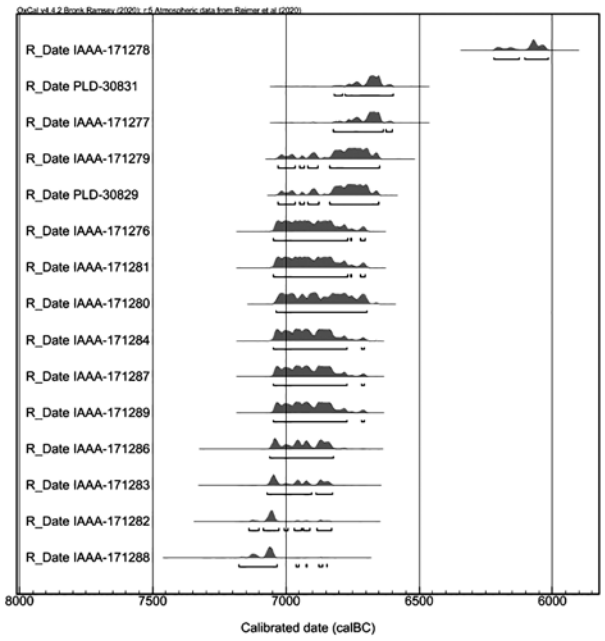

Fig. 6. Table reflecting the C^{14} dates from Lernagog-1 settlement using the OxCal 4.3.2 calibration program (Armenian-Japanese Archaeological Expedition archive).

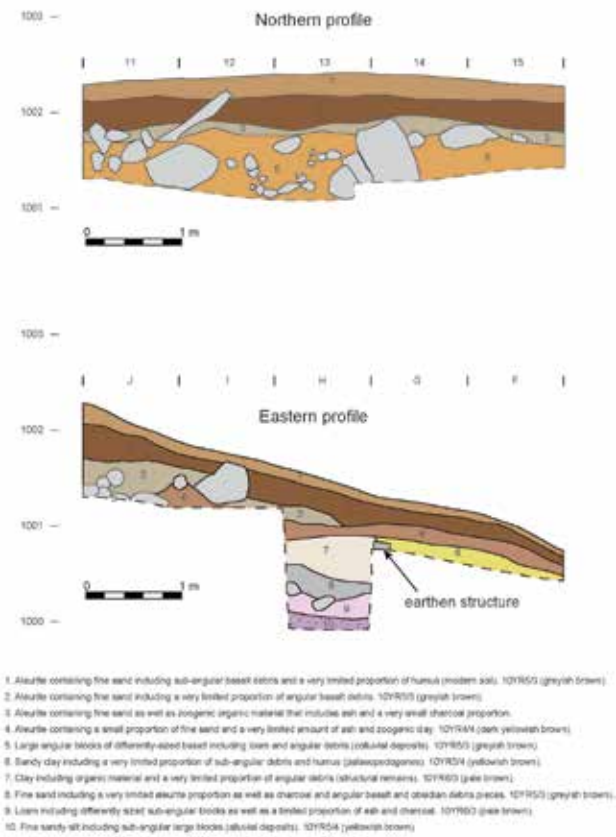

Fig. 7. Profiles of the excavation area in Lernagog-1 settlement (Armenian-Japanese Archaeological Expedition archive).

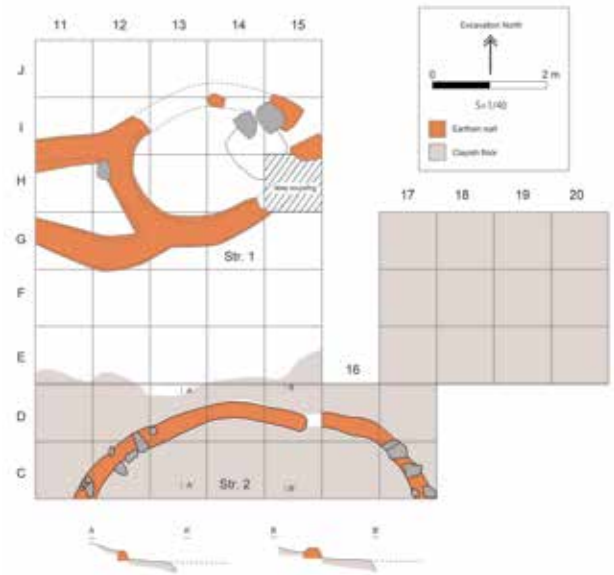

Fig. 8. Drawings of plans and wall sections of clay Structures 1 and 2 from Lernagog-1 2018 excavations (Drawing: M. Arimura).

Fig. 9. Main view of the excavated area in Lernagog-1 (2018 season) and Structure 1 from north-west (Armenian-Japanese Archaeological Expedition archive).

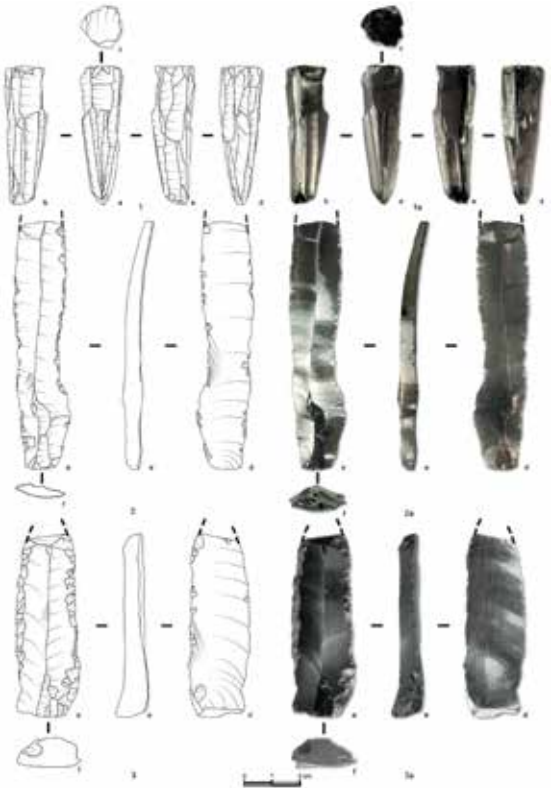

Fig. 10. Obsidian artefacts discovered from the 2017 excavations of Lernagog-1: 1-1a. Bullet core; 2-2a.-3-3a. Retouched blades (Armenian-Japanese Archaeological Expedition archive).

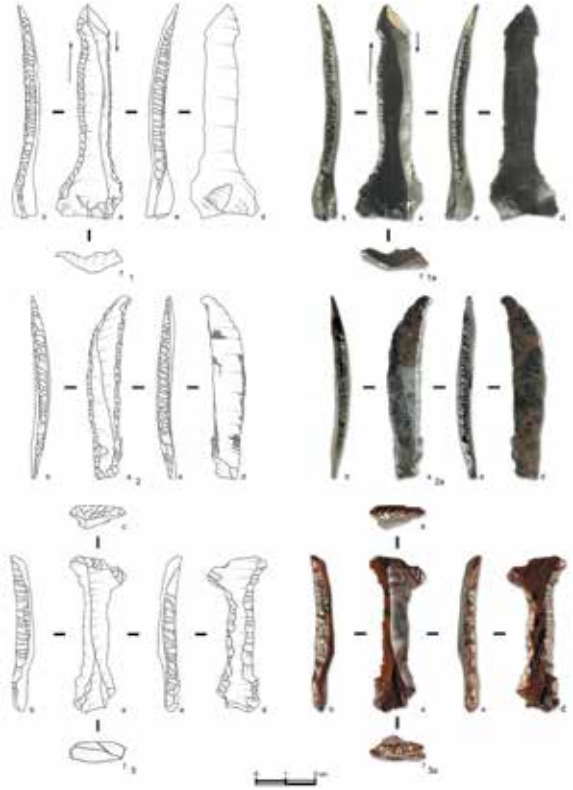

Fig. 11. Obsidian artefacts discovered from the 2017 excavations of Lernagog-1: 1-1a-3-3a. 'Apnagyugh tools (kmlo tools)' (Armenian-Japanese Archaeological Expedition archive).

technique. Formal retouched tools, such as burins and end-scrapers, are also rare. The relative abundance of 'apnagyugh tools (kmlo tools)' is remarkable (around 25% of tools, Fig. 10–13); as at other sites, some of these artefacts exhibit visible abrasion traces on their retouched edge (Fig. 12–13). Microliths are present but not numerous, represented by backed bladelets, trapezes and lunates (Fig. 14).

In addition to these obsidian lithics, two ground stones and a large basalt knife are also noteworthy. The first of these, a tuff grinding stone, was found within a concentration of material in Square J11 and has one face that is well-flattened by polishing (Fig. 16). The other specimen was found within the surface layer and comprises a fragment of basal saddle quern (Fig. 17). Although these ground stones are not abundant at the site, their presence is nevertheless important because they provide important insights regarding the likely activities that were carried out in this area. The basalt knife does not include any intentional retouches, and apparently is just a large flake struck off from the nodule (Fig. 15); basalt is locally available material and such deposits are present along the right bank of this valley (Arimura et al. 2018).

Two flat stone beads were also collected from within the same context at this site (Fig. 18); the form and materials of both are similar, and the evidence suggests that they derive from the same stone blank. In addition, a half-broken artefact piece was also collected associated with the bullet core noted above that was fashioned from a bird bone (Fig. 18). As both the ends of this fragment are clearly cut and its outer surface is polished, this artefact would appear to be a bead or a pendant fragment (Arimura et al. 2018).

Site data show that faunal remains are not abundant compared with obsidian lithics and most derive from lower layers. The bones from this site are generally in a poor state of preservation; these elements are often fragile and require consolidation with Paraloid resin before they can be picked up from the soils. An on-going study of these faunal remains reveals that equids are the most abundant species[3]. It is generally the case that organic materials have not preserved well at Lernagog-1, probably due to the acidic basaltic environment.

3 A study of the faunal remains from the Lernagog-1 site is being carried out by Dr. Hitomi Hongo and Dr. Saiji Arai (Graduate University for Advanced Studies, Japan).

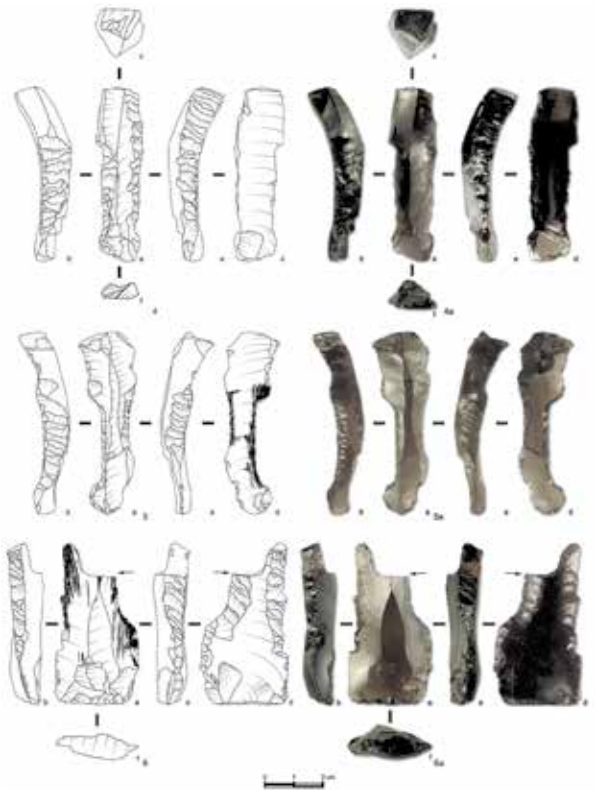

Fig. 12. Obsidian artefacts discovered from the 2017 excavations of Lernagog-1: 4-4a-6-6a. 'Apnagyugh tools (kmlo tools)' (Armenian-Japanese Archaeological Expedition archive).

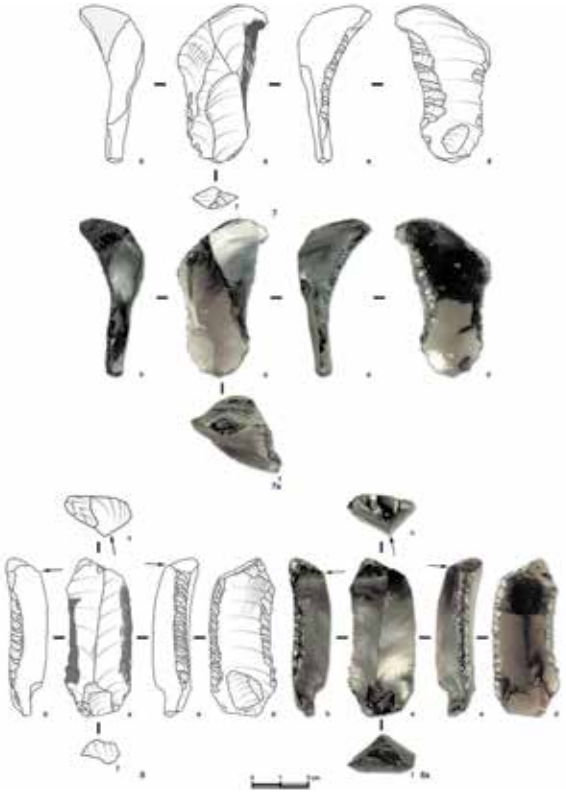

Fig. 13. Obsidian artefacts discovered from the 2017 excavations of Lernagog-1: 7-7a-8-8a. 'Apnagyugh tools (kmlo tools)' (Armenian-Japanese Archaeological Expedition archive).

Excavations at the Areni-2 and Areni-1 Caves

Location, stratigraphy and finds. Areni-2 Cave is located 1.5 km northeast of the village of Areni, on the right bank of the River Arpa. First test excavations were conducted here in 2007 and from 2016 they became systematic. This relatively small karstic cave (the width is around 1.5 m) has a single narrow gallery with about 14 m in length under cover. Since 2016, an area of around 25 m^2 has been opened, with excavations inside the cave and on its front platform (Fig. 19). The layers containing cultural remains were mainly present close to the entrance of the cave and on the front platform. Observations revealed a series of sediments represented by angular blocks and debris, rounded debris, loams, aleuvrite and fine grain sandy clays of aeolian and alluvial origins (Fig. 19–20). Neolithic and Chalcolithic finds derive from Units 4 to 7 and 11a, which were partly destroyed by later occupations. Neolithic period finds are limited, consisting of the complete skull of a goat, a bone dagger (Fig. 20–21) and a human rib bone. Not with standing their mixed deposition, all of the finds have been directly 14C dated and fall into the time range

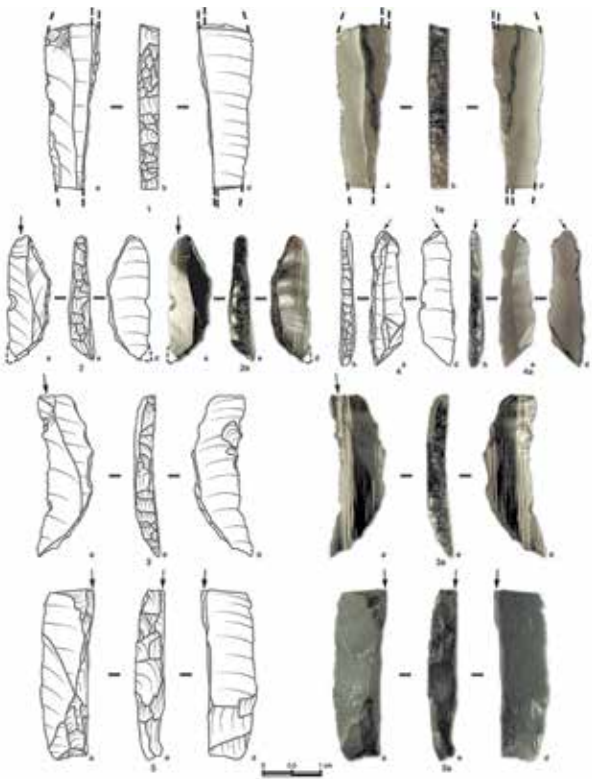

Fig. 14. Obsidian artefacts discovered from the 2017 excavations of Lernagog-1: 1-1a-5-5a. Microliths (backed bladelets, trapezes and lunates) (Armenian-Japanese Archaeological Expedition archive).

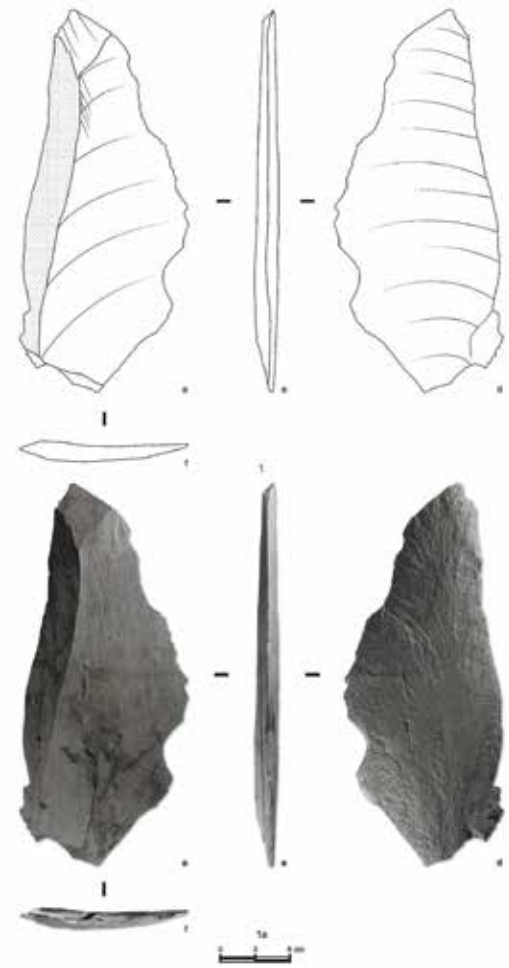

Fig. 15. A basalt large flake (butchering knife) from the 2017 excavations of Lernagog-1 (Armenian-Japanese Archaeological Expedition archive).

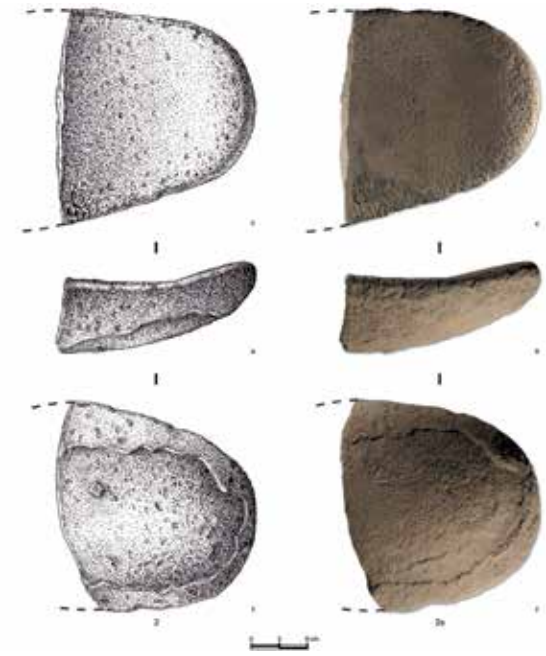

Fig. 17. A sandstone grinding stone from the 2017 excavations of Lernagog-1 (Armenian-Japanese Archaeological Expedition archive).

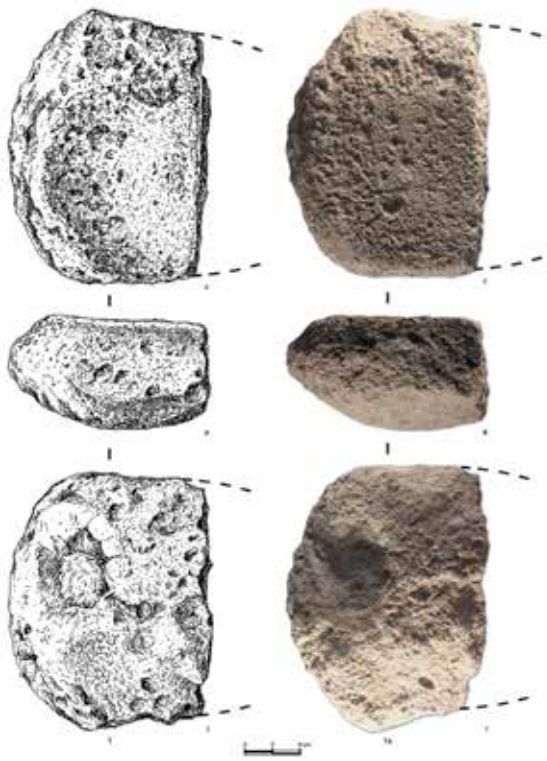

Fig. 16. A tuff grinding stone from the 2017 excavations of Lernagog-1 (Armenian-Japanese Archaeological Expedition archive).

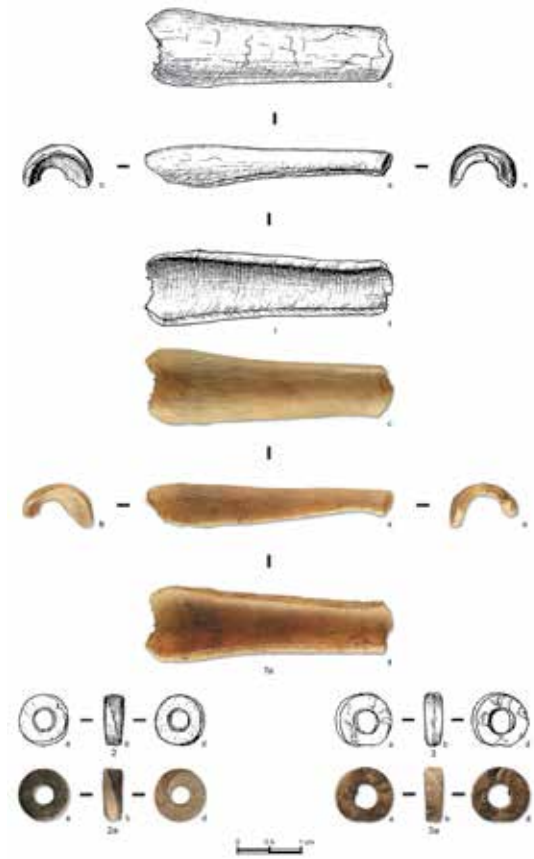

Fig. 18. Bird bone artefact (1-1a) and stone beads (2-2a-3-3a) discovered from the Lernagog-1 2017 excavations (Armenian-Japanese Archaeological Expedition archive).

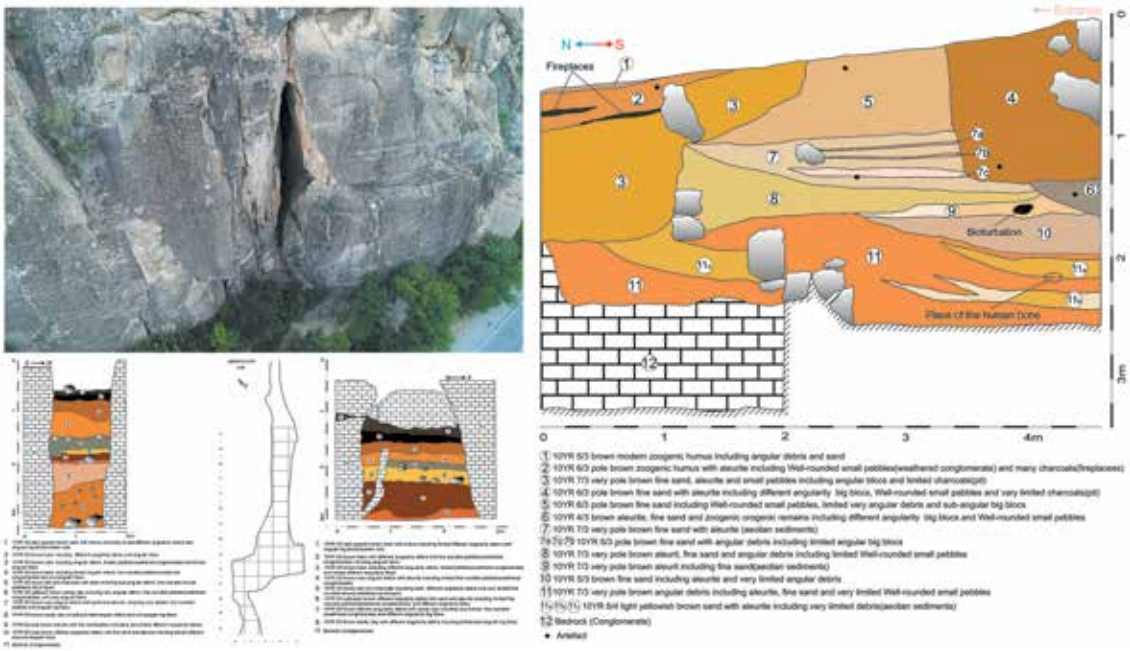

Fig. 19. Main view of Areni-2 cave with transverse an longitudinal profiles from 2017-2018 excavations (Vayots Dsor Project archive).

Fig. 20. Inner view of Areni-2 Cave with exposed section and skull of goat discovered next to the bone dagger (Vayots Dsor Project archive).

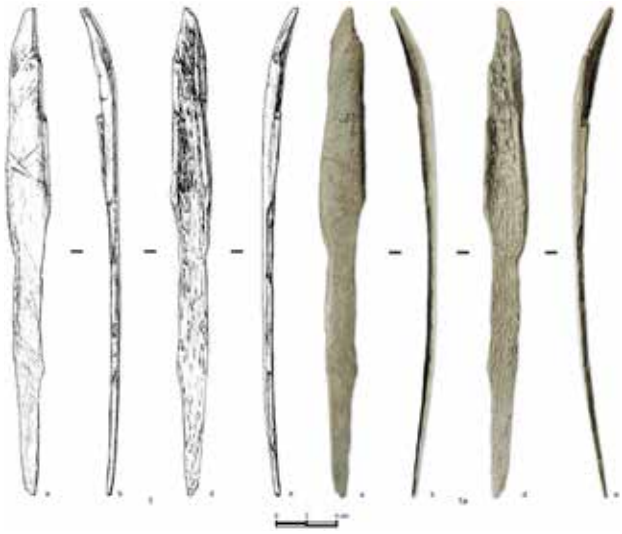

Fig. 21. Bone dagger from Areni-2 Cave (7,029 – 6,687 Cal BC (95.4%), 2016 excavations) (Vayots Dsor Project archive).

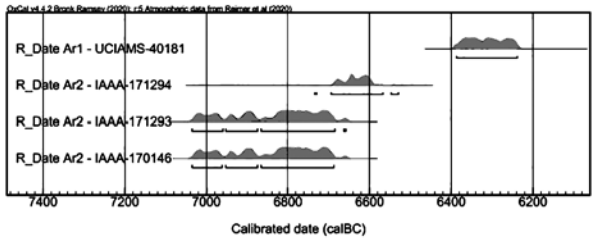

Fig. 22. Table reflecting the C^{14} dates from Areni-1 and Areni-2 caves using the OxCal 4.3.2 calibration program (Vayots Dsor Project archive).

of the late 8th – first half of the 7th millennium Cal BC (Fig. 22). These finds may be interpreted as evidence of ritual activities conducted by local Early Holocene populations in the caves, showing that they were used as ritual localities long before the Chalcolithic inhabitants' similar behavior in Areni-1. The most interesting record in Chalcolithic Areni-2 is a large amount of grinding stones and agricultural stone tools. The cave was probably used as a base by a small group of people involved in processing harvested crops, since the area near the cave was\is a flatland formed by low energy river flow and is suitable for local agriculture and horticulture, and which is occupied by vineyards and orchards nowadays. It is obvious that caves played a very important role during the whole prehistory of the region and continued to do so, remaining an essential part of the local historical-cultural landscape even during the medieval period.

The Neolithic occupation in Areni-1 cave, which is located just opposite Areni-2, was recorded at the initial stage of the excavations of the site during 2007 (Fig. 23). A test trench (Trench 1) located in the inner part of the first gallery (Squares P-Q-R-23-24) was deepened over 4 m (Fig. 24). In the bottom of the trench Late Pleistocene gravel and sand sediments were exposed (Unit 1007). The Neolithic layer (Unit 1006), which has 15–20 cm of power, lies unconformably over this layer under the Late Chalcolithic sequence (Units 1002–1005). Charcoal sample collected from Unit 1006 (Square Q-23) yielded a ^{14}C date 7440±25 BP (UCIAMS-40181) calibrated to 6390–6230 BC at 95.4% probability (Fig. 22) (Areshian et al. 2012; Wilkinson et al. 2012).

The layer also contains some limited finds of lithics and faunal remains. The chipped stone artefacts are distributed by around 75 exclusively obsidian implements, which contain a single bladelet core, core trimming elements and resharpening flakes as well as tools. The tools are modified using regular and irregular blades and bladelets and are distributed by a composition of retouched blades, points and borers, end-scrapers, chisels and burins (Fig. 25–26). Among around 115 fragmented faunal remains Caprids are dominant; meanwhile Bos and Sus exist in very low quantities[4]. Even though the Neolithic record from the Areni-1 cave is extremely limited because of small surface of the excavations, it is showing multiple occupations of the Arpa River valley during the Early Holocene. The episode of occupation in the Areni-1 cave during the second half of the 7th millennium BC is important as the closest in timing predicting the Late Neolithic Aratashen-Shulaveri-Shomutepe tradition sites in Armenia. The Areni-1 record shows that such occupation exist and future excavations will shed more light on this 'missing' cultural unit which connects the Middle Holocene early farming sequence with the previous Early Holocene occupations. Also, the discovery and study of new archaeological sources, reflecting the occupation of Armenia during the 7th millennium BC remains an important task for the Neolithic archaeology.

Conclusion

The excavations and study of the Early to Middle Holocene archaeological sites in Armenia are in progress; meanwhile our knowledge for this time period spanning between the 11th to 6th millennium Cal BC still remains limited. The Early Holocene period archaeological sites, which lie in the basis of formation

4 Unpublished data. The identification and study of the faunal remains from Areni-1 cave was carried out by Dr. Siavash Samei (The College of Wooster, Department of Sociology and Anthropology, USA).

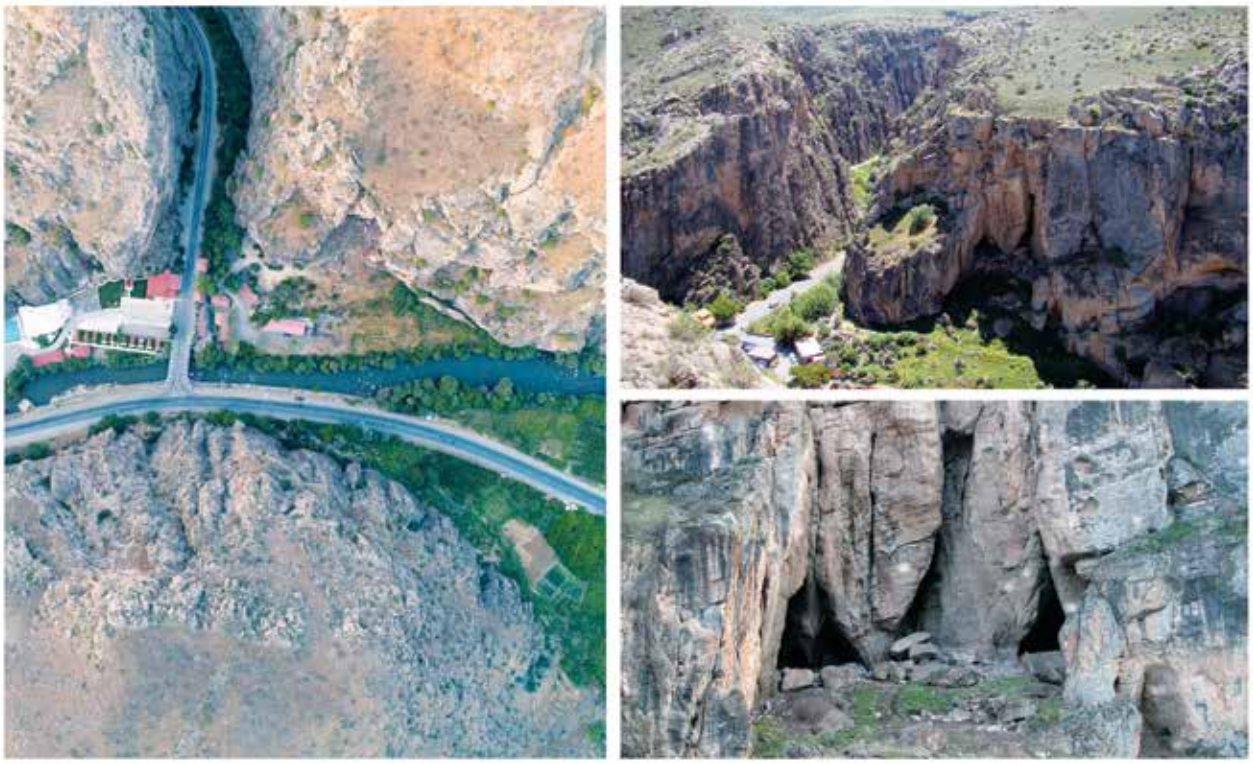

Fig. 23. Location and entrance of the Areni-1 cave near the point of confluence of Arpa River with the tributary Gnishik (Vayots Dsor Project archive).

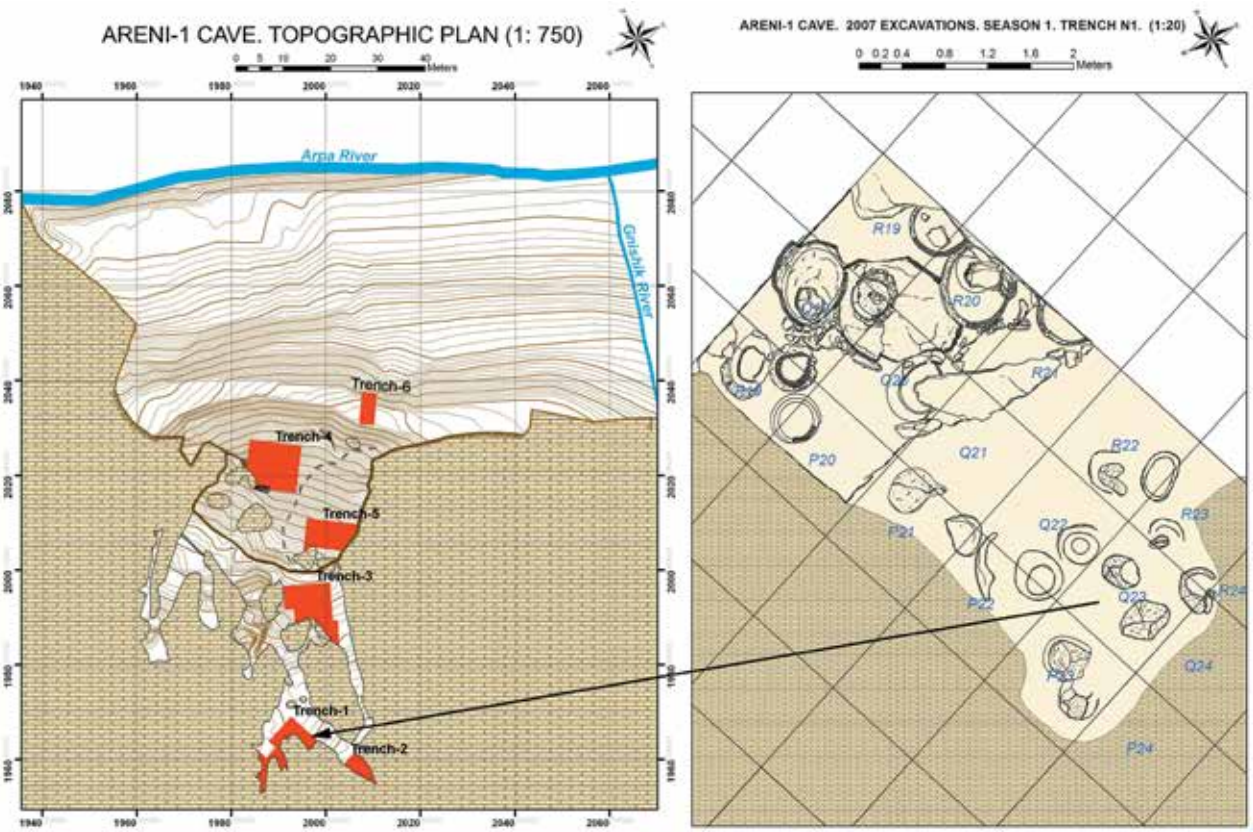

Fig. 24. Topographic plan of the Areni-1 cave and squares excavated during 2007 initial season (Areni-1 Cave Consortium archive).

Fig. 25. Obsidian artefacts discovered from Trench 1, Unit 1006 of Areni-1 cave: 1-7. Regular and irregular retouched blades (Areni-1 Cave Consortium archive).

of the Neolithic culture, show more or less continuous development, distributed by short term occupations in caves, rock-shelters and open-air localities on high elevations (1,700 – 3,200 m asl), most probably near the migration corridors of the game. At the end of the 8th and the first half of the 7th millennium BC there is a noticeable shift of the ecological niches occupied by Early Holocene populations, who start using lower elevations (1,000 – 1,200 m asl), especially the northern fringes of the Ararat Depression. This is the time period, when first settlements appear. The second half of the 7th millennium BC is known very poorly. Based on a single site in Armenia (Areni-1 cave) and bunch of similar occupations in neighbouring areas (Damjili cave in Azerbaijan) (Nishiaki et al. 2019), the late Early Holocene populations continue their activities in the caves. Starting from the end of the 7th and the beginning of the 6th millennium BC the first known Late Neolithic farming communities appear in the Ararat valley, with settlements located along the Hrazdan and Kasakh rivers, situated on the elevations from 900 to 1000 m asl (Badalyan et al. 2004; Badalyan et al.

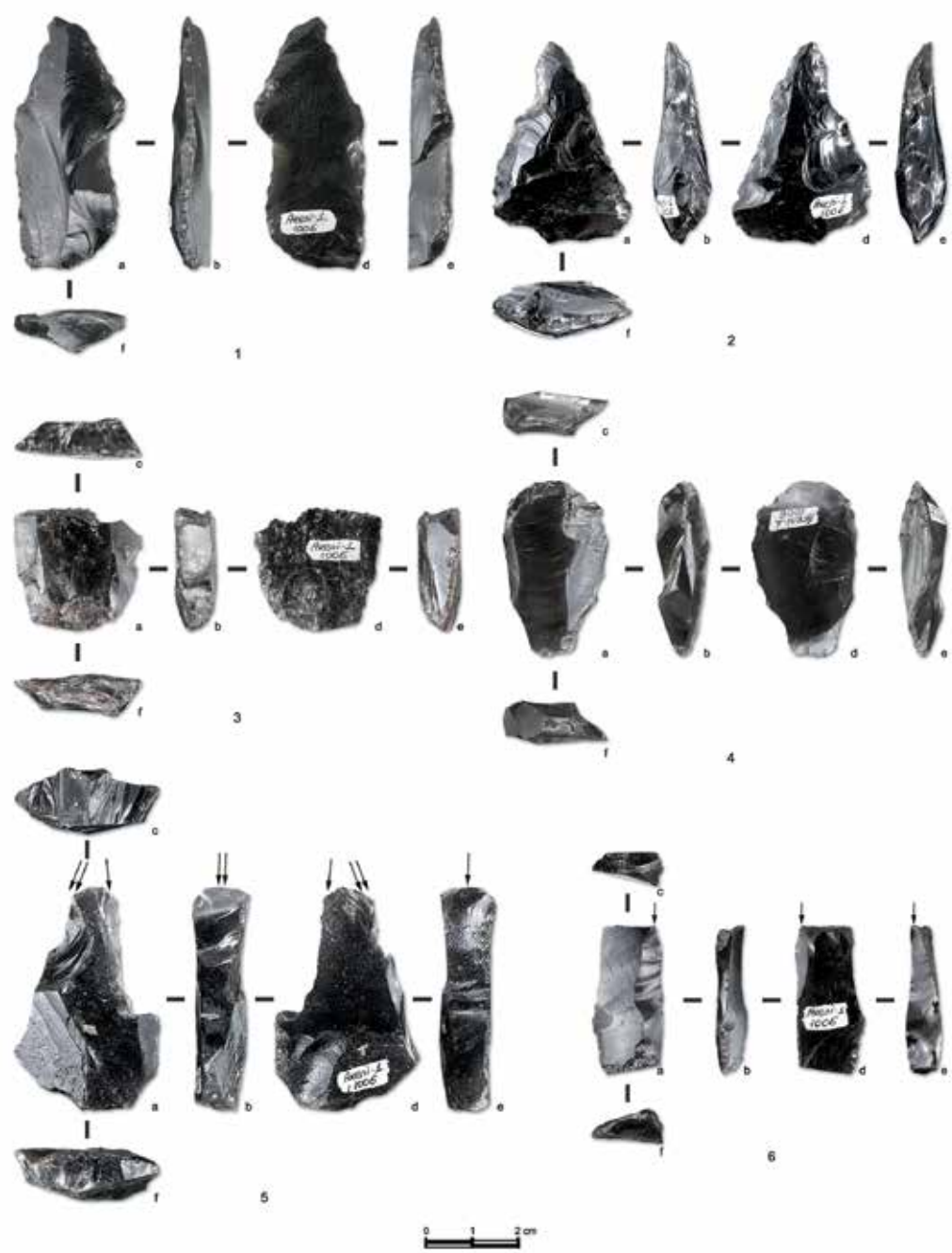

Fig. 26. Obsidian artefacts discovered from Trench 1, Unit 1006 of Areni-1 cave: 1. Point; 2. Borer; 3. End-scraper; 4. Chisel (pièce esquillée); 5-6. Burins (Areni-1 Cave Consortium archive).

2007; Badalyan et al. 2010; Badalyan, Harutyunyan 2014; Harutyunyan 2014; Hayrapetyan et al. 2014; Chataigner et al. 2014; Martirosyan-Olshansky et al. 2013; Martirosyan-Olshansky 2018).

Meanwhile, the plant and animal samples discovered during the excavations of the Early Holocene sites of Armenia are either limited or luck corresponding study and need further research. This is making difficult to build a more precise archaeological chart for the initial stages of the Neolithic period in Armenia at the common stage of investigations.

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"Gauchos" in the Armenian Highlands? Bolas or Slings in Syunik Rock Art

Franziska Knoll[1], Harald Meller[2]

[1] Martin-Luther-University Halle-Wittenberg, Germany
[2] State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany

Abstract. This paper deals with three extraordinary petroglyphs, recorded in the Syunik highlands in Armenia during extensive field surveys in the years 2013 and 2014. They all depict human figures, handling a flexible throwing weapon. After a short outline of the archaeological evidence for these kinds of weapons, including slings and boleadoras, their pictorial representations are discussed. Because these scenes are very rare, the synopsis includes examples from prehistoric rock art all over the world. The use of slings and boleadoras is depicted in two different contexts. Firstly, integrated in hunting or herding scenes and secondly, associated with warrior representations who are, however not explicitly involved in warfare. Although the Syunik highlands were used as summer pasture by herders, the three depictions we found there cannot be interpreted as being part of a hunting or pastoral herding scene.

Keywords: Armenia, Syunik highlands, rock art, throwing weapons, bola, sling.

Introduction

Between 2012 and 2014 Armenian and German archaeologists and students conducted an annual field campaign which lasted several weeks each documenting the rock art heritage of the Syunik highlands which lie close to the border of Nagorno-Karabakh. The aim of this joint project was to make a complete inventory of the petroglyphs in this region as well as the topographical and man-made features in which they are imbedded. This reflects our conviction that an interpretation or understanding of the ancient petroglyphs is only possible if they are contextualized in their landscape and the lifeways of its users. Therefore, three reference areas, ranging from about 2 ha to more than 1,5 km² in size (Fig. 1), were chosen. They were initially surveyed by a drone, recorded by aerial photography and georeferenced. In a second step all artificial structures – such as stone walled cattle pens, cairns and other dry-stone settings – but also natural features – most of them related to water, like melting ponds, riverbeds or valley heads – were mapped together with the rocks bearing the petroglyphs (Knoll 2017; Knoll, Meller 2015). A total amount of around 3,500 rocks containing ca. 11,000 single figures were recorded following this procedure.

Representations of Throwing Weapons

In addition to the three areas, which were intensely documented in the aforementioned way, extensive surveys were conducted in neighbouring undocumented areas during the summer campaigns of 2013 and 2014 (see Fig. 1). Several hundreds of petroglyphs were documented by photographs and located by GPS. On this occasion a remarkable depiction of two human figures, wielding flexible objects was (re-)discovered (Fig. 2/a). This pair of figures had already been documented and published by a team of the Academy of Sciences of Armenian SSR in the 1960s (Karakhanian, Safian 1970, pl. 7).

This image is remarkable for several reasons: The pecked lines are very fine and can therefore only been made by a thin, specially made pecking tool. Most of the surrounding petroglyphs were produced with less effort and probably by using a "normal" piece of basalt with sharp edges. We successfully re-enacted this technique by experiment in 2012. Linear figures and motives, which represent the majority of the imagery on our site, can be produced in a very effective way without any specialist knowledge. In contrast, the precise delineation for these two figures requires a hard tool with a point, perhaps made of obsidian or bronze. Making the image in this way would take more time (especially for the infilled bodies) and advanced planning in its execution. Figures executed in this style are quite rare in the Syunik highlands. If the imagery of the whole rock panel is considered it is possible to attribute another figure to this technique and dynamic

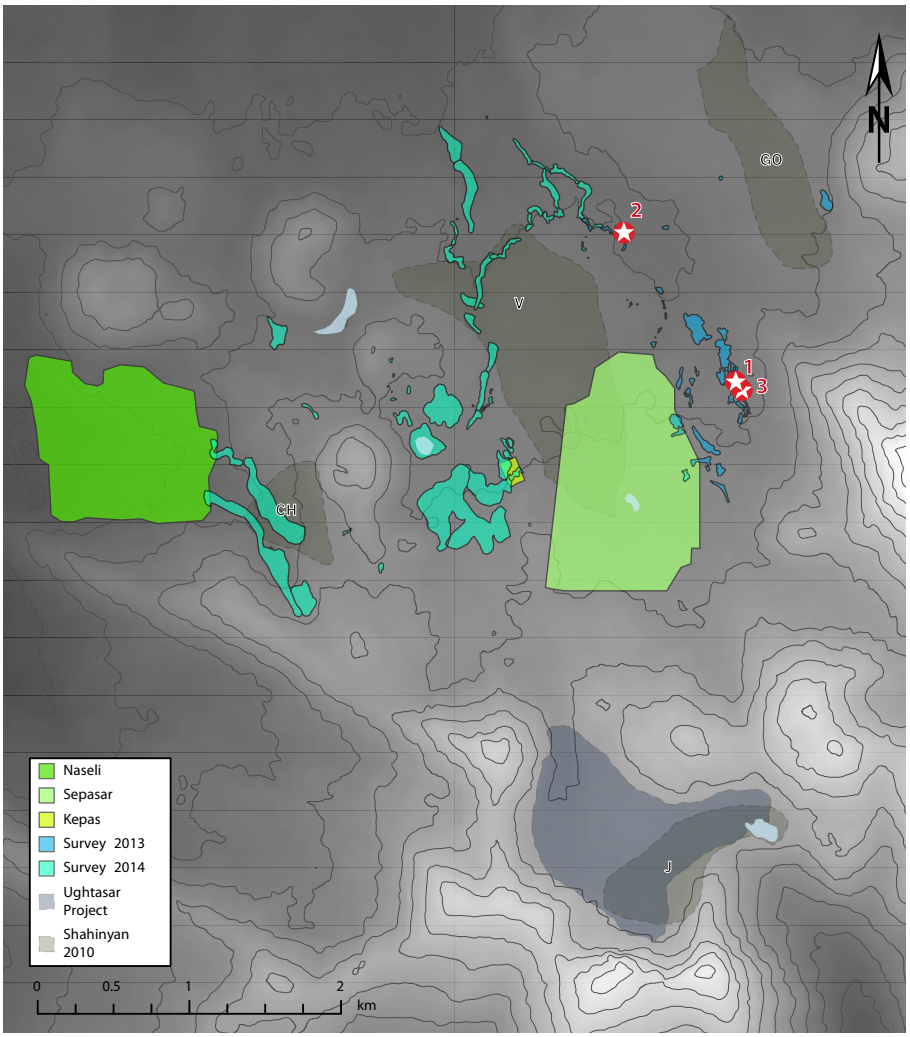


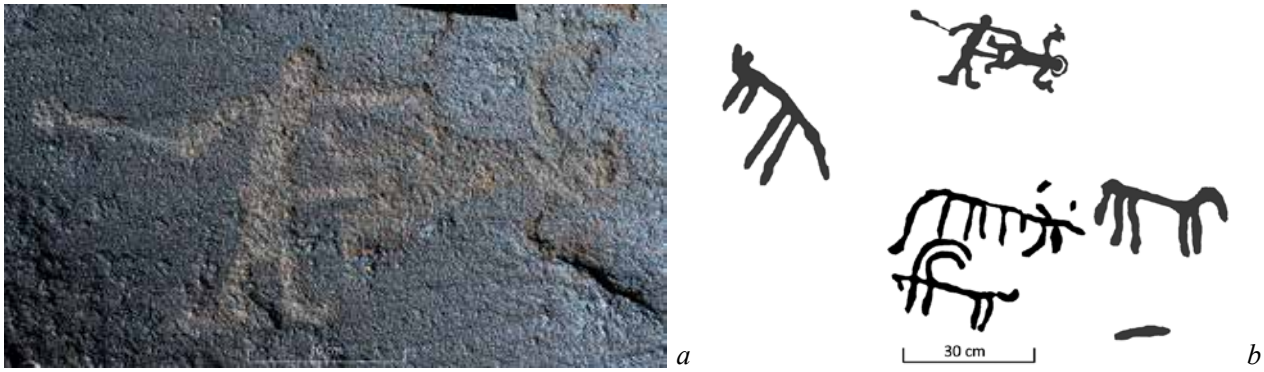
Fig. 1. Map of all investigated petroglyph areas in the Syunik highlands. The three fully recorded fields, named Naseli, Sepasar and Kepas (greenish colours) after volcanos nearby, were documented by the Armenian-German team during 2012 to 2014. This record was complemented by several surveys in between and around these fields (bluish). The region next to lake Ughtasar in the south (marked blue-grey) is currently being surveyed by an Armenian-British team. In addition, all zones, published by Shahinyan 2010 are shaded grey, using his nomenclature (capitals J, V, CH and GO). The initial petroglyph survey, published by Karakhanian/ Safian 1970, was not mapped, because no georeferencing (like coordinates, maps etc.) was provided. The three petroglyphs showing bola or sling depictions are marked with red stars and the numbers 1–3 (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, GIS processing: T. Rödel, Martin-Luther-University Halle-Wittenberg).

style, the big cat, depicted below (Fig. 2/b). But the distance between the two armed figures on the one side and the cat on the other is quite large and there seems to be no interaction between them. This would seem to exclude a hunting scene or some kind of attack as an interpretation. A closer look at the pair of figures shows that they both brandish the same two objects, the aforementioned upraised item that ends in a bulge, and a rod. Obviously, the two figures are antithetic pairs. This posture, without attributes, can be observed in the case of a quite frequent pictorial trope, known as "the dancers" (cf. Knoll et al. 2013, 222–223).

Close to this panel there is another depiction of a figure with a throwing weapon (Fig. 3/a). This scene is missing in the publication of the 1960s academy survey, but mentioned in the course of a later unsystematic petroglyph survey of this region (Shahinyan 2010, 21, p. 38). Without any doubt this scene shows a symplegma, an act of sexual intercourse (Meller 2020). The ithyphallic male figure seems to penetrate a second figure in lying position who is shown with broader hips, and probably was meant to be wearing a kind of skirt. Her arms are raised in the adoration gesture and the recumbent figure´s head is surrounded by a corona. This interacting couple is similar to quite another possible symplegma, which forms part of the rock panel bearing the initially described bola dancers, even if it belongs to an earlier pecking phase (cf. Fig. 2/b). Both couples

a b

Fig. 2. a. This peculiar pecking, rediscovered northeast of field Sepasar in 2013 (cf. Fig. 1, no. 1), represents two antithetic dancing figures, both armed with the same attributes: a stick or spear without recognizable head (centre) and another weapon with a bulged end, raised up in a way known from throwing weapons, like bolas or slings (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt); b. Redrawing of the rock panel, comprising the two "bola dancers" (up left, see Fig. 2/a). At least three different pecking phases can be distinguished (from black to grey). The weapon dancers as well as the big cat on the left belong to the last, youngest phase. The oldest, first phase, displays a single figure holding a spear or sword (centre) and a couple, which was interpreted as symplegma scene because of an analogous depiction with an ithyphallic male figure and a female figure with a corona (cf. Fig. 3/a). The two ibex, another big cat and several remains of further four legged animals are assigned to an intermediate phase (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt).



a b

Fig. 3. a. The male figure of this couple, depicted in sexual interaction (Meller 2020), is again holding a type of object, that could be characterized as bola or sling. This scene was located near the bola dancers in the northeast of the Sepasar field (see Fig. 1, no. 3) (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt); b. Redrawing of the petroglyph panel, comprising the symplegma scene (Fig. 3/a) with the ithyphallic male figure wielding a sling or bola. The couple is part of the younger, second pecking phase. Two four-legged animals, probably depicting a dog (left) and horse (right), can be attributed to this younger phase as well. The two older central animals of the first phase are pecked with a thinner stone tool and heavily weathered (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt).

differ in the attribute, shown in the men's right hand. Again, an object, consisting of a straight, in this case horizontal, line with a spherical end, is shown. The remaining pecked motifs of the panel with the symplegma (Fig. 3/b) include two animals, perhaps a dog, because of its erect ears advancing to the left, and probably a long-necked horse moving to the right which belong to the same phase. But they have no visible connections to the mating couple. So that also in this case, the possible throwing weapon is not related to a concrete act of hunting or of war, as would be expected.

A third and last petroglyph showing potential throwing weapons was found ca. 800 m north of the Sepasar area, and was situated in a dry glacial river bed. This panel has a single-phase motif ensemble. Four linear figures were pecked rapidly (Fig. 4). Unfortunately, the pecking is quite shallow, and the dark iron manganese crust on the rock's surface was not removed completely while pecking this image. Therefore, the depictions, especially the objects which can be identified as throwing weapons, are hard to recognize. An interpretive drawing, published about 50 years ago, showed only two throwing objects with a bulged end, each in the right hand of the two central figures (Karakhanian, Safian 1970, pl. 5/2). One of this two items, raised above the head of the second figure from the left, is still visible today and is clearly meant to show a throwing weapon, particularly because its last quarter

is bent at a 90-degree angle. All three remaining figures bear an object in their right hands as well. Due to the bad state of preservation these items cannot be securely distinguished from simple sticks. All four figures are shown from the front, facing the viewer. There is neither a possible enemy to be seen nor are any animals as the possible hunting prey of the armed humans shown. Therefore, these four figures are probably best interpreted as a group of warriors. This interpretation can be supported by another neighbouring petroglyph, which also depicts four warriors, this time armed with lance and bow and arrow (Fig. 5, which has not yet been published). However, these warriors are facing each other; thus, this scene is representing one of the very rare depictions of armed conflicts.

Identifying Flexible (Throwing) Weapons and Projectiles

Summing up the information provided by the three rock art images, depicting potential throwing weapons from the Syunik highlands it can be said that all human figures – only one of whom is clearly a male (see Fig. 3/a) – carry a flexible object or a leash with a bulged end in their hand, which is swung above the head or beside the body. In prehistoric times there are two major classes of armament, which fit both criteria. One is the mace with flexible (or stiff) wooden shaft as well as throwing weapons. The latter category, with one bulged end as seen here, includes bolas and slings.

In archaeological contexts mace heads, which are commonly, but not always made of stone, are easy to identify and were in use all over the Near East and Caucasia, since the 9th millennium BC (Muhle 2008). Particularly true since the 3rd millennium when representations, showing a ruler beating his enemies with a mace, become ubiquitous (e. g. the stelae from Tello or Narasmin, see Kaelin 2006, 155). The ruler is always shown grasping the shaft at its lower end, holding the mace in a horizontal position with his upraised hand, ready to strike. The Syunik examples display another posture, showing the object at other angles, which can only be the result of hurling. Therefore, an interpretation as flexible maces should be excluded for the presented petroglyph scenes.

Sling bullets or missiles, made of stone or clay and later on of lead, seem to be omnipresent in the archaeological record of settlements during all epochs. The earliest evidence in the Near East, especially in Northern Iraq, dates to the 8th millennium BC (cf. Horejs 2015). As early as in 1972 Manfred Korfmann pointed out that the flexible sling as long-range weap-

Fig. 4. Four humans, each bearing objects in their right hands. Some are raised above their heads (right and centre left). The bad state of conservation and the flat pecking do not allow to identify all these objects as throwing weapons. But the figure in the centre of the depiction left is definitely swinging a flexible object above its head. This petroglyph is located north of the Sepasar field (see Fig.1, no. 2) (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt).

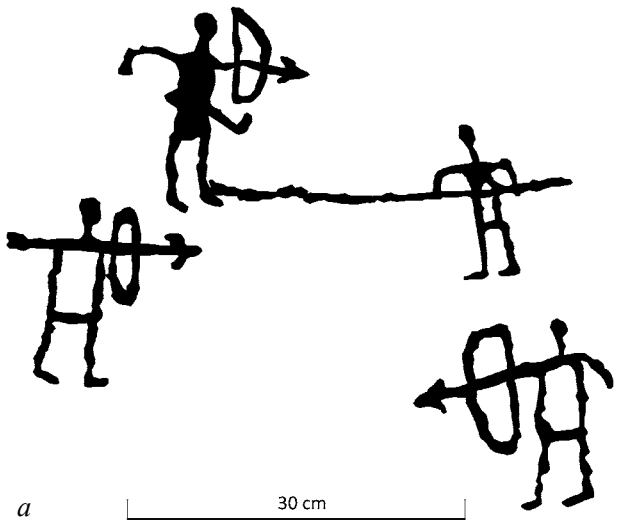


Fig. 5. a, b A narrative warrior scene, located just a few meters away from the bola warriors (Fig. 4). Scenes depicting acts of war or duelling are very rare within the repertoire in the Syunik highlands (© Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt).

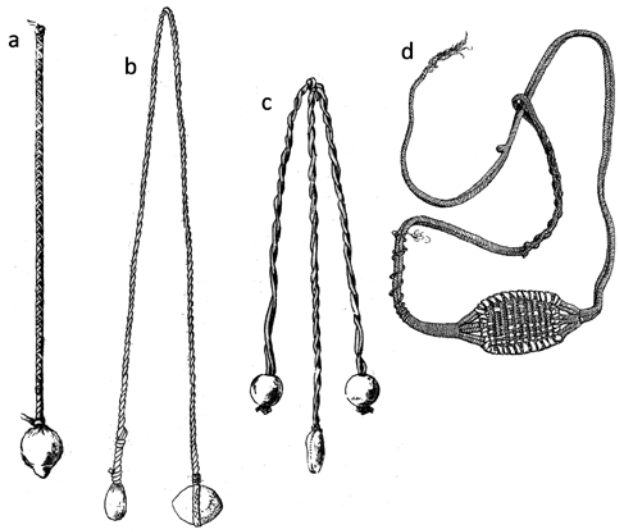


Fig. 6. a–c. Recent examples for one-, two- and three-part boleadoras from South America. The missile, called bola (if preserved, made of stone, but organic pieces are known as well), is always fixed at the end of the cord and thrown in its entirely; d. This is, in contrast, an example of a sling from Kenya. The sling shows a widened cradle, where the missile is placed. Both ends are kept in one hand, when one end is released , it sends the missile flying (a. Gonzáles 1953, 149, fig. 7; b. Gonzáles 1953, 139, fig. 2; c. Gonzáles 1953, 141, fig. 3; d. Korfmann 1972, pls 1, 3).

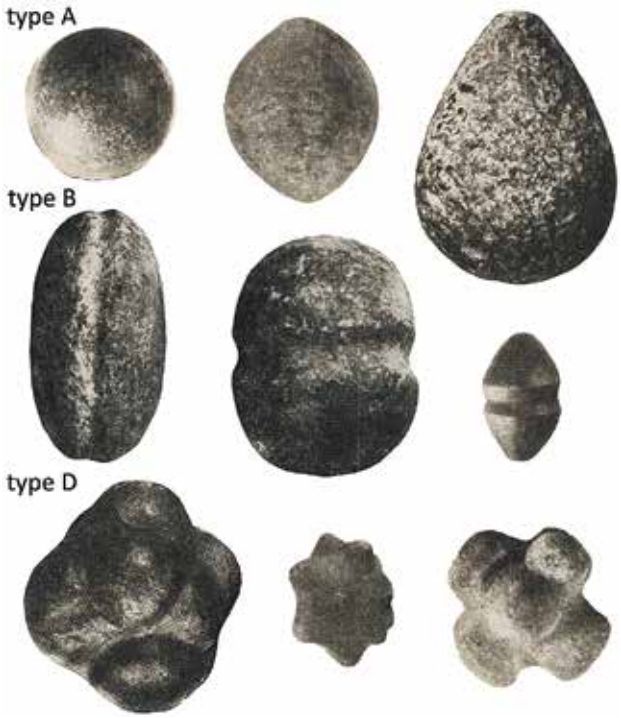


Fig. 7. Stone bolas of different shape (types according to Gonzáles 1953, from diverse findspots in South America): type A: spherical, ovoid or drop-shaped without any grooves; type B: spherical, ovoid/oblong or biconical with one groove to fix the cord of the boleadora; type D: ground stone balls, cruciform or spherical with knobs. (Gonzáles 1953, pls 1, 8, 11, 12, 14).

on, launching ovoid, biconical and spherical bullets, was wide spread and replaced bow and arrow in the Neolithic Near East (Fig. 6/d). As a result, the sling became one of the most important military weapons in the region, up to the invention of gunpowder which lead to radical changes in technology and warfare (Korfmann 1972, 4–9). Depictions of slingers as warriors, carried out in relief technique are well known particularly from the 1st millennium BC, for example Tell Halaf (Neo-Hittite) and Nineveh (Assyrian). Also ancient Greek writers, like Xenophon, describe Persian slingers in the context of warfare (Korfmann 1973).

Perhaps there is evidence for the much earlier use of stone balls as missiles. Shea 2013 (68–70) proposed this function for round pebbles, pounded pieces of spherical and subspherical shape, weighing less than one kilo. They were recovered from several sites in the Levant, dating to the Lower Palaeolithic. Experiments with spheroid stone balls, belonging to the Acheulean, found inside the Cave of Hearths, South Africa, have shown their suitability as missiles, when they weigh less than one pound. The balls could be shot at high speeds and over adequate distances (Wilson et al. 2016).

Much more such stone balls are known from the pre-Pottery Neolithic and the beginning of the Ceramic Neolithic. Recently published examples include: hundreds of spherical stone objects which were recorded at tell settlements in Southeastern Turkey (Salat Cami Yanı and Hasankey Höyük; Maeda 2019) as well as in Northern Syria (Tell Shir; Rokitta-Krumnow 2010, 166–167; 251–255; 289). These stone balls are all made of local flint and river cobbles, their weight ranges from about 100 to 400 g. They are ubiquitous as well as being undoubtedly multifunctional. Although they show different traces of shaping/flaking and use, one of their applications might have been their use as missile or projectile.

Especially the last-named simple stone balls might have been more easily suited to have been thrown in form of a bola than with a flexible sling. The main difference between a sling and a bola is that a sling-stone is released from the sling, whereas the boleadora is thrown in its entirety, i.e. the missile remains attached to its cord (bola perdida; see Fig. 6/a–c). But at the moment of throwing or swinging the sling and one-part boleadora are almost indistinguishable from each other in pictorial representations. Of course, the bola – as the Spanish technical term suggests – is best known from South America, not in Caucasia. The first comprehensive work dealing with bolas in an archaeological context was published by Alberto Rex

Gonzáles in 1953, dealing with finds as well as ethnographical records from Argentina. Bolas, consisting of one, two or three balls were used by indigenous peoples for hunting/herding as well as in the course of armed conflicts. The final of the one-part bola, is usually made of one piece of stone ground into different shapes (Fig. 7). González divided them into five main types. The most common ones are spherical, like the examples described for the Near East above, ovoid or rarer drop-shaped (type A). A second type reminds one of a specific type of hammerstone because of its one groove, which serves to arrest the cord (type B, in German known as the "Rillenschlägel" (grooved mallet), but weighing more than one kilo; e. g. Mangartz 2010). The third major type is composed of bolas with sculptured surfaces (type D). Some examples have knobs just as mace heads do, others can be described as being cruciform. The latter ones have analogies in Scottish Neolithic carved stone balls (e. g. Saville et al. 2011).

Simple spherical stone balls, with and without grooves, are mainly recorded in hunter-gatherer societies. The main area of their distribution is located in the Argentinian Regions of Pampeana (Vecchi 2016) and Patagonia (Borrazo, Etchichury 2012; Torres, Morello 2011). For these bolas even non local lithic materials were used.

Revisiting the Syunik highlands again it is worth noting that no stone ball, which could have either originated from a sling missile or bola, has ever been found, either from an excavation or as surface finds during surveys. This is all the more remarkable as obsidian of the Sevkar deposit (Chataigner, Gratuze 2014), which is situated just 20 km from this petroglyph area, and was transported by the river Vorotan would have provided suitable cobbles.

Boleadoras and Slings in Rock Art

Due to the absence of archaeological finds, the hypothesis that throwing weapons are shown in Syunik´s petroglyphs can only be made likely by comparisons to rock art. The cited study by Osamu Maeda (2019) focused stone balls/bolas found at tell settlements southeast of lake Van, close to Batman. Several petroglyph sites were discovered in this region. A good review was presented by Uyanik 1974, but there is no similar depiction as reference for the Armenian examples presented.

But there are other (early) pictorial representations of throwing weapons in Anatolia, identified in the wall paintings of Çatal Höyük. At the east side of shrine A.III.I, called the "hunting shrine" several figures armed with bow and a second tool, which might be a sling, are depicted (Mellaart 1967, 174, pl. 61; Horejs 2015, 153). And the south wall of the antechamber of this shrine revealed a figure, wielding a flexible object, perhaps a sling or bola (Fig. 8; Mellaart 1967, 171 f.). As discussed earlier, a clear differentiation between slings, one-part boleadoras or even just a cord, used as lasso, is generally not possible in this kind of depictions. Rock art with depictions of boleadoras are also recorded in Argentina, where most of the bolas have been found and investigated. Several scenes, showing human figures, hunting guanacos (a llama species) with boleadoras are known from the Río Pinturas (Fig. 9). In the case of the Cueva de los Manos site, stone bolas were excavated inside the painted cave, even if they belong to a younger level (Gradin et al. 1987). Another depiction is known from a painting inside the cave of Alero Charcamata-II, dated to ca. 3500 BC for stylistic reasons (Aschero, Isasmendi 2018). There is one single painting containing boleadoras without human or hunting context (Aschero 2012, 814 fig. 5; Gonzáles 1953, 230 fig. 42).

Fig. 8. Çatal Höyük, red painting on the south wall of the antechamber to shrine A.III.I. The scene shows several figures, hunting deer with bow and arrow. The person, sitting on the back of the fallen deer on the lower left, might be handling a sling (Mellaart 1967, pl. 54).

Fig. 9. Examples for boleadora depictions in the Río Pinturas valley, Patagonia. a. Cave Alero Charcamata-II (ca. 3500 BC., Style IB), the badly preserved red human figure on the lower left is wielding a boleadora in front of the white guanaco (Aschero, Isasmendi 2018, 124, fig. 8); b. Cueva de los Manos (after ca. 7300 BC., Style A). The white figure is wielding a multi-part boleadora, hunting the animal above (Onetto, Podestá 2012, 71, pl. 7).

Fig. 10. Murewa, Prov. Mashonaland, Zimbabwe. A boleadora with two strings and weights (balls) is wrapped around the buck's (antelope) neck (above). This painting, located in a rock shelter, was probably executed by San bushmen (Woodhouse 1966a, 54).

Fig. 11. Petroglyph panel in the area of Wadi Diib, Sudan. Apart from large cattle with impressive horns, some human figures, probably the cattle herders, are depicted. One of them (lower centre) is carrying a two-piece bola around his neck (Pluskota 2012, 62, fig. 4/4).

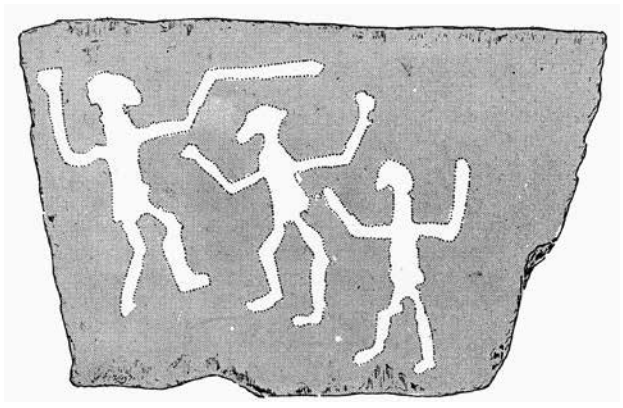


Fig. 12. One out of ten pecked stone slabs, found inside the Early Bronze Age settlement of Korfi t'Aroniou on Naxos. The left figure is wielding a flexible throwing weapon in his left hand. Two worshippers, face him (Doumas 1966, 57, fig. 11).

A similar correlation between boleadoras/slings and rock art can be seen in South Africa in particular among the Rock paintings which are found in the San Bushmen areas. In 1966 Bert Woodhouse recorded at least three rock paintings, depicting possible boleadoras (Woodhouse 1966a; Woodhouse 1966b). The first, known by illustration was discovered inside a rock shelter next to Murewa, Prov. Mashonaland (Fig. 10). A successful hunt is shown by the image of a two-piece bola, wrapped around an antelope's neck. It is likely that this painting is connect to the San bushmen, unfortunately no information is given about its date. A similar scene is recorded on a painting from the Giant's Castle, game reserve on the Drakensberg escarpment (Woodhouse 1966a). Another possibly related object, which might illustrate a boleadora, is found in the hand of a figure on a painting at Cathedral Peak, Lower Mushroom Shelter (Mushroom Hill Cave, Woodhouse 1966b, 170). There are also archaeological finds of stone bolas from South Africa which were first reported by J. Desmond Clark in 1955. He differentiated between stone balls, used as boleadoras, and stone mace heads. His distribution map indicates that these stone tools were mainly distributed in Savanna Regions (Clark 1955, 407 fig. 2), including the rock art findspots quoted above.

Moving further to the north of Africa, one petroglyph, which clearly shows a two-piece boleadora, can be added to this summary (Fig. 11). It is part of a Sudanese petroglyph record by a Polish team in the Wadi Diib (Bir Nurayet) in eastern Sudan which has been published in a preliminary report (Pluskota 2012). In this case, the throwing weapon is associated with cattle breeding. This combination suggests that the petroglyph dates before 2200 BC, a period when shepherds and their herds abandoned the Red Sea Hills (Bobrowski et al. 2013) which are now a desert.

Petroglyphs from a completely different context were excavated in Kofi t'Aroniou on the island of Naxos, Greece. Inside a settlement, which is most likely to date to the second half of the 3rd millennium BC (Early Cycladic II to IIIa; cf. Maran 1998, 293), ten stone slabs which were decorated with pecked figures, were found, secondarily used, in terracing walls. During the excavations in the 1960s a building of oval shape was detected (Doumas 1966), but there is obviously no connection between this structure and the reused slabs with petroglyphs. This precludes as interpretation of this structure and its petroglyphs as a temple (Maran 1998, 294). This has often assumed when the Kofi petroglyphs are compared to examples

from Strophilas on Andros, where pecked stones were found among the floor slabs of a hall-like building (Hubert 2011, 71 f.). Indeed, the iconographic repertoire of the petroglyphs from both Aegean sites is quite similar. It includes various animal species, humans with attributes or weapons as well as ships. Besides the ships, of course, these motifs are carried out in a linear style, analogous to what we found at the Syunik highlands. Slab no. 9 from Korfi is the only known depiction from this group of a human wielding a boleadora or sling (Fig. 12). The whole scene is composed of three figures, two "adorants" with raised arms and a third with the throwing weapon in use. Scene and style are indeed comparable to the four "warriors" from Syunik (see Fig. 4). Complementing these images there is also secure archaeological evidence for slingers ammunition in Neolithic Greece. The typical biconical sling bullets found in Greece weigh about 20 to 45 g, just as the Classical examples do, and are widely distributed, with a focus on Thrace (e.g. Runnels et al. 2009, 180 f.). During the Early Bronze Age pebbles have been found en masse inside the bastions of defensive walls, which would have been well suited for sling missiles (cf. Kastri on Skyros; see Ivanova 2008, 62).

Discussion

Even though there is no archaeological evidence that demonstrates the use of slings or boleadoras in the Syunik highlands in prehistoric times, the three petroglyph scenes we have dealt with here suggests that they were in fact in use. Moreover, there is ample evidence for the use of slings from literary sources as well as archaeological record for the Neolithic and Bronze Age Near East. Unfortunately, it is not yet possible to reliably date the Syunik petroglyphs either by scientific dating, or by a relative stylistic classification. Considering the advanced state of re-patination of the Syunik petroglyphs a prehistoric date seems reasonable. Furthermore, the simple linear style of the imagery indicates a relatively early date, i. e. before the Middle Bronze Age, when curved, infilled bodies appear in vase paintings (Knoll et al. 2013, 228). The two weapon dancers shown on Fig. 2 could possibly date even latter, perhaps to the Iron Age.

Because of the different pecking styles, ranging from linear (Figs 3, 4) to planar bodies with thin lines, performed with another tool (Fig. 2), we think it likely that this type of weapon was in use for longer period of time.

Similar to rock art all over the world, flexible throwing weapons make up a very small part of the repertoire of hand held attributes. The majority of attributes in Syunik rock art are simple wands or sticks, which could have been used as shepherd's crooks to drive livestock, for wandering, or hunting, when thrown as a spear. The next larger group of illustrations shows figures, brandishing or shooting with bow and arrow which are often embedded in hunting scenes. The petroglyph record yielded some figures acting with a lasso as well, but this tool never ends with a "ball", like the presented representation of throwing weapons do. In contrary, the lasso is uniformly depicted as waved line in movement or as a straight line, when the captured animals were kept on a leash.

The throwing weapons in Syunik are shown in different contexts. On one case it is associated with a scene of sexual intercourse (Fig. 3). This can be seen in the context of hunting magic and hieros gamos which has been discussed elsewhere (Meller 2020). In the other two depictions where no additional interaction is shown (Figs 2,4), the actors could most probably be interpreted as warriors. For a pastoral society, using the Syunik highlands as summer pasture (see Knoll 2020), this context would be quite remarkable. In such a society it would be expected that throwing weapons would have been in use in the course of herding, driving livestock or similar activities. There is also no connection to hunting, as can be seen in the rock paintings from South Africa, Patagonia or Çatal Höyük. In contrast, the (male) figures, bearing the sling or boleadora, must be seen as warriors, demonstrating their power by using these weapons. The relation between warfare and flexible throwing weapons in rock art and archaeological record has only been illustrated by the Greek example from Naxos. The deeper meaning of these rare warrior depictions in the Syunik highlands for the prehistoric society in Armenia still has to be discussed elsewhere.

Acknowledgments

This essay about throwing weapons, is only a very extract from the results of the Armenian-German petroglyph project in Syunik revealed. There are many collaborators, team members and friends, from Halle, Yerevan, Sisian and elsewhere, without whom this project would have never been successful. We are grateful to every single one of them. Moreover, we are indebted to the German Foreign Office as well as to the Federal State of Saxony-Anhalt for their generous financial support over the past years. A special thanks goes to Prof. Louis D. Nebelsick for his linguistic editing.

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Perspectives on the Kura-Araxes: The View from Shengavit

Mitchell Rothman

Widener University and Penn Museum, USA

Abstract. The Kura-Araxes cultural tradition has been receiving more and more attention since the Iron Curtain fell. It is an important case in part because it represents a unique world culture with its own characteristics and history. Also, because it parallels the Mesopotamian Uruk and Early Dynastic I in time, it provides one basis for comparisons between these highland and lowland societies. It therefore can help inform our understanding of the evolution of ancient societies in the broader Middle East. Shengavit is one of the more extensively excavated Kura-Araxes sites in Armenia and beyond. It can serve as an important case to detail the Kura-Araxes cultural tradition, but also to investigate the developing societal organization of highland societies. This contribution reflects a brief review of the formation of the Kura-Araxes cultural tradition. The main focus of the paper, however, is to look at what Shengavit tells us about the development of societal complexity in the South Caucasus in the time after 3000 BC.

Keywords: Armenia, Shengavit, Early Bronze Age, Kura-Araxes culture, chronology, cultural evolution.

Introduction

Interest in the Kura-Araxes cultural tradition and the societies whose members follow that tradition has been rising in recent days. Special editions of Paléorient (Palumbi, Chataigner 2014), volumes about it (Smith et al. 2009), and a week-long workshop on it in Toronto (Batiuk et al. in press) demonstrate that new level of interest. Many Armenian scholars have made it their focus (Simonyan 2015, Smith et al. 2009; Badalyan et al. 2014), as have international scholars studying neighboring states in the South Caucasus (Lyonnet 2014; Sagona 2014), and other places where migrants from the Kura-Araxes homeland settled (Summers 2013; Alizadeh et al. 2015; Greenberg et al. 2012; Rothman 2011; Batiuk 2005; Rothman 2003; 2014; Frangipane 2014; Frangipane, Palumbi 2007; Işikli 2015).

The Kura-Araxes dates from the mid-4th into mid-3rd millennium BC. Various scholars have proposed schemes for its beginning and ending dates and for phases within it (Burney 1958; Munchaev 1975; Kushnareva, Chubinishvili 1970; Japaridze 1992; Passerini et al. 2018, Kushnareva 1997, Sagona 1984, 2000; Batiuk et al. in press). Almost all of those chronologies were based on relative chronology. That is, they used the artifact styles first, and even if they used radiocarbon dates, they were applied to justify the relative chronology. In cases like Passerini (et al. 2018), the analysts even proposed a different chronology for the northern and southern parts of the South Caucasus. At the Toronto Kura-Araxes Workshop, participants from Armenia, Iran, Italy, France, Canada, Israel, England, Australia, and the United States proposed a new chronology. Our purpose was to examine the entire extent of the Kura-Araxes, that is, the homeland and the migrant diaspora together. We therefore created a chronological scheme using stratigraphy and radiocarbon dates. It divided the Kura-Araxes it into two phases, KA1 (35/3300–3000 BC) and KA2 (3000–2500 BC), again based on absolute, radiocarbon dates and stratigraphy following Badalyan's model. The breaks in those dates defines the KA1 and KA2. Perhaps, not coincidentally, the Toronto chronology tends to track major artifact and settlement changes in the South Caucasus, but it can be used as a single scale of time across the entire region, even to compare the Kura-Araxes with events and trends in neighboring Mesopotamia, Iran, and the North Caucasus. Already this new chronology has changed the narrative that migration began after 3000 BC. Because it began before 3000 BC, especially in a western direction, it changed our ideas about the Kura-Araxes spread and its relationship to the homeland (Batiuk et al. in press). The Kura-Araxes is contemporaneous with the expansionist periods of the Uruk (LC3-5) (Rothman 2001) and the Early Dynastic I in Mesopotamia (Reade 2015).

Although the narrative of the Kura-Araxes usually emphasizes the migration of Kura-Araxes popula-

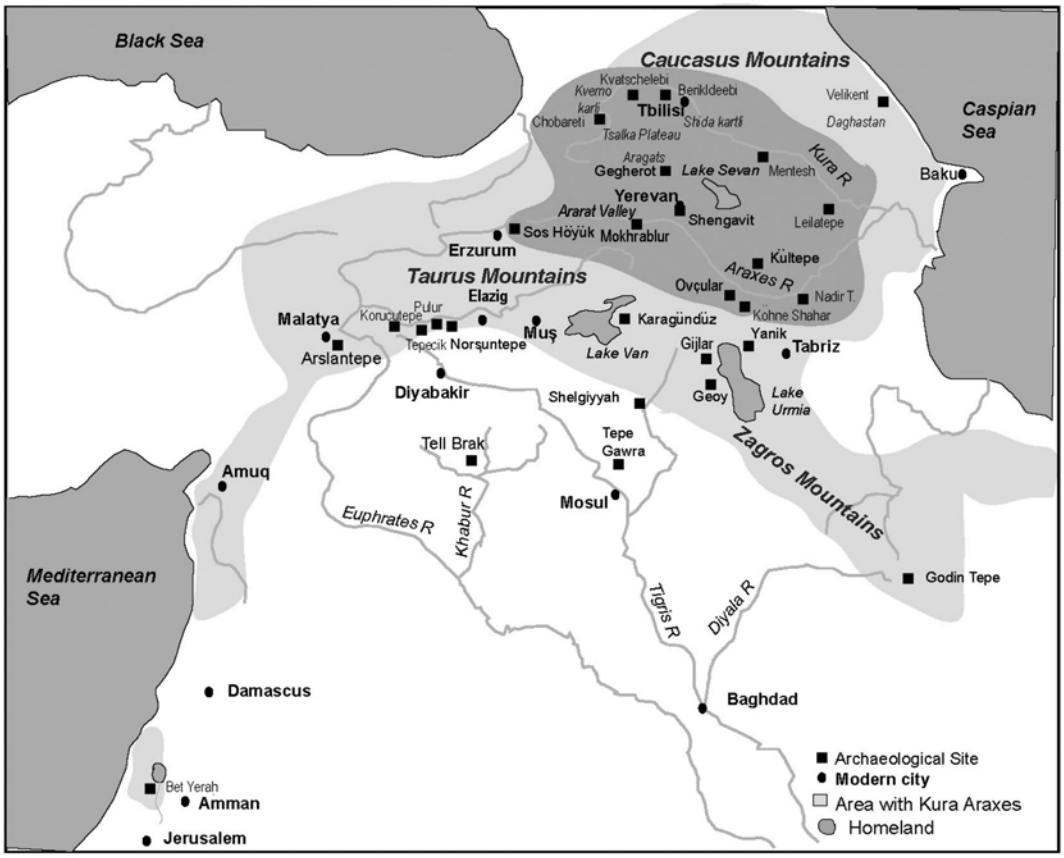

Fig. 1. Map of the Kura-Araxes homeland and diaspora landscape (by M. Rothman).

tions into areas outside the South Caucasus, this article will focus on the South Caucasus only, particularly the area of the Araxes river and its tributary, the Hrazdan river, in Armenia, and the site of Shengavit.

The Forming of the Kura-Araxes Cultural Tradition

The earliest manifestations of Kura-Araxes culture and society occurred within what archaeologists have called a homeland; that is, the area where the cultural tradition first appeared. The homeland is basically the basins of two rivers: the Araxes river and its tributaries from Erzurum in the west to the area north of lake Urmia in the east, and the Kura river from east of the Colchis littoral of the Black Sea to the western edge of the Caspian Sea littoral (Fig. 1). These basins and the areas between them saw the earliest manifestations of the Kura-Araxes cultural tradition (Rothman 2003; Batiuk 2005; Batiuk, Rothman 2007; Kohl 2006). Hence, Kuftin's name for the cultural tradition as Kura-Araxes makes sense and has largely replaced the term Early Transcaucasian.

The Kura-Araxes cultural tradition was distinct in a number of characteristics. Those included a common language of architecture, pottery style, functions (implying cuisine and food production (Wilkinson 2014)), and manufacturing technologies, rituals involving the use of fire with specially produced ceramic hearths or andirons, as well as figurines and other symbols (Simonyan, Rothman 2015). It also includes the transition to larger scale smelting of arsenical copper and gold items, manufacturing tools from obsidian, flint, and ground stone, and major changes in agricultural production. This set of characteristics is larger than the so-called Kura-Araxes cultural "package"(that only includes pottery, architecture, and ritual), because the package was what all bearers of the tradition shared, those in the homeland and those in the farthest place migrants went.

Some scholars, Rothman included, believe that the physical landscapes of the mountainous topography of the homeland was an important factor in creating this particular culture and its societal organization. The size of sites and settlement systems, therefore population size, was limited by its mountain topography and potential carrying capacity (Rothman 2018). The largest sites were located in more open areas in the Ararat plain and some of the more open valley bottoms of Shida Kartli and Kvemo Kartli south of the Kura

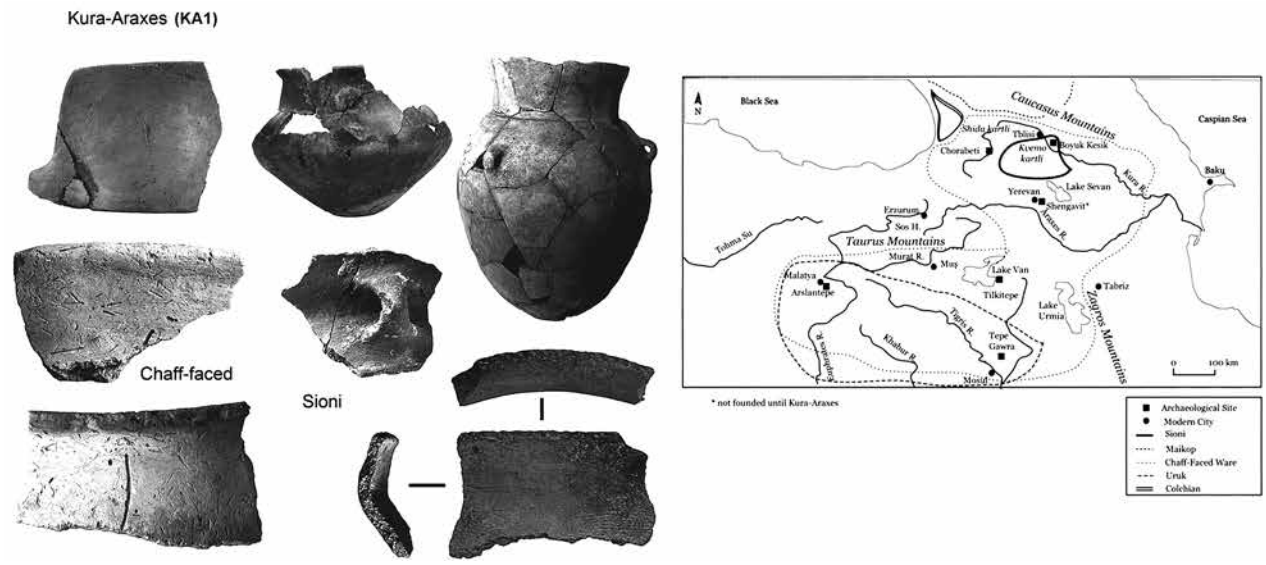

Fig. 2. Chalcolithic pottery and distribution (Photographs by A. Sagona, map by M. Rothman).

river. Readily available to these populations were resources of metallic ores, flint, obsidian, timber, as well as arable fields and rich pasture for animals. However, the development and elaboration of settled societies in these upland zones was regularly cut short. Settled society in the Neolithic and then at the end of the Kura-Araxes appears to have failed to maintain and grow, replaced by differently organized mobile lifestyles. The pressures of growing demands on the system against the background risks of weather and climate change, may have played some part. That change was evident in increasing wetness and the expansion of the forest zone in the homeland followed by a drier climate after 2500 BC (Connor, Kvavadze 2014).

To see how landscape and climate can affect these evolutionary trends, one can compare contemporary Mesopotamia to the Kura-Araxes homeland zone. The open and homogenized landscape with easy river and canal transport and high yields of agriculture permitted the societies of Southern Mesopotamia to follow a trajectory from villages to towns to cities and territorial states that was fairly continuous and homogeneous (Algaze 2008). One phase was an elaboration of the last (Adams 1968). Periods of political disruption did occur, but they never disrupted the overall direction of those societies' evolution. Once established, Mesopotamian societies maintained and grew the model of settled, urban systems without a major break. As the Kura-Araxes developed some societal complexity, rather than increasing its homogeneity, the factors of landscape and climate created more heterogeneity. Some scholars therefore hypothesize that the South Caucasus region's varied and dissected natural topography and its connection with Eurasia certainly had something to do with the nature of its societal order and its evolution (Kohl 2006; Rothman 2018).

Some scholars propose that the seed of the Kura-Araxes cultural tradition and economic behaviors came from the higher elevations of the South Caucasian and nearby Taurus mountains (Hovsepyan 2015). Perhaps, the most telling indicator of where the Kura-Araxes cultural tradition began lies in the foods they grew and the animals they domesticated. Whereas the Neolithic and Chalcolithic peoples of Armenia and its neighbors grew a wide variety of plants, including pulses and grains, by the beginning of the Kura-Araxes farmers stopped growing pulses like lentils, chickpeas, and beans. Kura-Araxes farmers did grow an increasingly variety of cereals (grasses), including a number of varieties of wheat, barley, and millet (Hovsepyan 2015; Tumanyan 1944, 1948) along with grapes, flax, and some tree fruits (Javakhishvili, Glonti 1962; Lisitsina 1984; Lisitsina, Prishchepenko 1977). Changes in agricultural intensification did occur (see below). However, the protein rich pulses would leave the local South Caucasian diet for many centuries until the Late Iron Age. One theory is that people replaced the protein missing from the elimination of pulses with a heavy reliance on animal protein. This protein included meat, milk and cheese. This combination of grains and animal protein mirrors a pattern still found in the high mountains of Armenia (Hovsepyan, in Batiuk et al. in press).

One theory that would support the idea of a highland origin for the Kura-Araxes food production patterns involves the patterns of style distribution of Cau-

casian Chalcolithic (4600–3500 BC) pottery style. Its two ware traditions were Chaff-Faced Wares, on the one hand, Sioni and Tsopi Wares, on the other hand (Fig. 2). The geographical area covered by Chaff-Faced Wares extends from the high plains and hilly country of Northern Mesopotamia into the South Caucasus toward the end of the 5th millennium BC. More than just the pottery, however, there are indications of other cultural connections as well. At Berikldeebi Period V2 (Sagona 2014) a building the excavators called a temple does meet the criteria for a specialized Mesopotamian religious building of the Late Chalcolithic (Rothman 2002, 73–74). A seal from Boyuk Kesik fits this connection as well. Excavators in Georgia found other pottery matching that of Tepe Gawra of the northeastern piedmont of Iraq (Sagona 2014; Rothman 2002). Some of the functional types are a good match with later Kura-Araxes ones, and include the small s-shaped eating pot, which Rothman (2011) proposes was an eating bowl, although other of the shapes are quite different.

In a narrower area inside the South Caucasus, a second pottery ware, the Sioni, was common in the early 4th millennium BC, especially in the Kvemo Kartli area south of modern Tbilisi (Sagona 2014, 2018; Rova 2014) (Fig. 2). Excavators found pots of Sioni style in small numbers at Early Kura-Araxes sites like Sos Höyük Level VA and Chobareti (Sagona 2014). Its heartland lay in the Kura river basin highlands. This is the same area where the abandonment of pulses in favor of animal protein is still practiced today (Hovsepyan in Batiuk et al. in press).

Possibly connected to Chaff-Faced Wares are the traditions of Caucasian Chalcolithic in burial practices that did not continue into the Kura-Araxes (Palumbi, Chataigner 2014). The Late Chalcolithic practice was typified by single inhumations in pits or large jars. Some of these internments show indications of social inequality (Lyonnet et al. 2008); that is, their grave goods included exotic materials. The KA1 graves all contained groups of bodies at sites like Mentesh with kurgan coverings (Poulmarc'h et al. 2014). The grave goods were simple and locally made. Logically, if the Late Chalcolithic graves represented social differentiation, these Kura-Araxes graves represented a more egalitarian society. They may represent a period of mobility. "Except for kurgans, occupation is almost invisible during the whole Early Bronze Age in Western Azerbaijan. Obviously at that time the lowlands were not settled as they used to be from the 6th to the end of the 5th millennium [...] it appears that, in Azerbaijan during the Early Bronze Age, mobility was much more frequent" (Lyonnet et al. 2014, 128).

The KA1 is represented by a small sample of sites, like Norabats, Mokhrablur (Areshian 2005), and Gegharot (Badalyan et al. 2014) in Armenia. The pottery was rather uniform across the homeland zone (Burney 1958). It was related to, but different than the Chalcolithic pottery from which some of its shapes derived (Kavadze, Sagona 2003; Ashurov 1992, 24; Aliyev 1997; Avetisyan et al. 2010, 11–12; Zardaryan, Gasparyan 2010, 155; Marro et al. 2011). Ceramics were fairly simple s-shaped and round-sided. They were wet-smoothed or lightly burnished and dark to pale red in color. Archaeologists recovered only a few black or black on the exterior, red on the interior pots, typical of later KA2 ceramics. Little decoration was added to the exterior.

The sites themselves were small; Areshian (2005) estimates the population of Norabats at about 150 persons (less than 1 ha). Round buildings of the KA1 varied from approximately four meters square at the lowest levels of Mokhrablur to 13 meters at Kültepe II (Sagona 2018, 230).

The model for much of the westward expansion of the Kura-Araxes can be found in this KA1 phase.

The KA2 and Shengavit

The beginning of the KA2 marked a change in the South Caucasus homeland, especially in the Ararat valley and the nearby Kotayk plateau where Shengavit is located. In general, the population grew significantly measured by the total hectares occupied and the size of some sites (Areshian 2007). In the KA1 sites averaged only one hectare. In the KA2 some sites grew in size like Shengavit–6 ha, Mokhrablur–4 ha, Dvin–12 ha, and perhaps Aygevan (in size between Dvin and Mokhrablur). A number of clusters of sites dotted the Ararat plain (Areshian 2007), and three unexcavated sites, now destroyed, sat in close proximity to Shengavit. Given the expansion of the modern city of Yerevan in the midst of which Shengavit sits by the newly created Lake Yerevan, there could have been more.

The issues that most affect our understanding of the Kura-Araxes, especially of the KA2 and certainly from the point of view of Shengavit regard the question of how complex its society was[1]. Complexity is a measure of economic, social, and political relations within given polities (mutually interrelated sets of sites). At

1 Simonyan disagrees on many points with Rothman's interpretations. To find his contrary views, see Simonyan 2013, 2015, 2018; Simonian 2002; Simonyan, Rothman 2015.

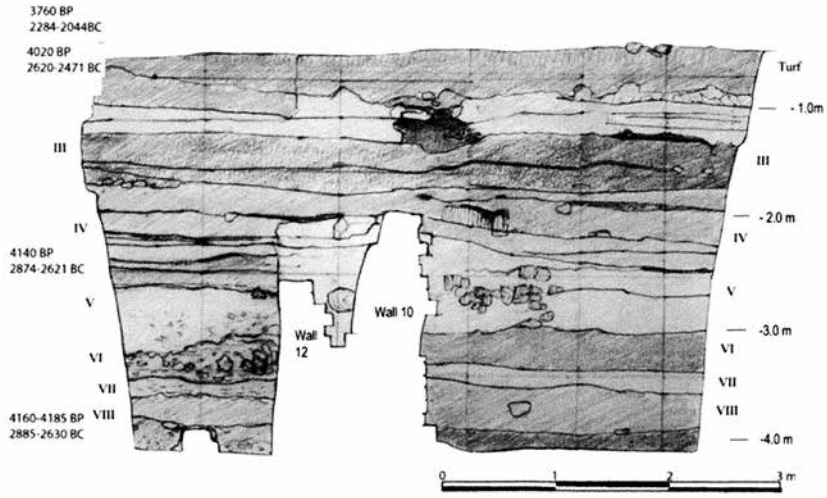

Fig. 3. Shengavit section with radiocarbon dates (drawn by H. Sanamyan and M. Rothman, Beta Analytic Labs).

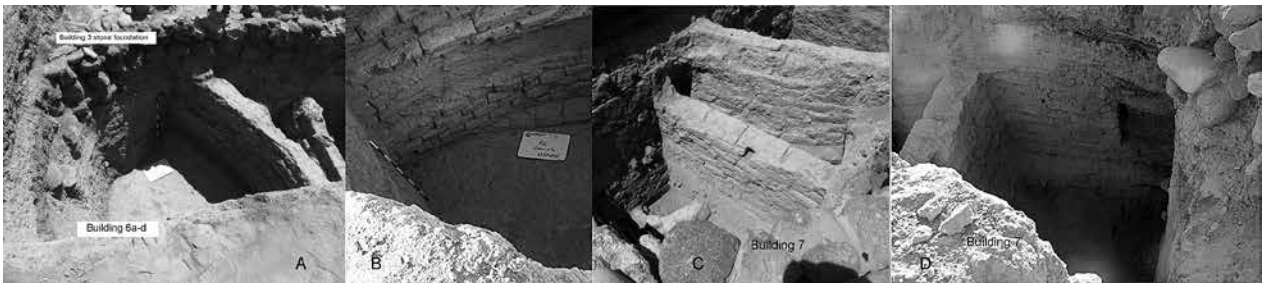

Fig. 4. Buildings at the lowest elevation over bedrock in square K6. a,b. Buildings 6a-d; c,d. Building 7 from two angles with door or window (pictures by M. Rothman).

the heart of complexity are a number of factors regarding how the society is structured in regard to its leadership and control mechanisms (Rothman 2004). Was the primary structure of making decisions about the actions of public works or coordinated activities decentralized, as in clans or neighborhoods? On the other hand, are there individuals or groups with unequal say in those decisions. The latter is usually symbolized by access to more or more highly valued goods, larger houses, and public buildings (in later times, palaces). Such organization is often correlated with increases in specialized (workshop), as opposed to household, production of goods and significant long-distance trade. These imply the existence of separate institutions from the smaller domestic units. D'Altroy and Erle (1985) viewed the sources of such control in either staple or wealth financing. The former involves basic goods like food and raw materials that are derived from nearby sources and then administered for the use of those in positions of control. For example, although Arslantepe sat at the center of a large inter-regional transport network, its excavators believe that the power of those in its palace based on staple finance (Frangipane 2010). The other type of control, wealth finance, derives from the administering of trade in high valued goods, especially, long-distances, and often involving relations with other centers of power. Such control often implies that the same leaders benefit differentially from this trade. They often control labor not only for production and re-distribution of goods, but occasionally use that control to create a more formal, public religious ritual and religious places, as well as other large public projects. They often engage in military competition with other polities. Lastly, to be able to do this implies a societal scale large enough to be able to perform specialized tasks, take enough labor away from subsistence activities to support such tasks, and utilizes symbols of inequality.

Shengavit is one of the more extensively excavated sites of the KA2 in the area of the Ararat valley (Bayburtian 2015: Sardarian 1967; Simonian 2002; Simonyan, Rothman 2015). Unfortunately, Sardarian lacked accurate records, and his control of stratigraphy was poor. To me, it is hard to rely on his published site plans to be accurate representation of contemporary occupation at any stratum. The Soviet reconstruction at the site for the museum display shows walls of varying depths that imply the buildings shown were from different strata. Similarly, although his note-

keeping was superior to Sardarian, Bayburtian did not fully understand the stratigraphy of the mound. In his field notes (from the archives of the Armenian National Museum of History), he wrote "*it is odd to build a wall with stone on top*." Clearly, he was conflating two separate buildings each with a stone foundation under a mudbrick wall (Bayburtian 2015, fig. 8).

Chronologically, Shengavit is one of those sites that represents the transition from KA1 and the full sequence of KA2 (Fig. 3). Its beginning date is a matter of some discussion between the two current co-directors of the latest excavation. Simonyan cites two radiocarbon dates of 3300 BC from his earlier 2000 excavations (Simonyan 2015). Rothman argues for a post-2900 BC, KA2 date, based on (1) three very close radiocarbon dates from three secure proveniences just above bedrock in the only square, K6, from the surface to bedrock (Simonyan, Rothman 2015, tab. I), and (2) the few possible KA1 sherds are from the very bottom of K6, the earliest remains excavated on the site. Unfortunately, the sample size from the bottom of the stratigraphic column is too small to say anything definitive. The two 3300 BC dates cited by Simonyan are questionable. One is from two samples from the same locus room 7 (g) (Simonyan, Rothman 2015, tab. I). The other date from the same locus is post 3000. It is unlikely that one locus from the same room could be occupied for over three hundred years. Despite some disagreement, all agree that the major occupation of the site was in the 3rd millennium BC, and the site continued to be occupied until just after 2500 BC. A couple of classic Bedeni post-Kura-Araxes potsherds from square M5 are radiocarbon dated to roughly 2450 BC. These are fairly small closed forms (jars) about 20 centimeters in height, black, and with a short, slightly outturned rim, combing on the body proper, and high burnishing at the neck. Thereafter, remains on the mound indicate that mobile Middle Bronze populations probably used the site for some storage pits, graves, and possibly small-scale, temporary, seasonal occupation that left no architectural remains.

The architecture and layout of Shengavit certainly fits the Kura-Araxes cultural tradition. The shapes of its buildings reflect the range of Kura-Araxes types. They were round, round with square anterooms, and square buildings. The latter are of two types. First is a smaller square building from the third stratum from the top in K6, which had its hearth by its side wall (Fig. 5/a,b). It lacked clear benches. The second was a rectangular large building with an area of 98 square meters (14 x 7 meters), the foundation of which was made of river stones, over which rose walls made of mud bricks. There were remains of inner dividing walls, unusual at Shengavit, and remains of a pebbled floor (also found in a building at the same level in square J5). In the southeastern corner of the large house was a square niche, which, according to Simonyan, was separated from the rest by a partition made of mud bricks. Simonyan believes this was a cult niche for a large patriarchal family (Simonyan 2015, figs 31–35). More analysis of the contexts is needed. In the 2012, a similar building, identified by georadar, but of a bit smaller dimensions, was excavated in square I14 (Simonyan 2013, tab. 21). One such building is described in Bayburtian's fieldnotes, although no drawing of it was available. To represent the architecture of Early KA2 or transitional KA1/KA2 eras, a round building, partially excavated on K6 Square, is of great importance. House 6 was built on bedrock, that is, at the very beginning of construction work on this section of Shengavit (Fig. 4). The walls of this house (preserved 2 m high) were erected on a clay base, not stone. This house was rebuilt four times on the same plan, each re-building with differently shaped and proportioned bricks. Each rebuilding phase was marked by the plastered floors inside the building. A square building, also not founded on stone, adjoined it.

The importance of the architecture for questions of the societal structure are key to an understanding of Shengavit and the KA2 period. As Whiting and Ayres (1968, 117) state, "*We have found that whether a culture is settled or nomadic, the form of its family and the presence or absence of status distinctions are related to its house type, and that house type can in turn be inferred from the floor plan.*" According to Sagona "*At its heart [of the Kura-Araxes cultural tradition] is the notion of house and compound*" (Sagona 2014, 42). As we begin to map artifacts onto their original provenience, it is possible to see what activities occurred there. The first of these (Fig. 5/a,b) indicates a fairly self-sufficient household, containing processing (querns and associated grinding stones, cutting blades) , cooking and serving food (cooking pots, eating vessels), along with tools for pottery production (burnishers and engravers), spindle whorls for cloth, abraders for a variety of tasks, sickles, retouchers for flintknapping, hammers, and storage jars[2]. Although through the eight rebuilding strata in K6, there was a clear progression from simple round and square buildings

2 This is only the first such room processed. As we do more hopefully, a broader picture will emerge.

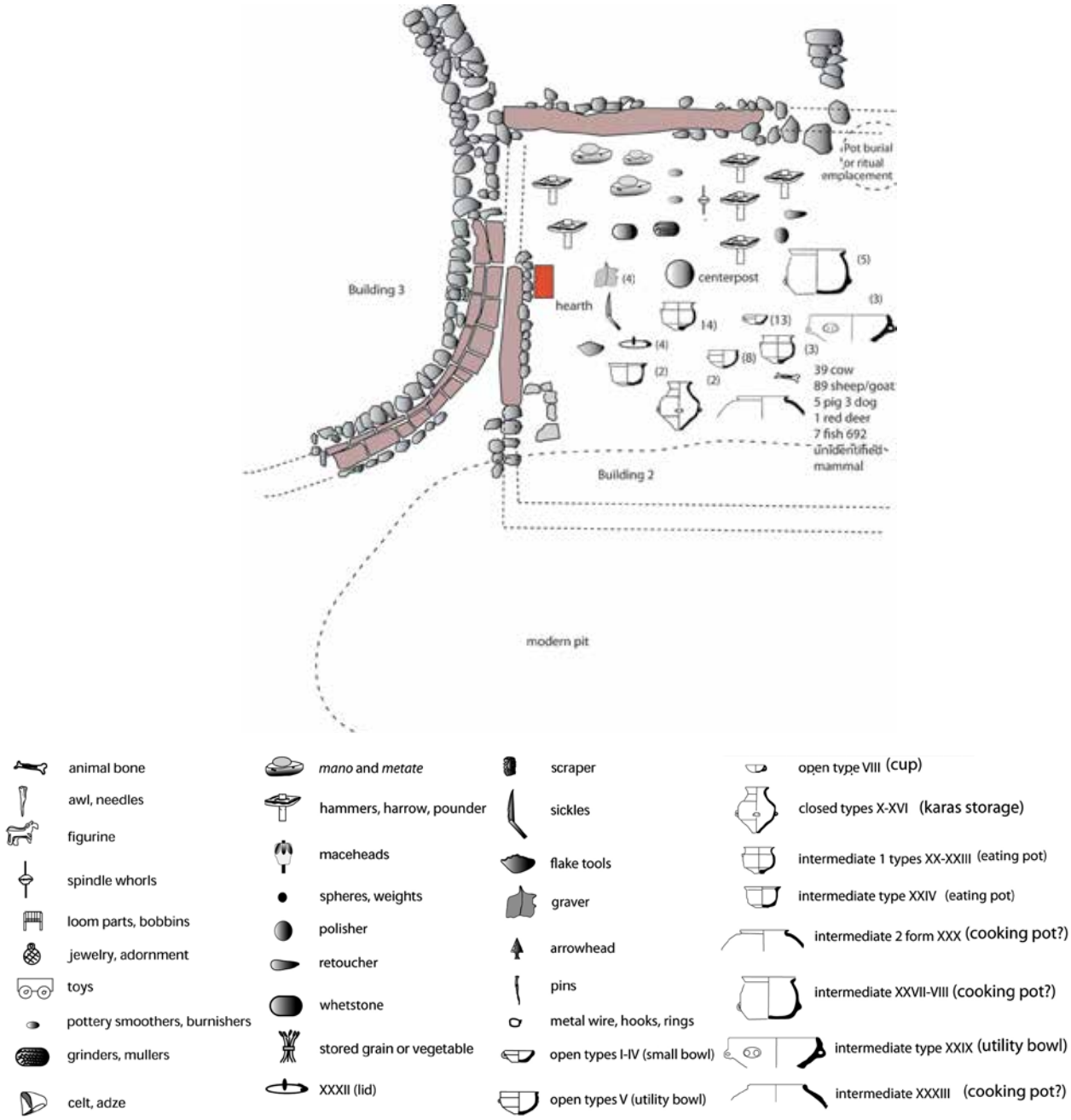

Fig. 5. Artifact distribution in Building 2, Square K6 (drawn by M. Rothman)

to round buildings with square anterooms to the large rectangular building with a niche. In the same stratum there is little evidence of differences among the buildings in plan or, so far, contents (Fig. 6). Nor to date have excavators found a building with a truly unique public function (but see discussion of M5 below), such as Building 3 at the Kura-Araxes levels of Godin Tepe (Rothman 2011) or building 36 of Arslantepe VIB1 (the time when Kura-Araxes migrants appear in the area). The presence of such a building at Shengavit is possible, but we cannot base any conclusion on evidence we do not have.

To Rothman, the production of pottery supports the conclusion of a site primarily based on decentralized, household production. Simonyan reaches the exact opposite conclusion. The pottery production and styles of the Chalcolithic, especially the early 4th millennium BC, suggest a real break between it and the Kura-Araxes cultural tradition proper (Kavadze, Sagona 2003; Sagona 2014; Rova 2014; Palumbi, Chataigner 2014), although some believe that Chalcolithic bowls and other forms were the models for

some of the Kura-Araxes wares, as were other forms (Marro et al 2009; Ahurov 1992; Aliyev 1997; Avetisyan 2006, Zardaryan, Gasparyan 2010, Marro et al. 2011). By contrast, the KA2 Karnut-Shengavit and Shresh Mokhrablur pottery (Fig. 7) (Badalyan 2014) is thought of as black, highly burnished (some black outside and red inside), although a lot of pots with a gray or even red color on the outside existed. It is frequently decorated with incised or raised designs. Some analysts erroneously call this raised design appliqué; it is actually made by applying a thick slip and removing enough slip to leave a raised design. Shengavit has among the richest variety of shapes and decorations found in the Southern Caucasus. Its very distinctive double-carinated closed and intermediate forms are one possible marker of its connection to other parts of the Kura-Araxes like the s-shaped jars (intermediate forms, as opposed to open [bowls] and closed [jars]) at Godin IV (Rothman 2011, fig. 5/59).

From an organizational point of view, where and who produced pottery is an important metric of complexity. Household production would yield much variation in features like thickness, temper, shapes of features like rims, etc. in the same functional categories. We have yet to complete that analysis from a database of over 1400 sherds with detailed measurements. However, Nyree Manoukian's test analysis of 30 sherds from different levels of K6 in the categories of fine wares, cooking pot wares, and utilitarian wares (Manoukian 2015) did not find the consistency in any category to suggest the standardization one would expect from workshop-made pots. Manoukian has expanded her sample significantly and we are hoping for new data on that soon. There are other views which suggest workshop potters (Navasardyan 1997). The question of whether the pottery was fired in a kiln or pit/bon fired (Kramer 1997) is still an open question. Archaeologists have recovered no clear signs of kilns at Shengavit, although they may have been located either outside the walls or in an area of the site that was occupied by the Soviet hospital or modern businesses that destroyed most of the mound. Only detailed studies of the characteristics of many pots will give us the answer. It is also possible that cooperative kinsmen or neighborhood collectives rather than specialized potters coordinated their efforts.

However, studies of chipped stone by Dan Rahimi (in Simonyan, Rothman in press) suggest a rather *ad hoc* craft of flake tools based on nodules of obsidian that washed down on the waters of the Hrazdan river. Even the few large blocks of obsidian from a

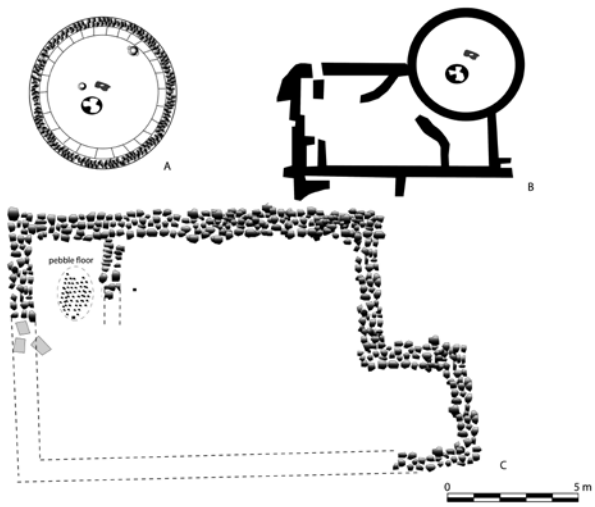

Fig. 6. Shengavit architecture: a. early round building, b. intermediate round building with adjoining room, c. latest square building with small annex and interior dividers (images by M. Rothman).

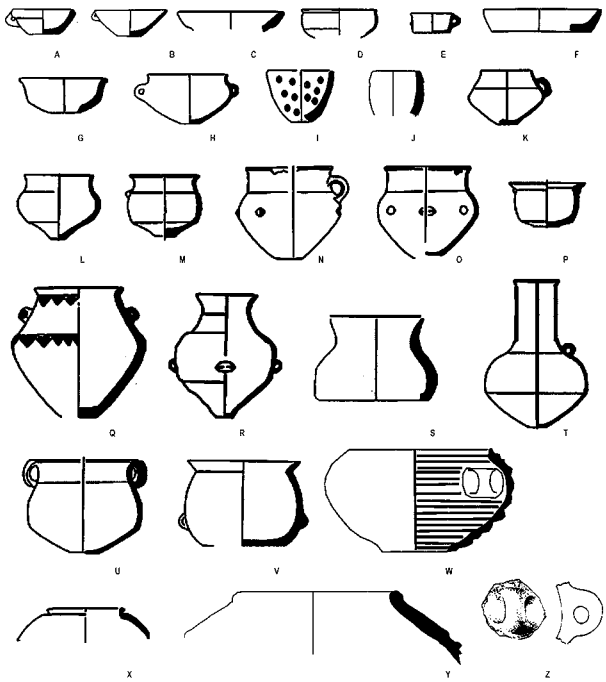

Fig. 7. Kura-Araxes pottery from Shengavit (drawn by M. Rothman).

local source were not developed into blade cores like in the Caucasian Chalcolithic, but again flintknappers took off flakes. Simonyan proposes that there were flint knapping areas from Simonyan's 2000–2008 excavations, but as far as Rothman knows, they have not been fully studied by an expert. The possible exception as far as specialist production are obsidian arrowheads. Considerable skill is necessary to produce the arrowheads, but not skill they could not have learned early on in life, according to Rothman. The most common lithic tool was a flint sickle. We recovered many, many

sickle blades, but far more obsidian than flint debitage flakes, which could suggest that these were made off the site. Boris Gasparyan (personal communication) believes that they were knapped at a flint mining site near Mushakan, which could indicate specialists or not.

Metallurgy represents another craft that traditionally has been associated with the Kura-Araxes. Many, including Rothman (2003), saw this as one reason why Kura-Araxes sought new places in the diaspora. Sagona (2014), however, questions the importance of metallurgy in the Kura-Araxes at all. In the South Caucasus, several dozen mines of copper and arsenic were exploited in the Bronze Age (Racha, Alaverdi, Shamlug, Bashkepsara, etc. (Batiuk et al. in press). The metals made were either tools (spikes, axes, scrapers) or ornaments (earrings or hair decorations, as Sagona (2018) suggests) spiral headed pins, flat pins, and small golden amulets). In addition, at Shengavit archaeologists recovered clear evidence of smelting and of molds for making four-sided points and flat ax blades (Simonyan 2002).

Certainly, the development of copper from hammering in the 6th millennium to extractive metallurgy (smelting) by the late 5th millennium was a critical technology (Bobokhyan et al. 2014). It was critical not only because it provided a new set of tools, but because of the lack of metals in Mesopotamia and parts of Eurasia, it created a great trading network that passed through the lake Urmia area in the east or the Euphrates to the west. Remember that it was during the Chaff-Faced Ware period at the end of the 5th and first half of the 4th millennia that the most active interaction between Northern Mesopotamia and the highland existed. The residents of Shengavit certainly were involved in the smelting of the copper (Simonian 2002) and fabricating of metal objects, but we do not know much about the organization of that production, which would be our first question in terms of the creation of social organization. In the Central Zagros, metallurgy was certainly workshop made at this time (Helwing 2013). Ethnographically, it is often household made. We really do not know what the case is for Shengavit and other sites. Certainly, there was no single workshop, since every KA2 site in the South Caucasus yielded evidence of metal working (Gegharot, Garni, and Metsamor come quickly to mind). The other issue is what the real value of metal was. Was it for practical use? Perhaps, because of decay in the soil or because they were not as frequently produced as in the Middle Bronze Age and later, there are many fewer metal tools in comparison to ground stone tools, including axes, and harrows. So, these items may represent status items, leading to the possibility that there were more social statuses, and more social complexity.

As far as trade (wealth finance) we do know that the South Caucasus is rich in arsenical copper. Export of copper ores or ingots is hard to establish in this period. Imports clearly did happen. The necklace from Gegharot contains high levels of lead that were not found in Armenian copper mines (Meliksetian et al. 2011). Throughout this discussion of trade, it is important to keep in mind that not only physical items represent the interconnections of the South Caucasus with other regions. Technologies, whether for wine making (Batiuk 2013) or metallurgy, are important. Learning metallurgical techniques is only really possible when a metal worker is present (Roberts et al. 2009).

The story with obsidian is also indicative. Like metals, timber, and other construction materials Southern Mesopotamia lacked flint and obsidian for making tools and for uses in statuary; the eyes of some Mesopotamian god statues were made from obsidian. The South Caucasus was rich with sources of obsidian and flint. Although some significant amounts of this material reached Southern Mesopotamia, sourcing of obsidian suggests that within the South Caucasus its raw materials were mostly from the same sources over time, and those sources were not very far from the sites where they were used (Badalyan et al. 2004; Keller et al. 1996; Chataigner, Gratuze 2014). Most of the obsidian found in Southern Mesopotamia came from the Taurus Mountains (Wright 1969, Blackman 1984). One could argue that migrants from the South Caucasian homeland into the areas of lake Van and the other obsidian rich areas of the Taurus were involved in this trade, but how that affected Shengavit would be hard to assess. The major sources of obsidian were not very close to Shengavit. We also recovered talc nodules on a single floor in the upper level of Building 6 in a context with tools for bead making and flint knapping.

Another material that was close and was likely a material processed, used, and probably traded was salt. Natural salt cones are located very close to the site. Salt is essential for the health of humans and animals, and it is a necessary product in the manufacture of leather, cheese, and medicinal products, as well as separating silver from copper ores..

Clearly, plant agriculture and animal raising were key activities that served as a primary basis of the site's economic organization. Presumably, they used the fields under what is now the artificial Lake Yerevan, about 124 ha. The most prominent crops at

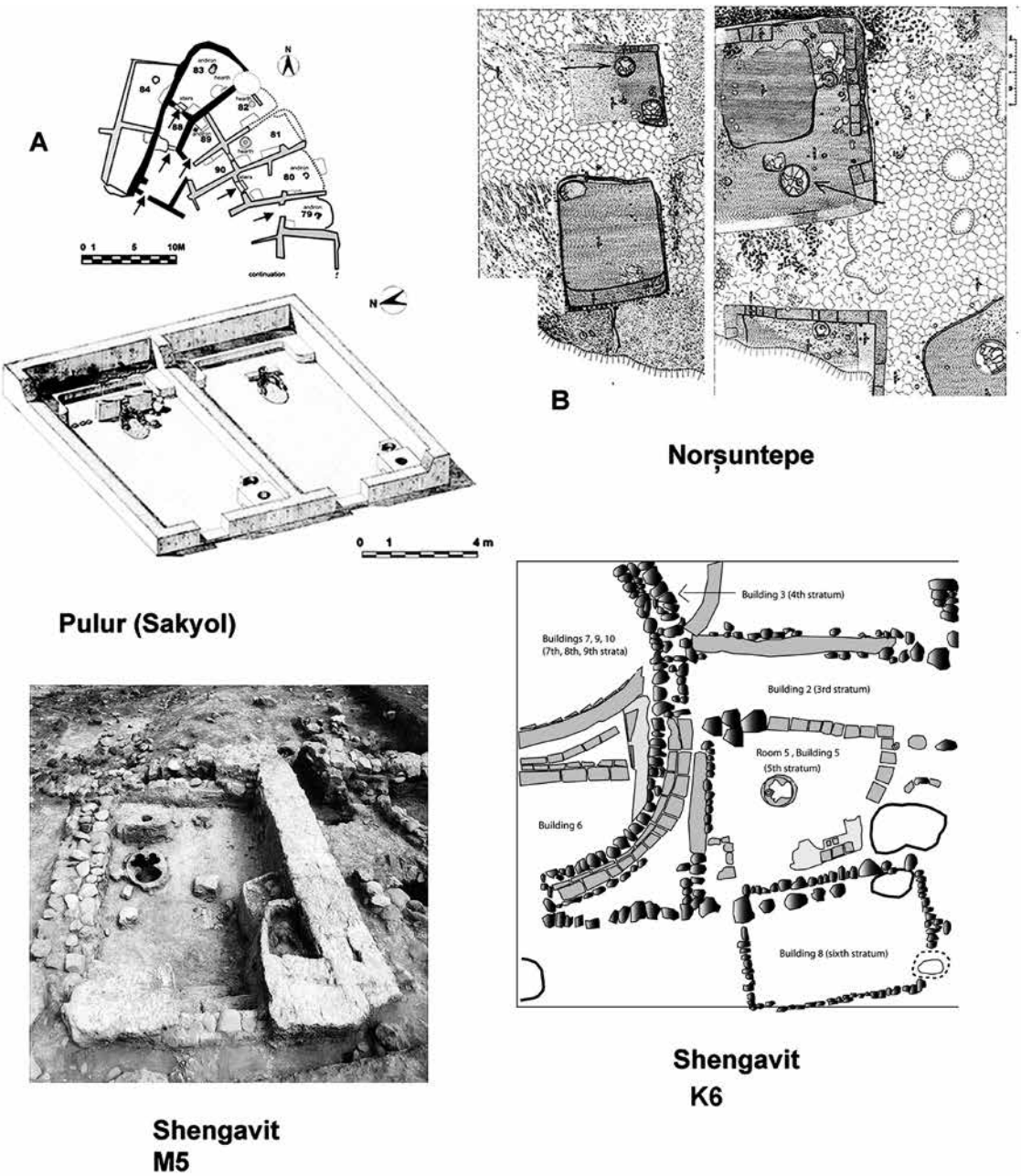

Fig. 8. Kura-Araxes ritual emplacements (after A. Rothman 2011, Fig. 5.11; b. after Hauptmann 1982, Pl. 29, Shengavit M5 photograph, H. Simonyan, Shengavit drawing M. Rothman).

Fig. 9. M5 layout (photographs by H. Simonyan).

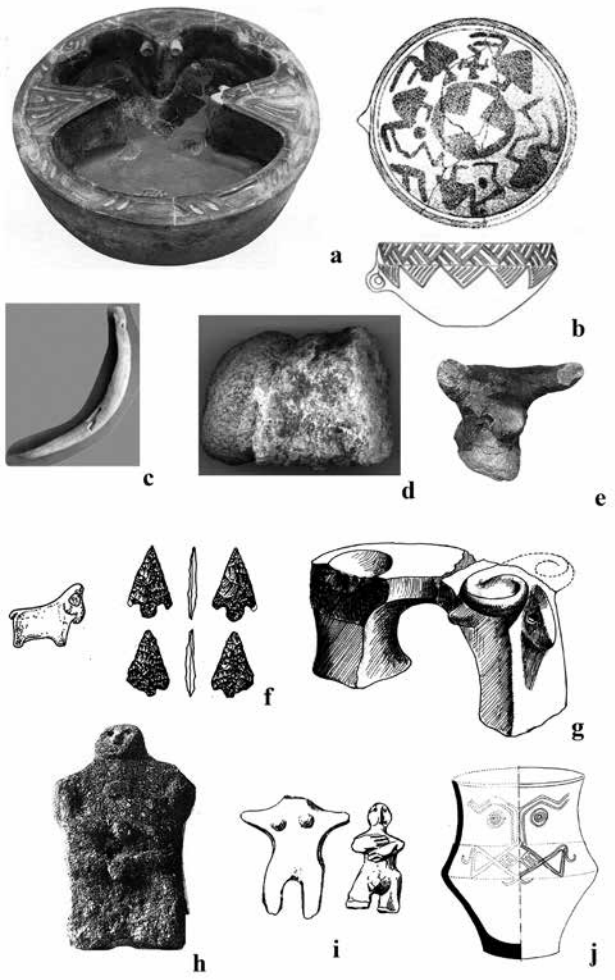

Fig. 10. Ritual objects (after a. Badalyan et al. 530, b. Sardarian 1967, Fig. LXI; c. photograph by M. Rothman, d.and e. photographs by H. Simonyan, f. Sagona 1998, fig. 4, g. Bayburtian 2011, fig. 15, h. Simonyan 2013, 10, 5. i. Simonyan 2013 plate 9, 10, j. Koşay 1976, fig. 83).

Shengavit included bread, club, and durum wheat, and barley. The ratio of wheat to barley was 7:3, opposite that of the higher elevations farther north (Hovsepyan 2015). In addition to this, there were also apples and grapes, as well as dyed flax found among pollen samples (Kvavadze, pollen report). Analysis of pollens found vegetal weeds common in cultivated places at Shengavit. Pollens analyzed by Kvavadze in general indicated intense cultivation. Like the rest of the Kura-Araxes, many common Chalcolithic crops like pulses were missing. The range of cereals grown grew. According to the palynological analysis of many sites of Kura-Araxes culture, various assortments of wheat (round-grain and soft, bare-grain and webbed), barley (webbed, double-row and six-row), as well as millet and flax were grown here. Apricot, peach and sweet cherry seeds found in a number of settlements (Lisitsina, Prishchipenko1977, 64–67; Buniyatov 1968, 23) also are evidence of the development of gardening. If you add to these facts the presence of large plots of cultivated land, we can have a more or less complete picture of the agricultural activities of the ancient people of Shengavit. We can certainly state that they cultivated 125 ha of fertile land on the banks of the Hrazdan river for sowing grain (Simonyan 2018, p. 4–5). In addition, intensification of irrigation was expanding (a system of irrigation canals on the Aragats Mountains, Geghama Mountains, a dam on the Kasakh river near Mokhrablur) (Simonyan 2013a, 39–41). The use of plows powered by draft animals and terraced farming systems testify to an intensive agriculture (Javakhishvili, Glonti 1962, 61; Munchaev 1975, 397; Kushnareva 1997; Lisitsina 1979, 14–17), although evidence of those plows (often made of antler bone (Kushnareva 1997)) is missing from many sites.

Rothman believes that the stored grain found in numerous large storage pits at Shengavit (Simonian 2002) represented a surplus that the people of Shengavit used as staple finance to recruit labor from nearby villages and to lower the risk of crop failure. This assumes a population small enough not to need to use the grain themselves. A figure of about 1200 people for Shengavit at its maximum would fit this situation. The figure of 200 people per hectare accounts for open spaces for threshing floors, streets and alleys, animal pens, courtyards for craft activity, etc.

Animals were an essential source of protein and of products. Shengavit's domestic animals were primarily sheep/goat and cows in a ratio opposite of the higher altitude zone in Armenia. What changed as people settled into the lower elevations was a shift to sheep and goat, which are less risky, more productive, and better suited to the warm summers of the lowland (Siracusano, Bartosiewicz 2012; Bahşaliyev 1997; Crabtree, Piro in press). Their management, based on ages at slaughter, indicate they were used primarily for meat, and only secondarily for milk, wool, hide, bone, and sinews. Kvavadze found remains of dyed wool in her pollen samples; however, the age curve is not one typical of specialized wool production. Wool's use for long-distance exchange is possible, but less likely. Spindle whorls confirm that residents did use animal fibers to make cloth. Finds of figurines of bovines with a place for a yoke suggest that cows were animals used for pulling plows and carts. A much smaller number of the wild animals identified indicates hunting of onager, roe and red deer, and bear, as well as fishing. All of these confirm the palaeoclimatologists' theory that the

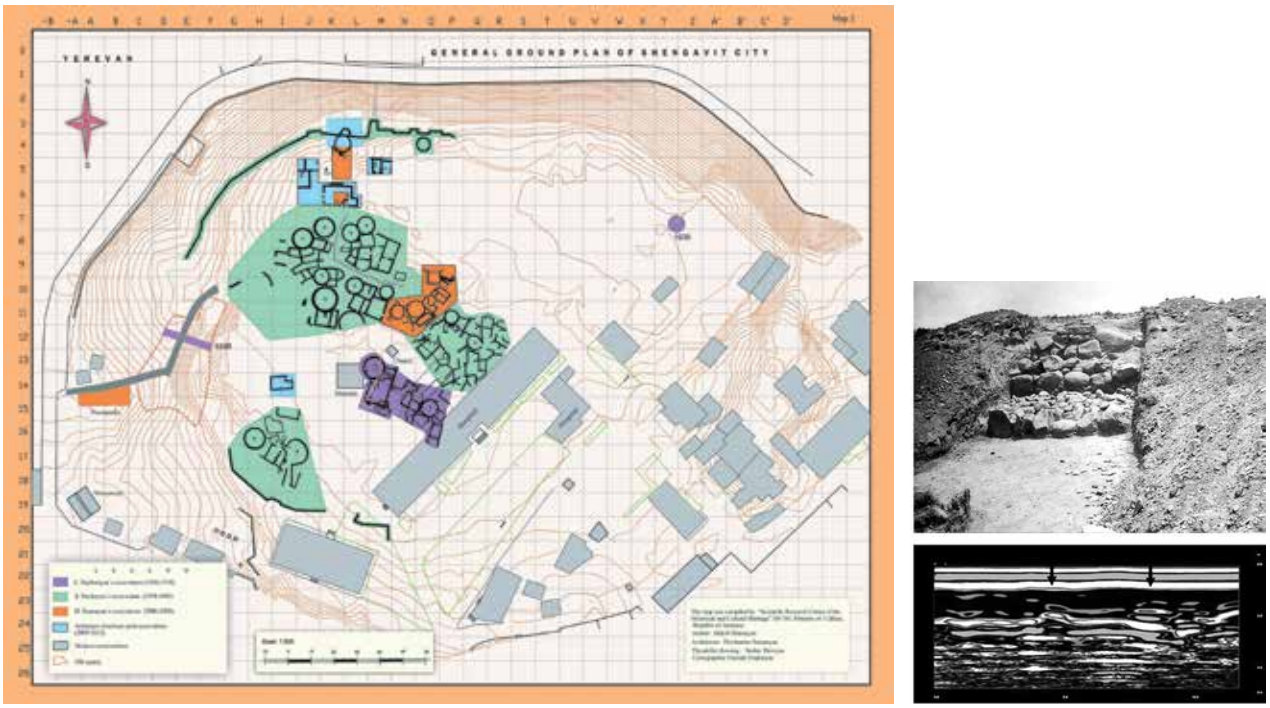

Fig. 11. Shengavit Plan and Wall (after Simonyan, Rothman 2015, Fig 3, Fig 8 a and c).

forests had expanded in the KA2. Manaseryan (2018) identified true horse at Shengavit, but both Uerpmann and Crabtree found none, only wild donkeys (onagers), and questioned whether Manaseryan used the proper criteria for assessing true horse. Again, animal production looks like it is focused on local consumption.

Theoretically, one correlation of the development of increased societal complexity was the creation of a more formal, public religious practice. That practice is detailed in Simonyan and Rothman (2015). The core symbol of religious ritual (the reenacting of myths and beliefs) was fire and the place of fire, the hearth. The importance of the hearth was its placement in the center of the room, often with benches surrounding it (Fig. 8). Architectural plans drawn by Sardarian (1967) and Bayburtian (2015) show many buildings with these hearths. They mostly had a three-lobed opening, which Batiuk (2013) likens to a grape leaf. At Pulur Sakyol and at Shengavit this hearth was placed in a room that was lower than ground level; that is, one had to walk down steps into it. The room had in addition a small standing construction with indication that a burnt offering was placed on it and small bins with signs of burnt vegetation in them (Figs 8, 9). The symbols of this ritual place (Fig. 10) includes the hearth or alternatively, an andiron shaped like an animal or with a face on it. Also, people at Shengavit buried symbols of natural fertility near the hearth: figurines of sheep and cattle, a wild red deer horn, and a human phallus. Important symbols of human production, obsidian points and bone points, are common. Different from most Kura-Araxes symbols (Sagona 1998) Shengavit's ritual included a variety of human figurines, from clay ones of women, to tufa statues that one could theorize were divinities. Sagona and Sagona (2009) suggest that the realms of the sacred and secular are not distinguished in ritual practice. The relation between the everyday and the sacred might be reflected in the fuel used in the ceramic hearths. Since there was little soot, it was likely the fuel was charcoal, the same fuel that had to be produced for metallurgy.

The question is whether M5 at Shengavit (Figs 8, 9) was part of this increase in the centralization and formalization of public religion remains unclear. If the unexcavated area to the south were a room of a house like at Pulur (Sakyol) (Fig. 8), this would suggest it is a household or family shrine. It suggests that the importance of the house and the kin group. Perhaps, the ritual emplacement served a number of neighboring houses. It is also possible that like the Late Bronze ritual emplacement at Gegharot, it was a divination center used by many small groups one at a time (Smith, Leon 2014).

At the same time, one marker of the period does indicate some coordination of effort, the building of the Shengavit wall (Fig. 11). Walls seem to be an artifact of the KA2. This one was four meters thick with stones dragged to the top of the bluff. From what has remained, the wall had at least a couple of towers

like Köhne Shahar farther east on the Araxes river, also built on a bluff, although builders at Köhne Shahar walled off only the central district (Alizadeh et al. 2015). The date of the Shengavit wall, contrary to Kohl, is definitely Kura-Araxes. A georadar study by scientists from Yerevan State University shows that it extended deep into the three and a half meters of deposit (Fig. 11), and there are no major occupations on the site after KA2. Why the wall was built is another matter. We know that many such walls were built for defense, but in as many cases, defense was not necessary, and they served rather as a symbol of new political orders. Those groups found ways other than hierarchical authority structures, possibly like the Pueblos of the US Southwest (Mills 2000). They mobilized laborers to do the work over a fairly long time period through kinship networks and obligation. So, some coordination is likely, which raises the complexity from tribal, which is what Bayburtian called it (Bayburtian 2011). Were it for defense, one would expect more evidence of military hardware. There are a few ground stone objects that could be maceheads (they are one of few ground stone objects made from marble), some molds of spear heads, and the odd obsidian point. Mokhrablur had evidence in its small trench of burning events. Dvin had a fire, although whether it was burned by some group or simply had frequent fires is unclear. As far as I know, there were no skeletons with signs of battle wounds, which were found in other cases of military attack and burning (for example, Tepe Gawra). Nor was there extensive evidence of burning at Shengavit. In the diaspora sites, certainly, there is little evidence of military destruction associated with the coming of Kura-Araxes migrants. The more symbolic reason for building the wall appears more likely to Rothman than the military, but the matter is still open to discussion.

Discussion and Conclusions

I believe that Shengavit was a local center of a small polity in the environs of modern Yerevan. On the other hand, I do not see it as being nearly as complex as Simonyan would have it. The sort of society Simonyan describes is one based on authoritative controls (the ability of leaders to say do this, or else). That implies a number of things. To have such a level of control, certainly one with hierarchical decision-making, requires size. Larger scale societies are basically forced into a more central control or at least has those with the potential to seize it. They also require mechanisms of control. That control is often evidenced in its control hardware. However, at Shengavit, in fact in the whole of the South Caucasus, there are only a few "seals," and no evidence exists of what they sealed. In the Mesopotamian system there were clay locks on doors, over the knots of string tied around the covering over a bowl or jar, or around the peg in a sack. These seals restricted access to goods to those permitted to break the seal and access the contents, either as personal signatures or as seals of institutional identity (Rothman 1994). As far as I know, no single clay sealing has been found in all of Armenia during Kura-Araxes times. So, control if it exists must be exerted another way. One way is by using kinship networks to exert some controls, to recruit labor for public works, and to gain reciprocal gifts or tribute. This is the sort of system that permitted the Pueblo populations at Chaco Canyon to construct the "great houses." These were large neighborhoods, each with its own ritual building (kiva). Also, the Pueblo people constructed and operated amazingly long stretches of road to facilitate a trading system from the Gulf of Mexico to the upper Mid-West. The leaders at Chaco Canyon felt it was important not to appear better than their kinsfolk. So, the outward signs of power, bigger houses, access to goods denied to others did not exist. In that scenario, a seal might be a symbol of identity, as a macehead is possibly a symbol of family status. Therefore, the basic focus of the society is the extended family or neighborhood. The degree of control in such a society is fairly low. It hardly rises to the level of hierarchy (three distinct levels of decision-making).

Another mechanism for creating some control was accumulating the surpluses and taking control of who was to contribute and who could withdraw. In Shengavit's case. I think it was in grains. A center, which I believe Shengavit to be, is a place where certain activities are centralized; they exist one at the center of a set of multi-site networks. If the size of the population of Shengavit is close to what I believe, there was more grain stored than its residents needed. Not only was this a resource for recruiting labor from the villages for projects like building the wall, but also was a guarantee against risk in the inevitable years of poor harvests, which guaranteed loyalty of the satellite sites and maybe nomadic peoples to the center's political structure.

This was a developing complexity, however embryonic, built on staple finance. I think the picture of trade fits this picture. The two most desirable materials in the South Caucasus were metal ores and obsidian. Salt, flint, and highland wool with its long strains might be secondary. As far as the scientific analysis tells us, trade in those goods tended to be local, and not part of the larger networks like the Uruk expansion

(Rothman 2001). I also wonder if there were trading with the sites at the gateways into Mesopotamia, what the South Caucasians got back. Trade from only one side is tribute, not exchange, and there is no reason to think Mesopotamians controlled the Kura-Araxes homeland. In fact, it seems in many ways that the Kura-Araxes populations avoided the Mesopotamians. Never did migrants cross into Northern Mesopotamia south of the Taurus massif. Nor in the Zagros did they leave the craggy high places, even to go as far as the Mahi-Dasht, despite the fact that the Khorasan Road crossed the Zagros into Susiana and Southern Mesopotamia in the Mesopotamian Late Chalcolithic, contemporaneous with the KA1.

Whether the production was in fact domestic or specialized really is not certain. Now we who are publishing Shengavit have to dig into the details of that production. "Professional" producers will produce standardized wares. With a database of over 1400 sherds, it should be possible to determine how standardized open vessels (bowls), intermediate vessels (small eating pots and utilitarian vessels), and closed vessels (jars) were in terms of the thickness of their sides, the height of the forms, the creation of their fabric. We need to do very detailed studies of the places that had evidence of metallurgy, flint knapping, etc. In fact, we need to map artifacts back into their original findspots to see how activities were distributed over space and time. This also might tell us if some households had access to goods that others did not. Where possible we need to source materials within the Caucasus to see if we can trace ancient exchange networks. Then we can judge the spheres of exchange and the sizes of polities.

As to the wall, a critical question is when it was built. Neolithic villages like Jericho built walls with a tower as impressive as any in the Bronze Age, clearly without hierarchical or authority control. They apparently built it to stop flooding. Why did the residents of Shengavit with the likely help of others in their hinterland do so? Was it really a public works program to create unity and interdependence, or to establish the status of those who planned it, recruited the labor, and carried it out? Was it necessary for defense and for a place for nearby villagers to be safe at times of violent encounters? We had planned in 2012 to dig a trench on the inside of the wall to see if we could find the beginning of the wall or wall trench. That might tell us more about its purpose. If it were late, nearer the abandonment of the settlement of Shengavit, it is more plausibly for defense. If it is earlier, more likely to be a symbolic marker of territory and status.

If there is a conclusion, as my colleague Simonyan says, it is to do more work and ask more questions. Only then and with an open mind can we get nearer the mysteries of the past.

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Margahovit: Craft and Subsistence Economy in a Bronze/Iron Age Community between Pambak and Bazum Mountains, Armenia

Aram Gevorgyan[1], Henrik Danielyan[1], Roman Hovsepyan[1], Harutyun Vanyan[1], Nina Manaseryan[2], Nyree Manoukian[3], Anna Azizyan[4], Arsen Bobokhyan[1]

[1] Institute of Archaeology and Ethnography, Armenia
[2] Institute of Zoology, Armenia
[3] University of Oxford, UK
[4] Erebuni Historical and Archaeological Museum-Reserve, Armenia

Abstract. Margahovit settlement is located on Sari Sop hill, in the village of Margahovit, Lori region. The hill covers an area of 7.8 ha, where 1.2 ha occupies the fortified section at the top of the hill. Several key criteria outline the importance of this site. Firstly, it is the central settlement of the Margahovit plateau, surrounded by smaller satellite sites. It is located strategically at the junction of the road, which connects Vanadzor to Dilijan. More importantly, the site is located in the immediate vicinity of the metal mines. During 2011–2017, the Institute of Archaeology and Ethnography of the NAS RA conducted a series of excavations at the settlement of Margahovit, in order to obtain preliminary information on the stratigraphy and the main phases of the development of the site, as well as to date its defense system. Preliminary observations indicate that the settlement extended to all parts of the hill, and descended from the centre in different directions. As a result of the excavations, we can trace the existence of a four-stage settlement in Margahovit, where the first three stages (Early Bronze, Middle Bronze, Late Bronze/Early and Middle Iron) are documented stratigraphically, while the fourth is visible on the surface or as later intrusions in early cultural layers (Middle Ages, Modern period). The Early Bronze Age is the main period of occupation in the settlement, comprising 90% of the artefacts and stratigraphic layers unearthed at the site. Inhabitants of Margahovit practiced cereal-based agriculture (free-threshing wheat (Early and Middle Bronze, as well as Early Iron Ages), hulled barley (Early and Middle Bronze Ages) and emmer (Early and Middle Bronze Ages) and animal husbandry of sheep/goat, cattle (Early Bronze and Early Iron Ages) and some pig (Early Bronze Age). Radiocarbon dates from the Early Bronze Age layer confirm a Kura-Araxes occupation spanning 2871–2620 cal BC. Considering the environmental characteristics, situated near forests and metal mines, our preliminary data from archaeological research suggests that the settlement of Margahovit could have served as a crafts production workshop centre, especially during the Early Bronze Age. In this regard, artefact repertoire and function are in parallel with the nearby specialized settlement of Fioletovo.

Keywords: Northern Armenia, Lori, Margahovit, Sari Sop, Early Bronze Age, metallurgy, specialized community, agriculture, animal husbandry.

Introduction

Archaeological investigations concern a natural and terraced hill called Sari Sop, located on the western side of the village Margahovit (formerly Hamzachiman), Lori region, 17 km away from the city of Vanadzor, in the middle section of the Vanadzor-Dilijan highway, near the Aghstev river[1]. The hill covers a total area of 7.8 ha, 3.5 of which is the area presumably inhabited in ancient times. About 1.2 ha of the site corresponds to the fortified section at the top of the hill (Figs 1–2, 4–8).

The site is bounded by a forest to the north, south and east and by the plateau to the west. The geographical coordinates are N 40° 44' 19.2" E 44° 40' 36.0", the altitude is 1809 m above sea level. The top of the hill rises on the eastern edge of the Margahovit (Hamzachiman) plateau (ca. 15 m above the plateau level). Its flat top is surrounded on all sides by medium-sized and large elaborated stones, which are the remnants of a defence system, especially in the northern and western parts of the hill. The accumulation of elaborated stones on the surface indicates the existence of certain dwellings.

The Late Medieval and 19–20th centuries cemeteries/tombstones (some are marked with Arabic inscriptions), as well as a sanctuary composed of earlier Armenian cross-stones (khachkars) are visible on the

1 The present article is prepared by following specialists: Archaeology - Aram Gevorgyan, Henrik Danielyan, Harutyun Vanyan, Anna Azizyan, Arsen Bobokhyan; Archaeobotany - Roman Hovsepyan; Archaeozoology - Nina Manaseryan; Radiocarbon analysis - Nyree Manoukian.

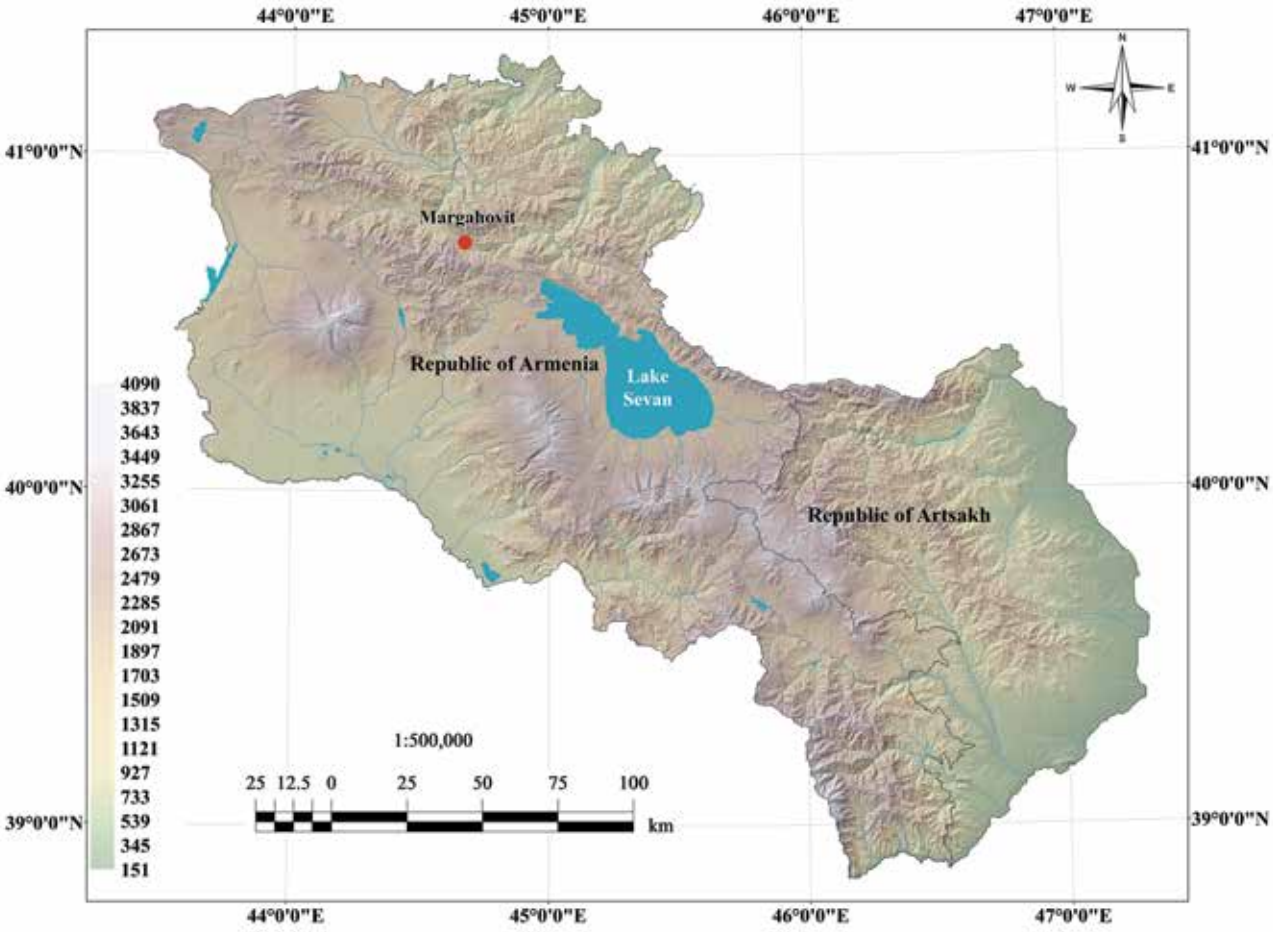

Fig. 1. Location of Margahovit (Map: H. Danielyan).

surface of the hill. In the central part of the site, there are remnants of a rectangular medieval structure. The site could have been partially destroyed in the 1960s by the forest planted in the foothills and surroundings of the site (the planting holes are observed along the terraces; traces of lorries are evident on the terraces of the southern part). Furthermore, the presence of a large quantity of Early Bronze Age pottery in the humus layer indicates erosion processes.

The settlement of Margahovit is significant due to its location, as it is the central settlement of the Margahovit plateau, surrounded by other smaller satellite sites (Fig. 2). Subsequently, it is located strategically at the junction of the road, which connects Vanadzor to Dilijan. In addition, the site is located in the immediate vicinity of metal mines, outlining the importance of craft production and control of resources, which most likely served a productive function (Fig. 3). In this sense, it is noteworthy that the straight line between the Margahovit plateau and Marmarik valley (Meghradzor - another important metallurgical centre) is only 8.5 km long, which suggests the possibility that these two sub-regions functioned within the same cultural and production system. It is also important to note, that as a part of the historical region Gugark, and in particular Lori (Kayen or Dzoropor sub-region), Margahovit is situated not far from the Georgian border and could play a significant role in interactions with various other settlements in the Transcaucasian region.

Some authors have already mentioned the importance of the Lori metallurgical zone since the Early Bronze Age (cf. Gevorgyan 1980, 22). It is the most powerful metallurgical region in present-day Armenia, the mines of which must have been used not only by ancient Armenian, but also by Georgian and North Caucasian communities. In this regard, our intention is to conduct archaeological investigations in and around the site and explore the local cultural environment of the Margahovit micro-region as a subject of discussion, as well as to ascertain its role in the context of archaeometallurgical developments in Armenia and neighboring regions.

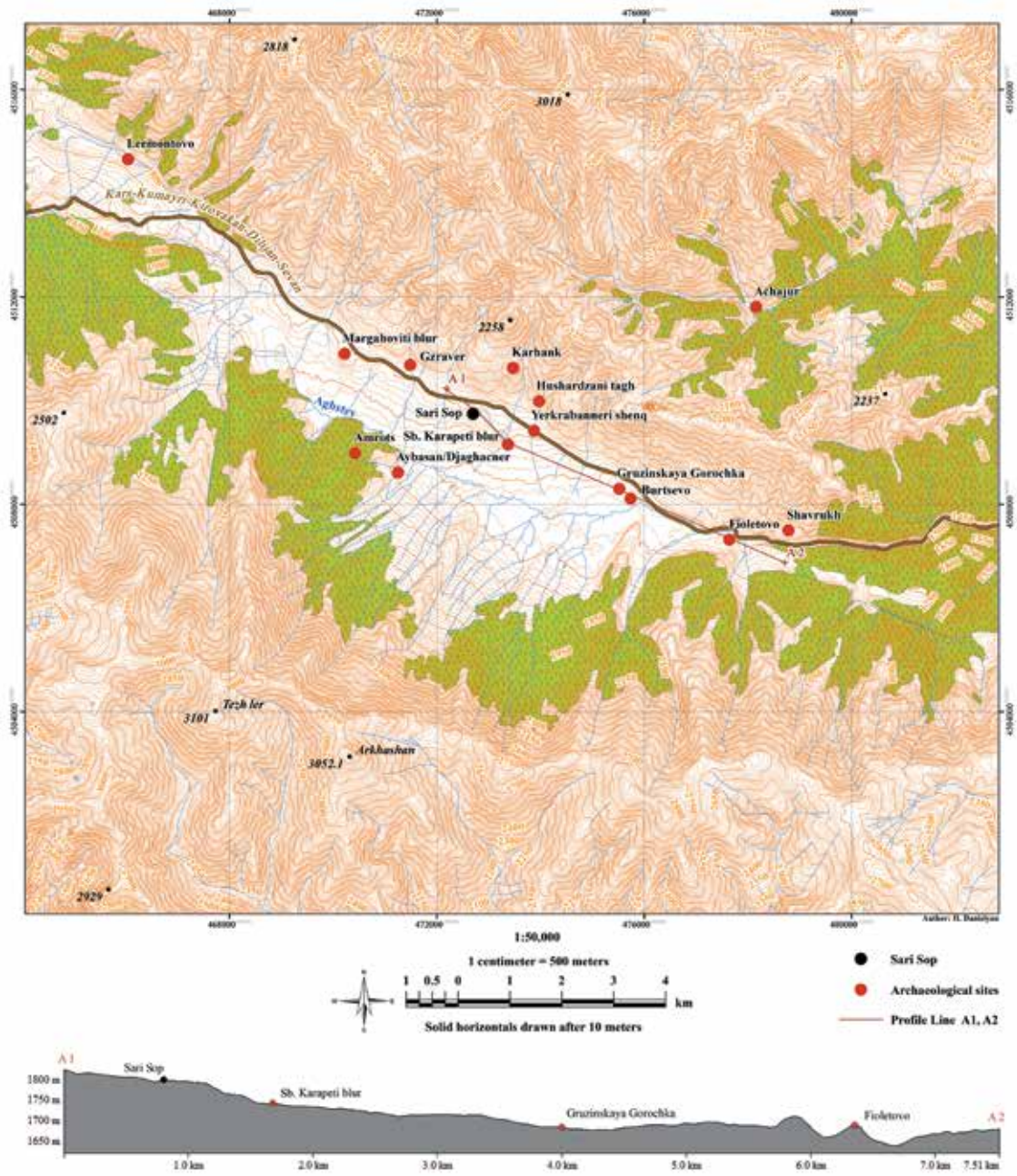

Fig. 2. Archaeological sites of the Margahovit plateau (Map: H. Danielyan).

Natural Environment

The Margahovit plateau is a unique micro-region surrounded by the Pambak mountains in the south and the Bazum mountains in the north. The climate is humid, the area is rich in water resources (including mineral resources of iron composition), covered with dense deciduous forests, where oak, hornbeam and beech predominate (Takhtajyan 1971, 239–257). The fauna is diverse and rich in predators and herbivores (wolves, foxes, bears, boars, goats), rodents (pine voles, squirrels), birds (warbler, buzzard, falcon, great tit, etc.) (Aslanyan 1971, 258–269).

In the geological structure of the area the Eocene rocks are predominant, which are represented by porphyritic granites, tuff breccia and limestone. This is a region rich in metal ores (Fig. 3); in particular, the Fioletovo copper ores should be mentioned, marked by the presence of rich zones of secondary copper minerals (malachite and azurite) (Vardapetyan et al. 1967, 322). During the Early Bronze Age, these minerals served as raw materials for copper production. Currently, the entire surface of the ore zone is destroyed by various metallurgical drillings. Thus, the stratigraphic layers are mixed and difficult to examine in terms of its chron-

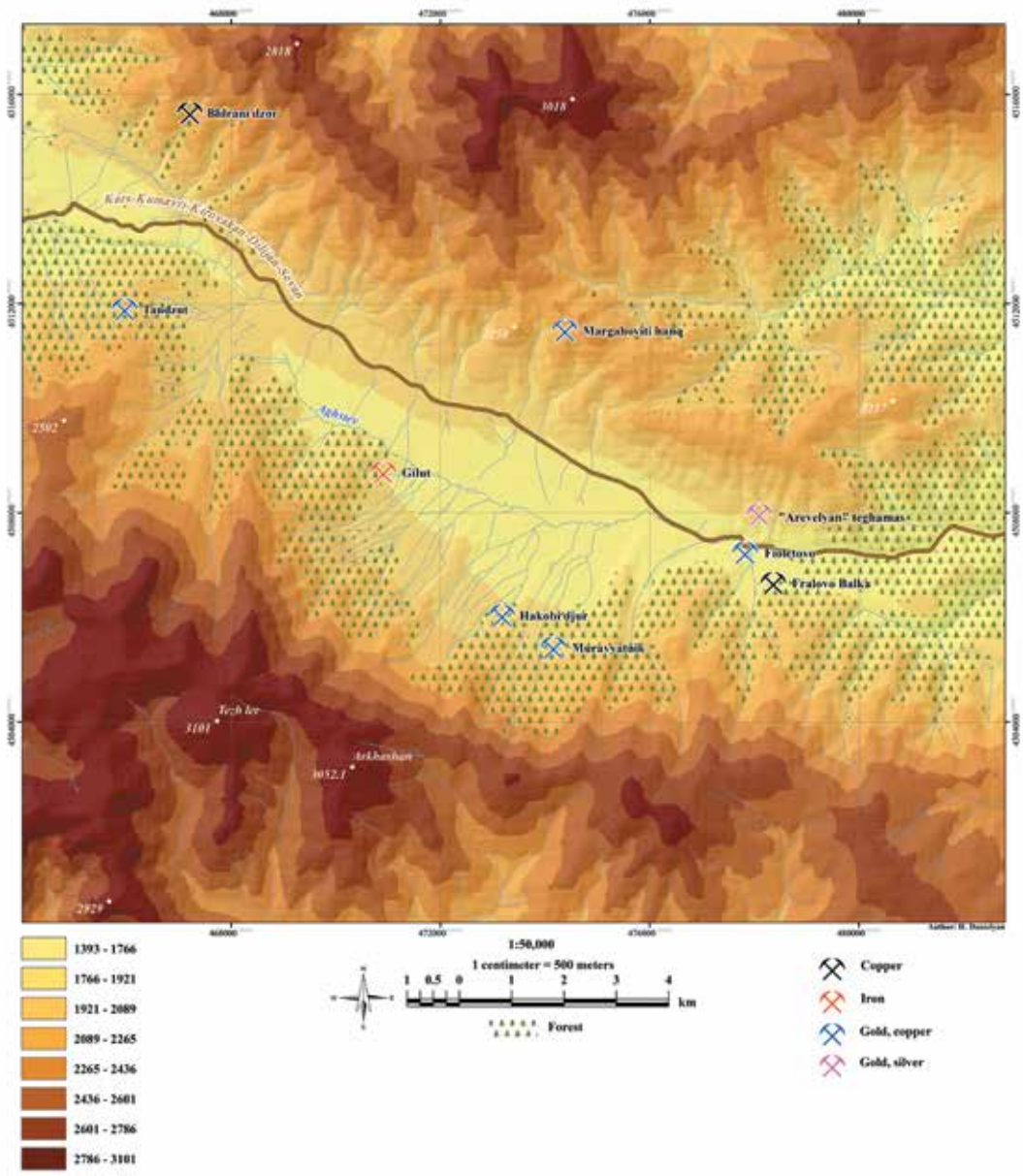

Fig. 3. Metal mines of the Margahovit plateau (Map: H. Danielyan).

ological framework in relation to the surrounding archaeological sites. However, despite this situation, we managed to find some fragments of Early Bronze Age black-polished pottery in the area, which indicate the possibility that the Fioletovo copper ore is coeval with the Early Bronze Age (cf. Gevorgyan, Palmieri 2001).

There is another important copper ore not far from Margahovit: Bldrani dsor. In contrast to Fioletovo, secondary minerals are absent here, the copper ore is represented by chalcopyrite (Vardapetyan et al. 1967, 323) and ancient metal processing traces are unknown. However, it is possible that the ores of these mines could have been used during the Late Bronze and Early to Middle Iron Ages.

Among other minerals in the region, iron, silver and especially gold are important to mention. Margahovit is the richest and most famous gold mine, where two sources of gold exploitation have been identified: the first is the radical appearances of gold-containing rocks; the second is the gold that appears in the floodplains of the Aghstev river and its tributaries (Amiryan 1984, 108).

History of Investigations at Margahovit

For the first time, the Margahovit site is mentioned in the important work of E. Khanzadyan, dedicated to the Kura-Araxes culture. In particular, when discussing the Tashir-Dzoraget region, the author writes: “An

Fig. 4. Margahovit village and its environment (Photo: H. Vanyan).

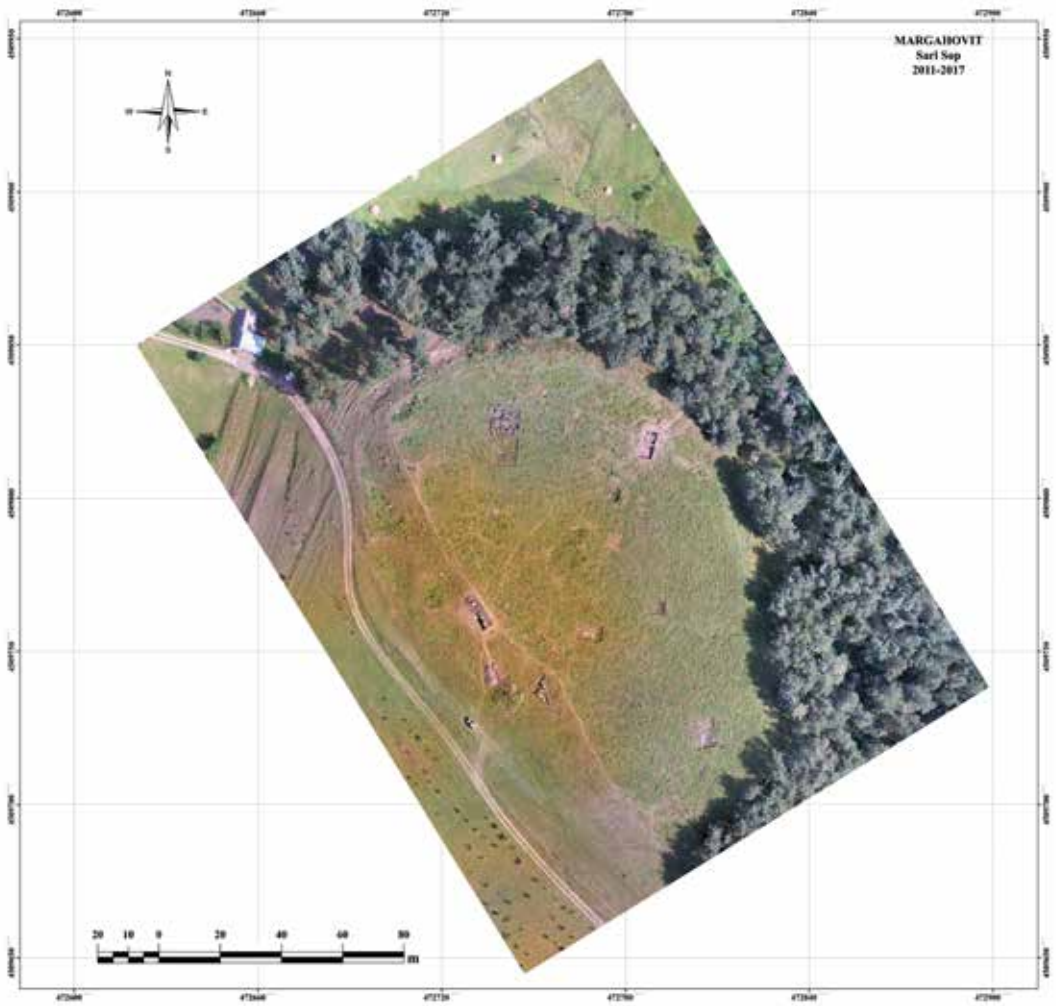

Fig. 5. An aerial view of the Margahovit site (Map: H. Danielyan).

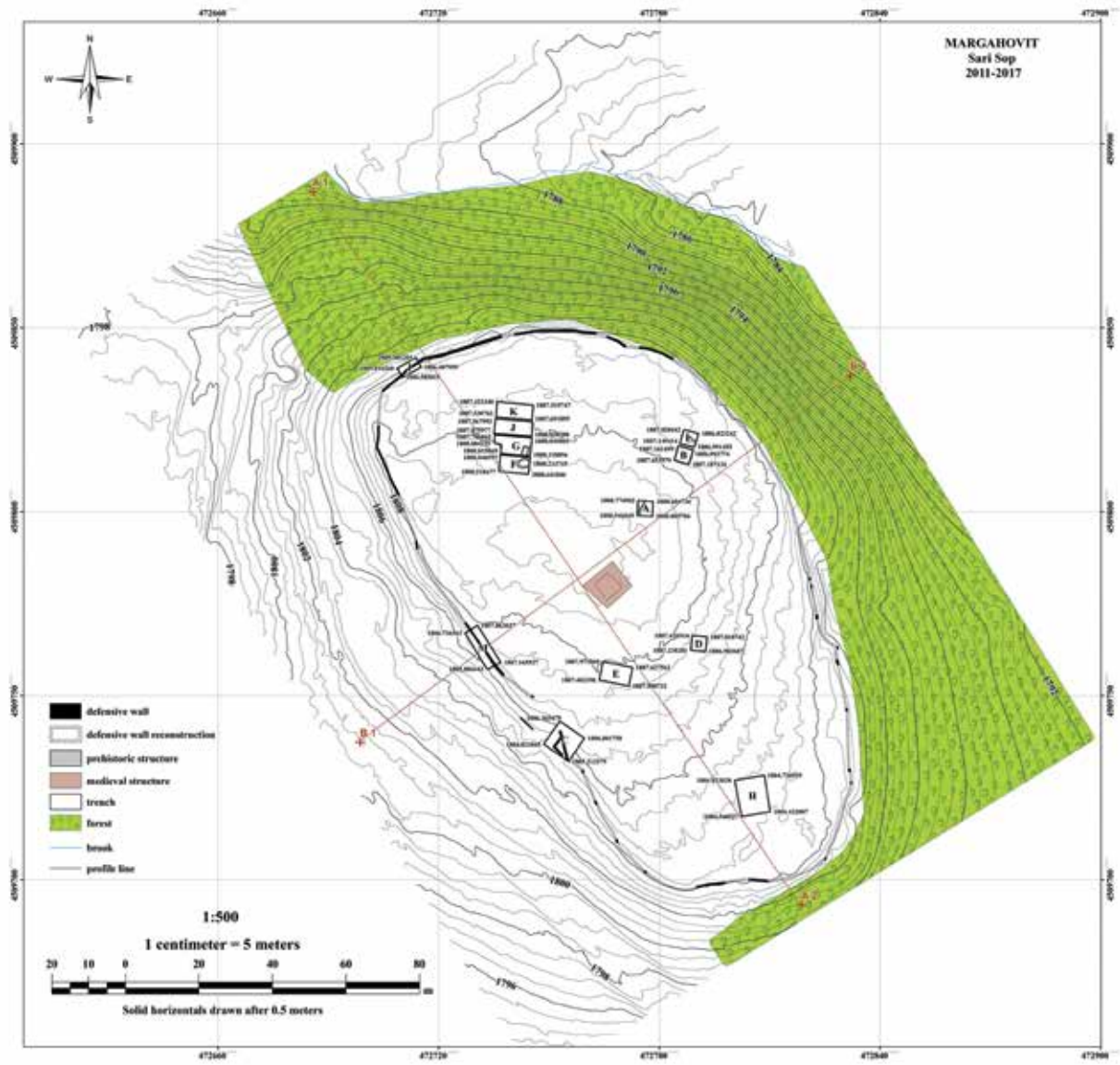

Fig. 6. Topographic plan of the Margahovit site (Graphic: H. Danielyan).

Early Bronze Age settlement was also found in the village of Hamzachiman, in the Kirovakan region, near the sources of the river Aghstev, on the hill of Sari Sop" (Khanzadyan 1967, 20). Later, the site was forgotten for a long time and is mentioned again only in the book of S. Devejyan on the archaeology of Tashir-Dzoraget region (Devejyan 2001, 21; cf. also Yesayan 1976, 190–192). Several archaeological sites in and around Margahovit, including the hill of Sari Sop, are mentioned by A. Kharatyan in his historical-ethnographic description of the village (Kharatyan 2011, 58–64). Margahovit and its antiquities are regularly reflected in the papers of geologists; particularly, in the environment of gold mines, the archaeological discoveries indicate the exploitation of these mines in ancient times (Gevorgyan, Zalibekyan 2007, 22, 26–28, 30, 48).

Archaeological interest in the Margahovit settlement increased in the early 2000s, when it was visited by A. Gevorgyan and A. Palmieri, who were excavating at the nearby site of Fioletovo. Subsequently, the site was surveyed by R. Badalyan (Early Bronze Age) and B. Gasparyan (Stone Age), with investigation of the materials of the village museum. An ethnographic research of the village was conducted by S. Hobosyan.

Excavations have not been carried out on the Sari Sop hill and the village itself[2]. In order to commence

2 Artefacts related to various periods of Margahovit prehistory are preserved in the village museum. Among them are materials which belong to the Early Bronze Age (vessels, spiral-ornament and chisel of bronze – the last two were examined by R. Badalyan and Kh. Meliksetyan) and to the Late Bronze-Early Iron Ages (vessels, including a kernos, bronze bracelet, iron dagger), that were illegally excavat-

archaeological investigations at Margahovit, our expedition visited the site and conducted surveys in 2010, spanning various methodologies including, reconstruction of the natural environment, pottery collection, site exploration, and GIS mapping. Preliminary data suggested that the settlement could have been densely populated especially during the Early Bronze Age. The question arose whether the defence structure could refer to the Early Bronze Age. Since 2011, excavations have commenced in order to shed light on the history of this remarkable site.

Results: Archaeological Excavations

From 2011 to 2017, an inter-disciplinary research team led by the Institute of Archaeology and Ethnography of the NAS RA conducted excavations at the settlement of Margahovit. The excavation zones were selected intuitively in different sections of the site. Trenches were opened in 13 sections: two in central - eastern (A, B), two in south - southeastern (D, H), two in central-western (C, E), four in central-northern (F, G, J, K), one in north-northeastern (I) and one in southwestern part (M) of the hill, with a surface area: 4 × 4 m (A, B, D, L), 4 × 6 m (I), 8 × 8 m (C), 5 x 8 m (E, F, G), 8 × 10 m (H), 4 × 10 m (J, L) and 4 × 12 m (M) (cf. Figs 9–14). In 2011, the excavations were conducted in trenches A, B, C, D, in 2012 – C, E, F, in 2013 – B, C, F, in 2014 – H, in 2016 – J, K and in 2017 – L, M. A total area of 484 m^2 was excavated. The purpose of the excavations was to obtain preliminary information on the stratigraphy and the main phases of the development of the site, as well as to date its defense system.

The thickness of cultural layers in Margahovit reaches ca. 1.8 m. Preliminary observations indicate that the settlement extended to all sections of the hill, and descended from the centre in different directions. Consequently, the deeper layers are most likely the central parts of the settlement. As a rule, the stratigraphic sequence in the settlement is as follows: quite a thick humus layer – brown stone-clay mixed soil – ash-layer (only in trench A) – clay layer/s – bedrock. As a result of excavations, the existence of a four-stage settlement is evidenced at Margahovit, where the first three stages (Early Bronze, Middle Bronze, Late Bronze and Early to Middle Iron) are documented stratigraphically, while the fourth is visible on the surface or as later intrusions in earlier cultural layers

ed mainly in a place called Achajur. Medieval pottery and a ring derive from the area called Gzraver.

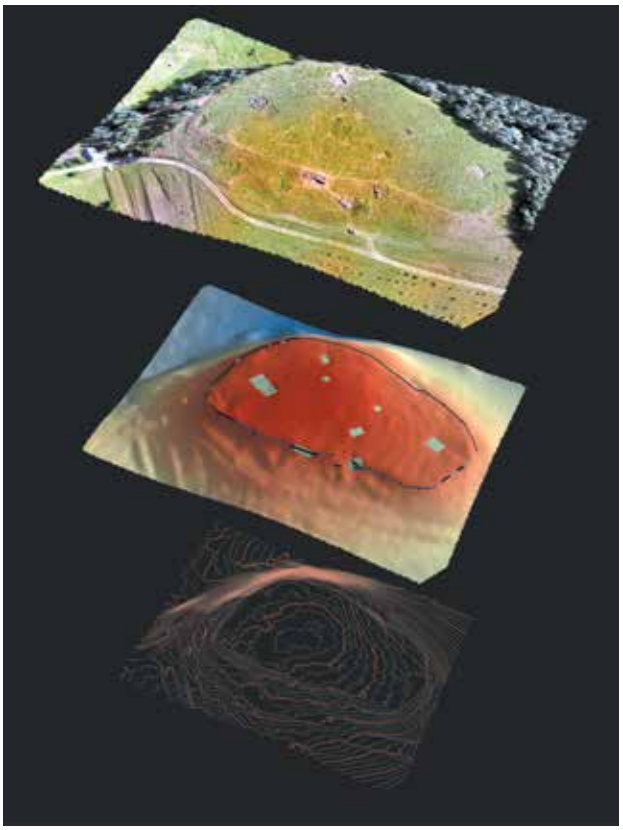

Fig. 7. 3D modelling of the Margahovit site (Graphic: H. Danielyan).

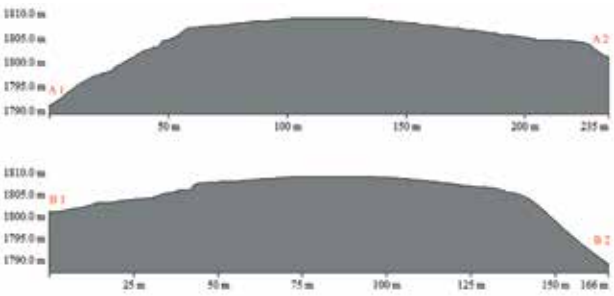

Fig. 8. Section of the Sari Sop hill, where Margahovit site is located (Graphic: H. Danielyan).

Fig. 9. Trench C, defensive wall construction, Early to Middle Iron Age, 2012 (H. Vanyan).

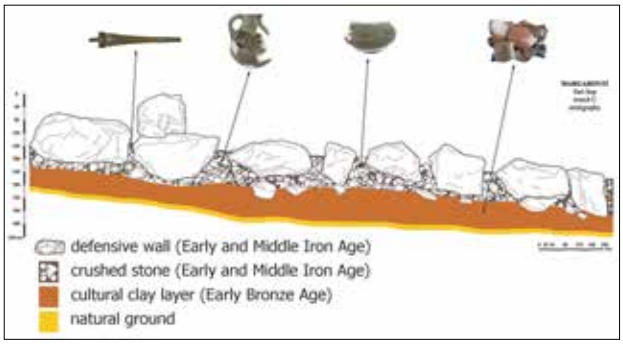

Fig. 10. Trench C, central section with location of various period materials, 2012 (H. Danielyan).

Fig. 11. Trench F, Early Bronze Age structures, 2012 excavations (H. Vanyan).

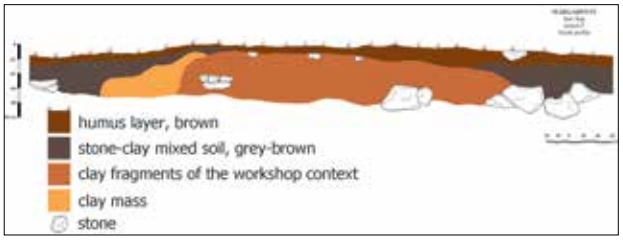

Fig. 12. Trench F, North Profile, 2012 excavations (H. Vanyan).

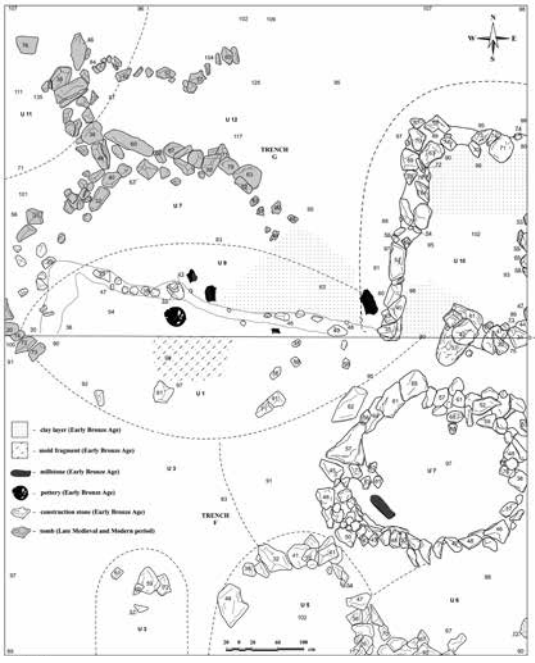

Fig. 13. Trench F and G drawing, Early Bronze Age structures and later intrusions, 2012 and 2013 excavations (H. Danielyan).

(Middle Ages, Modern period). The artefacts found in these layers (cf. Figs 16–26) confirm the mentioned sequence.

Stage I - Early Bronze Age is the main stage of habitation of the settlement, where more than 90% of artefacts were unearthed, as well as stratigraphic associations. The maximum thickness of the layer is 1.4 m, where 95% of the pottery from all trenches correspond to the Kura-Araxes culture, based on typological similarities (Badalyan 2014). The excavations in the A, C, E, F, H, J, K trenches do not clarify the stratigraphic sequence yet, while in trenches B and D, it was possible to determine two horizons (upper Ia and lower Ib).

Stage II - Margahovit is a multi-layer site and has the potential to allow the investigation of transition perods between the Early and Middle Bronze Ages (pottery traits corresponding to the Martkopi culture occur in the same context as late Kura-Araxes pottery). However, this intepretation requires more analysis and examination, as the contexts are unclear. Additional data was obtained to confirm the last stage of the Middle Bronze Age at Margahovit (Trench E, structure M4). This section suggests that the settlement of Margahovit was occupied during the entirety of the Middle Bronze Age.

Stage III - Late Bronze /Early and Middle Iron Ages are represented in the trenches A, C, E, F, G, I, M, in particular within trenches A and C, where compact contexts related to these periods were identified. Furthermore, the fortress wall is also dated to Early to Middle Iron Age.

Stage IV - Middle Ages and Modern period are represented by several medieval pottery fragments (Trenches E, F, G, M). In addition, the rectangular structure in the central part of the hill and cross-stones in the northeastern part suggest the presence of the High Middle Ages (IVa), while Muslim tombs indicate the presence of Late Middle Ages and Modern period (IVb).

The archaeological evidence corroborates that Margahovit settlement is dated mainly to the second phase of the Early Bronze Age (c. 3000–2500 BC), when the entire hill was inhabited. One charred grain of naked wheat (*Triticum aestivum/durum*; Mh-D5b) was radiocarbon dated to ca. 2876–2678 cal BC (Fig. 27) (we have used the IntCal20 curve, cf. Reimer et al. 2020). The sample preparation, chemical pretreatment, freeze-drying, combustion, graphitisation and AMS measurement were conducted at the Oxford Radiocarbon Accelerator Unit, School of Archaeology, University of Oxford. The chemical pretreatment

followed the ABA method (for more details regarding sample preparation and analysis, see Brock et al. 2010). The $\delta^{13}C$ value for this sample is – 21.7‰. Currently this period is represented by two horizons, the chronological boundary of which is still unclear. Further radiocarbon dates will confirm the detailed chronological framework. Some available archaeological finds, such as double protrusion arrow-heads and pottery typical to the Martkopi culture, suggest that one of these horizons must be chronologically very close to the very end of the Early Bronze Age (ca. 2500/2400 BC), which corresponds to Kura-Araxes II (Badalyan 2014).

The last phases of the Middle Bronze Age (about 1700 – 1500 BC) and the Late Bronze/Early to Middle Iron Ages (ca. 1300 – 600 BC) are underrepresented in stratigraphic contexts. Thus far, we can discuss the partial and spontaneous habitation of the settlement. It is postulated that craftsmen, perhaps metalworkers, occupied the central part of the hill to conduct craft activities (evidently due to layers of ash in the trenches A and E). In this regard, the importance of the site is further exemplified due to its multi-layer habitation, confirmed by the Iron Age wall, material remains and stratigraphic contexts (cf. Figs 9, 10, 14, 15).

Majority of the artefacts found during excavations belong to the Kura-Araxes culture and are represented mainly by black-polished ware, rich in ornaments and unique in many cases (Figs 16 – 26). Stylistically, there is evidence concerning the use of white and yellow backgrounds, the usual forms and ornaments. A certain number of artefacts constitute bone (elaborated cylinder tools) and stone (millstones, sickles, axes) tools. Among the unique finds are clay figurines of a bull and a dog, a broken stone axe, weights, a bronze pin and human hand prints on the clay mass. Obsidians of different origin are often used as raw materials, semi-finished products and complete objects (arrow-heads), but flint artefacts are also present (especially sickles). Among other findings, we are dealing with a smaller number of Middle, Late Bronze/Early and Middle Iron Age pottery. The dagger of "Sevan" type belonging to the same period is noticeable among the metal objects (cf. Fig. 10).

Fig. 14. Trench M, Early to Middle Iron Age fortification wall construction, 2017 excavations (H. Danielyan).

Fig. 15. Fortification wall construction in the southwestern part of the hill, 2016, not excavated (H. Danielyan).

Archaeobotanical Data

The sampling of archaeological sediments aiming to recover plant remains has been conducted at the Margahovit site during 2011 – 2014 parallel to the excavations (Figs 28 – 29). Archaeological contexts rich in ash, with less stones and gravel corresponding to well-stratified contexts were targeted for the sampling. Sixteen contexts were sampled, and the total volume of the sediments was 643 liters. Standard flotation (mesh size: 0.25 mm) method was applied to recover plant remains from the cultural sediment samples. The separated light fraction was cleaned, sorted and counted (for more details regarding applied methodology cf. Hovsepyan 2017). Approximately 1,500 units of carbonized and mineralized carpological material were recovered. Carpological material is not evenly distributed in the studied cultural layers: the density of seed material ranges from 0 to 16 units per one liter sediment. The recovered carpological material has been grouped into 42 categories, according to the preserved organs, preservation types and identified (based on morphological and anatomical features) up to species, subspecies and varieties (10), section (3), genus (22), subfamily (3) or family (4) levels. Minimum number of the identified taxa is 39.

Ten out of the 16 investigated contexts are attributed to the Early Bronze Age. Regarding the concentration of seed material, 4 of these 10 contained more than 2 seeds in one liter sediment and deserve special attention, while carpological material was too scarce in the rest of the samples for any meaningful interpretations.

The richest samples are from Trench D, particularly from Units 5a (clay semicircular structure – bone-

Fig. 16. Trench G, clay vessel, Early Bronze Age, 2013 excavations (Photo: V. Hakobyan).

Fig. 17. Trench F, clay andiron, Early Bronze Age, 2012 excavations (Photo: V. Hakobyan).

Fig. 18. Trench D, pottery sherd, Early Bronze Age, 2011 excavations (Photo: V. Hakobyan).

Fig. 19. Trench F, clay hearth, Early Bronze Age, 2011 excavations (Photo: V. Hakobyan).

making workshop), 5b[3] (stone and clay structure) and 6 (a clay structure, probably an oven). Almost one thousand seeds were recovered from 115 liters of sediments from this Trench. The sample from Trench D Unit 6 (120–125 cm depth) revealed the richest archaeobotanical material at the site so far (almost 16 seeds per one liter sediment). This 30-liters volume sample contained a lot of charcoal and 478 units of carpological material. This sample may be a reliable example for wheat-barley proportion: 9 to 1 (Fig. 28).

Preserved remains of the carpological material from cultivated plants consisted 72% of all seed material recovered from the Early Bronze Age contexts. The former were mostly represented with hundreds of fragmented and complete charred grains of cultivated cereals, of which 69% of all grain remains was possible to identify as wheat (*Triticum*) and barley (*Hordeum*), and the rest, 31%, was unidentifiable up to genus level (Triticeae gen. sp. and cf. Triticeae gen. sp.). The average ratio of wheat and barley is 86% and 14% in the studied Early Bronze Age material (Fig. 28).

The portion of wheat compared to barley varies from 64% to 100% for the Early Bronze Age contexts. Although majority of wheat remains were possible to identify as hexaploid and/or tetraploid wheat (*Triticum aestivum/turgidum*), there were some better-preserved grains as well, that helped identification and recording taxonomical diversity within the wheat genus. Evidence of wheat include small grains ("*Triticum aestivum/turgidum*, small" in Fig. 28), which are possibly apical grains of spikelets. One charred internode of a hexaploid wheat species was found allowing identification and record of bread wheat (*Triticum aestivum*). At least five species/subspecies of wheat were identified: possibly common bread wheat (*Triticum* cf. *aestivum* subsp. *vulgare*), spelt wheat (*Triticum* cf. *aestivum* subsp. *spelta*), macaroni wheat (*Triticum* cf. *durum*), emmer (*Triticum dicoccum* (including *Triticum* cf. *dicoccum*, *Triticum dicoccum* / *Aegilops* sp.) and possibly einkorn (*Triticum* cf. *monococcum*). Identifications of spelt, macaroni and einkorn wheats are based on several grains only, while grains identified as naked wheat(s) and emmer prevail (Fig. 28).

The portion of barley compared to wheat varies from 0 to 34% in the examined Early Bronze Age contexts. Majority of the recovered barley charred grains derive from hulled varieties of cultivated barley

3 One charred grain of naked wheat (*Triticum aestivum/durum*; Mh-D5b) was dated (OxA-39401) and attributed to the Early Bronze Age period.

(*Hordeum vulgare*). Presence of the lateral grains of barley triplet is an evidence of hulled six-rowed barley (*Hordeum vulgare* ssp. *vulgare* convar. *vulgare*). Meanwhile, prevailing of the middle grains of triplet supports the presence of two-rowed barley. There is also evidence of one hull-less barley grain that possibly derives from a naked variety of barley (*Hordeum vulgare* cf. var. *nudum*) (Fig. 28).

In addition to the wheat and barley findings, several grains of rye (*Secale* sp.) have been recovered and identified as well. These grains of rye are possibly from plants that were sown, harvested and consumed with cultivated wheat and barley, but we were not able to identify those with particular species of rye.

Many taxa of wild and weedy herbaceous Flowering Plants were recorded (Fig. 28). Charred kernels of poaceous plants, possibly cf. *Lolium* sp., triangle nutlets of plants from Polygonaceae and-or Cyperaceae families, mericarps of *Galium* cf. *spurium*, and capsules of *Neslia* sp. comprise the majority of the findings among herbaceous non-cultivated plants.

Number of poaceous wild grasses in the Units 6 and 5b of Trench D is notable. These seeds of poaceous wild grasses most probably derive from weeds infesting sowings of cultivated cereals that were sieved and separated from the crop. Another possibility for Unit D6 is dung of the herbivores that grazed poaceous plants, due to the fact that almost 1/3 of grasses seeds are eroded, which may be a sign that they passed through the digestive track of grazing animals. It is not a case for Unit D5b, where there are very few eroded kernels of grasses. Instead, there is another group of archaeocarpological material that may serve positive evidence for dung in Unit D5b – eroded seeds of hygrophilous plants from Cyperaceae and-or Polygonaceae families (Fig. 28). Essential number of these seeds refers to the presence of some marshy areas in the surroundings of the site; possibly these seeds are from the plants that grew along the riverbank. Eroded seeds may also derive from peat present in the valley. The presence of hygrophilous taxa could support the evidence of peat, but it is important to question the simultaneous presence of plants commonly growing in cultivated fields and around the settlement. In addition, in Units 5b and 5a, there are many eroded unidentifiable seeds that do not exhibit features of hygrophilous cyperaceous plants. Thus, it is possible that these eroded seeds derive from the dung of animals, which pastured in accessible (less swampy) wetland areas from and to the settlement. Such boggy places,

Fig. 20. Trench A, clay vessel, Early Iron Age, 2011 excavations (Photo: V. Hakobyan).

Fig. 21. Trench F, basalt millstone, Early Bronze Age, 2011 excavations (Photo: V. Hakobyan).

Fig. 22. Trench D, stone axe, Early Bronze Age, 2011 excavations (Photo: V. Hakobyan).

Fig. 23. Trench B, bull statuette of clay, Early Bronze Age, 2011 excavations (Photo: V. Hakobyan).

Fig. 24. Trench J, dog statuette of clay, Early Bronze Age, 2016 excavations (Photo: V. Hakobyan).

Fig. 25. Trench F, clay molds, Early Bronze Age, 2012 excavations (Photo: V. Hakobyan).

Fig. 26. Trench F, clay crucible, Early Bronze Age, 2012 excavations (Photo: V. Hakobyan).

wetlands suitable for pasturing, could have been riverbanks. Thus, charred seeds most likely resemble dung/peat, which could have been used as fuel.

Summing up with the present archaeobotanical data, we may suggest that the Early Bronze Age period inhabitants of the Margahovit site consumed cereal-based food. It is possible that they practiced cereal-based agriculture; however, it might have been necessary to have other remains of spikes than grains, as the cleaned grain crop may be imported from elsewhere. Even if the inhabitants of Margahovit did not practice agriculture, there should have been a simultaneous settled community(-ies) not too far from the studied site that have been practicing agriculture based mostly on the cultivation of bread wheats, hulled barley and emmer. Possibly, ecological conditions at the surroundings of the sites in the Early Bronze Age were similar to present ones: cultivated plants and weeds recorded for the Early Bronze Age period of Margahovit currently grow in the region and there is not much evidence of ecological change. Archaeobotanical data from Margahovit, in line with data from other sites of the region, confirm that Bronze Age people of the South Caucasus practiced agriculture specialized in the cultivation of cereals. From this viewpoint, the Bronze Age agriculture in the South Caucasus differs from earlier, Neolithic and Chalcolithic, and later, Iron Age, agricultural communities, when cultivation of pulses, oil-producing and other plants were common (Hovsepyan, Willcox 2008; Hovsepyan 2015).

Very little carpological material has been recovered from the contexts dated to the Middle Bronze and Iron Ages (Fig. 29). Cultivated plants recorded for these contexts are present also in the contexts dated to the Early Bronze Age. Unidentified cultivated cereals, hexaploid or tetraploid wheat(s), barley and possibly emmer were documented for 200-litre sample from Trench E Unit 4, which is a mixed context, oven and burial, where ceramics attributed to the end of the Middle Bronze Age were found. The presence of many charred mericarps of *Gallium* in this context is notable (Fig. 29).

Only unidentified cereal grains and grains of wheat were recovered from the Iron Age contexts. The most notable and rich (4 units/liter) context in terms of archaeobotany in this group is Unit 4 of Trench A, which is a burnt layer rich of charcoal. Almost two hundred seeds of non-cultivated plants were recovered from this context. Identification of these seeds revealed a range of hygrophilous taxa where the segetal and other weeds are almost absent. Four representatives of

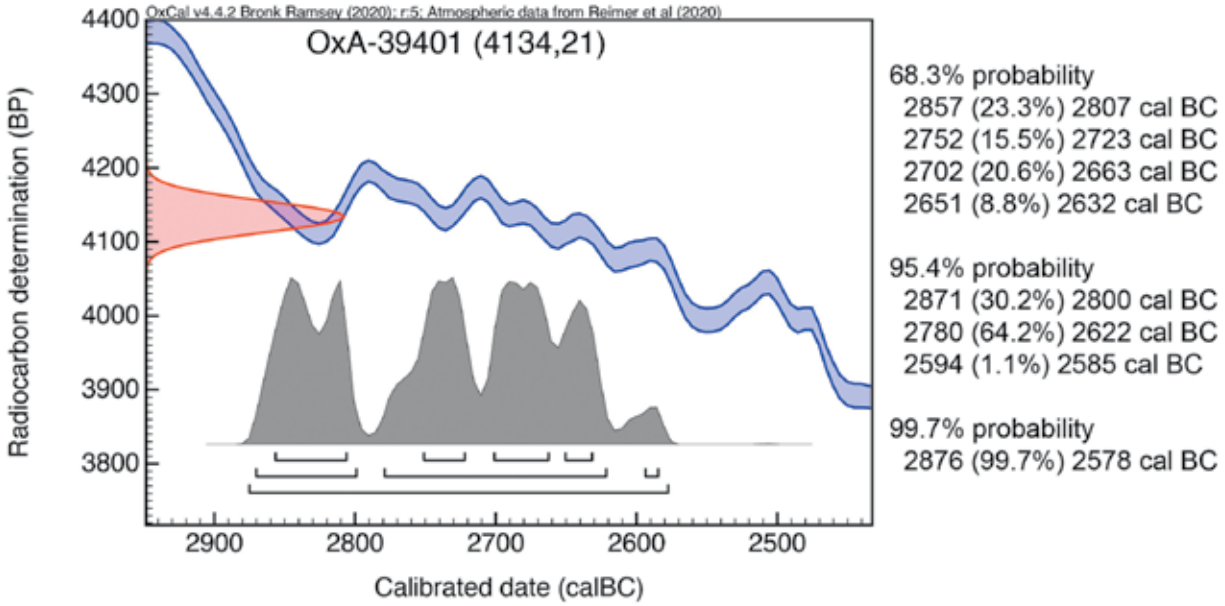

Fig. 27. Radiocarbon date of a sample (charred grain of naked wheat, Triticum aestivum/durum) from Trench D, Unit 5, Laboratory code OxA-39,401 (N. Manoukian).

Cyperaceae family, possibly species of *Eriophorum*, *Eleocharis*, *Carex* and *Schoenoplectus*, *Polygonum aviculare* (Polygonaceae) and three species of *Ranunculus* (Ranunculaceae) were recorded here. In addition, there were many eroded unidentifiable seeds in this context. This situation is very similar to the one recorded for the Early Bronze Age contexts and, possibly, regarding the use of dung or peat as fuel. Furthermore, there is evidence of some nutstones and a fruit peduncle in this context that are possibly from *Rosa*, *Malus* or *Pyrus* or other rosaceous arboreal plant.

All plant taxa recovered from the investigated site are native to the area under investigation. The cultivated ones, bread wheat, emmer and hulled barley, are the main cultivated field crops at the villages neighboring the site. The recovered herbaceous weedy taxa are common weeds of the local cereal fields and the main elements of native vegetation of the site and its environment.

Present archaeobotanical evidence from the Margahovit site are in line with data from simultaneous Bronze and Iron Age sites in the territory of the South Caucasus. This data confirms the production of cereals, particularly free-threshing wheat, hulled barley and emmer, as the main direction of agriculture of the people of Early Bronze Age Kura-Araxes culture (Hovsepyan 2015). Regarding the environment, archaeobotanical data suggests the presence of steppe, meadow and riparian herbal vegetation along with forests in the surroundings of the site.

Archaeozoological Data

Animal bones are among rare finds at Margahovit site: they appeared only during two seasons of excavations (2011, 2017) and consist of two hundred units (Fig. 30). Although the number of faunal remains is not enough for meaningful statistics, preliminary calculations may provide some preview for the proportion of animal husbandry and hunting practices, as well as to acquire information towards priorities of domestic animal husbandry.

Majority of these bones, 191 of 209, derive from the Early Bronze Age layers. Forty-two individuals were recorded among them. Bones of domestic animals (cattle, sheep and/or goat and pig) comprise 88% of the Early Bronze Age faunal material, and 67% comprise Early Bronze Age individual animals. According to the present material, cattle husbandry was the main direction of animal husbandry (84% of bones and 57% of individuals), followed by sheep and/or goat husbandry (12% of bones and 25% of individuals) and pig husbandry (4% of bones and 18% of individuals). Deer was the main prey regarding hunting activities during the Early Bronze Age, followed by mouflon, European roe deer and bear (Fig. 30).

The faunal data is typical for sites located near the vicinity of large forests and meadows; this data confirms cattle prevalence, pig husbandry and prevailing deer bones indicative of hunting activities. The faunal material recovered from Early and Middle Iron Age contexts of the site are not enough for preliminary

Fig. 28. Table of archaeobotanical materials from the contexts of the Margahovit site attributed to the Early Bronze Age (R. Hovsepyan).

Excavation year			2013	2013	2011	2011	2011	2012	2012	2013	2014
Trench			B	B	D	D	D	F	F	G	H
Unit			2	5	5a	5b	6	1	7	7	7
Context			workshop	part of stone building	clay semicircular structure - bone workshop	stone and clay structure	clay structure (oven?)	workshop	circular construction (d=2.2m)	round structure	charcoal rich layer
Charcoal			++	++	+	++	++	++	+	+	+++
Soil sample Volume (liters)		334	28	4	35	50	30	80	65	12	22
Concentration of Carpological material (units/liter)	All	3.5	1.8	8.3	2.1	8.6	15.9	0.5	0.6	1.7	0.1
	Cultivated plants	2.5	1.0	7.3	1.2	5.7	12.9	0.3	0.4	1.0	0.1
Plant Taxa	Findings (Organs)	1,169	49	33	74	432	478	42	38	20	3
Cultivated plants / All =		72%	57%	88%	57%	66%	81%	64%	71%	60%	100%
Unidentified Cereals / All Cereals =		*31%*	*39%*	*21%*	*14%*	*38%*	*26%*	*56%*	*44%*	*42%*	*0%*
cf. Triticeae gen. spp.	grains(?) remains	5	1						4		
Triticeae gen. spp.	grains fragments	258	10	6	6	108	100	15	8	5	
Wheat / (Barley+Wheat) =		*86%*	*94%*	*100%*	*64%*	*85%*	*89%*	*75%*	*67%*	*86%*	*100%*
cf. *Triticum* spp.	grains	68	5	2	1	12	35	5	3	4	1
Triticum aestivum/turgidum	grains	304	7	9	19	95	160	4	7	2	1
Triticum aestivum/turgidum, small	grains	17			2	9	6				
Triticum aestivum	rachis internode	1				1					
Triticum cf. *aestivum ssp. aestivum (vulgare)*	grains	47		2			45				
Triticum cf. *aestivum ssp. spelta*	grains	2					2				
Triticum cf. *durum*	grains	3					3				
Triticum cf. *dicoccum*	grains	23	4	5		12	2				
Triticum dicoccum / Aegilops sp.	grains	13		4		8					1
Triticum dicoccum	grains	15			1	13	1				
Triticum cf. monococcum	grains	1				1					
Barley / (Barley+Wheat) =		*14%*	*6%*	*0%*	*36%*	*15%*	*11%*	*25%*	*33%*	*14%*	*0%*
cf. *Hordeum vulgare*	grains	28			5	12	9		1	1	
Hordeum vulgare	triplet position unid. grains	37	1		6	11	13	2	4		
Hordeum vulgare (hulled)	triplet position unid. or middle hulled grains	10			2	2	6				
Hordeum vulgare ssp. *vulgare convar. vulgare*	triplet left hulled grains	2					2				
	triplet right hulled grains	2				1	1				
Hordeum vulgare cf. var. nudum	triplet middle grain	1						1			
Other cereals (possibly cultivated)											
Secale sp.	grains	5		1		2	2				
WEEDS	Weeds / All =	28%	43%	12%	43%	34%	19%	36%	29%	40%	0%
Poaceae											
Poaceae gen. spp., group 1 (long grains)	grains, fragments	33	2		3	2	21	1		4	
cf. *Lolium* sp.	grains	76	3		1	22	47	2		1	
cf. *Bromus* sp.	grains	1	1								
cf. *Hordeum* sp.	grains	2				1	1				

cf. *Aegilops/Triticum* sp.	grains	2				1	1				
cf. *Avena* sp.	grains	1								1	
Fabaceae											
Fabaceae gen. spp. 1 (Vicieae gen. spp.)	seeds	1					1				
Fabaceae gen. spp. 2 (small seeded)	seeds	1					1				
Rubiaceae											
Galium cf. *spurium*	mericarps	26	7	2	3	3	4	2	3	2	
Asperula sp.	mericarps	2					2				
Boraginaceae											
Buglossoides arvensis	erems b/m	3	2			1					
	erems b/m&b	8				7	0.5				
Polygonaceae											
Polygonum cf. *aviculare*	nutlets	2					1	1			
Polygonum cf. *convolvulus*	nutlets	2					1		1		
Polygonum convolvulus	nutlets	2		1	1						
Polygonaceae/Cyperaceae gen. spp.	nutlets, seeds	50			3	47					
Cyperaceae											
Cyperaceae gen. sp., cf. Carex sp.	nutlets	1						1			
Brassicaceae											
Neslia sp.	capsules	20	2		1	8	7	1	1		
Chenopodiaceae											
Chenopodium sp.	seeds	5						4	1		
Ranunculaceae											
Ranunculus sp.1 (wider)	seeds	1		1							
Violaceae											
cf. *Viola* sp.	seeds b/m	1						1			
Lamiaceae											
cf. Lamiaceae gen. sp.	nutlets b/m	1							1		
Unidentified group		7%	8%	0%	27%	12%	1%	5%	11%	0%	0%
Various herbaceous species	seeds	84	3		20	53	2	2	4		
	seeds b/m	2	1				1				

Notes: In addition to the abovementioned samples there was one 8-litre sample from Trench B, Unit 4 (pit), 2013.

Preservation of recovered carpological material: All findings of cereals and majority of other plants were charred, unless marked as the followings: b/m – biomineralized, b/m&b – biomineralized and burnt, u/ch – uncharred.

Fig. 29. Table of archaeobotanical material from the contexts of the Margahovit site attributed to the Middle to Late Bronze as well as to Early to Middle Iron Ages (R. Hovsepyan).

Year of excavation		2012	2011	2011	2013	2012	2012
Trench		E	A	A	B	C	C
Unit		4	2a	4	3	1	3
Context		mixed - oven and burial	pit with charcoal	layer of charcoal	later burial	concentration of charcoal	surroundings of dagger and EIA ceramics
Charcoal		+	+++	++++	+	+++	+
Period		MBA	EIA	EIA	?	EIA	EIA
Soil sample Volume (liters)		200	10	50	4	25	20
Concentration of Carpological material (units/liter)	All	0.6	0.1	4.0	0.3	0.1	0.2
	Cultivated plants	0.1	0.1	0.0	0.3	0.1	0.0
Plant Taxa	Findings (Organs)	128	1	198	1	3	3
Cultivated plants / All =		13%	100%	1%	100%	100%	0%
cf. Triticeae gen. spp.	grains(?) remains					1	
Triticeae gen. spp.	grains fragments	8				1	
Triticum aestivum/turgidum	grains	1	1	2	1	1	
Triticum cf. dicoccum	grains	2					
cf. *Hordeum vulgare*	grains	1					
Hordeum vulgare	grains	4					
Weeds / All =		88%	0%	97%	0%	0%	100%
Poaceae							
Poaceae gen. spp., group 1	long kernels			1			
Poaceae gen. spp., group 2	short kernels			1			
Fabaceae							
Fabaceae gen. spp. 1, Vicieae gen. spp.	seeds	2					
Fabaceae gen. spp. 2, *Medicago*/*Melilotus*/*Trifolium* spp.	seeds u/ch	3					
Rubiaceae							
cf. *Galium* sp.	fragments of mericarps	5					
Galium cf. *spurium*	mericarps	39		4			
Galium sp.	mericarps (larger round & with smaller holes)	37					
Asperula sp.	mericarps			1			
Boraginaceae							
cf. *Asperugo procumbens*	wingy capsule(?)	1					
Polygonaceae							
Polygonum cf. *aviculare*	nutlets			35			
Polygonum convolvulus	nutlets			2			
Cyperaceae							
Cyperaceae gen. sp.1, cf. *Carex* sp.1	nutlets	1					
Cyperaceae gen. sp.2, cf. *Eriophorum* sp.	nutlets (longer & bigger)			7			
Cyperaceae gen. sp.3, cf. *Eleocharis*/*Carex* sp.2/ *Schoenoplectus* sp.	nutlets (flat, wider, with "shoulders", with sected wide stylum)	2		45			
Cyperaceae gen. sp.4, cf. *Carex* sp.3	nutlets			10			
Cyperaceae gen. sp.5, cf. *Carex* sp.4	nutlets			33			
Brassicaceae							

Neslia sp.	capsules	2					1
Bunias sp.	capsules	2					
Chenopodiaceae								
Chenopodium sp.	seeds	1		1			
Ranunculaceae								
cf. *Ranunculus* sp.	seeds			5			
Ranunculus sp.1	nutlets (wider)			5			
Ranunculus sp.2	nutlets (narrower)			5			
Ranunculus sp.3	nutlets (smaller)			2			
Violaceae								
cf. *Viola* sp.	seeds b/m	2					
Apiaceae								
cf. Apiaceae gen. sp.	mericarps m						2
Rosaceae								
cf. *Rosa* (?) sp.	nutstones			2			
Maloideae gen. sp., cf. Pyrus / Malus sp.	peduncle			1			
Unidentified group		**12%**	**0%**	**18%**	**0%**	**0%**	**0%**
Various herbaceous species	seeds	15		36			

Notes: Preservation of recovered carpological material: All findings of cereals and majority of other plants were charred, unless marked as the followings: b/m – biomineralized, m – mineralized, u/ch – uncharred.

Fig. 30. Archaeozoological materials from archaeological deposits of the Margahovit site (N. Manaseryan).

Excavation Year				2011	2011	2011	2017		2011	2011	2011
Trench				D	D	D	M		A	A	A
Unit				1	3	4	2		3	4	6
Notes				grey layer	gray clay layer	round stone structure floor	section under the fortress wall		stone line	ashy layer	pit
Period		EBA		EBA	EBA	EBA	EBA	EIA	EIA	EIA	EIA
Total	***bones***	***191***		***51***	***61***	***65***	***14***	***18***	***2***	***12***	***4***
	individuals	***42***		***9***	***12***	***15***	***6***	***5***	***2***	***1***	***2***
Cattle, *Bos taurus*	*bones*	*142*	*74%*	*37*	*48*	*47*	*10*	*3*	*2*		*1*
	individuals	16	38%	3	6	5	2	3	2		1
Sheep/goat, *Ovis aries* / *Capra hircus*	*bones*	*20*	*10%*	*8*	*5*	*6*	*1*	*15*		*12*	*3*
	individuals	7	17%	2	2	2	1	2		1	1
Pig, *Sus domesticus*	*bones*	*7*	*4%*	*1*	*4*	*2*		*0*			
	individuals	5	12%	1	2	2		0			
Deer, *Cervus elaphus*	*bones*	*13*	*7%*	*5*	*2*	*6*		*0*			
	individuals	7	17%	3	1	3		0			
Muflon, *Ovis orientalis*	*bones*	*4*	*2%*			*1*	*3*	*0*			
	individuals	4	10%			1	3	0			
European roe deer, *Capreolus capreolus*	*bones*	*2*	*1%*			*2*		*0*			
	individuals	1	2%			1		0			
Brown bear, *Ursus arctos*	*bones*	*3*	*2%*		*2*	*1*		*0*			
	individuals	2	5%		1	1		0			

statistics; however, the majority of faunal material suggests cattle and sheep/goat subsistence practices.

Function and Significance of the Margahovit Community

Based on preliminary data through archaeological evidence, our interpretation for the Early Bronze Age and Kura-Araxes Culture is expanding. Due to the natural environment, which is rich in metal resources and situated in a forested landscape, it can be suggested that the Margahovit settlement served as a craft production workshop centre, specifically during the Early Bronze Age, confirming parallel evidence with the nearby specialized settlement of Fioletovo.

The most significant achievement of the excavations at Margahovit are quite complex, single use clay molds for bronze casting, the number of which exceeds 200 (Trenches E, F, H, cf. Figs 11 – 13, 25). These were designed to cast various items, while many of them are blushed as a result of the heat. It is possible that all these molds were used for casting various objects, based on the principle of a lost-wax mold (*cire perdue*).

Based on structure and morphology, such complex bronze objects or molds are not well-known among the archaeological materials of the Kura-Araxes culture. For this reason, at the initial stage of the excavations, we had some doubts regarding the chronology and Early Bronze Age layers. Thus, the archaeological context and radiocarbon date confirmed Early Bronze Age occupation. In 2013, within trench G (the main zone of the distribution of the molds), we excavated a double-handed large polished vessel, typical to the Kura-Araxes culture (Fig. 16), containing nine such molds. The molds were filled with soil up to the mouth of the vessel, which was covered by large pieces of the black polished ware of the Kura-Araxes culture. The impression was as if the content of the vessel was intentionally "sealed" with the fragments of pottery. This finding allows us to subjectively date the molds to the first half of the 3rd millennium BC.

All the bronze objects and molds known from the Kura-Araxes culture to this day indicate that the casting of the bronze was made with the use of a single or double-sided molds, without the use of lost-wax technology. Due to this, archaeologists assumed that the Kura-Araxes people were not familiar with or did not use the mentioned technology. Current evidence at Margahovit confirm that craftsmen of the Kura-Araxes culture were familiar and successfully applied sophisticated lost-wax technology. The accumulation of single-use molds in a small territory confirm the use of this particular technology. It should be noted that lost-wax technology is evident in contemporary societies in relation to the Kura-Araxes culture, particularly in Mesopotamia, Levant, Egypt, Iran, and the Northern Caucasus (i.e., Maikop) (for details cf. Chernykh 1992; Kohl 2007; Courcier 2010).

Regarding Margahovit during the Early and Middle Iron Ages, the function of the settlement during these periods is rather unclear. It is possible that the fortress and scarcity of habitation traces suggest that there was a special type of fortification system controlling the production process or road-ways. The discovery of "Sevan" type dagger and double protrusion arrow-head found immediately under the fortress indicate certain military actions during the Middle Iron Age (Fig. 10).

The main significance of the Margahovit settlement can be fully investigated when the location of the settlement system of the plateau is clarified, where the site undoubtedly played a central role (Fig. 2). In addition to Sari Sop, another hill (in the territory of the village) is known on the plateau, as well as tombs and sites of Karhank, Gzraver, Aybasan/Djaghacner, Achajur, Gruzinskaya Gorochka, Burtsevo, Shavrukh, Fioletovo, and Lermontovo[4]. Based on the surface material, it can be argued that the main phases of habitation were Early Bronze Age (Gzraver, Achajur, Fioletovo, Shavrukh, and Lermontovo), the Late Bronze-Early and Middle Iron Ages (tombs in Margahovit village, Achajur, Gzraver, Fioletovo, Shavrukh, Gruzinskaya Gorochka, and Lermontovo), the Middle Ages (Gzraver, Aybasan, Fioletovo, Shavrukh, and Gruzinskaya Gorochka). So far data is lacking on the Neolithic-Chalcolithic and the Late Iron-Hellenistic periods. Furthermore, it is significant to note the lack of Urartian materials. This might be based on a few interpretations: during the invasions of the king Argishti I, the Urartian army moved from the left bank of the Araxes river through the road over Kars-Kumayri-Kirovakan-Dilijan-Sevan. Furthermore, we can take into account the possible identification of the toponym Alishtu with the name of the Aghstev river (Arutyunyan 1970, 200; cf. Eremyan 1969, 19). From this point of view, perhaps the Urartians crossed the Aghstev river for vari-

4 In literature, two sites are mentioned: Fioletovo, where single year excavations were carried out (Gevorgyan, Palmieri 2001, 11-13) and Lermontovo, where a survey visit was conducted (Badalyan, Avetisyan 2007, 295).

ous purposes, aside from invasions, but with the aim of crossing important roads, transporting resources/goods, and/or accessing metal ores (cf. Esayan 1976, 215). Thus, according to the available data, the Urartians did not settle in this region. On the one hand, this can be further explained by the fact that the area was well protected. On the other hand, it is imperative to take into consideration that the Urartians rarely settled in forest-based landscapes and territories.

Conclusions

Excavations in this particular region of Armenia are extremely imperative to our understanding of modern Armenian Archaeology. In particular, the investigations at Margahovit are of great importance. Firstly, these excavations are essential in the regional context, while Margahovit plateau is an archaeologically completely unknown region. The excavations at Margahovit are the first attempt of systematic investigations, unearthing a multi-layer settlement. The location of the site in the vicinity of metal mines is essentially supplemented by archaeological data, primarily through clay molds. The community that settled at Margahovit during the Early Bronze Age was most likely specialized in craft production. Archaeobotanical and archaeozoological data particularly reveal an environment with large forests and meadows in the surroundings and a community, which practiced subsistence and consumption of cereal-based free-threshing wheat, hulled barley, emmer, as well as sheep, goat, cattle and pig husbandry. Future expeditions in this region and at Margahovit will shed light on the Kura-Araxes culture, particularly the end of the cultural sequence and subsequent occupation layers. Thus, further investigations in this important region will deepen our knowledge on its local and interregional significance.

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Maikop-Novosvobodnaya Community: Problems of Internal Typology, Chronology and Distant Connections

Sergey Korenevskiy

Institute of Archaeology of the Russian Academy of Sciences

Abstract. The article presents the current stage of the study on Maikop-Novosvobodnaya community. The current data confirms the division of the Maikop-Novosvobodnaya community into four types that have different chronology and distribution area. Maikop-Novosvobodnaya community existed between 3900 3000/2900 BC. The earliest stages are the Maikop and the Psekupskiy types in the central part of the Pre-Caucasus. Sites of this period are preserved on the Terek river in the Central pre-Caucasus. In the later period the Psekupskiy type coexisted with the Dolinsky and Novosvobodnaya types. The Maikop type reflects closest proximity to Leylatepe culture as well as to the sites of North Mesopotamian area during the Early and Middle Uruk periods.

Keywords: Maikop community, distribution area, typology, chronology, long-distance connections, metal.

Introduction

At the beginning of the 4th millennium BC tribes of farmers, pastoralists and warriors with an unusually developed for its time material culture suddenly appeared in Caucasian region[1]. They are known as tribes of the Maikop-Novosvobodnaya community. In those times, weapons made of copper and bronze were just beginning to come into use in the Caucasus and Europe. However, among the tribes of this community were already skilled metallurgists and blacksmiths who could produce bronze daggers, axes, hoes, woodworking tools, jewelry made of non-ferrous metals of high prestige and dishes of silver, gold and bronze. Their economic way of life was associated with surface hoe farming and pastoral cattle breeding. They were not nomads and led a stationary way of life on settlements near the rivers, changing places of being from time to time. Wheeled transport was not known. Modern research on typology, features of the metal composition and metalworking technologies suggest that the Maikop tribes used the products of their own copper smiths, metallurgists and jewelers relying on local sources of metal (Greater Caucasus, especially its northern part). South Caucasian sources were not the basis for their metalworking (Gevorgyan 1980; Korenevskiy 2011; Rindina, Pavich 2019).

Internal Typology of Maikop-Novosvobodnaya Community

Currently we possess information about 25 settlements of the Maikop-Novosvobodnaya community and more than 250 tombs. This community has been always been regarded as a multi-component phenomenon (Krupnov 1957, 56; Iessen 1950; Munchaev 1975; 1994). New materials confirm this approach and allow to define four types of the community based on the typology of ceramic, settlement and graves: Early Maikop (Gulygaevsko-Sereginski) , Early and Late Psekupsky, Dolinsky and Early and Late Novosvobodnaya, as well as sites of Kuma-Manych in Stavropol region and in Kalmykia steppe zone (Korenevskiy 2004).

Already M. Rostovtsev, based on his deep erudition, defined Maikop-Novosvobodnaya community analogues to the proto-writing period in Mesopotamia (Rostovzev 1920;1922). However, this date has not been accepted for a long time. A turning point in this context were 1970s: M. Andreeva after attending the fundamental course of V. Titov in Near Eastern and Anatolian archaeology at Moscow State University, went back to Rostovzevs opinion (Andreeva 1977; 1979). Currently the dating of Maikop sites is based on radiocarbon dates. It analogues to Leylatepe culture,

1 The article was written within the frameworks of the State task (Goszadanie) no. AAAA-A18-118011790090-1.

North Mesopotamia and Eastern Turkey (Arslantepe), according to which Maikop culture lasted between 3900–3000 and 2900 BC, with three most obvious ranges: Early Maikop (3900/4000–3700/3600 BC), Middle Maikop (3600–3400 BC) and Late Maykop (3400–3000/2900 BC) (Korenevskiy 2004; 2011). Chronological scale of the Maikop-Novoslobodnaya community is comparable with Arslantepe (Vingnola et al. 2019): Arslantepe VII (3900–3350 BC) corresponds to the Early and Middle Maikop, Arslantepe VIA (3350–3000 BC) to the Late, Arslantepe VBI (3000–2900 BC) to the latest stage of the Maikop-Novosvobodnaya community (Korenevskiy 2020).

The Early Maikop (Galugaevsko-Sereginskiy) type was spread widely. It had a specific ceramics of North Mesopotamian forms with molding masses without artificial mineral impurities of the so-called class 1 with corresponding marks (Fig. 1/1–4). It bears great resemblance to the culture of Leylatepe. Its later sites (known from Terek region, for the settlement Gulyaevskoye (cf. Korenevskiy 1995) date back to the third quarter of the 4th millennium BC. The funeral rites of this type assumed the construction of small and large mounds over military burials and graves. The most outstanding of them is the Maikop kurgan (Fig. 2) and kurgans in the village of Zamankul in North Ossetia, which are burials of the elite with an abundance of gold, weapons, woodworking tools, metal objects and a lot of precious utensils. Grave no. 70 in Zamankul is dated to 3640–3500 BC. These tribes began to bury in ground tombs in addition to burials in the pits.

The Psekupsky type differs from the Early Maikop. The class 1 pottery does not have marks, but has a polished ornament on the top of the vessels. Pottery has usually squat forms (Fig.1/5–7). Painted ceramics spread in the Black Sea zone are marked with red and brown paint. Early sites of the Psekupsky type date to the first half of the 4th millennium BC. They are rare and are known mainly from the Central Caucasus. Later sites of this group date back to the second half and the end of the 4th millennium BC. They are recorded mainly in the Western Caucasus and the Black Sea zone. In the Black Sea coastal strip of Krasnodar region some new settlements of this group were opened recently. At Chekon and Tuzla-15 semi-earth dug dwellings, household pits, tools made of bone, impact tools made of stone, a large number of ceramics of 1 and 2 classes, animal bones were excavated (Fig. 3). It is important to note, that the cultural layers in the settlements of Chekon and Tuzla-15 have a thickness of more than 50 cm, which indicates on the long-time existence. Tuzla-15 is dated to the first centuries of the 3rd millennium BC

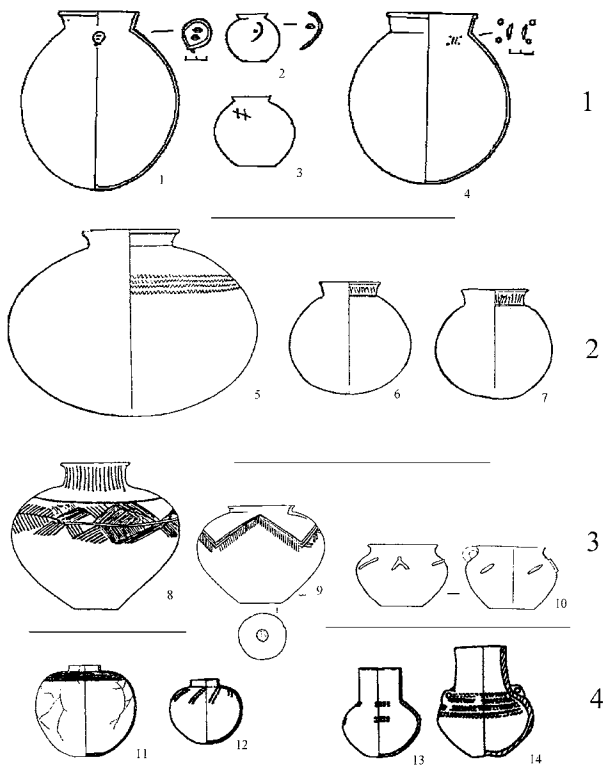

Fig. 1. Diagnostic types of the vessels of Maikop-Novosvobodnaya community: 1–4. Maikop type; 5–7. Psekupsky type; 8–10. Dolinsky type; 11–14. Novosvobodnaya type (Korenevskiy 2004; Rezepkin 2012).

(Bochkovoy et al. 2013; Korenevskiy, Yudin 2019; Yudin, Kochetkov 2019; Korenevskiy, Davudov 2019; Shishlov et al. 2013; Korenevskiy 2018; 2019).

The Dolinsky type was common in Central Caucasia and is characterized by flat-bottomed ceramics of the class 1 (Fig. 1/8–10). It dates from the second half and the end of the 4th millennium BC (Korenevskiy 1993). Dolinsky type is mainly explored in funerary sites to be represented by burials on the surface (with the use of pebbles) and in deep pits. The most prestigious burials are made in the stone ground tombs with the use of anthropomorphic statues (Nalchik and Kishpek tombs). Dolinsky type finds analogies in Kura-Araxes sites (slanting rollers and prints on button of the vessels), such as those in Velikent II (Figs 1, 9, 10), has high level metal-working represented by bronze boilers, daggers with forged grooves, shaft-hole axes, pitchforks, rings for controlling bulls, gold rings (Kantorovich, Maslov 2009; Kantorovich, Maslov, Petrenko 2013; Korenevskiy 2011; Rindina, Pavich 2019). Nalchik tomb dates to ca. 3099–2943 BC (Hansen et al. 2017).

The Novosvobodnaya group is known in the foothills of the Adyge at altitudes up to 600 m above sea level (Popova1963; Rezepkin 2012). Especially

Fig. 2. The part of the findings from Maikop kurgan (Korenevskiy 2011).

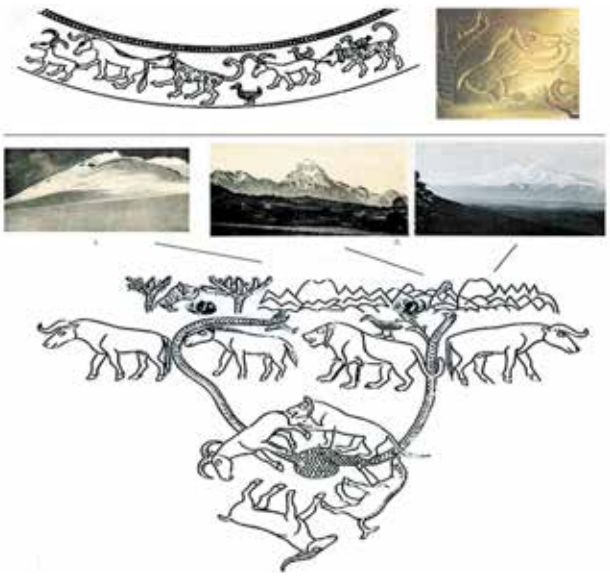

Fig. 4. The animal scene on the silver cup from the Maikop kurgan (Korenevskiy 2004).

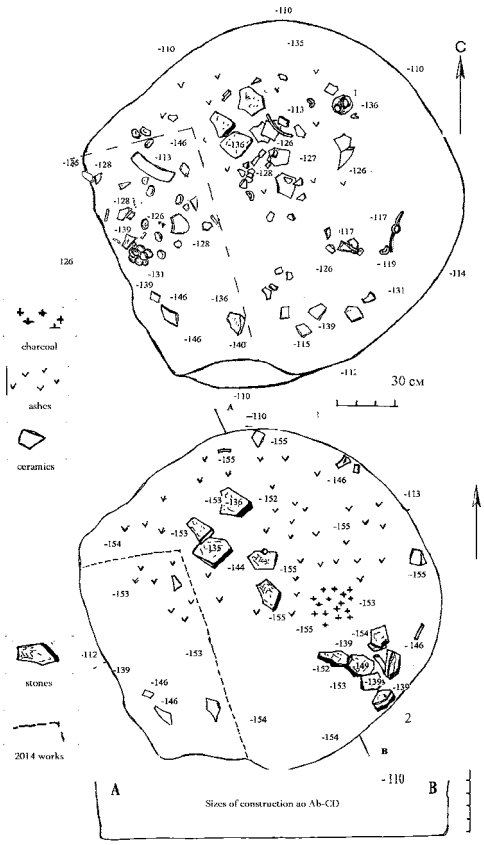

Fig. 3. Semi-earth dug dwelling in the Settlement of Tuzla-15 (Korenevskiy2004).

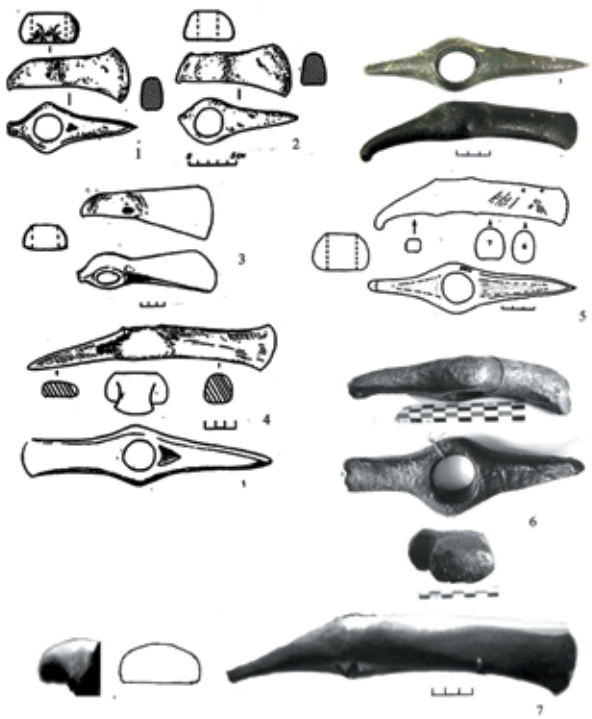

Fig. 5. Axes of Lechinkay type, axe-hoes, picker-axes, axe-hammers with bushings. 1. Lechinkay, Russia; 2. Pyatigorsk, Russia; 3. Ayrum, Armenia; 4. Ust-Labinsk, Russia; 5. Veremye, Ukraine; 6. Gyumri, Armenia; 7. Yerevan, Armenia (1–5. Korenevskiy 2011; 6. Gyumri museum, Armenia; 7. History Museum of Yerevan; 2, 7. Occasional finds).

Late Novosvobodnaya graves are known with great quantities of metal finds. Pottery of the late stage of this group is very specific: these are made of molding masses with mineral impurities (Fig. 1/11 – 14). The Early Novosvobodnaya group dates from the one - to the second half of the 4th millennium BC.

Material Culture and Distant Connections

The Maikop-Novosvobodnaya community reflects a phenomenal culture with original copper-based products and the use of noble metals. Recent monographs demonstrate the local origin of metallurgy of this community (Korenevskiy 2011; Ryndina, Ravich 2019). Maikop copper-based products contain high arsenic content and have long been called arsenic bronzes. Some of them have high nickel content. The use of such additives was very significant, since nickel, as shown by the research of I. Ravich, was able to hold arsenic with high volatility in the alloy. It led to their widespread distribution in the 4th millennium BC in the Near East before the appearance of tin bronzes in the region in 3rd millennium BC. Now the question remains how much the Maikop masters were familiar with tin and its copper additives. The questions rose after the fact of tinning of one of the Maikop vessel was established, according to the study of N. Ryndina. The authors of the mentioned monographs have a different and quite generally restrained attitude to the possibility of identifying the composition of finished products with ore sources, according to emission spectral analysis, which was carried out by previous researchers in laboratories of Moscow, St. Petersburg and Baku. In preparing their work N. Ryndina and I. Ravich obtained data on the micro-content of uranium in Maikop products in bronzes and suggested that this is one of indicators for the exploitation of local ore sources, which also contain micro content of this radioactive element.

Materials of the Maikop-Novosvobodnaya community reflect a wide network of contacts to the Near East and the South Caucasus. Symbolic contacts are illustrated by scenes on silver cups of procession of animals and the image of two trees with the animal risen on hind legs. These compositions may be associated with the widespread Near Eastern worship of the Tree of Life and its magical fruits or flowers. The symbol of this cult are also gold flowers on gold ribbon headdress found on the deceased person, the festoons on the foreheads of the figures of bulls (Korenevskiy 2012, 66 – 80, fig. 4).

Axes of the Lechinkay type, dating back to the Early Maikop type, have a peculiar shape of the socket, which in the section resembles the head of a mushroom (Fig. 5/1 – 3) and find parallels in Ariushed type axes of the Danube region Chalcolithic sites (Fig. 5/4) and pick-axes of the South Caucasus (cf. Yerevan hoard) (Fig. 5/7). The mold of the socket of such an axe was found in the village of Ayrum, Allaverdi (Fig. 5/5) and those of hammer-axe in Gyumri (Fig. 5/6) (Korenevskiy 2011, 246, fig. 47/2; 247, fig. 48/1).

The tradition of the production of pick-axes with oval mushroom socket in the South Caucasus can refer to an earlier time than the date of the sites of the Kura-Araxes culture. A clay mold of such an axe was found at the settlement Dzudzuebi IV3 in Bolnisi (Georgia) in the layer of the Sioni-Tsopi culture, located on the northern periphery of the Alaverdi ore region (Stölner, Gambashidze 2018)[2]. The date of the Sioni-Tsopi culture is associated with the end of the 5th – beginning of the 4th millennium BC (Sagona 2014, 36). According to I. Gambashidze, the date of the pit itself, in which the mold of the picker-axe was found together with the ceramics of the Sioni-Tsopi culture, corresponds exactly to the end of the 5th millennium BC. It chronologically coincides with Ovcular Tepesi (Marro et al. 2009), and Ariushd and Yasladan type axes of Danubian Chalcolithic (Tripolie BI – BII, BII) (Ryndina 2002, 257). These analogies allow to think that the idea of a complex axe with an oval sleeve, cast in an open clay mold from below, appeared in the South Caucasus at the end of the 5th millennium BC, probably under the influence of the Danube Chalcolithic centres. Then it was accepted by local tribes of the pre-Kura-Araxes culture. It should be noted that in Caucasus we are not faced with imports from the Danube region, but with the independent production of such weapons.

The Early Maikop sites (Kudahurt, Grave no. 3) reflect long-distance links based on lapis lazuli trade (Fig. 6), which was delivered to Mesopotamia and to the South Caucasus from the Badashkhan sources in Afghanistan, and from there through the passes to Maikop. Lapis lazuli thus was transported for 1500 km from East to West (Korenevskiy et al. 2008).

At Psekupskiy type sites cylinder seals have been dound. On one of them, discovered in the Krasnogvardeyskoye Kurgan 4 deals with the symbolism of the Tree of Life. Another seal from the settlement Chekon bears a parquet ornament (Fig. 7/3 – 4) (Nehaev 1986; Bochkovoy et al. 2013: this ornament is known also on

2 I express my gratitude to I. Gambashidze for her consultation on the dating of the mold from Dzudzuebi.

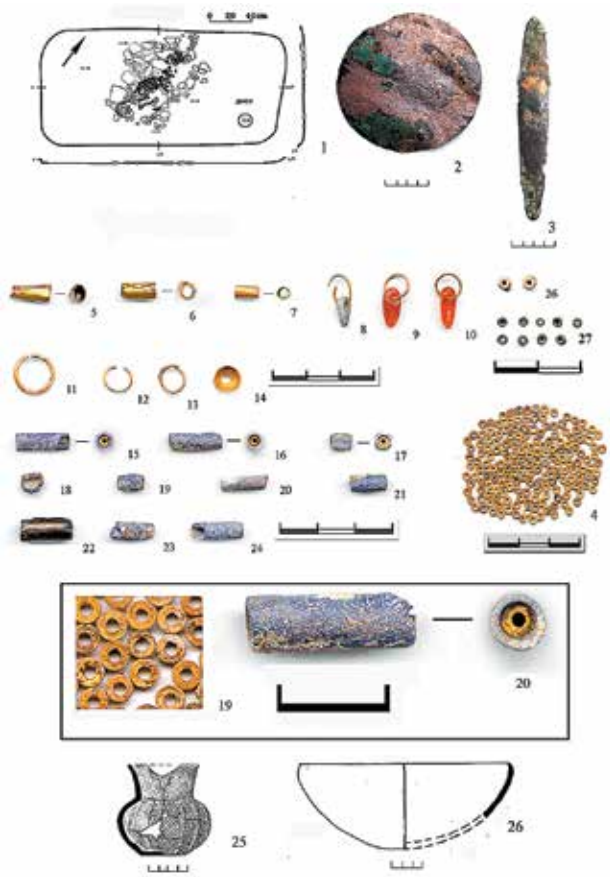

Fig. 6. Findings from the Kudahurt kurgan, grave no. 3 (photo: S. Korenevskiy).

Fig. 7. Seals of the Psekupskiy type of the Maikop-Novosvobodnaya community: 1.Krasnogvardeysk, Russia; 2. Mesopotamia; 3,4. Chekon, Russia; 5–8. Natukhaevskoe-3, Russia (1. Nekhaev 1986; 2. Amye 1961; 3, 4. Bochkovoy et al. 2013; 5–6. Shishov et al. 2013).

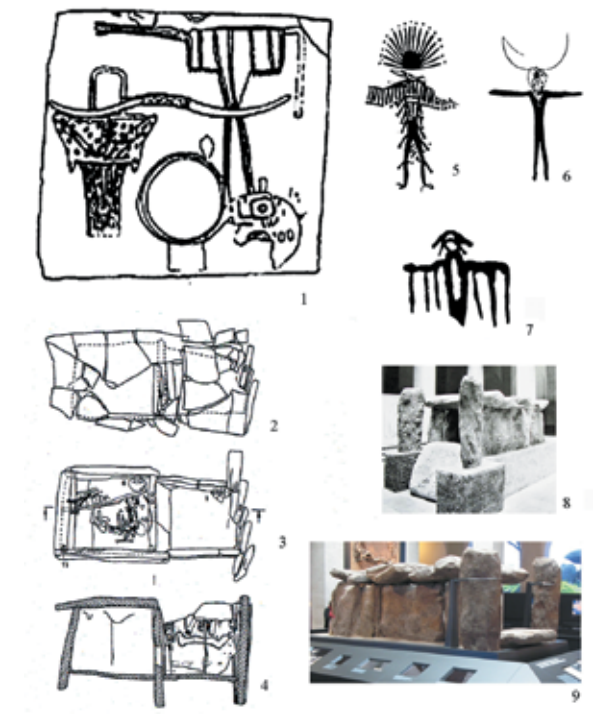

Fig. 8. Stone tombs of Klady and Haale cemeteries, as well as paintings in stone boxes from different sites: 1–4. Klady, Russia, tomb no. 28; 5–7. Karakol, Altay; 8,9. Haale, Germany (1–7. Rezepkin 2012; 8–9. Schunke 2013a).

Fig. 9. Analogy of the vessels of Novosvobodnaya group and the statue of the Serezlivskiy type from the settlement of Checon: 1–Novosvobodnaya, kurgan no. 2; 2. Klady, kurgan no. 31, grave no. 5; 3. Sophiaevka burial ground; 4. Hamangia culture, stage III; 5. Chekon settlement (1. Popova 1963; 2–3. Videiko 2004; 4. Todorova 2002; 5. Yudin, Kochetkov 2018).

a fragment of a head of a clay prefix to the fire place, fig. 7/5–8. For Mesopotamian parallels cf. Tonussi 2007, 178, SM/9).

Western connections are demonstrated on examples of Novosvobodnaya megalithic tombs (Fig. 8/1–4), which find analogues in the tomb of Haale of the Funnel Beaker culture (Fig. 8, 9) (Schunke 2013a, 144; 2013b, 151–155). Apparently, these are different kind of sites however they reflect close ideas of the symbolism of the popular weapons of rapid-fire complex bow and quiver. Paintings depicting a magician or shaman on the wall of the Grave no. 28 in Klady (Fig. 8/1) finds parallels in the Altai among paintings of the tombs of the burial of Karakol (Fig. 8/5–7) (Kubarev 2009, fig. 57, 137).

The question of cultural relations with the tribes of the Late Tripolie culture can be discussed when comparing vessels with high tapering neck of Novosvobodnaya graves (Rezepkin 2012, 151, fig. 22/4; Popova 1963, tab. 12/2) and ceramics of the Sophievskaya group (Videyko 2004, 492; Fig. 9/1–4). A statue of the Serezlievskiy type from the settlement Checon (Korenevskiy, Yudin 2019; Fig. 9/5) finds parallels in Late Tripolie culture (3200–2750 BC) (Videyko 2004; Kovaleva 2004).

Conclusion

Taking into account the nature of saturation of the Maikop graves gold, metal kitchenware, stable combination in burials of the elite sets of weapons and implements of work (axes, daggers, adzes and chisels), distribution of pottery with symbolic labels, it is possible to interpret the rituals of these tribes as a reflection of proto-chiefdom and of early prepolitarian society (Semenov 1993, 587; Korenevskiy 2011, 136–140) with essential long-distance contacts in various directions.

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Symbols of Power: Portraits of Hero-Kings and a Battle Chariot from the Royal Tomb of Verin Naver, Armenia

Hakob Simonyan

Scientific Research Center for Historical-Cultural Heritage, Armenia

Abstract. The mid-2nd millennium BC in the Near East was a time of powerful central governments based on military prowess and access to goods from a wide area. The interconnections among the states over the Eastern Mediterranean, Levant, Mesopotamia, and Iran led scholars to name this time span as "period of rivalry of great powers". In discussions of this period the South Caucasus, especially the Armenian Highland is often forgotten, although it seems to be one of centers of vital resources, communication routes between Ancient Near Eastern countries. For the leaders and their close associates of the period under discussion the symbolism of power has been reflected among others also in appearance of the spoke-wheeled chariot and the horse. In this article the distribution of chariot burials in Armenia from the Middle to the Late Bronze Age will be discussed, especially in context of corresponding tombs at the necropolis of Verin Naver.

Keywords: Armenia, Verin Naver, Bronze Age, royal tombs, symbols of power, battle-chariot, medallions, depiction of hero-king.

Introduction

After the decline of Kura-Araxes cultural tradition at about 2450/2400 BC, which was known for its agricultural way of farming, Armenia entered a long period (2400–1550 BC) of more mobile, militaristic organization mainly represented by tombs that compose more than 70% of the total number of known sites and only few apparent settlements (Simonyan 1984, 8–9; Smith 2005, 260–264). Many tombs containing high status burials, given the militaristic focus of the society, featured military equipment and arms. The essential expressions of superior status of power are the big kurgans and huge grave chambers with finds indicating on symbols of power: especially the vessels made of gold and silver, adornments of metal, precious stones, colored glass beads, cylindrical seals, human and animal sacrifices, particularly horses should be mentioned. Chariots, horse bits and other equipment related to charioteering, of which in many cases only metal parts are preserved, symbolized the social and military highest power.

Recent excavations in Armenia revealed evidence of sacrifice of domesticated horses at the end of the 3rd millennium BC. Domesticated horse was first attested in Armenia at a Middle Bronze Age necropolis Nerkin Naver (Uerpmann, Uerpmann 2010, 241), although there is an ongoing discussion whether there was horse breeding during the Kura-Araxes period. Mesopotamian kings have always looked to the Armenian Highland as a source of horses, because they were an important means to increase wealth, present as symbol of rank and ascertain authority (Diakonoff 1968, 42). The funerary rite of cremation of nobility and sacrifice of horses lasted at Nerkin Naver for more than two thousand years, from 2300 BC to 100 AD (Simonyan, Manaseryan 2013, 183, 203–204).

Over the next millennium across the Ancient world, including Armenia, larger and more centralized societies emerged with their monumental architecture, large towns, and signs of clear social stratification. Rulers of state societies established capital cities and controlled large territories and populations across the Ancient World. Military organization was at the heart of these societies. The Kassites, thought to have been of mountain origins, conquered Babylon and were in competition with the Middle Elamite states of Iran (Potts 2006, 117–119). By the beginning of the Late Bronze Age (ca. 1550 BC), fortresses and fortified towns occupying up to 30–100 hectares dotted Armenia's landscape. They were built by the hundreds throughout the Armenian Highland, including Georgia, Eastern Turkey and Northern Iran (Arakelyan 1996, 70–86). Their leaders, like in the Middle Bronze Age, constructed tombs covered with tumuli, encircled with stone circles-cromlechs, and containing many riches.

In the first half of the 2nd millennium BC in Middle East, horse-drawn chariots with spoked-wheel replaced the earlier one's wagons that had solid wooden wheels, which were pulled by bulls and mules. Schematic images of wheel with spokes, which probably symbolized chariots, we can see on the black-polished big jug (karas), found from grave no. 2 in Nerkin Naver, dated by the 2100–2000 BC (Fig. 1). As a result, battle chariots became lighter, more agile, and faster. If horses pulled them, their efficiency and lethality was enhanced (Piggott 1983, 196–215; Moorey 1986, 196–215). These battle horses and new lighter chariots changed the former military balance of power (cf. a portrayal of a horse herd on a pot from Verin Naver kurgan no. 7 (1950–1850 BC)), which is one of the earliest examples in the broader region (Fig. 2).

The Hyksos used this new military technology to overcome the Egyptian thirteenth dynasty (Oren 1997). Battle chariots increased the force of armies by multiple times. It resulted in the formation of ancient Near Eastern empires such as the Hittites, Mitanni, Babylon, Assyria, New Kingdom of Egypt, and Elam. These empires in their turn waged endless wars against one another in order to establish hegemony over territory, capture favorable habitats, get new sources of raw materials, and cheap labor (Zablotska 1989, 227–229).

Chariots were very common. In addition to those, stele, paintings on walls, and other media, often associated with internments, marked common themes shared across these ancient states, yet portrayed in local artistic traditions. The new kind of battle chariot and the horse symbolized power and authority across the regions from the Eastern Mediterranean to Iran. However, the fundamentally important data from Armenia are absent from a number of new studies concerning chariots and charioteering in the Ancient Near East (Feldman, Sauvage 2010, 67–181), despite the fact that earlier such finds from Armenia were included in publications concerning this topic. The inclusion of this region in the interconnections is fairly clear. Big waterpots with horse and chariot are evident there from the Middle Bronze Age.

Among earlier finds from Armenia especially important was the discovery of eleven battle chariots and ritual funerary carts from the excavations of elite burials at Lchashen on the shore of lake Sevan in the second half of the 1950s and early 1960s. Since for more than three thousand years the tombs had been filled with water, because of the rise of the surface of the lake, the preservation of organic materials, including

Fig. 1. Schematic images of wheel models with spokes on the black-polished pithos, found from Tomb no. 2 at Nerkin Naver, dated ca. 2100–2000 BC (Photo: V. Hakobyan).

Fig. 2. Depiction of a herd of horses on a painted jar from Tomb no. 7 excavated at Nerkin Naver (1900–1800 BC) (Photo: V. Hakobyan).

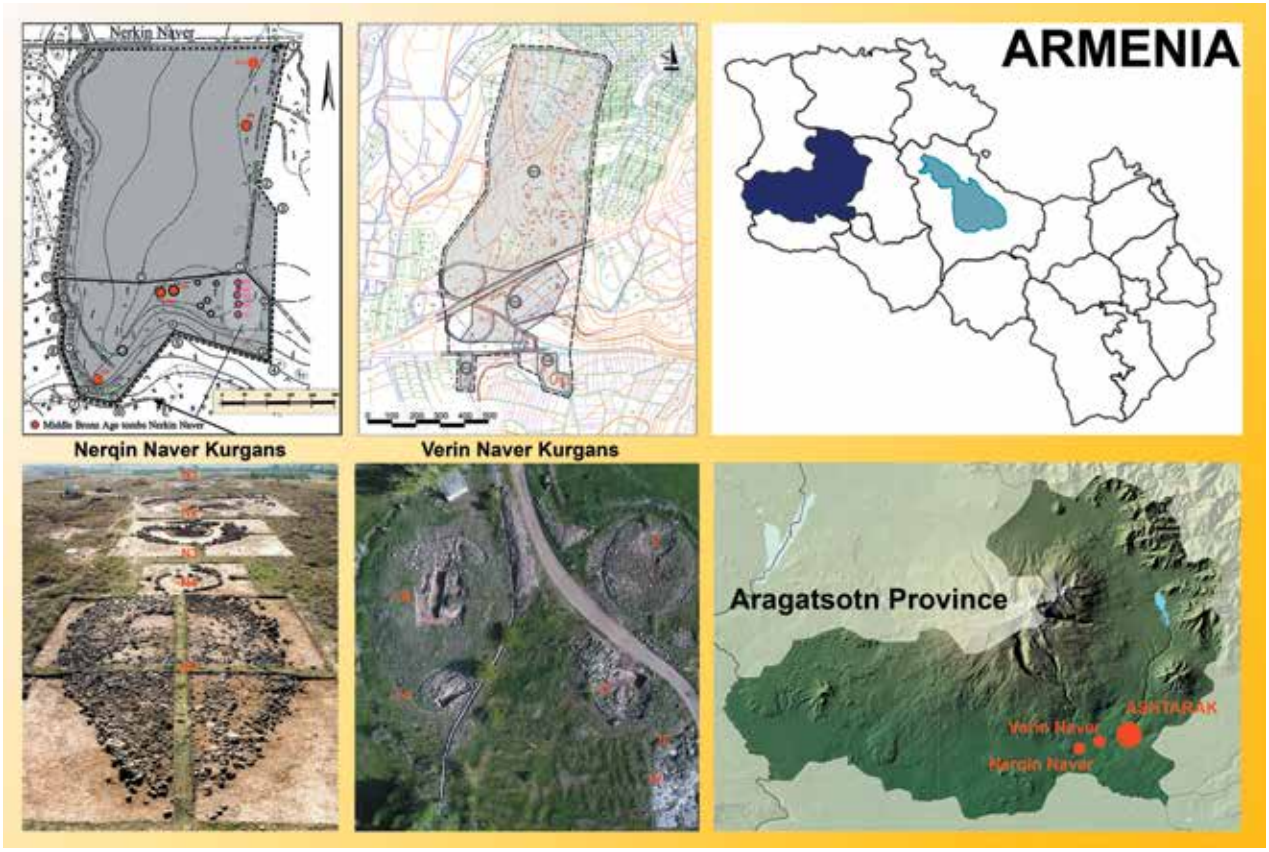


Fig. 3. Maps and general plans of the cemeteries Nerkin Naver and Verin Naver in the Aragatsotn Province of the Republic of Armenia (Photo: H. Simonyan).

the carts and chariots, was excellent (Mnatsakanyan 1960, 139–152; see also Mnatsakanyan 1961, 65–72; Piggott 1983, 196–215). Together with them sacrificed horses, chariots' bronze details and horsegear have been found. The Lchashen carts and chariots date to the very end of the Middle and the first phase of the Late Bronze Age (ca. 1650–1450 BC) and they seem very much part of the broader Ancient Near Eastern tradition. Kurgan no. 3 at the Late Bronze Age site of Gegharot in Armenia on the north side of mount Aragats is also surprising, since it is essentially contemporary with Lchashen (Badalyan, Smith 2017, 19–25). We can see great resemblance between the chariots in grave I:B at Verin Naver and those from Berikledebi grave no. 4 (Miron, Orthmann 1995, 95–97), as well as the bronze pieces of chariots from graves nos 1, 2 and 5 in Garajamirli (Huseynova, Aliev 2008; Pogrebova 2011, 25–36). These chariots seem very much part of the tradition.

Modeling chariots on bronze statues, artistic images on bronze belts, and on pottery become ubiquitous since the beginning of the Late Bronze Age: Lchashen, Lori-Berd, Gora Gokhebi, Dilijan (Mnatsakanyan 1960, 139–152, figs 5, 7, 13; Martirosyan 1964, 99, fig. 46; Devejian 1981, 27, fig. 6; Yesayan 1994, 20–44; Pitskhelauri 2005, 55–60). A chariot on an Assurbanipal bas-relief matches an actual chariot buried in a tomb at Lchashen (Yesayan 1994, 30). The comparison of archaeological original data with the scarce written sources about the Armenian Highland in the 2nd millennium BC that reached the present, suggest interesting conclusions. Thus, according to the Hittite written sources the king of the state Hayasa-Azzi formed in the Armenian Highlands, in the war against the Hittites in 1338 BC had 700 chariots in his army; while the king Mursilis II (1345–1315 BC) entered into a contract with the Azzi elders and in this way got a mighty ally. He demanded from them chariots and charioteers. To break the mighty confrontation of Hayasa-Azzi against the native people of the upper Euphrates it was the Hittites that gathered an army of 10 000 infantry and 700 chariots. The confrontation that lasted four years when the main forces with their leader king Mursilis came close to the capital of Azzi–Toukkamou fort, the council of the elders surrendered to the invaders, and as a conciliatory condition provided to the Hittite army 3 000 charioteer solders (Ghapantsyan 1947, 21, 33; Khachatryan 1971, 141, 145).

To show the traits of the Late Bronze Age local tradition, the remainder of this paper will describe a tomb from the Verin Naver cemetery, and discuss how its contents represent symbols of power of a well-organized, centralized society which is very much in line with those of other, contemporary regions of the Near East.

Verin Naver Cemetery

Archaeological sites of Verin Naver and Nerkin Naver are located in the Aragatsotn Marz (Province) of the Republic of Armenia, 25 km west from Yerevan, on the southeastern slope of the mount Aragats. They cover around 150 (Verin Naver – 100, Nerkin Naver - 40) ha with over 500 burial mounds recorded (Fig. 3). The excavations of the cemetery Verin Naver started in 1976 and still continue with intermittent breaks to the present day (Simonyan 2006, 7 – 10).

The results of 2011 – 2014 excavations of burials grouped in the southeastern part of the Verin Naver cemetery are especially important in this regard. A cluster of five burial mounds existed in an area that seems to have been sacred to the ancient inhabitants of Ararat Valley on bright-orange outcrops of tuff bedrock (Fig. 4). The choice of tufa rock for the construction of royal burials was not accidental and could have some kind of symbolic meaning (cf. Simonyan 2010, 624 – 626). There is evidence at Verin Naver of what some believe were Indo-European symbols: cremation, horse sacrifices, battle chariots, and special royal funeral rites. Stone circles-cromlechs, consisting of specially selected big river boulders, separate the plot occupied by the elite burials from the surrounding area; the burial chambers are located in the center. Among the excavated by now grave-tombs in the cemetery Grave I:B stands apart; here the tradition of Middle Bronze Age is evident - the cromlech is made of trimmed tufa blocks.

All the elite burials excavated at Verin Naver were at least partially looted in ancient times. Nevertheless, with modern methods of excavation, as well as the high-quality restoration of the artifacts, comprehensive laboratory analyses (paleo-bioanthropological, archaeozoological, and pollen analyses of soil samples by scholars in Yerevan, Tbilisi, and Moscow, and spectrometric, chemical, and technological studies of metal finds in the laboratories of the USA and Europe) we were able to reconstruct many traces of royal rituals (Atoyants et al. 2015, 57 – 70).

All big burials of the Middle/Late Bronze Ages (1650 – 1450 BC) at Verin Naver included: a) large-scale monumental construction; b) complex ritual with

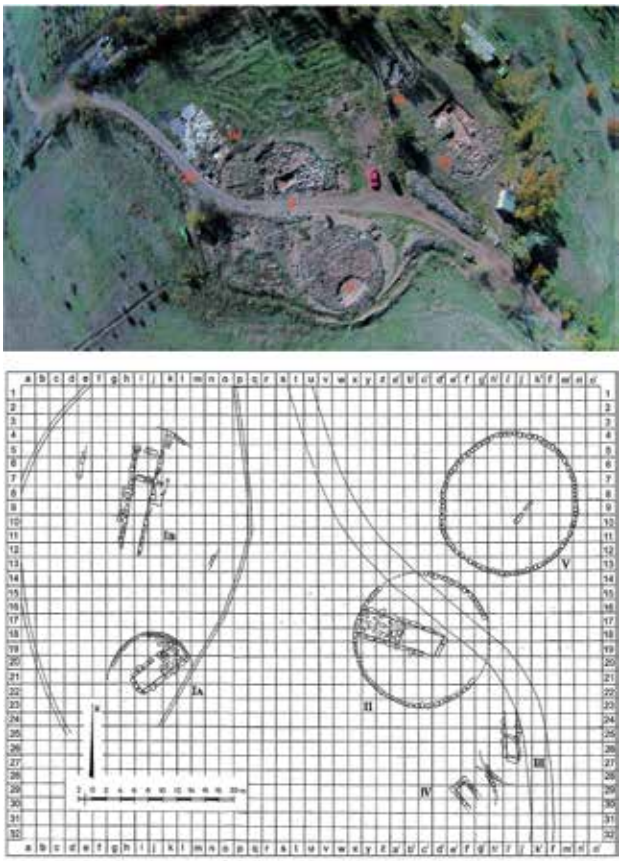


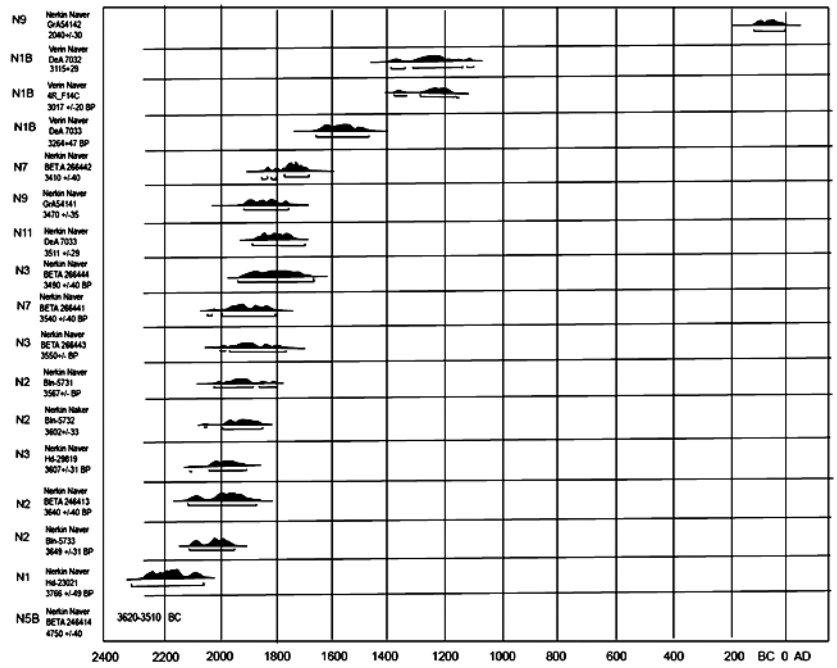
Fig. 4. A view from a quadrocopter drone and drawing of the royal tombs at Verin Naver cemetery (Photo: H. Simonyan, drawing: K. Ghafadaryan).

cremation of the body of the "lord", as well as numerous human and animal (including horse) sacrifices (Simonyan 2006, 129 – 154); c) enormous assemblages of the funeral offerings including weapons, battle chariots, tools, ritual vessels, jewelry and adornments of precious metals; gold, silver, electrum, and, surprising as it may seem, of iron (we know that iron then was 4 – 8 times more expensive than gold), colored glass, and semiprecious stones, d) imported objects (sea shells, glazed clay beads, precious stones: garnet, turquoise, lapis-lazuli, nephritis; adornments, seals and so on). These finds evidence not only the exceptional wealth of the buried persons, but also their belonging to a high social rank. According to researchers' understanding of the cultural beliefs of the time, the king was the supreme leader, the first in all spheres of life: military, religious, and economic (Zablotska 1989). Presumably, Verin Naver burials belonged to such a ruler, who had centralized the secular and sacred aspects of power, and personified the functions of a high priest-king.

In 2011 – 2013, the expedition of the Scientific-Research Center for Historical and Cultural Heritage of the Ministry of Culture of the Republic of Arme-

nia began the excavations of the Verin Naver no. I burial mound. The first burial mound (50 m in diameter and 2 m in height) dates back to the final phase of the Middle Bronze Age or the earliest period of the Late Bronze Age (cal BC 1610–1590 and cal BC 1540–1430: I/1166 project, HEKAL AMS Lab, Debrecen, 2015.11.29, Molnár Mihály).

Two burial chambers were excavated under a common tumulus. One of them (no. I:B) is situated in the central part of the burial mound, and the other one (no. I:A) in the southern part.14. Due to space constraints as well as the fact that we have already published the article about the grave I:A (Simonyan 2012, 110–113; 2014, 222–226) we will describe here only one of the excavated burial chambers – the structure no. I:B.



NN	Site	Excavat. Date	No. tomb	Sample	Lab-no.	14C-Date BP	Calibration date		
							date BC	Range σ1	Range σ2
1	Nerkin Naver	2002/2003	kurgan no. 1	born	Hd-23021	3766±49	2198	2290–2050	2340–2030
2	Nerkin Naver	2004	kurgan no. 2	charcoal	Bln-5731	3567±37		1980–1870	2030–1860
3	Nerkin Naver	2004	kurgan no. 2	charcoal	Bln-5732	3602±33		2020–1910	2040–1880
4	Nerkin Naver	2004	kurgan no. 2	charcoal	Bln-5733	3649±31		2120–1950	2140–1930
5	Nerkin Naver	2004	kurgan no. 2	charcoal	BETA-246413	3640±40 C13/C12	2020	2110–2100	2040–1950
6	Nerkin Naver	2007	kurgan no. 3	charcoal	BETA-266443	3550+/-40 BP	1890	2010–2000	1980–1760
7.	Nerkin Naver	2007	kurgan no. 3	charcoal	BETA-266444	3490+/-40 BP	1870	1920–1730	1880–1750
8,	Nerkin Naver	2007	kurgan no. 3	born	Hd-29819	3607±31		1885–1773	1914–1747
9.	Nerkin Naver	2008	kurgan no. 5B	charcoal	BETA-246414	4750 +/- 40 BP	3620–3510	3640–3500	3440–3380
10.	Nerkin Naver	2008	kurgan no. 7	charcoal	BETA-266441	3540+/-40 BP	1890	1930–1870	1840–1820
11.	Nerkin Naver	2008	kurgan no. 7	charcoal	BETA-266442	3410+/-40 BP	1720	1870–1850	1780–1620
12.	Nerkin Naver	2010	kurgan no. 9	Horse tooth	GrA54142	2040+/-30		62 BC-3AD	119BC-26AD
13.	Nerkin Naver	2010	kurgan no. 9	Human tooth	GrA54141	3470+/-35		1877– 1841BC-	1866BC-1730AD
14.	Nerkin Naver	2015	kurgan no. 11	Charcoal	DeA-10892	3511+/-29	2033–1891	1915–1750	
15.	Verin Naver	2012	kurgan no. IB	charcoal	DeA-7033	3234+/-47	1616–1422	1602–1590	1533–1439
16.	Verin Naver	2012	kurgan no. IB	charcoal	DeA-7032	3115+/-29			
17.	Verin Naver	2013	kurgan no. IV	Horse tooth	Aeon-1866		1250	1384–1342	1308–1188

Table 1 Radiocarbon datings of the burials at Nerkin Naver and Verin Naver in Armenia.

Burial no. I:B

This large burial chamber (17 m long, measured with the dromos, burial chamber's inner length is 10 m, and width 2.20 – 3.0 m) was cut into a brightly red tuff bedrock. Then the grave builders laid walls of tuff blocks around the edges of the cut. A partitioning wall of huge tuff slabs was erected between the dromos and the grave chamber. The chamber was oriented north to south (Fig. 5, 6). The roofing was not preserved. The southern part of the burial was looted in antiquity, during which the upper row of the wall was ruined. The burial chamber was full of tuff and basalt stones mixed with earth. The burial mound mainly consisted of thousands of fist-size river pebbles that couldn't be found in the area of the necropolis, but had to be brought from riverbeds in a distance of a few kilometers from the kurgan. Judging by analogy, each participant of the funerary ritual would bring a pebble and place it on the burial mound as a sign of worship and allegiance. That's a very big assumption to make about the reach of this individual's power, not to mention the construction method of the tomb shield. We think that this was a sign of exceptional respect towards the deceased. According to famous Russian archaeologist Nikolay Sudarev the earliest evidence of similar rituals was recorded in Maikop culture, in particular in the area of Krasnaya Polyana. This ritual is preserved to modern times in the North Caucasus. The excavator mentions that the same ritual has been attested in the course of ethnographic observations[1].

The dating of the Tombs no. I:A and no. I:B at Verin Naver is based on two lines of evidence. First, its burial rites and finds are similar to hundreds of burials of the 16th – 14th BC of the Southern Caucasus (Pitskhelauri 2005; Pogrebova 2011; Devejian1981; Huseynova, Aliev 2008; Mnatsakanyan 1961; Badalyan, Smith 2017). Second, we have radiocarbon dates from Verin Naver Tomb no. I:B and Gegharot no. 3, which place it firmly in the Late Bronze Age: 1600 – 1400 BC.

The central part of the burial chamber of Tomb no. I-B was almost empty (Fig. 6). Probably the most valuable objects, which were later looted, had been placed here, alongside with the wooden frame of the battle chariot. Most of the remaining funerary offerings, as well as remnants of the funeral ceremony were found next to the eastern wall and consisted of bones of sacrificed humans, young animals, including horses, sheep, goats, bulls, cows, pigs or boars, rabbits, wolf or big

Fig. 5. The kurgan and burial chamber no. I:B at Verin Naver (Photo: H. Simonyan).

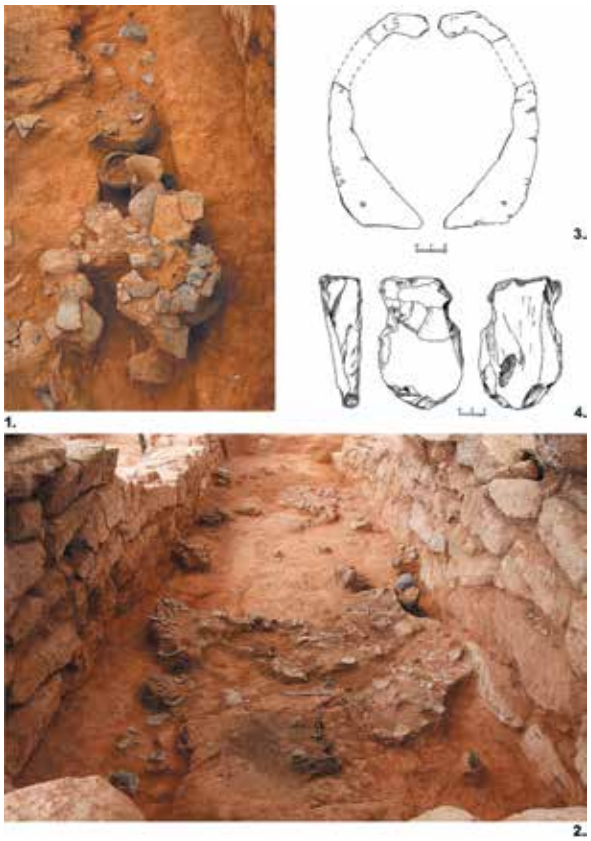


Fig. 6. Burial chamber of the Tomb no. I:B at Verin Naver. 1. Pottery put in the "channel"; 2. Burial chamber after excavations; 3. Iron sword; 4. Stone axe (Photo: H. Simonyan, drawings: T. Hmayakyan).

1 Personal communication to Nikolay Sudarev.

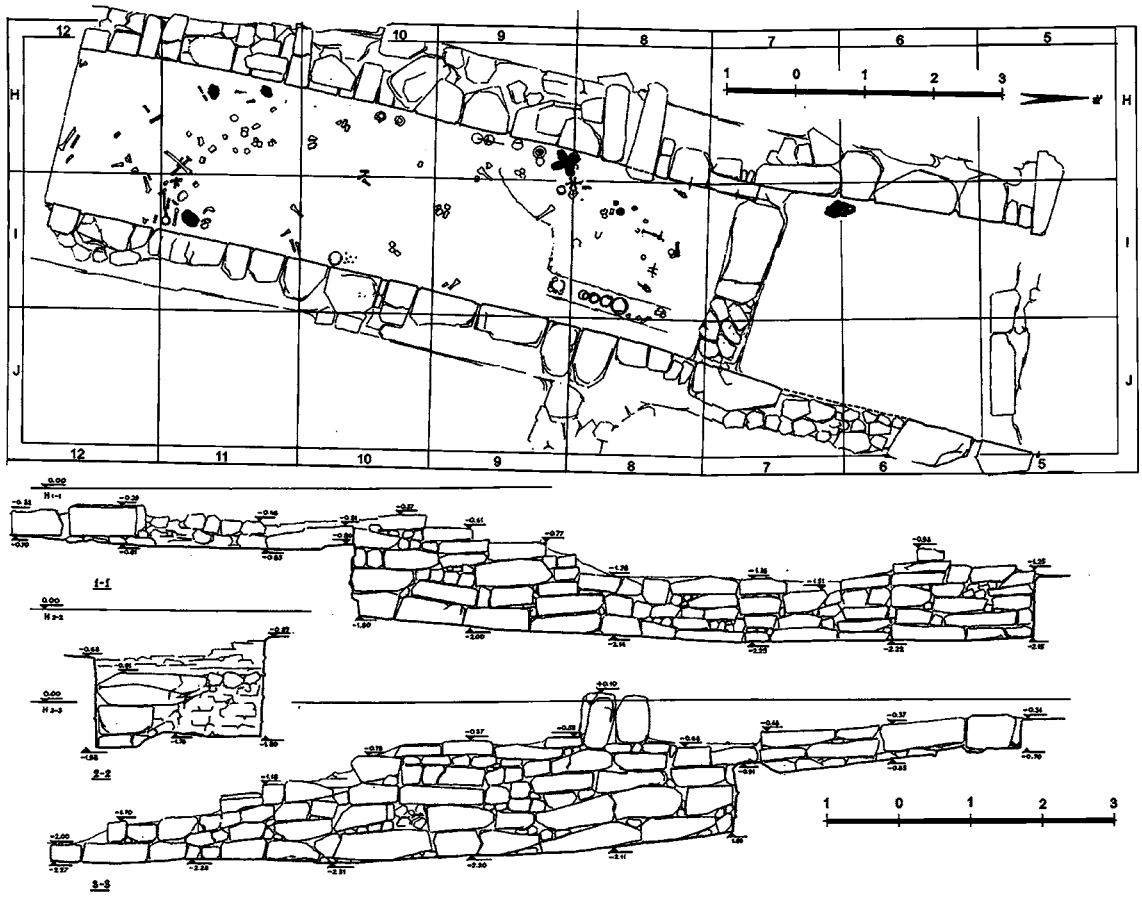


Fig. 7. Burial chamber of the Tomb no. I:B at Verin Naver: plan and sections (Drawing: K. Ghafadaryan).

dogs, and fox, deposited together with bronze[2]. The latter included several dozens of hemispherical heads, which were adjusted to the body of the battle chariot or leather tires attached to the frame of the wheels (Fig. 8/1), as well as dozens of small bronze nails affixing copper plates to its wooden trunk (Fig. 10/13). Among the finds were silver, cornelian, agate and other gemstones, black amber and glass beads that made part of a splendid necklace (Fig. 10/15), glazed beads possibly imported from Mesopotamia or Syria-Palestine (Fig. 10/1–8), 62 arrowheads of jasper, flint, and obsidian (Fig. 10/14), and two bronze rings that created a frame for a quiver. Also by the eastern wall a heavily corroded blade of a sickle-shaped iron weapon (Figs 6/2; 10/17) and a prismatic stamp seal carved of jasper with an image of a horse (Fig. 10/12) were found. To the east of the burial chamber, in the pile of stones forming the tumulus we found a small jade stone with no traces of shaping or dressing, known to come from the East, maybe as far as from China (Fig. 10/16). Among the finds was a schist axe, which was possibly used for cutting the tufa rock (Fig. 6/3).

Clay vessels were placed under the walls (Fig. 7). Most of those were black burnished, decorated with dotted lines impressed with a rolling stamp with impressions filled with white and red paste (Figs 11, 12). The assemblage of ritual vessels is especially important, consisting of kernos-like vases with three small goblets attached to the body (Fig. 11/9), kidney-shape bowls with inverted rims (Figs 11/8; 12/1–2, 6), as well as cylindric stands with funnel-shaped expansions on the opposite ends (Figs 11/3–4, 7; 12/10). A cross-shaped bowl found there (Fig. 11/1) is without parallel.

The floor of the burial chamber was slightly raised toward the north (Fig. 7), were it was covered with smashed ceramic potsherds and ashes, possibly from the cremation fire. Under the ash layer we found two bronze tubular straps bracing decorating the yoke of the battle chariot alongside with two rein terrets (Fig. 8/7), as well as two horse bridles, each having D-shaped external ends with an addition of rhomboid-shaped cheekpieces (Figs 8/8, 9), a bird figurine (Figs 8/6, 9) on an anchor-shaped stand that decorated

2 The zooarchaeological analysis was conducted by Armenian and American palaeozoologists Nina Manaseryan and Miriam Bellmaker, who participated in the fieldwork with the expedition.

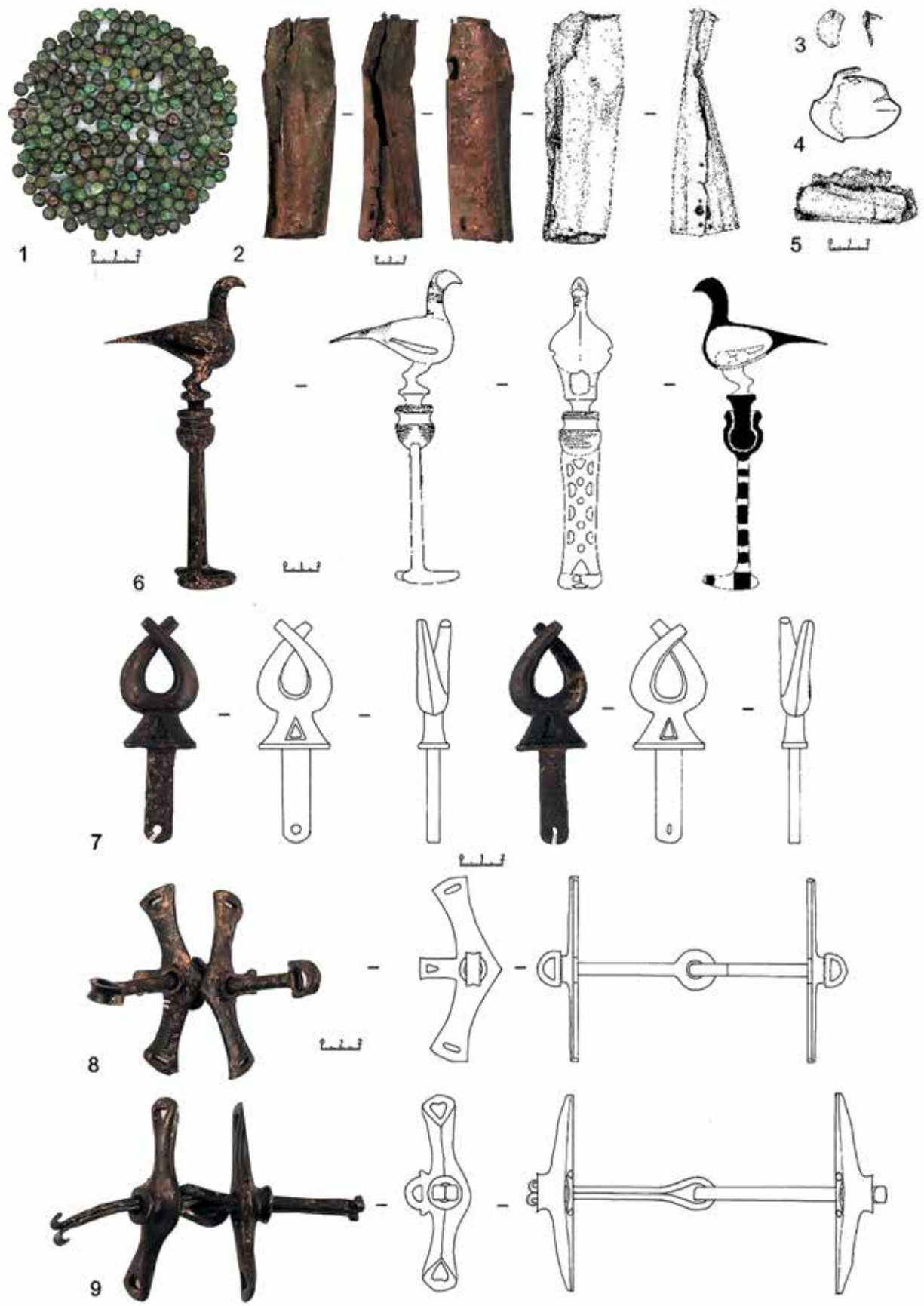


Fig. 8. Bronze details of the battle chariot found from the Tomb no. I:B at Verin Naver. 1. Bronze hemispheres decorating the body of the battle chariot; 2, 5. Harness straps; 6. Bird figurine; 7. Rein ferrets; 8–9. Horse-bits (Photo: H. Simonyan, drawings: T. Hmayakyan).

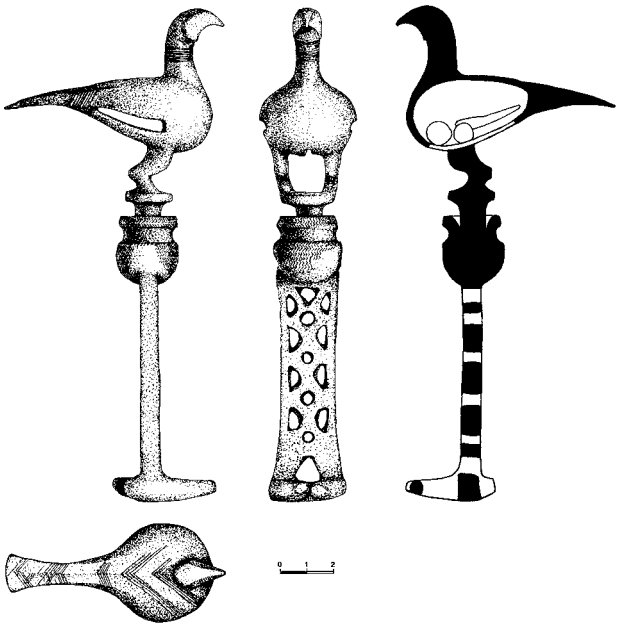


Fig. 9. A bronze figurine of a bird (Drawing: T. Hmayakyan).

the yoke and the shaft of the battle chariot. Bones of sacrificed horses were present as well (Fig. 6/1). The in situ position of the horse bones, the yoke, the bridle, and the bronze pieces decorating the reins, as well as the large sizes of the grave chamber, give reason to conclude that like in Lchashen, here too, a whole chariot in its primary form was placed in the grave (Mnatsakanyan 1960, 139–152).

It should be mentioned that some of the scholars studying ancient chariots suppose that the chariots and psales were specially prepared for funeral rites, and were not used in practice (Kovalevskaya 1977, 77). While other scholars are sure that chariots that were used in battles were placed in the graves (Mnacakanyan 1960, 147). The custom of placing chariots already used in battle inside graves also has been attested at the necropolis of Sintashta (Epimakhov, Chechushkov 2006, 168–182; see also Novozhenov 2012, 177–178). The chariot (more precisely, the yoke of the chariot and the horse reins) at Verin Naver should be used in the battle prior to its enterrement and placed in the burial. Which are the reasons for our conclusions? On the inner sides of the bronze details adjusted to reins of the bridles from the graves both in Verin Naver and Gegharot there are signs of wear, which may have been caused by prolonged friction with the leather harness reins, are visible. The other fact: both horse mouth-pieces discovered in a grave at Verin Naver were cast in a template. Both have mouth pieces made of two rods, on which psalias (cheek pieces); one – thin, the other – thick, could freely move. The bars of the ancient horsebits unearthed in the graves in Armenia and Southern Caucasus as a rule have D-shaped heads at the end (Sultanishvili 2005, 166–167). The two ends of one of the bridle bend in the form of letter "D", while the other had half of the mouth piece replaced with a folded bronze wire. A bridle with finely cast psalias is unbelievable to have such carelessly home-made mouth pieces. It is quite obvious that the second bits had been broken and repaired in haste. Otherwise, they would be unlikely to be combined with perfectly cast horsebits. I suggest that this denotes rapid replacement, as the cast ones were probably broken in the battle and replaced by a bit of forged (hammered) plates. Excavations at Sintashta in Southern Urals have demonstrated that the production of horsebits and battle chariots was carried out by specialized craftsmen (Epimakhov, Chechushkov 2006, 168–182; Usachuk 2002, 37–43). All these observations confirm the idea that it was a military chariot, which was put in the grave along with the owner killed in battle.

Numerous imported objects were found in the burial chamber, including glazed ceramic and colored beads similar to those used against the evil eye in Babylon, seashells from the Persian Gulf, a purple garnet bead from Badakhshan, and the small natural piece of jade from the mound of the tumulus - possibly from China (Fig. 10/1–9, 16). The finely retouched stone arrowheads of red jasper, yellowish flint, and black translucent obsidian (Fig. 10/14), each weighing between 0.5 and 0.7 grams, were possibly filling a quiver fastened to the body of the battle chariot, and judging by their weight could have been made specifically for ritual purposes, or to hunt small game, or maybe for target practicing. However, their usage in close combat neither could be excluded, since the warrior standing in the chariot penetrating the enemy lines would shoot the arrows at a close range. Among the unique finds from the burial chamber of Verin Naver I-A was a big black-burnished cup, its surface decorated with stamped ornamentation consisting of several rows of arrowheads (Simonyan 2014, 222–226).

One of the most important symbols of power is an image of a jumping horse engraved on a locally made stamp-seal in the shape of a truncated pyramid was uncovered in the Burial I-B at Verin Naver (Fig. 10/12). Bones of a sacrificed horse were also uncovered in this burial indicating the dismemberment of the sacrificial offering: the head placed in the dromos and the hip in the chamber.

According to Hittite and Homeric texts, bodies of dead heroes and kings had been cremated. We found

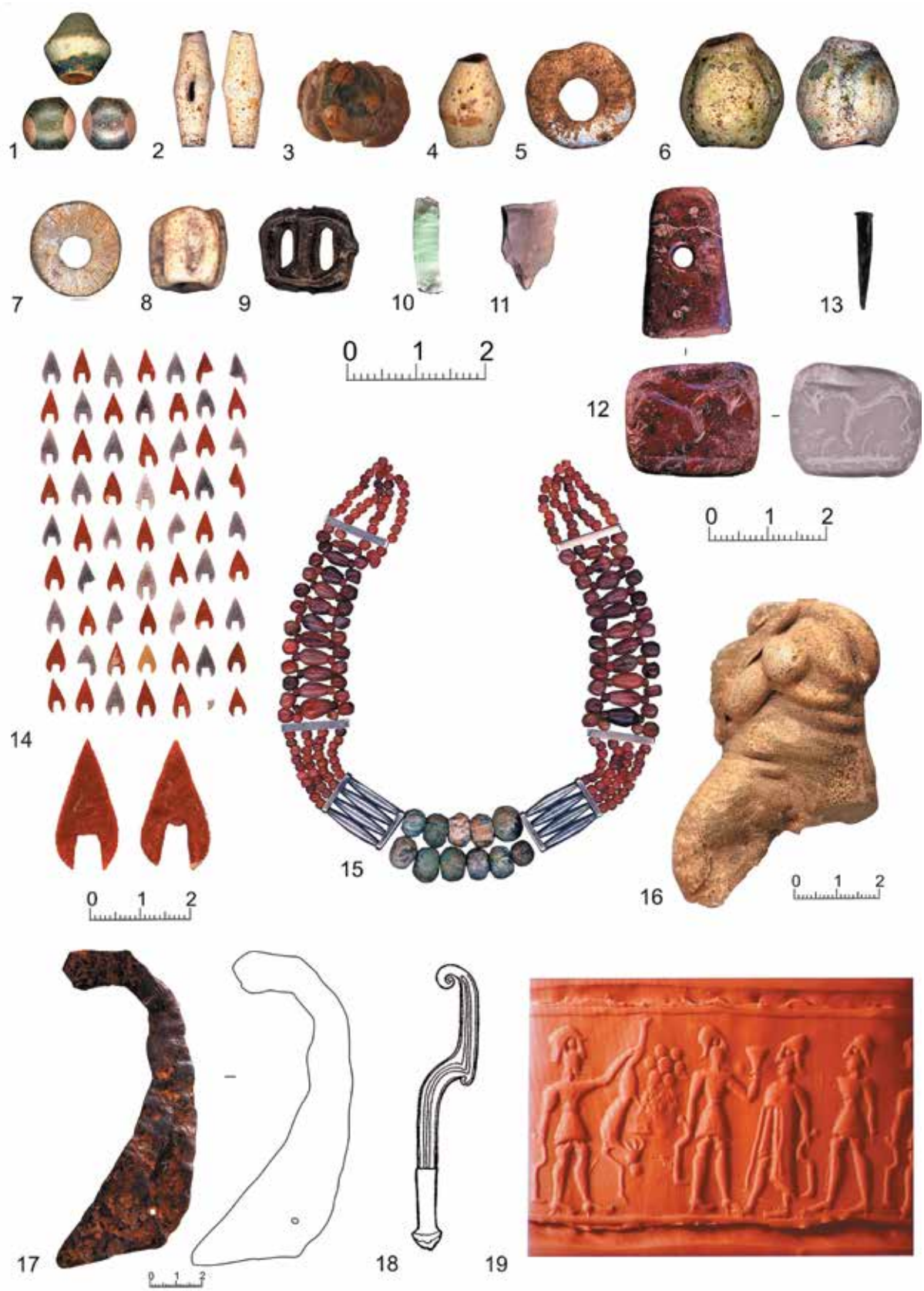


Fig. 10. Symbols of power, imported objects, arrowheads and a necklace found in the Tomb no. I:B at Verin Naver. 1–8. Glazed beads; 9. Antimony; 10. Obsidian drill; 11.Jasper seal depicting a horse; 12. Jasper stamp; 13. Bronze nail; 14. Obsidian, jasper and flint arrowheads; 15. Necklace of silver, garnet, cornelian and glass beads; 16. Object of nephrite; 17. Sickle-shaped iron sword; 18. Image of a sickle-shaped sword; 19. A seal from Alalakh with an image of a sword (Photo: V. Hakobyan and H. Simonyan, drawings: T. Hmayakyan).

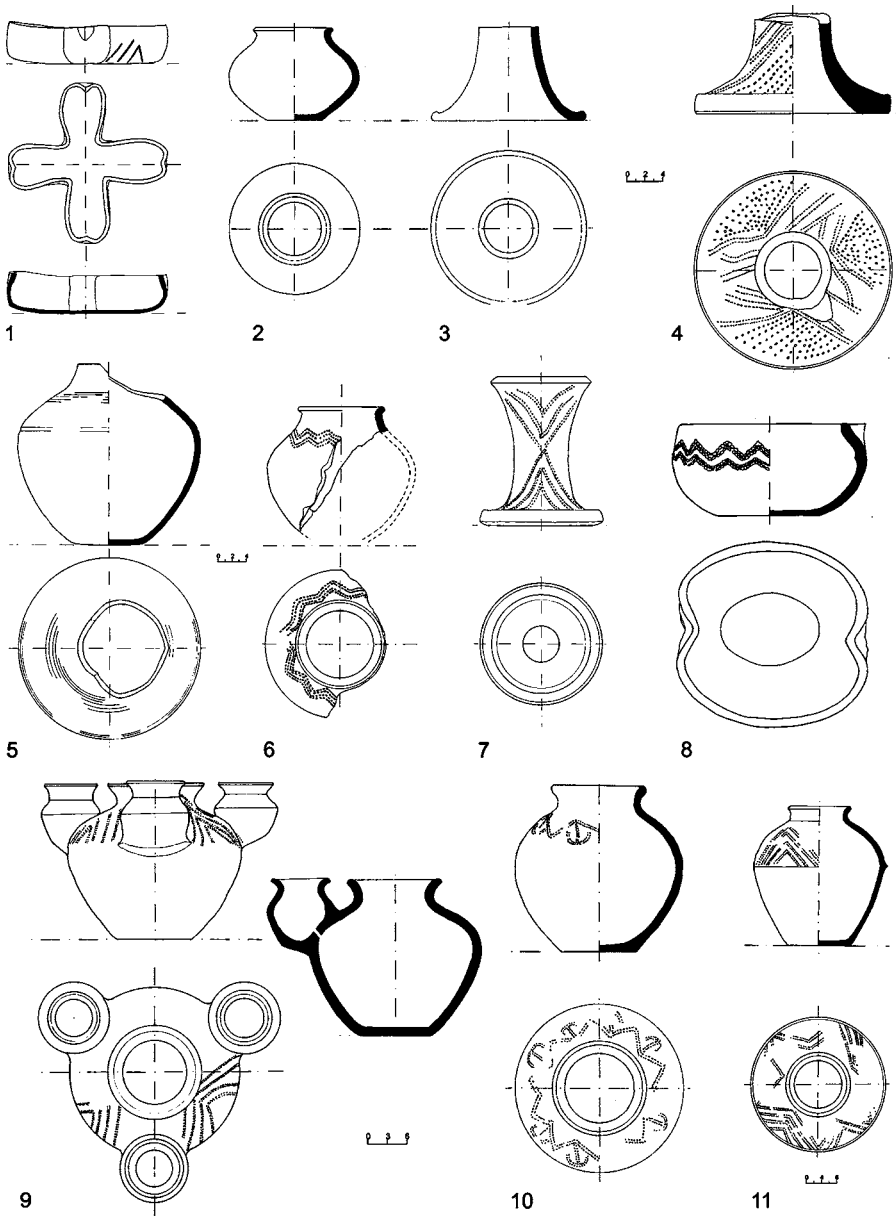


Fig. 11. Black polished vessels (Drawings: T. Hmayakyan).

the traces of funeral pyres in the burial chambers of Verin Naver, which could indicate the occurrence of such a ritual or its reverberations. The presence of finger bones and teeth of other individuals could probably testify to human sacrifices. One knee bone had an arrowhead stuck in it, suggesting violent death.

Pollen from the burial chambers may add another aspect to the funerary ritual and provide hints to the kinds of wood that could be used in the construction of the chariot. Taking into account the fact that in the following centuries there were penetrations into the mausoleum and the initial context of the burial was disturbed, we took samples from a more sterile environment, the soil accumulated in earthenware, for palynological analysis. In them, ancient pollen could be preserved both from the ecological situation of the burial time, and from wooden objects placed in the tomb[3]. Pollen of motley grass, mainly a weedy type, dominated all of the samples. Besides cultivated cereals, there was also pollen of Centaurea, Polygonum, Fagopirum and other representatives of Polygonaceae and Chenopodiaceae families as well as Cannabaceae and pollen of cereals of the wheat family. Especially noteworthy were cannabis hinting to the presence of hallucinogenic beverages inside the cultic vessels used in the ritual ceremonies. Would it be possible to hypothesize that the extract of hemp highly concentrated through boiling might have

3 Tomb no. I:B soil analyses by Anahit Atoyants, the Research Laboratory of General Biology at the Faculty of Biology of Yerevan State University.

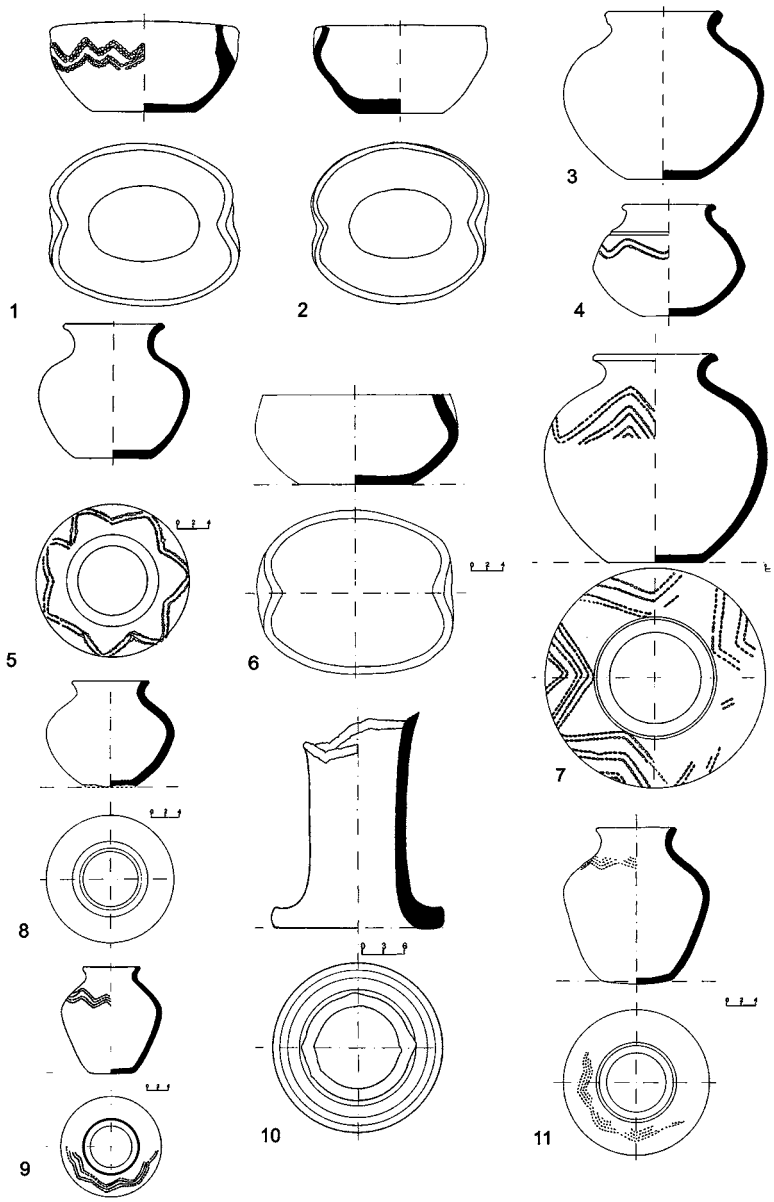


Fig. 12. Black polished vessels (Drawings: T. Hmayakyan).

been the famous xaoma used in Indo-European rituals as a hallucinogenic substance? The samples also contained pollen of trees such as Juniperus, Corylus, Pinus, Chenopodium album, Carpinus caucasica, Carpinus orientalis, Rhamnus, Picea, Alnus, Ephedra, Ulmus, Quercus, Fraxinus, Linden, elm, birch, oak, pine, and maple, some of which nowadays do not grow naturally (e.g. birch) in the area[4].

One of the explanations for the presence of spores of different tree species inside the vessels placed in the grave is that the buried war chariot was made of various types of trees. It should be noted that in those days, when making chariots, trees of various solidity and flexibility were used, among others branches and logs of birch and ash-tree. According to written sources, these trees were imported to Egypt from the northern faraway countries. In his article "Armenian wood in chariot-making in Egypt" the German scholar states that the wood (birch and ash-tree) of the Egyptian chariot now kept in the museum in Venice was imported from Armenia (Schäfer 1931, 730–742). So, unexpected as it may seem for many, however the pollen analyses of samples from Tomb no. I:B at Verin Naver prove the correctness of the bold assumptions of previous scientists.

4 Pollen analyses were made by two scholars independently of each other: Eliso Kvavadze (Georgia) and Anahit Atoyants (A rmenia). The data are given according to the report presented by E. Kvavadze and the published article cf. Atoyanc et al. 2015, 62.

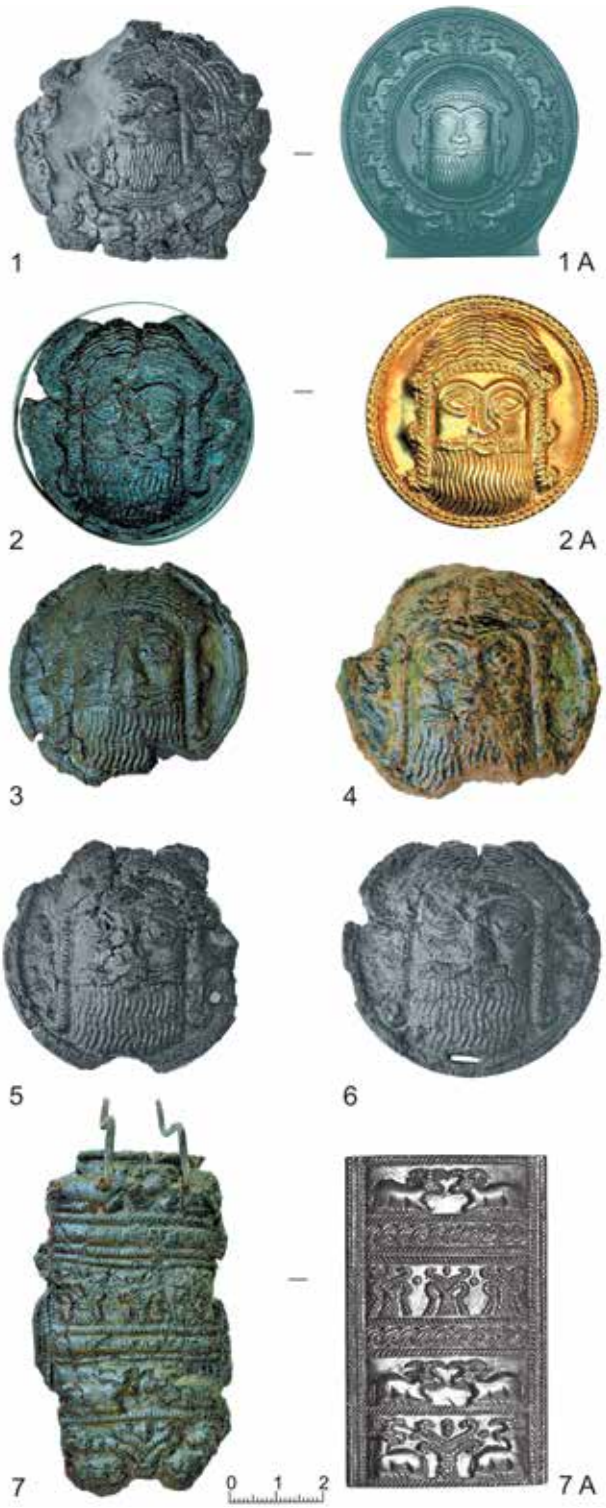


Fig. 13. Medallions and fibulae found from the Tomb no. I:B at Verin Naver: 1A, 2A and 7A (Reconstruction variants). (Photo: H. Simonyan, Reconstruction by: L. Khachaturyan).

However, the most impressive finds were the medallions and shoulder belt buckles with their bronze rings – locks, which laid uncovered on the floor of the chamber, under the ash layer from fire of the cremated corpses and pot shards (Fig. 16/2,3). The five of the medallions formed a circle. Those were made of bitumen, covered with thin gold plates, and were framed with a copper band. Possibly they were adjusted to a diadem or a leather basis of shoulder belt; this is proved by the preserved square and round holes on the medallions (Figs 13 – 14). The medallions were outlined with bands of decorated reliefs and are of two types. Four of them have a diameter of 50 mm and are 15 mm thick. The obverse is a relief image of a human face. The faces have thick, arched brows, almond-shaped eyes, straight noses, bulging lips, and small mouths. They have rectangular beards with thick zigzag of falling hair, and long horizontal mustaches. Their hair is parted in the center and combed straight to the ends. Three heavy spiral-shaped ringlets hang from their temples (Figs 13 – 15).

The larger medallion was 80 mm in diameter and 15 mm thick and had a straight cut base. The human face in the central part is surrounded with a circle of spikelets separating it from a circular frieze consisting of repeated symmetric relief compositions. Each of the repeated patterns consists of a pair of lying argalis facing one another from opposite sides of a stylized depiction of the sacred tree. Each of the repeating compositions are separated from one another by an eight-petalled rosette. The entire circular frieze, in its turn is surrounded by a circle of spikelets forming the border of the medallion (Figs 13/1, 14/1). Despite the standard treatment, the portraits have peculiarities emphasizing their individual personality, which leads to believe that they don't merely represent heroic images, but rather that they portray historical persons, according to the stylistic conventions of the time for kings.

While the portraits on the small medallions are depicted with the faces looking straight ahead, the portrait on the bigger one is depicted slightly at an angle making it seem the person is staring off into the horizon. Again, based on their findspot, there are sufficient grounds to think that they were part of a crown. The bigger medallion was placed in the center while the smaller ones were on the sides. On the ancient Near Eastern reliefs kings and rulers were depicted wearing crowns or diadems, decorated with rosettes similarly to the medallions found in Verin Naver.

Two other bitumen objects were found next to the medallions. One of them is of a trapezoid shape narrowing towards the edges: length of the preserved part is 45 mm, the upper edge is 51 mm wide, the lower edge is 36 mm and their thickness is 9 mm. The frontal part of this plaque is almost completely corroded. Initially it was decorated with relief images, traces of

which allow suggesting that snake-shaped images and a tree of life had been depicted there. Copper/bronze straps linked to the upper part of the plaque made possible to lock up it. Only the left one is preserved (Fig. 15/2).

The second plaque is rectangular. Its preserved part is 75 mm high, 44 mm wide and 9 mm thick. The frontal side is decorated with the techniques of embossing and impressing. The long edges of the plaque are framed by double rows of spikelets and twisted threads. Within the external frame, four vertically aligned rectangular pictorial fields are separated from one another by three different ornamental belt-dividers sequenced from the broadest at the top to the narrowest at the bottom. The upper belt-divider consists of a central pair of horizontal weaved lines with a row of dots inserted into the weaving, the weaved lines being separated from the pictorial fields on the top and the bottom by twisted threads. Of the four rectangular pictorial fields two (the top one and the third from the top) are identical depicting a pair of laying ibexes facing one another. In the second rectangular field a row of three particularly schematized images of sacred trees are presented. Finally the composition in the fourth, lowest field is the most complex: its center occupies a schematized depiction of the sacred tree on both sides of which lays an argalis, the body of which is positioned in the direction away from the tree, but the head is turned back with eyes gazing at the tree (Fig. 15/3. From the shoulders of the argalis on the upper band, a pair of copper-bronze Ω-shaped extensions is adjusted at a straight angle. These two artifacts possibly could constitute two ends of a leather shoulder belt, which were adjusted with bronze straps.

The importance of these gold-covered bitumen figures is not only their indication of the status of the primary individual whose tomb it was. They are symbols of power and rank of the individual buried in Tomb no. I:B. The styling of the image also shows a stylistic connection with the Middle Elamite kings (Wilkinson 1965; Connan 1996). A roundel and a helmet with three figures sculpted in bitumen and covered with gold found in the area of Marlik (cf. http://www.metmuseum.org/toah/works-of-art/63.74/). These objects are associated with Marlik Tepe in Iran, which is dated to the second half of the 2nd or beginning of the 1st millennium BC. Other similar roundels sculpted bitumen are associated with Middle Elamite Haft Tepe (Negahban 1984). Their distribution is presented on the map (Fig. 16). Currently the possible sources of the bitumen used in the production of the finds from

Fig. 14. Medallions from Tomb no. I:B at Verin Naver (Photo: H. Simonyan, drawings: T. Hmayakyan).

Verin Naver are not yet identified. But the composition of one of the bronze rings into which the bitumen of the medallions was set, is analyzed showing the local source of the copper originating from the Shamlugh-Akhtala copper fields of Northern Armenia[5]. Whether those artifacts were imported or copied locally from an earlier Middle Elamite object is premature to conclude. The latter possibility is suggested by a parallel with a breastplate of the Early Iron Age found at Hasanlu. In that case the horse breastplate made in Iran clearly copied the images of an Assyrian war horse breastplate (Winter 1990).

Among the finds at Verin and Nerkin Naver two artifacts made of iron are of special interest and will

5 The analyses are completed by Ernst Pernicka and Khachatur Meliksetyan.

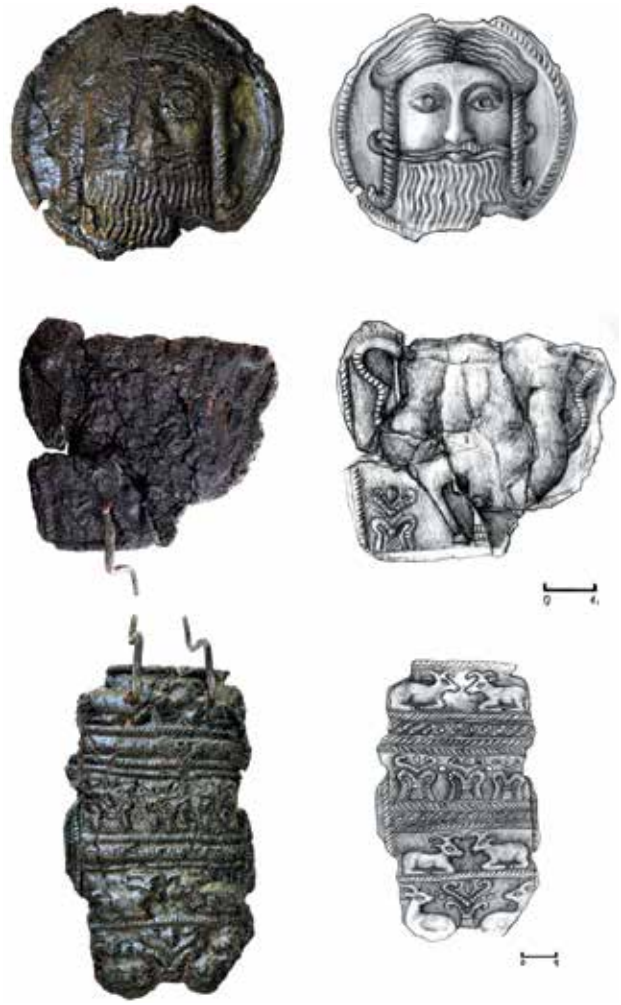


Fig. 15. Medallions and fibulae from the Tomb no. I: B at Verin Naver (Photo: H. Simonyan, drawings: T. Hmayakyan).

require further study and interpretation. The first is a horsebit found in the burial pit of Tomb no. 1 of Nerkin Naver in conjunction with a sacrificed horse and earliest Middle Bronze Age pottery dating to the 2340/2290–2050/2030 BC. This find, regardless how outstanding it could be, still should be considered with some caution, because an intrusive burial of a woman dating to ca. seventh century BC was excavated in the mound covering the primary burial (Simonyan, Manaseryan 2013). The second iron artifact was found nearby the intact grave goods deposited on the floor in the funerary chamber of the Tomb no. I-B of Verin Naver (Fig. 6/3). It is a sickle-shaped weapon resembling the Sumerian, Hittite, Syrian and Egyptian swords known as khepesh or khopesh (Fig. 10/17–19). This potentially exceptional find still needs to be considered with caution because the funerary chamber was partially looted in later periods. Most scholars think that iron was commonly used in Southwestern Asia since the 12th century BC. However, it has been established with certainty that iron artifacts were already produced as symbols of prestige and power since the mid of the 3rd millennium BC in Mesopotamia and Anatolia (Areshian 1975, 86–99; 1976, 87–99). And if indeed the sickle-shaped implement discovered in Verin Naver Tomb no. I:B belongs to the time of the burial, it would be one more distinctive artifact symbolizing royalty[6]. Excavators have found iron weapons and tools in other burials of the Late Bronze Age Armenia, including at Verin Naver. Their presence would suggest that this early iron was considered a kind of luxury good.

Conclusion

The importance of the chariot and horse, as well as weapons and exotic goods, for the states of the Late Bronze Age is clear from their frequent finds in the Eastern Mediterranean and the Middle East. The selection of symbols of power depends on local and regional use of such symbols. Feldman and Sauvage write that the variability of iconography in the depiction of chariots reflects an amalgamation of the inherent meaning of prestige attributed to the object and its image with the regional ideological characterization of elite and royal status in a specific form (Feldman, Sauvage 2015, 163). In other words, the states that existed in the Armenian Highland during 1650–1450 BC fit the pattern of kingship and centralization common across the wider region, yet also display characteristic features of the local culture, emphasizing the actual artifact and its artistic representation in a particular context.

The interaction with the neighboring and faraway regions is evinced by imported goods found in Verin Naver Tomb no. I:B and by the artistic themes common with the Middle Elamite world, further indicating that ancient Armenia had a role to play in the wider world.

The idea of Verin Naver Tomb no.I:B representing a royal funerary ritual is supported by common royal themes and the large number of imported objects. In addition, local perceptions of royal symbolism, including the diadem, the stamp-seal depicting a horse, possibly the sickle-shaped iron sword, together with the monumentality of the burial chamber, cremation of the deceased, voluntary and involuntary human sacrifices support that suggestion. Young age of sacri-

6 Ernst Pernicka of the Eberhard Karls University of Tubingen who analyzed this artifact concluded that its composition is similar to the late 3rd millennium BC dagger from Alaca Hüyük (a sword from Tomb K at Alaca Hüyük in Anatolia), but similar composition is also known among the iron finds of the Early Iron Age (Personal communication to Ernst Pernichka).

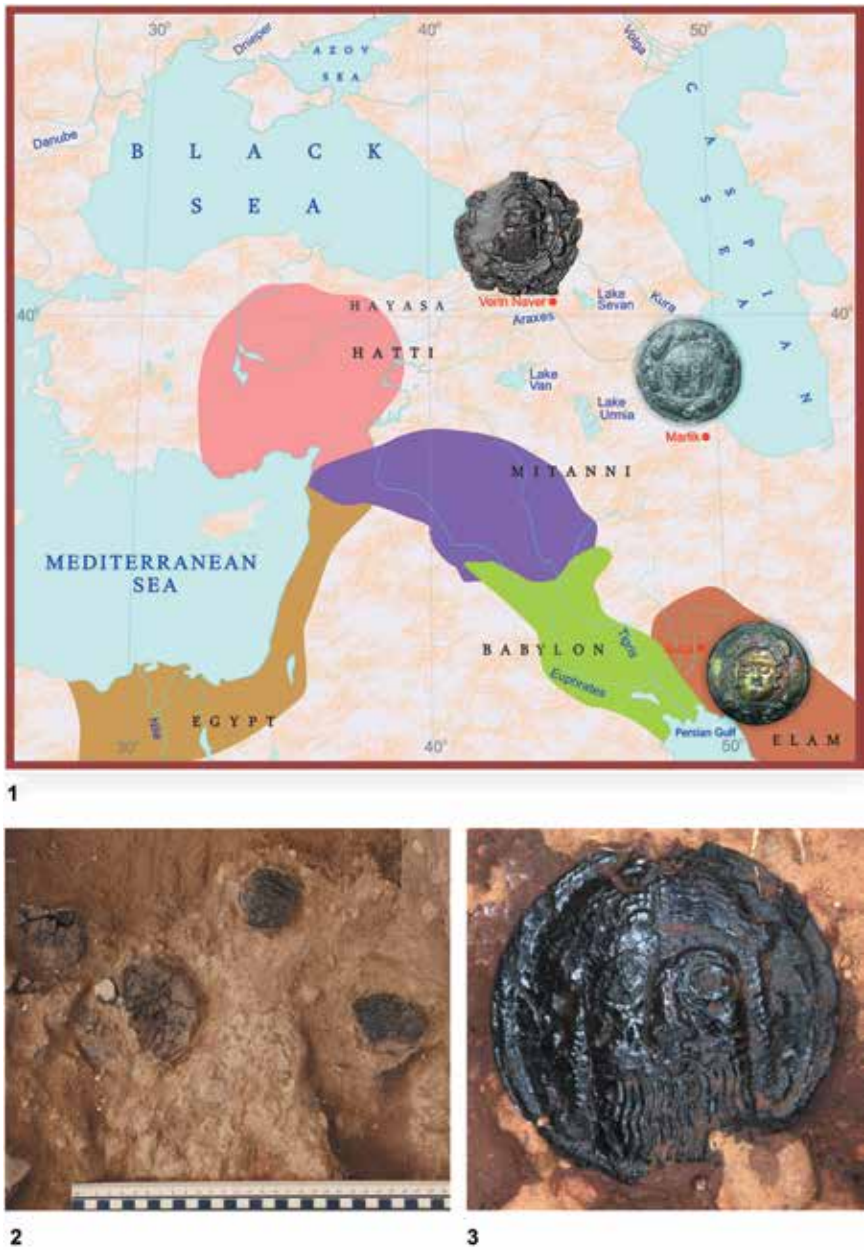


Fig. 16. 1. Map of the Ancient Near Eastern sites where gold-plated roundels-medallions depicting a hero-king were found; 2 – 3 Verin Naver , burial chamber of the Tomb no. I:B, roundel-medallions opened on the floor (Map and photos: H. Simonyan).

ficed animals, assortment of ritual vessels, sacrifice of horses, the battle chariot, and the possible participation of large number of people at the funeral (judging by the number of fist-size pebbles piled on the grave assuming that each participant brought a stone to show his or her attendance and devotion) are characteristic of elite burials wielding power at the highest level of social hierarchy. For that time and place it meant the burial of a priest-king of the state.

These royal persons were supported by their military might. What archaeologically identifiable prerequisites could create the capacity for armies supplied with a large number of battle chariot in the 2nd millennium BC? Evidently, those were battle horses, harnesses with bronze horsebits and cheekpieces, elaborately constructed light battle chariot made with complex construction out of various woods, copper and bronze pieces, such as bronze terrets and spoked wheels, weapons made of bronze, and sometimes the new use of iron. Thousands of warriors available for combat also suggest that the societies inhabiting Armenia during the Late Bronze Age achieved a higher degree of complexity and centralization than most of the scholars have previously thought. Although the scale of these societies might not be equal to those of Mesopotamia or Egypt, they likely were significant

players in the larger social and political landscape of the region and in events that played out there during this new "phase of Internationalism".

At the same time, although they were certainly aware of the symbols of Mesopotamia and Iran, and may have copied some of them, the societies of Armenia at this very time were unique in their own right. As we learn more about them, they could emerge as having a different trajectory of social and economic development, military organization, centralized government, religious ideology, as well as ancient traditions of horse breeding, together with the development of new armaments, new technologies, and advanced metallurgy.

The maps published by Feldman and Sauvage (2010) leave simply blank the area of the Armenian Highlands. Yet, the described recent excavations at Nerkin Naver uncovered depictions of herds of domesticated horses dating to the first two centuries of the 2nd millennium BC, schematic pictures of elite chariot with spokes wheels and remains of horse sacrifices at the end of the 3rd millennium BC. Huge cemeteries and vast fortified settlements are clear evidence for the increasingly organized militant population in the 2nd millennium BC. The exceptionally rich collections of weapons from different sites of Armenia containing rapiers, swords, daggers, arrowheads, spears, and lances made of high quality tin bronze and, later of iron demonstrate an advanced stage of arms-making, while the variety of the weapons suggests a diversification in fighting roles played by different groups of soldiers in battles. In general, advances in metallurgy (molds, complex alloys, and the large number of weapons) suggest an economically advancing society. They suggest the existence of local copper mines and metallurgy, which made this region a key supplier of ores and perhaps finished tools and weapons.

The sacrifices of domesticated horses and details of ancient horse harnesses, testify to the horse breeding, which, according to Assyrian annals of the 1st millennium BC, was one of the products most desired from the people in the area of lakes Van and Urmia, but also northward. Some of the products in Tomb no. I:B at Verin Naver were clearly imported, which shows that this area was not isolated, but part of the broader region.

The graves of Verin Naver (and the earlier Nerkin Naver) demonstrate that in the course of the Bronze Age a complex and unique highland society has developed in the area of modern Armenia. These discoveries, including the symbols of power, suggest that this area should be discussed in the academic narratives concerning the Middle and Late Bronze Age civilizations of the Middle East. Its importance is only hinted at, but it cannot be ignored anymore.

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Dragons under Microscope: Determination and Identification of the Geological Sources of Vishap Stone Stelae

Arshavir Hovhannisyan[1], Arsen Bobokhyan[2], Dmitri Arakelyan[1], Marianna Harutyunyan[1], Varduhi Siradeghyan[1], Pavol Hnila[3], Alessandra Gilibert[4]

[1] Institute of Geological Sciences, Armenia
[2] Institute of Archaeology and Ethnography, Armenia
[3] Freie Universität Berlin, Germany
[4] Ca' Foscari University Venice, Italy

Abstract. This article reports the results of the a first-of-its-kind archaeo-geological survey of the vishaps located in the area of the Tirinkatar and Karmir Sar volcanoes on the southern slope of mount Aragats, Armenia. The survey identified the petrographic and petrochemical features of the rocks from which the vishaps were carved. The results indicates that the vishaps were produced from rocks found nearby, consistently favouring the softer tuff lava (rocks intermediate in structure and formation between lavas and volcanic tuffs) and tuff over the harder-to-work basaltic andesites.

Keywords: Aragats, Tirinkatar, Karmir Sar, vishap (dragon) stone stelae, interdisciplinary studies.

Introduction

Archaeology and geology come across in many points. The present research realized by the interdisciplinary team is concentrated on the upper reaches of Ampur and Amberd rivers, of apical, south part of mount Aragats and includes geological, petrographic and petrochemical study and identification of rocks in order to clarify the genetic relationship between the monumental stone stelae known as vishaps (or dragon stones) and the lava flows of different age and different types. The survey focused on the vishaps of Karmir Sar, an archaeological site located in the area of the Tirinkatar and Karmir Sar volcanoes on the southern slope of mount Aragats. Vishaps are imposing prehistoric stone stelae with animal reliefs, for which date have been proposed ranging from the 2nd to the 5th millennia BC. These stelae are found in the mountains of the Armenian Highland, usually around or above the altitude of 2000 m asl. Given their remote locations, one wonders how exactly the stones to produce them were chosen, what were the logistics of their erection, and, specifically, from how far away where the stones dragged up to their erection point? In this article, we contribute towards answers to these questions, essentially proving that the vishaps were produced from local tuff lavas, accurately selected from nearby sources. This research once again confirms the great potential of geo-archaeological investigations.

The Aragats Volcano Massif: Geology and Geomorphology

The Aragats volcano massif was formed as a result of repeated manifestations of volcanic activity over a long period of time. Its geology has been the object of study of generations of scholars since the borderline of the 19th and 20th centuries (G. Abich, A. Pastoukhov, F. Oswald) but especially during the Soviet period (P. Lebedyev, O. Karapetyan, A. Reinhardt, A. Zavaritskiy, A. Aslanyan, N. Dumitrashko, A. Gabriyelyan, F. Milanovski, S. Karapetyan, K. Karapetyan, K. Shirinyan, et al.). These and other later studies focused on the geological structure of the massif, its tectonic position, the stratigraphy of the individual components of its volcanogenic and fluvioglacial formations, as well as the petrochemistry and genesis of individual lava flows, among other issues. The rocks of the ancient foundation, occurring at the base of the volcano massif, are represented by intensively dislocated deposits dating to the Eopalaeozoic, Upper Cretaceous, Palaeocene-Middle Eocene, while in the periphery they date to the Oligocene and Miocene. The foothill areas of the Aragats massif are large depressions – Ararat, Shirak, Aparan – filled with Neogene and Quaternary deposits (Fig. 1).

The Aragats volcano massif has the shape of a huge convex shield with four peaks in the middle. The volcanogenic formations, reach a thickness of 1.5 km,

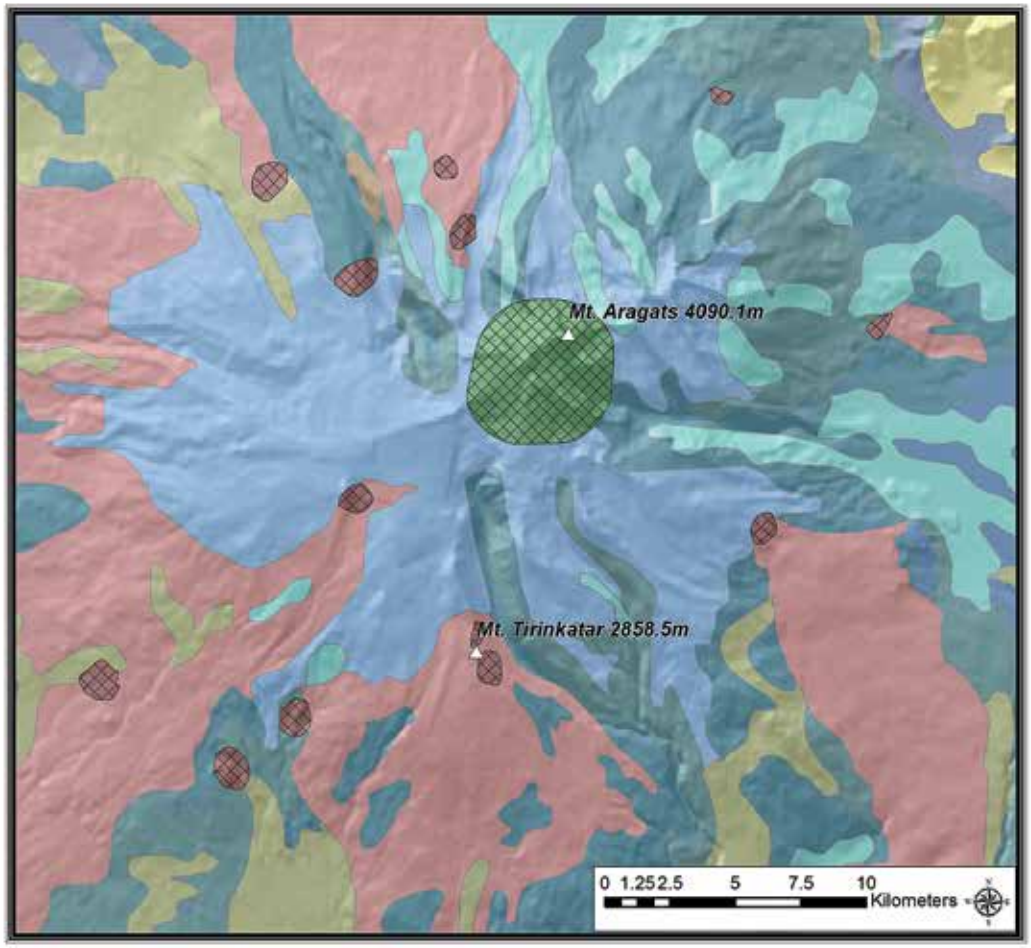


Fig. 1. Geological scheme of Aragats volcano (By: Dmitri Arakelyan).

and they are represented by diverse lavas of andesite-basalts, andesites, andesite-dacites, rhyolites, etc., their tuffs and tuff breccias, interbedded by sedimentary formations of Quaternary period. The diameter of the massif, lying at an average height of 1000 m, is approximately 60 km at the height of peaks from 3879 to 4090.1 m asl. The four jagged peaks are the remains of the volcanic cone. They surround the crater, extended by water-glacial erosion to a diameter of 2 km and with a depth of 300–400 m (Amaryan 1972). Near the peak there are 10 glacial circuses 3–4 km long and 1–2 km wide. This is also the center of the modern glaciation of Armenia, with an area covering up to 2–3 km^2. The ice is firn, which shows that the glacier is in retreat. From an orohydrographic perspective, this is a significant place: besides the numerous rivers originating from the summit, there are almost 100 lakes located here (Gusakov 1901; Lichkov 1931).

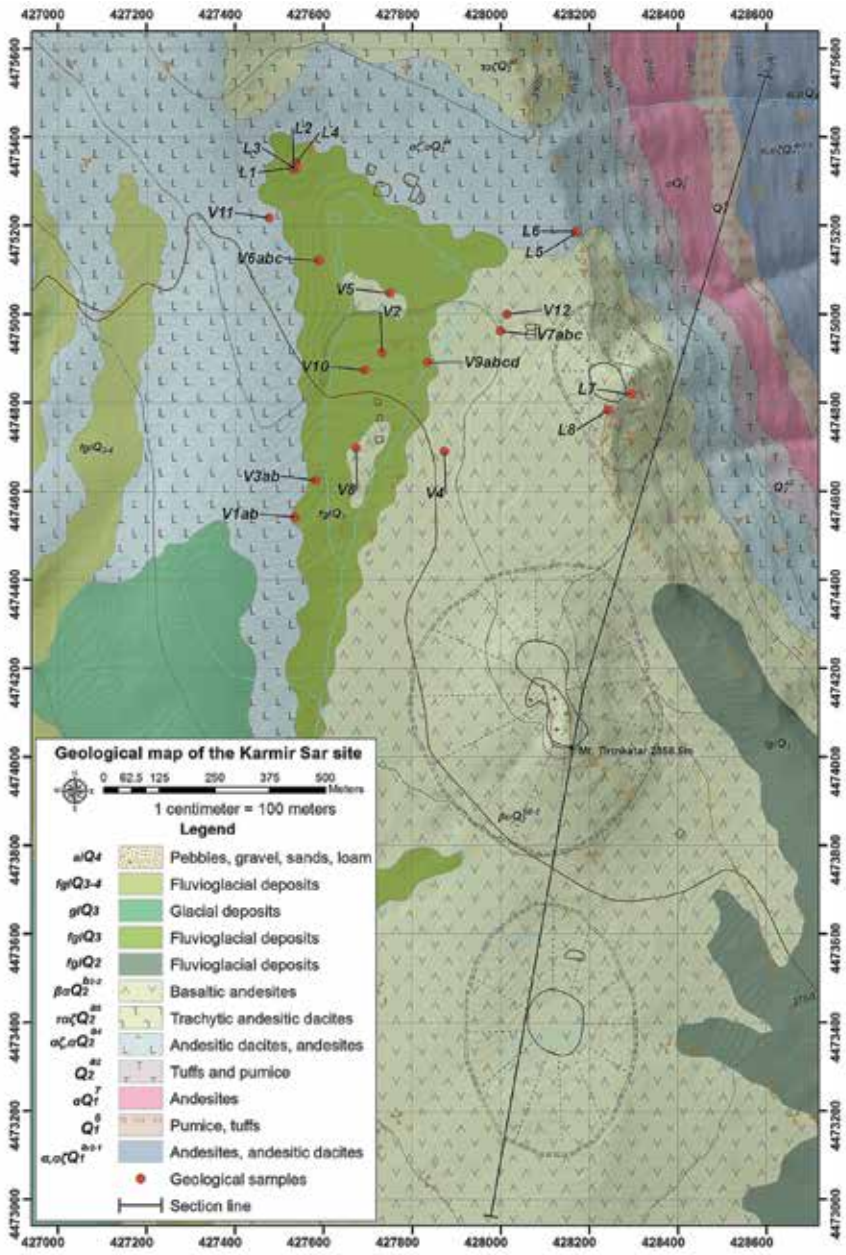


Fig. 2a Geological map (Scale 1:10 000) of Tirinkatar volcano and its surroundings with sampling points from vishaps (index V) and lava flows (index L) (By: Arshavir Hovhannisyan and Dmitri Arakelyan).

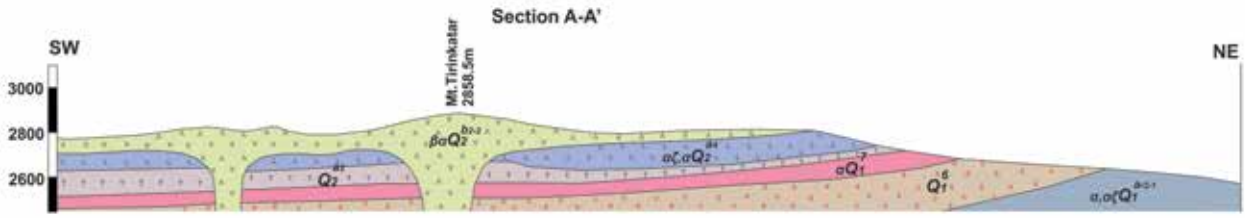


Fig. 2b Geological section along the A-A´ line (By: Arshavir Hovhannisyan and Dmitri Arakelyan).

A geologic survey was published at a 1:50000 scale in 1960–1970s, detailing the stratigraphic sequence of eruptions, their age, petrochemical and other features of lavas and tuffs of all Aragats volcano massif (Amaryan 1972). The present research, concerning the area of mount Tirinkatar, is based on cartographically referenced data of the detailed dissection of rocks composing the Aragats volcano massif, based on the most important stratigraphic geological sections of volcanic formations, according to individual slopes

and sites, marking out the suites, sub-suites and packets, separated by washouts, or lacustrine, lacustrine-fluvial or water-glacial deposits, and in some areas even traced by cross bedding (Amaryan 1972).

Geological Structure of Mount Tirinkatar

Along the right bank of the Amberd river, at the base of the geological section, are located the most ancient Upper Pliocene formations of the site, represented by andesites, andesite-dacites and dacites of the Upper Aragats subsuite (Fig. 2/a). The surface of lavas is eroded, knobby and uneven. Andesite-dacites are thin, plate-like, with giant concentrically-conchoidal joint of light gray ground mass. They have a cryptocrystalline, microlitic structure: the ground mass is of dark color, it is characterized by hyaline and hyalopilitic structures. Inclusions are rare, and they are represented by plagioclase – andesine and pyroxene.

Quaternary deposits are represented by volcanogenic, lacustrine, lacustrine-fluvial, glacial and alluvial-delluvial deposits, and according to the time of formation, they are divided into Lower, Middle and Upper Quaternary.

Along the right flank of the gorge of the Amberd river the mentioned Upper Pliocene andesitic lavas are replaced by packets of gently dipping up to 10° southward Lower and Upper Quaternary formations. Yellowish-brown pumiceous tuffs occur below with thickness up to 5 – 8 m, which are overlain by lavas of andesites with thickness up to 5 m. Above them brick red volcanic tuffs of Artik type are observed with thickness of up to 5 – 8 m, in some areas turning into pumice stones and pitch-black pechstein rocks.

An andesite-dacite cover occurs on all of the above lavas and tuffs, overlying all mentioned in the section formations and widespread in the western part of the site; its thickness in some areas reaches 15 m. Andesite-dacites and dacites at the bottom of the cover are light gray with a bluish tint, upward they are dark gray with light inclusions of plagioclase.

The packet of andesite-basalts with thickness of 1 to 10 m with lava flows, directed down the slopes to the south at a distance of 21 km, forms a cover, overlying all mentioned deposits. The andesite-basalts of gray and dark gray color are characterized by porphyritic structure. Eruption centers of andesite-basalts are fixed by three slag cones, one of which is mount Tirinkatar. The relative height of slag cone is 50 – 60 m (Fig. 2/a).

The western slope of mount Tirinkatar (Kizilziarat) is covered by Upper Quaternary glacial and water-glacial loamy sands, loams, as well as boulder-blocky deposits. In the valley of the river Amberd water-glacial deposits merge with modern fluvial deposits forming terraces (in the western part of the site). The thickness of fluvioglacial deposits in some areas reaches 100 – 150 m.

Geological Identification of Archaeological Objects – the Vishaps and Volcanic Rocks[1]

The geological research concentrated on the upper reaches of Ampur and Amberd rivers, of apical, south part of mount Aragats, included geological, petrographic and petrochemical study and identification of rocks in order to clarify the genetic relationship between the monumental stone stelae known as vishaps (or dragon stones) and the lava flows of different age and different types at Karmir Sar/Tirinkatar. Twelve vishaps were found located in a kind of high altitude sacred landscape dating back at least to the Middle and Late Bronze Ages (ca. 2200 – 1200 BC) and perhaps considerably earlier, to the end of the 5th century BC (cf. Gilibert et al. 2012; Bobokhyan et al. 2018; Hnila et al. 2019) (Figs 6 – 15). The vishaps are concentrated in the areas of Quaternary fluvioglacial deposits, from which, according to our observations, they were carved. The fluvioglacial deposits in their turn were formed due to erosion of volcanic lava flows as a result of the "work" of glaciers.

Research was carried out with the identification of small individual fragments, which were carefully split off from the vishaps, as well as from various volcanic rocks distributed over the research area.

The interstream area of Ampur and Amberd rivers marked by elevations of Tirinkatar and Karmir Sar is predominantly composed of Middle Quaternary lava formations (Zavariskiy 1944; 1947; Aslanyan 1950; 1956; Amaryan 1972; Meliksetian 2012), among which single flows of andesitic dacites and andesites of lower packet, trachitic andesite-dacites and basaltic andesites are distinguished. Pumiceous tuffs, both of Lower Quaternary and Upper Quaternary age, forming the eastern slopes of Tirinkatar and Karmir Sar, are overlain by packets of lavas of andesitic composition and they do not crop out in this area. Trachitic andesite-dacites form the most northern part of the site and they are outside the research area (Fig. 2/a,b).

1 The present research was partly funded by the State Committee for Science of the Ministry of Education and Science of the Republic of Armenia under the scientific topic code 18T-1E171.

Sampling. In total, 23 petrographic samples were taken from 12 vishaps and their fragments (samples by indexing from V1 to V12) and 8 samples from all varieties of volcanic rocks from the environment of mount Tirinkatar (Fig. 1/a, cf. Figs 16–17). Those are the rocks which are widespread in the vicinity of the study area (geological samples by indexing from L1 to L8). The aim of sampling is to obtain the maximum petrographic, as well as petrochemical information, for determination of genetic relationship between vishaps and volcanic rocks: namely, to determine from which particular local volcanic rock each specific vishap was carved, or to disprove the supposed relationship. Since not all of the vishaps were intact (some of them have been broken into several parts during long time of their existence), from the very beginning of our work we were not sure that all of their parts found and assembled as a "puzzle" with some missing pieces can actually belong together instead of being parts of other unknown stelae. We had to sample all the individual pieces as well, in order to avoid a mistake (Tab. 1). Several of the crushed parts of vishaps were scattered throughout the area, and although we managed visually to assemble all their fragments and practically adjust them to each other, still there were some doubts about such a purely architectural approach, since by the intensity of erosion and mineral backlight of erosion crust of parts of vishaps, they were still different. Almost all samples underwent petrographic examination (see Annex 1). And the four most typical samples of vishaps underwent silicate analysis, to obtain besides petrographic information also petrochemical background for the classification of a specific type of volcanic rock which had been the building material for vishaps.

Table 1 List of vishap sampling.

Vishap N/N	N/N of sample taken
V 1	V 1a; V 1b
V 2	V 2
V 3	V 3a; V 3b
V 4	V 4
V 5	V 5
V 6	V 6a; V 6b; V 6c; V 6fr
V 7	V 7a; V 7b; V 7c
V 8	V 8; V 8fr
V 9	V 9a; V 9b; V 9c; V 9d
V 10	V 10
V 11	V 11
V 12	V 12

Petrography and petrochemistry. Petrographic analysis was done using a polarizing microscope with 200 and more magnification. Under the microscope, in transparent thin sections, made from the vishap samples, was studied the structural and textural features of vishap rocks, distribution of mineral grains inside the crystals of the studied rock, determining rock-forming minerals by their crystal-optical characteristics.

Vishaps, specifying the territory of fluvioglacial formations to the west of the top of Karmir Sar (Fig. 2/a) are characterized by superficial weathered thin crust of iron-magnesium oxides – desert crust.

In accordance with petrographic features, as well as petrochemism (Tab. 2) they are mostly carved from vulcanites (tuff lavas) of andesite–andesite-dacite composition. Mostly they chemically fall into the andesite field, partially deflected to dacite (Fig. 3). Actually, the most part of vishaps (V1–V7; V9; V11) carved from tuff lavas - rocks intermediate in structure and formation between lavas and volcanic tuffs.

Table 2 Chemical composition of rocks from which the vishaps were carved (silicate analysis).

	$Si0_2$	$Ti0_2$	Al_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O	Ka_2O	P_2O_5	H_2O	S	Burn losses	∑
V 1a	61,30	0,86	17,86	3,38	0,56	0,08	1,34	3,86	2,80	2,30	0,55	1,86	0,68	2,66	100,09
V 3b	63,60	0,85	17,50	2,03	1,96	0,09	1,08	3,22	2,80	2,70	0,57	0,45	0,96	2,40	100,21
V 6c	64,66	0,87	18,63	2,65	1,40	0,06	0,87	2,38	2,90	2,80	0,59	0,55	–	1,73	100,09
V 8	59,94	0,82	17,85	2,41	2,52	0,14	2,70	5,66	2,60	1,50	0,46	0,84	–	2,60	100,04

Note: *From all 23 samples, the most differentiated 4 samples were selected for analysis, in terms of physical properties (color, hardness, porosity, specific gravity, texture, structure, etc.). № V8 – andesite (andesite lava); №№ V 1a and V 3b – andesite (tuff lavas of andesite composition); № V 6c – dacite (dacite lava). The analyses were carried out in the chemical laboratory of the Institute of Geological Sciences of NAS RA. Prepared by A. Nazaryan.*

The andesite-dacites and dacites spread within the site Karmir Sar–Tirinkatar, like all volcanogenic rocks forming the Aragats volcano massif, have petrographic features similar in mineral composition (see Annex 1). The association of inclusions in them is represented by plagioclase, two pyroxenes and magnetite.

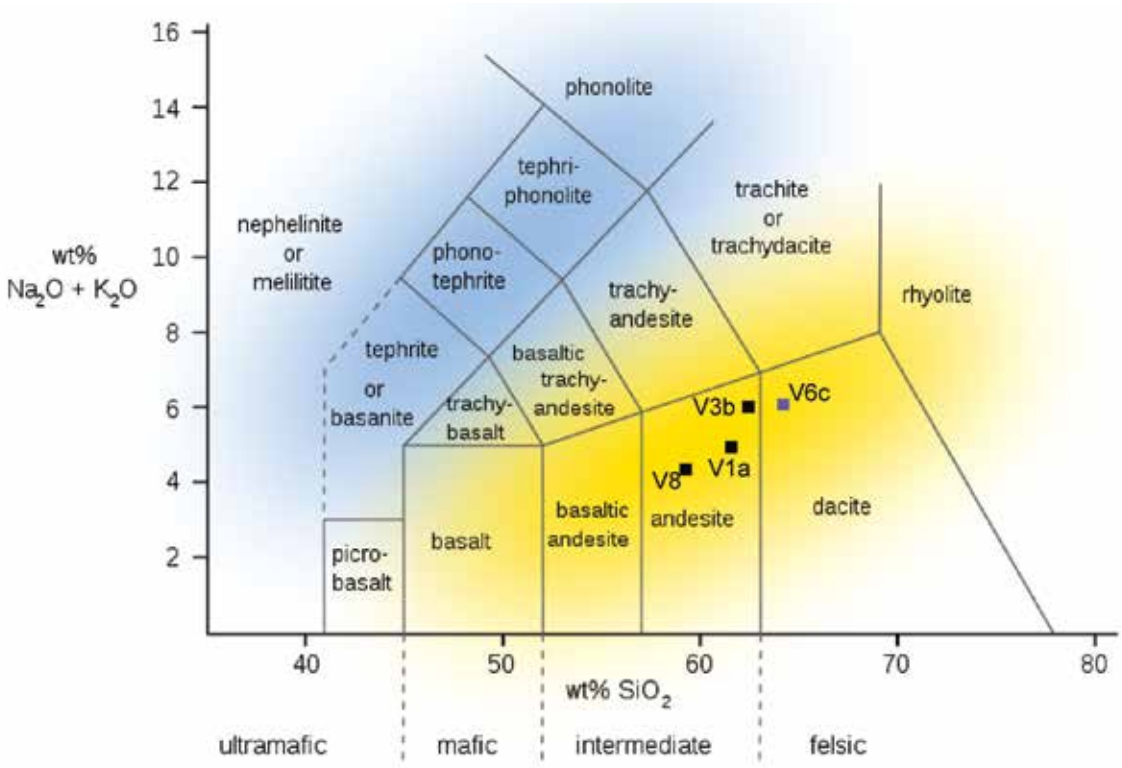


Fig. 3. Petrochemical classification of samples taken from vishaps (By: Arshavir Hovhannisyan).

Among phenocrysts two generations of plagioclases often stand out. The structure of the ground mass varies within the same thin section.

Plagioclase is predominantly andesine or andesine-oligoclase, it is polysynthetic twinned and has a zonal structure, which is emphasized by the distribution of melt inclusions in the outer zone. Clinopyroxene is represented by augite (Shirinyan 1970; Ghukasyan 1985; Djerbashyan 2010). Rhombic pyroxene with pleochroism in greenish tones for Ng, pinkish or pinkish yellow Np, was previously defined as hypersthene (Shirinyan 1970; Ghukasyan 1985): by the content of ferrous iron based on microprobe studies its composition is verified as bronzite (Djerbashyan 2010). Cristobalite sporadically occurs in rocks and it is spread both along the volcanic glass, and in some areas along the walls of the pores.

The mineral composition of both lava and pyroclastic formations of the Aragats volcano massif is uniform, indicating their close genetic relationship, and, unfortunately, does not make it possible to use the peculiarities of their composition for even deeper differentiation of various sites.

Discussions and Conclusions

The following critical factors were taken into account in petrographic studies of characteristic features of vulcanites: 1. nature of the rock ground mass, its structure and texture features, color of volcanic glass, 2. number of inclusions of rocks, their relationship with ground mass, their dimension and relationship between basic minerals, 3. characteristics of phenocrysts; their morphology, degree of erosion by melt inclusions, nature of their distribution in crystals, 4. quantity, size and shape of pores which make up 10–20% of the rock volume.

According to these factors, it has been determined that vishap V 12 was carved from tuff, and the majority of vishaps – №№ V 1 (samples V-1a V-1b), V 2, V 3 (samples V-3a and V-3b), V 4, V 5, V 6 (samples V-6a and V-6fr.), V 7 (samples V-7a and V-7b and V-7c), V 9 (samples V-9a, V-9b, V-9c, V-9d) and V 11 were carved from tuff lavas-in this case – tuff lavas of andesitic composition (rocks intermediate in structure and formation between lavas and volcanic tuffs). There is an opinion that tuff lavas were formed under conditions of aerosol-type creeping flows, characterized by high speed of movement (Karapetyan 1985; 1988).

These rocks are softer compared to andesites. Unlike typical lavas, tuff lavas contain inclusions of porous pumiceous-slag material. The glassy matrix of tuff lavas is fine-porous – vesicular, it always makes up the most part of the rock, and the mineral fraction is equal to 8–10%. The texture of tuff lavas is ataxitic, fluidal. Coloring of volcanic glass is due to the degree

of its oxidation; with complete oxidation glass acquires a reddish color. Inclusions of glass fragments are usually of dark color, and they stand out clearly against the background of the rock. Relatively large fragments have an elongated shape in the form of lenses; in the relatively thick rocks they are intensely welded and deformed. Porphyritic segregations of the rock are immersed in a glassy mass; they are idiomorphic, occasionally being represented by fragments. Porosity ranges within 13–20%. Gray and dark gray rocks are characterized by higher density. In primary bedding tuff lavas are not observed within the mentioned area.

Though among boulder fluvioglacial formations of Karmir Sar andesites and andesite-dacites are found in large numbers (see on the map 2a the points of samples of volcanic rocks: №№ L 1, L 2, L 3, L 4), as a building material for vishaps they were used in rare cases. Those are the vishaps №№ V 8 and V 10 (andesite), which are characterized by more decrystallized ground mass and lower porosity compared to tuff lavas, and which are identical to the bedrock exposures of andesites of Middle Quaternary packet, highly developed within the mentioned area (see Fig. 2/a, sample №№ L 2, L 3, L 8).

Geological samples, taken from lava formations №№ L 1, L 4, are represented by andesites with pores filled with carbonate and partially by limonitized clayey mass.

Variations of chemical composition of tuff lavas (as well as of andesites), in our opinion, relate to a greater extent to the content of silica and are due to uneven development of cristobalite – crystalline silica in the rocks pores.

Basaltic andesites (sample L 6), which are widely spread (not less than andesites) among the rocks of the site, as well as slagged rocks of volcanic cones of basaltic andesites (sample L 7), were not used.

Interestingly, the vishaps № V 4, V 7 and V 12 are located outside the area occupied by fluvioglacial deposits, and by hypsometric marks, most likely mark the same level of the assumed lake shore of glacial origin, existing at that time. And it is possible that those vishaps by the age of creation and establishing may vary from the rest.

Samples from vishap № V 6 are four in number: № V 6a and V 6fr (fragment, found during excavations: Operation F, coll. 6.29) are gray tuff lavas. Meanwhile V 6b and № V 6c are pinkish gray andesite-dacites, on which fluvioglacial deposits occur. It means, that the sample V 6fr in fact belongs to vishap V 6, meanwhile V 6b and V 6c differ from it, i.e., they are not fragments of the Vishap V 6 (see Table 3).

The tuff lavas of the samples № V 1a and № V 1b, as well as samples № V 3a and № V 3b and № V 9a, V 9b, V 9c, V 9d are identical to each other, that is, they belong to the vishaps V 1, V 3 and V 9 respectively, and are made from the same rock, in this case – from tuff lava (tuff lava of andesitic composition).

Samples from vishap V 7 (blocks № V 7a, № V 7b and № V 7c) are petrographically similar and belong to the vishap V 7.

Table 3 Petrographic variety of materials of vishaps.

Material of vishaps	Indexing of samples and individual fragments of vishaps											
Tuff lava (tuff lavas of andesitic composition)	V 1a V 1b	V 2	V 3a V 3b	V 4	V 5	V 6a V 6fr	V 7a V 7b V 7c		V 9a V 9b V 9c V 9d		V 11	
Andesite (andesite lavas)								V 8 V 8fr		V 10		
Andesitic dacite (andesitic dacitic lavas)						V 6b V 6c						
Tuff												V 12

Samples from vishap № V 8 are two in number both being of the same andesite: it means that № V 8fr (fragment, found during excavations: Operation D, coll. 17.1) belong to the stela № V 8.

Sample from vishap № V 10 is made from andesite.

Some samples of the rocks, judging by the uneven coverage by limonitization of ore mineral (not all grains of ore mineral are limonitized, but only in some part of the thin section), were in an aggressive environment. Those are the samples № V 2, № V 7b and № V 7c, as well as № V 11, in which iron hydroxides not only replace the ore mineral, but also cover the walls of some cavities and vesicles in the form of a film.

Fig. 4. Vishap 1, 210x90x30 cm (1a), 90x40x30 cm (1b, 1 m to the N-W of 1a), unexcavated (Photo: Pavol Hnila).

Fig. 5. Vishap 2, 327x49x41 cm, excavated in 2015, (Photo: Pavol Hnila).

Thus, it can be concluded that:

a. All vishaps were built from local volcanic material, specifically from the tuff lavas (rocks intermediate in structure and formation between lavas and volcanic tuffs) of average (andesitic) composition, andesites, and tuffs which are widespread in the area (see Tab. 3 and Annex 1).

b. Basaltic andesites, which are equally easy to find on site, were not used as building material for vishaps.

c. Some fragments of vishaps (V 6b and V 6c), which by visual observations were previously considered identical and belonging to one and the same vishap (V 6), turned out not to be the related, implying the existence of further vishaps still to be identified (cf. Fig. 9).

d. Some remoteness of three vishaps (V 4, V 7 and V 12) has been observed, which are at one hypsometric level, and, most likely, that was the shoreline of a seasonal lake of glacial origin, existing at that time. And it is possible that those vishaps by the age of creation and establishing may vary significantly from the rest.

Annex 1

Thin section V 1a

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic, in some places the ground mass is of cryptocrystalline structure, in other places it is of hyaline structure with vesicular texture.

The ground mass is non-uniform, it is represented by volcanic glass; the aggregate of very fine microlites and indeterminable crystallites is fixed by volcanic glass of light gray color with a pinkish tint; the other areas are made of brownish-gray volcanic glass, fine vesicular with rare microlites.

The rock phenocrysts make up 10–12% of the thin section surface and are mainly represented by plagioclase, as well as clinopyroxene and rhombic pyroxene. Plagioclase forms transparent long prismatic polysynthetically twinned crystals up to 4mm in size. Rhombic pyroxene – hypersthene is represented by thin prisms 1–1.5 mm long; it poorly pleochroates in greenish-pink tones, fading is direct, elongation is positive. Clinopyroxene forms short prisms of the same size with a well defined cleavage. Fine grains of ore mineral occur in association with pyroxenes.

Thin section V 1b

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic, in some places the ground mass is of cryptocrystalline structure, in other places it is of hyaline structure, with fine vesicular texture.

The rock phenocrysts are represented by plagioclase, clinopyroxene and single grains of olivine and make up about 10% of the rock.

Plagioclase forms long prismatic twinned crystals up to 3mm in size. Clinopyroxene is represented by short-prismatic crystals of slightly greenish color with a well defined cleavage; the size does not exceed 1–1.5 mm. The grains of olivine are of the same size, they have a rounded shape.

The ground mass is represented by unevenly decrystallized light brownish volcanic glass, in some places fine vesicular. It is made up of very thin aggregate of fine microlites of feldspar; in the light brownish glass areas of almost transparent volcanic glass are distinguished with numerous indeterminable crystallites.

Thin section V 2

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic; the structure of the ground mass is hyaline with perlitic and fine vesicular texture.

Areas of brownish-greyish-brown and light gray volcanic glass are observed in the rock.

Phenocrysts in the rock occur relatively rarely up to

7% and are represented by plagioclase and clinopyroxene, the size of which does not exceed 2 mm. Plagioclase forms prismatic twinned crystals; clinopyroxene is characterized by short prismatic grains.

Brownish-greyish-brown areas are represented by poorly decrystallized vesicular volcanic glass with perlitic jointing, in which microlites of plagioclase are observed here and there, as well as grains of ore mineral are found in the halo of iron hydroxides.

The areas made of light-gray volcanic glass are more uniform; phenocrysts occur in them less often.

Thin section V 3a

The rocks of thin sections 3a and 3b are similar

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is fine-porphyritic, the structure of the ground mass is hyaline; the texture is close to perlitic, vesicular.

In the thin section plane areas of greyish-brown vesicular limonitized glass with perlitic jointing are observed; decrystallization of the nuclear part of perlitic globules is observed, the structure of which is distinguished due to concentration of limonite product in the shells of the globules; their size does not exceed 0.15 mm.

The areas of light gray volcanic glass of hyaline structure are more uniform.

Phenocrysts make up 15–17% of the rock and are represented by short prisms of twinned plagioclase up to 2 mm in size and fine prisms of clinopyroxene; their aggregates are observed here and there. Thin small prisms of hypersthene occur. The ore mineral magnetite forms fine grains.

Thin section 3 b

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic, in some places the structure of the ground mass is hyaline, in other places it is cryptocrystalline; the texture is perlitic, vesicular.

In brown-greyish-vesicular volcanic glass with perlitic jointing and rare phenocrysts the areas of volcanic glass are distinguished, less colored – grayish brown, of cryptocrystalline structure with a large number of sub phenocrysts and less defined perlitic texture. Perlitic globules are made of brownish volcanic glass with a thin shell of decrystallization. The small hollows have an irregular shape.

Phenocrysts make up 17–20% of the rock and are mostly represented by long prismatic crystals of twinned plagioclase up to 3–4 mm in length, less by thin prismatic crystals of hypersthenes and grains of clinopyroxene up to 0,7 mm in size.

Thin section V 4

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic, the structure of the ground mass is hyaline, the texture is fluidal.

The rock – andesite is characterized by the presence of fine and lighter small lenses of volcanic glass, oriented to

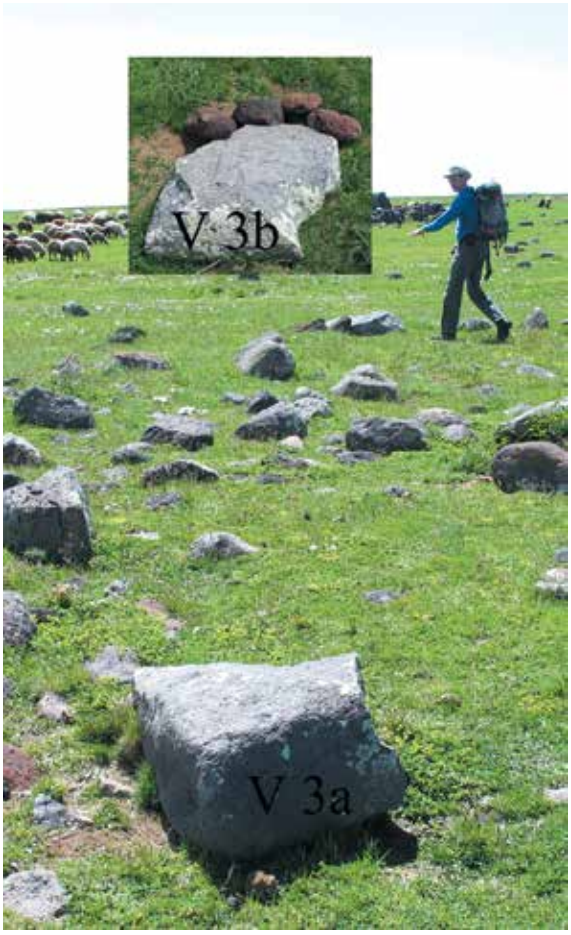


Fig. 6. Vishap 3, 85×56×25 cm (3a), 90×45×25 cm (3b, 10 m to the N of 3a), unexcavated (Photo: Alessandra Gilibert).

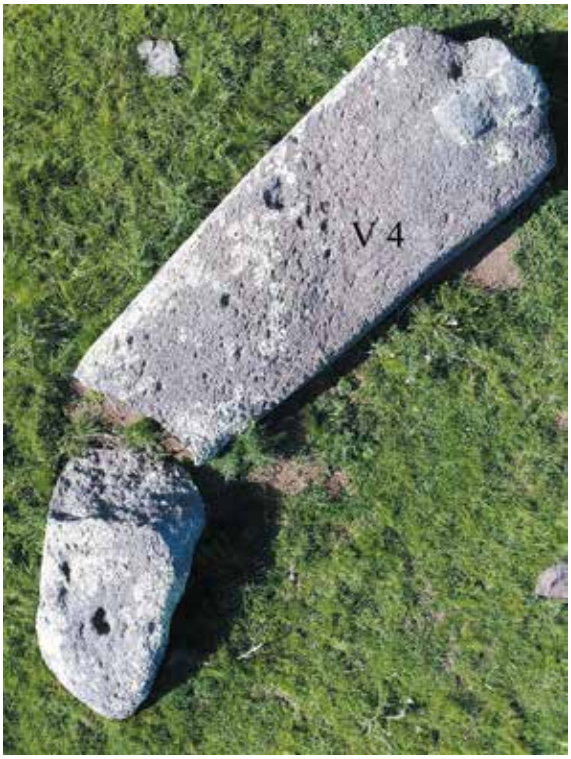


Fig. 7. Vishap 4, 435×112×40 cm, unexcavated (Photo: Pavol Hnila).

Fig. 8. Vishap 5, 148×73×35 cm, unexcavated (Photo: Arsen Bobokhyan).

Fig. 9. Vishap 6, 272×84×33 cm (1a), 54×47×30 cm (6b, found 20 m to the N-E of 1a), 95×45×30 cm (6c, found 15 m to the W of 6a), excavated in 2017 (Photo: Arsen Bobokhyan).

Fig. 10. Vishap 7, 181×98×62 cm (7a), 52×80×48 cm (7b, found during excavations 80 cm to the S-E of 7a), 54×70×56 cm (7c, found during excavations of Vishap 12, 1 m to the W of it), excavated in 2019 (Photo: Pavol Hnila).

Fig. 11. Vishap 8, 350×94×58 cm, excavated in 2016 (Photo: Pavol Hnila).

Fig. 12. Vishap 9, 95×80×25 cm (9a), 82×44×35 cm (9b, found 4 m to the E of 9a), 71×47×43 cm (9c, found 40 m to the S from 9a), 97×76×39 cm (9d, found 10 m to the E from 9a), unexcavated (Photo: Arsen Bobokhyan).

the plane of fluctuating texture, which is distinguished due to oriented distribution of phenocrysts and flattened vesicles. Their concentration in certain directions determines the rock texture. The size of glass lenses ranges from fractions of a millimeter up to 0.5–0.7 cm and they are represented by more decrystallized volcanic glass with cryptocrystalline structure; on the periphery of the lenses decrystallization of secondary minerals is observed. Flattened vesicles are characterized by the same dimensions; radiolith formations of isotropic mineral are observed in some of them.

The ground mass of andesite consists of slightly brownish-greyish brown non-uniform vesicular volcanic glass with fine impregnation of ore mineral and phenocrysts of plagioclase and occasionally of clinopyroxene. Sometimes they occur in fine-grained aggregates.

Phenocrysts make up 15–17% of the rock and are represented by plagioclase and clinopyroxene; plagioclase forms prismatic polysynthetically twinned crystals up to 4–5 mm in size; in large crystals the microinclusions of volcanic glass are observed. Clinopyroxene is represented by fine grains.

Thin section V 5

Tuff lava of andesite

The texture of the rock is ataxitic, the structure is porphyritic, the structure of the ground mass is hyaline, the texture is poor fluidal, fine vesicular.

The surface of the thin section is mainly represented by non-transparent coarse-vesicular and limonitized brownish gray volcanic glass with poor fluidization. In the limonitized volcanic glass the small areas of fine-vesicular poorly decrystallized grayish-brown volcanic glass are poorly distinguished.

The inclusions in both varieties of volcanic glass are represented by plagioclase and clinopyroxene, which make up up to 15% of the rock. Phenocrysts of plagioclase of long prismatic habitus up to 4 mm in size are characterized by microinclusions of volcanic glass, they have andesine composition. Clinopyroxene of slightly greenish color is represented by small prismatic crystals. The ore mineral is magnetite.

Rock fluidization is manifested by oriented location in the limonitized glass of elongated areas of greyish-brown glass, as well as large vesicles stretched in the same plane.

Thin section V 6a

Tuff lava of andesite with fritted fragments of slagged glass

The texture of the rock is ataxitic, the structure is fine-porphyritic, the structure of the ground mass is cryptocrystalline and hyaline; and the texture is vesicular, fluidal.

In the thin section plane the sub-parallel banded elongated areas of slightly brownish-greyish-brown and greyish-brown vesicular volcanic glass are distinguished different in color, including round shape corroded fragments of andesite-basalts 3–4 mm in size. The binding volcanic glass of brownish-greyish-brown color is characterized by cryptocrystalline structure and uneven limonitization, the greyish-brown glass is of hyaline structure. Vesicles in the glass are mostly of small size, they are elongated by fluidity; compara-

tively large vesicles are observed on the border of volcanic glasses differing in color and decrystallization.

Phenocrysts make up 15–17% of the thin section surface and are predominantly represented by plagioclase of prismatic habitus up to 1 mm in size, in rare cases 2 mm. In addition to them grains of clinopyroxene and ore mineral are observed.

Slagged glassof have micro-porphyritic structure with hyalopilitic structure of the ground mass. The microphenocrysts are represented by grains of clinopyroxene, and the ground mass is made of brownish-blask slagged volcanic glass with microlites of plagioclase.

Thin section V 6b

Andesite-dacite

The texture of the rock is ataxitic, the structure is porphyritic, the structure of the ground mass is microlitic; the texture is vesicular, fluidal.

Areas of volcanic glass of greyish-brown-brownish (70–75%) and brownish-gray color are characterized by equal distribution of microlites of plagioclase and vary in size of phenocrysts and vesicles, elongated according to the fluidity of the rock. In the volcanic glass of dark color both inclusions and vesicles are characterized by large size. In the light glass the vesicles on the walls are filled with secondary poorly crystallized products.

Phenocrysts make up about 15–17% of the rock and are mostly represented by prisms of polysynthetically twinned plagioclase up to 3 mm in size, as well as by crystals of clinopyroxene of lesser size up to 1.5 mm.

Thin section V 6c

Andesite-dacite

The structure is porphyritic, the structure of the ground mass is hyalopilitic; the texture is fine and coarse-vesicular, fluidal.

The amount of inclusions does not exceed 10–13% of the thin section plane, and they are represented by plagioclase, rhombic pyroxene and clinopyroxene. Plagioclase of andesine-oligoclase composition is represented by long prismatic polysynthetically twinned crystals 2–3 mm in length, in some places with fritted contours, and short-prismatic small crystals 0.5–0.7 mm in size. Rhombic pyroxene–hypersthene forms thin prismatic crystals up to 0.5 mm in size, it poorly pleochroates in greenish-pink tones, fading is direct, elongation is positive. Clinopyroxene of greenish-dirty color is less common, it forms short-prismatic grains.

The ground mass is represented by brown-greyish-brown volcanic glass with numerous microlites of plagioclase with rare and small rash of ore mineral. The small areas of glass enclosed in the ground mass resemble the rock described in thin section 6b. Rock fluidization is mostly manifested by oriented location of microlites of the ground mass, as well as small and large vesicles, the sizes of which reach 4–5 mm. Small vesicles on the walls have outgrowths of mineral of yellowish-brownish color in transmitted light and isotropic in crossed nicols.

Fig. 13. Vishap 10, 285×59×56 cm, excavated in 2013 (Photo: Pavol Hnila).

Fig. 14. Vishap 11, 213×50×38 cm, excavated in 2018 (Photo: Alessandra Gilibert).

Fig. 15. Vishap 12, 355×78×51 cm, excavated in 2018 (Photo: Pavol Hnila).

Thin section V-6 fragment

Tuff lava of andesite

The structure is fine-porphyritic, the structure of the ground mass is hyaline; the texture is perlitic, vesicular.

Phenocrysts, the size of which does not exceed 2 mm, make up 7–8% of the thin section surface.

They are mostly represented by small prismatic crystals of twinned plagioclase up to 1 mm in size, only a few reach 2 mm. Clinopyroxene also forms small thin prisms; small grains of magnetite occur in association with clinopyroxene.

The ground mass is represented by brownish gray volcanic glass with perlitic texture, which in some places is not very clearly manifested. The vesicles in glass are quite rare and they are distributed unevenly; up to 4 mm in size.

Thin section V 7a

Tuff lava

The texture of the rock is poorly distinguishable, ataxitic, the structure is porphyritic, the structure of the ground mass is cryptocrystalline, microlitic and hyalopilitic; the texture is vesicular.

The areas of brownish-brown and greyish volcanic glass differ in the structure of the ground mass. It is cryptocrystalline microlitic in the first case and hyalopilitic in the second. In the latter there is also poorly manifested fluidization. In the brownish-greyish-brown volcanic glass a small area of limonitized brownish-black glass is observed. Small vesicles are quite rare; large vesicles up to 4 mm in length occur more often. Radiolith formations of isotropic mineral are observed in some vesicles.

The inclusions make up about 7–10% of the thin section surface. Phenocrysts of plagioclase of prismatic habitus are up to 2 mm in size. The grains and small prisms of pyroxene occur less often and are small up to 1 mm in size.

Thin section V 7b

Tuff lava

The ataxitic structure is very poorly manifested. The structure is porphyritic, the structure of the ground mass is hyaline and cryptocrystalline; the texture is perlitic, vesicular.

Phenocrysts make up up to 5–8% of the thin section surface and are represented by plagioclase, clinopyroxene and hypersthene. Plagioclase mainly occurs in the form of crystal fragments, and only single crystals hold prismatic habitus no larger than 1.5 mm in size; clinopyroxene and hypersthene are characterized by more preservation – prisms no more than 0.5 mm in length; their agglomerates are observed here and there.

The ground mass is represented by vesicular brownish-greyish-brown volcanic glass of hyaline structure, which sometimes alternates with glass of cryptocrystalline structure with perlitic texture. There is an extremely uneven distribution of ore mineral in the glass. The impression is that the glass pieces with impregnation of ore mineral are assimilated by volcanic glass. The glass is unevenly limonitized; iron hydroxides are observed in the halo of frequent impregnation of ore mineral and they even line the walls of vesicles in the glass by a thin film. However, areas with ore mineral completely unaffected by limonitization are observed.

Thin section V 7c

Tuff lava of andesite

The texture of the rock is ataxitic, perlitic; the structure is porphyritic, the structure of the ground mass is hyaline.

The areas of brownish-greyish-brown and light brown glass of vesicular volcanic glass differ not only in color but also in size and frequency of perlitic globules. Their boundaries are almost indistinguishable; in some places they are detected by the merging of individual pores into elongated cavities up to 5–6 mm in length. In the volcanic glass with rare distribution of perlitic globules the agglomerate of plagioclase crystals is observed. Iron hydroxides are developed on the walls of some vesicles.

Phenocrysts are represented by plagioclase of prismatic habitus up to 2–2.5 mm in length, as well as by small prismatic indides of pyroxene. The grains of ore mineral occur in association with pyroxene.

Thin section V 8

Andesite lava

The structure is porphyritic, the structure of the ground mass is pylotaxitic; the texture is fluidal, porous.

Phenocrysts make up up to 17–20% of the thin section surface and are mostly represented by plagioclase and clinopyroxene, as well as by single crystals of olivine. Plagioclase forms prismatic polysynthetically twinned crystals up to 3 mm in length, large crystals contain microinclusions of volcanic glass. Clinopyroxene is represented by short prisms up to 1.5 mm in length; olivine is characterized by rounded shapes, with rare small cracks of iron hydroxides. The ground mass is a thin felt of microlites and rare blades of plagioclase, bonded by brownish-greyish-brown volcanic glass; microlites of plagioclase wrap around the rock inclusions. Hollows of irregular shape are observed in the rock with a transparent isotropic mineral, overgrown on the walls by a thin stripe. Microbunches of slagged glass are observed in the rock.

Thin section V-8 fragment

Andesite

The structure is porphyritic, the structure of the ground mass is hyalopilitic; the texture is perlitic, fine vesicular.

Phenocrysts are represented by prismatic crystals of plagioclase 2–3 mm in size and clinopyroxene up to 1.5 in size.

The ground mass is made up of brownish gray volcanic glass with microlites scattered in it and occasionally blades of plagioclase, small grains of clinopyroxene and very rarely of ore mineral. The perlitic rock texture is expressed very clearly. Vesicularity is very thin and vesicles are quite rare.

Thin section V 9a

Tuff lava

The structure is porphyritic, the structure of the ground mass is hyaline; the texture is fluidal.

The rock consists of slagged non-uniform volcanic glass of fluidal texture, in which the texture is distinguished due to oriented distribution of sub phenocrysts, pores and cavities.

Large phenocrysts are rare and are represented by long prisms of twinned plagioclase 2–3 mm in size with microinclusions of volcanic glass; clinopyroxene is represented by short-prismatic crystals 1–1.5 mm in size. The sub phenocrysts are mainly represented by short-prismatic crystals of plagioclase, clinopyroxene and hypersthene up to 0.7 mm in size, sometimes of angular-rounded shape. Their agglomerates are observed in the rock up to 4–4.5 mm in diameter. Grains of ore mineral up to 0.5 mm in size occur.

Small pores of the rock sometimes are connected by conductors forming cavities oriented in the plane of fluidal texture. The outgrowths of isotropic mineral of radiolith structure are sometimes observed on the walls of the cavities.

Thin section V 9b

Tuff lava

The texture is ataxitic due to alternation of areas of volcanic glass differing in color. The structure is porphyritic, the structure of the ground mass is hyaline.

The areas of limonitized brownish volcanic glass are observed in the grayish-brown fine-vesicular volcanic glass. The boundaries between them are indistinguishable in some places, elongated hollows are sometimes observed.

In the limonitized volcanic glass the comparatively large phenocrysts of plagioclase often have fritted shape, iron hydroxides develop along the cracks. Dendrite-like segregations of ore mineral are observed in the volcanic glass itself. The walls of the vesicles are distinguished by the concentration of iron hydroxides. The outgrowths on the walls of radiolith formations of isotropic mineral are observed in some vesicles.

The size of the rock phenocrysts does not exceed 2–2.5 mm; clinopyroxene and rhombic pyroxene occur in fine grains, sometimes the agglomerates of plagioclase and pyroxene grains are observed.

Thin section V 9c

Tuff lava

The texture of the rock is ataxitic, the structure is porphyritic, the structure of the ground mass is cryptocrystalline, in some places hyaline; the texture of cryptocrystalline glass is perlitic.

The rock is mainly represented by dark grey vesicular volcanic glass of cryptocrystalline structure with thin microlites in which the inclusions of brownish-greyish-brown, sometimes limonitized fine-porous glass of hyaline structure are observed.

Phenocrysts are quite rare and are represented by long prismatic crystals of polysynthetically twinned plagioclase up to 5 mm in size, often fragmented; clinopyroxene and hypersthene are represented by small prisms up to 0.7 mm in length.

On the walls of the pores, as well as in the glass of cryptocrystalline structure itself radiolith formations of isotropic mineral are observed.

The walls of some large vesicles in the glass of cryptocrystalline structure are filled with iron hydroxides.

Thin section V 9d

Tuff lava of andesite

The texture is ataxitic, the structure of the rock is porphyritic, the structure of the ground mass is cryptocrystalline; the texture is perlitic, vesicular and porous.

In the thin section plane the areas of fine vesicular gray and brownish volcanic glass are observed also varying in number and size of inclusions. Elongated pores or hollows of irregular shape are observed at the borders of their contact up to 5 mm in size. It is a grey volcanic glass with single phenocrysts of polysynthetically twinned plagioclase, forming long prisms up to 3 mm in size, as well as rare small grains of clinopyroxene and ore mineral. The caked fragments of limonitized volcanic glass of micro-porphyritic structure with rare blades of plagioclase are submerged in the grey volcanic glass.

Rock fluidization is manifested by the directivity of the smallest microlites in volcanic glass, as well as by the elongation of vesicles, the size of which does not exceed 0.5–0.7 mm. The outgrowths on the walls of radiolith formations of isotropic mineral are observed in some vesicles.

Thin section V 10

Andesite

The structure is porphyritic, the structure of the ground mass is hyalopilitic passing to microlitic; the texture is vesicular, fluidal.

The rock phenocrysts are mostly represented by small prisms of plagioclase and clinopyroxene 1–1.5 mm in size. The single long prismatic crystals of polysynthetically twinned plagioclase reach up to 5 mm in length, the prismatic crystals of clinopyroxene – up to 3 mm.

The ground mass consists of brownish-greyish-brown volcanic glass with numerous microlites of plagioclase and micrograins of clinopyroxene and ore mineral. Segregations of light grey volcanic glass occur, caked with brownish-greyish-brown glass, up to 1–1.5 mm in size. The vesicles elongated in one direction, the sizes of which reach 5 mm, as well as microlites of plagioclase oriented in the same direction, determine the rock fluidization.

Thin section V 11

Tuff lava of andesite

The texture is ataxitic, the structure is porphyritic, the structure of the ground mass is hyaline; the texture is vesicular.

In the grayish-brown volcanic glass of porphyritic structure the areas with frequent impregnation of limonitized ore mineral are observed, and the areas of dark brown volcanic glass with micro-porphyritic structure are observed with sub phenocrysts of clinopyroxene and plagioclase.

In the grayish brown volcanic glass the phenocrysts are represented almost in equal combination by plagioclase and clinopyroxene. The crystals of twinned plagioclase of long prismatic habitus up to 3–3.5 mm in length are quite rare, the short-prismatic crystals 1–1.5 mm in size are observed more

Fig. 16. Sampling process of volcanic rocks by Arshavir Hovhannisyan and Dmitri Arakelyan in L 1-4 area (Photo: Arsen Bobokhyan).

often. The short-prismatic crystals of clinopyroxene are opacitisized, in some places they form agglomerates. Grains of ore mineral are observed in association with them. Rare vesicles are sometimes filled with radiolith isotropic mineral.

Thin section V 12

Tuff

The structure is vitroclastic, psepho-psammitic, the cement is basal.

Varieties of slagged volcanic glass are observed in the thin section plane, which differ in structural and texture pattern, presence and size of inclusions, as well as in size and frequency of pores.

A fragment of non-rounded form of fine vesicular volcanic glass of brownish-gray color of micro-porphyritic structure with rare inclusions of prismatic crystals of polysynthetically twinned plagioclase and grains of clinopyroxene, and more rare inclusions of ore mineral, is characterized by fluidal texture; the texture is due to subparallel orientation of thin pores. The fragment has a zonal structure, which is manifested by a compacted outer zone on both sides and a vesicular middle part; the vesicles are often elongated into narrow cavities, oriented to the rock fluidity. The fragment is enclosed into fine-vesicular slagged brownish-black mass of perlitic texture with prismatic crystals of twinned plagioclase up to 3 mm in length and small crystals of clinopyroxene up to 1 mm in size (porphyritic structure). The crystals of plagioclase contain inclusions of the ground mass.

The binder mass is black-greyish-brown, structureless, the agglomerates of plagioclase and clinopyroxene grains are observed in it along the edges of the fragments described above.

Thin section L-1

Andesite

It is similar to L-4: the same fragments of carbonized rock.

The texture is ataxitic, the structure is porphyritic; the structure of the ground mass is pylotaxitic, the texture is fine-vesicular.

Phenocrysts are represented by plagioclase and clinopyroxene of prismatic habitus. The plagioclase is up to 1.5 mm in size, clinopyroxene is up to 1 mm. Fine crystals of hypersthenes occur 0.7 mm in length. In pylotaxitic mass the fragments of rock are observed carbonized and replaced by clayey material, possibly of volcanic glass; in some small fragments the globules of isotropic colorless glass are observed. At the same time cavities are observed, the walls of which are filled with carbonate with radiolith formations of isotropic mineral growing on the walls.

The ground mass is made up of brownish gray volcanic glass with microlites of plagioclase and small grains of clinopyroxene and ore mineral.

Thin section L-2

Andesite

The structure is porphyritic, the structure of the ground mass is pylotaxitic; the texture is fluidal, vesicular.

Phenocrysts are represented by plagioclase and pyroxene and make up about 15–17% of the thin section surface. Plagioclase forms long prismatic polysynthetically twinned crystals up to 5 mm in length. Crystals of clinopyroxene and hypersthene are 2–3 mm in length. The glomeroporphyry agglomerates of all mentioned minerals are observed.

The ground mass is made up of microlites of plagioclase and small grains of pyroxene fixed by brownish gray vesicular volcanic glass with frequent and fine impregnation of ore mineral.

Thin section L-3

Andesite

The structure is porphyritic, the structure of the ground mass is pylotaxitic; the texture is fluidal, vesicular.

Phenocrysts are represented by plagioclase of prismatic habitus 2–3 mm in size, less often by short-prismatic grains of clinopyroxene up to 1 mm in size. Phenocrysts are rather unevenly distributed in the rock; some crystals of plagioclase contain micro-impregnation of ore mineral.

The ground mass is unevenly decrystallized and depending on the content of microlites it is characterized now by hyalopilitic, then by pylotaxitic structures; it is made up of microlites of plagioclase, small grains of clinopyroxene and ore mineral fixed by brownish gray volcanic glass of vesicular texture; the vesicles are of elongated oval shape, they are distributed by the fluidity of the rock.

L-3 и L-4 are similar, but L-4 contains fragments of carbonized glass and vesicles more often.

Thin section L-4

Andesite Agglomerate

The texture is ataxitic, the structure is porphyritic; the structure of the ground mass is pylotaxitic and hyaline, the texture is vesicular.

In the brownish gray vesicular volcanic glass of pylotaxitic structure the rounded fragments of volcanic glass

Fig. 17. Sampling process of volcanic rocks by Arshavir Hovhannisyan and Dmitri Arakelyan in L 5-6 area (Photo: Arsen Bobokhyan).

of grayish brown color of hyaline structure occur, in some places with partial devitrification of volcanic glass; the fragments are carbonized on the periphery.

The ground mass of brownish gray vesicular volcanic glass besides the fragments contains microlites and rare blades of twinned plagioclase, grains of clinopyroxene and ore mineral.

Phenocrysts are represented by twinned plagioclase of prismatic habitus up to 3 mm in size and rare grains of clinopyroxene of irregular shape; they form agglomerates here and there. The vesicles of irregular shape are quite frequent up to 3–3.5 mm, the outgrowths of colorless mineral isotropic in crossed nicols are observed on the walls here and there.

Thin section L-5

Tuff Lava of Andesite

The texture is ataxitic, the structure is porphyritic; the structure of the ground mass is cryptocrystalline and hyaline.

In the thin section plane the areas of vesicular brownish gray glass are observed with hyaline structure and grayish-brown glass with cryptocrystalline structure of the ground mass.

Phenocrysts occupy up to 10% of the thin section surface, they are unevenly distributed in the rock and are represented by plagioclase of prismatic habitus 4–4.5 mm in size, and rare grains of clinopyroxene.

Thin section L-6

Basaltic Andesite

The structure is porphyritic, the structure of the ground mass is fine crystalline, microlitic.

Phenocrysts make up to 25% of the thin section surface; they are unevenly distributed and form agglomerates. They are represented by long prismatic crystals of polysynthetically twinned plagioclase 2–3 mm in length and by prismatic crystals of pyroxene up to 2 mm in size. In the agglomerates of phenocrysts the grains of magnetite up to 0.3 mm in diameter are also observed.

The ground mass is represented by a thin felt of microlites fixed by dark grayish-brown volcanic glass with small grains of pyroxene and ore mineral. The vesicles are of oval elongated shape up to 4–5 mm in size.

Thin section L-7

Slag

The structure is almost aphanitic, hyaline; the texture is pumiceous.

The rock is made up of slagged brownish black volcanic glass with numerous small and large pores and rare crystals of plagioclase with corroded peripheral membrane up to 0.7 mm in size, as well as even rarer and smaller grains of brownish clinopyroxene.

Thin section L-8

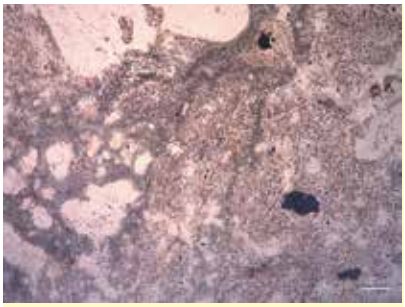
Andesite

The structure is porphyritic; the structure of the ground mass is hyalopilitic.

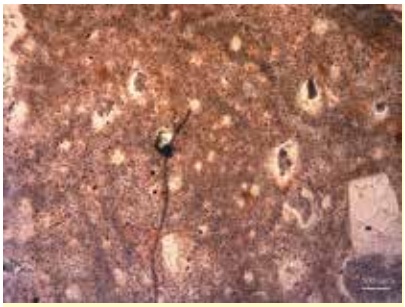
Phenocrysts make up to 20% of the thin section surface and they are mainly represented by plagioclase, less by slightly greenish clinopyroxene. The crystals of polysynthetically twinned plagioclase 2–3 mm in length are rare, the short-prismatic crystals 1.5 mm in length occur more often, they are often characterized by a lack of crystallographic faces and even in some cases by a fritted form. The relatively small crystals of prismatic habitus are corroded by the ground mass on the periphery. The small up to 0.7 mm crystals of clinopyroxene have prismatic habitus, the larger ones are characterized by irregular shape. The ground mass is made up of greyish-brown-brownish very fine vesicular volcanic glass with microlites and blades of plagioclase, micro-grains of clinopyroxene and rarely of magnetite. The vesicles are of rounded shape and they are few.

Thin Sections

V 01a



V 01b



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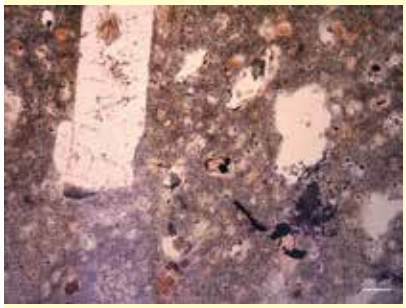

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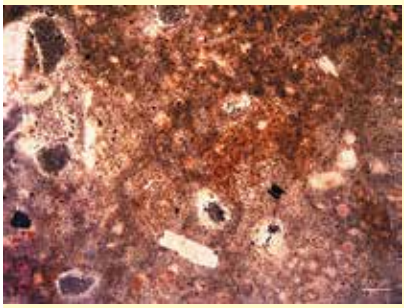

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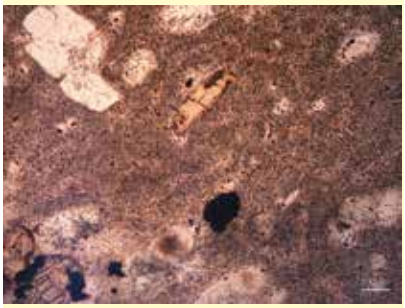

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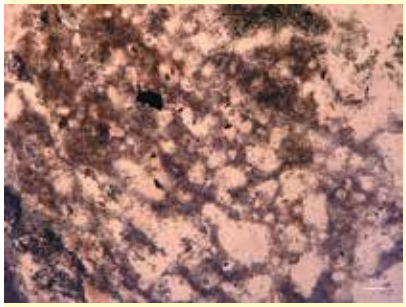
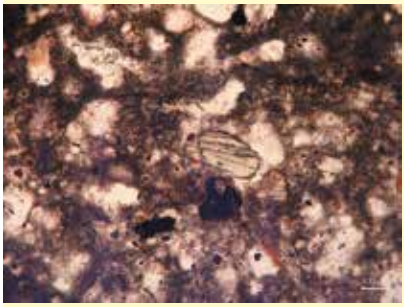
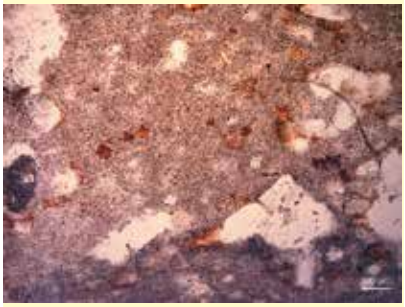


V 05



V 05'



V 06a

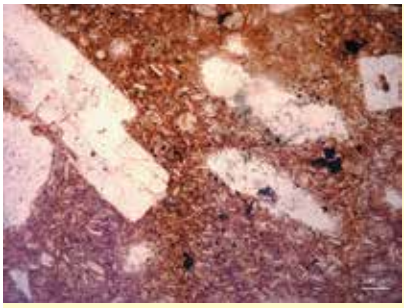
V 06a'

V 06b

V 06b'

V 1a	*Brownish-gray volcanic glass, fine vesicular with rare microlites; without analyser*
V 1b	*Light brownish and brownish-gray fine vesicular volcanic glass; without analyser*
V 2	*Vesicular volcanic glass with fine perlitic jointing; without analyser*
V 3a	*Areas of light gray volcanic glass of hyaline structure; without analyser*
3 b	*Brown-greyish vesicular volcanic glass with perlitic jointing and rare phenocrysts of twinned plagioclase; without analyser*
V 4	*Brownish-greyish brown non-uniform vesicular volcanic glass with phenocrysts of plagioclase, clinopyroxene and ore mineral; without analyser*
V 5	*The texture is poor fluidal, fine vesicular (***V 5** *without analyser;* **V 5'** *with analyser)*
V 6a	*Fragments of slagged glass.* **V 6a** *without analyser. Cryptocrystalline structure of the ground mass.* **V 6a'** *with analyser*
V 6b	**V 6b**. *Crystals of clinopyroxene and plagioclase. Crystals of plagioclase with microinclusions of volcanic glass; without analyser;* **V 6b'** *with analyser*

Thin Sections

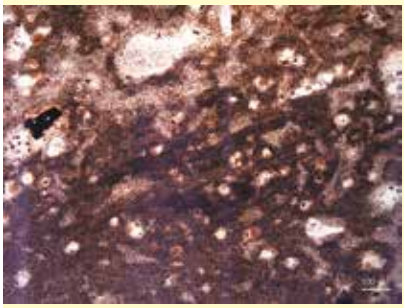


V 06c

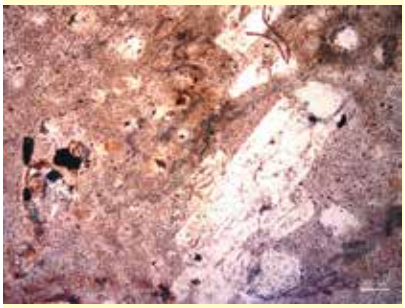
V 06c'

V 06fr

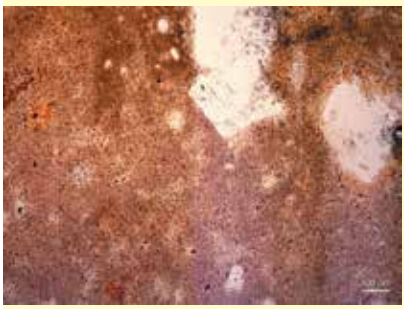
V 06fr'



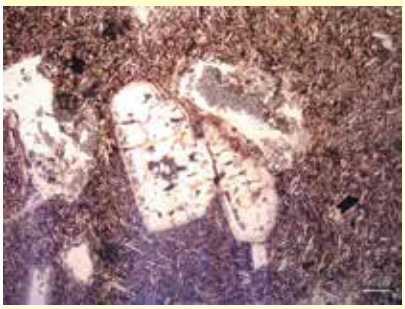
V 07a



V 07b

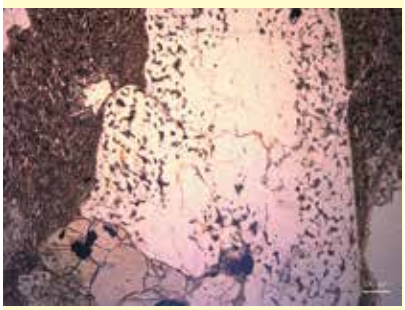


V 07c

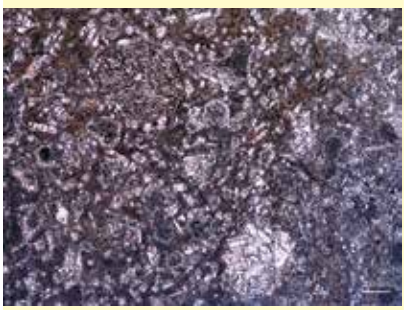


V 08

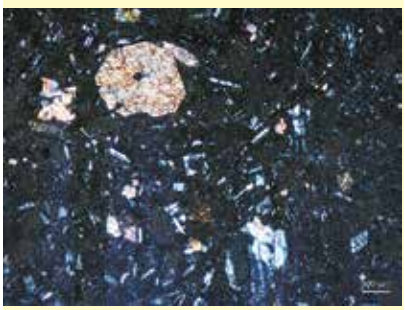
V 08'



V 08''



V 08fr

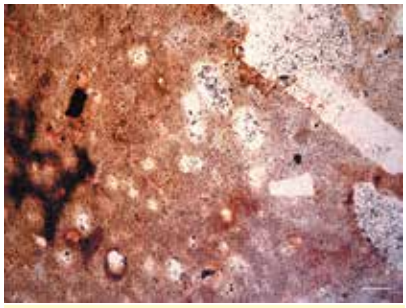


V 08fr'

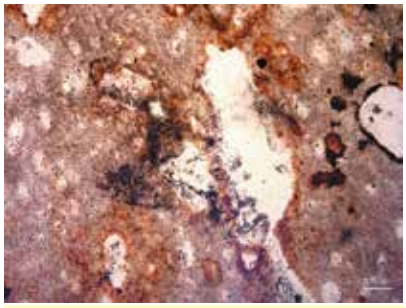
V 6c	**V 6c**. *Brown-greyish-brown volcanic glass with numerous microlites of plagioclase; without analyser* **V 6c'**; *with analyser*
V 6 fragment	**V 6 fr**. *Brownish gray volcanic glass with perlitic texture; without analyser;* **V 6 fr'** *with analyser*
V 7a	*Vesicular texture of brownish-brown and greyish volcanic glass; without analyser*
V 7b	*Perlitic, vesicular texture of the ground mass. The areas with limonitization changes; without analyser*
V 7c	*Hyaline structure of the ground mass; without analyser*
V 8	**V 8** *Pylotaxitic structure of the ground mass; without analyser;* **V 8'** *with analyser* **V 8''**. *The large crystals of plagioclase contain microinclusions of volcanic glass; without analyser*
V 8 fragment	**V 8 fr**. *Perlitic, fine vesicular texture of the ground mass. Crystals of clinopyroxene;* **V 8 fr'** *without analyser*

Thin Sections

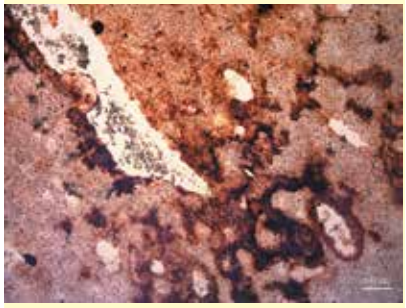
V 09a



V 09b

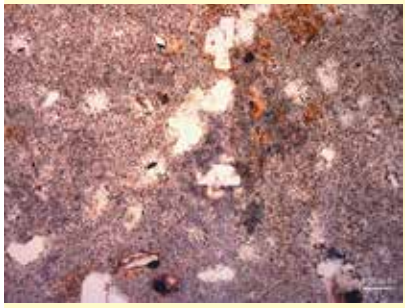


V 09c

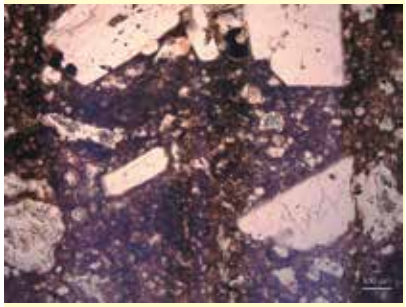


V 09d

V 10

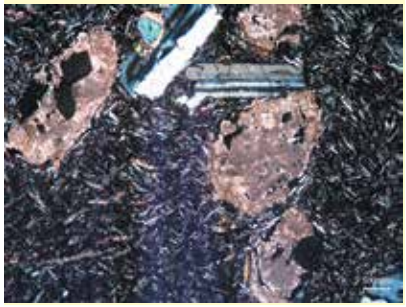


V 011



V 012

L 01



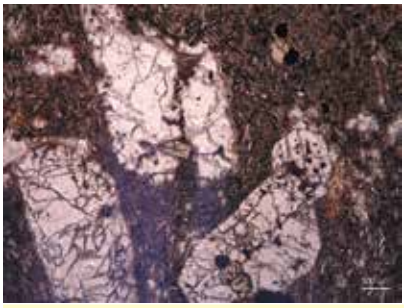
L 01'

L 02

L 02'

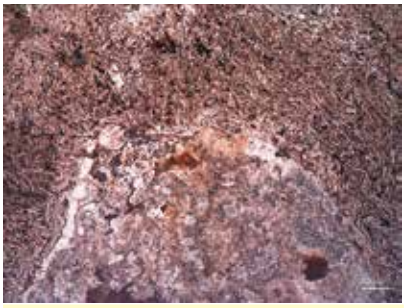
V 9a	*Very fine vesicular volcanic glass. Agglomerate crystals of plagioclase and clinopyroxene; without analyser*
V 9b	*Areas of limonitized very fine vesicular volcanic glass; without analyser*
V 9c	*Areas of limonitized brownish volcanic glass. The walls of some vesicles are filled with iron hydroxides; without analyser*
V 9d	*Areas of limonitized brownish volcanic glass; without analyser*
V 10	*Phenocrysts of plagioclase and clinopyroxene with ore mineral; without analyser*
V 11	*The rare vesicles are filled with radiolith isotropic mineral; without analyser*
V 12	*The binder mass is black-greyish-brown and structureless; without analyser*
L 1	**L 1**. *Fragments of carbonized and replaced by clayey material rock; without analyser;* **L 1'** *with analyser*
L 2	**L 2** *without analyser* **L 2'**. *The pylotaxitic structure of the ground mass; with analyser*

Thin Sections



L03

L03'

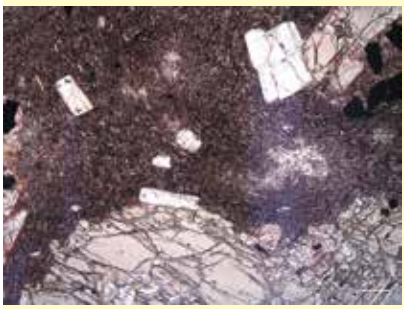


L04

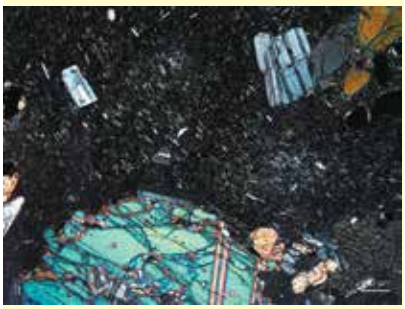
L04'

L05

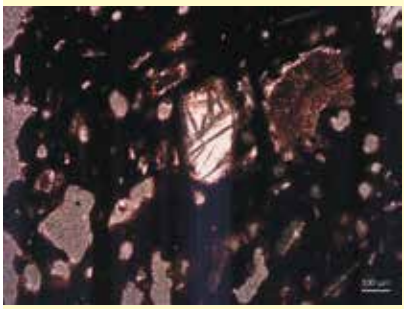
L05'



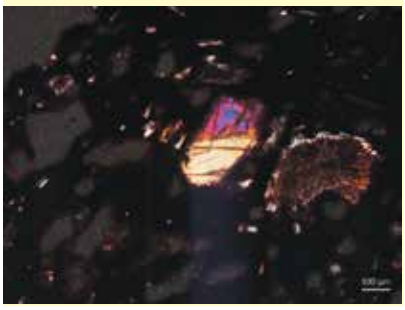
L06



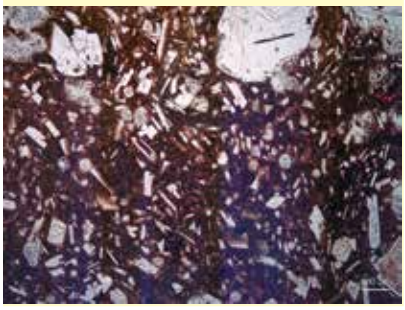
L06'



L07



L07'



L08

L08'

L3	**L3** *Crystals of plagioclase with micro-impregnation of ore mineral; without analyser;* **L3'** *without analyser*
L4	**L4** *Vesicles with colorless isotropic mineral; without analyser;* **L4'** *with analyser*
L5	**L5** *without analyser;* **L5'**. *Cryptocrystalline structure of the ground mass; with analyser*
L6	**L6** *Agglomerate prismatic crystals of pyroxene; without analyser;* **L6'** *with analyser*
L7	**L7** *Smaller grains of brownish clinopyroxene; without analyser;* **L7'** *with analyser*
L8	**L8** *Very fine vesicular volcanic glass with microlites of plagioclase and micro-grains of clinopyroxene; without analyser;* **L8'** *with analyser*

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Archaeological Investigations in Kotayk Region as Part of the Kotayk Survey Project (KSP). A Glance at a Selection of Fortresses (2013–2019)

Artur Petrosyan[1], Roberto Dan[2,3], Priscilla Vitolo[2], Varduhi Melikyan[1], Onofrio Gasparro[4], Samvel Nahapetyan[5]

[1] Institute of Archaeology and Ethnography, Armenia
[2] International Association of Mediterranean and Oriental Studies, Italy
[3] Tuscia University, Italy
[4] Ca' Foscari University of Venice, Italy
[5] Yerevan State University, Armenia

Abstract. Begun during the summer of 2013, the Kotayk Survey Project is an Armenian – Italian joint project studying the upper river Hrazdan valley, located in the northern part of the Kotayk region in the Armenian Republic. With the prospect of publishing a monograph in the coming years, here we present a selection of the most important pre-medieval sites discovered during our work; some of them are included in the "List of the Immobile Monuments of the History and Culture of the Republic of Armenia" published in 2003, whereas others were completely unknown.

Keywords: Armenia, Kotayk, pre-Medieval period, fortresses, architecture, material culture, chronology.

Introduction

During the summer of 2013 the Armenian – Italian Kotayk Survey Project was launched studying the upper Hrazdan river valley, located in the northern part of the Kotayk region in the Armenian Republic. The project is conducted under a scientific cooperation agreement between the Archaeology and Ethnography Institute of Armenia and the ISMEO – The International Association for Mediterranean and Oriental Studies. The project is under the patronage of the Ministry of Foreign Affairs and International Cooperation (MAECI) of Italian Republic (code ARC-001374). This paper describes a group of sites identified and studied during last year's activities. The extensive survey conducted in Kotayk Region has led to the identification of 174 archaeological sites. These sites range in date from the Palaeolithic to the Late Middle Ages. They are mostly located in the river Hrazdan gorge and on its main affluent, the river Marmarik. Some sites have also been studied in the Region of Gegharkunik, since these are in complete geographical and cultural continuity with the areas and issues investigated in our project. With the prospect of publishing a monograph in the coming years, here we present a selection of the most important pre-medieval sites discovered during our work; some of them are included in the "List of the Immobile Monuments of the History and Culture of the Republic of Armenia" published in 2003, whereas others were completely unknown. The series of fortifications discussed below are characterized by diverse architectural features and sometimes by unusual geographical positions.

Methodology

The investigation of the area is divided into two different activities: excavation and survey[1]. Given the area's huge size, survey work has been planned to be divided into two main phases. The first years have been devoted to an extensive survey, that have been useful for recording and documenting both already known and newly discovered sites, covering a wide area of mountainous terrain and intermountain valleys. This kind of activity is conducted with vehicles, together with low and high intensity pedestrian survey. Remote sensing is one of the tools for our archaeological landscape investigations, which involve the use of orthorectified LANDSAT images and digital topographic maps (1:10000). Remote sensing enables regional environmental, topo-

1 This article follows the previous contributions on other sites identified during the mission. See Castelluccia et al. 2012, 28-32; Petrosyan et al. 2015, 59-64; Dan, Petrosyan 2017, 313-315; Petrosyan et al. 2020, 211-212.

Code	Name	Date	Region	Closest Village	Latitude	Longitude	Elevation
KSP022		EBA, IA, LA, MA	Kotayk	Karashamb	40°24'11.59"N	44°35'16.64"E	1451 m
KSP025	Berdi Dar	BA?, IA, MIA/UR, MA	Kotayk	Hrazdan	40°29'14.51"N	44°47'57.17"E	1937 m
KSP047		BA?, IA?	Kotayk	Kaghsi	40°28'39.90"N	44°43'55.70"E	1718 m
KSP084		BA?, IA?	Kotayk	Fantan	40°23'18.12"N	44°49'56.10"E	2400 m
KSP097	Zovaber-1	IA, LIA, MA	Gegharkunik	Zovaber	40°33'49.8" N	44°47'17.1" E	1766 m
KSP099	Berdi Dosh	BA?, IA?	Gegharkunik	Ddmashen	40°35'15.2" N	44°49'23.9" E	2046 m
KSP102		BA?, IA?	Gegharkunik	Ddmashen	40°33'38.6" N	44°48'17.2" E	1791 m
KSP103		IA, LIA, MA	Gegharkunik	Ddmashen	40°34'08.4" N	44°49'50.0" E	1839 m
KSP104		BA?, IA?	Gegharkunik	Tsaghkunk	40°35'17.03"N	44°52'0.03"E	2025 m
KSP108	Boloraberd	BA?, IA?, MA	Kotayk	Hatis	40°35'17.03"N	44°52'0.03"E	2092 m
KSP109	Boriai Blur	IA, LIA, MA	Kotayk	Zar	40°15'50.76" N	44°45'10.96" E	1811 m
KSP128	Metsep	BA?, IA?	Gegharkunik	Gomadzor	40°33'36.63"N	44°56'29.80"E	2195 m
KSP133	Bjni	MBA, IA, MA	Kotayk	Bjni	40°27'39.73"N	44°39'14.69"E	1598 m
KSP136		BA?, IA?, MA	Kotayk	Karashamb	40°24'3.65"N	44°35'26.48"E	1452 m
KSP138		BA?, IA?	Kotayk	Karashamb	40°24'14.47"N	44°35'19.75"E	1447 m
KSP139		IA?	Kotayk	Karenis	40°23'1.18"N	44°36'17.93"E	1424 m
KSP140	Tigranaberd	IA, LIA, MA	Kotayk	Zar	40°15'6.60"N	44°46'9.30"E	1937 m
KSP142	Sevaberd	IA, MA	Kotayk	Sevaberd	40°16'13.04"N	44°47'50.65"E	2055 m
KSP145	Astghaberd	BA?, IA?, MA	Kotayk	Hatis	40°22'31.38"N	44°45'8.26"E	2080 m
KSP149		BA?, IA?	Kotayk	Hatis	40°19'57.55"N	44°43'8.50"E	2270 m
KSP154	Elar	EBA, MBA, LBA/EIA, IA, LIA, LA, MA	Kotayk	Elar	40°15'41.83"N	44°37'38.36"E	1430 m
KSP156		BA?, IA?	Kotayk	Arindj	40°14'9.82"N	44°35'49.03"E	1410 m
KSP163		BA?, IA?, MA	Kotayk	Hatis	40°18'25.80"N	44°43'30.90"E	2530 m

graphic and taphonomic assessments to be made, together with the identification of potential archaeological features. This step is followed by ground-checking activities so as to verify the various situations. All the archaeological evidences (pottery, artefacts, architecture) are geo-referenced and inserted into a cartographical GIS system. The most significant features are documented with aerial photography using drones for the creation of 3D models and ortophotos on which new maps and plans of the selected sites are produced. In the following years, after the identification of the most promising areas, an intensive survey will be developed, aimed at the complete or near-complete coverage of the selected areas at a high resolution, conducted by a team of archaeologists that will walk along parallel transects. Combining the topography with the study of the architecture and the information relating to surface patterns of pottery distribution, enables the identification of different forms of occupation and activity across the areas.

Predictive models created using GIS systems have been employed for the identification of unknown archaeological sites[2]. The pottery and other finds gathered during the survey activities are documented and inserted in specific databases to define the chronological occupation span of every site. The locations of the sites and of the artefacts are recorded using a handheld GPS. Some difficulties were noticed during the field investigations, mostly connected with weather and environmental conditions: on one hand the presence of wind or rain made it problematic to use drone technology; on the other visibility was often poor due to the presence of high vegetation and surface finds could not be seen. When these problems occurred, it took more time to complete the documentation of a single site. The density of surface material in some sites was extremely low for various variables (vegetation, previous investigations, alluvial deposits, etc.). For these reasons we have decided to collect all the pottery discovered on the surface, without applying any pre-selection. During the survey activities, some test excavations were conducted in a number of sites that were considered of

2 This is for example the procedure that we are going to apply to the sites dating to Urartian period. Study of the distribution on the ground of Urartian settlements (9–7th centuries BC) has led to the identification of standardized patterns that, it was hypothesized, might lead to the discovery of archaeological sites as yet unknown. The application of one of these models resulted in the identification in 2013 of the fortress of Solak-1 (Kotayk Region, Armenia; see the relevant section in this volume). Archaeological excavations conducted on this site since 2013 unearthed a sherd of highly diagnostic Urartian red slip pottery in context in the summer of 2017, final evidence of the Urartian construction of the fortress, and proof of the value of the model – that will be applied in the future to other regions. The predictive model used for the discovery of the Solak-1 site was awarded in 2019 the Europa Nostra/ European Heritage Award in the Research category.

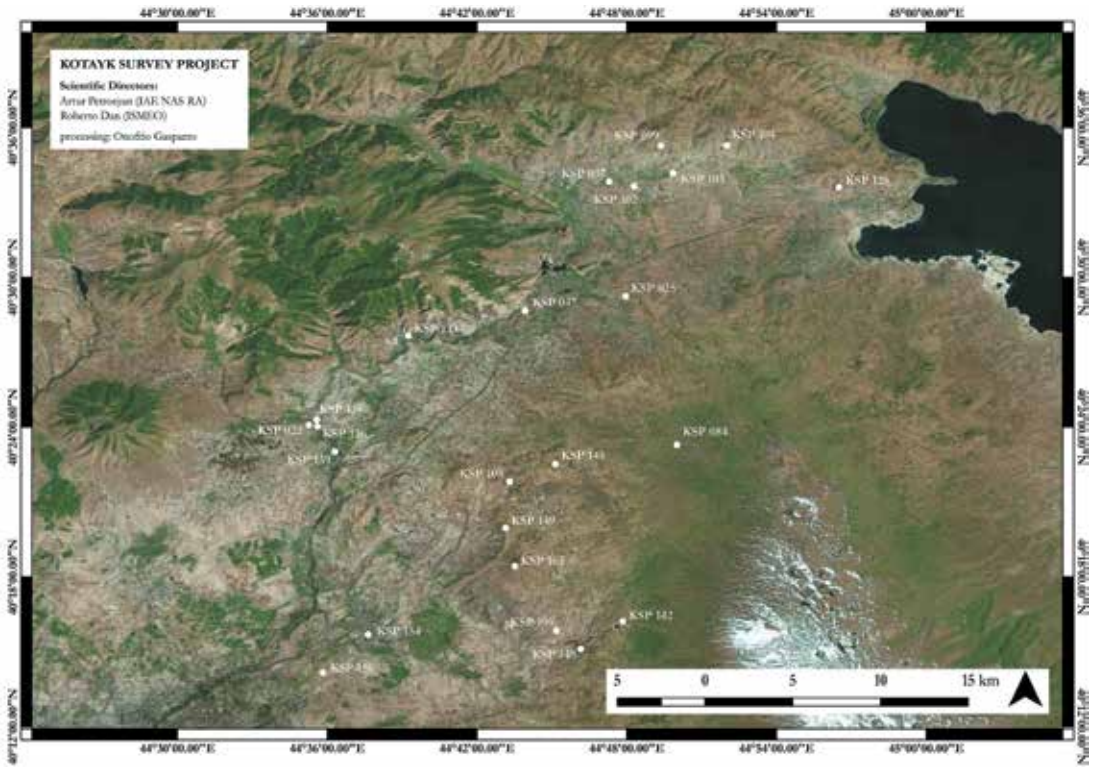

Fig. 1. Sites documented in the survey activities conducted in the Kotayk Survey Project (© Kotayk Survey Project archive).

particular interest, so as to understand their chronology. The systematic collection of data is allowing us to perform a very important task, which is to systematize the fortified structures – regardless of their time of foundation, which only in certain cases can be reliably determined – by combining architectural, dimensional and topographical data. In general, for the dating of buildings, in the absence of pottery finds that seem likely to be associated with the structures, the main criterion is the presence of mortar in the walls, which was generally used in the Middle Ages, although there is no lack of dry-stone structures. The presence/absence of regularly spaced buttresses and towers is usually diagnostic of the Urartian period and later, while the use of irregularly placed towers and buttresses started in earlier times. All these chrono-typological parameters will be discussed in specific future publications.

In this paper 23 archaeological sites are described and discussed, almost all characterized by fortifications with various architectural features, functions, dimensions and geographical locations. The sites have a chronological range that goes from the Early Bronze Age to the Middle Ages (Fig. 1)[3].

3 The chronological abbreviations used in this text are the following: EBA: Early Bronze Age; MBA: Middle Bronze Age; BA: Bronze Age; LBA/EIA: Late Bronze Age/Early Iron Age; IA: Iron Age; MIA: Middle Iron Age; LIA: Late Iron Age; LA: Late Antique; MA: Middle Ages.

KSP022 (Kotayk Region, Karashamb Village)

The site is located on a small plateau in a high strategic location on a hill positioned on a bend of the river Hrazdan. It is protected by the river on almost every side, except for one small area (Fig. 2/4). Unfortunately, the plateau and consequently the site have been partially destroyed, especially on the south-west, south and south-east sides, by extraction activities that have now been suspended. The site was visited and studied by the expedition in 2013 and 2019. It is located on land measuring ca. 320 m × 120 m and covers an area of ca. 1.80 ha. Remnants of impressive fortification are visible on the northern part, and were clearly intended to prevent entry at the only point where the plateau could be accessed. These dry-stone walls were built employing double-faced technique, with large stones used for the external faces, filled with small stones. Remnants of walls are visible scattered over the ground at many points; the remains of an extensive settlement area occupy most of the plateau. Of multiple buildings buried in the ground only the wall ridges and sunken room interiors are visible; the structures appear as agglomerations of rooms. A conspicuous amount of pottery was collected from the surface of the site, which dates to the EBA, IA, LA and MA, including some 13 – 14th centuries AD sherds.

Fig. 2. Karashamb area in the middle Hrazdan valley, with the position of the sites identified by the KSP, some of which are discussed in this text (© Kotayk Survey Project archive).

KSP025 (Kotayk Region, Hrazdan City)

The site is locally known as "Berdi-Dar". It is divided into a fort (KSP025) and a huge settlement (KSP088). The fort was identified and studied for the first time in 2014 (Petrosyan et al. 2015, 61, tab. XXII/1). It was studied again, together with the settlement, in 2017 and 2018 (Petrosyan et al. 2020, 217–218, figs 4–7). Its identification on the ground was achieved through the use of remote sensing in an attempt to detect the fortified Urartian period road which connected the Ararat plain with the lake Sevan basin. This fortress is located about halfway between Solak-1/Varsak (KSP016) which is about 9 km away, and Lchashen fortress, from which it is about 12 km. The site stands upon a summit at 1956 m above sea level overlooking the plain between the modern village of Lernanist, 1.5 km to the east, and the city of Hrazdan, 2 km to the west; it is included in the national list of monuments (code 6.1.1). The fortress has a trapezoidal plan and is surrounded on four sides by double-faced walls built with large unworked stone blocks with an inner fill of smaller stones. Their thickness ranges from 3 to 3.5 m. The total length of the walls is about 220 m with an enclosed area of ca. 0.4 ha. Exactly like Solak-1/Varsak, the corners are oriented towards cardinal compass directions. The northeastern wall is ca. 50 m long; the northwestern wall is about 40 m in length and is the most damaged due to its position on the slope and consequent exposure to erosion; the southwestern wall, on which the gate is located, has a length of ca. 75 m; the southeastern wall, reinforced by three big buttresses, is about 55 m long. The best preserved walls are on the southwestern side, where there are two courses of stones still *in situ*. The entrance is still clearly visible on the south-west wall, flanked by two large buttresses that form a sort of corridor ca. 8 m long. The south buttress protrudes from the wall ca. 6 m and is 5 m in width. The northern wall, that is the extension of the north-west perimeter wall, is 8 m in length with a width of about 5 to 7 m. The entrance corridor is about 3 m wide.

Within the fortification may be noticed other regularly arranged partitions, that belong to the inner buildings. Visible remnants of structures are attached outside the main fortification on the southwestern and southeastern sides. It is interesting to note that on three sides (south-west, north-west and north-east) the walls seem to have been built on wider bases. Currently, we are not able to establish if this situation is connected

with the construction of the upper walls and whether the bases must be considered as foundations, or if the lower, wider walls pertain to an older phase of construction. The most intriguing architectural feature are the three buttresses located on the southeastern wall. These are spaced about 16 m apart (the central one is most clearly visible), with widths of ca. 8 m, and protrude ca. 3 m from the wall. The buttresses were made to protect the most exposed part of the fort. A small test trench was dug in the site in order to understand the chronology, given the absence of sherds on the surface. Unfortunately, in the small 1 × 1 m trench in which we reached the natural soil after 0.80 m and three stratigraphic units were detected, no diagnostic materials were found either. Further investigations will be conducted in the future on the site. The absence of diagnostic finds precludes any additional consideration. However, some remarks may be made about the architecture. The fairly regular construction technique (double-faced dry-stone masonry, using roughly worked "cyclopean" stones) points towards an Iron Age date. The possibility of two layers of fortifications, in which presumably the buttresses on the southeastern wall could be later additions, suggests at first glance that this might have been a pre-Urartian fortress, re-used and adapted in Urartian times. Regularly spaced buttresses are a typical Urartian feature, almost absent in earlier periods. These remains resemble the fortress of Akçaoren, located in Ağrı region of eastern Turkey, which shows similar characteristics. Indeed, despite being slightly larger, this latter fortress has the same orientation, a comparable construction technique, and three regularly spaced buttresses in the same positions as those of Berdi-Dar. Akçaoren fortress has been dated to the Early and Middle Iron Age (Özfirat 2009, 457).

In 2017, at the foot of the hill that hosts the Berdi-Dar fortress, the remnants of a large settlement (KSP088) were identified. The site is located about 250 m north-west of Berdi-Dar and about 800 m south-east of the eastern outskirts of Hrazdan city. Just west of the site, there are the remnants of abandoned Soviet period buildings. The site is surrounded by agricultural fields, a circumstance which precludes an understanding of its original extension or the amount of the damage. The area covered by building remains measures about 400 m east-west by 350 m north-south. The site's total area can be estimated at 11 ha. On the site, agglomerations of structures leaning against each other, often made using big stones and double-faced technique without mortar, with single courses of stones still visible, may be seen everywhere. Fortunately illegal excavations have not damaged it, although it has

Fig. 3. KSP047. Ortophoto of the site (© Kotayk Survey Project archive).

been cut by the passage of some pipelines. On the surface of the site, a few sherds of Black Burnished Ware typical of the Late Bronze/Iron Age were found, and some Middle Ages pottery.

KSP047 (Kotayk Region, Kaghsi Village)

Fort was identified in 2014 and documented with the use of aerial images in 2019. The site is not in the national list of monuments; it was identified for the first time by the expedition. It is located on the south margin of a small plateau, overlooking the right bank of the river Hrazdan gorge, just 100 m west of the western end of the modern Kaghsi village. About 250 m to the west there is a relevant Early Bronze Age site, named Kaghsi-2 (KSP046; Dan, Petrosyan 2017, 313–315) and 460 m to the south-east, on the opposite bank of the river Hrazdan, there is an important Bronze and Iron Age burial ground recorded as Kaghsi-3 (KSP012). The fort stands in a high, strategic position controlling transit in the bottom part of the gorge; it is sub-triangular in shape, and composed of a single fortification wall (Fig. 3). It measures about 80 × 84 m, with a total area of 0.48 ha. The fortification's original length was about 260 m, but most of the walls on the south and eastern sides have fallen into the gorge. The fortress is located on a terrace sloping down towards the gorge; between the north wall and the southern margin of the site there is a difference of about 10–15 m in

Fig. 4. KSP084. Ortophoto of the site (© Kotayk Survey Project archive).

altitude. The best preserved part of the fortifications is located on the north, northwestern side. The northern wall is about 80 m long, with the possible presence of a gate. The western wall was clearly built immediately after because it evidently abuts the former. The walls were built using a dry-stone, double-face technique, with external facings made of large stones and an infill of loose material; the average width is about 3.70 m. No traces of mortar have been identified. The walls are linear and no towers or buttresses are present. The walls usually survive to a height of not more than two courses of stones. No traces of buildings have been recognized and few fragments of non-diagnostic pottery have been found, results that were certainly conditioned by the high vegetation that was present at the time of our visits to the site. On the basis of the architectural features and the geographical position we can hypothesize that the site dates to the Bronze or Iron Age, quite definitely to a pre-Urartian period.

KSP084 (Kotayk Region, Fantan Village)

The fortification named KSP084 was identified in 2017 and is not present in the national list of Armenian monuments. For a series of reasons outlined below, this is one of the most intriguing sites discovered during our activities. It is located in an isolated position, far away from modern villages. The closest is Fantan, 12.5 km to the west and there is no road passing near it. The site was built on a low hill created by the Lower Pleistocene activity of volcanoes in the Geghama range. The low hill that hosts the site is located on a gentle slope that rises from east to west towards the mountain chain. The hill is completely covered by pieces of basaltic lava and the structure was built inside this lava outcrop. It is composed of a fortification wall made of the natural basalt blocks, which means that it is invisible from every direction.

The fortification is sub-rectangular in shape and is divided into two main areas: Area A, smaller and with an east-west orientation, and Area B, bigger and oriented south-west/north-east. The total size of the complex is about 92 × 32 m with a total area of 0.26 ha and an outer perimeter measuring about 235 m (Fig. 4). Area A measures about 25 × 20 m with an area of 0.05 ha and a fortified perimeter 85 m long. Area A shares its eastern wall with Area B. The eastern wall is reinforced by two rounded towers, very similar to a type attested for example in Georgia, in the Samtskhe-Javakheti region, at sites such as Abuli (SJP010)[4], Tontio-1 (SJP004) and Didi Khanchali (SJP020). The towers are not easily measurable, but are about 6–7 m wide. In correspondence to the structure's western wall, a short east-west path runs over the basalt stones to the bottom of the hill, leading to a gate that is 1.50 m wide. Another small (not measurable) passage in the middle of the eastern wall connects Areas A and B. Area B measures 68 × 32 m. In general, no structures are present inside these areas. The dry-stone walls are all built, as mentioned, of medium to large pieces of basaltic lava, and are about 2 m wide on average. In the best preserved part, in correspondence to the east wall

4 The acronym SJP refers to the Samtskhe-Javakheti Project, a Georgian-Italian archaeological expedition active since 2017.

of Area A, the walls are about 1.50/1.60 m high, with 8 or 9 courses still preserved. Absolutely no traces of pottery have been found. This place is completely unsuitable for normal living, firstly because of its high altitude which allows it to be frequented only in certain periods of summer and secondly due to the type of walking surface which is very difficult to cross. The absence of tree vegetation, the structure's architectural characteristics and the area's climate make it difficult to imagine that this construction was used other than sporadically. This looks like a further example of an archaeological phenomenon that we have also documented in south Georgia, with a series of sites at Abuli, Shaori and elsewhere, all located at altitudes in excess of 2300 m, which have recently been interpreted as temporary shelters (Licheli et al. in press). These sites were built by the local populations to protect themselves from the passage of groups that posed a considerable threat. Their interpretation as refuges, as in the Georgian cases just mentioned, is supported by the fact that these complexes seem to have been designed to be practically invisible to anyone who crossed the region. Taking into consideration that the ancient north-south route that led towards the Ararat valley ran near the river Hrazdan, i.e. between 13 and 18 km further west, the site's function as a refuge seems even more evident. As in the case of the Georgian sites mentioned above, it is impossible to provide an exact date for the complexes on the basis of their architecture and pottery; the latter is absent from the site described, but present in small quantities in the Georgian sites. However, some help comes from the Abuli complex whose chronology was recently moved back to the pre-Urartian period, since it is probably the Apuni (Salvini 2018: CTU A 8-2, Vo 38'; CTU A 8-3 I, 12; CTU A 9-3 VI, 14) mentioned by Argišti I in his annals (Dan et al. 2019; Dan 2020, 21). For this particular architectural phenomenon, it is currently possible to hypothesize a Bronze or Iron Age date that cannot be specified with greater precision – in any case a period preceding the birth of the Urartian state.

KSP097 (Gegharkunik Region, Zovaber Village)

The site is located on the southern outskirts of the village of Zovaber, just west of the road (H-29) which runs between it and Mikroshrjan village. It is not on the national list of monuments and was studied by our expedition in 2018. The structure stands on a low natural hill that rises 5 – 6 m above the surrounding land. It is sub-circular in shape and measures about 70 × 60 m with an area of about 0.30 ha. The site has unfortunately been severely damaged by subsequent human activity, including the construction of three buildings in 1959, that overlie and have partially destroyed the western portion. Only some scattered wall remains are visible, dry-stone, double-faced and made of medium-sized stones, generally preserved for not more than two courses of stones. At the western edge of the hill there are the remains of a cemetery disturbed during the construction of the houses present on the site. The burial ground yielded three whole vases of Late Bronze/Iron Age date (Fig. 5), which were recovered from local inhabitants who had kept them since the construction of their home and who told us they found them at a depth of about 4 m. The surface pottery collected on the site dates to the Late Iron Age and to the Middle Ages.

Fig. 5. KSP097. Iron Age pottery from the site (© Kotayk Survey Project archive).

KSP099 (Gegharkunik Region, Ddmashen Village)

The site known locally as "Berdi Dosh" stands on the top of a high hill about 1.5 km north of the modern village of Ddmashen and can be reached by climbing up to a small church devoted to St. Hovhannes in a place known locally as Tsarov Dzor (KSP098). It was visited and studied in 2018. The site belongs to the national list of monuments (code 5.30/1), which dates it to the 2 – 1st millennia BC. It consists of a fortification that was part of a chain of fortresses located on the northern margin of the river Hrazdan valley, on the initial spurs of the Pambak mountain range, together with sites KSP104 and KSP128, with which it shares similar architectural features and geographical location. From the top of the hill is possible to overlook and control the entire river Hrazdan valley, part of lake Sevan's northwestern shore and the entrance to the Marmarik valley. It has a sub-circular plan, with a size of 140 × 120 m

Fig. 6. KSP099. Ortophoto of the site (© Kotayk Survey Project archive).

Fig. 7. KSP102. A small fort with an overhead power line in the middle (© Kotayk Survey Project archive).

and a total surface of 1.17 ha (Fig. 6). A single wall, well adapted to the hill's topography, encloses the upper part where there is a flat area. The wall was built in dry-stone, double-faced technique with medium/large stones used for the external faces and loose materials for the filling. The average width is between 2.10 and 3 m. Remnants of some irregular buttresses are visible; one on the northern side is 5 metres long and protrudes 1 m from the wall. The southeastern part of the wall contains the gate (3 m wide and 3 m long) to the inner part of the complex. In general, the wall is not well preserved, with at most three courses and an average height of less than 0.50 m. Inside the fortification wall and attached to it are remnants of at least five irregular enclosures made quite recently by shepherds to contain animals using stones taken from the surrounding wall. In general, there are no traces of ancient internal structures. Despite the absence of surface pottery, but taking into consideration the architectural characteristics of the complex and its total adaptation to the local topography, a possible and generic dating to the pre-Urartian period may be suggested.

KSP102 (Gegharkunik Region, Ddmashen Village)

The site is located on the left bank of the river Hrazdan, about 530 m south of the village of Ddmashen, that is located on the opposite bank of the river. The site can be reached by a dirt road that starts form the southeastern outskirts of the village. It is not included in the national list of monuments and was discovered and documented by the expedition in 2018. It is a small fort built on a low natural mound about 5 m high. In the middle of the fort stands a modern power line tower (Fig. 7). The fort is sub-circular in shape, with a single wall that encircles the mound. The wall, preserved for a single course, was built using a double-faced dry-stone technique with external faces of medium to large stones. The average width of the walls is between 2.50 and 2.70 m. No traces of towers or buttresses are recognisable on the ground and no pottery was found. Despite its poor natural defences, the small fort offered a clear view of the surrounding areas. There is little evidence concerning its chronology, although a pre-Urartian date, based on its architectural features, may be hypothesized.

KSP103 (Gegharkunik Region, Ddmashen Village)

The site is located on the left bank of the river Hrazdan, overlooking the gorge, about 200 m east of Ddmashen village, from where the site can be reached by dirt roads. It is not present in the national list of monuments. It has irregular shape and measures about 230 x 180 m, with a total area of 2.18 ha (Fig. 8). The site consists of an extensive settlement partly enclosed by a fortification wall. The area of the settlement protected by the wall is 1.50 ha and the perimeter of the fortifications is about 470 m long. The regular dry-stone walls are double-faced, made of medium-sized stones, usually preserved for one or two courses and between 1.5 and 2 m wide. In the southwestern part of the fortifications the remnants of two buttresses are visible. The remains of not less than forty underground rooms may also be seen. Surface pottery is generally Iron Age in

date; some sherds are from the Late Iron Age and others from the Middle Ages. In the river Hrazdan gorge, several metres below the western side of the site, there are the remnants of an ancient water channel that is still in use today.

KSP104 (Gegharkunik Region, Tsaghkunk Village)

The site lies 1115 metres north of the village of Tsaghkunk and is not in the national list of monuments. It was visited and documented in 2018. The site is located on the top of a small mount in the Pambak range at the northern margin of the river Hrazdan valley and there is no road leading to it. It closely resembles the site of Berdi Dosh (KSP099) with regard to position and architectural features. The site is a small sub-circular fort measuring about 70 × 60 m with a total area of 0.27 ha (Fig. 9). The perimeter wall is about 195 m long, dry-stone and faced externally with medium/large stones. The average width of this wall is between 1.50 and 2 m, and mostly just a single course is preserved. A possible gate was located in the southeastern part of the structure but unfortunately it is impossible to give measurements due to its poor preservation. Some possible structures are visible in the inner part of the fort, near the north/northwestern side of the wall. Two buttresses are located on the north and southeastern parts of the outer wall; the northern one is about 10 m wide and protrudes about 1.5 m from the wall face. Unfortunately, no pottery has been found in the structure, notwithstanding the presence of an illegal excavation in the middle of the fort. As for Berdi Dosh, despite the absence of surface pottery, but taking into consideration the architectural characteristics of the complex and its close conformation to the lie of the land, a possible generic pre-Urartian date may be suggested.

KSP108 (Kotayk Region, Hatis Village)

The site is located on a series of volcanic hills 3.3 km north of the village of Hatis; no road leads there. It is locally known as "Boloraberd" or "Klorberd" and is included in the national list of monuments (code 6.40/2), where it is dated to the Middle Ages. It was visited and documented in 2018. The site covers a large area and is composed of a small fort, the remains of a wall and a possible settlement. These lie on several hills which, like that of KSP084, are almost completely covered by pieces of basalt produced by the volcanic activities of the Geghama mountains in the Lower Pleistocene. Structures are visible over an area measuring about 150 × 170 m (total area 2.5 ha). The most

Fig. 8. KSP103. Ortophoto of the site (© Kotayk Survey Project archive).

Fig. 9. KSP104. Ortophoto of the site (© Kotayk Survey Project archive).

interesting building is a small fort located on the top of a hill (Fig. 10). It has a semi-circular shape measuring 32 × 22 m, covering a total area of 0.06 ha. The dry-stone walls, with a perimeter of about 100 m, are double-faced with large stones used for the faces and an infill of small stones. The width of the walls is from 3 to 5.5 m; the thicker walls are located on the east side, which is the most accessible and would therefore have been more exposed to attack. On this side, there is also

Fig. 10. KSP108. An overhead view of the small fort (© Kotayk Survey Project archive).

the only entrance door to the structure which is 2.5 m wide and 5.5 m long. The walls are very well preserved and in various parts still stand to heights of more than 2.5 m. On the northern part of the fort, in correspondence with one of the two corners of the building, there is a rectangular tower, with sides measuring 6 m (north-west) and 4.70 m (north-east); it protrudes 0.60 m from the wall on the east side and 1.80 m on the west side. There were probably no internal partitions; it seems likely that the walls there are relatively recent. Just north-west of this fort, and attached to it, a metre or two lower down, there are the remains of irregularly shaped enclosure walls built using the same basaltic lava stones present on the hill. They seem to be later in date than the fort. Just west/south-west of the fort there is a large area that for simplicity has been called a "settlement", where there are no surrounding basalt flows. Just at the edge of this part, where the igneous stones start again, a whole series of rooms have been constructed – in most cases single rooms with rather irregular shapes. These seem to have been small shelters, not too dissimilar in conception from those attested in the sites of Abuli and Shaori in Samtskhe-Javakheti. The size of these small structures is about 2 – 3 × 5 m. The last significant visible feature is a long wall built about 90 m south-west of the fort in the valley at the foot of the hill on which the fort stands, in correspondence to the beginning of another hill. The wall was again made of basaltic lava rocks, at the point where the western hill stands and where the area covered with basalt rocks ends. This wall is about 160 m long and in some sections is preserved for a height of about 4 m. At present we are unable to suggest a function or chronology for this complex. As seen in the other sites relating to this type of structures built on lava flows, there is practically no surface pottery, except for a single Middle Ages fragment dating to the 13 – 14th centuries AD, a circumstance that makes it difficult to suggest a date. The only possible dating criterion would be the fort's architecture; a certain regularity of the structure, combined with the presence of a large corner tower, might suggest a relative date similar to that of the KSP084 complex.

KSP109 (Kotayk Region, Zar Village)

The site is known locally as Boriai Blur. It is located about 1 km north-east of the village of Zar on the edge of a small valley and can be reached along a dirt road. The site was visited and studied in 2018. It is composed of a tower surrounded by an outer fortification wall (Fig. 11), with dimensions of about 80 × 55 m and an area of 0.30 ha. All the walls are dry-stone and double-faced, with medium/large stones for the faces and an infill of loose material. The tower has a sub-circular shape and measures 12 × 9 m, with an area of 0.01 ha. The walls of the tower are poorly preserved and stand for a maximum of two courses. The structure is completely full of debris, so is not possible to establish the presence of inner partitions. There are

internal wall remains but no precise building may be recognized. The outer fortification is sub-elliptical in shape and is divided in two areas by a straight wall located on the eastern side. The bigger part that encloses the tower covers 0.23 ha and the perimeter wall is about 177 m long. This part is divided from another section by a straight wall about 40 m long. This area is more difficult to interpret but it seems to contain at least two long, parallel rectangular rooms. The bigger one measures 20 × 9 m; the second is not completely visible on the ground but is probably of a similar size. All this eastern section was presumably built later, attached to the main fortification wall associated with the tower. The remains of buttresses are present on the outer walls, but their imperfect state of preservation precludes precise measurement. The total perimeter of the outer wall around both areas may be estimated at about 220 m. Potsherds were collected on the surface of the site, and date to the Iron Age, the Late Iron Age and the Middle Ages.

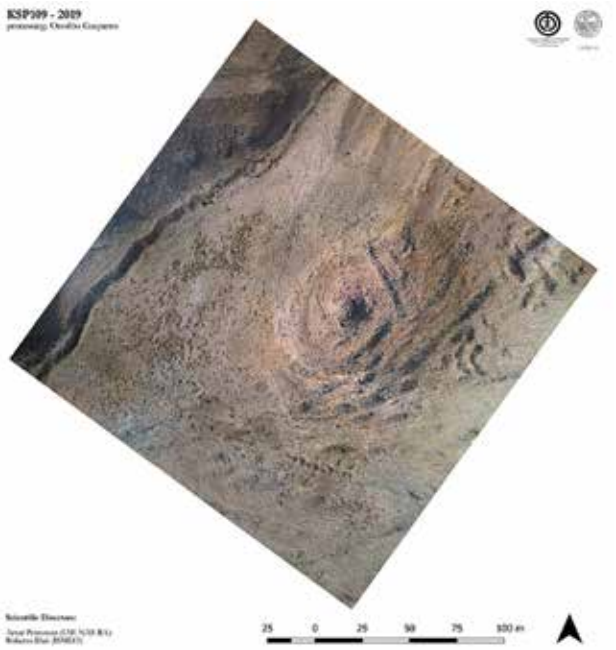

Fig. 11. KSP109. Ortophoto of the site (© Kotayk Survey Project archive).

KSP128 (Gegharkunik Province, Gomadzor Village)

The fort locally known as Metsep is located on the top of a hill overlooking the city of Sevan, which is 1 km to the south, and the village of Gomadzor, about 700 m to the east. The site may be reached by means of a hard dirt road. The fort is situated on one of the hills at the very end of the southeastern offshoot of the eastern Pambak mountain range. On the east slope, there is an Armenian television relay station and a chapel. The fortress is located on the flat hilltop, from which very steep slopes descend towards lake Sevan to the south and Gomadzor village to the east. This is a highly strategic position with an incredible view of the lake area, limited only to north, north-west and west by mountains (Fig. 12). The Pambak range, the whole northern part of the lake (both eastern and western shores) and the upper Hrazdan valley to the city of Hrazdan and beyond are visible. The first reference to it in the scientific literature is by G. Mikaelyan (1968, 15 – 16, pl. 7)[5] and it was later briefly surveyed again by an Armenian - Italian expedition (Parmegiani, Biscione 2004,

Fig. 12. KSP128. An aerial view of the Metsep fortress (in foreground). In the background, the northwestern shore of lake Sevan (© Kotayk Survey Project archive).

284). It is a listed national monument (code 5.4/1), dated to between the 3rd and 1st millennia BC, and was studied by the expedition in 2019. The site comprises two sub-rectangular forts, one partly covering the other, oriented north-west/south-east and made up of various sections (Fig. 13). The older, bigger fort measures about 105 × 35 m, with a total area of 0.32 ha. The total length of the outer fortification is about 260 m. This older fort, very poorly preserved, is divided in two sectors by a 30 m wall that was partly destroyed by the construction of the second fort. Where the second fort covers this wall there are the remnants of a badly preserved gate which is not measurable. Another gate is located on the southeastern end of the older outer fortification, more or less in the middle of this stretch

5 In the sketch-map published by Mikaelyan the fortress appears to be much better preserved than it now is. In particular he was able to recognise two towers at the southwestern end of the fortress (these are no longer visible) and a second wall parallel to that which starts from the eastern end of the fortress, that ran some metres to the north. The scholar proposed a certain similarity between the walls of this fortress and those of Lchashen (KSP130; Mikaelyan 1968, 16).

Fig. 13. KSP128. An aerial view of the site (© Kotayk Survey Project archive).

Fig. 14. KSP133. Ortophoto of the site (© Kotayk Survey Project archive).

Fig. 15. KSP133. A section of the pre-medieval walls in the southern part of the site (© Kotayk Survey Project archive).

of wall. In this case too it is not possible to take precise measurements. Poorly preserved building remains are visible inside these two walled enclosures. The stones used for the construction of this fort are greyish in colour. The outer faces of the dry-stone walls are made of medium-sized stones, with an infill of small stones. The average thickness of the walls is about 1.5 m. The best preservation was recorded on the south-west side, where in some points the wall survives to a height of 2–3 courses. On the south-east corner of this fort, there are the traces of a wall that runs about 60 m towards south-east but is then no longer visible on the ground surface. The second fort, later in date because it covers part of the older one, is much smaller and clearly distinguishable on the ground due to the use of reddish stones that are quite different from the greyish ones previously described. It has again a sub-rectangular shape and measures about 50 × 15 m, with an area of 0.06 ha and an outer perimeter 125 m long. The complex, much rougher and more irregular in comparison with the older one, is subdivided into three areas by two straight walls. Remnants of building pertaining to various periods, some associated with the older fort, are visible inside. No pottery was found on the site. A Late Bronze/Early Iron Age date has been proposed (Parmegiani, Biscione 2004, 284). We confirm a pre-Urartian date for the construction for the older complex, but suggest a more generic Bronze–Iron Age chronology, while the second fort could be much more recent on the basis of its architectural features and its irregularity.

KSP133 (Kotayk Region, Bjni Village)

During the activities carried out in 2019 the famous Middle-Ages fortress of Bjni was visited and studied by the expedition. The monument is well known and was built in the 10–11th centuries AD; it is included in the national monuments list (code 6.19/1), which gives a date of between the 5th and 16th centuries AD. It is located in the river Hrazdan gorge, on its right bank and is surrounded by the modern Bjni village. The fort was built on an impressive natural rock-spur with dimensions of about 230 x 100 m (Fig. 14); its structures cover an area of about 1.7 ha. Rather than focussing on the well-known medieval structure, we gave our attention to the fact that the medieval fortress was built on a huge, much older complex, still testified by the presence of remains of dry-stone masonry, partially incorporated in medieval walls and visible due to the progressive destruction of the latter. These ancient wall remnants are particularly visible in the southern

margin of the Middle Ages fort (Fig. 15). The antiquity of the complex is demonstrated by the presence in the small local museum of a fair quantity of pottery dating to the Middle Bronze Age and Iron Age that comes from the area of the fortress.

KSP136 (Kotayk Region, Karashamb Village)

The site is located at one of the bends of the river Hrazdan on its right side (Fig. 2/6). It is situated just 70 m north of the modern village of Karashamb and is listed in the national monuments inventory (code 6-66/1), where it is dated to the 2–1st millennia BC[6]. It consists of the remains of a big Middle Ages settlement, featuring a church (St. Gevork, 11–13th centuries AD–KSP137) that was built on top of a much older site, as testified by the remnants of impressive fortifications. The best preserved part of these walls is visible at the site's southern limit, just next to the modern road that runs close to it. A 60 m long section of walls is well preserved; these are dry-stone, with outer faces formed of medium/large stones. In some points the walls stand eleven courses high, almost 4 m (Fig. 16). The site measures about 240 × 140 m with a total area of 2.9 ha. On the surface of the site mostly Middle Age pottery has been collected, but it seems likely that the complex dates to the Bronze and Iron Age. It is plausible that this site was the settlement associated with the large necropolis of Karashamb (KSP135), located 250 m south, which contains tombs dating from the Middle Bronze Age to the Iron Age.

KSP138 (Kotayk Region, Karashamb Village)

The site KSP138 is located 150 m north-west of the Aghzibir site (KSP137) and was studied in 2019. It stands on a small rock outcrop, on the right bank of the river Hrazdan in correspondence to a bend Fig. 2/8). It consists of a small fort, created by the construction of a wall thought to flank the termination of the rock outcrop. The wall, preserved for a length of about 10 m and still standing to a height of about 3 m (5 courses) was built using dry-stone, double-faced technique with large stones for the faces and a fill of small stones. The small fort measures about 25 × 16 m and its area is 0.04 ha. Unfortunately, no pottery was present on the ground. A generic Bronze/Iron Age date may be hypothesized for this small fort, which was presumably contemporary with the walls of Aghzibir described above. Given its strategic position, it was clearly built to control the transit of people in the bottom of the gorge.

Fig. 16. KSP136. An aerial view of the pre-medieval wall at the southwestern end of the site (© Kotayk Survey Project archive).

Fig. 17. KSP139. An aerial view of the fortress (© Kotayk Survey Project archive).

KSP139 (Kotayk Region, Karenis Village)

The site is located in the river Hrazdan gorge, on its left side, just 440 m south of the village of Karenis. It can be easily reached by means of the made-up road that joins Argel and Karenis villages. It is recorded in the national list of monuments (code 6.37/1), where it is dated to the 2nd millennium BC, and was visited and studied by the expedition in 2019. The fortification has a sub-triangular shape and was built to protect a small flat area (Fig. 17). Unfortunately, the fortifications are poorly preserved and covered by vegetation. Two lines of walls protect the east and south sides, while the western side, where the walls are less preserved, was protected by the natural cliff. Its dimensions are about 26 × 35 m and it covers an area of 0.05 ha. The two visible dry-stone walls have medium/large stones

6 Preliminary information about the site was published by L. Karapetyan, including an account of the discovery of Late Bronze Age, Hellenistic and medieval pottery there (Karapetyan 1969, 278, fig. 1).

defining the faces and a fill of small stones. They have a width of between 3.5 and 4 m and are reinforced by several buttresses that stand out about 0.40 m from the wall face. In some points the walls are standing for 1 – 1.5 m and 5 courses. The structure was probably built at some time in the Iron Age to control the road that ran north from the Ararat valley and passed through the gorge.

KSP140 (Kotayk Region, Zar Village)

The site, known locally as "Tigranaberd", is located on a high hill, 2.3 km east of the modern village of Zar. There is no road to reach the site. It is on the national list of monuments (code 6.27/1), and is dated there to the 12th century BC and the Early Middle Ages; it was studied by the expedition in 2019. The site comprises two distinct groups of fortifications. The biggest and best preserved is located just next to a characteristic basaltic lava flow that originated in the volcanism of the Geghama range. It has an elongate pentagonal shape measuring 145 × 90 m and covers a total area of 1.06 ha (Fig. 18). The wall, with a total perimeter of 405 m, is reinforced on the north-east side by four buttresses. These buttresses are about 4 m wide and protrude about 3 m from the wall. They are between 9 and 13 m apart. The wall was built using dry-stone, double-faced technique with big stones on the outer faces and filling of various-sized stones. The width of the wall is not easy to measure due to the huge amount of debris present, but appears to be between 3 and 5 m. The walls are well preserved in some points, for a height of almost 2 m and six courses of stones. Two symmetrically placed gates are present in the middle of the northwestern and southeastern walls. The former is about 3 m wide; the latter is about 4 m wide, but has recently been enlarged to allow the entry of agricultural machinery. The second fortification was built in direct connection with the northern corner of the first fort. It seems to be later in date and appears unfinished. It is composed of two walls, one oriented south-west/north-east and 100 m long and the second is 45 m long and runs in a north-west/south-east direction. The longer wall is reinforced by three, maybe four towers. The towers are from 10 to 13 m long, and positioned between 10 and 20 m apart; they protrude 6 to 9 m from the wall. This second fortification was built with dry-stone, double-faced walls; medium/large stones are used for the external faces, with an infill of small stones. This site is highly enigmatic; no structures are visible inside the main fortifications and the few sherds collected have been dated to the Iron Age, Late Iron Age and Middle Ages. Given its features, this site could be considered part of a defensive system of an unspecified epoch, a real mountain refuge, similar to sites KSP084 and KSP108.

KSP142 (Kotayk Region, Sevaberd Village)

The site known locally as "Sevaberd" or "Sraberd" of Kara Kala (literally the "Black Fortress"), is located just 100 m south-west of the village of the same name, on a low natural hill of volcanic formation. The site, included in the national list of monuments (code 6.61/1), where it is dated to the 3 – 2nd millennia BC and the Early Middle Ages, has already been studied by an Armenian - Austrian expedition (Kuntner et al. 2017, 270 – 282) and was studied again by our expedition in 2019. The fort measures about 103 × 92 m and covers a total area of about 0.73 ha. All the structures are based directly on the natural bedrock. The fort is made up of two walls which compose a small internal fort, surrounded by another wall. All the walls were built using the local basalt stones produced by the volcanic activity of the Geghama range, on which the site stands. The dry-stone masonry is without mortar; the external faces are defined by middle/large-sized stones, with an infill of small stones. It is evident that the walls have undergone frequent alterations and repairs in different periods, probably for various reasons – including, it has been suggested, due to earthquake damage (Kuntner et al. 2017, 271). The average width of the walls is 4.5 m. The inner fort has dimensions of about 60 × 40 m and covers an area of about 0.20 ha. The perimeter wall is ca. 160 m long and was bypassed by means of a single gate (3 m wide) flanked by two towers (Gate IV). The wall is reinforced by nine towers, two of which are on the same side as the only access door, located on the east side. The towers (of the inner and outer fortification walls) are generally rectangular and differ in size. Usually they protrude between 2 and 3 m from the wall and have an average width of 3 to 5 m. The remains of now indistinguishable structures are visible inside, especially in the southwestern part. The outer wall has a perimeter of about 323 m, and is from 3.5 to 5.5 m wide. According to the reconstruction proposed by the Armenian – Austrian team, there were four gates on this wall (Gates I – III, V), one (Gate I) with a tower in association (Tower 1) and one flanked by two towers (Gate V, about 3.15 m in width). The Armenian-Austrian expedition divided the buildings on the site into four distinct architectural phases. Pottery and architecture have been dated to the Middle Iron Age (8th century BC) and to the 6 – 10th centuries AD (Kuntner

et al. 2017, 273, 276, 282). Sevaberd fortress was probably a protection fort for communities that habitually lived further down, towards the river Hrazdan, and a base camp for one of the established seasonal routes across the Geghama range, used especially by shepherds for transhumance. There is also the hypothesis that the Urartian conquest of the lake Sevan basin may have passed through here (Kuntner et al. 2017, 282). Another option, supported by both epigraphic and archaeological evidences, shows that the road could have been that from the north which passed around Geghama (Petrosyan et al. 2019, 397, fig. 9).

KSP145 (Kotayk Region, Hatis Village)

The site known locally as "Astghaberd" is located 4.5 km north of the village of Hatis, on the southeastern slope of a high hill covered by basaltic lava flows associated with the volcanism of the Geghama range. There is no road to reach the area of the site. It is inserted in the national monuments list (code 6.40/1), where it is dated to the Early Medieval period. The site was visited and studied by the expedition in 2019. It is a very interesting fortified complex built directly onto the hillside, on a series of three stepped artificial terraces (Terraces I–III; Fig. 19). The terraces were constructed on the natural slope by building retaining walls, which connected the large upper wall with another wall about 69 m long, running in a north-west/south-east direction. The site, sub-rectangular in shape, measures about 75 × 65 m and covers a total area of about 0.43 ha. All the walls were built using the local basalt, double-faced dry-stone walls with external faces made of medium/large-sized stones and infills of small stones. Almost all the walls are set directly on the natural bedrock. The upper part of the fortified complex is composed of an 80 m long wall oriented north-south, the northern section of which is curved. It was built to isolate and protected the entire complex from the west, and varies in width between 3 and 10 m. In general at least two main construction periods are visible, with an older lower wall on which a later one was built; in some cases this is half as high as the lower wall. In some points, the wall is preserved for a height of at least 3 m (about 8 courses of stones). A partly collapsed gate is visible in the middle of the wall, with estimated dimensions of 3.5 m long by about 1.5 m wide. Two rectangular towers reinforce it. One is located in the southern part, about 12 m south of the gate, protrudes about 2.5 m and is about 5 m wide. A second rectangular tower is located at the northern end of the wall, in correspondence with its junction with the one that run down the hill. It

Fig. 18. KSP140. An aerial view of the site (© Kotayk Survey Project archive).

Fig. 19. KSP145. An aerial view of the fortress (© Kotayk Survey Project archive).

protrudes about 1 m from the wall and has a width of about 3.5 m. Terrace I is located just to the east, a few metres below this wall. It is bordered by a retaining wall that joins the western one just described and is about 60 m long. Terrace I covers an area of 0.09 ha and has a fortified perimeter 140 m long. Due to the presence of debris and vegetation it was impossible to establish the exact position of the gate which connected Terrace I with Terrace II. Terrace II was built few metres lower than and to the east of the previous one. It was obtained through the construction of a retaining wall of about 65 m long, which to the south starts in connection with the retaining wall of the Terrace I. This second terrace has a surface area of 0.08 ha and walls 134 m long. A section of the wall of this terrace is particularly impressive for its height of preservation; at one point it stands about 4 m high, with 8 courses of stones. At the north-eastern end of the wall the remains of a tower and a gate which joined Terrace II with Terrace III may be seen. The gate is about 2 m wide. The tower protrudes about 2 m from the wall and has a width of about 3 m. Terrace III is the lowest in altitude, the biggest, and that

Fig. 20. The Mount Hatis looking north, with indication of some of the sites documented by the KSP (© Kotayk Survey Project archive).

in which the outer walls are in the worst state of preservation. It was obtained by means of the construction of a wall about 95 m long, which starts directly from the one of Terrace II. It has a total area of 0.25 ha and is surrounded by walls almost 200 m in length. Everywhere on the terraces there are the remains of collapsed buildings and stones fallen from the retaining walls. Unfortunately the huge amount of debris and the high vegetation preclude the collection of diagnostic finds. As mentioned, there are at least two main architectural phases, clearly recognisable in the western upper wall which was undoubtedly the first component of the fortress to be built. Next to be erected was the long north-eastern wall which abuts it; the retaining walls of the various terraces were built later. The construction technique and the absence of mortar in the masonry that we have seen suggest a possible pre-medieval date for the construction of the complex, and its clear re-use and modification during the Middle Ages. Probably contemporary to the Middle Age occupation of the fortress are the remains of a village located about 150 m to the south-east (KSP144). Further investigations, already planned for the years to come, are needed to clarify the age of construction of this site.

KSP149 (Kotayk Region, Hatis Village)

This site is located on the top of a high hill on the northern slope of mount Hatis, just 800 m west of the modern village of Hatis (Fig. 20/4). It can be reached by climbing the east side of the mountain from near the village. It consists of a series of irregular structures with a main architectural phase and some much later independent modifications. It measures about 85 × 70 m and cover a total area of 0.49 ha. The original structure has a quadrangular shape measuring 40 × 40 m with an area of 0.15 ha. In the southwestern corner inside the structure there is another roughly square fortification, contemporary with the outer walls and attached to them. This measures about 20 × 20 m and covers an area of 0.03 ha. All these dry-stone walls were built using local basalt stones with medium-sized blocks for the outer faces and an infill of small stones. The width of the walls is irregular, between 2 and 4 m. The best preserved wall is the western one, with a height of about 1 m, about six courses. There are two possible gates to the complex, one located in the middle of the north wall and the other in the middle of the south wall. The possible north wall doorway seems to have been created by local shepherds to allow the entrance of cattle. The original gate was

probably that to the south, which is situated near the junction point between the external wall and the wall of the internal structure and seems to have been accessed via a small ramp. The width of the gate is about 3.5 m. On the south and western outer sides, as well as in the inner part of the fort, there are areas delimited by small dry-stone walls belonging to various eras, made by shepherds to contain livestock. Unfortunately, there was no pottery on the site and the architecture is of no particular help in dating the complex. However, given its architectural characteristics and geographic position, with an almost 360° view over the middle Hrazdan valley, a generic dating to the pre-Urartian period would seem plausible. This was a fort made to contain a small garrison intended to control the area.

KSP154 (Kotayk Region, Elar Village)

The site of Elar is located on a low hill of volcanic origin on the southern outskirts of the village of Elar, which has now become a suburb of the larger village of Abovyan, about 12 km north-east of Yerevan. The site can be easily reached thanks to made-up road on the southern periphery of the modern village. The hill overlooks the surrounding areas from a height of 40–50 m. The site is present in the national list of monuments (code 6.2/1) and dated there to the 3–1st millennia BC. It was archaeologically investigated in two different periods, first by E. Balajan in 1927 and E.A. Bayburtyan in 1928 and later by E.V. Khanzadyan, who worked on the cemetery in 1960–1961 and 1969 and on the fortress from 1973 (Khanzadyan 1979, 163). The fortress is characterized by stone masonry and the presence of buttresses, and was dated by the excavator to the Early Iron Age. In addition, the remains of an Early Bronze Age (Kura-Araxes culture I–II) settlement and burial ground were identified in some places under Middle Age layers. Middle Bronze Age graves were also excavated and sporadic Late Bronze Age finds have been collected on the site. The most important phase, at least from an architectural perspective, was the Early Iron Age, when the fort was established. After the Urartian conquest the structure may have been rebuilt and re-used by the Urartians (Khanzadyan 1979, 168), as probably indicated by the regularly spaced buttresses visible on the site and the presence of classic red-polished Urartian and local Middle Iron Age pottery identified on the site. Some Late Antique (Sassanid period) and Early Middle Age finds have also been collected (Khanzadyan 1979, 175–176). Today the site is almost entirely covered by the modern cemetery related to the chapel of St. Stephanos. In some places wall fragments and rubble deposits from ancient structures still emerge, but the complex now appears badly disturbed. The site was believed to be the pre-Urartian city of Darani, mentioned in a nearby rock inscription (Salvini 2018: CTU A 8-8; KSP153), now partly destroyed and stored in the History Museum of Armenia, which recounted interesting information on the war activities of Argišti I (785/780–756 BC) along the route leading to lake Sevan. During our activities in 2019, among a series of potsherds from the debris caused by the site's progressive destruction we identified a group of Iron Age sherds, a single sherd of Urartian red-polished pottery and some Late Iron Age fragments.

KSP156 (Kotayk Region, Arindj Village)

The site is located on the top of a high hill on the north-eastern outskirts of Arindj village and south-east of Getargel village. It is included in the national monuments list (code 6.10/1) and dated there to the mid-2nd millennium BC. The site can be easily reached using the M-15 (Yerevan bypass). A pre-Urartian date was proposed by E. Khanzadyan (Khanzadyan 1979,125). It was visited and documented by our expedition in 2019; it originally hosted the remains of a fortification which unfortunately has been almost completely destroyed by modern interventions. The upper part has been extensively disturbed by mechanical excavation for the laying of a pipe that practically cuts the hill on which the site stands in two. Everywhere on the top may be seen the remains of destroyed walls and traces of bulldozer activity that has levelled the surface. Other causes of severe damages are a large pumice-stone quarry, which has destroyed a large portion of the northeastern hillside and part of that to the south-east. Additional destruction is due to a modern cemetery which is slowly ascending the hill on the northwestern flank and which is also gradually destroying the medieval cemetery of *khatchkars* on that side. Unfortunately, during our visit we were unable to find ceramic diagnostics that allowed the site to be dated.

KSP163 (Kotayk Region, Hatis Village)

The site is located on the top of mount Hatis, 1.5 km south-west of Zovashen village, 2.5 km south of Hatis village and 3 km south-east of Kaputan village. It is recorded in the national list of monuments (code 6.36/2) and was visited by the expedition in 2019. The site may be approached up to a certain point by car, after which an hour's walk is required. It has a high, strategic location with a 360° view over the entire middle river

Hrazdan valley (Fig. 20/5). The complex is composed of remnants of fortification, probably left unfinished, and a series of other structures that are not clearly decipherable. The structures are overlie lava flows originating from the volcano's activity that produced basalts used for building. They are distributed especially on the western margin of the flat mountain top, on an area measuring about 280 × 100 m that covers 1.65 ha; less substantial structural remains are also visible outside this area. All the walls are dry-stone and built using the local basalt, with medium/large-sized stones for the external faces and an infill of small stones. In some places, especially on the eastern outer walls, they are preserved to a height of almost 3 m, equal to 10 courses. The fortifications are mainly composed of two almost parallel lines of walls that run in a north-south direction. The eastern wall, clearly unfinished, has a length of almost 140 m, and an average width of about 4.5 m. On the southern section of this wall there is a tower measuring about 5 × 6 m. About 12 m to the north are the remains of a single buttress, which protrudes ca. 2 m from the wall; just 20 m further north, there are the remnants of a gate, about 3 m wide and probably flanked by two poorly preserved buttresses. The wall, against which modern enclosures for animals made with material taken from the wall itself are built, both inside and outside, ends inexplicably after curving slightly towards the west. The west wall is about 280 m long and borders an area of outcropping lava flow; to the east there is a series of rooms, similar to those documented in site KSP108. The wall has an average thickness of 2.5 – 3 m. About 36 m from the end of the basalt outcrop, there is a gate in the wall flanked by two buttresses. The width of the gate is about 2 m. The southern buttress, the best preserved, protrudes about 2.5 m from the wall and is about 3 m wide. This wall too, like the eastern one, is inexplicably interrupted at a certain point. Most probably the construction of the fort was never finished. Unfortunately, there was no pottery on the surface or even in the vicinity of a series of illegal excavations carried out in the nearby. Very little can be said about the chronology. The masonry technique would seem in general to date to the pre-Urartian period, although alterations and modifications may have been made over the centuries. Given the site's great strategic value, it is probable that it has been used through the ages to control the route that led from the Ararat valley to lake Sevan.

Conclusions

Overall, the 23 sites outlined above are very important for an archaeological understanding of the river Hrazdan valley, which has long been one of the most relevant routes in the region, connecting the Ararat valley with the lands to the north. In general, the scarcity of pottery – combined with a certain architectural standardization mainly linked to the building material locally available, which was mostly basalt – precludes dating these complexes with absolute certainty. Of the 23 sites presented, only four may be dated to the Bronze Age on the basis of pottery, two to the EBA (KSP022; KSP154) and two to the MBA (KSP133; KSP154). Thirteen sites have been generically attributed to a period comprising the Bronze and Iron Ages, in any case to pre-Urartian times – mostly due to their architecture which featured the absence of mortar, the "cyclopean" technique, the adaptation of structures to the topography of the ground, etc. (KSP025; KSP047; KSP084; KSP102; KSP104; KSP108; KSP128; KSP136; KSP138; KSP145; KSP149; KSP156; KSP163). We have preferred to maintain a generic Bronze – Iron date for these fortified complexes. Their dating is certainly partly connected to the problem of the "militarization" of the Caucasus, which – despite various attempts to attribute it to the passage between the Late Bronze Age and the Early Iron Age – we are far from being able to clearly define in chronological terms and which could be a phenomenon that appeared earlier. A single site, Elar (KSP0154) has a precise dating also to the Middle Iron Age thanks to the discovery of fragments of Urartian pottery. This is a picture absolutely in line with the scarcity of Urartian sites in the area. Of 170 archaeological sites documented by our mission (excluding already known such as Aramus, Dovri and Lchashen) in the upper and middle Hrazdan valley only Solak-1/Varsak (KSP016) exhibits fully Urartian characteristics, while no site currently shows Urartian features in the Marmarik valley, which appears totally extraneous to the Urartian domination. On the basis of its architectural characteristics, Berdi-Dar could also be a small pre-Urartian fortress, readapted by the Urartians, as suggested by the three regular buttresses on one side of the fort. Among other things, the complex could have been an intermediate stop on the fortified road that led from the Ararat valley to the northwestern shore of lake Sevan, since it lies exactly halfway between the Solak-1 fortress (KSP016) and that of Lchashen (KSP130). The scarcity of Early and Middle Bronze Age sites is certainly connected to our currently unsatisfactory knowledge of the common ware pottery of these older periods. Unfortunately, in the Iron Age our imperfect knowledge of the most important ceramic marker – Black Burnished Ware, that re-

mained in use much longer than the Late Bronze/Early Iron Age to which it is usually supposed to have been confined – precludes the more exact dating of sites in this period. Six sites (KSP097; KSP099; KSP103; KSP109; KSP140; KSP154) may be assigned a generic Late Iron Age date, mainly thanks to locally produced pottery that, in most cases, has nothing to do with the political trajectory (entry into the Achaemenid Empire) that characterized Armenia in these centuries. Certainly twelve sites (KSP022; KSP097; KSP099; KSP193; KSP108; KSP109; KSP 133; KSP 136; KSP 140; KSP145; KSP154; KSP163), but probably almost all the sites presented here, were re-used to some degree during the Medieval period. In just one case this may be dated with some precision, to the 13 – 14th century AD (KSP108), on the basis of highly diagnostic surface finds.

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Preliminary Results of the 2018–2019 Tavush Archaeological Project

Bérengère Perello[1], Levon Aghikyan[2], Ruben Badalyan[2], Karen Azatyan[3], Benjamin van den Bossche[4]

[1] CNRS UMR 5133 Archéorient, France
[2] Institute of Archaeology and Ethnography, Armenia
[3] Yeghegnadzor Regional Museum, Armenia
[4] Service Archéologique Interdépartemental Yvelines-Hauts de Seine, France

In memoriam of Patrick Devedjian, President of Hauts-de-Seine district, great defender of Armenia and its cultural heritage, and who was the initiator of the T.A.P.

Abstract. The Tavush Archaeological Project (TAP) was carried out in 2018 and 2019 in the province of Tavush (North-eastern Armenia) by an interdisciplinary Armenian-French team. The goals are to draw the archaeological map of this largely unknown region, to trace the changes in settlement patterns, with special attention to the periods from the Neolithic to the Late Bronze Age and to acquire a better understanding of the landscape of Tavush. This landscape is dominated by dense forest and mountainous topography, which make it especially challenging to survey. We were compelled to develop an ad hoc *field methodology, which was based on survey protocols from classic archaeology, which had to be adapted to the specific environmental conditions of the area. Therefore, our project used a hybrid survey method, combining an extensive systematic survey across the region – through examination and study of satellite imagery and topographic maps – with an intensive survey of selected areas in the field. During these first two seasons we identified 34 "places", among them 20 sites (places in which both architecture and surface material are found), mainly situated around the Aghstev river, but also in the south-west part of the province, next to the modern villages of Haghartsin and Teghut.*

Keywords: Armenia, Tavush , Bronze Age, Iron Age, Medieval period, cultural landscape, survey, mapping.

Introduction

The intention of this article is to outline the origin, objectives, methods and preliminary results of the two seasons of a multi-period survey carried out in 2018/2019 by the joint Armenian-French Tavush Archaeological Project (henceforth: TAP). The first campaign took place from August 18 to September 2, 2018, and the second from May 16 to June 5, 2019.

The project consists of a joint study by the "Mission Caucasus" of the French Ministry of Foreign Affairs and the Armenian Institute of Archaeology and Ethnography. It was established in 2018 through the initiative of a French district, Yvelines-Hauts de Seine, in the west of Paris, which wished to support an archaeological project specifically in the Tavush region, in which they have developed cooperation since 2009 to boost the local economy. The goals are to enhance the local heritage and contribute to the economic and cultural development of the region.

A large number of archaeological sites is recorded in the Georgian and Azerbaijanian parts of the basin of the Kura river, while the Tavush region, which forms the southern side of the middle Kura basin and feeds this river through its hydrographic network, remains poorly known. This state of research is largely due to the impenetrability of the forest cover, which occupies more than half the area of the province, the rugged nature of the terrain and conditions of access that are often degraded. Under these circumstances, the detection of possible archaeological sites remains a difficult exercise. This explains, in part, the deficit of data related to ancient settlement in this region, although the rare research conducted in the area provides evidence for human exploitation of the territory since the Middle Palaeolithic.

Environmental context. The Tavush region is located in the north-east of Armenia (Fig. 1). From an administrative point of view, it constitutes one of the ten marz (administrative provinces of Armenia). It is bordered on the north by Georgia and Azerbaijan, on the east by Azerbaijan, on the south by the province of Gegharkunik and on the west by the province of Lori.

The Tavush region today occupies nearly 3 000 km^2, that is, 9.1% of the country's total area.

In this mountainous province (which is part of the Lesser Caucasus), the average altitude is around 900 m above sea level, varying between 500 and 3000 m (Aslanyan 1971). The landform consists mainly of limestone massifs and deep gorges. The Aghstev, the principal river in the region, crosses the Lesser Caucasus from south to north and flows into the Kura. Thus the Tavush region occupies a strategic location, between the valley of the Kura and the highlands of the Armenian plateau. Tavush is famous for copper ores; jasper, chalcedony, cornaline and agate are also present in the Aghstev valley (Ollivier et al. 2010; Chataigner et al. 2020, 11, fig. 10). The favorable climate is temperate humid, characterized by moderate summers and mild winters, with an average annual precipitation between 400–500 mm. It is a heavily wooded area, with more than half the region covered by forest: hornbeam (*Carpinus betulus*), beech (*Fagus orientalis*) and oak (*Quercus iberica*) (Moreno-Sanchez, Sayadyan 2005, 116–117, fig. 4) (Fig. 2). The forests of Tavush province represent more than 60% of the forest cover in Armenia (Vardanyan 2016).

Goals of the TAP. The 2018 and 2019 campaigns had two goals. The first was to study the settlement dynamics of this region during the Holocene by creating an archaeological map of the area. We sought to obtain a broad but systematic view of site distribution and to enrich our understanding of the Tavush landscape. Data from all time periods were recorded although our main focus was on the protohistoric period. Our second goal was to identify stratified Neolithic, Chalcolithic and Early Bronze Age sites for later excavation. In addition, by recording and assessing the condition of the sites and their characteristics, the project's intent was to contribute to the management and conservation of Armenian heritage.

History of the occupation of Tavush. The region is famous for its numerous archaeological sites, which have interested researchers since the 19th century AD. Yeritsov excavated several tombs dating to the 2–1st millennia BC in the vicinity of Akner village (Yeritsov 1882) and Jacques de Morgan excavated Iron Age tombs in the vicinity of Akhtala, Alaverdi and Ayrum and recorded about one thousand Iron Age tombs in the Debed basin (Morgan 1889). Later, in the 1960s and 1970s, Yesayan discovered and conducted research excavations on many archaeological sites such as Shahlama-2 near Ayrum, Poploz Gash in Jujevan, Bardzraberd in Achadjur and Astghi blur in Yenokavan village (Esayan 1976). He recorded more than fifty fortresses and 29 gravefields.

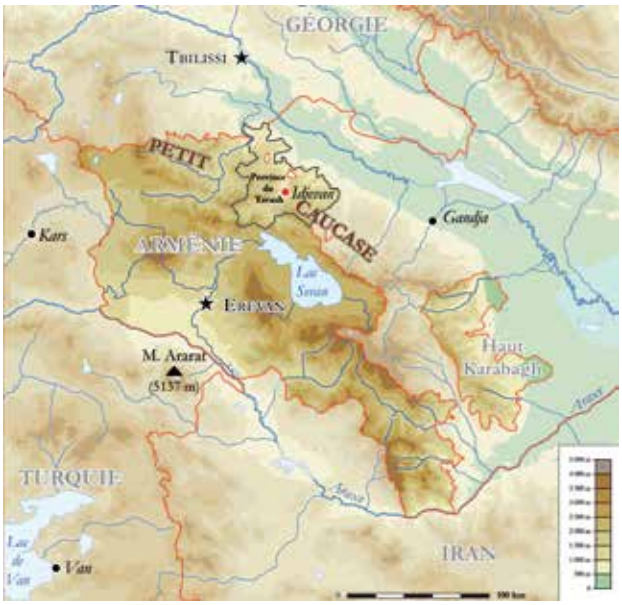

Fig. 1. The South Caucasus and Tavush province (Map: B. Van der Bossche, T.A.P).

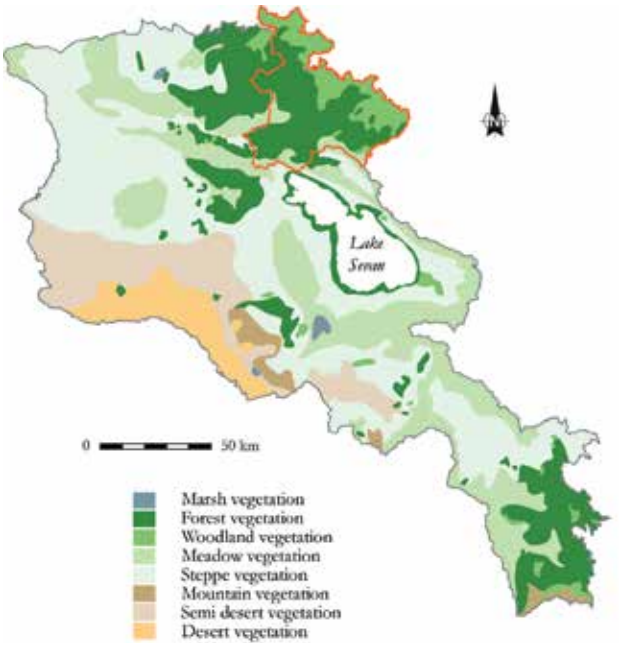

Fig. 2. The vegetation of Armenia (Map: B. Van der Bossche, T.A.P.).

The Armenian-American joint expedition conducted research work in the Debed valley and as a result discovered about 400 lithic pieces and 23 open-air shelters belonging to various periods of the Palaeolithic. The most important is in the Debed valley near the village of Haghtanak, the Middle Palaeolithic shelter of Bagratashen-1 (Egeland et al. 2009; 2014; 2016; Gasparyan et al. 2009, 2014: 70–71; Gasparyan, Arimura 2014, 15).

In the mountains overlooking Ijevan, at an altitude of over 2000 m, the Hovk-1 cave, excavated by an Armenian-British team (directors: B. Gasparyan and R. Pinhasi) in 2006–2009, also contains Middle Palaeolithic occupations of between about 55,000 and 30,000 BC (Pinhasi *et al.* 2008, 2011; 2012; Gasparyan, Arimura 2014, 15; Gasparyan et al. 2014, 70–71). Hovk is contemporary to the open-air site of Kalavan-2 (Ghukasyan et al. 2011) in Gegharkunik province, a few kilometers south of Tavush.

This team also excavated in 2007–2008 the cave of Yenokavan 1, situated in a canyon of the Khachaghbyur river (Petrosyan et al. 2014; Arimura et al. 2014, 263–264). This karst cave contains a multi-period occupation (more than 2.5 m deep), with medieval, Iron Age and Late Bronze Age layers, as well as an Early Bronze layer, 1 m thick. But most noteworthy are the remains of earlier occupations, dating to the 1st millennia of the Holocene (10000–5000 BC) which provided some examples of "Kmlo tools" (Arimura et al. 2014, 264, fig. 14/7).

Our Armenian-French "Mission Caucasus" team (directors: C. Chataigner, I. Kalantaryan) carried out seven campaigns (2011–2017) in the cave of Getahovit 2. This revealed a long stratigraphic sequence of occupations, the main occupation being Chalcolithic (ca. 4700–4050 cal BC), but including those of the Early Middle Ages (ca. 900–1200 cal AD) and the Upper Palaeolithic (ca. 22,000 cal BC) (Kalantaryan et al. 2012, Tardy 2016, Chataigner et al. 2020). The sites of Hovk 1, Hovk 3 and Barepat-1 also present Chalcolithic occupations (5th millennium BC) (Arimura *et al*. 2014, 262–263).

An Armenian expedition also discovered the major Early Bronze Age cemetery of Berkaber (Areshyan et al. 1987; Areshyan, Simonyan 1988; 1989; Gasparyan 1981; 1987; 1991; Simonyan 2009).

A Methodology Suited to the Challenging Tavush Landscape

The Tavush region presents two major methodological challenges for surveys: first, the dense forests hinder surface visibility and, second, a large part of the region is dominated by steep, rugged mountains.

Before the fieldwork. Before fieldwork began in the Tavush, preliminary studies of historical and topographic maps, of data from remote sensing, and of published material were carried out. High-resolution satellite images (©Earth Explorer, ©Google Earth, ©Bing) were examined in search of potentially interesting topographic or archaeological elements at the regional level (such as blur, kites, burial mounds, corrals, canals, etc.). This remote sensing enabled the first assessments of environmental and topographic characteristics as well as archaeological elements. Later, all of the information gleaned was subject to verification on the ground.

Research was also carried out on maps from the Soviet era. These topographic maps produced in the 1980s/90s are mainly of interest because they provide information on archaeological remains ("ruins" (развалины), "burial mounds" (курганы), etc.). We also analysed the bibliography concerning previous research carried out in the Tavush region.

Archaeologists and geomaticians worked on the creation of a Geographic Information System (GIS) (O. Barge, E. Regagnon, CNRS, UMR 5133 Archéorient) to initially mark the topographic points identified on satellite images as well as a series of areas to be surveyed by transect, selected according to environmental factors and logistics (timetable and financial constraints, scope of the exploration permit).

We also rely occasionally on information from local inhabitants who generally have in-depth knowledge of their environment and territory.

We soon realized that much of the region was unsuitable or simply inaccessible for intensive survey by foot or track-walking. This is probably one of the reasons why research has so far been limited in the Tavush region. Under these circumstances, it was not possible to implement an extensive and systematic archaeological survey. While extensive survey is perfectly suited to flat or alluvial landscapes where sites (tells) are easily recognizable from a distance, in areas with difficult topography such as that of the Tavush region, the perspectives are limited. In order to overcome these limitations, we decided to implement a hybrid survey method, based of course on classic archaeological survey protocols, but adapted to the specific environmental conditions of the Tavush region. It combines extensive study before the fieldwork in order to obtain a general understanding of the Tavush landscape and to select specific areas of interest for the fieldwork, with an intensive survey of selected areas in the field by foot.

In the field. The team's movements were first carried out with a vehicle. The team was composed of 7 to 9 people, mostly archaeologists specialized in the Neolithic, Bronze Age and medieval periods, including a geographer and a geomatician.

We implemented an intensive survey by foot of selected areas that were chosen based on our studies of satellite images. Our first task consisted of confirming the data on the ground.

We used teams of evenly spaced walkers at in-

tervals of 5 m or 10 m in order to record and collect archaeological material. However, because of the topography and the vegetation, it was usually unrealistic to implement rigid spacing, so we were forced to adopt a more pragmatic approach. Because the implementation of standard transect-walking was generally not feasible, we decided to record the path of each walker by GPS (Garmin), tablets and even smartphones using a free application called maps.me. Thus, every evening when we downloaded the data, we possessed a very clear vision of the areas explored during the day by each walker. We also implemented systematic site-recording using a DGPS. This meticulous recording enabled us to locate the points of interest but also to indicate on the map the "empty" areas, those without any archaeological elements.

The data acquired in the field, as well as the data acquired from the study of the material recovered (dates, cultural affiliations) were integrated into the GIS (ArcGIS), which made it possible to model the dynamics of the occupation of Tavush during the Holocene and to begin a spatial analysis of the region.

A systematic data collection system was implemented which contains the information relating to the deposit and in particular, its morphology and its sedimentary and archaeological potential. It ensures that required data was collected in a standardized fashion. All documentation has been produced in English to facilitate its use and exploitation by all of the project partners. The form describes the main characteristics of each entity: location (absolute and relative), integration into the current landscape, state of preservation, presumed nature, chronology, inventory of finds collected and photographic images available. The "places" are subdivided in six categories: 1) area of scattered artifacts, 2) settlement (both material and architectural features, visible on the surface), 3) fortress ("settlements surrounded by visible masonry walls" (Smith et al. 2009, 102)), 4) rock shelter, 5) burial cluster, 6) *khachkar* (cross stone) The forms were filled in during the day and then computerized in the evening, when the memories of the day were still fresh in the minds of the surveyors so that any possible confusion was cleared up.

Each "place" was identified by a GPS point and several photos, along with comments on the morphology and its sedimentary and archaeological potential.

On sites with the highest potential, a photogrammetric survey using a DJI Phantom 3 drone was carried out (Fig. 3). We created 3D modeling and subjected it to color gamma. This enables rapid provision of topographical maps and aerial pictures of the sites.

Fig. 3. E. Régagnon and A. Mkrtchyan using the DGPS and the drone during the 2018 campaign (Photo: B. Perello, T.A.P).

Difficulties encountered. Our survey was conducted as a pilot study, being improved as it occurred. During the first campaign, in 2018, we encountered some difficulties.

One of the problems was the inaccuracy of the List of Monuments, concerning the location of the sites, as well as their description and chronology. Thus it was difficult to locate the sites present on the list, and when we independently found a site, confusion occurred if it had already been registered in the list. Other difficulties arose concerning the few sites in this area already known, either related to their location (riverside, mountain context, hillside, etc.), or to the form of these settlements (tell, cave, shelter). We therefore searched widely to try to collect this data and create a first repository.

The last problem, although not the least, was the very poor visibility on the ground. Indeed, in 2018, when we worked in August, dense grass and shrub cover considerably reduced visibility and the possibility of spotting material. Finally, it was often thanks to the presence of old military trenches, cuts related to construction work, or even animal burrows that we were able to collect material and thus identify the chronological phases of the occupations. In 2019, we decided to carry out the survey in May to avoid (or at least reduce) this problem.

Sampling strategies and material. On each site of interest, we collected material. It was principally pottery but also lithic tools (obsidian, dacite, flint, etc.). When there was a profusion of material, we did not seek exhaustive collection, but rather collected representative samples of the periods represented using a selection of diagnostic elements. The material collected was washed, recorded and photographed. During the campaign we conducted an initial analysis of the material in order to gain a general understanding of the chronology. A more thorough study was completed

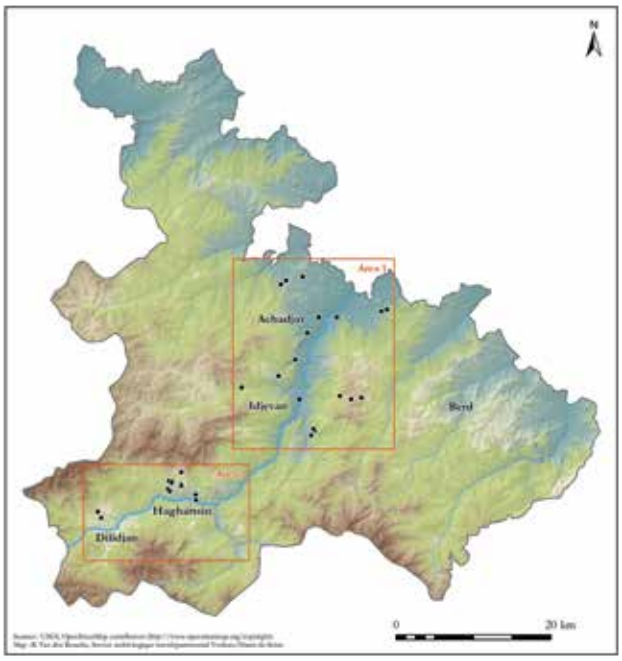

Fig. 4. The sites discovered during the 2018 and 2019 campaigns (Map: B. Van der Bossche, T.A.P.).

at the Institute of Archaeology and Ethnography of Yerevan after the campaign. The pottery was studied by Ruben Badalyan and the lithics by Karen Azatyan. The artifacts found were dated by comparison with well-dated assemblages. The chronological conclusions thus provided differ dramatically from period to period. All of this material was handed over at the end of the campaign to the Yerevan Institute of Archeology and Ethnography. It will be stored in the History Museum of Armenia.

Results of the 2018 and 2019 Campaigns

In total, the 2018/2019 campaigns made it possible to record 34 "places", among which 20 are sites (settlements or fortresses). Most of them had no reference in the "Historical and Cultural Monuments of the Republic of Armenia" on the online list (http://armmonuments.am/list-gov. html) (Fig. 4). In addition, the survey also made it possible to refine the chronological and geographical data for the sites already recorded.

These discoveries cover a broad chronological spectrum from the beginning of the Palaeolithic to the Medieval period. 18 of the 34 correspond to proven sites (settlements or fortresses), that is, complexes for which there are both materials and visible structures on the surface. The chronological distribution of the discoveries is uneven. Of the 34 places discovered, 1 is Palaeolithic, 5 represent Bronze Age occupation (3500–1200 BC), 6 Iron Age (1200–600 BC) layers, 10 are Ancient Armenian, dating to the 6–4th centuries BC, or represent Hellenistic occupation (3–1st centuries BC)[1] and 13 deal with medieval (12–15th centuries) layers. There are four places for which we determined the presence of architectural remains, but were unable to determine the occupation phases due to the lack of surface material or the paucity of diagnostic elements.

Prehistoric and proto-historic occupations remain very poorly represented. No Neolithic or Chalcolithic sites were identified during the two campaigns. In the current state of our research, it is not possible to postulate on the reason(s) for this absence. It could be related to:

- an actual absence of sites (related to environmental or cultural conditions)?–This hypothesis would seem highly unlikely.
- the poor visibility of the occupations because of their specific nature (paucity of archaeological remains: ephemeral occupation by a mobile population could have left less substantial material evidence), because of concealing elements (modern dense forest cover or later occupation), or because of a location particularly unfavorable for discovery (isolated cave).
- biases in our approach. We can acknowledge two: 1) the absence of a geomorphologist, who would have made it possible to distinguish the levels of terraces in the Aghstev valley and to precisely target the terraces corresponding to the Neolithic-Chalcolithic periods; 2) previous research in the region has shown that the Chalcolithic (and *a fortiori* the Neolithic) occupations are invisible on the surface; excavation to 40–50 cm deep is necessary. Only trench excavation could reveal them.

As already mentioned, because a large portion of the study area is unsuitable for intensive field survey it was necessary to focus on open areas with favorable topographic and environmental conditions. We chose to focus first of all on forestless valleys and lowlands. In 2018, we began with the banks of the Aghstev and its tributaries (Getik and Sarnajur) between the border with Azerbaijan, the village of Sarigyugh in the north and the southern limit of the Tavush region in the south near the village of Gosh. Previous surveys carried out in the region had already demonstrated the presence of sites near the river: "*Based on its current large drainage area, the Aghstev valley must have served as an important route between the Lesser Caucasus, the Kura basin, and the volcanic landscape of the Armenian Highlands during the prehistoric times. Hence,*

1 Manning (Manning et al. 2018, fig. 10) and Smith (Smith et al. 2009, fig. 2) have proposed recently an alternative periodization for this period with an Iron Age III that respectively end around 200 and 300 BC.

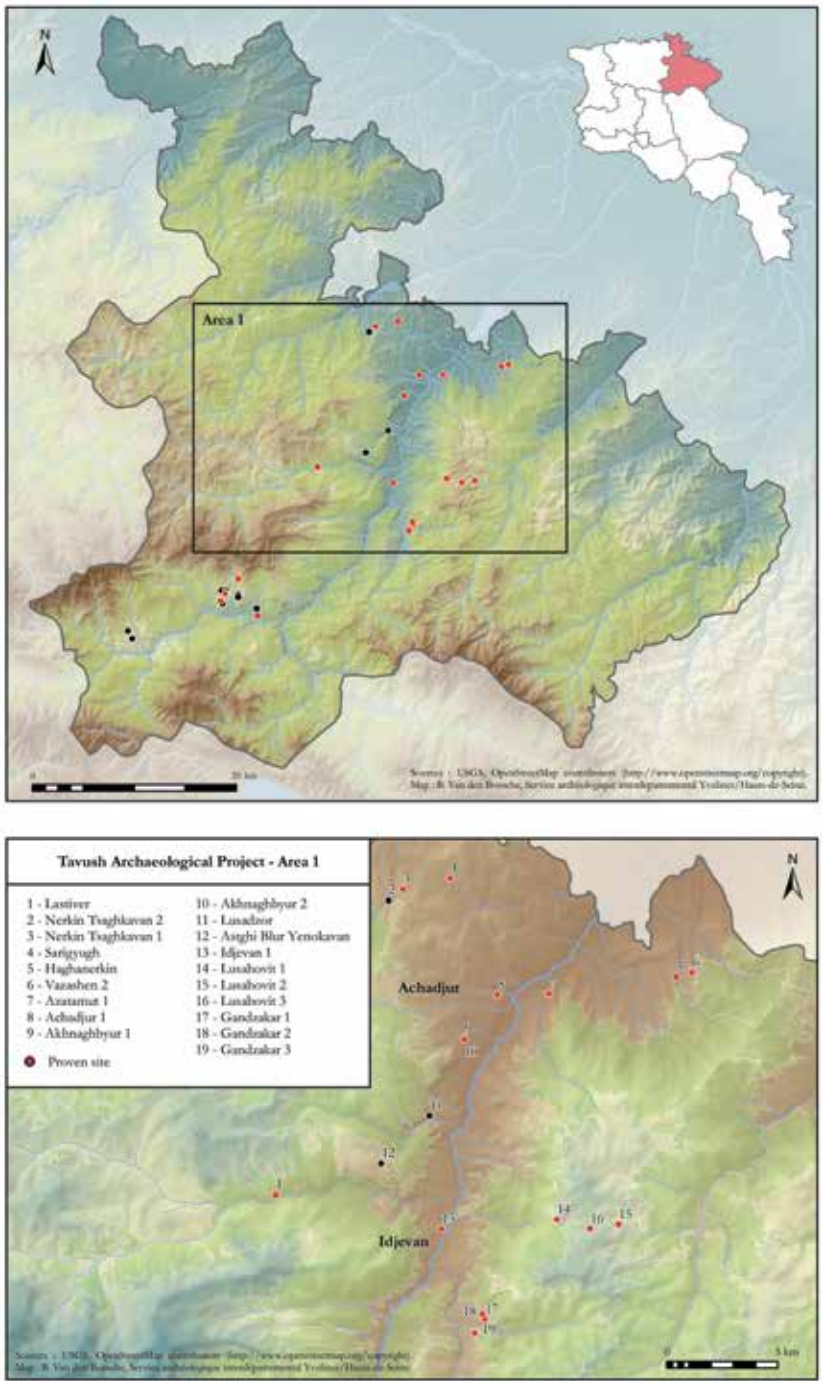

Fig. 5. Area 1: Aghstev valley (Map: B. Van der Bossche, T.A.P.).

the discovery of numerous prehistoric sites along the basin come as no surprise." (Arimura et al. 2014, 261). In 2019, we decided to explore around the modern city of Dilidjan southwest of Tavush.

Description of the Sites by Area

Area 1: Aghstev Valley (Fig. 5)

Achadjur 1 (Figs 6,7)

Longitude 45.178954, Latitude 40.985599, Elevation (a.s.l.) 619 m

Periodization: Neolithic (?), Iron Age

The Achadjur site is located on the right side of the Ijevan-Achadjur road, 780 m east of the village, on the left bank of the Aghstev. The site is in the form of a tell, measuring 70 m east to west and 44 m north to south. The western part of the site is partially damaged by recent development work (gas line); a military trench was dug in the upper part of the site. This construction cut allowed us to collect material from the occupation layer, whereas none was visible on the surface because of the dense vegetation.

Fig. 6. Achadjur 1: An aerial view (Drone photo: A. Mkrtchyan, T.A.P.).

Fig. 7. Achadjur 1: Iron Age sherd and prehistoric stone axe (Photo: V. Hakobyan).

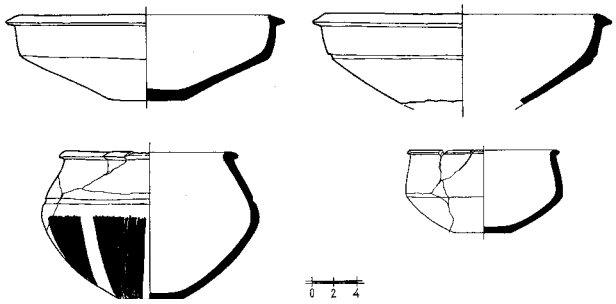

Fig. 8. Aknaghbyur 2: Iron Age pottery sherds (Drawings: N. Mkhitaryan).

Fig. 9. Idjevan 1: An aerial view (Drone photo: A. Mkrtchyan, T.A.P.).

A stone ax and 42 fragments of pottery were found here, most of which belong to the Urartian period and date to the 8–7th centuries BC. Three sherds present a gray-brown outer surface, a black inner surface and a large amount of mineral inclusions (medium and coarse). This type of pottery could be compared to that of Horizons II–III of Aknashen.

During the 2019 campaign, we excavated a test trench on this site that was discovered in 2018 (cf. below: Excavation at Achadjur).

Aknaghbyur 1

Longitude 45.161242, Latitude 40.967368, Elevation (a.s.l.) 699 m

Periodization: Medieval, 15–17th centuries

Aknaghbyur 1 is located at the northeast limit of the village of the same name, between the villages of Lusadzor and Khashtarak. The large stelae found on the surface suggest that the area was used as a Bronze Age tomb field. However, the material discovered on the surface belongs only to the end of the Medieval period.

Aknaghbyur 2 (Fig. 8)

Longitude 45.1612261, Latitude 40.9673437, Elevation (a.s.l.) 696 m

Periodization: Iron Age

This settlement is located in the northeast of the village of the same name. Remains of stone structures have been registered. No archaeological artefact was visible on the surface, but fragments of pottery have been found in the section of a military trench. The pottery belongs to the 1st millennium BC.

Azatamut

Longitude 45.2064758, Latitude 40.9858643, Elevation (a.s.l.) 578 m

It is located in the village of the same name and represents an Iron Age tomb which was destroyed due to military engineering construction, but it became possible to record the accumulation of rocks left from the tomb and pieces of pottery thanks to which we managed to date the tomb.

Located between Aghstev in the west and Hakhum in the east, the third zone explored is also the closest to the border with Azerbaijan. It encompasses two areas of foothills–one centered on the village of Vazashen, the other on the village of Varagavan–separated by a mountain chain oriented southwest/northeast. The latter is locally dominated by mount Kaghnutt'umb and the Chapkut forest massif. Established between 600 m and 800 m a.s.l. these two agricultural micro-regions are characterized by a relief whose undulating landscape is used for the cultivation of vines.

Gandzakar 1

Longitude 45.172033, Latitude 40.853810, Elevation (a.s.l.) 998 m

Periodization: Ancient Armenian

Gandzakar 1 is located at the southeastern end of the village, 90 m east of the present cemetery, on the side of a natural hill. 58 pottery fragments were collected, among which several were dated to the first Ancient Armenian period (5–4th centuries BC).

Gandzakar 2

Longitude 45.170580, Latitude 40.855870, Elevation (a.s.l.) 995 m

Periodization: Ancient Armenian

Gandzakar 2 is located on a natural hill east of the modern village of Gandzakar. 13 pottery fragments were recorded, most of which belong to the Iron Age and can be dated to the 2–1st millennia BC. Traces of construction with large stones are visible on the surface of the hill, which suggests that it was a fortress.

Gandzakar 3

Longitude 45.166649, Latitude 40.848147, Elevation (a.s.l.) 968 m

Periodization: Ancient Armenian

This site was discovered about 100 m south of the Gandzakar 2 site, east of the modern village of the same name, on the opposite bank. 20 pottery fragments were collected which belong to the 4th century BC.

Ijevan 1 *(Figs 9–11)*

Longitude 45.148749, Latitude 40.890383, Elevation (a.s.l.) 713 m

Periodization: Early Bronze Age (Kura-Araxes), Iron Age, Medieval period

This site is located in the urban center of Ijevan in the northwestern part of the city, on the left bank of the Aghstev. The site rises 40 m above the level of the plain. It forms a broad, roughly oval area oriented northeast/southwest. It measures a little more than 2.5 ha (233 m by 135 m approximately).

The site presents several recent disturbances, in particular three pillars for high-voltage electricity lines at the southeast edge and a large quadrangular construction in the southwest. Pottery typical of the Hellenistic period was discovered at the top of the settlement, while Early Bronze Age sherds were collected on the southwest slope. A total of 78 fragments were collected, of which 37 belong to the Early Bronze Age, 20 to the 1st millennium BC. The collection of pottery from the Early Bronze Age is mainly represented by diagnostic fragments, (glossy red and black ceramics, with decorations in spiral relief). They belong to the

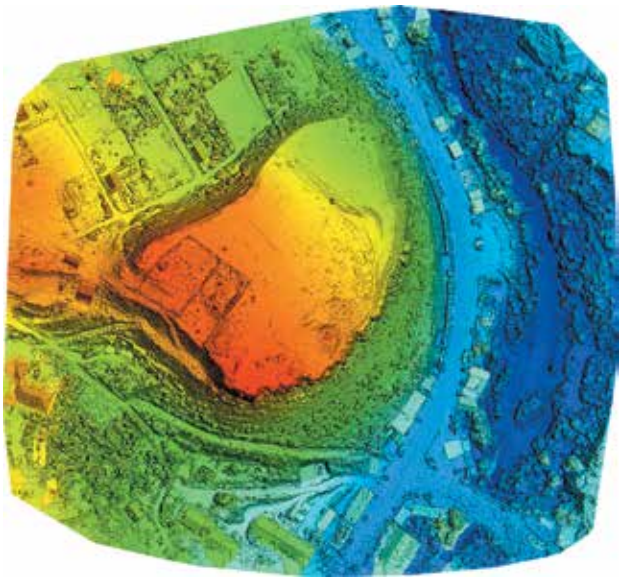

Fig. 10. Idjevan 1: Photogrammetric plan (Graphic: A. Mkrtchyan, T.A.P.).

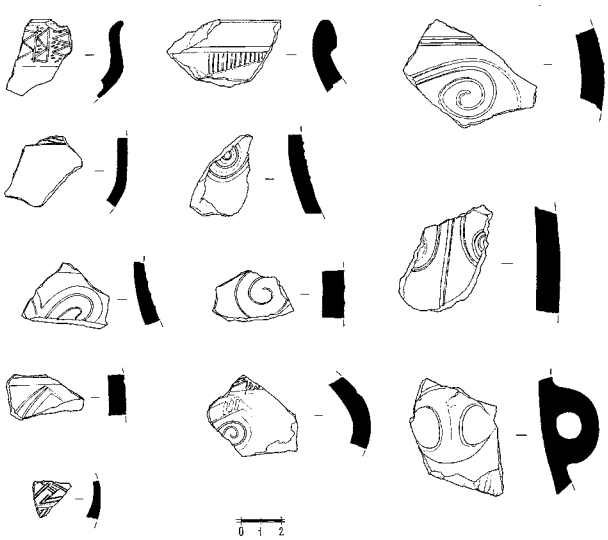

Fig. 11. Idjevan 1: Kura-Araxes pottery sherds (Drawings: N. Mkhitaryan).

second phase of the Kura-Araxes culture (KA II), the first half of the 3rd millennium BC (Badalyan 2014).

On the slope, several very large burial covering slabs were also registered, evidence for funerary activity on the site. This type of rock tomb is attested from the Bronze Age to the end of the Hellenistic period. It is therefore not a discriminating chronological clue. It would be interesting to determine whether the Kura-Araxes occupation is limited to this southern flank or whether it is also present on the tell, under the later occupations. This site, by its dimensions and by its position, appears to be a major site in the Ijevan region.

Lastiver

Longitude 45.060117, Latitude 40.904352, Elevation (a.s.l.) 1100 m

Fig. 12. Lusahovit 1: An aerial view (Drone photo: A. Mkrtchyan, T.A.P.).

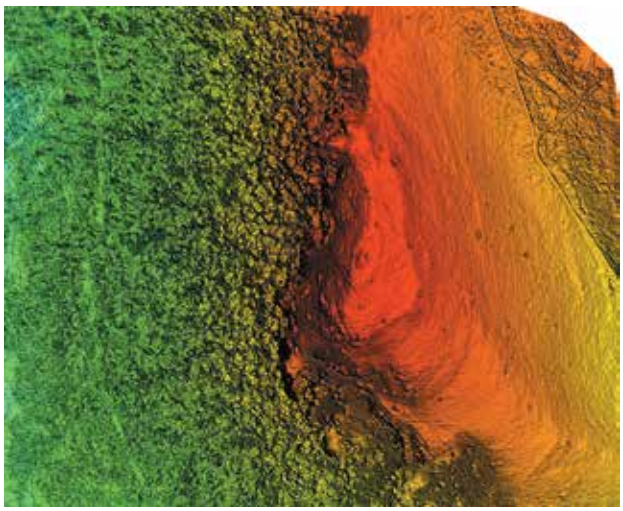

Fig. 13. Lusahovit 1: Photogrammetric plan (Graphic: A. Mkrtchyan, T.A.P.).

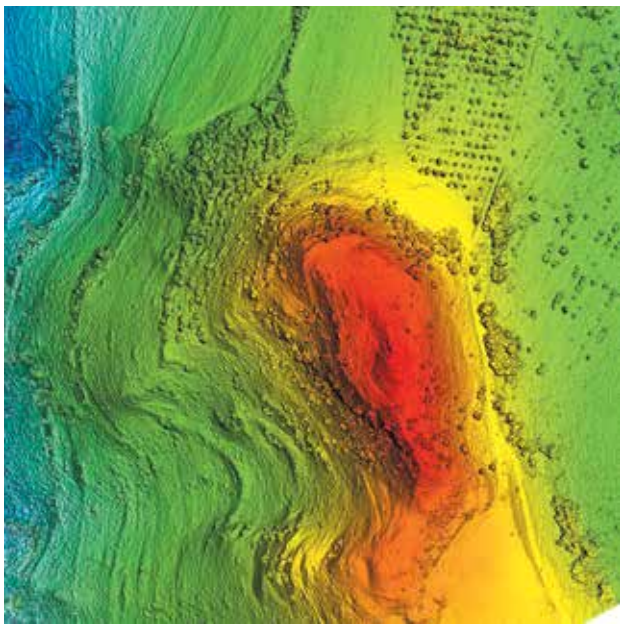

Fig. 14. Nerkin Tsaghkavan 1: Photogrammetric plan (Graphic: A. Mkrtchyan, T.A.P.).

Periodization: Bronze Age, Iron Age, Medieval period.

Lastiver is a cave, located in the Khachaghbyur river valley, west of Ijevan. The cave consists of an interior chamber and a terrace, as well as another cavity located just above. The cave is difficult of access, by a very steep path which gives it an undeniable defensive aspect. In the chamber were found sherds of the Bronze Age, Iron Age and the Medieval period, attesting to a long period of occupation.

Lusahovit 1 *(Figs 12,13)*

Longitude 45.210568, Latitude 40.894188, Elevation (a.s.l.) 1730 m

Periodization: Early Bronze Age (Kura-Araxes)

Lusahovit 1 is located high up on the mountains that overlook the right bank of the Aghstev at Ijevan. The site has a surface area of about 2 ha. The cliffs on the west and south sides of the hill are clearly natural defenses for the settlement. Remains of walls have been spotted on the surface. However, they do not suggest any particular structure. Because the vegetation was up to our waists when we visited the site, it is only thanks to a burrow that we were able to gather 25 pottery sherds. Only an EBA handle was really diagnostic, but the rest of the material appears to be all EBA. As the material is not diagnostic, it is difficult to specify the stage of the Kura-Araxes culture (KA I or KA II) to which it belongs.

Lusahovit 2

Longitude 45.243776, Latitude 40.892072, Elevation (a.s.l.) 1707 m

Periodization: undetermined

Site 2 is located on the left side of the Ijevan-Itsakar road and 2.6 km south of Lusahovit 1. The topographic location and the traces of Cyclopean walls suggest that it was a fortress. Due to very tall grass, it was not possible to collect material from the surface.

Lusahovit 3

Longitude 45.228453, Latitude 40.89084, Elevation (a.s.l.) 1722 m

Periodization: Bronze Age

Lusahovit 3 is located between the sites of Lusahovit 1 and Lusahovit 2.

Our team had identified on satellite images (©Bing) three anomalies that resemble kurgans. In the field, the identification was confirmed. Three small mounds of about 1.5 m in height and 7 to 10 m in diameter were located. No artifacts were found on this perimeter.

Nerkin Tsaghkavan 1 *(Fig. 14)*

Longitude 45.120879; Latitude 41.023912, Elevation (a.s.l.) 904 m

Periodization: Bronze Age (Late Bronze?), Iron Age, Medieval period.

This site is located 500 m north of the modern village of Tsaghkavan, and 500 m south of the national road which crosses the Aghstev valley towards Georgia. The site measures approximately 4 ha and is marked by a central eminence. Several alignments of walls were visible on the slopes. The sherds collected reveal an occupation of the Iron Age and the Medieval period.

Sarigyugh *(Fig. 15)*

Longitude 45.153918, Latitude 41.032816, Elevation (a.s.l.) 822 m

Periodization: Ancient Armenian

The site is located at the southeast end of the modern village of Sarigyugh, near the Soviet era silage pits. A pot and dozens of fragments belonging to the first Armenian period were found in a large trench related to recent construction work on the site.

Vazashen 1

Longitude 45.2747792, Latitude 40.9925059, Elevation (a.s.l.) 763 m

Periodization: Medieval period (12 – 14th centuries AD)

This site is located 800 m west of the modern village of Vazashen, on the left side of the main road going from Aygehovit to Vazashen, on the upper part of an embankment. A pit of the medieval period is located on the left side of the highway (14 sherds: 7 are diagnostic).

Vazashen 2

Longitude 45.2832800, Latitude 40.994341, Elevation (a.s.l.) 811 m

Periodization: Iron Age and Middle Ages

Located on the southeast edge of the village of Vazashen, this site lies on a promontory, on the top of which a reservoir was built by the municipality. This recent construction has naturally deeply disturbed the archaeological levels and caused destruction that is difficult to quantify. It was on the southwest slope of this easily accessible eminence that material was collected, including pottery and lithics. The diagnostic sherds identify at least two occupation phases. The most important is attributed to the Iron Age, a period during which the favorable topographic position of the site appears to have been valued. The presence of medieval sherds, on the other hand, does not add more information.

An accumulation and distribution station for drinking water was built in the area of this archaeological site which has caused much damage to it. During that construction work a large quantity of pottery was displaced, only part of which was collected for dating (141 sherds: 29 diagnostic for the Iron Age, 5 diagnostic for the Medieval period).

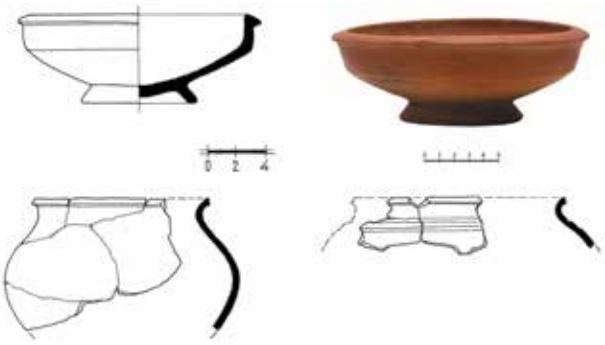

Fig. 15. Sarigyuh: pottery of the Ancient Armenian period (Photo: V. Hakobyan, Drawing: N. Mkhitaryan)..

Area 2: From Haghartsin to Dilidjan *(Fig. 16)*

Lying between 600 m and 1 650 m above sea level, the surveyed lands of this area correspond to several flat stepped surfaces, partly exploited in artificial terraces. The date of these terraces is not defined. 21 points of interest were recorded, distributed mainly between the neighboring municipalities of Teghut and Haghartsin. Among the reported locations, seven correspond to proven sites. In this area, the only deposit dating to the Bronze Age is the one that we call Haghartsin (formerly Teghut 7), where we began excavation in the 2019 campaign.

Haghartsin (former Teghut 7) *(Figs 17, 18)*

Longitude 44.9529949, Latitude 40.7924332, Elevation (a.s.l.) 1 360 m.

Periodization: Early Bronze Age, Medieval

This site is located on a vast promontory at an altitude of 1350 m overlooking the left bank of the Aghstev. Surface collection is extremely promising because the material is mostly attributed to an advanced stage of the Early Bronze Age, KA II, which appears to be the only significant occupation of the settlement. The material is widespread over a very large area and the shape is relatively open, so it is not obvious where the settlement core is located. There is a small medieval occupation represented by a chapel and several *khachkars* in the north-east part of the settlement.

The archaeological site is located to the north of Haghartsin village, in a place called Hndzan (near the mine of Kuybishev conglomerate). A large quantity of pottery was found on the surface, the study of which

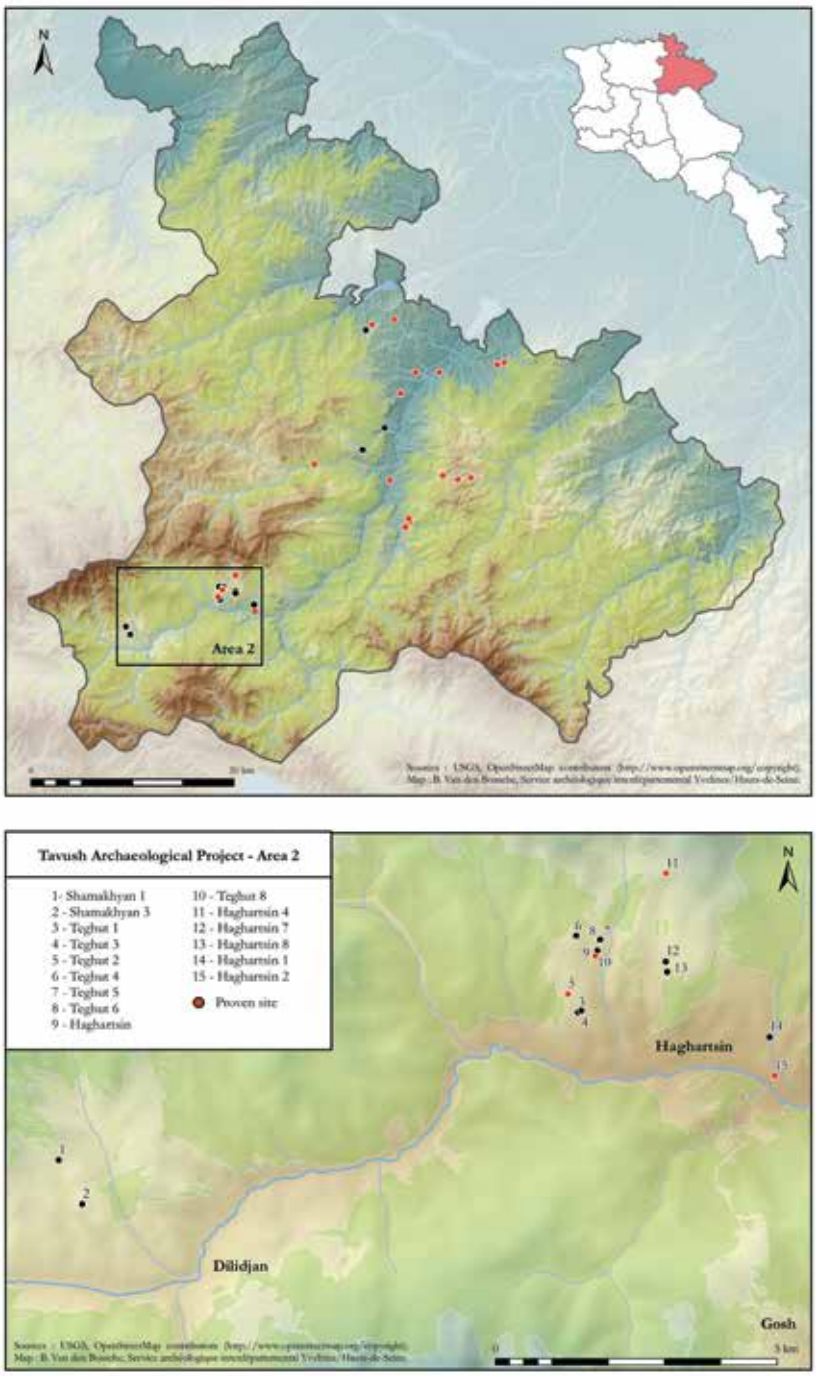

Fig. 16. Area 2: From Haghartsin to Dilidjan (Map: B. Van der Bossche, T.A.P.).

revealed that they belong to the Early Bronze Age. The surface material was particularly rich: a large quantity of sherds (among them, 20 Early Bronze Age diagnostic pieces), lithics in obsidian and a groundstone. Aerial photography and orthophotography were carried out as well as 3D modeling, topography, sections of the hill, in the area where the archaeological site is located.

Haghartsin 2 *(Fig. 19)*

Longitude 44.99068083, Latitude 40.7732992, Elevation (a.s.l.) 1 020 m

Periodization: Hellenistic period

The site is located northeast of the modern village of the same name. Nearly 130 sherds were collected, 44 of which were diagnostic for the Hellenistic period. On this site were also found several bases of stone walls measuring one meter wide and several meters long.

Haghartsin 4

Longitude 44.9678081, Latitude 40.8056575, Elevation (a.s.l.) 1 656 m

Periodization: Ancient Armenian

The site is located at the top of a small triangular promontory, in a grassy area. Visible on the surface were stone walls forming quadrangular units of differing size. Fourteen sherds were collected, among which four are diagnostic for the Ancient Armenian period.

Teghut 2

Longitude 44.947191388, Latitude 40.7863113, Elevation (a.s.l.) 1 307 m

Periodization: Hellenistic period

Located north of the modern village of Teghut, this site produced a large quantity of pottery from the Hellenistic period (28 samples are diagnostic). It was above all the presence of a very large quantity of iron slag which caught the attention of the team. It is possible that this area was devoted to mineral processing. Hundreds of iron slags and a large amount of pottery of the Hellenistic period were discovered.

Test Trenches

In 2019, we received the authorization to excavate two test trenches on two sites: Achadjur and Haghartsin. The results in Haghartsin confirmed the presence of an Early Bronze Age occupation, so we will begin proper excavation in 2020. The results of this campaign in Haghartsin will be published in a separate article.

We decided to dig a test trench at Achadjur because in 2018 we collected on this site, along with Iron Age material, sherds that are possibly Neolithic, as well as a stone ax, which strongly suggest prehistoric occupation on the site.

The survey was made based on the structures visible on the surface. A segment of the southern flank was selected that corresponded with an accumulation of blocks of decametric size covering a layer of carbonised material, the whole of which could be interpreted as the remains of constructions related to combustion activity.

Preliminary cleaning and partial recovery of the segment made it possible to better choose the strategy to be followed and the methods to be applied. Given the difference in height between the top of the plateau and the base of the eroded flank (about 2 m), it was decided to carry out a diagnostic excavation in two stages (upper terrace and lower terrace).

The upper terrace, open on the summit, corresponds to a rectangular area 4.50 m long west/east and continuing on the plateau by a length of 0.76 m on the north/northeast side and 1.32 m on the north/northwest side (Fig. 20). On the upper level, the first constructions appeared very quickly under the plant cover, con-

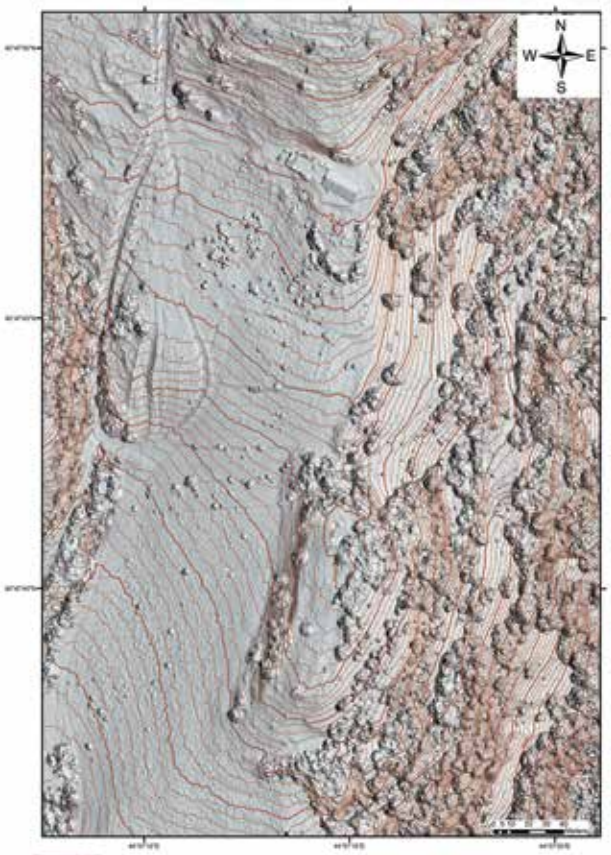

Fig. 17. Haghartsin: isoline map (Graphic: A. Mkrtchyan, T.A.P.).

Fig. 18. Haghartsin: View of the site from the south (Photo: V. Cicolani, T.A.P.).

Fig. 19. Haghartsin 2: Wall visible on the surface (Photo: B. Perello, T.A.P).

Fig. 20. Achadjur 1: Test trench of 2019 (Photo: A. Mkrtchyan, T.A.P.).

centrated mainly in the northwest corner. It is a constructed level that probably corresponds to a dry stone wall of cut stones, decametric in size, associated with a fragment of millstone and a stone ax. The ax possesses a form close to that of the one discovered in the survey last year and is probably attributable to the Chalcolithic. The wall was enclosed in a compact, light brown clay-sandy level (US 02), greatly altered by the action of roots and the presence of several anthills. Below, a thick anthropic level (US 03), light beige to white in color, was characterized by the presence of several pockets of charcoal, related to combustion activities whose function remains difficult to interpret. The only feature potentially associated with these activities appears to be a heap of dry stones which could have been an old combustion structure (US 07), now heavily damaged. The structure covered a deposit containing a large quantity of charcoal (US 08) and a lower level consisting of a light brown sandy-loam matrix. On its bottom were discovered several charred branches and twigs still *in situ*, arranged all around a flat, circular stone of local origin (object n°3). The thickness of this level gradually decreases as it descends along the slope, in the form of a landslide due to the dispersion of charcoal fragments down and to the west. Throughout the thickness of level US 03 there are a large number of fragments of charred wood branches and twigs in good condition. These correspond to the remains of dwellings to be related also to the remains of US 04. A charcoal layer parallel to the ground and located near the bottom of US 03 was also isolated (US 10). On the bottom of US 04 (object n°4) a dry stone structure (US 05) appeared towards the bottom. This structure consisted of five uncut stones arranged in a circle and partially covering a quadrangular central slab. It did not provide any significant material, and appears to have been placed on a natural sandy level rich in limestone inclusions on which US 03 rests. The central slab covered a circular excavation (US 06) filled with a natural and sterile sediment. A small cut in the form of a narrow vertical window was made in the sterile silty-sandy level of very light beige color (US 11), at which point the survey stopped in order to preserve any possible older remains which could have been buried deeper in the ground.

In general the results obtained confirmed occupation of the site, especially during the Iron Age, a period to which most of the sherds discovered belong. These structures remain difficult to interpret due to their poor state of preservation and the reduced area of the survey. Combustion activities appear to have characterized at least part of the human occupation. The dry stone layouts appear to be fragments of architectural elements whose function remains unresolved.

Unfortunately, the data collected in this survey did not provide any information to clarify the discovery of a Chalcolithic ax on the site in 2018. No level or ancient element was discovered in our survey. Once a chronological sequence has been established, together with our Armenian colleagues it has been decided that

it is preferable to put an end to the investigations on the site of Achadjur.

Conclusion

The goal of the TAP is to enrich understanding of the archaeological landscape of the South Caucasus, to contribute to discussion concerning the occupation of mountain environments and to investigate the settlement dynamics and the prehistoric and proto-historic material culture of this still largely unknown region. In this article, we have outlined the results of the first two seasons of the TAP. Our survey seeks to explore the landscape and the cultural and historical development of the Tavush province, an area of Armenia which remains poorly understood. We are confident that this approach, combining extensive study on our screens before the fieldwork with intensive survey on the ground, is the most promising method to further our work in this challenging region.

The two seasons have enabled us to add more than 20 sites to the archaeological map of the region. The results of these two campaigns in the Tavush confirm the strong potential of this region, which is still largely under-explored. Obviously, our knowledge is still very patchy and the work must continue. Some areas, in particular the zone around Berd, have been set aside for the time being, because too far from our place of residence (Ijevan), but will be pursued in future research.

As previously mentioned, the vegetation cover is a strong limiting factor for our exploration of the Tavush region. In order to overcome this limitation, we have considered the use of Canopy-penetrating LIDAR imaging. This could be an effective way (although not the only one) to examine the areas that remain out of reach for now. We have considered beginning with a test area. If the results are conclusive, we could implement this method on a broader scale.

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The Metsamor Project: Results Following Six Seasons of Field Excavation

Krzysztof Jakubiak[1], Ashot Piliposyan[2]

[1] Institute of Archaeology, University of Warsaw, Poland
[2] Service for the Protection of Historical Environment and Cultural Museum Reservations, Armenia

Abstract. This article presents the first preliminary observations on the Metsamor settlement during the Early Iron Age and the dynamic of its changing in later periods. The architectural remains, several cultural elements and factors recorded here shade some light on the reinterpretation of our previous knowledge on the lifestyle of the local community. The most significant discovery is that the changes in the settlement character were not as dramatic as it was previously thought. It means that the local community was opened or was forced to newcomers settling down within the city.

Keywords: Armenia, Metsamor, Iron Age, architecture, material culture, chronology, Urartian domination.

Introduction

The archaeological site of Metsamor is located approximately 35 km south-west of Yerevan, the capital city of the Republic of Armenia[1]. It is undoubtedly one of the most important ancient landmarks along the Araxes valley, also known as the Ararat plain. These areas of the Southern Caucasus were excavated extensively from the beginning of the 60s of the 20th century. E. Khanzadyan led full-scale excavations in Metsamor between 1965 and 2006. Several spots throughout the settlement, including the north-facing necropolis, were partially revealed by Khanzadyan's team. Continued study of the site and shedding new light on previous hypotheses was possible thanks to the efforts of this earlier research. Fieldwork at Metsamor was reestablished by a joint expedition of Armenian and Polish archaeologists in 2013. Since the start of the project, the Armenian-Polish team focused their research on areas previously untouched by archaeological activity. The choice to uncover a so-called lower town helped define tactical goals for future exploration of the site.

Over several centuries, Metsamor was strategically developed atop two natural stone outliers, Mets Blur and Pokr Blur, that dominated over the Araxes valley (Fig. 1). The settlement itself was divided into multiple characteristic sectors. Along the southern slopes of the citadel mound, the Metsamor river runs past the settlement and further southeast toward Artaxata where it flows into Araxes. Upstream of the Metsamor river, toward the west, a vast area of marshes and swamps made access to the settlement very difficult. From the other side, east of the settlement, an old riverbed of Araxes is recognizable from satellite imagery. According to detailed analysis of these satellite pictures, it can be postulated that the river ran much closer to the settlement during the 1st millennium BC. The distance would have been less than two kilometers, to be precise. There was likely an active ford near the settlement that made communication with the other side of the river, including Eastern Anatolian regions, possible.

This idea seems credible considering that the ruins of Menuahinili fortress recorded by Turkish scholars are proximal to the Turkish-Armenian border (Bilgisi 2017). The location suggests that at least one of the roads toward Araxes would need to pass Menuahinili fortress. Or, the fortress may have controlled all possible maneuvers around the road.

The most striking landscape features that characterize the Metsamor environment to this day are two large mountains. Massive Ararat towers over the east and Aragats in the west. Situated in the middle, the continuously developing site of Metsamor presided over the arable and fertile lands spread around and along the Araxes valley. As a consequence of the rugged local topography, access to those areas was very limited. Therefore, the town became important and played an exceptional role. Prior research on the site

1 The funding body of our project is National Science Centre grant 2018/29/B/HS3/01843.

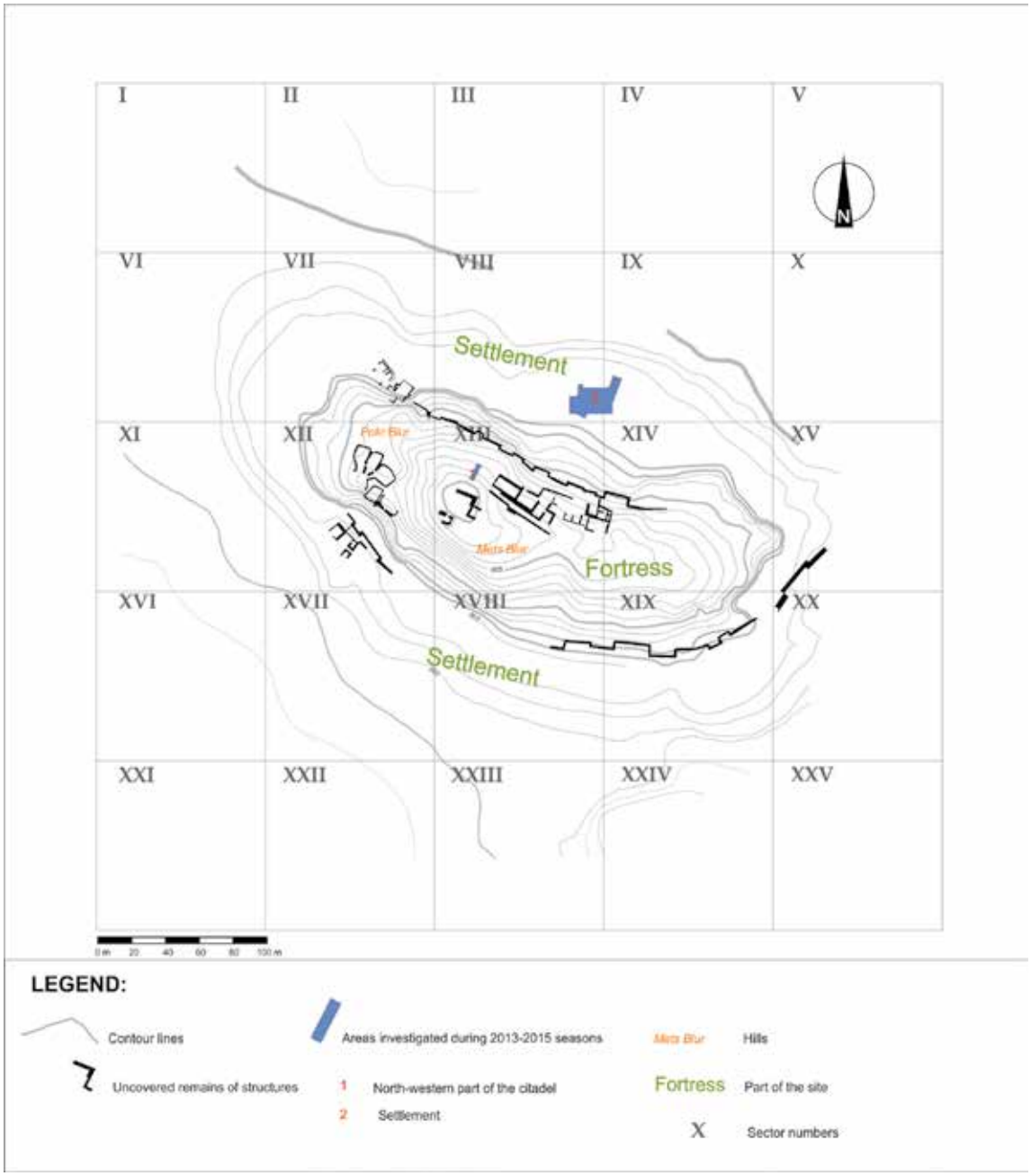

Fig. 1. The plan of the Metsamor site (Drawing: M. Iskra).

acknowledged these conditions and used them to assist their analysis of the location. Similar observations led and pushed forward the Armenian-Polish team for the reestablishment of the research project.

The decision to restart excavations was initiated by the need to clarify previously unanswered research problems. These questions, which included the settlement's function during the Early Iron Age period, led to the conclusion that research with the new team must start in previously unexcavated areas. That precondition pushed all our focus and effort to the area north of the citadel hill which controls the lower town and associated terrain. Research activity on the lower town has mainly focused on determining the stratigraphic sequence and internal layout of the settlement from the Early Iron Age I until the end of the Iron Age III. From our perspective, acknowledging how the settlement functioned was the most important question. Our interpretation had to bear in mind the role of the only so-called metallurgical center in the western part of the site (Khanzadyan, Mkrtchyan 1973). It has been speculated that this metallurgical center was active in the approximately same period.

Researching the development of the settlement from the Early Iron Age I period continues to inform the project's fieldwork after six seasons (Jakubiak, Pilopo-

Fig. 2. General plan of the excavated area in 2018 (Drawing: M. Iskra).

syan et al. 2016; Jakubiak 2017, Jakubiak, Piliposyan et al. 2018; Jakubiak, Zaqyan 2019). As a result, our work has created the unique opportunity to record possible distribution of dwellings and other architectural structures that could have seen extensive use during the life of the settlement. Nonetheless, it is still difficult to define and recognize a full stratigraphic sequence and chronology of the so-called lower town occupation. The full chronological sequence as it stands now is postulated and would require a separate research program of its own. Thanks to our selective research approach, it is now possible to record a relatively big area of the Iron Age settlement's layout or internal space arrangement after several seasons of excavation.

Architectural Setting

While analyzing the architectural remains brought to life by excavation, several characteristic architectural features and structure types were recognized. At first glance, the settlement internal arrangement is dividing into two sectors (Fig. 2). A larger open space or a relatively large yard once divided the western part with dwelling quarters from the urban space distributed in the eastern part of the already excavated area. It cannot be overlooked that this kind of internal layout planning was active for a long period of the settlement's development. This notion is supported by fieldwork observations from that spot which record no trace of building activity in compacted clay deposits ranging 60 – 70 cm.

The western part of the excavated dwelling seems chaotically arranged if the concept of a conscious arrangement can even be applied to that part of the settlement. The present state of the space arrangement can be understood by referring to the architectural preservation recorded in the western part of the settlement. The surviving fragments provide clues to interpreting the original building distribution. Analysis of the surviving architectural structures led to conclusion that the dwellings were rearranged during the time. This is not particularly surprising on multi-layered and multiphase settlements. From a technical viewpoint, all the structures were carefully built up according to size differences in stones and rocks. The surviving architectural structures certainly belong to the lowermost part of the building. This means that that upper portions of those recorded buildings and the whole lower town area were constructed in a similar if not the same manner. The remnants of stone architecture available to us indicate that nearly every wall was constructed differently and can reflect the settlement's process of internal rearrangement. These varying construction techniques can be used as a tool to recognize and understand chronological changes taking place during this rearrangement process. In the western part of the settlement, five architectural structures have been uncovered to date that were likely used for dwelling purposes. As previously mentioned, not all the structures belonged with certainty to the same chronological horizon. According to stratigraphic analysis and building techniques, it can be postulated that the wall separating structure S2 and S11 is one of the oldest structures ever discovered during fieldwork (Fig. 3). Based on pottery analysis and other

Fig. 3. Architectural structures S2 and S11, view from the west (Photo: O. Baggi).

artifacts discovered there, it was determined that structure S2 was the oldest architectural element in that part of the settlement. This badly preserved, rectangular structure dates to the Early Iron Age I/II periods. S11 was dated similarly to S2[2]. It was built up and attached to the wall that separated them. It can be assumed that both structures were active simultaneously. The similar character of both structures should be interpreted as simple, one chamber dwellings.

To the northwest edge of dwelling structure S11 is another similarly constructed structure that was only partially excavated until now. Structure S6 is reinforced by irregular stones and rocks, reminiscent of those used in other constructions recorded on site. S6 was constructed above the ruins of the northern wall of structure S11. Its superposition determined that it is younger than structure S11. The pottery assemblage entirely supports the dating established by stratigraphic analysis. This means that structure S6 could not have been constructed earlier than the Iron Age II period, if not later in Iron Age III. Discovered east of structure S6 is a poorly assembled structure known as S4 (Fig. 4). This case demonstrates how difficult it is to say that the walls belonged to any kind of dwelling structure. Since the pottery material discovered near S4 was mixed, it is hard to confirm or estimate the precise date of its construction. It is rather highly possible that this structure was used as a corral or pen for keeping livestock in a small, limited space. Taking into consideration both pottery distribution and correlations present between the walls, it can be assumed this pen or corral was probably functioning with structure S6 as opposed to S11. Therefore, it should be dated to the Iron Age III period.

2 The detailed discussion concerning pottery distribution is published in this volume by M. Iskra.

In the southern part of the excavated area, opposite structure S4, a similarly dated architectural structure was brought to light. It was not a weak and unstable construction, however, but well-built from large stones and rocks. Unfortunately, it is still only partially recognized and recorded. Structure S5 is undoubtedly the most impressive piece of architecture recorded during the whole project (Fig. 5). In addition to its partially revealed, large corner, subsequent results of a magnetometric survey confirm that this structure had a northern wall at least 20 meters long. This means that during the Iron Age III period, S5 belonged to one of the most monumental edifices distributed among the architecture of the lower town area.

In the area attached to S5's northern wall face, a pavement composed of pebbles from the Iron Age II period was also discovered. (Fig. 6) Most likely the pavement, now preserved only in fragments, could have been reused at a time when S5 dominated over that part of the settlement. Excavations of the ancient settlement that functioned along the northern slopes of the citadel mound have exposed a relatively open space that once divided the two-part internal layout. Based on the present state of the site, it is still impossible to ascertain the scale, size, shape and borders of that open space area. The layout of the court, or rather yard, could have been irregular. The distribution of architecture within the settlement might have forced the shape of this open area. These assumptions can only be proven with future excavations conducted in that part of the settlement area, however.

The eastern section of the settlement is situated in the central part of the lower town. Over the next several seasons, excavation will continue to extend toward the east in order to reveal more of the settlement layout. By the 2018 season, it was possible to recognize several interesting architectural features on the eastern side. Like the situation visible in the western part of the settlement, the dwelling structures imply several phases of expansion and rearrangement.

East of the yard, a curvilinear stone wall shows the visible limit and border between the open space and dwelling structures in the settlement. Just behind it, several other architectural features were excavated and recorded. The most characteristic and recognizable structure found in that part of the settlement was a rounded pit house known as S1. The pit house was constructed from stones irregular in both size and shape. Since the whole construction was partially dugout from the ground level, the wall formed part of the pit house as opposed to a roof support. It can be

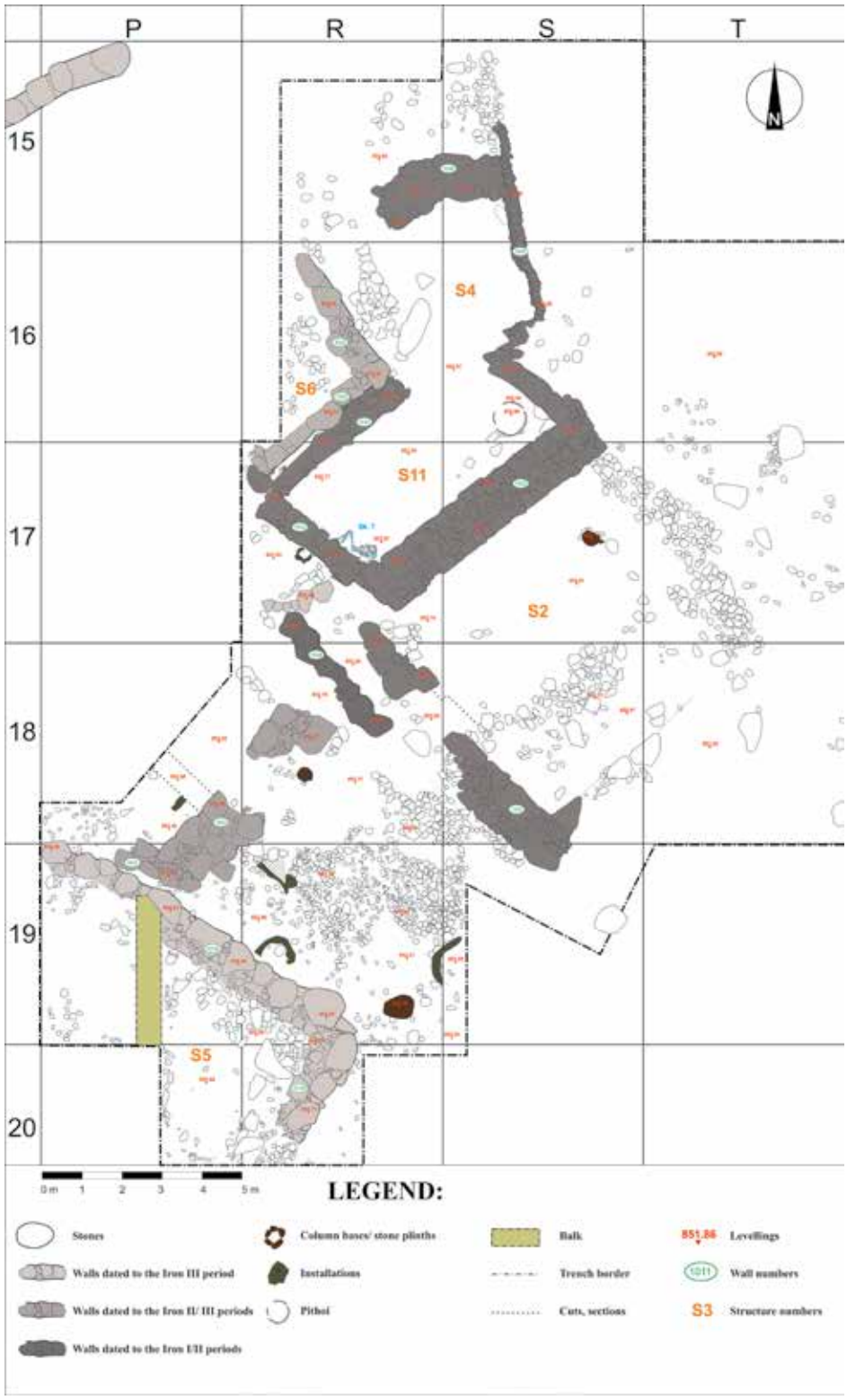

Fig. 4. Structure S4 plan (Drawing: M. Iskra).

estimated that the walls were no higher than 1 – 1.5 m above the ground. The construction techniques of S1 can be easily differentiated from those observed in other structures belonging to the western part of the settlement. Structures with a similar scale and construction technique were recorded during excavations at mount Aragats. At the site of Tsaghkahovit, several spots in the settlement area shared common architectural traits with building S1 in Metsamor (Badalyan, Avetisyan 2007; Smith, Badalyan, Avetisyan, 2009). These structures were dated to the Late Bronze Age horizon. Being aware of this data, the temptation to

Fig. 5. Architectural structure S5 (Photo: O. Baggi, section drawing: M. Iskra).

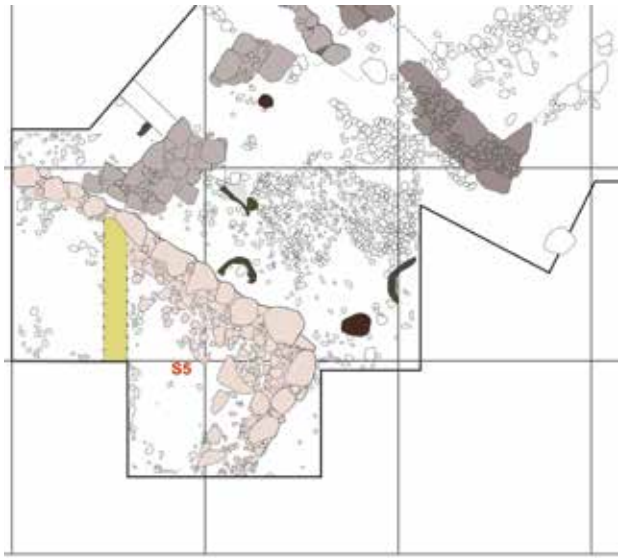

Fig. 6. The architectural structure S5 plan (Drawing: M. Iskra).

Fig. 7. Structure S1, general view from the air (Photo: M. Truszkowski).

date S1 to the same period as the Tsaghkahovit structures was strong. As a result, S1 was thought to belong to the Late Bronze Age based on architectural features only (Jakubiak, Piloposyan et al. 2016, Jakubiak 2017, Jakubiak, Piliposyan et al. 2018). The pottery sherds collected during the clean-up process of building S1, however, dated to the Iron Age period. This prompted us to revise our initially proposed date for S1.

The question that remained, however, was which part of the Iron Age period should S1 be precisely dated since two phases of occupation were distinguished (Fig. 7). Most of the pottery collected from the pit house belonged to a local manufacturing pottery tradition. This finding implies that very little pottery was imported from outside the Araxes valley. Realizing that S1 was not dated to the Late Bronze Age was a big surprise. The second astonishing factor was that the pottery assemblage found on the two floors used during the pit house's occupation phases dated to the Early Iron Age II period instead of Early Iron Age I. This challenged the expectations set at the start of our project. The only material that can be dated to the Early Iron Age I period was made known from a test trench within the building interior. The most spectacular findings from this test trench were two large pithoi originally dug into the floor of an architectural structure that preceded the round building S1. These clay storage jars were likely reused after the rearrangement of the building that once functioned there. The discovery of these earlier architectural techniques and chronological phases helped us develop a strategy to find occupation layers associated with the Early Iron Age I local community.

Careful analysis of the architectural remains distributed in that part of the settlement was necessary to detect traces of Early Iron Age I activity. In fact, several structures from the Early Iron Age I period were recognizable. Despite the poor preservation level, these architectural remains give us an impression of how the Early Iron Age I settlement phase was arranged. The internal space was well organized as testified by the walls. In fact, many decent, thick and stable walls can be dated to this early dwelling area in the eastern part of the settlement. Two walls situated north and east of the round pit house S1 are particularly important. The wall situated north was partly destroyed by building S1. Therefore, if S1 cut the stone wall, the wall itself must be from earlier phase according to the stratigraphic perspective. This stone wall was part of a rectangular structure known as S10 (Fig. 8). The latter is only partly recognized because it is superimposed by oval structures from a later date. This indicates that S10 is even older

than S1 and can be dated to the Early Iron Age I period. East of S10, on the other side of the shallow street, there are traces of another building with a rectangular layout dated to the Early Iron Age I period. It was found among architectural ruins from the Early Iron Age II period that were subsequently rearranged and formed part of larger, rectangular buildings toward the east.

Until now, most the recognized buildings were roughly dated to the Early Iron Age II period. The large building east of the round pit house S1 has several phases of rearrangement. But, according to further architectural analysis, this building was also used during the Early Iron Age II period. Apart from these two buildings, another pit house was brought to light. Pit house S7 was attached to the southern wall of S1. The relationship between these two pit houses is difficult to fully understand or confirm. Notwithstanding, both were certainly active during the same chronological bracket of Early Iron Age II. The layout of S7 does not repeat the oval shape of building S1 but was rather a trapezoid (Fig. 9). The size of the building determined that the roof needed greater support. Close to the middle of the inner chamber were small stones forming a small, circular shape on the floor. Surely this marker once fixed a wooden pole that upheld the roof. Despite S7 being a well preserved and pristine building, the entrance of the house is still hard to locate. Based on our analysis of S7's construction techniques and observations from the field, we can surmise that the entrance might have been situated in the southern part of the pit house. Unfortunately, the area attached to the southern part of s7 is badly damaged by latter vandalism, which makes careful analysis almost impossible.

Within proximity to the edge of open area S3 is a curvilinear, one chamber building. It is the smallest dwelling dated to the Iron Age III period (Fig. 10). If this building is interpreted correctly as a dwelling, it means that it was in use on the settlement during the so-called post-Urartian period. The contrast between this small dwelling and the monumental structure S5, which was unearthed in the southwestern part of the settlement, is puzzling and can suggest that the settlement was divided into at least two zones.

The architecture presented above is our only framework to reconstruct or set the stage for other aspects of settlement activity.

Pottery and Dating

As is standard in archaeology, the only material found in large quantities that can give understanding to a settlement's economy and provide precise dating is pottery.

Fig. 8. Structure S 10, view from the air (Photo: M. Truszkowski).

Fig. 9. Dwelling structure S 7, view from the south (Photo: O. Baggi).

Fig. 10. A plan of the structure S 3 (Drawing: M. Iskra).

Fig. 11. Structure S1 during the excavation process (Photo: O. Baggi).

Fig. 12. One of the bronze bracelets found in the pithos jar (Photo: T. Zakyan).

No other methods for this information are possible in Metsamor apart from pottery. It should be noted that the pottery in Metsamor bears similarity to other archaeological sites. All the ceramic accumulated during the excavation seasons of our project is locally manufactured. Based on present studies of the material, changes to the local pottery production were less dramatic over time compared to neighboring areas. In order to gain better understanding of the chronological sequence it was necessary to analyze all contexts and associated stratigraphy. This includes revisions made to the dating of occupation phases within the settlement. Although pottery analysis is a broad topic deserving of its own separate volume, it is still worth highlighting some of the overall trends observed for this article.

Special attention must be given to the sizable pithoi (storage jars) discovered inside building S1. As previously mentioned, the building's interior was in use for a relatively long time as attested to by multiple renovation attempts. It is important to document not only the stratigraphic sequence but also the shift in pottery styles represented here. Although the pottery assemblage might appear homogenous through the ages, some subtle changes are visible. In the last occupation phase of S1's uppermost layers, some fragments of Iron Age II pottery as well as a few Urartian sherds were recovered. The storage jars, by contrast, date to Iron Age I and their style is deeply rooted in the manufacturing tradition of that time. Owing to their durability, large storage jars like these survived a long time. They continued to be produced and used by the settlers. This trend can be seen in other varieties of pottery discovered in the S1 building deposit including plates, jars and gray burnished goblets. The two pithoi discovered in the Iron Age I context were also used in the later phases of this pit house. In the Iron Age II context, the rims of both jars were lifted above the floor while the shoulder layers sat in the previous period (Fig. 11). The jars were tidily closed with circular stone lids. Inside one of the jars, two massive bracelets, both around 1 kg in weight, were brought to light (Fig. 12). Both objects were made of bronze and had a circumference too small to be worn as jewelry by females of the local community. This observation lead to the possible conclusion that these objects were never used as personal decoration or adornment. Rather, they might have been used as symbols of power, wealth or simply as weights. The only objects bearing any similarity to these were discovered in Georgia. Unfortunately, the heavy bronze bracelets from Georgia were deposited in funerary contexts as precious gifts for ancestors (Narimanishvili et al. 2017).

A similar situation was observed during the exploration of structure S7. As opposed to S1, however, this building was probably abandoned during the Iron Age II period. During the process of exploration, some Urartian pottery sherds were detected among those of local manufacturing. The relatively large deposit of pottery and animal bones discovered within building S7 can lead us to assume that the interior space was converted into a trash deposit after it was no longer a dwelling. This might be the possible reason why Urartian pottery pieces were deposed here with other waste from other parts of the settlement.

The chronologically similar S2 and other structures attached to it show a similar process of usage. The pottery assemblage here was crucial for understanding the character and function of this architectural grouping. Most of the pottery discovered in that part of the settlement was material of local provenance. Although a chronological sequence of Early Iron Age

I and II were recognized, it needs to be emphasized this chronology is solely based on local production. Another exceptional find by our team was a small, locally manufactured goblet. It was unearthed close to a human skeleton found nearby a wall separating structures S2 and S11. The goblet was dated to the Iron Age II period and had the symbolic representation of a trident engraved on its shoulder. Since the trident is a symbol of the Urartian god Haldi, this goblet confirms that the local pottery tradition continued in this settlement during the Urartian period (Fig. 13/a). Near the human skeleton, a cheek piece belonging to a horse bridle made of bone was found (Fig. 13/b). This object was richly decorated with a geometric pattern and has become one of the most unique discoveries from Metsamor. This anomalous artifact proves that objects outside of the Urartian kingdom or local production were also present at Metsamor. This horse cheek piece resembles those used by nomadic tribes such as the Scythians or Cimmerians (Esayan, Pogrebova 1985, 100, pl. XVIII; Pogrebova 2011, 348, tab. LII). The human skeleton and cheek piece were both discovered in a context associated with the settlement's violent destruction. Therefore, the horse bridle part would have been brought to Metsamor before or after the town's demise. If this speculation is correct, it means that the destruction and domination of the settlement could not have happened toward the end of the Urartian period but earlier, possibly at the end of the 8th century BC.

Following the excavation of a large building in the eastern part of the settlement, it was clear that the east side shared the same fate as the west. Here, however, the pottery assemblage shared similarities with the function of the local architecture. The only difference recorded during fieldwork was that more Urartian pottery was surfacing. In general, the overall chronological sequence based on pottery is also reflected in other parts of the settlement. Another spectacular discovery with architectural associations were carnelian and gold necklace beads found in the western part of the same building. The discovery context can be associated once again with the settlement's destruction.

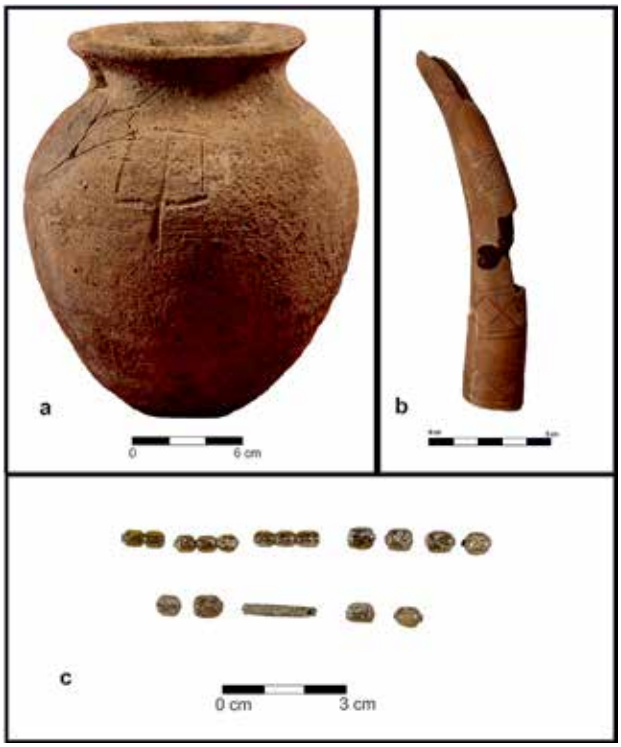

Fig. 13. a. Goblet with a trident symbol, b. A bone horse bit side pice, c. Beads (Digitilization: M. Iskra).

Fig. 14. Ungentarium form the Grave no. 9 (Photo: S. Manas, drawing R. Mcclenaghan).

Discussion

The problem of how the Metsamor settlement survived the collapse of the Urartian period is still the target of research. Reconstructing this difficult era in the life of the settlement is not possible with our present state of knowledge and what material is available for analysis. We can confirm, however, that the settlement was still active in Iron Age III or post-Urartian times but reduced to a modest structure. Only a few buildings can be attributed to the Iron Age III period as proven by pottery distribution. Even if the economy failed and the development of the town ended, the locally produced pottery was still in use by the settlers who remained. Although it is uncertain whether the pottery artisans had workshops in the settlement or in the vicinity, the tradition nonetheless continued. This

Fig. 15. Aryballos from the Grave no. 9 (Photo: S. Manas, drawing: R. Mcclenaghan).

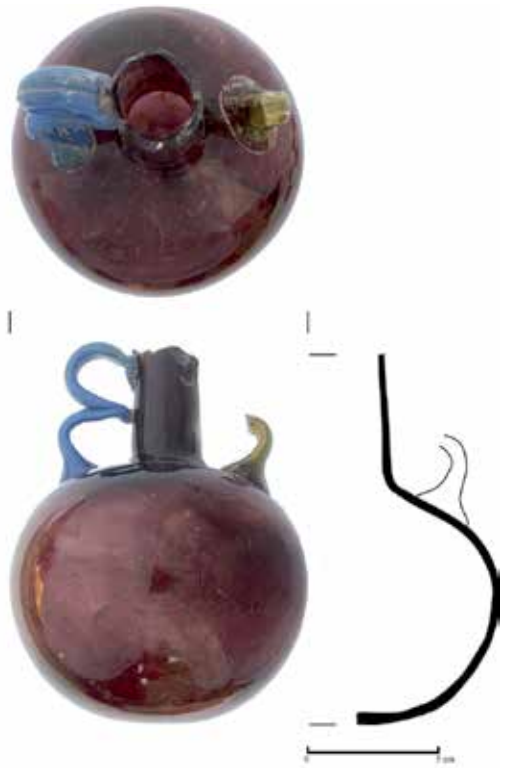

Fig. 16. Deposit from the Grave no. 11 (Photo: S. Manas, drawing: R. Mcclenaghan).

means that pottery production had deep, cultural roots in Metsamor since the Early Iron Age I period and was maintained up until Iron Age III. This notion is supported by evidence of constant development in the pottery manufacturing process. The presence of morphological changes gives us the chance to reconstruct the overall typology and developmental sequence.

The downsizing of the Metsamor settlement during Iron Age III was probably due to economic decline. Simultaneously, if not prior to the end of that period, the settlement became depopulated. The site was abandoned for a long time afterward. The question of how the town persevered after the downfall of the Urartian kingdom and why they eventually ceased all industry, development and habitation in the settlement remains a mystery. Certainly, the answers to these questions are among the main goals of this ongoing project.

Dilemmas of a different kind must also be addressed. Contrary to the Early Iron Age I focus of our archaeological fieldwork, we encountered several graves from the first centuries AD in the eastern part of the settlement. Five graves have been recorded thus far. This concentration indicates that a potentially large necropolis was once situated in the eastern part of the abandoned settlement's ruins. Unfortunately, neither the layout of the cemetery or its funerary customs could be determined. Only two of the skeletons were buried in proper inhumation graves oriented in an east-west direction whereas the other three were lacking proper grave structures and oriented in a north-south direction. The presence of burials in an abandoned settlement is not surprising. However, the decadence of these burials and their grave goods was completely unexpected (Jakubiak et al. in press). Small gifts such as the glass beads in Grave no. 1 belonged to a rather modest burial. Graves no. 9 – 11 had many small glass objects deposited as burial gifts. In two of them (no. 9, 10) glass unguentaria dated to the 2nd century AD were the most valuable objects among the grave goods (Figs 14 – 15). The glass unguentarium from Grave no. 10, which belonged to a child, included a small, eggplant-colored aryballos and numerous glass and golden beads. Grave no. 11, which belonged to a middle-aged man, had a trichroic glass bottle dated between the 3 – 4th centuries AD (Fig. 16). This individual was found with a long, needle-like arrowhead between his ribs which likely killed him. More importantly, all the glass objects discovered in the necropolis were brought from Syria. The glass beads were probably manufactured on the Levantine coast or more precisely, in Lebanon. The plethora of glass objects discovered during our exploration of the necropolis indicate that these luxury items were imported from the Levant to Armenia. Some of them were used and enjoyed in Metsamor and the neighboring vicinity. The fact that these community members were buried with objects of such high quality would suggest that they lived on a relatively good economic level. The question remains whether the necropolis was situated nearby the settlement during the first centuries AD or if the deceased individuals were brought there from afar. A survey conducted of the Metsamor site did not show a single

piece of pottery dated to that period. So still, the more we discover, the more questions we are presented with.

Conclusion

In conclusion, the Metsamor project has confirmed after six excavation seasons that the settlement of the so-called lower town was active from the Early Iron Age I period. After several centuries, the overall layout and internal arrangement show signs of significant change. Even so, most of the dwellers were probably local community members who dwelt there for a long time. This local community was not entirely homogenous. There is some evidence of newcomers appearing at the beginning of the Iron Age I/II periods. Their presence was made known through the advent of new building techniques applied to the settlement arrangement. Surely pit houses like S1 and S7 belong to that category. The settlement ultimately changed its character after the Early Iron Age II period which saw the rise of the Urartian kingdom. Scholars agree that the Urartian invasion of Metsamor during the reign of Argishti 1 did not devastate the settlement.

Based on the results of archaeological excavation, it is believed that the Urartians installed a form of subjugation and political control over the town rather than brutal, military force. This superior regime created the possibility for economic development under a new controlling power. As a response to this unfavorable situation, the small community may have sought a new powerful leader. Thanks to the dynamic social policy of the Urartian kings, a group of people from the Aragats plain were displaced and resettled into the local community of Metsamor. A new dynamic appeared in the settlement's population. It now contained local dwellers, resettled peoples from Aragats and possibly Urartians. Together, they created a small, intermingled society that lived in harmony and fought alongside one another against invaders at the end of the 8th century BC. It is important to note that this community survived those adverse times and were still thriving until the post-Urartian period, which is synonymous with Iron Age III according to archaeological nomenclature. How the settlement was changed by Urartian domination and factors affecting its survival after the downfall of the Urartian kingdom require more careful study in the future.

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Remarks on Deposition of Pottery in the Lower Town of Metsamor

Mateusz Iskra

Institute of Archaeology, University of Warsaw, Poland

Abstract. In stratified archaeological sites a complex research conducted on deposition of pottery provide an important data for defining the patterns of household activities and refuse disposal as well as their changes trough the time. In case of Metsamor presented research was focused on distribution and deposition of pottery during four main habitation phases of the lower town dated between 10th and 5th centuries BC. The results of analysis of pottery assemblages found on floor surfaces, inside shallow pits or backfilling layers indicating secondary deposition of Bronze Age pottery during the building activity dated to Iron III period, gradual abandonment of Iron II structures as well as existence of "intramural dumps" in abandoned part of still occupied buildings.

Keywords: Armenia, Metsamor, Iron Age, pottery, refuse practices, depositional patterns, ceramic taphonomy.

Introduction

The analysis of the context and spatial patterning of archaeological finds remains the fundamental part of archaeological research. Context gives artefacts their legal authenticity and archaeological significance (Ford 1977, 14), while spatial patterning of artefacts reflects distribution of past human activities (Binford 1962; Clarke 1968). In stratified archaeological sites an accurate reading of the context is especially important given a broad spectrum of accretion and deterioration processes affecting archaeological assemblages. One of the key factors leading to understand patterning of past human activities and nature of post depositional processes in particular stratified site is analysis of life cycle and spatial distribution of the pottery finds. Although the pottery is belonging to the most universal category of archaeological finds, detailed research on its depositional context, refuse disposal, use-wear traces and spatial distribution was developed relatively late as one of the main strategy of behavioral archaeology (Reid et al. 1975; Schiffer 1976; Rathje, Murphy 1992). Quantitative and qualitative analysis of pottery fragmentation, use-wear traces and spatial patterning of particular vessel forms provide best source of information concerning the function and circulation of ceramics in community as well as the depositional dynamics.

More detailed research conducted on deposition of pottery from the lower town in Metsamor began already in 2017 and from year to year was being improved[1]. In the field procedure each pottery sherd (diagnostic and non-diagnostic) coming from single context is classified according to: ware type (12 types including tableware and kitchenware variants), vessel form, fragmentation, use-ware traces, form of breakage (fresh, rubbed) and relation with other fragments (orphan, refitting, possible refitting). Statistical analysis of these variables usually provide complex information about the character of deposition of each ware and vessel types as well as the relationship of the entire assemblage with architecture units and other deposits. The results are subsequently verified by stratigraphical analysis. However, it should be noted that, due to short period of fieldworks (4 – 5 weeks) refitting of the sherds is usually not fully completed, hence in case of very fragmented assemblages some results could be inaccurate.

In contrast to the summary of six field seasons published in this volume (Jakubiak K., Piliposyan A. this paper puts greater attention to the easternmost structures (namely S8, S9, S12, S13, S14 and S15) uncovered during 2017 and 2018 seasons. Given the fact that in 2018 some of them were only partially explored it was necessary to include data acquired during latest season (2019) in the final results presented in this paper.

Based on already acquired data it is increasingly clear that the stratigraphy of the lower town does not reflect formation processes which have been observed in the fortress (Jakubiak, Piliposyan in this volume).

1 Present research is conducted within frame of National Science Centre grant 2018/29/B/HS3/01843.

In contrast, the area of the lower town has not been affected by medieval habitation, thus the upper strata dated to the Iron Age are rather intact and undisturbed by later domestic residues. The burials dated to the Late Roman period intersecting deposits accumulated at the inner corner of structures S3, S12 and S15 are exceptions (Jakubiak et al. 2019, 320–324, Jakubiak, Piliposyan in this volume). The absence of later deposits is followed by a very low number of sherds dated to the Classic period and the Middle Ages which occurred exclusively in subsurface layer. Based on stratigraphical analysis supported by radiocarbon dating and presence of well-dated sherds it was possible to distinguish several habitation phases of the lower town that could be approximately dated to the late 10th /first half of 9th and beginning of 5th century BC (Jakubiak 2018; Piliposyan et al. 2020, 254, 256). Since the Iron Age deposits from the lower town are better preserved than in the fortress it was possible to distinguish two uppermost habitation phases dated to the late Iron II and Iron III periods that had not been recorded during excavations conducted by E. Khanzadyan.

As a result of a great dynamic of accretion and deterioration processes, four centuries of human activity have compressed in one stratum that usually does not exceed 1,5 m thickness in stratigraphical section. In consequence, there are few sealed contexts characterized by undisturbed assemblages while majority of features contains very mixed material. Yet, in both situation it is possible to obtain valuable information concerning the last stages in ceramic life i.e. use, discard and refuse.

Deposition of Bronze Age Pottery

Identifiable sherds being typical for the Kura-Araxes (Early Bronze Age, henceforth: EBA), Sevan-Uzerlik, Karmirberd (Middle Bronze Age, henceforth: MBA) and Lchashen-Metsamor I–III (Late Bronze Age, henceforth: LBA) traditions constitutes ca. 4% of total volume of diagnostic fragments discovered during seven seasons of fieldworks in the lower town[2]. The assemblage composed of 10 EBA sherds, 70 MBA sherds and 44 LBA sherds has been found in three main findspots: near S5, in S1/S17 and S7 or attached to S16[3]. Concerning fragmentation of the sherds – 100% of the EBA sherds are small fragments not exceeding

Fig.1. Examples of Bronze Age sherds found in the Iron II and the Iron III layers: a. the LBA sherd with abraded outer surface, b. the EBA sherd with rubbed breakage, c, d. The MBA sherds with abraded outer surface and rubbed breakage (Photos: M. Truszkowski, S. Manas Jolis).

5 cm in length; within the MBA sherds, 80,5% are small, 17% are medium (between 5–10 cm) and only 2,5% are large (more than 10 cm), whereas within the LBA sherds 70% are small, 22% are medium while 8% are large. Apart of six refitting the MBA examples found in the deposit associated with pithoi in S17 the majority of Bronze Age fragments can be classified as orphan sherds. The most common features of small and medium orphan sherds are rubbed edges and abraded surfaces indicating strong influence of water erosion as well as mechanical abrasion during postdiscard stage (Fig. 1). Together with considerable fragmentation both features are pointing towards that bulk of the Bronze Age sherds was secondary refused. This observation clearly corresponds with the deposition of sherds in contexts associated with backfilling or levelling activities. It should be noted that the MBA and the LBA orphan sherds occurred mainly in uppermost deposits being foundation layers of structures dated to the Iron III i.e. S5, S16 and wall 1059 (Iskra, Zakyan 2019, 335–337). One exception can be found in mentioned cluster of the MBA sherds discovered in S17. Noticeable feature of assemblages from levelling layers dated to the Iron III is a relatively larger size of the LBA sherds comparing to secondary refused fragments dated to the Iron I or Iron II. It may suggest that some part of earth filling was brought directly from the place of primary refuse of a household wastes (such as midden) during the LBA period. Usually this type of deposits located close to activity area contain considerable amount of sherds larger than 9 cm discarded

2 More about Bronze Age pottery in Armenia: Avetisyan, Bobokhyan 2008, Badalyan 2014.

3 The main plan of excavations after season in 2018 is attached to mentioned summary (in this volume).

Fig. 2. An aerial view of the house from the Iron II after completing exploration in 2019 season (Photo: M. Truszkowski; digital processing: M. Iskra).

from living space together with food consumption wastes (Binford 1978; Yellen 1978). Given the lack of the LBA architectural remains in adjacent area such place could have existed probably much closer to the fortress walls which most probably were built between 15th and 14th centuries BC (Khanzadyan et al. 1973). In this respect it should be considered large size of stone blocks, used in foundation of the structures which is unusual in architecture of the lower town, as more adequate for building material of the fortress walls. As the test trench dug at the inner side of the southern section of fortress walls (in 2019) indicated, the area close to the wall was used as a dump place at least during the transition period of the Late Bronze Age and Iron Age. Ceramic assemblage discovered in lowermost layers consist of medium and large refitting fragments of Lchashen-Metsamor II–IV vessels as well as small and medium orphan sherds typical for the MBA Karmirberd tradition. Concomitance of the MBA and the LBA sherds is also typical for foundation layers of the structures dated to the Iron III, therefore it may reflect content of original assemblages dispersed during acquisition of soil and building materials. Taking into account proximity of the place it is probable that soil and large stones had been retrieved from now dismantled southeastern section of the fortress wall. In this hypothetical scenario the fortress area during the Iron III was most likely unoccupied, that in turn, could be confirmed by the absence of the Iron III layers from the fortress mound.

Cluster located around and underneath two pithoi found in S17 (Jakubiak et al. 2019, 314) is characterized by considerable quantity of red surfaced, unornamented body sherds with fabric similar to typical large painted jars dated to the MBA. Soot traces indicating possible usage of complete vessels for cooking were found on some of thick walled fragments. Most of soot coated fragments are medium and large size refitting sherds with fresh breakage. Together with them six refitting diagnostic fragments being a part of two painted jars were found. Due to occurrence of several Iron I sherds in the same deposit, the MBA material should be treated as a secondary refuse, however its quantity and fragmentation is remarkable and suggest quite unique depositional context. Most probably the deposit found around lower body of the pithoi and underneath had formed as a result of intersection of lower layers during sinking of the jars. During this works both the MBA and the Iron I sherds have been mixed up in backfill layer that stabilized both jars. Use-wear traces occurred on the MBA sherds are indicating that original deposit was composed of mainly typical household refuses, thus most probably the layer underneath both pithoi should be rather connected with at least temporal habitation during the MBA. In this regard the hypothesis about existence of vast MBA cemetery located on slopes of Mets Blur hill should be re-examined (Khanzadyan 1987; Piliposyan et al. 2020, 255).

Since the EBA sherds are completely absent in deposits dated to the Iron III, their circulation as secondary refuse objects should have different course. Majority of fragments was found mainly in the living surface in the vicinity of S13. Considering compact cluster of deposition it is reasonable to assume that these fragments were originally part of one assemblage dispersed during various activities. However, stratigraphical analysis excluded that the EBA sherds could be retrieved in situ as a result of deep intersection of the EBA layers thus most likely some part of the material scattered nearby the entrance to S13 had been moved from yet unknown place of dense deposition of the EBA sherds. The purpose of this action was undoubtedly connected with household activities. Given the location of cluster on path leading towards the structure it is possible that the sherds were used for hardening the walking surface.

Floor Assemblages

Since most of houses unearthed in the lower town had floors made of clay or beaten earth, the recognition of occupational surfaces together with separation of its pottery assemblages sometimes is very problematic. It must be stressed out that in Metsamor thick sequences of constructed floors interleaved with loose occupational debris can be observed. On the basis of combination of radiocarbon dating, typological analysis of pottery and stratigraphical observations it can be concluded that floor assemblages unearthed in the Iron I and the Iron II structures were formed mainly between the late 10th – first half of 9th centuries BC and the turn of 8th and 7th centuries BC (Fig. 2). Clay floors of living structures dated to the Iron III in most cases are badly eroded, hence information about deposition of the pottery is very restricted.

The term "constructed floor" is defined intentionally as constructed sedimentary bodies or the natural substrate that may have been cleaned and levelled for occupation (Karkanas, Goldberg 2018, 125). The constructed floor in Metsamor were composed of upper layer of clay plaster which was an actual walking surface and lower preparation layer made of levelled small stones, sherds and even animal bones. Due to natural and human related deterioration processes, the sequences of floor levels are readable only at the contact zone with walls of the room or in some cases, at the foundation level of the building. In structures S1/S17, S7, S10, S12 and S13 thin reddish orange layers with sharp contours and depressed shape in profile were recorded marking out the initial occupation surface in the house stratigraphy and *terminus a quo* for the dating of primary refused pottery sherds inside the house (Fig. 3). Accretion process of the floor levels is uneven in all excavated structures and unfortunately cannot be precisely dated thus the most reliable information provides the analysis of pottery assemblages found on plaster layers. In structure S1/S17 at least four capping plaster layers are interleaved by preparation layers of about 10 – 16 cm in thickness, whereas in adjacent S7 three capping plaster layers interleaved by preparation layers of about 8 – 14 cm in thickness were recorded. In turn the structure S13 have only two plaster layers separated by preparation layer of about 13 cm in thickness. Distribution of the sherds on floor surfaces, in contrary, is maintaining one scheme across the stratigraphical section of these structures. The lowermost plaster layers found at foundation levels contain mainly few small fragments being mostly orphan sherds, the assemblages from in-

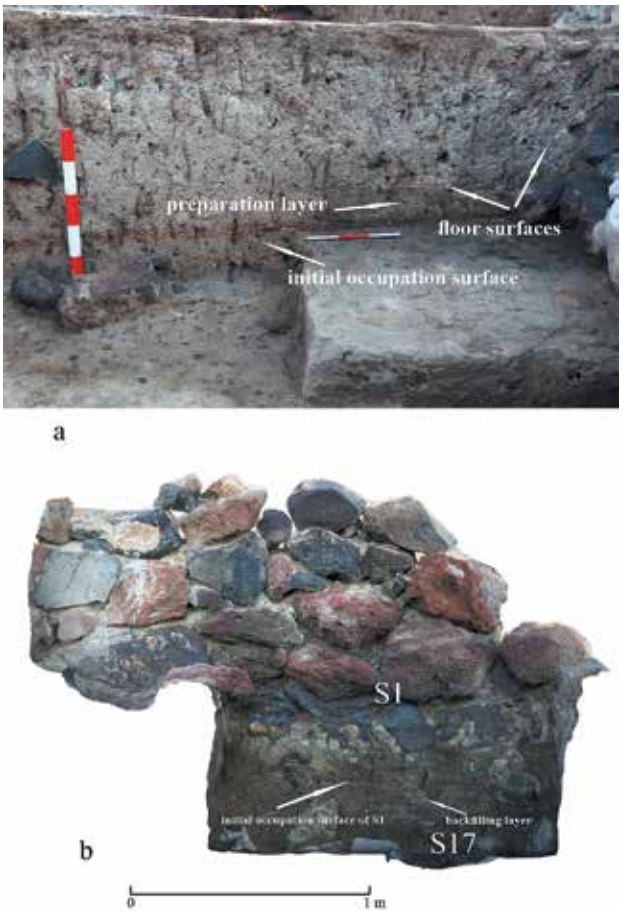

Fig. 3. Stratigraphic profiles of constructed floors in: a. S7; b. S1/S17 (Photo: M. Iskra; photogrammetric image: O. Baggi).

Fig. 4. Part of diagnostic sherds discovered in preparation layer (context 414) uncovered in S7 (Photo: E. Bastien).

a

b

c

Fig. 5. Floor assemblages discovered in: a. S1, b. S9, c. S13. (Photos: M. Badalyan, K. Kasperkiewicz, R. Mcclenaghan).

termediate layer due to its destruction are usually not distinguishable, while on the uppermost layers larger fragments and even complete vessels can be found. It must be stressed out that preparation layers contain majority of pottery sherds discovered in a single structure (Fig. 4). The assemblage is very fragmented and diverse with significant number of very small body sherds mainly being fragments of highly burnished serving vessels (bowls and jugs). Unlike in backfilling or levelling layers, preparation layers of constructed floors contain quite homogeneous material, in terms of typology and relative chronology, that essentially corresponds with pottery sherds found on plaster layers. Thus, it is very probable that sherds used for hardening of preparation layers were retrieved from refuse deposits such as deep trash pits or middens containing consumption wastes produced by adjacent household.

Generally speaking there are three depositional patterns found on uppermost floor layers in structures unearthed in Metsamor (Fig. 5). In the first pattern unearthed in S1, fragments being parts of still usable vessels prematurely left behind during abandonment of the building were scattered on the floor surface (Jakubiak et al. 2016, 564–566). The form and method of use of deposited vessels strictly corresponds with presumably function of the structure since in S1 in close proximity to stationary stone installation for grinding grains two large storage jars were found. In the second pattern uncovered in S9 large cooking pots and other clay objects (such us bread molds) were clustered in one spot, around clay installation (Jakubiak et al. 2018, 439–440). In the third pattern observed in S7, S10, S11, S12 and S13, the floor layers, with several exceptions, are almost clean and contain mainly small fragments (with length less than 5 cm) being parts of cooking and serving vessels. According to present knowledge floor assemblages from S10 and S17 are the oldest and could be dated to the Iron I, whereas occupation of structures S1, S2, S7–S15 could be widely dated to the Iron II (between first quarter of 8th and the turn of 8th/7th centuries BC) (Jakubiak et al. 2019, 318–320; Jakubiak, Piliposyan in this volume). It must be stressed out that structures S8, S9, S12–S15 are part of one domestic unit that had been developed during the first phase of Urartian presence in Metsamor.

Spatial examination of deposition of vessels from the uppermost floor layer in S1 shows that before destruction of the building all objects including: two storage jars, at least four cooking pots and one small juglet, were placed next to each other mainly in the upside down position. The vessels broke during the falling of the roof as can be proven by large fragments of carbonized wood found on the top of scattered fragments. Judging from its original position most of the jars were left empty, which in turn, led to supposition that at the time of its destruction this subterranean building was probably used as cubby-hole for clean containers.

In the second pattern, presence of complete jars is most probably connected with planned discard rather than is an effect of some rapid and destructive event. It should be noted that the main group of deposited vessels constitutes of large cooking pots with distinctive burn out traces and noticeable attrition of outer surfaces. Most probably they were left by inhabitants due to their low value, partial destruction and considerable weight. In case of S9, the floor assemblage was subsequently covered by thick ash deposit containing typical consumption wastes, which may indicate that inhabitants did not actually abandoned whole building but only a part of it. In this regard structure S9 had been most likely transformed into a dump place, whereas west part of the building with structures S12, S13 and S15 remained occupied. This could explain further differences in formation processes and preservation of floor assemblages between east and west parts of the building.

In the third pattern, low frequency of ceramic finds together with absence of conflagration traces is excluding sudden destruction in favour of intentional abandonment. In contrast to second pattern, floor assemblages had been covered either by a stone debris of fallen walls (S11, S12, S13, S15), or by backfill layer connected with building of a new structure (S7, S10, S17). In both circumstances inhabitants left behind uncleaned domestic residues together with heavy or not portable items, such as: large cooking pots, bread molds (in S13), pithoi (in S11 and S17) or large stone mortars (S12). Before final abandonment of S11 and S17 pithoi have been filled with small debris and soil, however it should be noted, that one of the pithoi from S17 after backfilling of the structure was still being used as a hiding place for inhabitants of S1[4].

An analysis of diagnostic orphan sherds which were trampled into floor layers provides an interesting information about inhabitants of these intentionally abandoned structures. The assemblages from S7, S10, S12 and S13 included fairly constant proportion of serving vessels (60–65%) compared to cooking pots (30–35%) and storage vessels (not more than 5%) in each floor level. Within category of serving vessel a high diversity of types can be observed including small and medium bowls, beakers and jugs characterized by a very low refitting gauge (not more than 3%) which together with fresh brakeage and low density of abraded surfaces indicates its primary deposition

Fig. 6. Churn deposited in shallow pit (context 641) close to S15 (a) and their content (b, c) (Photo: E. Kwiatusińska, O. Puszkarewicz, drawing: J. Pawlik).

mainly during consumption and, to a lesser extent, cooking and dry food preparation. Given low durability of clay plaster surfaces the process of accumulation of consumption wastes in structures S7, S10, S12 and S13 was relatively short and probably did not exceed several years. Therefore, considerable diversity of tableware products discarded during or after consumption could reflect high demand on fine vessels, and in consequence, wealthier household. Regarding the latter the presence of thin walled fragments of Urartian red burnished bowls in S12 in S13 that are among rare findings in Metsamor and presence of bones belonged to young goats and calves in osteological material from household wastes must be noted. Moreover, none of the fragments found in context connected with activity area of S7, S10, S12 and S13 bear traces of repair or reuse.

Refuse Disposal in Activity Area

As matter of fact there are three types of depositional basins for household refuses that have been detected in the lower town of Metsamor. The first type are simple shallow pits located either close to the buildings, in open space (courtyard, terrace edge) or dug into stone debris of abandoned buildings. The second type comprises of deep pits, usually conical shaped, that were used for relatively long time as trash pits for consumption wastes of adjacent structure. The third type are in fact refuse dumps created in abandoned buildings, mainly being subterranean structures (such as S1, S7) or small rectangular rooms (S8, S9).

Shallow pits dug in the activity area of the structures occupied during the Iron I-early Iron II and the Iron III usually have small dimensions: from 1 m to 2 m in diameter and 30–40 cm in thickness. Pits dated to

4 The vessel containing two large bracelets made of bronze was carefully sealed by pumice lid and covered by thin clay plaster (Jakubiak et al. 2019, 314).

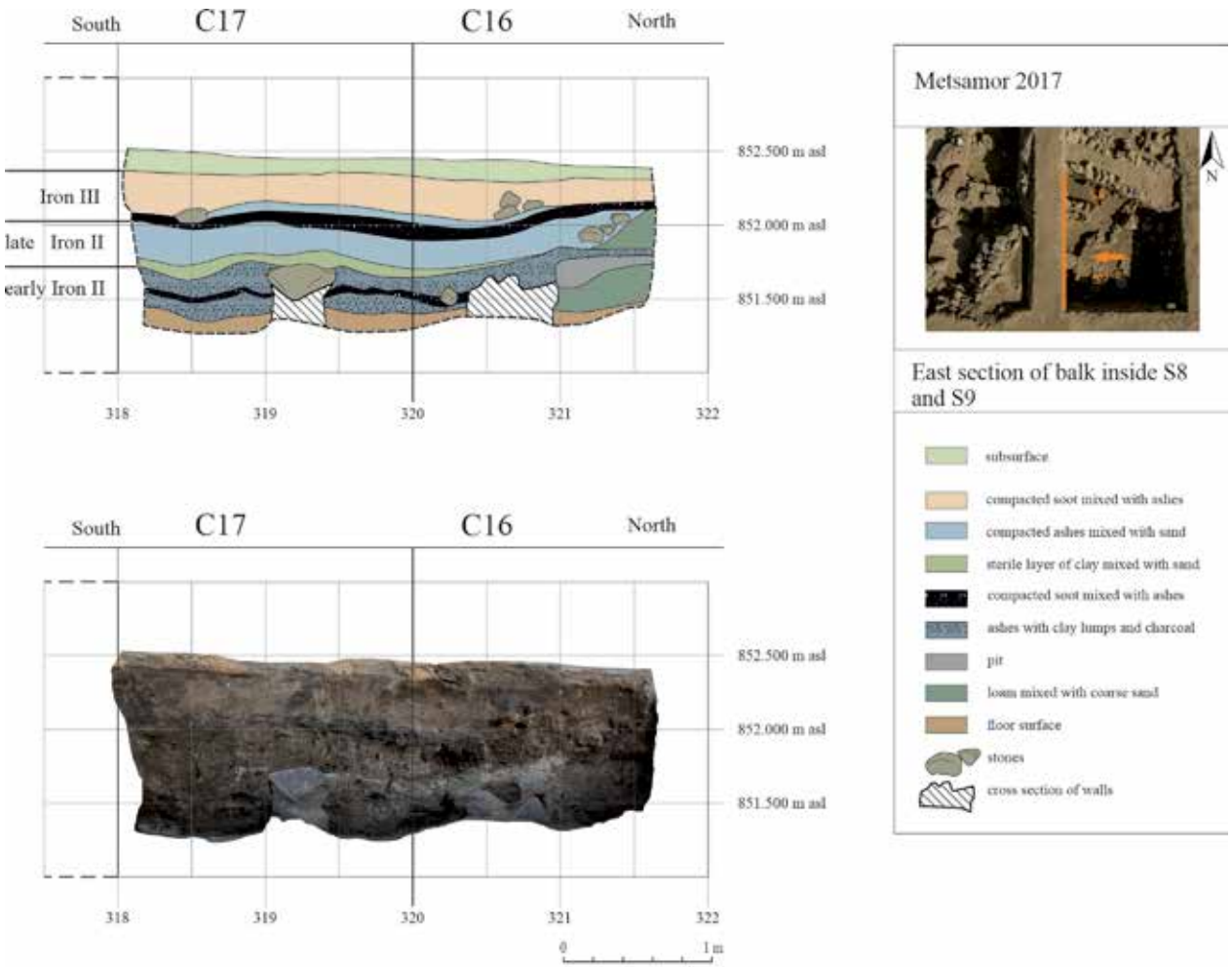

Fig. 7. Stratigraphic profile of S9 (Photogrammetric image: O. Baggi; drawing: M. Iskra).

the Iron I-early Iron II are clustering primarily around S1, S2, S7, S13 and S15, whereas there is only few objects dated mainly to the Iron III that have been located in open courtyard between debris of S2 and S7. Consequently, this area was most probably either undeveloped and excluded from direct household activity or did not serve as midden during the main period of occupation of domestic structures. Filling of the pits dug close to S1, S2, S7, S13, S15 contains mainly typical kitchen refuses: phosphatized organic remains mixed with ashes and discarded butchery wastes (such as animal skulls with antlers). Pottery assemblage is usually quite scant with observed predominance of medium and large refitting fragments of cooking pots followed by a small number of orphan sherds belonged to fine tableware products. Only in one feature larger fragments of the vessels have been discarded. In the shallow pit unearthed close to the outer side of the northern wall of S15 a broken churn have been deposited containing an upper part of Urartian jug, clay bread mold and a broken olive lamp (Fig. 6). The fact of deposition of four vessels that have been used in different domestic purposes in one cluster is very symptomatic because most likely it reflects typical refuses from living area, discarded during ordinary cleaning works in S15. Usually this kind of daily refuses can be find in the middens or deeper trash pits, however in densely built architecture it could have occurred also in smaller deposits located at the back of the house. Location of discovered deposit seems to confirm second pattern, since the pit was located between the building and the edge of terrace. Nonetheless, it should be noted that many evidences of middens or other extramural places for long-lasting accumulation of consumption wastes from structures occupied during the Iron I–early Iron II have not been found yet. Therefore, it is still impossible to determine whether some separated places for communal refuses which could reduce density of consumption refuses deposited close to each single household existed in Metsamor.

As it was mentioned above, existence of "intramural dumps" could be proven in post-abandonment

layers of structures S1, S7, S8 and S9. "Intramural dumps" could be recognized in stratigraphical section by festoon-like bedding (Cornwall 1958, 60) and greater compaction in the centre to the sides because of differential loading and pore water circulation (Fig. 7). Given relatively thin ash deposit containing small fragments of charcoals and lack of readable sections some of "intramural dumps" from Metsamor were previously incorrectly interpreted as a conflagration traces that caused destruction of the structures. Practice of dumping inside of abandoned structures most probably could be associated with the late Iron II due to findings of Urartian sherds dated to 7th century BC (Iskra, Zakyan 2019, 344), however it is not excluded that the east structures belonged to unearthed house have been adopted for refuse dump already during the final years of its habitation. In this regard the resemblance of sherds found in uncleaned domestic residues from eastern structures of the house with fragments discovered in lower ashy deposits in structures S8 and S9 should be noted. Additionally, there are examples of possible refitting of two sherds found on the floor of S13 with large pieces of discarded vessels found in ashy deposit in S8 and S9.

During the late Iron II refuse area was widely extended also up to stone debris of eastern structures of the house. The shallow pits dug into debris are considerably larger than the same features from proceeding period, usually exceeding 3 meters in diameter. Their content is also more diverse and fragmented (Fig. 8). The pits were filled by ashes and contains mainly fragmented bones and orphan sherds belonged to various types of jugs, bowls, beakers and cooking pots. Given their low refitting rate most of the sherds probably have been secondary refused. The same situation is observed in "intramural dumps", however it should be noted that upper deposits were truncated by deep pits dated to the Iron III. Taking into account their content it can be concluded that refuse deposits dated to the late Iron II were not formed as a result of squatter occupation since diversity and quality of types suggests more complex households with a developed economy. More reliable is to consider the shallow pits as a preserved features of scattered refuse dumps located outside of activity area in deserted place. As the discovered burials indicate, at least some parts of this area served also as a local cemetery during the late Iron II. In this regard a timeless connection between cemetery and refuse dumps observed also in modern times in Armenia should be noted. In case of several sites (e.g. Armavir, Oshakan) both, modern cemetery and garbage brought

Fig. 8. Pottery assemblage discovered in shallow pit from the Late Iron II (Photo: M. Truszkowski).

from adjacent villages exist almost next to each other in area that have been abandoned long time ago.

The most common refuse features dated to the Iron III are deep, conical shaped pits that were mainly located close to, now badly preserved, structure S16. Thin layers of ashes as well as its compaction and form of festoon bedding could suggest long process of refuse disposal directly connected with habitation of S16. The content of the pits is characterized by a large quantity of ceramic finds, a high diversity of forms as well as uneven fragmentation of particular types (medium and large refitting fragments of cooking pots contrast with small and medium orphan sherds mainly belonged to bowls and beakers). Together with large quantity of animal bones these features additionally confirmed that deep pits were continuously used as a main basins for daily wastes.

Conclusions

Preliminary analysis conducted on deposition patterns of pottery provides a completely new data for understanding dynamics and spatial patterning of household activities as well as development of residential area in the lower town in Metsamor. The "external" provenance of most of the Bronze Age sherds found in backfilling or levelling layers together with observed absence of primary refused the LBA sherds most probably suggest that the area of the lower town was occupied rather temporally prior to the 1st millennium BC. Until now only limited traces of the MBA household activity beneath structure S1/S17 have been detected. The deposition pattern of pottery found on floor surfaces in structures belonged to the main buildings indicates their intentional discard as a result of gradual abandonment at the turn of 8th and 7th centuries BC. Traces of rapid destruction of clustered vessels under

the fallen roof were confirmed only in the subterranean structure S1. In other structures the presence of ashy layer most likely does not reflect the fact of sudden destruction but existence of "intramural dumps".

During the habitation stage kitchen refuses from both houses and structures S1, S7 and S10 had been deposited close to the building walls, whereas refuses from living area had been discarded far outside of activity area. However it is possible that under some unfavourable circumstances (e.g. progressing destruction) some of structures belonging to the original layout of the house have been adopted for provisional dump place for daily refuses. In the late Iron II previously settled area had been abandoned which involves changes in deposition of the pottery. Most of the sherds were secondary refused in large pits containing consumption wastes brought from still occupied area located most probably closer to fortifications. High diversity and good quality of some types of the vessels probably indicates the existence of larger households with complex economy rather than poorly equipped squatter occupation. Typical household refuse disposal reappears again in the Iron III. In this period refuses from kitchen and living space were being discarded in deep trash pits located outside of newly built buildings. It should be added that during this phase along with levelling works for foundation of new buildings deposition of older material brought probably from the abandoned fortress occurred.

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Lernakert: ein neues archäologisches Projekt in Shirak

Benik Vardanyan[1], Ruben Davtyan[2], Sona Manukyan[1], Mariam Saribekyan[1]

[1] Institut für Archäologie und Ethnographie, Armenien

[2] Max-Planck-Institut für ethnologische Forschungen und Martin-Luther-Universität Halle-Wittenberg, Deutschland

Abstract. The present preliminary report represents the results of the archaeological campaign in Veri Berd, nearby the village of Lernakert on the northeastern slopes of Aragats Mountain. Five trenches on the fortified hill and two tombs on its slopes were excavated. The findings show relatively complicated weir system, like cyclopean structures, glacis, or protective terraces. The archaeological data indicate two occupation periods: the oldest findings and one tomb are dated to the Late Bronze age, whereas the second phase shows an intensive use of the hill during the Early Hellenistic period. Numerous indices for agricultural activities and cattle breeding in Veri Berd were revealed. In this sense, a cup mark for cereal processing, bones of domesticated and wild animals, as well as milk processing vessels should be mentioned. The archaeological excavations in Veri Berd provide new archaeological material from almost unknown site. For more comprehensive research questions, further investigations are required.

Keywords: Armenia, Lernakert, Veri Berd, Late Bronze Age, Early Hellenistic Period, fortification, necropolis. weir system, cup mark, social-economical activities.

Lage und Forschungsgeschichte

Das Dorf Lernakert befindet sich in der armenischen Provinz Shirak, an den nordöstlichen Hängen des Aragats-Gebirges (Abb. 1). Es liegt mehr als 1980 m über NN, 104 km von der Hauptstadt Jerewan und 36 km von dem Provinzzentrum Gyumri entfernt.

Auf der Denkmalliste des Dorfes sind zwölf Kulturstätten (insgesamt 20 Einheiten) angeführt, die sich über eine Zeitspanne des 3. Jts. v. Chr. bis ins 19. Jh. n. Chr. erstrecken[1].

Veri Berd (*arm*. „Obere Festung“) liegt ca. 2,5 km südöstlich vom Dorf und 1.5 km östlich von Vari Berd (*arm*. „Untere Festung“, Signatur in der Denkmalliste: 7/46.2). Die ersten Beschreibungen des Denkmals stammen von dem Bauforscher T. Toramanyan, welcher im Jahre 1924, zum Zwecke der Registrierung jener Denkmäler nach Lernakert (ehem. Name: „Širvanǰuł“) reiste (Toramanyan 1948, 243–246). Er beschreibt Veri Berd und erwähnt, dass die Einheimischen den Hügel von Steinen freigeräumt hatten und ihn als Weidefläche nutzen.

Nach der Typologie von K. Ghafadaryan fallen Veri Berd und Vari Berd in die dritte Periode der Festungen, welche über eine regelmäßige Mauerstruktur und eine gewisse Rechteckigkeit und zigzagartige Vorsprünge verfügen. K. Ghafadaryan sieht darin die Vorläufer von Schutztürmen. Anhand der Oberflächenfunde datiert er die Festung in das 18.–15. Jh. v. Chr. Ghafadaryan (1972, 152–153, Anm. 5).

Die nächste Phase der Forschung in Veri Berd ist mit dem Namen von A. Smith verbunden, welcher 1995 dort Versuchsschnitte (Sondagen) anlegte. Die Keramik, die bei seinen Ausgrabungen zu Tage kam, deutet auf eine spätere Datierung der Festung hin (als nach Ghafadaryan) und fällt in die späthellenistische oder »klassisch-armenische« Periode. Gleichzeitig berichtet er von einer früheisenzeitlichen Schicht, die aufgrund von späteren Bauarbeiten teilweise zerstört wurde (Smith 1996, 127; Smith 1998, 84). Die Forschungen an Veri Berd erbrachten also unterschiedliche Datierungsmöglichkeiten.

Die Grabungskampagne des Jahres 2019 entstand in Zusammenarbeit des Instituts für Archäologie und Ethnographie der armenischen Akademie der Wissenschaften und dem Max-Planck-Institut für ethnologische Forschungen (Halle (Saale), Deutschland).

Den Ausgrabungen war die Geländebegehung einer Fläche von 800 qm um das Dorf Lernakert vorausgegangen, währenddessen zahlreiche Denkmäler entdeckt und registriert worden sind. Dazu gehören prähistorische und mittelalterliche Siedlungen,

1 Denkmalliste Shirak-Provinz, gemäß der Verordnung am 9. September 2004 (Signatur 7.49). https://www.arlis.am/DocumentView.aspx?DocID=105447) (zuletzt aufgerufen am 09.02.2020).

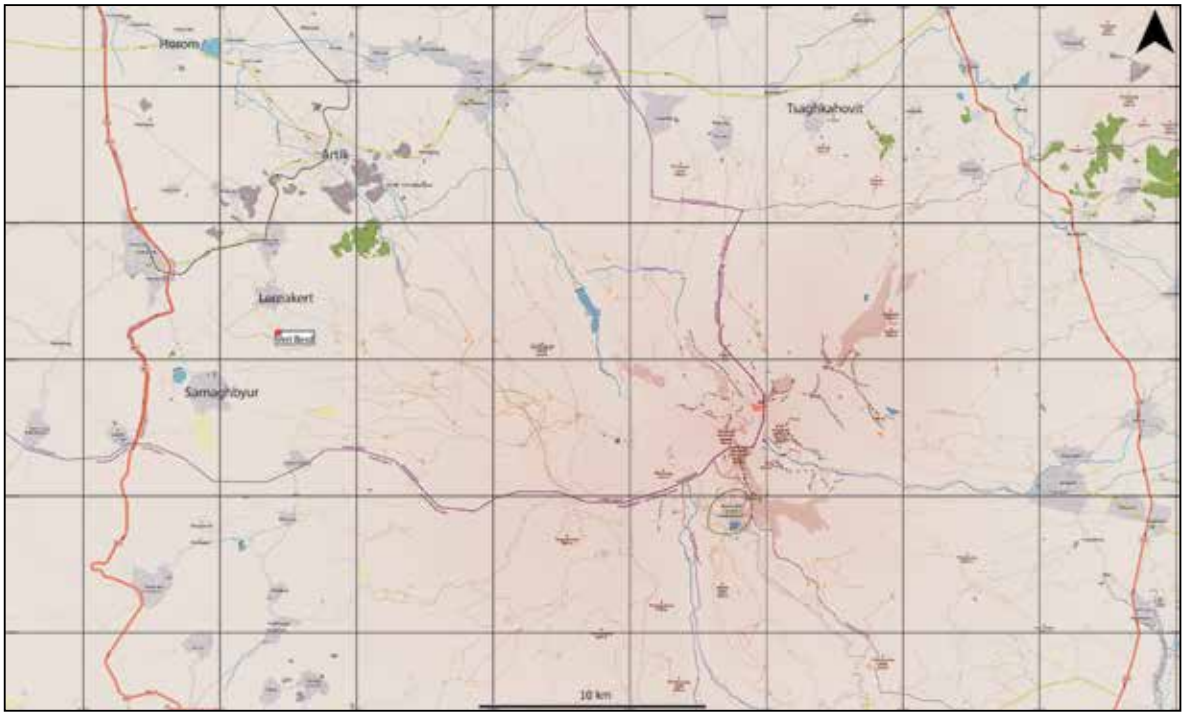

Abb. 1. Die Lage von Veri Berd (© Lernakert project).

bronzezeitliche Einzel – und Gruppengräber, Überreste von Bauten und Bewässerungssystemen.

Beschreibung des Fundortes

Das Denkmal von Veri Berd befindet sich auf einem Hügel, von dem aus man die Gegend gut überblickt. An den Nord – und Ostseiten ist er mit jeweils einer Felsenkette gekennzeichnet. Die Schutzeinrichtungen der Festung sind an die Hügelkontur angepasst. Der innerer Bereich (0.60 ha) des Hügels, der mit Umfassungsmauer, Zitadelle(n) und Plattformen umgeben ist, ist abgeflacht (Abb. 2).

An dem Nordosthang unter den Plattformen auf einer Fläche von ca. 0,8 ha finden sich quadratförmige und rechteckige Grudrisse von Bauten unterschiedlicher Größe. Dieses vermutliche Wohnviertel der Festung ist im Norden und im Westen mit den bereits beschriebenen Felsketten beschützt.

Der Weg, der das Wohnviertel mit der Festung auf dem Hügel verbindet, verläuft zum Eingang 1 (Abb. 3).

Eine besondere Installation der Schutzeinrichtung stellt ein Glacis dar, das vom Süden und Osten der Festung zu beobachten ist. Es kann damit gedeutet werden, dass die Festung an dieser Stelle am anfälligsten ist.

Im Osten des Hügels wurde eine Gruppe von dicht gelegenen Gräbern gefunden, von denen zwei während jener Kampagne ausgegraben wurden (Abb. 11/1).

Ausgrabungen von Siedlung

In 2019 wurden fünf Schnitte mit einer Gesamtfläche von 62,5 qm in unterschiedlichen Bereichen des Hügels angelegt, um die Bauzeit und Besiedlungsphasen des Fundortes herauszufinden. Schnitt 1 wurde innerhalb der Befestigungsmauer am nördlichen Eingang der Festung angelegt, Schnitt 2 auf der Innenmauer der Nordostzitadelle, Schnitt 3 innerhalb der Nordostzitadelle, Schnitt 4 im Südostbereich der Festung und Schnitt 5 im nördlichen Teil der Festung, zwei Plattformen an den Abhängen des Hügels untersuchend.

Schnitt 1

Befunde: Der Schnitt 1 befindet sich beim Osteingang des Hügels. Dieser erstreckt sich auf einer Fläche von 5 × 5 qm und ist ca. 2,4 m tief (Abb. 4). Keine obertägigen Befunde waren sichtbar. Dagegen wies eine relativ große Konzentration an Oberflächenkeramik auf eine intensive Nutzung des Bereichs hin.

Die Schnittkanten sind genordet. Die oberen Schichten zeigen (Kontexte 1 – 8) weisen vermischten Schutt mit zahlreichen Keramikfunden auf.

Bei Kontext 9 handelt es sich um einen Begehungshorizont aus gestampftem Lehm und den Spuren von Schwarzerde. Im östlichen Teil des Schnittes wurde gleichzeitig ein Befund mit zahlreichen Knochen und Keramikscherben (Kontexte 16 – 17).

Als Kontext 19 wird die lehmreiche Erdmasse über den unteren Begehungshorizont bezeichnet.

Im Südosten des Schnittes wurde eine steinerne Mauer (Befund 12) mit einer Höhe von 137 cm freigelegt. Die Mauer (Abb. 5) liegt auf einem mit ca. 20–30 großen und rechteckigen Flachsteinen gepflasterten Fußboden (Kontext 20). Integriert im gepflasterten Fußboden wurde in einer Tiefe von 134 cm eine *cup mark* (eine Steinplatte mit zylindrischer Senkung) entdeckt (Kontext 13, Abb. 4). Ähnliche Befunde sind aus Tsakhahovit (Badalyan et al. 2014, 196, Fig. 28) und anderen Fundorten bekannt.

An der nordöstlichen Ecke des Schnittes nahe der *cup mark* fehlte ein Teil des gepflasterten Fußbodens. Dies gab uns die Möglichkeit die Tiefe der Kulturschicht des Schnittes zu untersuchen. An dieser Stelle wurden undiagnostische Keramikscherben gefunden, wobei der gewachsene Felsen in einer Tiefe von 201–222 cm erreicht wurde.

Also umfasst Schnitt 1 den westlichen Teil eines Gebäudes, das eine nordwest-südost Ausrichtung aufweist.

Keramik: Die Befunde erbrachten eine relativ große Menge an Keramikscherben. Insgesamt wurden in diesem Schnitt 6956 Scherben gefunden, von denen 1319 diagnostisch sind.

Einige der blassrosa und orangen Keramikscherben mit grober Magerung weisen auf Vorratsgefäße (Öffnung 20–28 cm im Durchmesser) hin. Diese werden in zwei Gruppen eingeteilt: Die Randscherben der einen zeigen eckige Randlippen und biegen sich gleich unter der Randlippe nach außen zum Bauch. Manche verfügen über Linienverzierungen auf der Schulter. Ähnliche Objekte sind aus vielen Fundorten der zweiten Hälfte des 1. Jts. v. Chr. bekannt. Zu erwähnen sind die Exemplare aus dem Wirtschaftsbereich der Palastanlage von Yervandashat (Parsamyan 2015, Gruppe 1A, Gruppe 1B), den Gräbern Nr. 43, 44, 46 von Artashat (Khachatryan 1981, 15, Fig. 28.1; 17, 15–17; Fig. 29.4; Fig. 23.8), aus Dvin (Kocharyan 1991, 41, Taf. 14/5).

Die anderen haben rundliche Randlippen und einen höheren Hals. Für letztere finden sich Vergleiche in dem Wirtschaftsbereich der Palastanlage von Yervandashat (Parsamyan 2015, 103, Gruppe 1A/1), in den Gräbern Nr. 24, 30, 32 von Artashat (Khachatryan 1981, 11, Fig. 12.3; Fig. 13; Fig. 16.7, 13; Fig. 18.1).

Charakteristisch für die Töpfe (Öffnung: 18–24 cm im Durchmesser) sind die rundlichen Randlippen und die bogenartigen Hälse, die sich zum Bauch hin allmählich erweitern. Die Vergleiche stammen aus den Gräbern Nr. 13, 19 von Artashat (Khachatryan 1981, 9, Fig 6.1; 9, Fig. 9.4), der Gefäßbestattung Nr. 13 von Dvin (Kocharyan 1991, 27–28, Taf. 14, 6), dem Grab Nr. 15 von Oshakan (Yesayan, Kalantaryan 1988, 61, Taf. 43/3).

Abb. 2. Gesamtüberblick von Veri Berd aus Osten (© Lernakert project).

Abb. 3. Überblick von Festung aus Norden (© Lernakert project).

Eine andere Topfart ist durch eine sich nach außen hin leicht zuspitzende Randlippe und zum Bauch hin breiter werdende Scherben gekennzeichnet. Vergleichsfunde sind aus Yervandashat (Parsamyan 2015, 104, Gruppe 2A/1), den Gräbern Nr. 19 und 30 von Artashat (Khachatryan 1981, 9, Fig. 9.6; Fig. 10.9; 13, Fig. 17.1) bekannt.

Die Keramikscherben, die den leicht polierten Schalen zugewiesen werden, werden in drei Gruppen gegliedert: Die erste Gruppe der Schalen zeigt spitze Lippen, leicht nach innen verlaufende, sehr niedrige Hälse und Bauchumbrüche. Es ist zu bemerken, dass die Durchmesser der Öffnung und der Bauchteile bei diesen Schalen gleich sind. Eine Scherbe verfügt über schräge Linienverzierungen auf der Oberfläche, wobei sich die Richtung der Linien jeweils nach dem abgeknickten Bereich ändert.

Abb. 4. Cup mark (Kontext 13) im Schnitt 1 (© Lernakert project).

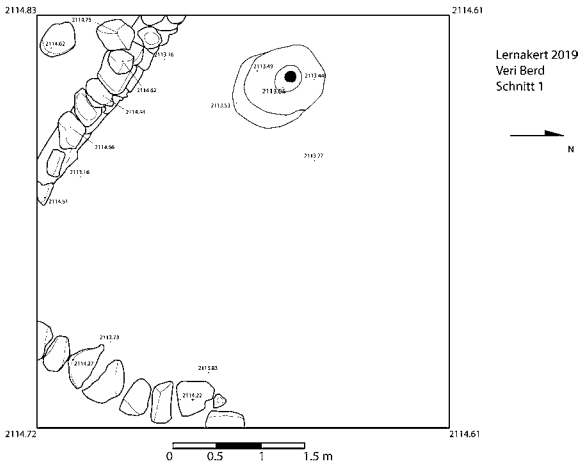

Abb. 5. Schnitt 1 in Veri Berd (© Lernakert project).

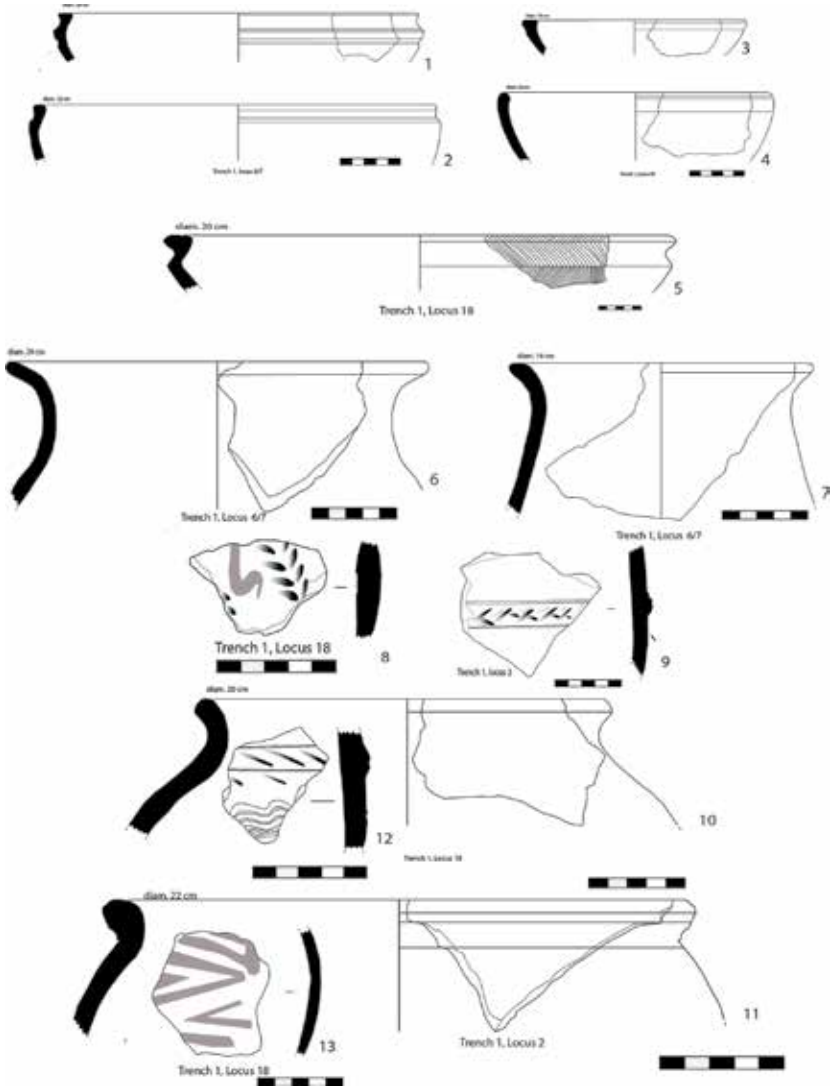

Abb. 6. Keramikfunde aus dem Schnitt 1 (© Lernakert project).

Vergleichbare Keramikscherbe stammen aus Astghiblur (Karapetyan 2003, Taf. 28/1), aus Yervandashat (Parsamyan 2015, 106, Gruppe 5A), den Gräbern Nr. 10, 13, 24 von Artashat (Khachatryan 1981, 8, Fig. 5.1; 9, Fig. 7.1; 11, Fig. 13.1).

Zur zweiten Gruppe gehören Scherben, bei denen die Rand- und Bauchscherben keinen Knick haben und zum Boden hin schmaler werden. Zahlreiche Paral-

lelen finden sich in Artashat (z.B. im Grab Nr. 17 von Artashat (Khachatryan 1981, 9, Fig. 8.6) und in Dvin (Kocharyan 1991, 45, Taf. 21/4)

Die letzte Gruppe bilden Rand- und Bauchscherben mit nach außen gestülpter und leicht abfallender Randlippe. Das Profil verbreitet sich im Bauchbereich und wird zu dem Boden hin wieder schmaler. Auf der Schulter ist ein durchgängiges Loch angebracht, das wohl zum Tragen der Schale bestimmt war. Vergleichsfunde stammen aus Yervandashat (Parsamyan 2015, 107, Gruppe 5A/3) (Abb. 6).

Die Ausgrabungen brachten ebenfalls eine gewisse Menge an Bauchscherben mit Ornamenten ans Licht.

Die Reihe von pflanzlichen Chevrons besteht aus zwei aneinander grenzenden Ovalen. Diese Ornamente sind sowohl aufgebracht, als auch mit einem Grabstichel eingeritzt. Ähnliche Verzierungen kommen in den Fundorten des 1. Jts. v. Chr. Zahlreiche Beispiele stammen aus achämenidenzeitlichen Schichten von Oshakan (Yesayan, Kalantaryan 1988, 61, Taf. 20/8; 21/11; 22.4-6, 23.7; 24.1,3).

Weiterhin sind aufgereihte kurze und schräge Linien, durchlaufende Wellenlinien, sowie Färbungen mit geometrischen Mustern zu erwähnen.

Die Untersuchung der Keramikfunde von Schnitt 1 zeigt Ähnlichkeiten sowohl zu achämenidenzeitlichen (Iron IIIb) (6.–4. Jh. v. Chr.), als auch zu frühhellenistischen (Iron IIIb/IV) (2.–1. Jh. v. Chr.) Exemplaren und markiert damit ein Verbindungsglied zwischen beiden Epochen. Allerdings veranschaulichen die vergleichbaren Objekte, dass die Keramik von Schnitt 1 eher Tendenzen zu den frühhellenistischen Exemplaren aufweist.

Kleinfunde: Im Kontext 2 wurde ein bronzener Armreifen mit einer Auswölbung in der Mitte gefunden (Abb. 14.4). Solche Artefakte sind aus der Mitte des 1. Jts. v. Chr. bekannt. Unser Exemplar findet seine Parallelen in den achämidenzeitlichen Funden aus Jrarat, Berd, Atarbekyan (Tiratsyan 1988, 47–48, Fig. 196). Laut Tiratsyan kommen solche Armreifen in der Region von der Achämeniden-Zeit bis ins 1. Jh. v. Chr. vor. In diese Zeit werden die Artefakte aus den Gefäßbestattungen von Garni, Mingechaur und Westgeorgien datiert. Dem Exemplar aus Veri Berd ist der Armreifen mit nach außen gerichteten Enden aus dem Grab Nr. 19 von Oshakan besonders ähnlich (Yesayan, Kalantaryan 1988, 65, Taf. 43/4).

Es ist zu erwähnen, dass aus Veri Berd zehn Öllampen stammen (Fig. 14.1), zu denen sich Parallelen in Hoghmik (Akopjan 2000, Abb. 3/1, 3/5) und im Grab

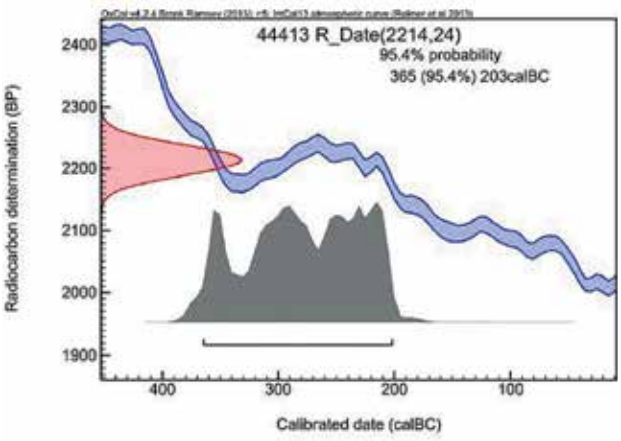

Abb. 7. Radiokarbonanalyse eines Körners aus Schnitt 1, Kontext 13 (© Lernakert project).

Nr. 23 von Beniamin (Yeganyan 2010, 61–62, Taf. 12/2) finden.

Ein anderer viereckiger Anhänger mit abgerundeten Ecken ist vergleichbar mit einem Exemplar aus dem Grab Nr. 184 von Beniamin (Yeganyan 2010, 61–62, 23.4).

Im Schnitt 1 wurden auch drei abgerundete Keramikscherben mit einem Mittelloch gefunden. Vergleichbares ist aus hellenistischen Schichten von Beniamin (Khachatryan 1999, Fig. 9.4) und Oshakan (Yesayan, Kalantaryan 1988, 34.5, 60.22) bekannt.

Aus Schnitt 1 stammt ein Spinnwirtel, zu der sich eine enge Parallele in Tsakhkahovit findet (Badalyan et al. 2008, 80, fig 30-e), sowie ein kreisförmiger Anhänger aus Ton und ein rechteckiges Gewicht aus Stein.

Paläobotanische Untersuchungen: Eine relativ große Anzahl an botanischem Material wurde in der Erde innerhalb der *cup mark* gefunden (Abb. 4). Laut paläobotansicher Untersuchung handelt es sich um Getreidekörner (n = 111)[2]. Es ist daher zu vermuten, dass die *cup mark* als Mörser diente. Die Radiokarbonanalyse eines der Körner ergab eine Datierung von der Mitte 4. bis ins 3. Jh. v. Chr. (Abb. 7).

Das Gebäude wurde also im 4.–3. Jh. v. Chr. genutzt, ein Zeitalter, das die Verbindungs-Periode zwischen der Achämeniden-Zeit (häufig auch als „Früharmensiche Zeit“ gennant) und Spätantike umfasst. Aus den freigelegten Befunden abgeleitet, kann dem Gebäude eine wirtschaftliche Funktion zugeschrieben werden. Zeitgenössische Wirtschaftseinrichtungen wurden in Armavir (Tiratsyan 1980, 35) und in Yervandashat (Ter-Martirosov 2008, 5–6) im Ararattal ausgegraben.

2 Die Untersuchungen wurden von PhD R. Hovsepyan (IAE) durchgeführt.

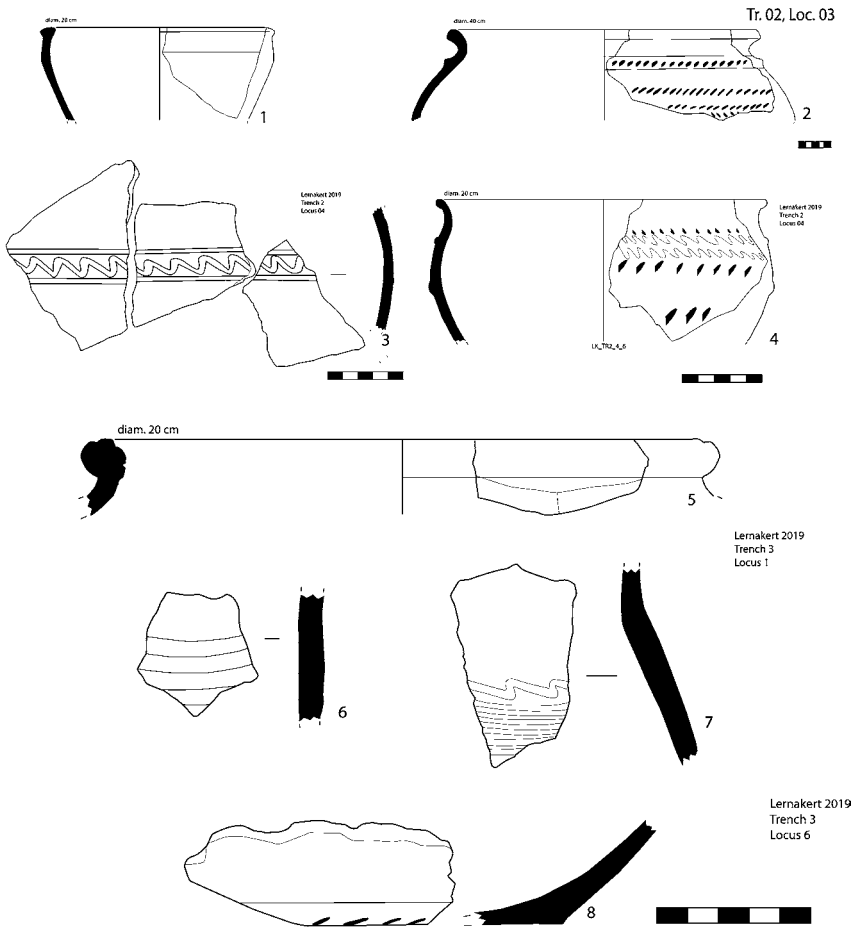

Abb. 8. Keramikfunde aus dem Schnitt 2–3 (© Lernakert project).

Historisch wird es der Herrschaftszeit der Orontiden in Armenien zugeschrieben. Geschichtliche Belege dieser Epoche (zweite Hälfte des 4. bis zum Ende des 3. Jh. v. Chr.) sind relativ spärlich überliefert (Tiratsyan 1958, 65–71).

Schnitt 2

Befunde: Schnitt 2 befindet sich an dem westlichen Teil der Abgrenzungsmauer der Nordostzitadelle. Der von Nordwest nach Südost ausgerichtete Schnitt, erstreckt sich über eine Fläche von 2×2 m. In dem gesamten Bereich wurden Steine unterschiedlicher Größe und mit unregelmäßigen Formen gefunden. Im südwestlichen Teil des Schnittes, in einer steinarmen Stelle (Befunde 3–4), wurde eine Anzahl an Keramikscherben freigelegt.

Keramik: Aus den 341 Keramikscherben (diagnostisch: 69) sind Scherben zu erwähnen, die einer tiefen Schale und einem Topf mit aufgesetzten Liniendekor und eingekerbten Körnreihen zuzuordnen sind.

Drei Bauchscherben zeigen einen mit Doppellinien abgegrenzten Fries mit einer Wellenlinie.

Ähnliche Verzierungen sind bekannt aus den Gräbern Nr. 15, 16 in Lchashen (Petrosyan 2018, Taf. 414/7; 417/4), den Gräbern Nr. 102, 110 in Shirakavan (Torosyan et al., 2002, Taf. 46, 2, 20) (SPZ III, 14/13–12 BC), der Festung von Keti (Petrosyan 1989, Taf. 23/1–3, 5 etc), Tsakhahovit (Lindsay 2006, Fig. 6.15b.), den frühneuzeitlichen Gräbern Nr. 24, 21 in Mastara (Avetisyan 2009, Fig. 1.13, 14 etc), dem Grab Nr. 10 in Khurjin hogher (Yesayan 1976, Taf. 91/3), Madnischala (Tushishvili 1972, Fig. 30.112) (Abb. 8/1–4).

Schnitt 3

Der Schnitt 3 liegt an der Innenmauer der Nordostzitadelle und erstreckt sich über eine Fläche von 2×2 m. An der östlichen Seite wurden obertägig sichtbare und zur Befestigungsmauer gehörige Steine (Kontext 2) freigelegt. Außerdem wurde in der Mitte des Schnittes eine einreihige Mauerung (Kontext 3) mit einer Nord-Süd-Ausrichtung entdeckt. Die Mauer hat eine Länge von 210 cm. Diese stellt die dritte Reihe von Befestigungsmauern in der Nordostzitadelle. Zwischen Befunden 2 und 3 war die Erde relativ lehmreich und voller Keramikscherben (Abb. 8/5–8).

Die Keramikscherben weisen auf das Ende des 2. Jh. v. Chr sowie auf die frühhellenistische Periode hin.

Schnitt 4

Während der Geländebegehungen im südöstlichen Bereich des Hügels haben wir, 3 m von der Umfassungsmauer entfernt, einen Stein mit Höhlungen bemerkt. Der Schnitt mit einer Fläche von 2,5 × 2 m wurde um den Stein angelegt. In der Mitte dieses Felsenblockes wurden zwei Vertiefungen mit einem Durchmesser von 35 cm und 55 cm freigelegt, zwischen denen eine Rinne verläuft (Abb. 9).

An den drei Seiten des Blockes wurden fünf durchgängige, senkrechte und waagerechte Bohrungen entdeckt.

In dem Schnitt wurden eine große Anzahl an Tierunterkiefern, Obsidiansplittern und Keramikscherben sowie ein Spinnwirtel gefunden.

Schnitt 5

Befunde: Westlich des Osteinganges wurde Schnitt 5 mit einer Länge von 13 und einer Breite von 1,5 m angelegt, der einen Teil der Festung sowie zwei Plattformen an dem Hügelhang einschließt. Schnitt 5 liegt 2,5 m östlich der Nordostzitadelle.

Terrasse 1 erstreckt sich über den Innenbereich der Umfassungsmauer, unter der eine Konstruktion aus kleineren, unbearbeiteten Steinen freigelegt wurde. Die letztere wird als eine Art tragende Mauer gedeutet. Die Steinblöcke der Umfassungsmauer, die auf eine "zyklopische" Bauweise hindeutet, sind umgefallen und liegen über die Ebene verstreut.

Terrasse 2 bildet die längste künstliche Plattform. Gleich in den oberen Schichten fanden sich spätbronze- und späteisenzeitliche Keramikscherben, die von einer Vermischung der Schichten zeugen. Hier wurde ein Spinnwirtel gefunden.

In den Kontexten 5 und 6 wurde eine Ascheschicht freigelegt. An der Nordseite wurde eine Lehmschicht gefunden, in der eine große Anzahl an spätbronzezeitlichen Keramikscherben, Knochen und Obsidiansplittern lagen. Diese Schicht setzte sich bis zum gewachsenen Felsen fort.

Zwischen der Terrasse 2 und 3 wurde eine weitere "zyklopische" Mauerstruktur gefunden, mit einer erhaltenen Höhe von 2 m (Abb. 10).

Die Terrasse 3 geht in die Hangstruktur über. Hier wurden (meistens ausgewaschene) Keramikscherben, Knochenreste, Obsidiansplitter sowie ein Mahlsteinfragment gefunden.

Um die Befestigungsmauer von Veri Berd zu sichern, wurden zwei künstliche Plattformen geschaffen. Diese wurden mit Wänden befestigt. Ähnliche architektonische Merkmale sind aus "zyklopischen" Festungen von K'eti (Petrosyan 1989, Fig. 5) und Tsakhkahovit, Sarnaghbyur East, West (Smith 1996, Fig. 4,19, 4,20, 4,21) etc. bekannt.

Abb. 9. Schnitt 4 in Veri Berd (© Lernakert project).

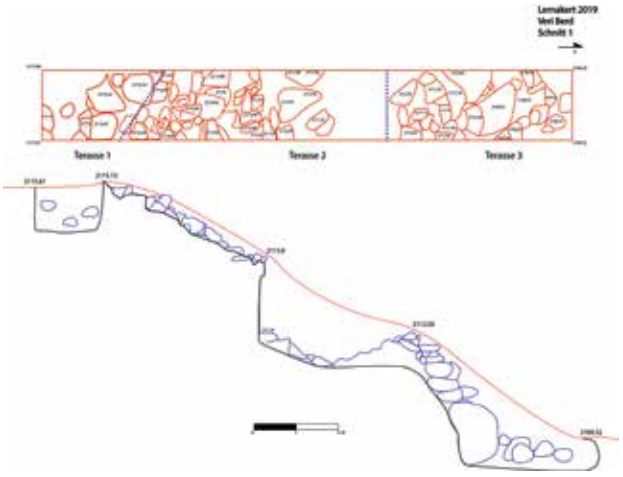

Abb. 10. Schnitt 5 in Veri Berd (© Lernakert project).

Keramik: Die Keramikfunde werden chronologisch in zwei Phasen unterteilt. Die meisten Scherben sind, wie in den Schnitten 1 – 3, der frühhellensitischen Epoche zuzuweisen. Wie bereits erwähnt, sind die Befunde und dazugehörige Scherben jedoch großteils vermischt. Jedoch wurden ungestörte Kontexte in den Befunde 3 – 4 auf der Ebene 2 identifiziert.

Die Scherben der Töpfe sind (unpoliert) schwarz oder grau und weisen Öffnungen mit einem Durchmesser von 12 – 18 cm auf. Sie verfügen über Rillen-, Fingernagel-, Dreieck-, und Wellenverzierungen und finden damit ihre Parallele in den spätbronzezeitlichen befestigten Siedlungen von Tsakhkahovit (Lindsay 2006, Fig. 6.9 a – c; Fig. 6.10, d; Fig. 6.14, a – b) Aragatsi Berd, Agarak (Badalyan, Avetisyan 2007, 65, Pl. 3, 1 – 2; 33, Pl. 8,1, 3, 4 etc).

Ein weiterer schwarzer Topf mit geglätteten Horizontallinien-Verzierungen ist 32 cm im Durchmesser. Dieses Motiv ist in der gesamten Spätbronzezeit der

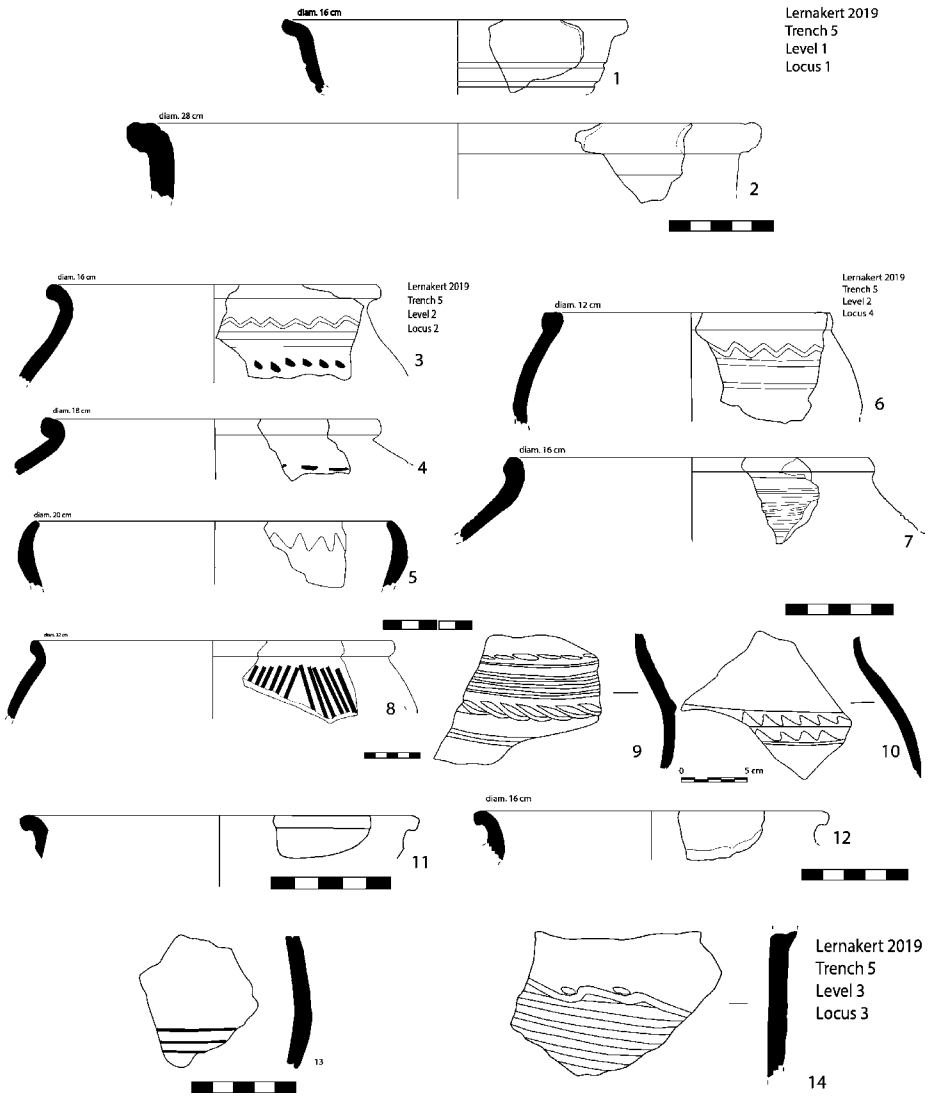

Abb. 11. Keramikfunde aus dem Schnitt 5(© Lernakert project).

Region bekannt, verbreitet sich aber mehr in der zweiten Phase der Spätbronzezeit. Ähnliche Verzierungen sind auch aus den Gräbern Nr. 40, 47, 144, 177 und in Lchashen (Petrosyan 2018, Taf. 193/1; 100/7; 123/3; 136/5), dem Grab Nr. 7 in Maisyan (Petrosyan et al. 2019, Fig. 1, 3), der Nordterrasse von Tsaghkahovit (Badalyan, Avetisyan 2007, 268, Pl. IV, 9 etc) bekannt.

Eine Schale mit 20 cm im Durchmesser hat einen nach innen gerichteten Rand. Auf dem Bauch wurden nach dem Brennen Wellenlinien angebracht. Ähnliche Schalen kommen in den Phasen 2–3 der Spätbronzezeit vor.

In der Ebene 2 wurde auch eine schwarzgraue Scherbe von einer „Amphora“ gefunden, welche auf dem Bauchteil einen Fries mit einer Wellenlinie hat. Ähnliche Motive sind aus der späteren Phase der Spätbronzezeit (Gräber Nr. 9, 6 in Lchashen: Petrosyan 2018, Fig. 398.2; 400.1), sowie in der Früheisenzeit, z. B. im Grab Nr. 24 von Mastara und im Grab Nr. 86 in Oshakan (Avetisyan 2009, p. 68, Fig. 1, 13) bekannt (Abb. 11/1–14).

Somit werden die Keramikfunde der Kontexte Nr. 2–3 des Schnittes 5 durch das vergleichbare Material aus verschiedenen Fundorten Armeniens ins 14.–13. Jh. v. Chr. datiert.

Ausgrabungen der Gräber

An den West-, Nordwest-, und Osthängen des Hügels (1995–2010 m über NN) wurden Gräber mit Cromlechs (3–9 m im Durchmesser) identifiziert. Sie bilden eine Gräbergruppe. Im Jahr 2019 wurde ein Grab (Nr. 1) aus dieser Gruppe und eins (Nr. 2) an dem Nordosthang des Hügels ausgegraben.

Grab Nr. 1

Der Durchmesser des Cromlechs des Grabes Nr. 1 ist 5,90 m in Nord-Süd- und 5,40 m in Ost-West-Richtung. Im Osten grenzt ein weiteres Grab an.

Zwischen den Deckplatten wurde ein Loch gegraben, was ein Indiz dafür ist, dass das Grab bereits in der Antike geplündert wurde.

Die Kammer (2,4 × 1 × 0,95 m) hat eine Südost-Nordwest-Ausrichtung. Der obere Teil des Grabes ist mit Steinen, der untere Teil dagegen mit lehmreicher Erde aufgebaut. Auf dem Boden der Kammer konnten Überreste eines 40–49 alten Mannes gefunden werden. *In situ* waren nur ein Teil des Schädels, Arm- und Beckenknochen. Es ist zu erwähnen, dass Trepanationsspuren auf dem Stirnbereich des Schädels identifiziert worden sind[3]. Dies kann vermutlich als eine rituelle Handlung gedeutet werden. Der Oberschenkelknochen ist kräftig ausgebildet, was für eine häufige Reitaktivität spricht.

In der Kammer wurden drei verwitterte undiagnostische Keramikscherben gefunden, die wir wegen der Feuchtigkeit nicht abheben konnten. Im Schutt der Decksteine wurde ein Anhänger aus Stein gefunden (Abb. 14/2).

Grab Nr. 2

Das Grab Nr. 2 befindet sich am nordöstlichen Hang von Veri Berd. Der Cromlech ist aus Basaltblöcken gebildet. Im Grundriss ist der Cromlech spiralförmig. In der Mitte sind drei große und zwei kleine Deckplatten zu finden, die von drei Seiten (außer der südlichen) durch Steine verschiedener Größe befestigt sind (Abb. 12/a).

Die Spirale beginnt in der Mitte der Struktur, macht eine Kurve um die Decksteine von Grab Nr. 2 und verläuft weiter zu dem Grab Nr. 2a im Westen. Die Steinblöcke im Norden sind größer als an den andren Seiten. Manche Steinblöcke weisen Werkzeugspuren auf.

In der Mitte der Spirale wurde die Kammer von Grab Nr. 2 gefunden. Die Erdgrabkammer (2,1 × 1 × 0,97 m, von 0-Punkt 2,9) hat eine Südost-Nordwest-Ausrichtung (Abb. 12/b). In der Mitte der Kammer wurde ein schlecht erhaltenes Skelett gefunden, in rechtsseitiger Hockerlage auf der rechten Seite liegend. Der Kopf war nach Nordwesten und die Blickrichtung nach Osten gerichtet. Die Beinknochen bildeten einen Winkel von 90°. Unter den Knien lag ein unbearbeiteter Stein.

Das Skelett gehörte einem neunjährigen Kind (vermutlich weiblich).

An der Ostseite des Grabes wurden jeweils drei Rippen und Unterschenkelknochen eines relativ großen, 6–8 Jahre alten Rindes (*B. taurus taurus*) gefunden. 40 cm östlich des Schädels lag eine Pfeilspitze aus Obsidian, von der nur eine Seite bearbeitet wurde.

Abb. 12. a. Gruppengräber an der Nordosthang des Hügels; b. Erdgrabkammer von Grab 2 (© Lernakert project).

Grab Nr. 2a

Das Grab Nr. 2 ist mit dem Grab Nr. 2 durch den Cromlech verbunden. Unter den Steinblöcken wurde eine »Kammer« mit einer Länge von 1.9 m, Breite

3 Das paläoanthropologische Material aller ausgegrabenen Gräber wurde von PhD A. Khudaverdyan (IAE) untersucht

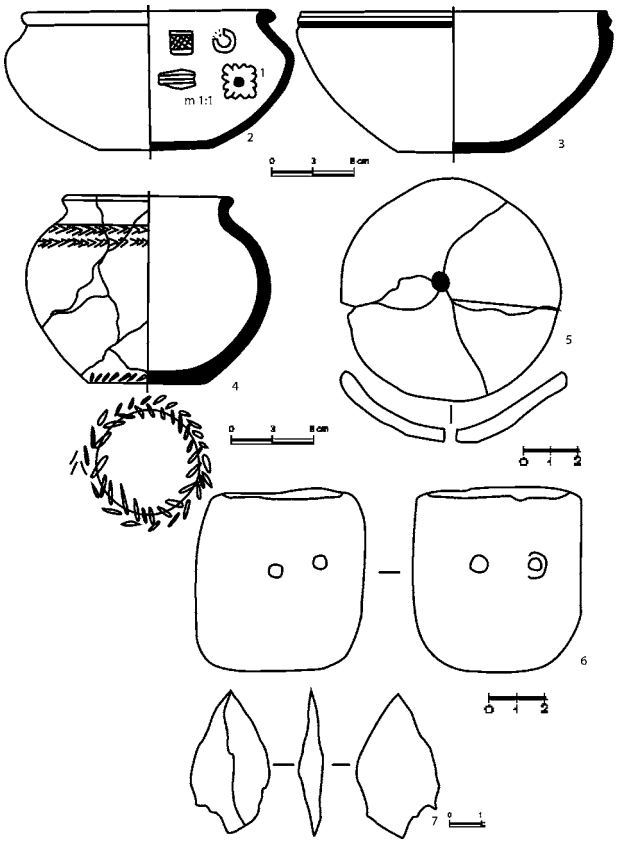

Abb. 13. Die Funde aus dem Grab 2 (© Lernakert project).

Abb. 14. Kleinfunde aus Veri Berd (© Lernakert project).

von 1m und Höhe von 1m geöffnet. Hier wurde keine Bestattung dokumentiert.

Keramikfunde: Im Grab Nr. 2 wurden fünf Keramikgefäße entdeckt: zwei Schalen, zwei Töpfe, ein "Trichter"- und ein Räuchergefäß (Abb. 13/6). Die letzten beiden sind handgemacht, wobei der Rest auf der Drehscheibe hergestellt wurde.

Die erste Schale ist schwarzpoliert, hat einen flachen Boden und eine geschnittene Randlippe (Abb. 13/3). Unter der Lippe sind zwei Rillenlinien zu finden Solche Schalen sind aus der späteren Phase des spätbronzezeitlichen Grabes Nr. 103 in Shirakavan bekannt (Torosyan et al., Taf. XLVI, 12).

Die andere Schale ist gelbgrau, hat einen flachen Boden und einen Bauchumbruch, niedrigen Hals und auf der Außenseite nach unten gestülpter Lippe (Abb. 13/2). Solche Schalen findet man in Lchashen in Frühspätbronzezeit, als auch in den Gräbern Nr. 42, 73, 82, 110, 117 (Petrosyan 2018, Taf. 195/2; 222/4; 233/2; 271/2; 278/4), sowie in der Später Phase von Spätbronzezeit, wo ein schwärzlicher und gelbgrauer Glanz zu beobachten ist (Gräber Nr. 6, 7, 9, 16 – 17 etc., Petrosyan 2018, Taf. 401/7; 396/2 – 3; 402/1 – 2; 417/1 – 3; 421/2).

Ähnliche Schalen aus der erwähnten Epoche sind ebenfalls bekannt aus den Gräbern Nr. 56, 62 – 63, 70 in Shirakavan, die in das 14. Jh. v. Chr. datiert werden (Torosyan et al, 2002, Taf. 30/3, 31/3 – 4, 9 – 10), sowie in den Gräbern Nr. 76 und 79 aus dem 13. Jh. v. Chr. (Torosyan et al. 2002, Pl. 32a/3; 44/9).

Der gelbgraue Küchentopf verfügt über einen flachen Boden, einen bauchigen Körper und eine leicht nach außen gerichteter Lippe. Die Kanten des Bodens sind mit kornartigen Chevrons dekoriert, die einem Lorbeerkranz ähneln. Zwei weitere Chevron-Reihen sind auf dem Hals des Topfes zu finden, welche durch einen spitzen Gegenstand angebracht wurden (Abb. 13/4). Diese Ornamentierung ist für das Material aus der Spätbronze – und Früheisenzeit bekannt. Erwähnenswert sind besonders die Keramikfunde aus den Gräbern Nr. 6, 20, 15, 52, 54 in Lchashen (Petrosyan 2018, Taf. 401/11 – 12; 422/7; 414/5; 426/6; 430/3), sowie aus den Gräbern Nr. 48, 53, 84 in Shirakavan, die dem 13. Jh. v. Chr. zugeordnet werden (Torosyan et al. 2002, Taf. 24, 12; 28, 6; 37, 6).

Auf dem erwähnten Topf lag ein "Trichter" in umgekehrter Position (Abb. 13/5), das ein Mittelloch mit einem Durchmesser von 1 cm aufweist. Solche Gefäße sind aus dem spätbronzezeitlichen Grab Nr. 52 in Tbilisi bekannt, die wie wiederum in umgekehrter Position auf größeren Gefäßen dokumentiert worden sind (Abramishvili 1978, Fig. 70, 677 – 678, 679 – 680).

Wirtschaftsaktivitäten

Die Ausgrabungen brachten eine Reihe von wertvollen Daten über die wirtschaftlichen Tätigkeiten in Veri Berd ans Licht. Hinweise auf Ackerbau liefern entsprechende Geräte aus Stein, Knochen, Ton und Obsidian.

Getreideverarbeitung: Eine intensive Getreideverarbeitung ist durch vier Mahlsteine aus porösem

Felsgestein, zwei halbkugelförmige Reibsteine, einen Mörser und eine Flintsichel belegt.

Die Mahlsteine aus den Schnitten sind hochgradig abgenutzt. Der Innenräume sind tief eingesenkt, während die Schnittkanten relativ hoch sind. Dies weist auf eine lange Nutzungsdauer hin. Die Exemplare sind fragmentarisch.

Ein halbkugelförmiger Reibstein aus porösem Felsgestein und mit einem Durchmesser von 16 cm wurde in den oberen Schichten des Schnittes Nr. 5 gefunden. Er ist wiederum fragmentarisch erhalten. Ähnliche Objekte sind aus mehreren Fundorten Armeniens bekannt (z. B. Shirakavan (Torosyan et al 2002, Taf. 80/1) oder Tsakhkahovit (Badalyan et al. 2008, Fig. 30, b).

Erwähnenswert ist eine Sicheleinlagen-Klinge (L.: 5,1 x B.: 1,9 x D.: 0,6 cm) aus grünrotem Flintstein aus dem Kontext 1 des 1. Schnittes. Die Klinge verfügt über feine Zacken. Obwohl solche Sicheleinlagen uns aus früheren Epochen bekannt sind, kommen vergleichbare Objekte auch in T'mbadir, Berdak'ar, Sev-sev K'arer (Karapetyan 2003, 52, Taf. 34/2 – 4) aus dem 6. – 4. Jh. v. Chr. vor.

Der bemerkenswerteste Beleg für die Getreideverarbeitung in Veri Berd stellt die *cup mark* aus dem Schnitt 1 dar. Wie bereits erwähnt, wies die paläobotanische Analyse auf die Verarbeitung von Weizen-, Gersten- und Emmerkörner hin.

Viehzucht: Für eine intensive Viehzucht sprechen zahlreiche Tierüberreste. Am artenreichsten ist der Schnitt 1: Hier fanden sich Knochen, welche einem Pferd, fünf Schafen, vier Ziegen, drei Rindern, drei Schweinen, einem Rothirsch, einem Reh und einem Nagetier zugeordnet werden. Überreste einer Ziege und eines Rindes kommen im Schnitt 2 vor. Knochen von jeweils einem Schaf, einem Rind und einem Schwein wurden in Schnitt 3 gefunden. Im Schnitt 4 finden sich Hinweise auf Pferde-, Rinder, – und Schafsknochen[4].

Diese Daten entsprechen, gemäß der Mischung aus Groß- und Kleinviehzucht sowie der weit verbreiteten Bejagung von Wildtieren, dem typischen regionalen Bild. Belege für Milchproduktion liefern die Überreste von Buttergefäßen.

Zahlreiche Obsidiansplitter weisen auf die Lederverarbeitung hin, wobei Spuren der Textilverarbeitung durch Spinnwirtel verschiedener Art belegt sind.

Somit wird vorläufig festgestellt, dass die wesentlichen Wirtschaftsaktivitäten in Veri Berd der Ackerbau und die damit einhergehende Getreideverarbeitung, als auch die Viehzucht, samt damit verbundene Leder- und Textilverarbeitung darstellen.

4 Die zooarchäologische Untersuchung wurde von Dr. N. Zarikyan durchgeführt.

Abschließende Anmerkungen

Die deutsch-armenische Ausgrabungskampagne brachte neue Informationen zu den sozial-kulturellen Aktivitäten an den Nordwesthängen des Aragats-Gebirges mit einer Fallstudie in Lernakert ans Licht. Besonders wichtig waren die Erkenntnisse in zweierlei Hinsicht: Zum einen wurden neue Erkenntnisse zu den Fortifikationseinrichtungen sowie den Wehranlagen gewonnen und zum anderen Datierungsmöglichkeiten der Festung und der umliegenden Gräber.

Bereits bei der Geländebegehung wurde die Existenz von zyklopischen Mauern, die Nutzung der Hügellandschaft für Fortifikationszwecke sowie die Errichtung von Glacis gezeigt. Durch die Ausgrabungen konnten weitere Schutzeinrichtung nachgewiesen werden: Dazu gehören die zusätzliche Wand der Umfassungsmauer im Schnitt 3, sowie die Terrassierungen im Schnitt 5.

Anhand von Keramikfunden aus der Ostzitadelle (Schnitt 2 – 3) und aus Schnitt 5 kann man die Gründung der Festung vorläufig in den 14. – 13. Jh. v. Chr. (Spätbronzezeit 3) einordnen. Zu dieser Periode gehört ebenfalls das Grab Nr. 2. Zwar sind die Beweise noch sehr spärlich, nach jetzigem Stand aber kann von einer Zeitgenossenschaft der früheren Phase der Festung und des Gräberfeldes ausgegangen werden.

Die Keramikfunde aller ausgegrabenen Schnitte, besonders die des Schnittes 1, bezeugen, dass die Festung etwa eintausend Jahre nach der Gründung, nämlich im 4. – 3. Jh. v. Chr. (Eisenzeit IIIB) intensiv genutzt wurde. Besonders aussagekräftig sind die Befunde und Funde, die Informationen zu den Wirtschaftstätigkeiten der Festung liefern. In Anbetracht der relativ seltenen archäologischen Belege dieser Periode in Armenien, sind die Forschungen in Veri Berd bedeutsam.

In den nächsten Jahren sind außerdem Ausgrabungen in benachbartem Vari Berd geplant, die umfassendes Vergleichsmaterial liefern sollen, um soziokulturellen und fortifizierungsbezogene Fragestellungen nachzugehen.

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Archaeological Landscapes of Al Lakes

Hayk Avetisyan, Artak Gnuni, Arsen Bobokhyan, Gagik Sargsyan, Levon Mkrtchyan, Anzhela Davtyan

Yerevan State University

Abstract. The high altitude archaeological landscapes of Al Lakes are situated between Karvachar region of the Republic of Artsakh and Gegharkunik as well as Vayots Dzor provinces of Republic of Armenia. The area under consideration is mentioned by the travellers since the 19th century. The area has been thoroughly investigated geologically, which is not the case for archaeological perspective. The first archaeological investigations in this region were carried out in 1970s and then, more detailed, within last years. Due to the investigations conducted, it is possible to distinguish several types of archaeological sites in the region of Al Lakes, among which are cemeteries, stelae, sanctuaries and ritual platforms, walls of ritualistic or economic significance, petroglyphs, etc. The basin of these lakes with corresponding archaeological sites, represents a unified sacred landscape. The megalithic sites discussed in the text and their contexts certainly go back to the Bronze and Iron Ages. It is obvious that visits to this area were made also in the Neolithic and Chalcolithic periods. The presence of sacred sites of different eras, and the fact that individual sites are still used as places of pilgrimage suggest that the area of Al Lakes has accumulated a large substratum of sacred memory over the centuries.

Keywords: Artsakh, Armenia, Al Lakes, Bronze and Iron Ages, high altitude archaeology, sacred landscape.

Introduction

The Al Lakes are located in a high-mountainous meadows of the Karvachar sub-region of the Shahumyan region in the Republic of Artsakh, at an altitude of about 2750 – 2850 m above the sea level (Fig. 1)[1]. They are rarely mentioned in maps and archaeological literature[2]. However, archaeologically the area is of an exceptional interest, as in a relatively small space are concentrated a variety of sites of different periods. The archaeological zone includes the basins of two existing and several dried-up lakes, the rivers that feed them and the surrounding mountains, reaching the territories of administrative districts of Vardenis in Gegharkunik province and Vayk in Vayots Dzor province of Republic of Armenia.

History of Archaeological Research

The Al Lakes are first mentioned in the scientific literature at the first half of the 19th century. Notably, a French researcher F. Dubois de Montperreux mentions the Al Lakes Basin, noting that these lakes, situated on the border of Vayots Dzor, Gegharkunik and Artsakh provinces, contain waters of dozens of rivers (Dubois de Montperreux 1839, 303). Gh. Alishan, referring to four or five Al Lakes (nowadays they are two: Great and Lesser Al Lakes), notes on their importance for future geological studies (Alishan 1893, 206).

The discussed area has been thoroughly investigated in geological perspective. It consists of Pliocene rocks, while the eastern part of the region is represented by upper rocks of the chalk system. Tectonically, the area represents the upper sub-phase of the early orogenic phase of the Alpine orogenic system. The area is one of the centres of quaternary volcanic activity. The lava flows of the area are characterized by fractures and porosity, as a result of which most of the surface water penetrates into the lava sediments, accumulating in the buried valley of Paleomasrik and flowing from there to the artesian basin of Sevan (Alizadeh 1972; Khalatov, Goginyan 2008, 23, cf. Alishan 1893, 206).

In archaeological perspective the Al Lakes region is extremely poorly investigated, although remarks about the sacred nature of the area did appear in the works of Gh. Alishan and E. Lalayan, who also referred to this locality as "Allahgyol" (Alishan 1893, 206; Lalayean 1904, 242, 252).

The first archaeological investigations in this region were carried out in 1970s by G. Ismailov, who documented numerous petroglyphs in the vicinity of

1 The research was conducted within the framework of the 18T-6A273 theme of the Science Committee of the Ministry of Science, Education, Culture and Sport of the Republic of Armenia.

2 The lakes are mentioned, for example, in the Russian five-verst map, as a part of the Djevanshir region of the Elizavetpol province (Pagriev 2007, 45).

Fig. 1. The Great Al Lake (Photo: A. Gnuni).

Fig. 2. Al Lake 10, cromlechs without tombs (Photo: A. Gnuni).

Fig. 3. Al Lake 12, tombs with stone filling (Photo: A. Gnuni).

the Great Al Lake. Carvings include depictions of wild and domestic animals, scenes of plowing and dancing (Ismailov 1977, 492). D. Akhundov mentions also the depictions of multi-chambered dwelling complexes (Akhundov 1986, 38). Based on the presence of the Early Bronze Age settlement in the area of Ali Bayramli in the upstreams of Trtu river (where also petroglyphs are mentioned), the Al Lakes petroglyphs were dated by G. Ismailov to the 3–2nd millennia BC (Ismailov 1986, 25–27)[3].

In 1996 and 1997 observations were made here by the expedition of the Scientific-Research Center of Historical and Cultural Heritage, directed by H. Simonyan (Simonyan 1996). The archaeo-geological investigations were carried out also by the expedition of the Institute of Geological Sciences of the National Academy of Sciences of Armenia (Avagyan, Karakhanyan 2003, 13–14). More thorough investigations were conducted by G. Sargsyan in 2008, and by the expedition of the Yerevan State University between 2015 and 2017 (cf. Avetisyan et al. 2015, 30–31; Sargsyan, Gnuni 2015, 112).

Main Types of Archaeological Sites

Due to the conducted investigations, it is possible to distinguish several types of archaeological sites in the Al Lakes region.

Cemeteries. The tombs discovered in the Al Lake Basin are mainly concentrated in the area between rock scatters and the shore of the lake. According to their external structure, they can be divided into several groups: a small-diameter cromlechs without a kurgan (Al Lake 10–11) (Fig. 2), low tombs with the predominance of stone filling (Al Lake 12–13, 19) (Fig. 3), large-diameter tombs with stone-soil filling (Al Lake 9) (Fig. 4). Although the land line of Al Lakes is highly variable, it must be noted that the largest tombs are situated on the coastal zone. The same pattern is observed by E. Lalayan in the Sevan Lake (Lalayean 1906, 32, 37). The cemeteries of Adiaman, Tsovinar, Tsovak 2 are also located on the coastal

3 An Early and Middle Bronze Age settlement is mentioned also in the Djermajur (Istisu) (Huseinova 2008, 105; although the refered paper is of a propagating nature, it contains the state lists of archaeological sites). In addition, a cemetery and a fortress (probably dated to the second quarter of the 1st millennium BC) are known in Tsar (investigations by A. Bobokhyan, G. Sargsyan, A. Gnuni, H. Danielyan) and a cemetery in Zeylik (investigations by H. Simonyan and A. Gnuni).

Fig. 4. Al Lake 9, a large tomb with stone-soil filling (Photo: A. Gnuni).

Fig. 5. Vishap Al Lake 1, a bull-shaped vishap near the source of Arpa River (Photo: A. Bobokhyan).

Fig. 6. Vishap Al Lake 2, a fish- shaped vishap (Photo: A. Bobokhyan).

Fig. 7. Vishap Al Lake 3, a fish-shaped vishap, found within the construction (Photo: A. Bobokhyan).

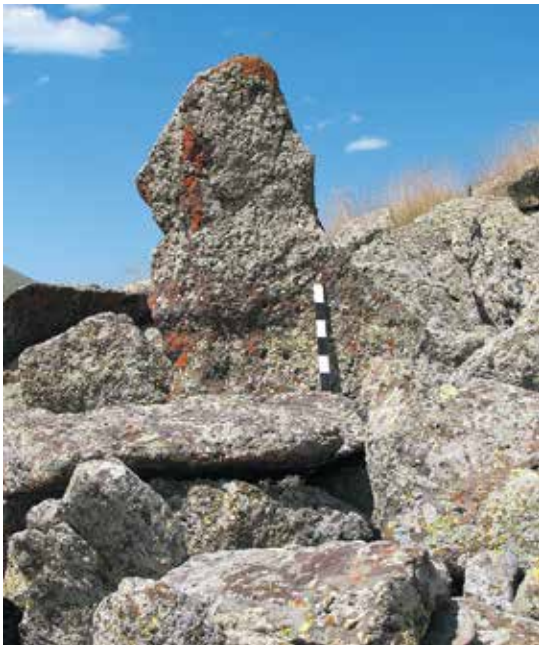

Fig. 8. Al Lake 10, an anthropomorphic stela in the basin of the Lesser Al Lake (Photo: G. Sargsyan).

Fig. 9. Al Lake 17, a cairn-sanctuary in the rock scatters in the basin of the Great Al Lake (Photo: A. Gnuni).

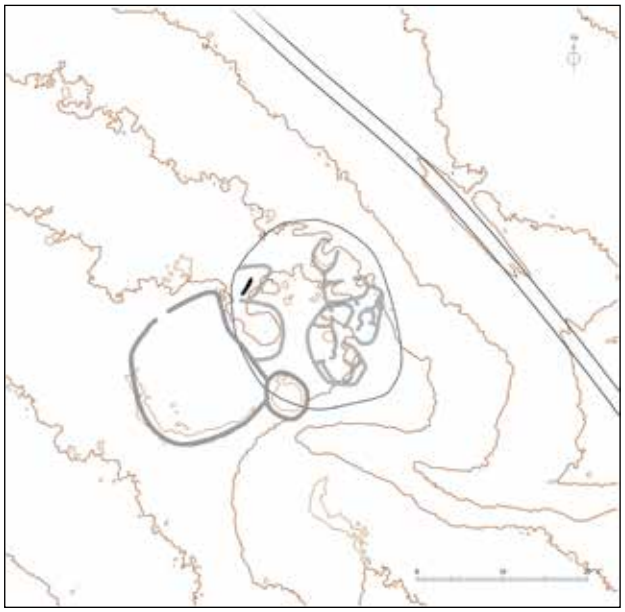

Fig. 10, 11a, 11b. Al Lake 4, a large "giant house" (Photo: A. Bobokhyan, Drone and drawing: L. Mkrtchyan).

Fig. 12. Al Lake 18, a "giant house" with a tower (A. Gnuni).

Fig. 13–14. Al Lake 5, a stone with cup-mark (Photo: A. Gnuni).

Fig. 15. Al Lake 21, a cromlech in the vicinity of a bull-shaped vishap (Photo: A. Bobokhyan).

zone (Biscione et. al. 2002, 116, 117). The presence of tombs on the shores of lakes can be observed also in other high-mountaineous areas[4].

Stelae. There are four stelae in the Al Lakes Basin. The first is a bull-shaped vishap-stela to be found on the border of Al Lakes region, near the source of Arpa river (Al Lake 1) (Fig. 5). The second one is fish-shaped which is placed on the top of a tomb with stone filling (Al Lake 2)[5]: it is noteworthy that the stela is elaborated only from single side (Fig. 6). Another double-edged fish-shaped vishap was found within the largest cairn-sanctuary (Al Lake 3). The next stela was discovered in the rock scatters around the Lesser Al Lake. Although the stela is highly stylized, some features (especially the upper pentagonal part) suggest that it is an anthropomorphic one (Al Lake 8) (Fig. 8)[6].

Sanctuaries and ritual platforms. The main type of the ritual platforms in the Al Lakes basin are the parts of rock scatters or piles of stones, in the central part of which there are rectangular or round chambers[7]. The platforms of the first type are documented in the rock scatters around the Great Al Lake (Al Lake 14) (Fig. 9). Similar platforms are present also in Kaputan[8]. The next sub-type is represented by the structures, located outside the rock scatters. They differ both in their architectural plan and quantity of chambers. One of these platforms is located in the basin of the Lesser Al Lake. The cairn-sanctuary in the basin of the Great

Fig. 16 a,b. Al Lake 14, photo of the wall (Photo G. Sargsyan).

Al Lake is exceptional for Armenia (Al Lake 4) (Figs 11 – 12). It is located in the area between the shore of the lake and the rock scatters and has twelve chambers. The third cairn-platform was discovered on the road from Al Lakes to Makenis. It has an adjacent tower-like structure (Al Lake 18) (Fig. 12). Similar platforms have been documented also in other sites of Armenia: Lernamerdz[9], Aylagh, Murad Tapa (Al Lake 15)[10]. It is noteworthy that all these structures are located mainly in cemeteries[11].

As a platform should be regarded also the boulder with pestle shaped cup-mark located on the border of rock scatters (Al Lake 21) (Figs 13 – 14). It can't be excluded that the cromlech found in the vicinity of the vishap stela in the source of Arpa river is also a platform (Fig. 15).

4 As a parallel the tombs, located at the top of the Lesser Masis can be mentioned (Manasvetov 1879, 49; Taghiadean 1846, 143; Alishan 1890,485-487; Tsotsikean 1917, 413).

5 For detailed information on the vishap-stelae on the tombs see: Piliposyan et al. 2019, 572-581. It is noteworthy, that in contrast to the bull-shaped vishap from Ltchashen, the vishap from Al Lake is a fish-shaped, similar to the vishap from Verin Naver (cf. Simonyan 2019, 561). The stela with fish-shaped contour has been found also in the ruined tomb of the Vardut cemetery in Kashatagh region (Gnuni, Khachatryan 2003, 269-270).

6 The statue of this type is often regarded as one of the phases of the anthropomorphization of the stelae, which can be expressed by giving to the stela the shape of a stylized man with the use of natural stones resembling human contours (Beneteau-Dovilard 2002, 570).

7 The pile of stones can be constructed on the occasion of a significant event (Solovyev 2014,47). These piles of stones can be compared to the European "cairns", however in the mentioned group of the megalithic structures are considered also the tower-like structures (cf. Cambry 1805, 84), which are often named "stone pyramids" (Magnus 1658, 11).

8 A number of similar structures have been found in Kaputan. In addition to the mentioned platform, aslo a variety of other structures, built in rock scatters, are documented here (investigations by G. Sargsyan, L. Mkrtchyan, A. Gnuni).

9 Investigations by L. Mkrtchyan, A. Gnuni.

10 Investigations by G. Sargsyan, A. Bobokhyan, A. Gnuni. In Aylakh and Murad Tapa the cairn-platforms are connected by stone rows. Cf. the connection of cromlechs by stone rows in Plimut (Rowe 1830, 204) and the connection of dolmens by vertical menhir rows in Jordan (Kafafi 2005, 14).

11 Similar structures are often documented in the megalithic landscapes outside Armenia, especially in Malta (Bonanno 2001, 40). Interestingly, the Russian writer M. Prishvin notes on the excavations of such a pile of stones by A. Spitsin (Prishvin 1977, 250-252). Similar structures are also mentioned in the Bible (Gen. 31: 44–54; cf. Lebeuf 2012, 42–43). Such piles are known also in Aylakh (investigations by G. Sargsyan, L. Mkrtchyan, A. Gnuni).

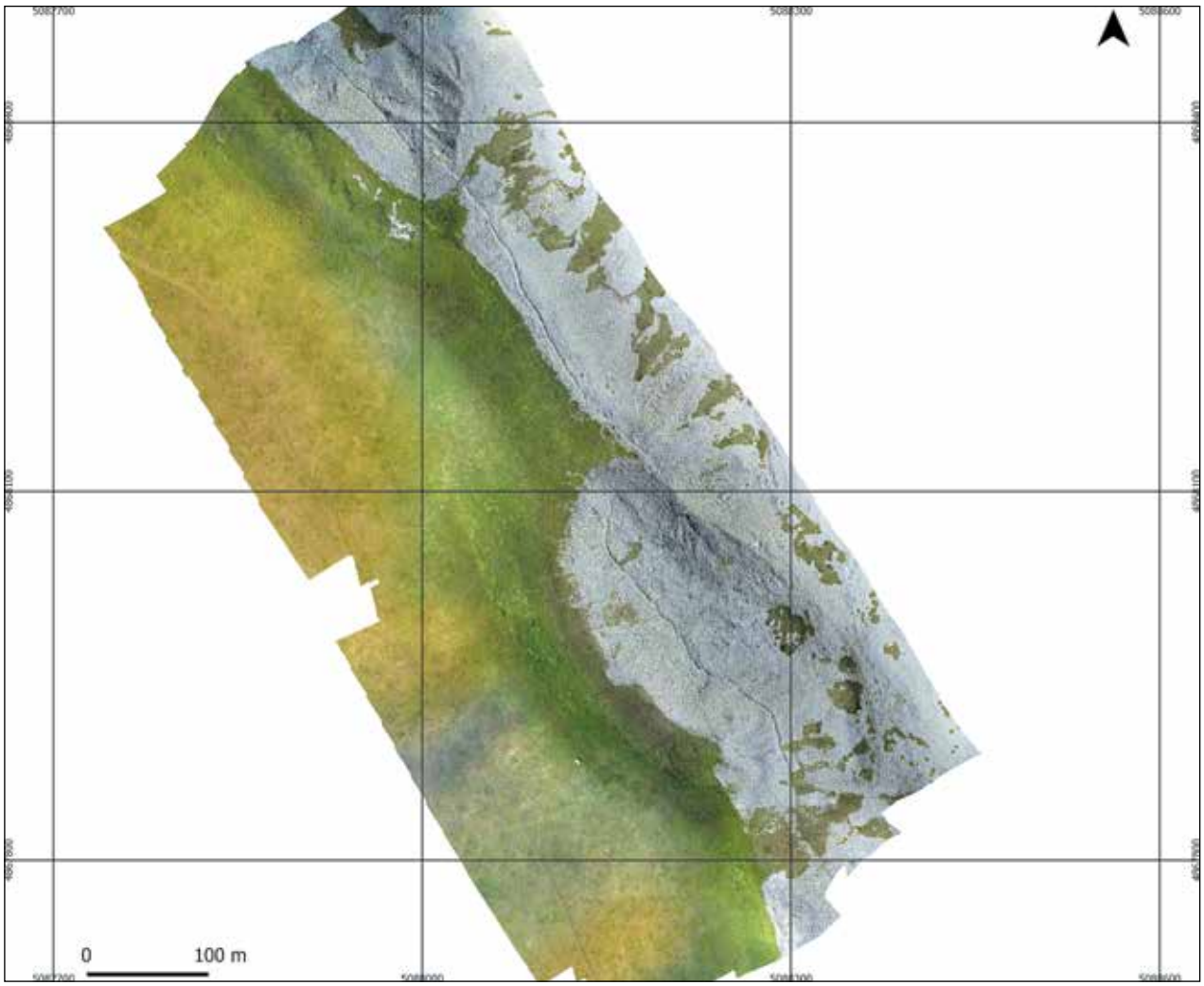

Fig. 17a,b,c. Al Lake 14, landscape profile, orthophoto and topographic map of the wall (drone and topomap: G. Sargsyan, L. Mkrtchyan).

Fig. 18. Al Lake 6, depiction of a phallic man (Photo: A. Gnuni).

Fig. 20. Al Lake 7, depiction of a man without hands (Photo: A. Bobokhyan).

Fig. 19. Al Lake 7, depiction of archers (Photo: A. Bobokhyan).

Fig. 21. Al Lake 7, a profile depiction, one hand is visible (Photo: A. Gnuni).

Similar cromlech- platforms often appear in the context of vishaps (Bobokhyan et al. 2015, 274–281).

Walls. One of the unique archaeological structures of the Al Lakes is the wall built in the rock scatters (Al Lake 14), starting in the scatters of the Great Al Lake and stretching along the shore of the lake for about 6 km in direction of Vardenis, reaching in the west to the village of Makenis in the Vardenis region. The width of the wall in different parts is 0.6–0.8 m, and the preserved height is about 1.5 m. It is noteworthy that the wall (fence) stretches along the border of natural rocks and alpine meadows. From the inner side, a number of large and small areas are adjacent to it, which are not bordered by such a long wall from the other side. At several points in its course, the wall joins the meadows with sloping passages descending from the heights (Figs 16–17). Similar walls are mentioned by A. Kalantar, who notes on their appearance in the context of megalithic sites: they are attached to the towers (Aygeshat, Ardar Davit), dolmens (Shamiram), sometimes stretching for several kilometers. Such walls are present also in the vicinity of Yeghvard, reaching to Karmir Berd. According to A. Kalantar, these walls may have served as boundaries between small and large land lots, perhaps even political formations (Kalantar 1925, 216). The member of our expedition G. Sargsyan suggests an economic function for the wall. Indeed, the walls discovered in Mirik and Hochants are most likely to have an economic function[12]. However, there are cases that walls are located within the cemeteries which suggests their ritual nature. So, a row of orthostatic stones surrounds the cemetery of Lernamerdz[13]. The walls of Aygeshat (Toramanyan 1942, 8) and Norakert (Gnuni et al. 2017, 31–32) are also located in cemeteries. At the same time, the mentioned wall of Al Lakes stands out for its more sophisticated construction and length[14].

12 Investigations by G. Sargsyan, A. Gnuni.

13 Investigations by L. Mkrtchyan, A. Gnuni.

14 Similar walls are known also outside Armenia. They could

Fig. 22–26. Al Lake 6 and 7, zoomorphic depictions (Photos: A. Gnuni).

Fig. 27. Al Lake 7, depiction of a tent (Photo: A. Gnuni).

Fig. 28. Al Lake 6, depiction of a dwelling (Photo: A. Gnuni).

Petroglyphs. Several clusters of petroglyphs have been discovered in the Al Lakes Basin (Al Lake 6, 7, 15). The first cluster is located in the basin of the Great Al Lake and was documented by G. Ismayilov, later by G. Sargsyan (cf. Avetisyan et al. 2015, 172–173). The second cluster is located in the vicinity of Mount Porak (Avagian, Karakhanian 2003, 13–14). The third cluster is located in the valley of Gortaget, 3 km south-east of Porak, around the springs flowing from two rocks (Al Lake 6). The fourth cluster is known from the region of the Lesser Al Lake (Al Lake 7). The depictions differ both in their technique and motives. By their motives, they can be divided into several groups:

a. Anthropomorphic images. These are usually presented in several variants: with outstretched hands and highly expressed male sexual features (Gortaget) (Fig. 18), depictions of archers (Lesser Al Lake) (Fig. 19), without upper limbs (Lesser Al Lake) (Fig. 20), with single hand, drawn perpendicular to the body (perhaps a profile picture) (Fig. 21), with outstretched arms, wide-stretched feet and widely opened hand and foot fingers (The Great Al Lake) (Avetisyan et al. 2015, 173). The latter can be interpreted as a depiction of solar deity (cf. Martirosyan 1981, 63; Israelyan 1973, 46).

b. Zoomorphic images. (Figs 23–27). Without any exception all depictions belong to the horned animals. According to their iconographical peculiarities, the zoomorphic images of the Al Lakes Basin and Gortaget can be divided into several groups: with arched horns, with upright tail, with downward tail, with straight horizontal tail, with vertically ascending tail, with slightly curved horns or with curved horns at the top.

c. Other images. Here first of all the petroglyph found by A. Avagyan and G. Karakhanyan in the vicinity of Mount Porak should be mentioned, which the authors, based on the analogy to the image from Çatal Hüyük, interpret as a scene of a volcano erupting (Avagyan, Karakhanyan 2003, 13–14). The second is the depiction of a tent-like structure found in the rock scatters around the Lesser Al Lake (Fig. 27). The third is the reproduction of interlocking rings and rectangular structures from the basin of Gortaget (Fig. 27). Perhaps this is the image, interpreted by D. Akhundov as a multi-chambered dwelling complex (Akhundov 1986, 38; cf. Martirosyan 1981, fig. 59; Martirosyan, Israelyan 1971, fig. 204–205). The fourth depiction is also from Gortaget basin, representing carved rings with

define a certain sacred area (Borlase 1769, 119).

Fig. 29. Al Lake 6, solar depictions (Photo: A. Bobokhyan).

Fig. 30. Al Lake 22, a stone with hollow (Photo: A. Gnuni).

central hollow (Fig. 29). Their parallels are known from Geghama Mountains (Martirosyan, Israelyan 1971, 329) and are often interpreted as solar symbols (Israelyan 1973, 43–44; Yesayan 1968, 259).

In terms of technique, several types can be observed: pecking-grooving, drawing (with this technique were made the sketches in Geghama mountains) and the combination of these two techniques (cf. Martirosyan 1981, 8–9).

Other objects. During the investigation of the Al Lake Basin, artefacts were found that are not related to the formation of the Bronze-Iron Age sacred landscape, but they value the region in the context of the archaeology of memory. These include the Neolithic-Chalcolithic obsidian tools (Al Lake 6), collected in the basin of the Great Al Lake[15]. On the right side of

15 Found during the survey of Yerevan State University expedition by R. Hovsepyan; definition by B. Gasparyan and A. Petrosyan.

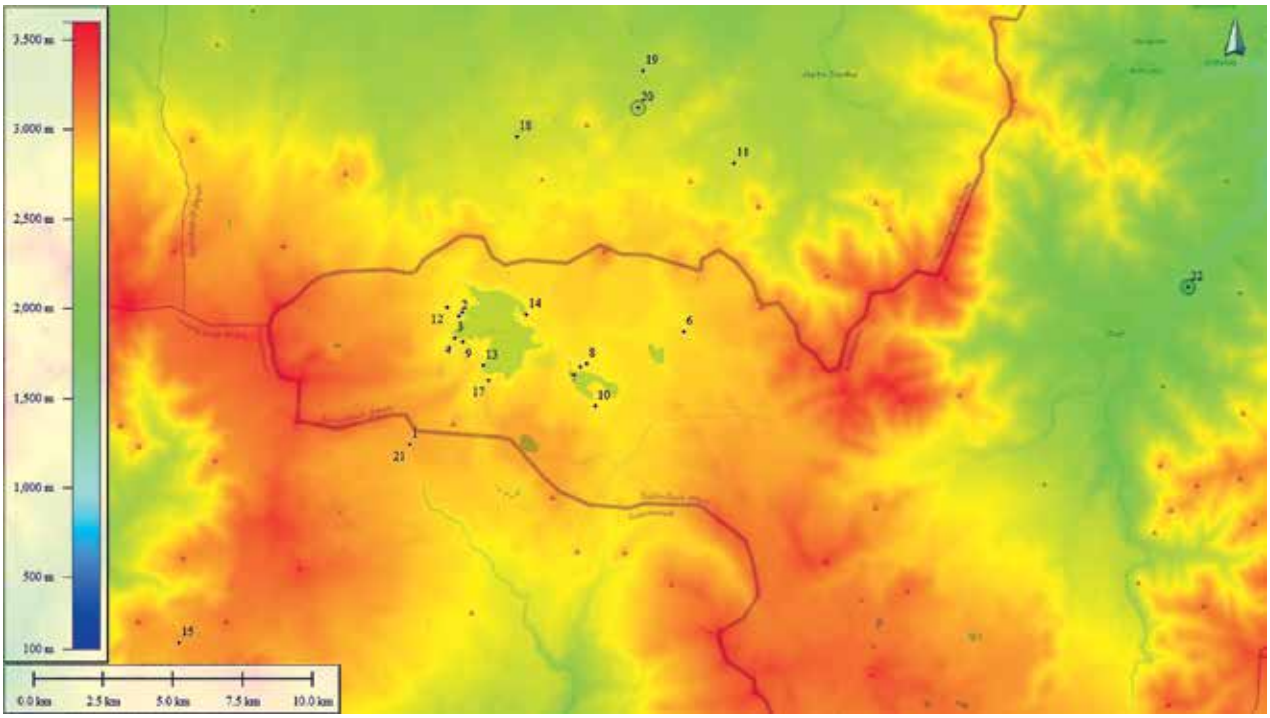

Fig. 31 Archaeological sites of the Al Lakes region (Map: L. Mkrtchyan).

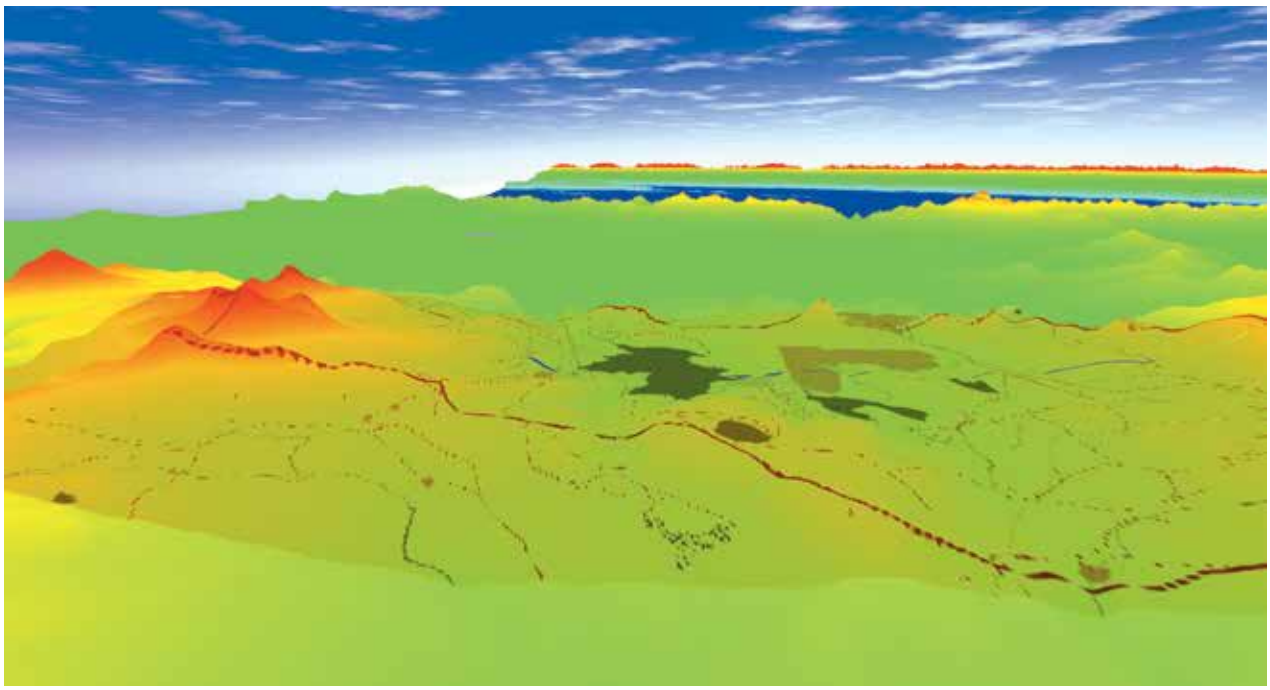

Fig. 32. A three-dimensional reconstruction of the Al Lakes region (Drawing: L. Mkrtchyan).

Fig. 33. The profile of the Al Lakes region and the location of archaeological sites (Drawing: L. Mkrtchyan).

Table 1. Newly discovered archaeological sites at Al Lakes.

Name	Type of the Site	Coordinates	Investigation
Fortresses and settlements			
Al Lake 20	On the road to Al Lakes. An oval fortress, built in rock scatters	N 40.07500° E 045.75449° 2538 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016; G. Sargsyan, L. Mkrtchyan, 2020
Cemeteries			
Cromlechs			
Al Lake 10	To the south of the Lesser Al Lake. A cromlech built with small-size pebbles, tomb is missing, diameter ca. 1,5 m	N 39.97898° E 045.73661° 2773 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 11	Cromlechs in the vicinity of the Great Al Lake, tomb is missing, diameter ca. 5 m	N 40.05715° E 045.79496° 2550 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 15	Murad Sar, cromlechs with diameter ca. 7 m and petroglyphs. Rocks with petroglyphs are often used as a stone for the cromlech	N 39.90324° E 045.58187° 3054 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Tombs with stone filling			
Al Lake 12	To the west and on the shore of the Great Al Lake. Cromlechs covered with stone tombs, , diameter ca. 6,5 m	N 40.01074° E 045.67427° 2755 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 13	To the north of the Great Al Lake. Ten cromlechs covered with stone tombs, diameter ca. 7–10 m	N 39.99206° E 045.68916° 2732 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 19	A kurgan with stone filling, diameter ca. 6 m	N 40.08718° E 045.75658° 2441 m	A. Bobokhyan, A. Gnuni, 2015
Tombs with stone-soil filling			
Al Lake 9	To the south of the Great Al Lake. A high kurgan, diameter ca. 10 m	N 39.99961° E 045.68073° 2746 m	A. Bobokhyan, A. Gnuni, 2015
Platforms and sanctuaries			
Cairn-platforms			
Al Lake 4	A large “giant house” with twelve chambers, diameter ca. 30 m (= the structure of Al Lake 3)	N 40.00098° E 045.67745° 2737 m	A. Bobokhyan, A. Gnuni, 2015; A. Bobokhyan, 2019
Al Lake 15	The “giant houses” of Murad Sar, cairn- platforms, connected by stone rows, located to the north-west of Al Lake 1, diameter ca. 5–10 m	N 39.90260°, E 045.56118° 2986 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Al Lake 17	The Great Al Lake, to the south-east of ten cromlechs, diameter ca. 5 m	N 39.98733° E 045.69148° 2785 m	A. Bobokhyan, A. Gnuni, 2015.
Al Lake 18	A tower-like structure before reaching the Great Al Lake, diameter ca. 7 m	N 40.06577° E 045.70335° 2528 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 19a	“Giant house”, diameter ca. 5 m	N 40.08718° E 045.75658° 2441 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 14	“Giant houses” in the rock scatters, in the vicinity of the Great Al Lake, diameter ca. 1,5 m	N 40.00849° E 045.70729° 2740 m	A. Bobokhyan, A. Gnuni, 2015
Rock platforms			
Al Lake 5	The Great Al Lake, a stone with cup marks, found to the south-west of a large “giant house”, 2x2 m	N 39.99763° E 045.67497° 2745 m	A. Bobokhyan, A. Gnuni, 2015

Cromlech platforms			
Al Lake 21	A cromlech in the vicinity of a bull- shaped vishap, diameter ca. 10 m	N 39.96647°, E 045.65818° 2969 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Stelae			
Vishap stelae			
Al Lake 1	A bull-shaped vishap, before reaching the Great Al Lake, 380x105x34 cm	N 39.96647°, E 045.65818° 2969 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Al Lake 2	In the vicinity of the Great Al Lake, a fish-shaped vishap in a tomb with stone filling, 110x43x23 cm	N 40.00805° E 045.67917° 2747 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 3	In the vicinity of the Great Al Lake, a vishap inside of the "giant house", 279x61x32 cm	N 40.00098° E 045.67745° 2737 m	A. Bobokhyan, 2019
Idol			
Al Lake 8	An anthropomorphic idol in the vicinity of the Lesser Al Lake, 180x90x20 cm	N 39.99256° E 045.73297° 2760 m	G. Sargsyan, 2008
Walls			
Al Lake 14	From the rock scatters on the shore of the Great Al Lake to Makenis	N 40.00849° E 045.70729° 2740 m	G. Sargsyan, 2008; A. Bobokhyan, A. Gnuni 2015
Al Lake 19b	In the basins of the Great and Lesser Al Lakes	N 40.08718° E 045.75658° 2441 m	G. Sargsyan, 2008 A. Bobokhyan, A. Gnuni, 2015
Petroglyphs			
Al Lake 6	In the basin of Gortaget, three kilometers to the south-east of mt. Porak. Petroglyphs around the springs flowing from two rocks	N 40.00297° E 045.77386° 2550 m	G. Sargsyan, 2008
Al Lake 7	Petroglyphs in the vicinity of the Lesser Al Lake	N 39.99154° E 045.73025° 2765 m	A. Bobokhyan, A. Gnuni, 2015
Al Lake 15a	Petroglyphs and tombs to the north-east of Murad Sar and Al Lake 1	N 39.90324° E 045.58187° 3054 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Al Lake 15b	High concentration of petroglyphs to the north-east of Murad Sar and Al Lake 1	N 39.90567° E 045.59500° 3036 m	A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan, 2016
Other units			
Al Lake16	A Neolithic-Chalcolithic open-air site in the vicinity of the Great Al Lake	N 40.00931° E 045.68030° 2733 m	G. Sargsyan, 2008; A. Bobokhyan, A. Gnuni, 2015
Al Lake 22	A stone with trough shaped hollow not far from the "giant house" with tower, 100x40x20 cm	N 40.06579° E 045.70334° 2528 m	G Sargsyan, 2008; A. Bobokhyan, A. Gnuni, 2015

the road from Makenis to Al Lakes, a stone with trough shaped hollow has been found (Al Lake16), with Arabic graphics on it, mentioning the date: 1252 (of coarse = 1874). However, the stone itself was probably used for another sculpture (probably for the placement of khachkar/cross stone) (Fig. 30)[16].

In this context, the sites of Murad Tapa in Vayots Dzor, located on the way to Al Lakes should also be considered. Tombs and petroglyphs of different periods are concentrated in one small area[17].

Conclusions

The Al lakes Basin, with its archaeological sites, represents a unified sacred area (Figs 31–32)[18], which,

16 Observation by H. Hakobyan.

17 Investigations by A. Bobokhyan, A. Gnuni, G. Sargsyan, G. Khachatryan.

18 The basins of lakes are landmarks of sacred areas in Ar-

however, is not isolated and is connected by a number of ways especially with Gegharkunik region. Thus, the stone wall stretches to Makenis village of Gegharkunik region, where a number of open-air sanctuaries – "giant/oghuz houses" are located; by the way, in the vicinity of one of them a tower is built. A number of sites from Vardenis region should also be observed in this contex: among them, e.g., the "Oval" Fortress (Al Lake 20), Geghakar (Arutyunyan, Badalyan 2008), the Tsar Fortress of Karvachar (the latter, however, probably belongs to later periods), the settlements of Ali Bayramli and Istisu and the complex of petroglyphs. From the south-west this section opens to the basin of Arpa river.

Although there is no evidence of roads passing through the area, the Armenian historian Stepanos Orbelyan, talking about the intention of Vardanants' army to cross Vayots Dzor and then Artsakh, means the road from the present Yeghegis village to Murad Tapa, then to the source of Arpa river and the road leading to Al Lakes (Stepanos Orbelyan 1986, 17).

The megalithic sites discussed above and their context certainly goes back to the Bronze and Iron Ages. It is obvious that visits to this area were made also in the Neolithic and Chalcolithic periods. The presence of sites of different periods, the folk-etymology of the lakes, the fact that individual sites are still used as places of pilgrimage (the stone for the placement of khachkar), etc. suggest that the Al Lakes Basin over the centuries has accumulated a large substratum of sacred memory.

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Seals from Lori Berd

Seda Devedjyan[1], Ruben Davtyan[2]

[1] Institute of Archaeology and Ethnography, Armenia
[2] Max-Planck Institute for Social Anthropology and Martin-Luther University of Halle-Wittenberg, Germany

Abstract. Seals represent one of the most remarkable objects of the ancient Near Eastern art. Unlike Mesopotamia or East Mediterranean, in Armenia they were found in a relatively small number and were used primarily in burial practices, with the exception of Urartian period. In this article are presented and discussed the Late Bronze Age - Early Classical Age seals discovered at the necropolis of Lori Berd, Amenia. Based on the stylistic and contextual analysis an attempt has been made to track the social aspect of the use of the seals. In a non-written community of Lori Berd the seals were used for the representation of social status and/or as personified amulets applied in magical and burial practices.

Keywords: Armenia, Lori Berd, seals, context, design, classification, function, chronology.

Introduction

The necropolis of Lori Berd is located in the province of Lori in the north of the Republic of Armenia. It is dated between the Middle Bronze Age and the Achaemenid period. Systematic excavations led here since 1969 by the expedition of the Institute of Archaeology and Ethnography of Armenia (IAE), directed by Dr. S. Devedjyan have revealed 117 tombs and a section of the settlement. In some of the rich burials eleven seals were found. Since several seals have not been published until now, the aim of this article is to describe and analyze a relatively small number of seals unearthed at site, which are dated to the Late Bronze Age, Late Iron Age and Early Classical period[1]. They are kept in the History Museum of Armenia (HMA).

The seals are presented in the chronological order. The technical data are followed by iconographical classification. In addition, the social aspects of the seals are discussed in their archaeological and historical context.

Description and Classification of Seals

Seal no. 1 (Figs 1, 3/1)

Context: The seal was found in the Tomb no. 25 with a soil chamber (length: 5.3 m; width: 1.7 m; height: 1.5 m). It was discovered on the ground, in the southern part of the chamber between a silver pectoral, idol-shaped pendant and carnelian beads. In the tomb, other objects such as a comparatively big ceramic vessel, a bronze trident and a hook were discovered. In the vicinity of these objects, the bones of the buried person were detected. The poor preservation of the bones did not allow to determine the sex and age of the skeleton.

Size: Height: 2.4 cm; diameter: 1 cm; diameter of perforation: 0.4 cm.

Material: Faience, whit(ish) core with traces of pale blue glaze.

Form: Cylindrical, uneven surface.

Design: The composition appears to consist of two identical groups. Two standing male figures wear hemispherical brimmed hats. The figure on the right side has a long fringed robe, whereas the one on the left seems to be naked except for a belt. They combat a horned quadruped with an elongated body, whose head is turned backwards. The naked figure grips the animal's tale, whereas the figure on the right packs one foreleg with the left hand and plunges into the animal's neck with a dagger-like weapon. The drill and cutting wheel were applied for the representation.

Parallels: A cylinder seal with a very similar design was found in Tell Mohammad Arab (Collon 1988, 59–77). Two others were uncovered in Hazor (Yadin 1961, pl. CCCXIX/ 3–4).

Classification: All three parallels depict a combat scene between human figures and an animal. The animal depicted on the seals from Hazor corresponds with the one from Lori Berd. Conversely, the specimen from Tell Mohammad Arab shows an animal with ant-

1 For periodization see Avetisyan, Bobokhyan 2012, fig. 2.

Fig. 1. Seal no. 1 (Photo: V. Hakobyan, HMA).

Fig. 2. Seal no. 2 (Photo: V. Hakobyan, HMA).

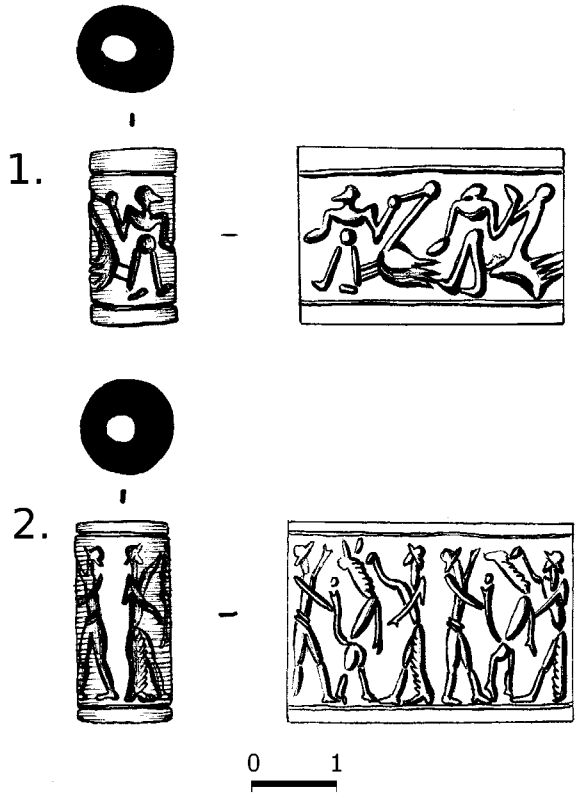

Fig. 3. Seals no. 1–2 (Drawing: A. Sahakyan, IAE).

lers. Nevertheless, this detail is the main iconographic difference between all four seals.

Based on the archaeological context, the seal from Mohammed Arab can be dated to 1450–1350 BC, whereas the ones from Hazor to the 13th century BC.

According to Collon, the antagonist of the human figures on these Mittanian seals can vary, e.g. horned quadruped, lions or gryphons (Collon 1988, 66). Salje groups these seals into the Mittanian "Common Style", Palestinian stylistic group P2 and describes them as "elusive plastic style ("*Flüchtig Plastischer Stil*")" (Salje 1990, 93–94). The symmetrical composition of two figures around an animal, a tree or a standard can be considered similar to earlier Mesopotamian glyptic styles. Salje (1990, 236) brings an additional nine exemplars, among which are the seals from Cyprus (Dhekelia-Steno), Southern Levant (Beth Shean and Kamid el Lod), Northern Levant (Tell Kazel and Ugarit), as well as from Northern Mesopotamia (Assur) and dates them between 15–13th centuries BC (Salje 1990, taf. XI, 206–210).

Previous publication: Devedjyan 2006b, 140–141, fig. 9.

Seal no. 2 (Figs 2, 3/2)

Context: See seal no. 1.

Size: Height: 2.2 cm; diameter: 1 cm; diameter of perforation: 0.4 cm.

Material: Sintered quartz.

Form: Cylindrical form, uneven surface.

Design: The image was cut with the help of a cutting wheel. Two repeating scenes with a human figure striding towards left and a bird. The man is bright-shouldered, has a narrow body and is presumably naked. The body is *en face*, the head and legs instead in profile. With the left hand he grips the bird's beak, the right is directed forward. It seems that he has a dagger on the right hand. The bird has the same size as the man. It is portly, the neck is elongated, the legs are not visible. The feathers are marked by ray-like lines.

Classification: This seal can be classified into the Salje's Mittanian "Common Style" Syrian stylistic group S(L) 1, or Group I Ugaritian I (Salje 1990, 84–85). According to her, the men in this group are depicted naked. In several cases there are birds, which are thematically associated with a tree or a standard. The bird motif finds its comparisons mostly in Eastern Mediterranean rather than in Mesopotamia. This group consists of 21 specimens, 15 from which come from Syria. To this group also belongs the seal from Artik, Tomb no. 422 (Khachatryan 1975, fig. 77). They

appear in the beginning of 14th century BC in Ugarit and Cyprus and spread in the Northern Mesopotamia in the 14–12th centuries BC. Because these specimens originated in Ugarit, the subgroup they belong to is named Ugaritarian style. The seal no. 2 is close to several specimen from the "Linear style" of the Ugaritian group (Salje 1990, 84, taf. IX/172, 173, 175, 176).

Regarding the bird's motif, it is also similar to seals from Alalakh (Salje 1990, 84, taf. VIII/ 145, 146). Stylistically it can be compared with the Mittanian seal from Artik. Khachatryan compares it with the seals from Cyprus and dates to the half of the 2nd millennium BC (Khachatryan 1975, 132, 158, fig. 77/2,5,6).

Presumably, the Lori Berd seal originates from Ugarit as well. Seals no. 1–2 were found in a relatively rich burials of Tomb no. 25. Several elements from the Trialeti-Vanadzor III culture in the tomb let us to date the seals to the mid-2nd millennium BC[2].

Previous publication: Devedjyan 2006b, 141–142, fig. 10.

Seal no. 3 (Figs 4, 5)

Context: The seal was found among the beads in the stone chambered Tomb no. 7 (length: 8 m, width: 2.5 m; height: 2.8 m). The former presumably rich tomb had been looted, so that many of the objects could not be detected *in situ*. The seal was found on the floor under the covering slab, which felt down due to the looting. No anthropological remains were preserved.

Size: Height: 3 cm; diameter: 1 cm.

Material: White quartzite.

Form: Cylindrical form, uneven surface.

Design: Two columns of respectively five chevrons. Each column is ca. 1.5 cm wide. The image was done with cutting wheel. The position of lines is mostly irregular.

Parallels in Armenia: Seals from Artik, Tombs no. 625 and no. 111 (Khachatryan 1975, 132, 188, fig. 77/3; 1979, 157), Harich (Devedjyan 2003, 67–71, fig. 1), Nerqin Getashen (Xnkikyan 2002, 43, XX, ill. 33, 35), Shirakavan (Torosyan et al. 2002, 39, pl. XXX-IX/15; 90, pl. LVI/41).

Parallels in neighbouring regions: Saphar Kharaba, Georgia (Narimanishvili 2010, pl. XX/14), Munjughlutepe, Nakhijevan (Aslanov, Kashkay 1993, 17, fig. 4).

Classification: A sealing practice with this motif was attested in the archive of Šilwa-Teššup in Nuzi and associated with the personal name Šeššwia (Stein 1993, no. 205). This sealing can be dated to 1440–1330 BC (Stein 1993, 19). Other Mittanian seals and sealings depict this branch motif as well, mostly as a secondary scene (some examples in Salje 1990, no. 54, 55, 126, 215, 242). In any case, this objects were also interpreted as seal-beads (Marcus 1996, 36–37; Iskra 2019, 263). It is likely that these seals were more spread in the South Caucasus rather than in Mittani. The rela-

Fig. 4. Seal no. 3 (Photo: V. Hakobyan, HMA).

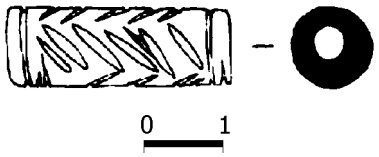

Fig. 5. Seal no. 3 (Drawing: A. Sahakyan, IAE).

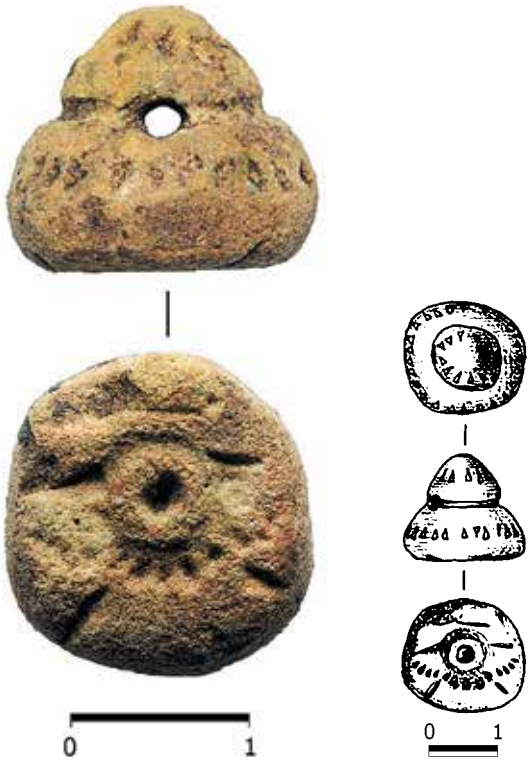

Fig. 6. Seal no. 4 (Photo: V. Hakobyan, HMA).

Fig. 7. Seal no. 4 (Drawing: A. Sahakyan, IAE).

2 For the Trialeti-Vanadzor culture in Lori Berd see Devedjyan 2006a.

tively simple iconography and unitary material indicate the local origin of this type of seals.

Seal no. 4 (Figs 6, 7)

Context: The seal was found in Tomb no. 2 (length: 5.8 m., width: 2.35 m.; height: 2.45 m).Two burials were documented: The first one was dated to the Late Bronze Age whereas the second, which was found in the upper levels of the tomb, refer to 7–6th centuries BC and showed a body inhumation. A skeleton of a middle-aged man was lying in the middle of the chamber. The seal came from the later burial. It was lying along with other stone and faience beads as well as with golden and silver jewelry on the chest of the buried person.

Size: Height: 1,5 cm, diameter: 1,6–1,7 cm.

Material: Yellowish faience.

Form: This seal has a small conical head which is separated by a narrow groove from the main part, nearly trapezium-shaped in profile. The seal is drilled horizontally on the part of the groove. This used to serve for hanging the seal. The main part is decorated by relative deep triangle-formed notches around the surface of the seal. The image is depicted on the base of the seal.

Design: On the flat surface of the seal the image of a winged sun disk is depicted. In the middle the circular element of the sun disc is relatively deeply inscribed. Around the circle its rays and "hands" can be seen. Above the sun disc a horizontal semicircle is depicted.

Parallels: Seals from Halaf (Hrouda 1962, no. 71), Hasanlu (Marcus 1996, 104, no. 26) and from Surkh Dum-I Luri (Schmidt, van Loon, Curvers 1989, 450, 472).

Classification: In the archaeological literature this type of seals are known as conoid-knob seals. They represent a relatively small group distributed mainly in Northern Mesopotamia and Northwestern Iran, that mostly date back to the late 9th to 7th centuries BC (Wicke 2016, 85). Comprehensive studies on these objects were made by Marcus (1989, 53–63; 1996, 102–107), Meyer (2008, 47–48.) and Wicke (2012, 685–712; 2016, 85–93). In this sense the separation of the so called "FSV" (*Flügelsonne, Skorpion, Vogel*) suggested by Wicke is particularly important: the three types of the objects (conoid-knob seals, scarabs and amulets as well as their impressions) of this group consist mostly of the same material (frit) and are designed with similar images (Wicke 2012, 687–688; 2016, 85–87). So the question of the origin of conoid-knob seals should be discussed in the context of "FSV" group. Although Marcus classifies several conoid-knob seals from Hasanlu into "Other Iranian styles", she has doubts that the very number of this type of seals indicate the decisive argument that they originate from Northwestern Iran. Nevertheless, Yengibaryan refers to Marcus's definition of the seal group name and expresses the opinion that the conoid knob seals in Armenia originate from Northwestern Iran (Yengibaryan 2015, 159–162). This is neglected by the fact, that the integration of scarabs in the "FSV" group would exclude Northwestern Iran at least as being the only area of origin for conoid-knob seals. The same can be argued about Assyria and Babylonia since in this period the cylinder seals were the most common form in Mesopotamia. In consideration of scarabs one could discuss the Levant as a possible source for "FSV" objects, but the scarabs of that group are free from Egyptian design, regardless the strong Egyptian influence in the Levantine art, and, finally, only few conoid-knobbed were found here (Wicke 2012, 695). Thus the most plausible area stays North-Syrian region, which is not only situated nearly in the center of the areas, where "FSV" objects were found (Wicke 2016, 87, fig. 9/4), but also combines the traditions of usage of frit as material, scarab and stamp seals as forms and some designs of "FSV" (e.g. scorpions: Wicke 2012, 696). These arguments are amplified with the fact that the Assyrian influence on Northeastern Syria increases starting from 8th century BC, which clarifies the occurrence of winged sun disk on the conoid-knobbed seals.

The identification of Northeastern Syrian region as the most probable area of origin for conoid-knobbed seals gives us a hint that the specimen from Lori Berd could have made its way to nowadays Northern Armenia from Northeastern Syria, but also from Northwestern Iran, since this region can be considered as an alternative area of the origin of conoid-knobbed seals, in case we assume that the "FSV" group's objects do not necessary share only one workshop of production: the point is, that explicitly the conoid-knobbed seals in Iran have not been a matter of a serious research and the research lacks any final evaluation on this topic[3].

In any case, the conoid-knobbed seal from Lori Berd along with the one from Karmir Blur (Piotrovsky 1950, 70) represent a unique example of "FSV" group in South Caucasus and possibly contacts with Northeastern Syria. By investigating it in the context of other conoid-knobbed seals from the entire Near East, it should be dated to 8–7th centuries BC.

Previous publications: Devedjyan 1981, 25, tab. IX.

3 For this information we thank Prof. Dr D. Wicke, given on 4th of May, 2018.

Seal no. 5 (Figs 8, 9)

Context: The seal no. 5 was uncovered in chamber no. 2 (length: 8.30 m; width: 3.20 m; diameter: 3.10 m) of the double-chambered Tomb no. 63. It was found on the ground of the tomb, next to the eastern wall, where five ceramic vessels were placed. The seal was put into the biggest of them, presumably full of wine.

Two human burials were detected in this chamber: a skull of s 40–50 years old male person, and arm bones and teeth presumably of a 25–30 years old woman, whereas the seal has been found in the area of the man.

Size: Height: 2.12 cm; length: 1.9 cm; width: 0.88 cm.

Material: (Probably whitish) calchedon.

Form: The seal is theomorphic and has been cut in the form of a (possible) seated sheep. Slightly over the bottom part of the seal figure a cylindrical bore is horizontally perforated, which facilities the hanging of the item. The body of the animal creates a platform on its bottom, which makes the "canvas" of the image below the seal.

Design: As already mentioned, the image can be on the flat oblong vertical surface on the bottom of the seal. In the lower center of the image a three-leaf plant, flanked by two knelt individuals, can be observed. The letters wear long garments covering the head, which seem to covered with a fringe. With one hand, they are directed to the three-leaf plant and with the other, to the object in the upper center, which is characterized with two hanged hands. This part of the seal is damaged and the picture is not completely preserved.

Nevertheless, the garments of the individuals are well known in Urartian art and refer to the women of higher class or priestesses. Moreover, the position and form of the object in the upper center can be considered as a depiction of a winged sun which poses its hands down.

Parallels: The closest parallel of the seal no. 5 concerning the form is a stamp seal from Karagündüz, Tomb K5, which dates to the beginning of the 1st millennium BC (Özfirat 165, fig. 13, K5). Other two zoomorphic seals come from Karmir Blur (Piotrovsky 1955, 51, fig. 41, no. 17; 1962, 122, fig. 81) and one from Hakko (Piotrovsky 1952, 47, 53, fig. 23), which are shaped in the form of a reclining bull. Other parallels represent the lion-shaped golden seal from Patnos (Ayvazian 2006, 989–990, NP 41) and a bull-shaped stone seal from the art market (Seidl 1988, 153, D34', pl. 37/7). It is noteworthy, that the example from Hakko and the one without any concrete provenience bear

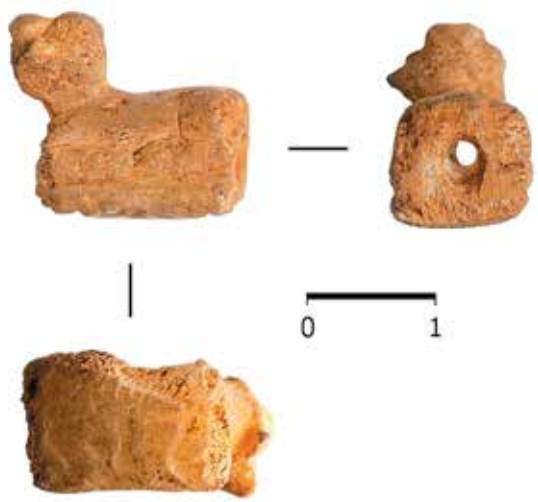

Fig. 8. Seal no. 5 (Photo: V. Hakobyan, HMA).

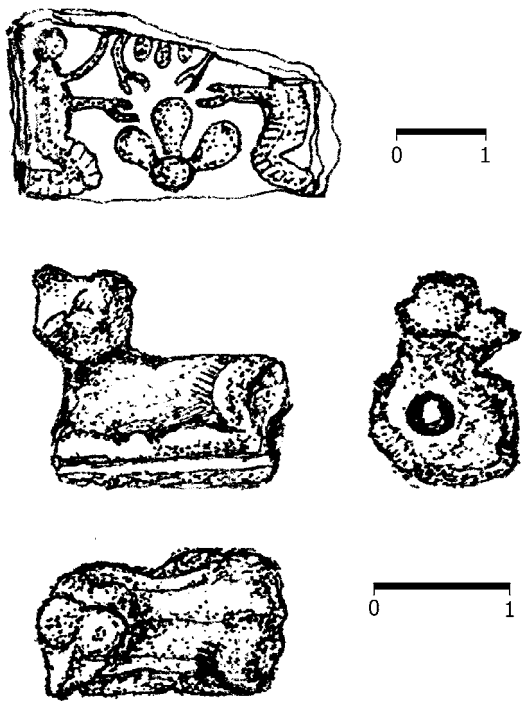

Fig. 9. Seal no. 5 (Drawing: A. Sahakyan, IAE).

a design of a winged sun disk, whereas the latter – an adorant worshipping the sun. Despite the zoomorphic character, the head of the animal on the seal of Lori Berd is directed to its left side, whereas the ones of the parallel seals look straight.

Concerning the composition of the seal design it can be compared with a rounded stone casket from Karmir Blur (Piotrovsky 1959, tab. XLIX). It shows two winged genies in a similar hand position like on the zoomorphic stamp seal of Lori Berd, which in this case stand on the both sides of a tree. A winged sun disk with stretched hands is depicted above the tree.

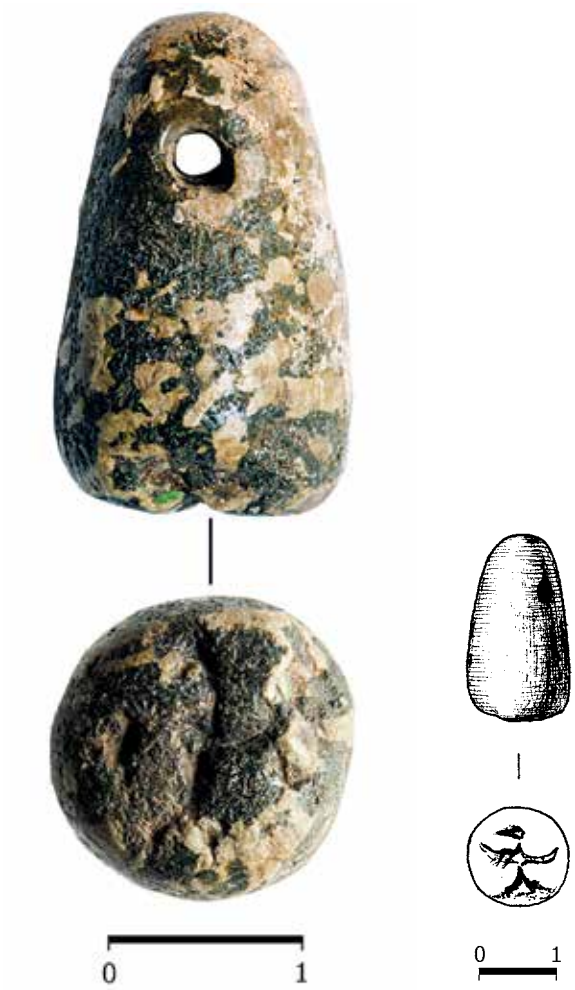

Fig. 10. Seal no. 6 (Photo: V. Hakobyan, HMA).

Fig. 11. Seal no. 6 (Drawing: A. Sahakyan, IAE).

Fig. 12. Seal no. 7 (Photo: R. Davtyan, IAE).

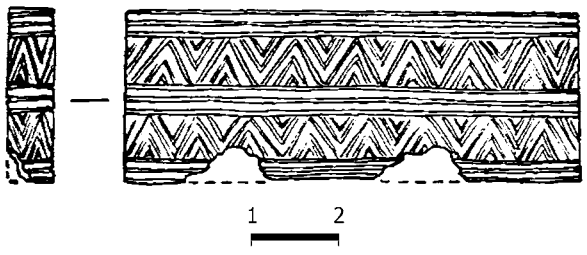

Fig. 13. Seal no. 7. Impression. (Drawing: A. Sahakyan, IAE).

Seals in the jars: The archaeological context of the seal no. 5 (found in a jar) is also remarkable[4]. The practice of putting seals in the vessels was not unknown in Karmir Blur. Piotrovsky reports about a disk-shaped seal from the storage vessel (or *karas*) no. 62 in the storage room no. 25 (Piotrovsky 1952, 45, fig. 22, no. 16) and five bull-shaped, cube-shaped, faceted and conical seals from the storage vessel no. 15 in the storage room no. 28 (Piotrovsky 1952, 45–47, fig. 22, no. 19–23)[5]. It must be mentioned that other objects were also inserted in the storage jars: in the *karas* no. 5 of the same storage room no. 25 a big number of bronze bowls with cuneiform inscriptions with the names of Urartian kings Minua, Argišti, Sarduri and Rusa were stalked on each other (Piotrvoski 1952, 20). Piotrovsky suggests that this was done in order to hide the bowls during siege of the fortress.

In another case, a bronze bracelet and golden sheets of a lion-shaped figurine were found in four wine jars in room no. 40 in Karmir Blur (Piotrovsky 1955, 22). According to Piotrovsky this might have been a rite, which, though, is not certified with comparisons (1955, 22). Thus, it is clear that the zoomorphic seal of Lori Berd was not fallen into the wine jar accidentally, but was put in it consciously and thus the observation of Piotrovsky on this phenomenon is further supported.

To sum up, it is obvious that the appearances of the discussed contemporary practice are very similar Lori Berd and Karmir Blur. Without excluding any practical meaning of that practice for some of the examples from Karmir Blur, we think that in case of Lori Berd the intentional inserting of the seal no. 5 into a jar should be considered as a ritual or magical act. The usage of seals in this practice strengthens the magical significance of the seals, which will be discussed later in this article. Nevertheless, it should be mentioned, that these assumptions are not based on any textual or oral tradition handed down to us.

Classification: The design of the seal, especially the tree adoration and winged sun disk is typical for Urartian art and can be seen not only in glyptic, but also on metal art works. The kneeling figures are mostly considered to be worshipping female persons.

While the shape of the seal, as well as the main design elements, especially the worshipping figures are typical Urartian, we would suggest that this seal was

4 Probably the jar was full of wine, which can be inferred from the reddish colour of the seal.

5 The form designations are taken from Ayvazian 2006, 45.

produced in the period when the Assyrian influence on Urartian art became stronger. This influence can be detected especially on the symmetric composition of the seal design. Based on this and having the above-mentioned comparisons with Karmir Blur and Hakko in mind, we can suggest dating this seal to the 7th century BC (probably around the middle of the 7th century BC).

Hence, the zoomophic stamp seals are well known in Urartian art, although they do not indicate a significant amount in the corpus of Urartian seals. Nevertheless, they seem to have played a specific role as administrative seals. Ayvazian argues that the occurrence of the winged sun disk on this small group of seals reveals their administrative character (Ayvazyan 2006, 90). It is noteworthy that the sole Urartian golden seal (from Patnos) belongs to this small group. Therefore, it is very likely they may have been offerings as well as as amulets (Piotrovsky1952, 47; Ayvazian 2006, 90).

Previous publication: Devedjyan 2007, 138.

Seal no. 6 (Figs 10 – 11)

Context: This seal comes from Tomb no. 56. This is certainly the richest tomb of its period: it has three chambers. The seal has been discovered in chamber 2, which is the biggest among the three (length: 8,7 m., width: 2.7 m., diameter: 3 m.). It has been found on the floor of the burial, next to the wall niche no. 2., next to the two sheep skulls, a pig skull and other bones. The location of the seal was not far from the male skeleton.

Size: Height: 2,5 cm, diameter of the bottom: 1,3 cm.

Material: Brownish hard stone.

Form: The seal has a conical form. Starting from the rounded top it broadens till the circular bottom. At the top in the center of the seal there is perforation to hang the seal, like in previous cases.

Design: On the circular, uneven base of the seal a figure can be observed. Although the traces of the stylus (or another decorative instrument) are relatively deep, the picture of the seal is not easily recognizable. Nevertheless, comparing with other known conical seals it might show a bird, which flaps its wings. Considering the wide wings and relatively big head, it could be an eagle.

Parallels: Parallels concerning the conical form come from Karmir Blur, Armavir, Hasanlu, Norshuntepe (summarized in Ayvazian 2006, 83 – 84). The closest parallel can be considered the seal from Sarukhan (Yengibaryan, Bobokhyan 2018, 120, fig. 2/11).

The conical seal from Lori Berd with its bird-like picture matches also with some of the designs of the seals. A seal from Armavir (Barnett 1963, fig. 40/8) and one from Hasanlu (Marcus 1996, fig. 117) show mythological winged creatures, whereas another one from Armavir (Barnett 1963, fig. 40/7) and two further seals from Karmir Blur (Piotrovsky 1952, 45; 1962, 105, fig. 70/1) indicate images of birds[6].

Classification: Both shape and design can be found in the Urartian glyptic. In most cases, the conical seals come from Urartu or neighboring areas. Most probably, they have been produced in Urartu as well (Ayvazyan 2006, 83).

Concerning the usage of conical seals Ayvazyan expresses the opinion that "…the simplicity of the motifs, puts these seals in contrast with the more elaborate and traditional forms and motifs that were used in higher levels of the administration." and concludes that they were probably used in the lower level of Urartian administration (Ayvazyan 2006, 84).

Previous publication: Devedjyan 2007, 146 – 149.

Seal no. 7 (Figs 12 – 13)

Context: The seal has been found in Tomb no. 56-II among beads from stone, paste and glass.

Size: Length: 2.51 cm., diameter: 0.71 cm.

Material: Black quartzite.

Form: Cylindrical form, one end is damaged.

Design: Through three horizontal lines, the scene is divided into two registers, where continuous rows of three triangles are seen. The triangles are placed into each other and mirrored in the upper and lower registers.

Parallels: Cylinder seals with geometrical patterns are known from the entire Near East. This type of seals found in the territory of Armenia and dated to the first half of the 1st millennium BC are known from Kapan (Aleksanyan et al. 2018, 311), Sarukhan (Piliposyan 1998, 30, pl. 26/12), Armavir Blur (Piliposyan 1998, 30, pl. 26/12), Yeghegnadzor (Piliposyan 1998, 30, pl. 26/4). The specimen from Kapan is preliminary dated to the end of 2nd millennium to the first half of the 1st millennium BC (Aleksanyan et al. 2018, 307).

The parallels for seal no. 7, which are mostly dated to the first half of the 1st millennium BC are known from Azerbaijan as well as from Northwestern and Southwestern Iran. They were discovered in Kalakent (Nagel, Strommenger 1985, 92, fig. 58/j), Hasanlu (Marcus 1996, 107 – 109), Sialk (Ghirshman 1939, pl. XCVII), Marlik (Negahban 1977, 95 – 98), Susa (Amiet 1972, no. 2097, 2115), Surkh Dum-i-Luri (Schmidt

6 According to Ayvazian, the picture of one of the seals (Piotrovsky 1952, 45) shows a winged quadruped (2007, 768, KB38).

Fig. 14. Seals no. 8–10 (Photo: R. Davtyan, IAE).

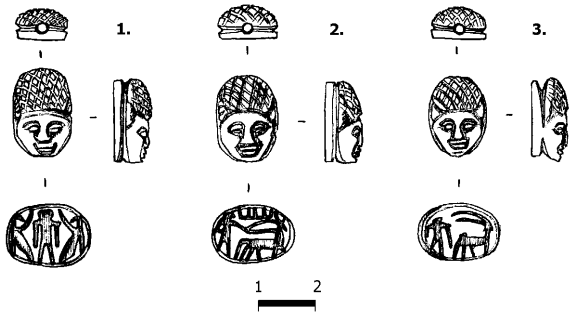

Fig. 15. Seals no. 8–10 (Drawing: A. Sahakyan, IAE).

et al. 1989, 462, pl. 248, no. 215–218) Choga Zambil (Porada 1970, no. 128, 144, 153).

Classification: Marcus classifies this type of seals into the group of Geometric-Style Cylindrical Seal-Beads, in the stylistic category of "Other Iranian Styles" (Marcus 1996, 36–37) and thus already in the name questions whether they were used as seals or worn as beads.

In terms of geography and contemporaneity the specimen from Kalakent and Hasanlu are of special importance for the seal no. 7. The inventar of Tomb no. 29 (Nagel, Strommenger 1985, 92, fig. 58) is comparable with the ceramic vessels found in the Tomb no. 56-II in Lori Berd. Therefore, we think that the Tomb no. 29 can be attributed to 7–6th centuries BC.

The mentioned seals from Hasanlu belong to the phase IVB, the destruction of which can be moved to "sometimes after 800 BC." (Magee 2008, 103). Thus, it should be underlined that the comparative seals of Hasanlu and Kalakent are contemporary to seal no. 7.

With its design of two registers, seal no 7 corresponds to seal no. 20 from Marlik (Negahban 1977, fig. 18) and no. 34 and 35 from Hasanlu (Marcus 1996, figs 59, 60).

As in case of seal no. 3, we consider the seal no. 7 also as example of local production. In the context of the other comparable seals, this object is specific both in its design (arrangement of the triangles) and in its technical elaboration. Chronologically it is also one of the latest specimen of its kind. Without assuming that the cylinder seals with geometrical patterns were all produced in a single workshop, we would like to point out that in the later phase of their existence the design became imaginative and the creation technique (at least in case of seal no. 7 from Lori Berd) more diligent. Thus, it seems that the stylistic development of the discussed seals took place simultaneously in the vast area between Western Iran and South Caucasus starting at least from the mid-2nd millennium BC.

The finding circumstance of seal no. 7 can be compared as well with those from Hasanlu: several examples from Geometric-Style Cylindrical Seal-Beads were also found among the beads and presumably were considered as beads (Marcus 1996, 37).

Seal no. 8 (Figs 14/1, 15/1)

Context: The seals no. 8–10 were found in the Tomb no. 62 which had a relatively big soil pit chamber (length: 11 m., width: 4 m., diameter: 3.4 m). The seals were found from the southwestern part of the chamber along with the bronze vessel, golden sheets for incrustation, spindle-like object with carnelian head. This area of the chamber was assigned for the human body, whose bones showed a very bad preservation, so that no data on sex and age was possible.

Size: Length: 1,58 m., width: 1,11 m., height: 0,7 m.

Material: Glazed steatite or whitish faience.

Form: The form of the three scaraboids (no. 8–10) is identical: the seals have oval form with oblong perforations. The back of the seals is engraved in the same manner: Roughly the half on the bottom represent a human face, where all the face parts except the ears can be

detected. The upper part is symmetrically reticular and the hair of the head is seen. The faces on the three seals, which differ only in little details, have emphasized lips. In general, this type of seal has been also called "African head" scaraboids (e.g. Gorton 1996, 92).

Design: A heraldic composition of a human image, which is flanked by two birds both oriented to the human figure and spreading their wings towards him can be seen. The body of the figure in the center is *en face*, whereas his face is looking to the right.

Parallels (*in design*): The design of seal no. 8 can be compared with a scarab from Fribourg, on which the same composition and even the position of the human figure and the birds is depicted (Matouk 1977, 400, no. 1556).

Classification: The motifs of the seal no. 8 are relatively well documented in Egyptian and Levantine art. Also the heraldic composition and the spreading arms of the birds testify that the artist had a deep knowledge of the Egyptian art. The human figure, which is depicted in all three scaraboids of Lori Berd, can be considered as Horus, although the falcon-like appearance is not recognizable.

Previous publications: Devedjyan 1998, 3–4; Devedjyan, Hmayakyan 2002, 185–194, fig. 1.

Seal no. 9 (Figs 14/2, 15/2)

Context: See no. 8.

Size: Length: 1,5 m., width: 1. 08 m., height: 0,69 m.

Material: Glazed steatite or whitish faience.

Form: See no. 8.

Design: A similar human figure like can be observed on the left and an ungulate (probably horse) on the right side. The human figure holds the reins of the horses with one hand. The human figure seems to lean on its left foot. Above this composition, a hieroglyphic symbol is depicted.

Parallels: A number of scarabs bearing the depiction of human figure holding horse reins are well known from Early Iron Age sites in the Eastern Mediterranean area: Tell Qasile, Tell Far'a, Gezer, Acre (Shuval 1990, no. 4–10), Akko (Keel 1997, 562, no. 92), Amrit (Giveon 1985, no. 54.48150), as well as Naukratis (Gardner 1888, pl. XVIII/67).

Classification: In case of several comparable scarabs, a wheel can be observed under the human figure. According to the investigation of Keel, in the iconography of scarabs the wheel was replacing the chariot motif (Keel 1990, 289), which was common in Ramesside period in Egypt (13–11th centuries BC). Simultaneously, this development led to the disappearance of the wheel itself, whereas the main meaning of this composition (the human domination over the nature) stayed (Keel 1990, 289, fig. 130). The symbol above the scene can be a version of the so-called "drought-board" hieroglyph number Y5 in Gardiner's list, which is pronounced as *-mn-* (Gardiner 1988, 534).

Previous publications: Devedjyan 1998, 3–4; Devedjyan, Hmayakyan 2002, 185–194, fig. 2.

Seal no. 10 (Figs 14/3, 15/3)

Context: See seal no. 8.

Size: Length: 1,42 cm., width: 1 cm., height: 0,69 cm.

Material: Glazed steatite or whitish faience.

Form: See seal no. 8.

Design: From the point of view of the composition, this seal can be associated with the no. 9. Also a human figure leaning on his left foot and an animal is seen, although this time it is a picture of a goat and is not bridled.

Parallels: The motif of the human figure standing behind the caprine is well known in Egyptian art. A scarab from British Museum (without provenience) shows a similar composition with exaggerated horns like on the seal no. 10 (Giveon 1985, 188–189, no. 35). Two more parallels are known from Fribourg museum (Matouk 1977, 196, 403, no. 1732; 387, no. 747). The first example represents a human-face scaraboid like the seal no. 8-10. The seal from the Bet-Shean is dated to the 830–600 BC and is kept in kibbutz Bet-Alpha (Keel 2010, 182–183, no. 193)

The design of the human figure standing behind a goat is attested on two faience scarabs from Perachora (Gorton 1996, 74, fig. 4; 116, fig 7).

Classification: The first example from Perachora is classified to the Gorton Type XXII A, which is mainly found in Perachora and Rhodos, whereas no direct links to Naukratis fabric could be attested (Gorton 1996, 63). The second example belongs to the Type XXXII A of Gorton and in contrast to the first one seems to be manufactured in a forerunner factory of Naukratis (Gorton 1996, 91). Both mentioned types are spread mainly in Aegean and Italy and date approximately to 700 BC.

Egyptianized seals from Lori Berd are not the only examples in South Caucasus, they were found also in Armavir and Karmir Blur (Piotrovsky 1958, 20–21). In contrast to these, the examples from Lori Berd represent scaraboids.

The human-face scaraboids are becoming widely spread among egyptianized seals in Egypt, the Near East

Fig. 16. Seal no. 11 (Photo: V. Hakobyan, HMA).

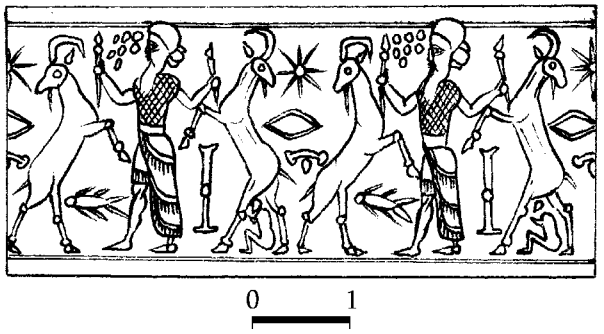

Fig. 17. Seal no. 11. Impression (Drawing: A. Sahakyan, IAE).

Fig. 18. Seal no. 11. Impression (Photo: V. Hakobyan).

as well as the Mediterranean from the last century of the 2nd millenium BC till the 7th–6th centuries BC (Keel 1995, 72).

After the classification of Stoof, all examples from Lori Berd belong to the type IIb of the human-head scaraboids (Stoof 1992, 174–175). These scaraboids were uncovered in big numbers from Naukratis, which was a Greek colony in Nile delta and from Kartago in Tunisia, whereas other examples are known from Portugal, Italy and Levante and date to 7–6th centuries BC (Stoof 1992, 78). Geographically the closest parallel to Lori Berd represents the human-head scaraboid from tumulus I in Gordion, which was dated to the 6th century BC (Dusinberre 2005, 46–47, cat. no. 23, fig. 33). Most of the mentioned specimens of human-head scaraboids were found in the scarab workshop from Naukratis, from which 12 examples belong to the type IIb (Stoof 1992, 40).

The Naukratis workshop or "Scarab Factory" uncovered by Petrie near the sanctuary of Aphrodite (Petrie 1886, 36–8) was identified as the place of origin for this and other types of seals (Gorton 1996, 91–131).

Although this question remains debated, it is generally agreed that the main phase of activity for the "Scarab Factory" should be situated between 600 and 570 BC (Masson 2018, 5). Among the numerous molds found in Naukratis a big number belonged to the Black African heads, so that this motif was very familiar to the artisans in the "Scarab Factory". From another point of view, it is important to mention that the three scaraboids of Lori Berd are mould-made. All features of the head are cut and the designs on the underside are incised[7]. Nevertheless, some Black African head scaraboids that are not mould-made were also discovered (and likely produced) in Naukratis. Thus Naukratis workshop is the only plausible candidate for being the place of fabrication for the three scaraboids from Lori Berd.

The scaraboids from Lori Berd probably were imported from Urartian administrative centers. How they reached Urartu in their turn is a matter of consideration. According to Piotrovsky the intermediate region for the Egyptian finds in Urartu was Assyria, where scarabs and scaraboids are known in a certain number (Piotrovsky 1958, 21). Although Hmayakyan and Devedjyan express the hypothesis of a possible Uratian-Egyptian relations within the Assyrian wars against Babylon and Media in the late 7th century BC (2002, 185–194), the evidence of such a relation can be only presumed. In any case, it is certain, that these objects do not indicate any relation between the society in Lori Berd and Egypt and reached the modern-day Northern Armenia via mediators.

According to the tomb context, as well the several parallels from stratified context, the scaraboids of Lori Berd can be dated to the beginning of 7th century BC.

Previous publications: Devedjyan 1998, 3–4; Devedjyan, Hmayakyan 2002, 185–194, fig. 3.

Seal no. 11 (Figs 16–18)

Context: The seal was found in Tomb no. 106 which had a stone chamber (length: 5.8 m., width: 2.25 m., height: 2.11 m) and comprises a significant amount of ceramic and metal objects[8]. The seal was lying next

7 For these observations we thank Ms Aurélia Masson-Berghoff.

8 Some burial objects are published in Devedjyan et al. 2008, 108–122.

to a male skull of the entombed corpse laying on a stone slab in the eastern corner of the tomb. According to the unpublished 14C analysis, the tomb is dated to the mid-5th century BC[9].

Size: Length with mounting: 4.8 cm, length of the cylinder: 2.85, diameter: 1.17 cm

Material: Pinkish chalcedony, gold.

Form: The seal consists from an cylinder with an elongated perforation, two golden caps grabbing two ends of the cylinder and a golden pin with pendant. After the pin was inserted in the perforation of the cylinder, its edge was bent so that the hook would not let the cylinder fall down.

Design: The main scene is represented by a standing figure, which seizes two upstanding caprids from the right and the left sides. The face of the figure is profiled. The body is slightly bent forward.

The figure's hair are tied up and doesn't reach the shoulders. It's uncertain whether the figure wears any headband. He has a long beard. The upper part of the clothing is held by a thick belt around the hips and is covered with squares decorated cloth representing a one-piece garment turned over the figure. The seized goats are pictured in an upstanding position. Their heads are turned backwards. Each of them has one goatee (pointed beard).

The scene is full of filling motifs. An eight-pointed star and seven dots are depicted on the upper part. In the central part a horizontal lozenge and a staff with a dot can be seen. Between the legs of the human figure and goats there is a fish, vertical staff and a figure resembling a monkey.

From the technical point of view at least three manufacturing methods can be detected on the chalcedony cylinder: the implementation of (probably bow-driven) drill (circular traces), cutting wheel (linear or curvilinear, mostly fleeting features) and file (various shapes).

Combat scene and filling motifs: The combat scene in Neo-Assyrian or Neo-Babylonian iconography is quite widespread. As the main character appears a genius (guardian spirit) or a hero, who defeats an animal or hybrid creatures.

The seal researchers usually connect the picture of a combat scene with the modelled style, which shows an increasing development during Sargonite. The seals of modelled style are curved primarily with chisel, therefore most of the fine details are visible. It should be mentioned that also other tools such as circular-end drill could be applied in modelled style.

Frankfort has established (Frankfort 1939, 190) that the seals of this style were widespread during the reign period of Sargon II (721–705 BC). They are known under the term "Late Combat Scene" in Porada 1948, 91–92. They are often grouped around the seal of Urzana, king of Muṣaṣir, who was the contemporary of Sargon II (Moortgart 1966, 73–75; Buchanan 1966, 118). With its inscription, Urzana's seal creates a dating point for other seals of modelled style.

With its theme and diligent preparation the cylinder seal from Lori Berd corresponds to the modelled style. From the technical point of view it can be classified into the "Creation group" 5 and 6, defined by Fügert (2015, 348). Indications for that are the thorough modeling of human face, musculature and the garment, as well as the details of the goats.

The filling motifs usually replace the images of the deities (Collon 1995, 69) or represent them. Numerous investigations on written sources and art objects support us to interpret symbolism of the filling motifs. Hence, the astronomical symbols – the seven dots, which are associated with deity Pleiades (*Akk* "sibittu") and the Ishtar-star are arranged on the top of the surface. The identification of the so-called "ball-and-staff" is still unclear (Collon 2001, 12). The creature, depicted between the goat's legs should be considered as a monkey. The vertical stuff refers to stylus, which would be the symbol of the god Nabu (Seidl 1998, 25).

The identification of the lozenge and the fish is also uncertain: they appear quite frequently (almost 20 %) in the Neo-Assyrian and Neo-Babylonian cylinder seals: it should be noted, that these two, as a rule, are depicted in the same position – both either vertical or horizontal (Seidl 2006, 134–136). According to Meinhold it can be associated with the goddess Pu-u-lishanu (*akk*. "mouth and tongue"), who was a mediator goddess between the goddess Ishtar and human (2009, 130–135). The fish can be associated with the god Ea and his son Asaluḫi (Seidl 2006, 137–138).

As already was mentioned, the discussed seals date back to the beginning of the reign of Sargon 2. Hence the manufacture of the Lori Berd's seal can be dated to the end of 8th till mid-7th centuries BC.

Origin of the seal: The cylinder seal is obviously not a local product but was imported from Mesopotamia to Lori Berd. It can be a Neo-Assyrian or a Neo-Babylonian product. Although from beginning of mid-8th century BC the Neo-Babylonian and Neo-Assyrian seal traditions conglomerate to a big extend and the classification is complicated, sometimes there are features which can give a hint to assess to one of the two cultural

9 The 14C analysis was done in the Poznańskie Laboratorium Radiowęglowe.

groups (Porada 1947, 145). The long garment (Porada 1947, 156) and the image of *sibittu* (Fügert 2015, 35; Collon 2001, 14) on the seal are Assyrian characteristics. To classify the discussed seal into the Neo-Babylonian group, the following features are relevant: goats as antagonists of the genius or hero (Herbordt 1992, 93; Wittmann 1992, 192–193; Collon 2001, 167), topknots of the genius or hero (Wittmann 1992, 209), the stylization of the joints of genius or hero (Wittmann 1992, 199), the images of Nabu (Porada 1948, 98–99) and squatted monkey (Fügert 2015, 37; Böhmer 1975, 343).

As it was mentioned before, the seal from Lori Berd has been discovered in an Achaemenid period tomb of the 5th century BC. In that time Babylon was one of the capitals of the Achaemenid Empire and an important political and economic center (Dandamayev 1988, 326–334), which leads us to consider that it is more plausible that the seal was brought from Babylonia rather than from Assyria.

Contemporary Neo-Assyrian/Neo-Babylonian seals: The occurrence of the Neo-Assyrian or Neo-Babylonian seals in Achaemenid period is not an exception. A seal impression, which presumably originates from Sippar and shows a genius or hero with a rhombus, is dated to the third reign year of Cyrus (Graziani 1989, 161, no. 1). Some other seal impressions were found in Sippar. There are two without an owner's name classified as Neo-Assyrian and Neo-Babylonian and date to the 1st and 15th years of the reign of Darius I (Altavilla, Walker 2009, 140–141, no. D03, C22). With owner's names are the no. G15 and C05. Similar to the seal from Lori Berd, the no. C05 shows a combat scene with a genius or hero and subjugated animal (Altavilla, Walker 2009, 137 no. C05). The impression originates from the 26th–28th Darius I's reign and presumably belonged to Marduk-remanni, a native Siparrian, who was operative in the temple administration and later in province government (Waerzeggers 2013, 3–19)

Four Neo-Assyrian or Neo-Babylonian seals were found also in Persepolis. To the 9–8th centuries BC are dated a cylinder seal made from green-white chalcedony with a combat scene found in Plot HF 29 (Schmidt 1957, 45, pl. 16, PT5 415) and another one from Plot HG 70 (Schmidt 1957, 45, pl. 16, PT6 1). The cylinder seal PT4 484 from auburn stone comes from Room 32 of the Treasury (Schmidt 1957, 45, pl. 16), whereas the seal PT5 791 is from clay and was found in the "Garrison street" (Schmidt 1957, 45, pl. 16). Both objects are classified as Late Neo-Assyrian (Schmidt 1957, 42–43).

Seal impressions which refer to the seal of Arystone (one of the wives of Darius I and daughter of Cyrus)were uncovered in Persepolis. It shows a human figure between two hybrid creatures and filling elements as well as a tree (Garrison, Root 2001, 83–85, pl. 10,11). This seal was prepared in 8th century BC and the wife of Darius I was still using it around some 200 years later (Seidl 2005, 157–158).

Classification: It must be concluded that the usage of earlier seals in Achaemenid court and for the elite of Persian Empire was not uncommon. These were not serving as talismans but rather in their initial function of sealing documents as we saw in case of Marduk-remanni or Arystone. The examples show that the mentioned seals were used exclusively in the governmental circles of Achaemenids. Thus the ownership of the Neo-Babylonian seal in Armenia could occur solely by individuals, who were familiar with the norms and customs of the king's court or satraps' palaces.

But could the seal reach Armenia during the Neo-Assyrian period, when the seal was manufactured and buried in the Tomb no. 106 as late as some two centuries later? In our opinion it is less likely, because Lori Berd was not included in the Urartian Empire, which had an intensive cultural exchange with Assyria, especially from the 7th century BC, but most probably was situated in Etiuni. Although according to the spy report from the period of the reign of Sargon 2 the Assyrian authorities got in touch with Etiuni and tried to instigate a war against Urartu (Saggs 1958, 211–212 ND 2453, 10–30). There are no other indications of the cooperation between two parties, which could lead to the donation or purchase of the seal.

In contrast, the entire Armenia, including the territory of Lori Berd later became a part of the Achaemenid Empire. It is probable that the buried man had a close contact with the satrap. Eventually, the seal was a prestige gift brought from Babylon or Persia to the local ruler of Lori Berd. The high social status of the buried man is verified by the anthropological investigations on his body. According to Khudaverdyan, his teeth were heated to temperatures between about 300 and 500°C, which marks the high social status of the 50–55 years old individual (Khudaverdyan 2014, 176, fig. 8).

Previous publications: Davtyan 2017.

Discussion

In total, there are eleven seals from seven tombs in Lori Berd. While Tombs no. 2, 7, 63, 106 had just one seal, the Mittanian seals in Tomb no. 25, the Egyptian scaraboids in Tomb no. 62, Urartian and a local seal in Tomb no. 56-II, were found together.

In the entire Near East, starting from the 6th millennium BC, seals were used primarily to mark owner-

ship and as a token of protection (Otto 2009, 469–474; Collon 1987, 113). With the rise of writing systems in the end of the 4th millennium BC, the cylinder seals along with the other types gained more importance by including the sealing practice of legal documents, treaties, and letters, which lasted until the Achaemenid period (Stein 1997, 104; Collon 1987, 113).

The Mittanian seals are known in South Caucasus starting from the mid-2nd millennium BC. According to Piotrovsky in Caucasus (e.g. in Lchashen) they were used even after the fall of Mittani. Without any sealing practice, the occurrence of a row of Mittanian seals in Caucasus can be considered as an indicator of social and / or political wealth. They also reveal the down-the-line-trade between northern regions of Syria and Caucasus via the Van region (Piotrovsky 1963, 11).

In contrast with other regions of the Near East, there is no evidence of writing system or sealing practices in Lori Berd, starting with its Middle Bronze Age layers and ending with the tombs of the Achaemenid period. Moreover, the sealing practice of documents emerged in Urartu not earlier than in the 7th century BC, with the introduction of administrative reforms by king Rusa, son of Argišti (Salvini 1995, 103). In any case, Lori Berd and the entire province of Lori were never a part of the Urartian kingdom (Herles, Davtyan 2017, 49–50). This proves that the seals in Lori Berd were not used in its original intended meaning--i.e. for sealing documents or other textual material, but for a completely different set of intercommunal and intracommunal social practices.

Intercommunal Aspect

Analyzing the legal and representative aspects of Ur III seals, Winter concludes that "…seals not only reflect, but actually provide evidence for, the organization of the state bureaucracy" (Winter 1987, 93). As mentioned before, we cannot speak of state bureaucracy in the case of Lori Berd. Nevertheless, Winter's statement can be applied to Lori Berd in the sense that the historical periods of the seals correlate with the occurrence of cultural influence—or at least cultural exchange—from a state organization on Northern Armenia, i.e. in seals no. 1–3 it is Mittani, in seals no. 5–6 it is Urartu and in seal no. 11 it is the Achaemenid empire.

Therefore, the seals can be considered as gifts to the representatives of tribal communities, most probably to the ones having political and economic power in Lori Berd. They could have reached Lori Berd from administrative centers of Mittani (seal no. 1–2), Urartu and the Achaemenid empire in different historical periods.

The exchange of prestigious gifts between social elites as a sort of "guarantee" of their contact fits into Marcel Mauss's model, where the gift represents a deeper socio-political relation between communities (Mauss 1990, 11).

Intracommunal Aspect

On the other hand, the gift, purchase as well as the wearing of seals was a symbolic action directed to the local community of Lori Berd. It was a visual message to them, conveying the elevated social rank of the person owning the seal. In other words, the seal points out the legitimation of the seal-owner as a representative granted by the third party (Winter 1987, 70).

However, it is noteworthy to mention that there are important differences in quality and value of the seals. The types of seals no. 1–2 or 5–6 had no outstanding importance in the context of the glyptic traditions in Mittani or Urartu respectively, similar to seal no. 4 in Northern Syria. In contrast to them all the seal no. 11 stands out, with its elaborated design, high degree of technical sophistication and, most importantly, its golden mountings, which show that this was a prestige object even among the ruling circles in the core area of Persia or Babylon.

The tombs, especially the ones from the first half of the 1st millennium BC where the seals were found show big chambers with rich burial objects . It is striking that in the chambers where seals no. 4–11 were found, also golden and imported objects have been detected (Devedjyan 2007b, 132–148). The correlation between richer tombs and the presence of seals let us assume that wearing an imported seal has been a practice exercised by the local elite in Lori Berd, a practice representing their "fashion". Thus we can speak of seals as part of the trends in appearance among the high society of Lori Berd. In this sense, Simmel points out the importance of the special preference for imported goods in clothing, using several historical examples for his argument (Simmel 1905, 12). He also emphasizes that coming these objects from outside, they create a special form of socialization via mutual relationships towards a phenomenon (phenomena) which originally existed outside of the community (Simmel 1905, 12).

In this sense, it should be added that the seals were probably worn with maximum visibility[10]. The seals no. 1–10 have perforations which a loop can be mounted through, whereas the golden loop of the seal no. 11 is preserved. As identity-forming hallmarks

10 For details how the seals were worn through the archaeological periods see Collon 1987, 108–112.

they should have been hung from the neck. Undoubtedly, this wearing practice was aimed to the public target audience. It can be compared with the usage of lion pins in Hasanlu (around 800 BC), which also contributed visually to the construction of the social identity (Marcus 1993, 157–178).

Aspect of Gender

In the ancient Near East both men and women owned seals, although the ownership by men seems to be more frequent[11]. In South Caucasian archaeology studies regarding the gender aspect of seals are missing. The table 2 shows the lack of information about the sex and age of the buried individuals in Lori Berd in the 2nd millennium BC. The results are more satisfying for the seals from the first half of the 1st millennium BC. Four out of five tombs represent men of different ages. Although the anthropological remains in Lori Berd are comparatively bad preserved and the research on the gender differentiation of the deceased persons is not yet finished, we can assume that the seals in this particular site were attributed to male burials.

Seals as Amulets or Beads

The next aspect of the seals is their usage as a bead or amulet. In this sense, also the material of the seal with its metaphysical properties is to be taken into consideration (for materials see table 1).

There are several examples from Mesopotamia suggesting that the seals were used also in magical practices (Salje 1997, 125–136). In most cases, they represent apotropaic amulets. Those seals had a protecting effect and were identified with the seal-owner. As a burial object, the seal was performing its task after the seal-owners' death, i. e. protecting against evil forces in the afterlife.

The apotropaic aspect can be ascribed to the seals no. 8–10. Although the pendants and amulets with Bes or Pazuzu comply better with the apotropaic function, they were not found in Lori Berd. With their frontal face image, they can "replace" the usual apotropaic characters in the context of Lori Berd. This idea is strengthened with the fact that all three scaraboid seals from Lori Berd were found in a tomb having just one skeleton, meaning that, in this context, seals no. 8–10 were not perceived as symbols of administrative or legal power.

Seal no. 11 also fits to the function of an amulet. Striking element for this aspect is the material of the seal. Here it is noteworthy to mention, that the type and the amount of raw material used to create an art was often more important for the owners and viewers than the technical performance (Yalcin 2014, 46). The pinkish chalcedony and gold had a special visual effect. Although at this point, we should mention that chalcedony or carnelian in form of beads appears very frequently in the tombs of Lori Berd. As an imported stone, it was, to some extent, considered as a special stone in Mesopotamia (Wartke 1997, 45).

Based on the geometrical patterns and the finding context of seals no. 3 and 7, it can be assumed that they were used as beads.

The peculiar context of seal no. 6 can also be discussed in the framing of the beads. As mentioned before there were several types of objects in Karmir Blur, which were "buried" in the jars: along with the group of the seals found from the karas no. 15 in the storage room no. 28 there was a big number of paste and carnelian beads (Piotrovsky 1952, 45). It seems therefore, that this ritual or magical practice includes beads as well. Taking the shape of seal no. 6 into consideration we think that this can be used during the discussed practice as a magical amulet or bead.

Seals in Intercultural Relations

Furthermore, the seals are indications for intercultural contacts. They served as submission of cultural massages and proclamations for the communities the seal was served to. They also played an important role in long-distance trade (Aruz 1997, 138).

Seals no. 8–10 are outstanding examples of the–presumably down-the-line-trade with Eastern Mediterranean and represent exceptions in the entire material of Lori Berd originating from Egypt. In contrast to them, seals no. 5–6 are only a part of Urartian material found in Lori Berd, since the contacts with the Urartian kingdom were, for obvious reasons, much stronger[12].

In this sense, seal no. 4 indicates that Lori Berd was a part of an exchange "network" spread in the vast area from the Levant to the Western Iran and represent the northern point where a so-called FSV object has been found. This speaks about the active trade connections of Lori Berd.

Finally, seals no. 3 and 7 with their geometrical patterns, though produced locally contribute to the discussion about cultural exchanges between South Caucasus and Northwestern Iran.

11 For the gender aspect of the seals see Yalcin 2014.

12 For Urartian objects found in Lori Berd see Devedjyan 2010, 76–89.

Conclusion

Lori Berd represents one of the important archaeological sites of the 2nd and 1st millennia BC where seals were found without any textual evidences. On this basis of the discussion, we conclude that the seals had two main functions for the ancient inhabitants of Lori Berd. First, they were visual markers of their elite status. As works of art, they were a source of, and target for social agency, whereas both the members of the community and the foreigners were targeted. Second, the seals were used as amulets or beads and being components in the magical practices. It should be mentioned that these two aspects were interwoven.

Finally, in most of cases being imported objects, the seals provide valuable information about the intercultural relations between Lori Berd and other regions of the Ancient world such as Urartu, Babylon and Egypt. In addition, the research of various aspects of seals such as the archaeological context or examination on the issue of gender and identity in South Caucasus prove an important area for future research.

Table 1 Seals from Lori Berd (technical data).

Seal no.	Museum no.	Size (in cm)				Material	Type	
		Length	Width	Height	Diameter		Cylinder seal	Stamp seal
1	3179.45			2.4	1	faience	×	
2	3179.45			3	1	faience	×	
3				3	1	quartzite	×	
4	2469.39			5	1.7	faience		×
5	3176.85	2.12	1.9	0.88		onyx		×
6	3174.34			2.5	1.3	stone		×
7	3174.29			2.51	0.71	quartzite	×	
8	3183.208	1,58	1,11	0,7		glazed steatite or faience		×
9	3183.209	1,5	1,08	0,69		glazed steatite or faience		×
10	3183.210	1,42	1	0,69		glazed steatite or faience		×
11				4.8	1.17 cm	chalcedony and gold	×	

Table 2 Seals from Lori Berd (context and classification).

Seal no.	Iconographical motifs			Cultural affiliation	Tomb no.	Gender / Age of buried person	Dating of the tomb	Dating of the seal
	Composite scene	Single motifs	Geometrical motif					
1	X			Mittani	25	not identifiable	15–14th centuries BC	15th century BC
2	X			Mittani	25	not identifiable	15–14th centuries BC	15th century BC
3			X	local/ Mittani	7	no anthropological remains detected	15–14th centuries BC	15–14th century BC
4		X		Northern Syria	2	Male / 25–35 years orl	7–6th centuries BC	8–7th centuries BC
5	X			Urartu	63-II	Male / 40–50 years old	7–6th centuries BC	7th century BC
6		X		Urartu	56-II	Male / age not identified	7–6th centuries BC	presumably 7th century BC
7			X	local	56-II	Male / age not identified	7–6th centuries BC	7–6th centuries BC
8	X			Egypt	62	not identifiable	7–6th centuries BC	7th century BC
9	X			Egypt	62	not identifiable	7–6th centuries BC	7th century BC
10	X			Egypt	62	not identifiable	7–6th centuries BC	7th century BC
11	X			Neo-Babylonian / Neo-Assyrian	106	Male / 50–55 years old	5th century BC	End of 8–7th centuries BC

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The Fortress of Aramus in its Historical Context

Walter Kuntner[1], Hayk Avetisyan[2], Sandra Heinsch[1]

[1] University of Innsbruck, Austria
[2] Yerevan State University, Armenia

Abstract. Recent archaeological evidence of the material culture of Armenia in the Middle Iron Age contradicts the historical picture from the cuneiform sources of an overwhelming and ubiquitous Urartian kingdom. This is certainly due to our still deficient understanding of the development of the material culture from 9th to 8th centuries BC as well as during the 6th century BC. Another, equally pertinent factor is that this lack of knowledge is bridged by a sometimes overly literal interpretation of Urartian cuneiform rock inscriptions, and, for the 6th century BC, by the mixing of different historiographic traditions that hinder the archaeological interpretation of findings. The continuity of the settlement, recently determined in the stratigraphy of the Iron Age fortress of Aramus, and dated by radiocarbon evidence from the 9th to 4th centuries BC, offers a new perspective on the nature of the Urartian dominance in Armenia. Not only are there no abrupt breaks in material culture, relatable to political conquest or declines in population, which currently help define the limits of Middle Iron Age periodization, but there is also no clear, archaeological separation discernible between conquerors and conquered. This is all the more remarkable given that the Aramus fortress was largely rebuilt by Argišti I in connection with mass deportations related to the foundation of Erebuni, and that the stronghold was afterwards used as basis for the military expansion of the Urartian kingdom to lake Sevan. Rather, the evidence of Aramus suggests that the conquest and long-term control of the Ararat plain was achieved through a prospective policy that aimed to incorporate existing power structures, and which used violence only as last resort, and for the benefit of the alliance if at all. The looting of Sargon II of the main sanctuary of Haldi in Mutsatsir marks a turning point in the history and material culture development of Urartu, in that it initialised a process of re-politicisation. Therein, the rise and fall of Biaini represents only one aspect, whose overall significance remains one of the most pressing problems in the archaeology of Urartu.

Keywords: Armenia, Aramus, Iron Age, fortress, Urartu, Biaini, Etiuni, Lchashen-Metsamor, Karmir Blur.

Introduction

The image conjured up by the ingeniously stylised Urartian rock inscriptions continues to exert a strong influence on the impression of imperial massiveness frequently encountered in historical references to Urartian military expansion into modern day Armenia. It is a picture, occasionally true indeed, of an inexorable and well-organised army (cf. Konakçi, Baştürk 2009). Its brilliant logistics not only enabled this army to cross high mountains and the imposing Araxes river, but also to establish, under adverse conditions, two masterfully built administrative centers, complemented by extended systems of irrigation and fortification. These served, once again, to prove supremacy not merely over the local population, but over nature, too (Smith 2004, 14–18).

However, this picture suggests that "Urartians" moved *in vacuo*, while their opponents are mentioned only in passing, often by nothing more than their often singularly attested names. However, is it conceivable that the seizure and, in particular, the long-term control of such a vast and fertile region, rich in history, which was one of the most important transitions and focal points in the history of the South Caucasus, really occurred without any active involvement of the local population? Has archaeology focused too much on Urartian (biased) cuneiform sources when attempting to retrieve this region's past (cf. Badalyan, Avetisyan, Smith 2009, 33, 40–41)?

Awareness of this possibility has recently increased, due to a deepening understanding of the local Iron Age material culture, starting with the evidence for the continuation of the Early Iron Age traditions of ceramic production up to their influence on Middle (Avetisyan et al. 2019) and Late Iron Age assemblages (Kuntner, Heinsch, in press). Thence, there has come a growing need to question existing terminology, in order to better cover the situation of sources and findings. This has led to a certain abstraction of terms. The term Urartu, an original Assyrian toponym used to name the region between lake Urmia and lake Van, has now been suggested to find use only as a geographical unit, de-

noting the sphere of cultural emergence and political influence of the kingdom of Biaini. This use, denoting a sphere of cultural emergence and political influence, finds a firm footing in its first mention in Middle Assyrian cuneiform sources of the 13th century BC, which continues until a last attestation in the Behistuni inscription of Darius I in the 20s of the 6th century BC (Zimansky 1998, 6–8; for the relationship between Urartu and Armenia see Areshian 2019). The same applies to the Urartian toponym Etiuni for the territory of modern-day Armenia, which again comprises a large number of entities, interacting both with each other and the kings of Biaini, at different levels and with different intensity and interests (for a scholarly development of the term Etiuni, see Arešjan 1977, 103–105; more recent discussions suggests Etiuni to be a general term for Transcaucasian tribes (Salvini 1995, 40) occasionally coalescing into loose political confederations (Smith 1999, 48, 54). Finally, the term Biaini is used in its political meaning, to define the period of leadership the city lords of Tushpa had in Urartu (Kroll et al. 2012a, 1).

Worth mentioning in this context is the fact that the hegemony, so vigorously declared in cuneiform writings by the city lords of Tushpa on Urartu, left an indisputable imprint on every-day material culture only during the reign of its last powerful member, Rusa Argishti (Kroll et al. 2012, 33–38). This is highly significant, not only for the archaeological periodization of the Middle Iron Age, but also for our understanding of the rise and fall of Biaini. The suggestion is that the proposed material imprint of Biaini, that is Zimansky`s (1995a) so-called state assemblage, could, ultimately, be nothing more than a short-term cultural phenomenon, reflecting the reform of the contemporary political system (Bernbeck 2003/2004, 303–304; Zimansky 2012), itself made necessary by the pillage of Haldi`s main temple at Muṣaṣir by Sargon II in 714 BC. While the consequences of this event remain one of the most discussed topics in Urartology, this discussion has hitherto focused mainly on the fate of Ursa, and his identification with Rusa Sarduri or Rusa Erimena (Salvini 2007; Kroll 2012; Roaf 2012; Seidl 2012; Fuchs 2012, 136–137; Rollinger 2018). However, the political repercussions the loss of control on Haldi`s main temple exerted over, in particular, the legitimizing polity of the city lords of Tushpa has not been touched on in detail, so far (cf. Salvini 1989, 80). The sometimes astonishing observation of the dynasty`s persistence might have been due to a temporary emergency situation which was mastered through a comprehensive reform of the political system and in particular of its administration (Zimansky 1995c). However, these reforms seem to have become obsolete or to have been considered excessive (cf. Hellwag 2012, 237) once the Assyrian pressure decreased again under Ashurbanipal, in turn due to the Babylonian revolts in 652 BC and the subsequent wars against Elam.

The decline of the kingdom of Biaini could therefore not have been caused by violence, as is generally assumed, due to the appearance of supposedly simultaneous horizons of destruction, but may, in contrast, reflect the withdrawal of these, now no longer required reforms (which would offer a much more cogent explanation for the absence of legacy to and reception of Biaini by posterity). However, ultimately, it fell back to a stadium comparable to the 9th century BC, accelerated by the decline of the Neo-Assyrian empire after Ashurbanipal's death in 631/627 BC and the final collapse in 614/612 BC. The often-quoted submission of Issar-duri may, thus, not have been a desperate appeal for help against invading equestrian steppe nomads, whose impact in the South Caucasia remains highly controversial (Pogrebova, De Sonneville-David 1984; Mehnert 2008). It may, in fact, have been but an appeal for help in legitimizing Issar-duri`s political position within an increasingly decentralized political system.

The Foundation of Aramus in the Context of Etiuni

The lack of contemporary written sources for the given period does, of course, leave room for ample speculation, which the authors do not intend to further engage in. The opposite is the stated intention. The point, specifically, is to determine whether we do in fact do well to solve the issue of the fall of Urartu by trying to bring different historiographic traditions together (cf. Hellwag 2012), and thence synchronizing the resulting picture with the fall of Biaini. Meanwhile, the end of literacy in Urartu, which is inherent in the definition of Biaini, and thus practicable in helping to mark its end, does not provide a solid base to validate the historicity of a Scythian invasion nor of a Median empire on Urartian territory. Noteworthy in this context, moreover, is that the cuneiform tradition attesting the perception of this region as a "country", Urashtu/Armina, is met with scepticism. However, such critics have so far largely misunderstood the suggested persistence of some kind of "residual polity" in Urartu (Rollinger 2008), erroneously inferring that this idea aims to question and redefine the date of Biaini's downfall (Kroll et al. 2012, 446, Fn. 4; cf. Hellwag 2012, 232; see now Rollinger, Kellner 2019.). In contrast, this approach rather suggests

that the local population seems to have reorganised to a level sufficient to make military campaigns to Urashtu strategically necessary for the control of Assyria.

In Armenia, ´Etiunians` could have played such a prominent role as result of a regained political autonomy, which is shown to be incipient in the development reflected in the flourishing of the so-called Ararat valley wares in the 7th century BC (Smith 2005, 270; see in more detail Avetisyan 1999–2000; Avetisyan et al. 2020). These show a vitality not widely known in the 8th century, marked by the persistence of traditions rooting in the Late Bronze Age, but that, on the other hand, clearly dominates the material assemblages of the 5th and 4th centuries BC (Kuntner, Heinsch *in press*). An interesting question regards the extent to which the first mention of the name (unfortunately not preserved) of a king of Etiuni in the time of Argishti Sarduri (Salvini 2008: CTU A11-3 Vo 1–2) and the perception of Etiuni as an enemy country in the time of Rusa Argishti (Salvini 2008: CTU A12-1 VI 10–11) can be interpreted as evidence for some kind of complex ethno-genesis (cf. Ter-Martirosov 2004).

However, it must be admitted that the current interpretation is based on findings dating to the 1st half of the 7th century, if not to very last years of the kingdoms` existence. This circumstance certainly distorts our understanding of the 8th century BC material culture, which remains one of the most pressing research desiderata in Urartian archaeology.

The evidence from Aramus on the 8th century BC occupation gathered so far is also problematic (Fig. 1). In fact, only a limited extent of the oldest levels could be examined, not only due to spatial restrictions, but because these levels were often removed due to the re-construction of large parts of the fortress in the 7th century BC. The Central Fort at the top of the outcrop appears to have been almost completely rebuilt. The discovery of so-called pre-Urartian Lchashen-Metsamor–LM V ceramics in conjunction with fragments of local red-polished wares is most remarkable in this context, as it confirms the view that LM V ceramics existed not merely during the 8th century BC, but even stretching into the 7th century BC.

The interpretation of this finding as evidence for the parallel persistence of two distinctive cultural spheres, in which an Urartian elite can be inferred to have ruled from the fortresses over a subjugated, rural population, cannot be confirmed in Aramus. Firstly, no evidence has so far come to light for a rural population around Aramus. Second, the percentage of even the local red-burnished ware, commonly interpreted as imitation of the so-called Toprakkale or Biaini ware, is extremely low (cf. Smith 2005, 270). This fact is remarkable, given the size (Biscione, Dan 2011, 107–109) and proximity of Aramus to Erebuni and Karmir Blur, as well as its geostrategic importance for the military expansion of the Urartian kingdom to lake Sevan during the 8th century BC (Kuntner et al. 2017).

An explanation of the ´cultural autonomy` of Aramus from Biaini can find a third pillar in the radiocarbon results concerning the founding of the fortress of Aramus, and in particular in the historical implications derivable from its contextualisation with the Elar rock inscription and the Horhor Annals of Argishti I at Van Kalesi. This new approach combines and partially resolves the partly contradicting interpretations suggested by Khanzadyan and Avetisyan for the importance of Aramus as part of the fortified landscape of the Kotayk plateau (Fig. 2).

Both have dated the founding of this stronghold to the 1st quarter of the 8th century BC, due to its proximity, of just 2.2 km, to the cuneiform rock inscription of Argishti I at Elar. The difference between the two interpretations arises from the opposite meaning they attach to the rock inscription itself. Khanzadyan derives a *terminus ante quem* from it, due to the results of the investigations at Elar, where a continuous sequence was ascertained from the Early Bronze to Early Iron Ages, and because of the absence of the characteristic Biaini ware, otherwise well known from the main Urartian centres of the Ararat plain. Therefore, she regarded the fortress of Aramus to be part of an extended Etiunian bulwark, founded to prevent the advance of the Urartians north of the Araxes river (Khanzadyan 1979, 168). In contrast, Avetisyan determined a *terminus post quem*, owing to the identification of the local variant of red-burnished Biaini ware at Aramus. Hence, he suggests Aramus to be an Urartian stronghold founded anew by Argishti I with the aim of controlling Uluani (Smith, Kafadarian 1996, 36–37).

Common to both approaches is that they consider the beginning of the Middle Iron Age have witnessed a sudden change in material culture. However, as mentioned above, we are currently far from being able to distinguish between 9th and 8th centuries pottery assemblage, regardless of the supposed parallelism of two cultural entities (Avetisyan et al. 2019, 89). Furthermore, the appearance of the local variant of red-burnished ware in Aramus seems to date to the 7th century BC. The two radiocarbon samples KIA 46887 and KIA 46886 taken in 2011 from the founding horizon of the North Fort in NB-I trench show that the period to be

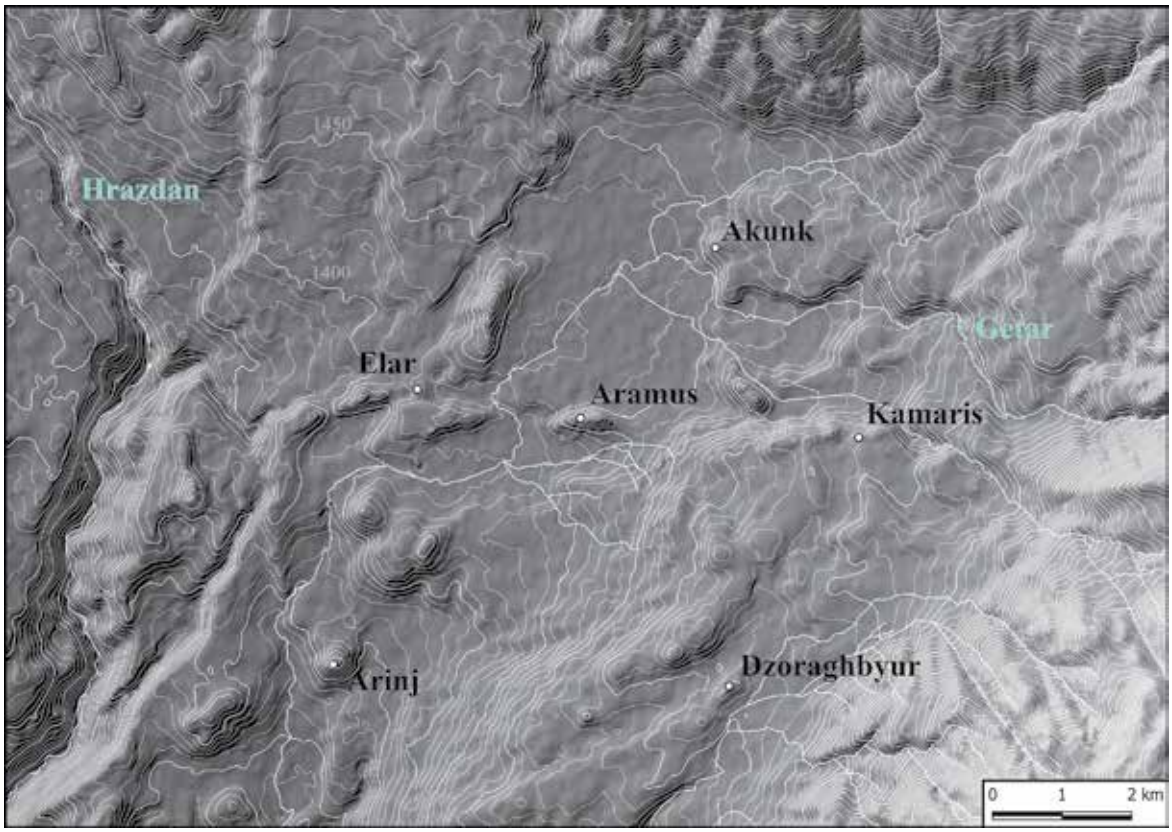

Fig. 1. Fortified landscape of the Aramus basin (Map: W. Kuntner).

Fig. 2. The fortress of Aramus (Map: W. Kuntner).

taken into account could well go back to the first half of the 10th century BC (Fig. 3). The largest matching period covered by the sigma 2 values (935–835 BC) is, therefore, still too early to assume safely, as Khanzadyan has, a relation between the founding of Aramus and possible military aspirations by the city lords of Tushpa on the Ararat plain. A further observation requires definite mention, which is that the fortification wall of the North Fort of Aramus is characterized neither by counterforces nor by a straight alignment

or right angles, altogether typical features of Urartian military architecture, as evidenced by all other enclosing walls of the stronghold. The smooth curtain façade, following the natural topography, is instead characteristic of the Early Iron Age, or of local building traditions that are much more functional than aesthetic. Smith and Kafadarian (1996, 36), by comparing Aramus with Horom, Dovri and Tsovinar, suggest the existence of a "frontier style of fortress architecture".

The problem that arises from the long time between the construction of Aramus fortress and the conquest of Uluani can be put into perspective by considering the broader historical context of this military campaign in the Annals of Argishti I.

The attack on Uluani relates to the 9th/10th regnal year of Argishti I. It was recently re-dated by Grekyan (2015) to 782 BC. The campaign brought about the conquest of the land of Darani, of the lands Uria, Ṭerṣubi and Muruzuqai, whose people were deported, and finally of the royal city Ubarugildu (Salvini 2008: CTU A8-3, I 24–27). None of these names is ever mentioned again in Urartian inscriptions. The greater importance attached to Uluani in the Horhor inscription, which does not mention Darani, suggests that Uluani did not belong to Darani, as commonly inferred from the Elar Inscription (Salvini 2008: CTU A8-8), but rather vice-versa. It is tempting to reduce the localisation of Uluani to the basin of Aramus and to identify the mentioned places Darani and Ubarugildu respectively with Elar and Aramus. Similarly, Uria, Ṭerṣubi, Muruzuqai might refer to either of the fortresses of Avan, Akunk and Kamaris.

The seizure of Uluani successfully completed a long series of campaigns against Diauehi and Etiuni, which stretched back to the times of the co-regency of Argishti's ancestors Ishpuini and Menua, dated to 820–810 BC (Salvini 1995, 48–49). The success of the city lords of Tušpa in this long standing advance of influence over the Ararat plain, initially through the control of its main gateways, is characterized by the foundation of the administrative centres of Menuahinili (cf. Özfirat 2017), Erebuni and finally Argishtihinili in 774 BC. The foundation of Erebuni was the intermediate step in the formation of the second bridgehead, which from now on ensured the long-term crossing of the Araxes river. The importance of this event, in marking the beginning of a new period, the Middle Iron Age, is widely recognized by scholars.

But how was the foundation of Erebuni accomplished? Here too, the Horhor inscription shows a well thought-out and systematic approach to the period immediately preceding the founding of Erebuni in 780 BC. Nothing was left to chance. In the year after the conquest of Uluani, Argishti I. launched a raid on Ḫate (Hatti) and deported its population on a large scale. The next year we find him, unexpectedly and unprecedentedly, again back in Etiuni, from where he leads a campaign against Qihuni and Alishtu on the northern shore of lake Sevan, again deporting parts of the populace. Thereupon, we are informed of the foundation of Erebuni, the "accomplishment there of mighty undertakings" as well as the re-settlement of 6600 soldiers(?) from Ḫate and Ṣupa (CTU A8-3, ii 32–36). At that time, Argishti I had already extended the fortress of Aramus, through the construction of the forts located on top of the outcrop and their reinforcement by regularly built buttresses. The radiocarbon samples KIA 46884, Erl 17818 and Erl 17819 taken from the foundation horizon of the East Fort confirm a date at the beginning of the 8th century BC (Fig. 3). Hence, the fortress of Aramus created the conditions for the city lords of Tushpa to gain the measure of political influence north of the Araxes river necessary to conduct the military campaigns aimed at establishing Erebuni. The exertion of this influence on Etiuni, therefore, stretches back to the time of Menua, as suggested by the rock inscription of Tsolakert, where Menua claims to have "put the land Etiuni under tribute" (CTU, A5-1: 14). It was, however, only the extension, built by Argishti I, which secured control both of the large water supply system of the Getar river, necessary for the irrigation of Erebuni`s countryside, and of the routes to lake Sevan, necessary for the further expansion of the Urartian kingdom (Kuntner et al. 2017).

The Fortress of Aramus in the Context of the Fall of Biaini

The contextualisation of the archaeological situation at Aramus, summarized above, with the Elar inscription and the Horhor annals of Argishti I, suggests that different, local and deported entities, as well as members of the Urartian elite were equally integrated in the governance of this stronghold. Admittedly, this interpretation might appear speculative. However, it must be stressed that no attempt is made here to identify barely defined ethnicities by their ceramic products. Instead, our interpretation tries to offer a conceivable explanation for the strong regionalism that characterizes the material culture of Urartu and the Ararat plain (Heinsch et al. (eds), in press). The idea of a cultural autonomy of Aramus from Biaini might, if viewed in this light, thus reflect a heterogeneous ethnos, which

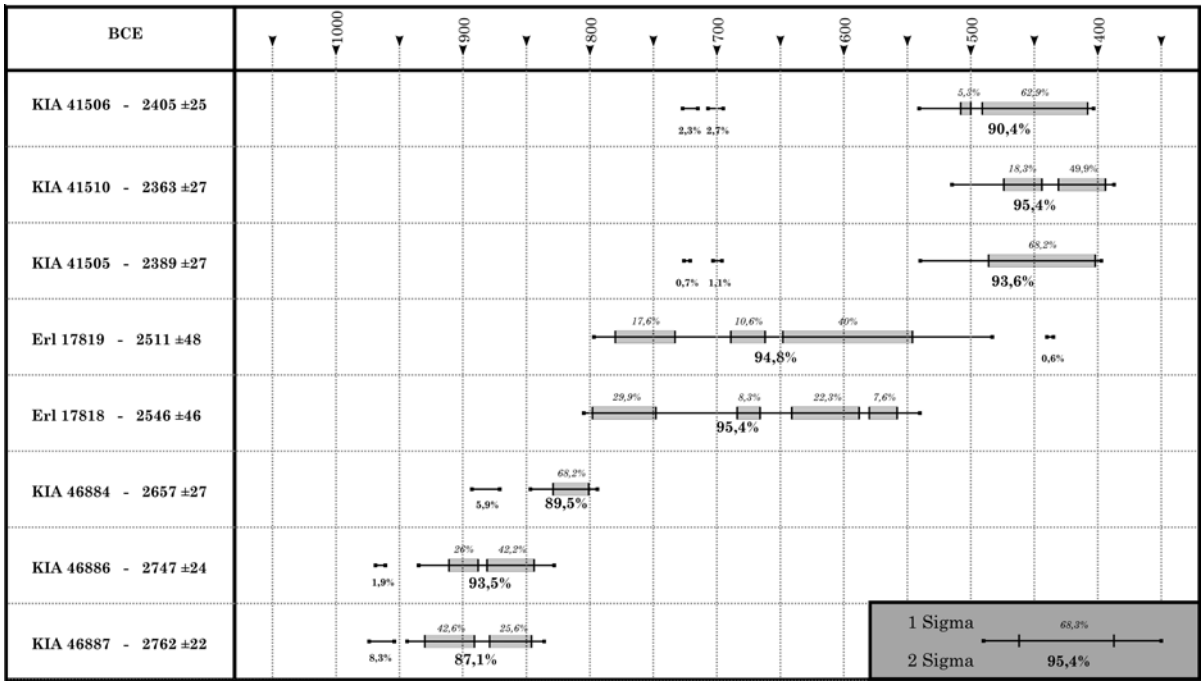

Fig. 3. Radiocarbon sequence of the fortress of Aramus (Schedule: W. Kuntner).

accepted the rule of the city lords of Tushpa, even participating in its military raids for their own benefit.

Fourth and finally, this interpretation is confirmed by the fact that the fortress of Aramus was preserved and rebuilt despite and long after the decline of the alleged vanquisher, until the 4th century BC. Recent investigation of the surface material from the fortresses in the Aramus basin, furthermore, has revealed that all fortresses were used both during the time of the Urartian kingdom, and long after its decline. Specifically, we are referring to the period defined according to the stratigraphy of Aramus as building period Aramus III, which stretches up into the 5th century BC. In contrast, the evidence for an Early Iron Age occupation has so far remained limited to Elar, not least because of the above-mentioned problem of identification (Khanzadyan 1979, 168–175).

The long-term Armenian-Austrian investigations at the Iron Age fortress of Aramus has finally also offer a new perspective on the complex subject of the fall of Urartu, which, as recently emphasized, cannot be synchronised with the fall of Biaini (Kuntner, Heinsch 2020). As mentioned above, Urartu is an abstract term that summarizes different material cultures that are closely connected to a polity characterized by extended fortification and irrigation systems (Smith, Thompson 2004; Smith 2012). Biani refers to the time of some of Urartu's best-known interlocutors with the present, the city lord of Tušpa, whose dominance over Urartu is mainly expressed or better recognized through their literacy, but which may have continued to play a political role in the region after their abrupt silence (cf. Zimansky 2006 with regard to the meaning of literacy in Urartu).

The question of how long the so-called South Caucasian political tradition, or, in other words, the *Urartian* polity, continued to shape the Armenian Highlands is, from an archaeological standpoint and without regard to historical preconceptions, still unanswered, even if strides are being made towards its possible resolution (Katchadourian 2008, 265–270).

The assessment that an abrupt end may have befallen the polity in Urartu is, however, not offered so much because of the absence of written sources. This circumstance is easily explained by the decline of the Neo-Assyrian kingdom as the main referent on Urartu. Furthermore, considering the number of Neo-Babylonian and Achaemenid references, which in sum and compared to the time span covered do not turn out to be much lower than in Neo-Assyrian times (Fuchs 2012; Rollinger 2008), this absence may sometimes be more felt than proven.

Rather, the assumption that most important Urartian centres were destroyed concurrently is based on the occurrence of bronze-socketed arrowheads in the destruction debris at several Urartian centres. In particular, it hinges on their finding context with Biaini ware especially at Karmir Blur, Bastam and Ayanis

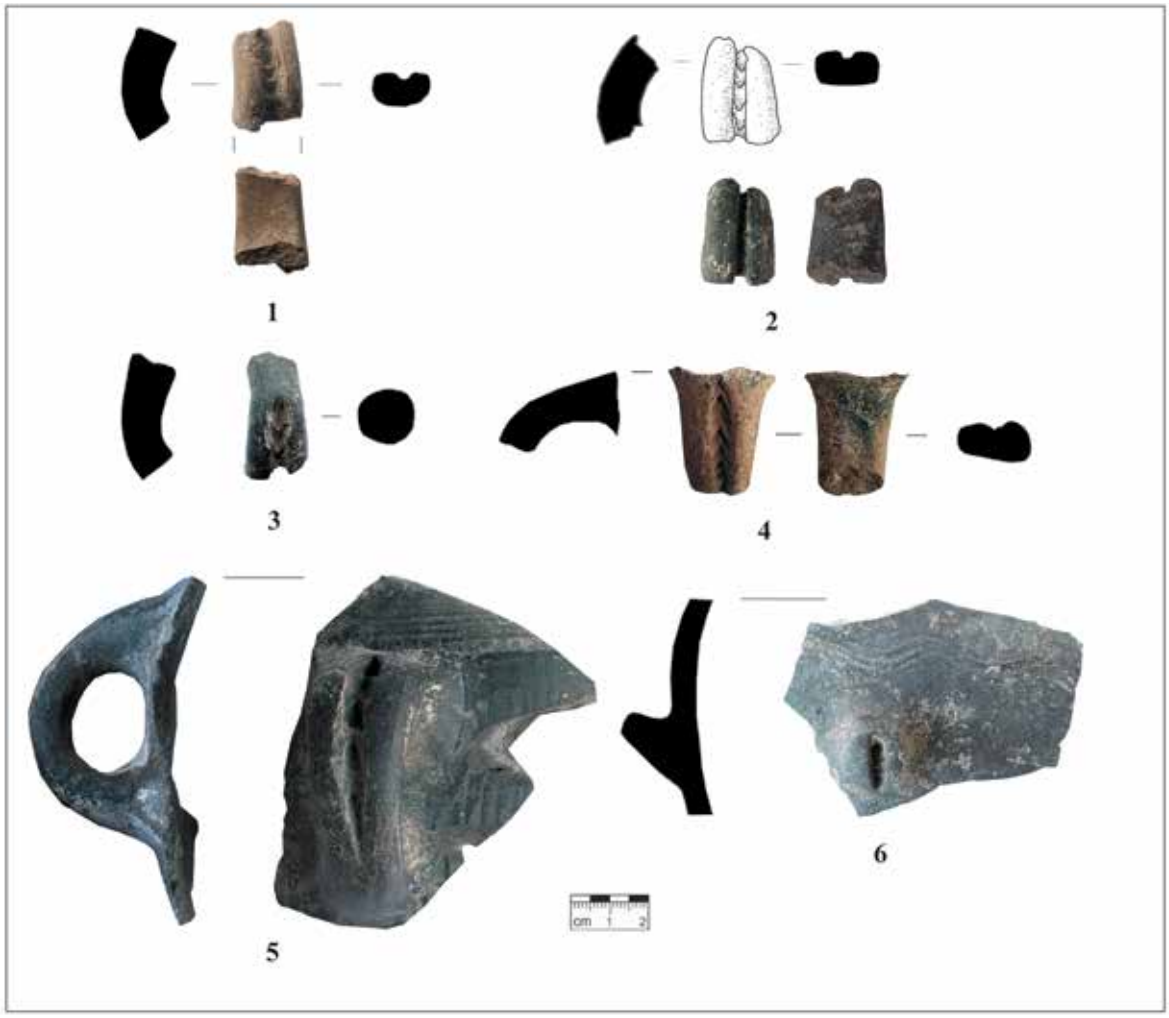

Fig. 4. Handled jar with step-like incision (Photo: S. Heinsch).

(Kroll 2012, 183). However, it should be noted that, in the destruction horizons of Bastam and Ayanis, only bilobate-socketed arrowheads were found in situ (Kroll 1979; 1988; Derin, Muscarella 2001). In contrast, the finding situation at Karmir Blur is particularly characterized by their association with trilobite-socketed arrowheads both with protruding as well as winged sockets (Esayan, Pogrebova 1985, 53–79). However, the latter type is generally dated to the Achaemenid period (Cleuziou 1979).

The limitation of the chronological meaning of bronze-socketed arrowheads to the middle of the 7th century BC, as archaeological confirmation of the date of the fall of Biaini, results from the date of their first concurrent occurrence in the Kelermes kurgan not before 660 BC (Galanina 1997, 173–193), and its historical contextualization with the classic tradition of Herodotus. This concerns the histories on the Cimmero-Scythian raids from the Pontos to the Near East, and the struggle between Scythians and Medians for supremacy in Asia (Barnett, Watson 1952, 134; Sulimirski 1954, 313–316; cf. Ivantchik 1999 for a more critical reading of Herodotus). However, the archaeological evidence clearly attests an occurrence of bronze-socketed arrowheads from the turn of the 8th to the 7th century (Ivantchik 2001) until the 4th century BC (Yalçıklı 2006), as well as their wide-spread production (Daragan 2015). While coarse chronological divisions and geographical distributions are possible, no ethnic identification is sustainable due to archaeological evidence (Derin, Muscarella 2001: 196–203).

All in all, it is, however, not surprising, as Piotrovsky emphasized, to find artifacts typical of the 7th century BC, such as Biaini ware, their imitations or bronze-socketed arrowheads, in Urartian fortresses of the time of Rusa Argishti, such as at the above-mentioned sites of Bastam, Ayanis and Karmir Blur. However, while the date of the destruction of Bastam and Ayanis can be fixed around the middle of the 7th century BC due to the absence of bronze trilobite-socketed

arrowheads, the archaeological date of Karmir Blur`s destruction must be derived from those findings that clearly stand in close relation with the attack itself (Salvini 1966, 169–171).

For Karmir Blur, these are essentially two groups of findings. Both were found together in the destruction debris of the dwellings built along the defensive wall near the north gate of the citadel courtyard. The first is the bridle of the so-called assaulter's horse, found together with three other horse skeletons, but without harness components (Dal' 1947, 42). The second tranche of evidence are the mostly black fired jugs with handles, decorated with a furrow including stepped wedge-shaped incisions (Fig. 4), which were, moreover, found in great number in the destruction debris of the cellar rooms of the citadel as well as of the urban houses there, suggesting a single destruction event (Piotrovsky 1950, 36).

The horse bridle consists of two pairs of bronze strap-crossings and a largely preserved silver shoulder phalera (Fig. 5; Ryabkova 2012, 378–379, fig. 5, tab. 1/2-4). Although the origins of the phalera lie in Assyria and Urartu, most were made of bronze and were always attached to the halter (Curtis 2013, 94–96, 120, 144, 319, pl. LXXIV, 745; Pfrommer 1993, 7; Belli 1976). According to Zasetskaya, shoulder phalerae were unknown in the Scythian parade dress of the 4th century BC, and begin to appear only in the Sarmatian period (Dedyulkin 2015, 128). However, the example of Karmir Blur has no décor that corresponds with the examples of the Sarmatians. Mordvintseva (2001, VIII) ascribes the origin of Sarmatians shoulder phalerae to the Scythians, but underscores that silver was used only from Hellenistic times onwards, and that undecorated phalerae are typical for the Kuban and Bosporus regions (*ibid*. 39). It is worth noting that another example for an undecorated silver phalera was discovered in Argishtihinili (Martirosyan 1974, 169–174).

Hauptmann was the first to typologically differentiate the so-called hook-shaped strap crossings. Together with the trunk and the beak-shaped strap-crossings, he regards them as imitations of belt tusk-belt crossings. In contrast to the two latter types, only the hook-shaped strap-crossings were made of bronze (Hauptmann 1983, 263). Recently, Grechko (2013) and Makhortykh (2017) discussed the hook-shaped strap-crossings. Both compare the specimen from Karmir Blur with exemplars from the Akhmylovsky grave no. 70 and the Shumeyko Kurgan. Another exemplar is probably known from Kasraant Mitsebi grave no. 22 near Kavtishveli in Georgia (Beradze

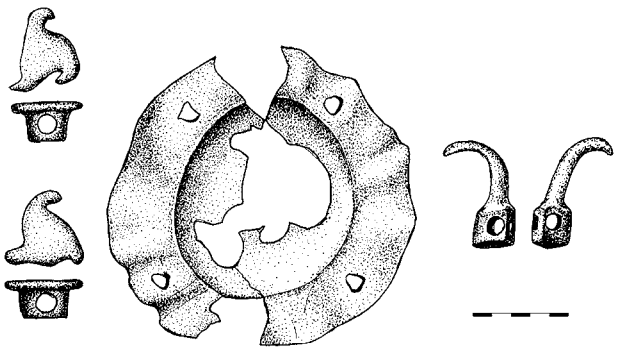

Fig. 5. Bridle of the assaulter's horse from Karmir Blur (Ivantchik 2001, 33, fig. 12).

1980, 21, pl. XIX/7), dated by Lordkipanidze to the 6th century BC at the earliest but most likely belonging to the 5th/4th century BC (cf. Bill 2003, 185, fn. 1398; taf. 91, 13). The identification of the strap-separator by the excavator, Beradze, as a bell is unlikely, since no typological parallels are so far known from Georgia (cf. Chanishvili 2015).

The parallels described by Grechko and Makhortykh confirm the close relation, already suggested by Piotrovskij (1973,16), of the Early Scythian objects recovered at Karmir Blur with the material culture of the Upper Sulla in the Dnepr area. However, the dating of the Akhmylovsky grave no. 70 is problematic. The hook-shaped strap-crossings come from a secondary burial, or at least a pit disturbing the main grave, which is dated to the 7th century BC (Khalikov 1977, 40–42). It is worth noting the comparison with the Shumeyko kurgan, dated from the middle of the 6th BC (Ivantchik 2011, 82; Grechko 2013) until the turn from the early to the middle Scythian period around 500 BC (Topal 2018, 61–62). Erlikh (2010, 58–62, fig. 11) assigned the hook-shaped strap-crossings to the Sialk group, which is believed to originate from Iranian forms of the 8th century BC, but which only spread in the early days of the Achaemenids.

A date into the 5th century BC for the bridle of the assaulters` horse of Karmir Blur is, finally, confirmed by their finding context they share with the one-handled jugs with step-like impressions. Avetisyan regards this type of vessel as one of the youngest representatives of the ceramic tradition of Lchashen-Metsamor (Avetisyan 2009, 64–65, no. 1. Badalyan, Avetisyan, Smith 2009, 92, no. 1). The proposed date in the 7th century is based on the generally accepted date of Karmir Blur's destruction (Avetisyan, Bobokhyan 2012, 377; Avetisyan et al. 2019, 94). However, evidence from Aramus shows that the characteristically decorated one-handed jugs only occur during the Aramus IIIa

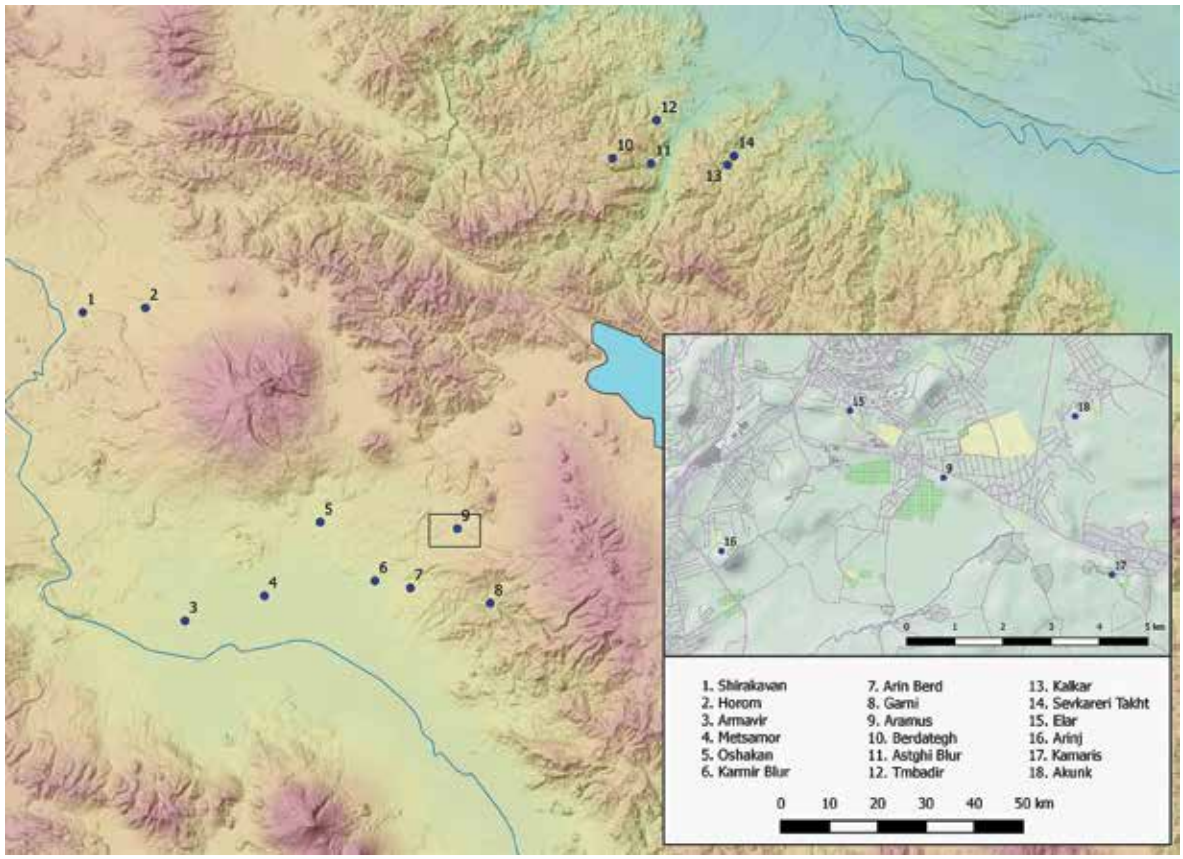

Fig. 6. Distribution of handled jars with step-like incisions (Map: W. Kuntner).

period, which dates based on three radiocarbon samples to the 5th century BC (Fig. 3; samples KIA 41505 and KIA 41510 were taken from level IIId and sample KIA 41506 from level II). Recently, Herles (2019) has also suggested a higher date for Oshakan tomb no. 25, which represents a key finding for the definition of the youngest phase of the Lchashen-Metsamor pottery tradition (cf. Avetisyan 2009).

In sum, more than 30 specimen have actually been found in situ in the East and Central Forts. The widespread distribution of single-handed jugs with step-like impressions in fortress contexts suggests that several fortresses continued to be used after the fall of Biaini in Armenia (Fig. 6), which contradicts the view of deliberate "repudiation" of Urartian politics in Achaemenid times times (Katchadourian 2016: 89–90). At Aramus, such a tendency can be inferred only from the 4th/3rd century BC (cf. Katchadourian 2007).

Aramus in Late Urartian Times

Recent archaeological investigations continue to strengthen the evidence for the continued existence of Urartian politics despite the decline of Biaini (cf. Zardarian, Akopian 1994); so in fact in the region of lake Sevan (Biscione 2002; Karapetyan 2003; Badalyan et al. 2016), across the Ararat plain (Deschamps, Fichet de Clairfontain, Karapetyan 2019; Ter-Martirosov 2020; Heinsch et al. 2012; Kuntner et al. 2012; 2019; Dan, Vitolo, Petrosyan in press) and the Mt. Aragats massif (Herles 2015). The Shirak plateau and Tsaghkahovit plain seem, on the contrary, to have been marked by a settlement hiatus during the Middle Iron Age (Ter-Martirosov, Deschamps 2007; Mauermann et al. 2013; Katchadourian 2014). However, for the 6th century BC the saying "not to see the forest for the trees" seems to be correct. It is not just about recognizing this fact, but also about rethinking previously upheld historical patterns of interpretation (Muscarella 1973, 75). The destruction of Karmir Blur and probably Argishtihinili is related more to Achaemenid politics in the 5th century BC than to Scythian or Median raids in the 2nd half of the 7th century BC. The destruction of these centres might be the result of direct suppressions of revolts, similar to those seen before, in the reign of Darius I, or it may been related to internal struggles between local entities seeking influence over the relationship to the Achaemenid king of kings. The political tradition that has characterized Urartu since the Late Bronze Age did not cease to exist (contra Zimansky 1995b). On the contrary, the Achaemenid

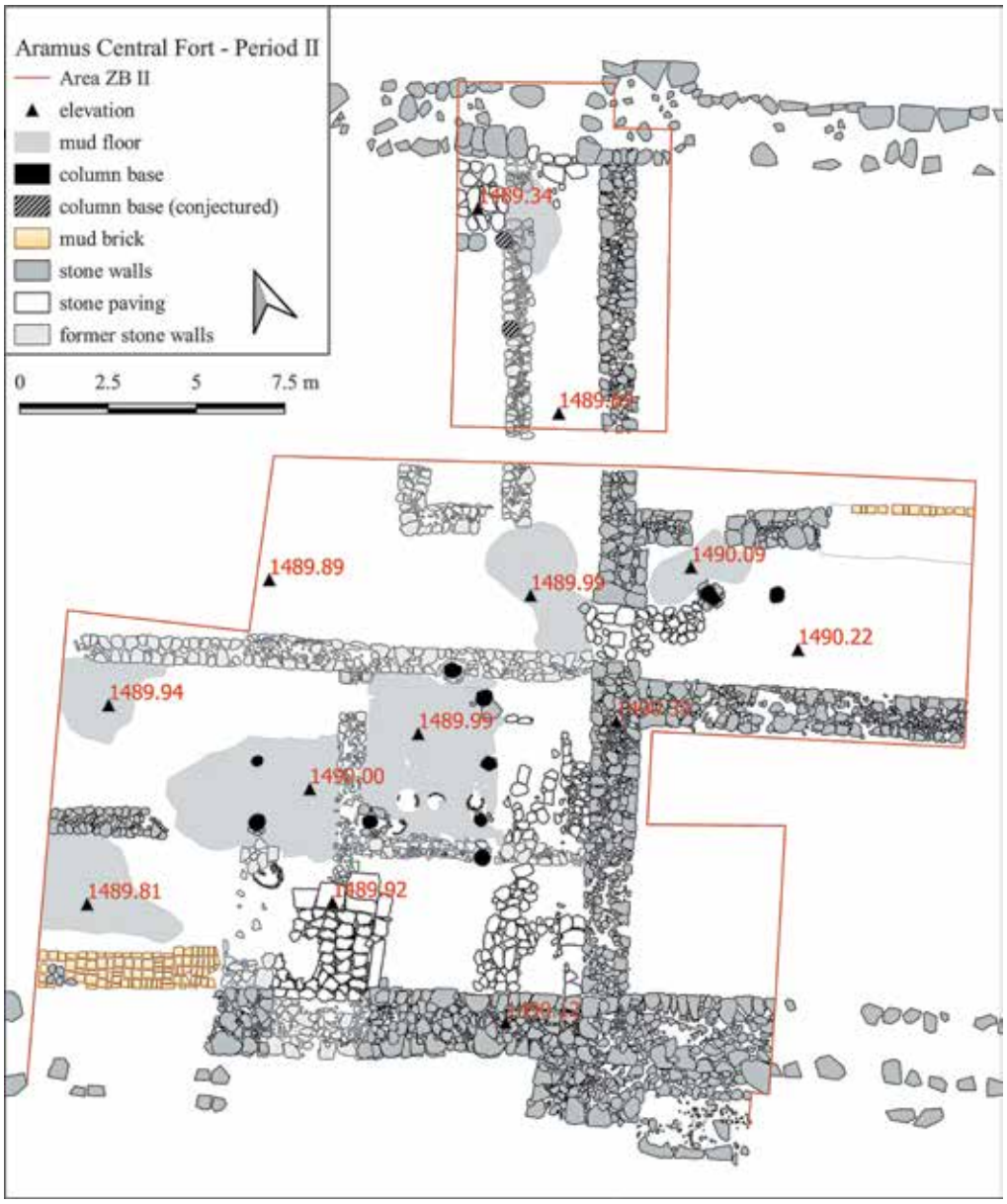

Fig. 7. Plan of the free-standing columned building in the Central Fort of Aramus (Drawing: W. Kuntner).

kings relied on this long standing political system from the beginning, in order to control and rule the Satrapy of Armenia.

The Aramus Fortress complements this picture, which was previously mainly characterized by the results of the excavations in Erebuni (Stronach 2018). Like Erebuni, Aramus quickly adapted its architecture as an expression of the new balance of power by the construction of a free-standing column building almost in the midst of the Central Fort. To the north is a large courtyard laid with pebbles. The outlines, roughly defined by the regular alignment of eight column basalt bases found in situ, measure 6,5 × 5,5 m. The column bases mostly ground on the former stone wall substructures of the Biaini occupation, which continued to be used as shallow thresholds in order to subdivide the covered living area marked by an up to 10 cm thick mud floor. The bases are only roughly hewn round and have the characteristic conoid shape of "terminal or post-Urartian date" (Stronach et al. 2007, 203, Pl. 5. cf. Ter-Martirosov 2020). The diameter is between 38 and 42 cm (except once with only 28 – 30 cm) and the height ranges between 22 and 30 cm. The shaft, if present, is between 5 and 15 cm high. The free-standing building is accessible through doorways on three sides, clearly proving that the fortress' defensive structures remained intact until the end of the 4th century BC (Kuntner et al. 2019). The southern entrance is characterized by a three-tiered, stone paved area. The stairs were carefully built with tuff spolia. Among these, the stelae-like

block has attracted special attention (Avetisyan 2016). Remains of a stone paved path lead east of the free-standing building to the northern and eastern doorways. Their thresholds were carefully paved with stones and the door hinges preserved in situ. The entrance from the northern fort was again characterized by at least three steps. The approximately 2 m wide pathway was roofed and bordered to the west by a 15–20 cm high platform, which was built by filling the former room with stones. The eastern doorway is supplemented by a 1,50 cm wide portico at the inside, which leads in a room to the north later repaired with a mud brick wall (Fig. 7).

Conclusions

Archaeological research at the Iron Age fortress of Aramus revealed a continuous occupation from the 9th to 4th centuries BC. Within this sequence, the presence of the kingdom of Biaini is ascertained in military architecture featured in the extension of the fortifications and in the occurrence of red Ararat valley wares. However, both aspects are integrated within a wider cultural context characterized by local Early Iron Age traditions of pottery production and construction techniques that persist the period of the kingdom of Van. This result demands for a critical reassessment of our understanding of Urartu beyond a mere mirror of the history of Biaini.

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Main Results of the Study of Anthropomorphic Stelae in Artsakh

Nzhdeh Yeranyan

Institute of Archaeology and Ethnography, Armenia

Abstract. The phenomenon of anthropomorphic stelae in Western Asia is known for millennia. Among them are the distinguished stelae discovered in Artsakh (Nagorno-Karabakh). Their systematic investigation was launched in 2013 as a part of a scientific project of the Artsakh archaeological expedition of the Institute of Archaeology and Ethnography of Armenia. As a result of five years of investigation the initial locations of previously known, but relocated stelae were identified and their cultural and archaeological environment has been defined. A substantial number of new stelae have been discovered. This paper aims to present the main results of the study. The issues of chronology and function are the main topic of this contribution.

Keywords: Artsakh, Tigranakert, Nor Karmiravan, anthropomorphic stelae, landscape, iconography, chronology, function.

Introduction

The stone anthropomorphic stelae of Artsakh are one of the essential components of the pre-Christian culture of the region. These are rectangular, flat elongated slabs, which were given anthropomorphic form by three-dimensional treatment. The slabs are divided into three parts by means of two horizontal grooves, accentuating three parts of the body: the head, body and lower body. The stelae are approximately 30–70 cm wide, 120–200 cm (in some cases up to 250 cm) high, and 30–40 cm thick. All are made of limestone.

The first stelae of this series became known during the 60's of the 20th century. Discovered rare examples, however, have been studied without application of appropriate research methodology. For this reason, the issues of their technical, iconographic, semantic specifics, as well as problems of chronology and function remain obscure and unclarified. After 90's new opportunities were opened up for the study of the ancient history and culture of the region. Physical accessibility of anthropomorphic stelae allowed their description in more detail, measuring, photography, as well as the investigation of their historical and cultural environment.

Objectives and Issues of Study

The present study of Artsakh stone anthropomorphic stelae has been launched in 2013 and was a part of a scientific project of the Artsakh archaeological expedition of the Institute of Archaeology and Ethnography of Armenia. Around four dozen stelae have been documented and studied. Moreover, a substantial part of them is introduced into scientific use for the first time.

The main objectives of this research is to clarify the initial location of the previously known, but relocated stelae and their cultural and archaeological environment; to survey and discover new stelae in the physically accessible parts of the Artaskh steppe zone; as well as to examine the issues of erection, chronology and function of the stelae on the basis of research of other archaeological source materials. Physical accessibility of anthropomorphic stelae was the essential circumstance and fact, which allowed their detailed investigation, measuring, photography, as well as study of historical-cultural environment.

Although several stelae were known already in the 60's of the past century (Khalilov 1987, 4–8; Vaidov et al. 1974, 446–447), it is important to note that this territory has not been studied sufficiently in the Soviet years for known reasons (Petrosyan 2010, 137–148). Existing researches are obviously politicized. This also applies to anthropomorphic stelae, which were represented by several Azeri scholars as Albanian. They attempted to interpret their distribution especially in Artsakh as presence of Albanian ethno-cultural substrate.

More than thirty stelae were physically accessible for our studies. Certain details about other three stelae were gained from other sources (diary of H. Petrosyan, various publications and photos available on Internet).

Fig. 1. An anthropomorphic stela. Martakert local lore museum (Photo: Author).

Fig. 2. An anthropomorphic stela. Martakert local lore museum (Photo: Author).

Fig. 3. An anthropomorphic stela from Gyavur kala (Photo: Author).

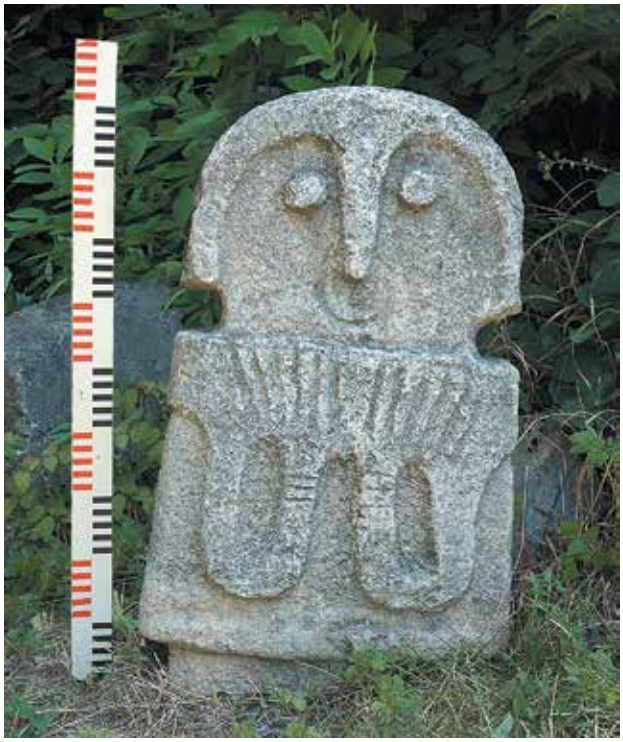

Fig. 4. An anthropomorphic stela. Artsakh State Historical Museum (Photo: Author).

It is possible that the stelae are spread within an extensive, physically inaccessible for us area, that is the eastern part of the Artsakh steppe and Mil plain to the east of it. Given the current situation, however, their documentation is impossible not only on the other side of the Armenian-Azerbaijani border, but also on the borderline.

It is not possible to carry out studies of the stone anthropomorphic stelae in Artsakh without examination of comparative materials and parallels. Within

Fig. 5. An anthropomorphic stela from Nor Karmiravan (Photo: Author).

Fig. 6. An aerial view of Nor Karmiravan burial (Drone photo: A. Mkrtchyan).

this framework, one of the important theoretical and methodological aspects of the present research is integration of the stelae of Artsakh within the broader Western Asian cultural context.

Iconography of Stelae

The stelae under consideration are nearly rectangular, flat elongated slabs, which are divided into three parts by means of wide horizontal grooves, "separating" three body parts: the head, which forms a little less than one third of the whole stela, the body and a part from the waist down. The lower part is usually slightly hewed (dressed). It has been either buried into the ground or fixed in a special foundation. The stelae are approximately 60–70 cm wide, 120–140 cm (in rare cases up to 2.5 m) high and around 30 cm thick (Figs 1–5).

Apart from accurate three-dimensional treatment, the relief sculptures of stelae were carved with an attention to details. Three main techniques of relief carving can be documented: relief carving of the background, grooved relief depiction, incised relief depiction.

The eyes, nose, folded forearms on the chest and upward-directed fingers are mainly depicted on the front side of the stelae. On the back side of the stelae, as a rule, are depicted the hair wrapped in a "kerchief", sometimes also the dagger in a scabbard.

In case of sculpture morphology some details can be separated, which are typical of all stelae. There are other details that are present only on several stelae. In general, among the canonic details are hands, nose, and, as a rule, eyes. The ears are never depicted. Depictions of mouth and hair are issues for separate consideration. Among the elements of garment, the daggers, bracelets and "kerchief" can be mentioned. It can be suggested that iconography of the stelae from Artsakh is strictly schematic, "poor", numerous elements of the "body" are not apparently depicted, although their "presence" is assumed. Interestingly, the images of mouth and ears on the stelae are missing.

Topographic Studies

The first anthropomorphic stelae were discovered in the northeastern regions of Artsakh (Nagorno-Karabakh) Republic: Martakert region and neighbouring territories. Today the accumulations of these monuments are known in Tigranakert of Artsakh, within the territory of Nor Karmiravan village not far from the latter, as well as in the vicinity of Gyavurkala settlement. In the Soviet period, several stelae were relocated from this environment and transferred to the Artsakh State Museum and Martakert museum of history and regional studies, and the other part still remains in the open field.

At the current stage of the work it is impossible to identify the primary location of the several stelae, as they have been relocated as early as in Soviet times and have not been documented *in situ*. It is noteworthy that although the major part of the stelae was not discovered *in situ*, most probably, they were not replaced from remote areas to the place of their secondary use.

Fig. 7. Excavations of Nor Karmiravan burial (Photo: Author).

During research we managed to clarify the place of initial discovery of previously revealed fifteen stelae. Thanks to the study and comparison of the data towards discovery of stelae, it can be suggested that they were found at an altitude of 500 m above sea level. Thus, the zone, where the stelae have been found, is similar to the meadow-steppe landscapes of Artsakh.

The stelae were spread within the extensional area connecting Artsakh Highland and steppe, stretching for around 30–40 km (Fig. 11). All places of discovery are located in the lower valley of the Khachenaget river (in the area where the river flows into the steppe) or its surroundings. The investigated territory occupies the southeastern side of the Minor Caucasus, including the western part of the Kura-Araxes valley, eastern part of the Artsakh steppe and, further to the east, the western-most part of Mil steppe (Avdeev, Akhundov 1942, 10–14).

Nowadays these territories have favorable conditions for development of animal breeding and agriculture. It seems that this meadow-steppe zone through which flows one of the largest rivers, was supposed to be the "pull factor" for those, who stood at the origins of this culture.

The Issues of Chronology and Function

One of the important issues of research was also clarification of the problems of stelae chronology and function. The anthropomorphic stelae of Artsakh represent a single system by their function and ideological content, which reflects the concepts of death, cult of ancestors and world order of that period. It is important to determine chronology of the stelae in order to understand their function and ideological content. This will let us understand not only their primary function, but also the system of beliefs and conception of the cosmic phenomena of those, who erected them.

The issue of chronology of the stelae of Artsakh was studied superficially by the scholars engaged in their research. For all researchers the primary source for dating were the paragraphs of "The History of Albania" by Movses Daskhurantsi (Kaghankatvatsi), where the Khazar invasions and appearance of Khazar warriors were described. According to the historian, these tribes were "…broad-faced, beardless and feminine" (Movses Kaghankatvatsi 1969, 103–104). It is also noteworthy that they were long-haired and loose-haired (probably also wore a kerchief), had no eyebrows and beard (Aramonov 1936, 55).

As we can see, the described characters have certain similarities with the character, depicted on the stelae of Artsakh. For that reason, Sh. Mkrtchyan dates the stelae discovered from Seysulan village to the 7th century AD (Mkrtchyan 1985, 351). M. Khalilov suggested that the stelae were erected in 6–7th centuries AD and added that they reflect idol worship manifestations known in Albania (Khalilov 2004, 104). R. Geyushev also found that these stelae were erected in 7–8th centuries AD by the local Christians (Geyushev 1966, 77–79). Evident typological iconographic similarity of the discussed stelae to the earlier stelae excludes such a later dating.

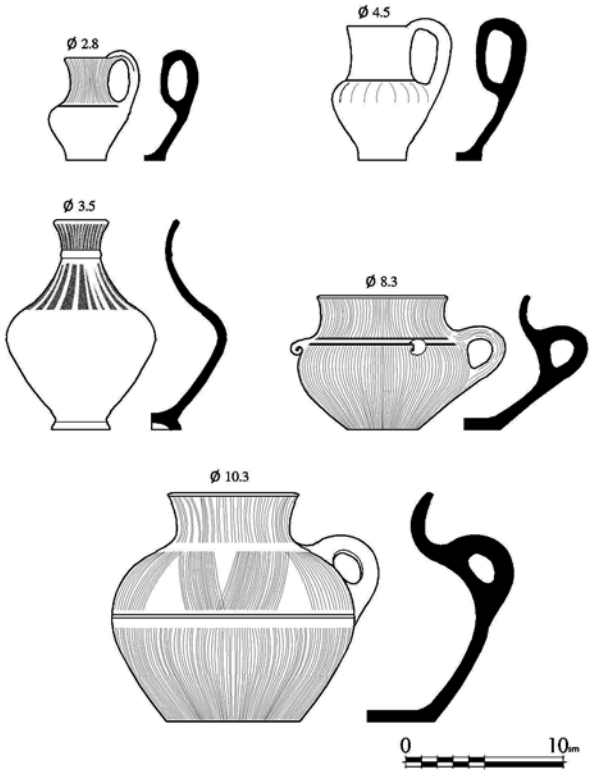

Fig. 8. Finds from Nor Karmiravan excavations (Drawings: L. Minasyan).

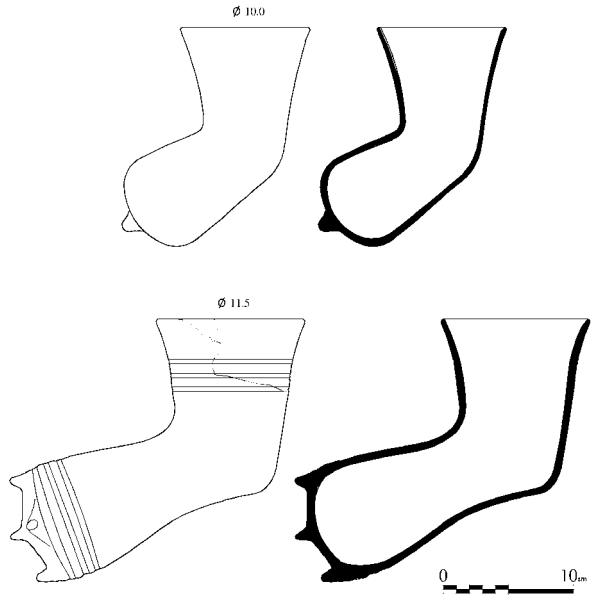

Fig. 9. Finds from Nor Karmiravan excavations (Drawings: L. Minasyan).

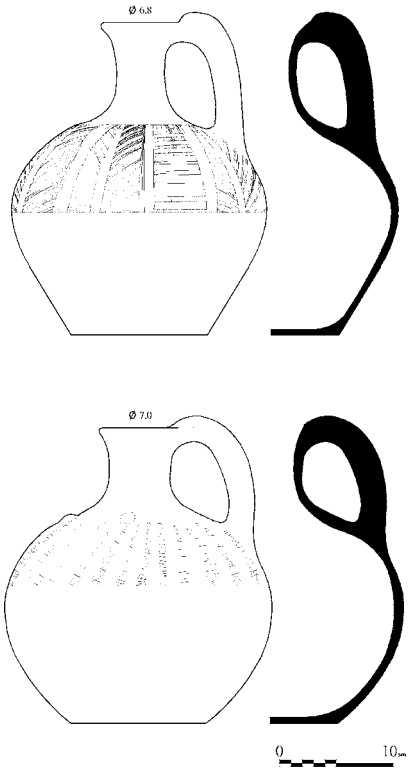

Fig. 10. Finds from Nor Karmiravan excavations (Drawings: L. Minasyan).

Existing archaeological data, however, also allow disproving this dating. During investigation in 2016, excavations carried out around several anthropomorphic stelae discovered in Nor Karmiravan village (Martakert region) revealed that the majority of stelae are placed on the tomb, within their environment. Archaeological material unearthed in the burial dates back to the 8–6th centuries BC, which is the most likely period for dating the stelae (Figs 6–10).

Comparative-historical examination also supports this dating of the stelae. When comparing the data on the similar anthropomorphic stelae known in the region, we arrive at conclusion that anthropomorphic stelae from Artsakh were made and erected between 8–6th centuries BC[1].

1 The stelae accumulation in the north-eastern part of Iranian Atropatene, in the site called Meshkin Shahr in Ardabil valley is particularly noteworthy (Ingraham, Summers 1979, 67-73). A British scholar Ch. Burney was one of the first researchers, who referred to these stelae. He mentions that some stelae in Arjak Kale on the eastern outskirts of Meshkin Shahr had been reused to build fortification and barriers. This argues in favour of early dating of the stelae. Ch. Burney mentions that the stelae, most probably, date back to the second half of the Iron Age (beginning of the 1st millennium BC). Their common connection to nomadic tribes of the northern steppes is beyond dispute (Burney 1979, 155). According to M. Ingraham and G. Summers, 120 anthropomorphous stelae have been found here,

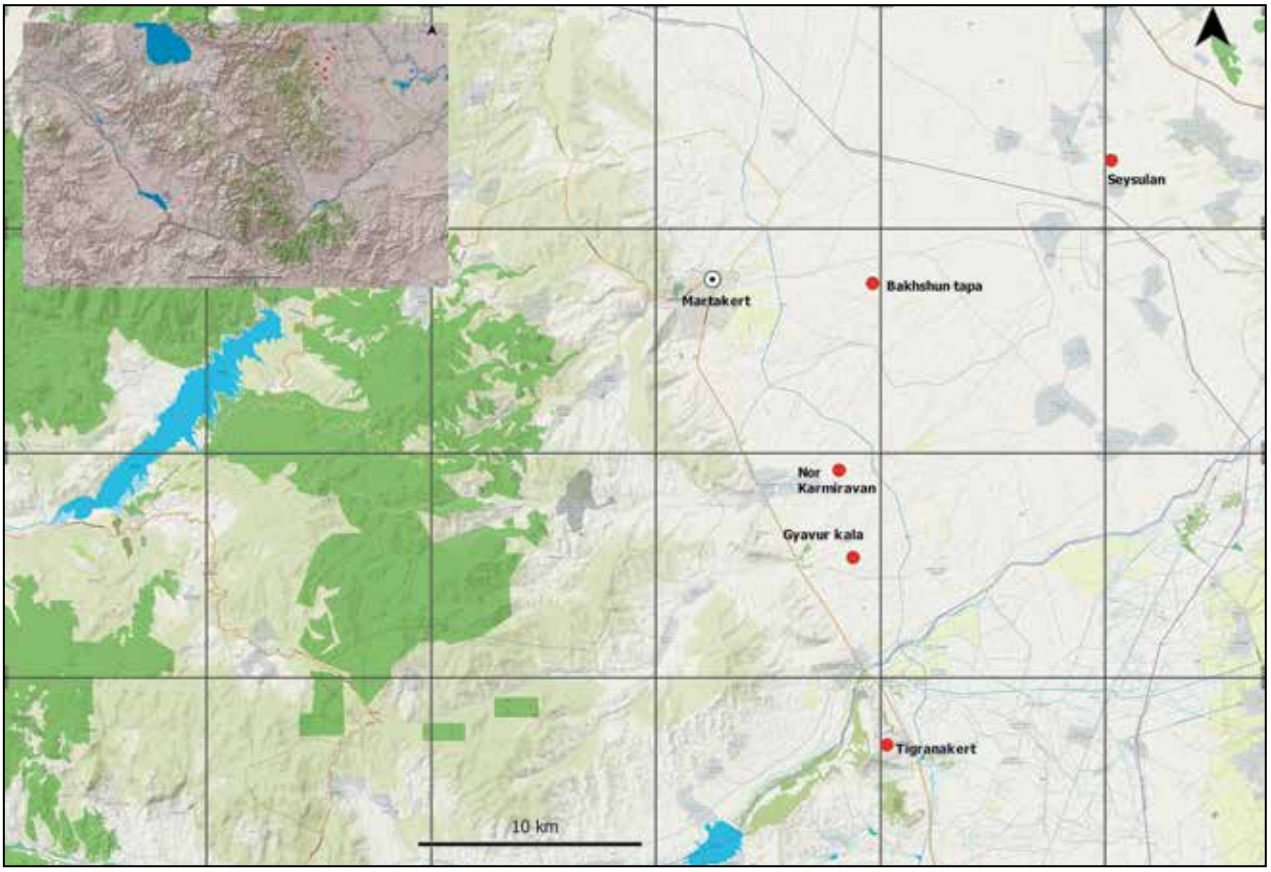

Fig. 11. Distribution of anthropomorphic stelae (1. Bakhshun tapa, 2. Tigranakert, 3. Nor Karmiravan, 4. Gyavur kala, 5. Seysulan) (Map:: L. Mkrtchyan).

The available examples before the research were scanty and out of their environment. That was the reason why certain questions including their function remained unclear. Subsequently, the data obtained in the result of research filled this gap. We managed to find out, that nine stelae in the yard of the museum of history and regional studies in Martakert were relocated in 1975–1976 from the place named Bakhshun Tapa at a distance of 3 km to the north of Martakert. The stelae were discovered during gardening activities when the land was leveled (Karapetyan 1989, 38–41).

According to verbal report of the work supervisor, who was present during the discovery, fragments of skeletons, several ceramic vessels and a sword were also found along with stelae. Although the stelae have been documented without application of appropriate methodology, by comparing available data it can be suggested that they were connected to the mound, where most probably was a burial. Some fragments of stelae were discovered during the surveys. Thus, the field that is leveled now, once contained cultural horizons.

Excavations in the surrounding area of the stelae discovered in Nor Karmiravan village played a principal role in the study. A burial was documented inside the discovered tomb, which belonged to a 25–30 years old male individual. Excavations of the Nor Karmiravan burial and extensive study of stelae environment suggest connection between the stelae and the tomb.

Similar anthropomorphic stelae from Iran, North Caucasus and Pontic Littoral dated to approximately the same period, supplement the available archaeological data. Thus, for example, similar anthropomorphic stelae in the settlement Meshkin Shahr within the territory of Iran have not been examined in detail. However, as Ch. Burney and G. Summers mention, they were initially placed on top of burials, including pit burials (Burney 1979, 156; Ingraham, Summers 1979, 69–70).

which are divided into four groups and are put in rows (Ingraham, Summers 1979, 74; cf. Pogrebova 1984, 199). Archaeological investigations in Meshkin Shahr were also carried out by the Iranian expedition of Tarbiat Modares University in Tehran. In 2004, the expedition documented 400 similar stelae (Azarnoush, Helwing 2005, 216-217). These stelae were also studied by K. Piller. He mentions that although there are even medieval monuments within the area, discovered black and red burnished pottery proves that the site dates back to the beginning of the 1st millennium BC (Piller 2010, 68-71).

The data about stelae in the territory of North Caucasus and Black Sea littoral is more informative. Thus, according to V. Olkhovsky, despite the fact that the stelae discovered there, in 30% cases had been relocated from other place, the study of the stelae discovered in situ proves that these were erected exceptionally on the burials (Olkhovskiy, Evdokimov 1994, 41–44).

In conclusion it can be mentioned that the stelae discovered in Artsakh as well as their known parallels were "gravestones", or/and cultic symbols, which were placed on the burials (possibly, also pit burials) attached to the pedestals or without pedestals. These stelae were erected in case of death of an individual, who belonged to an upper social class.

Main Results and Conclusions

In conclusion, it can be stated that as a result of the study more than twenty anthropomorphic stelae were discovered, the topographical, technical and iconographical specifics of the previously found and newly discovered stelae were clarified, including the chronological and functional issues.

The stelae under consideration are usually located in a quite isolated area that occupies the eastern part of the Artsakh steppe and, further to the east, the westernmost part of the Mil plain. The examined stelae refer to the 8–6th centuries BC and were gravestones, which were placed on the burials and/or on top of pit burials. The modest technical arsenal of the sculpture, sketchiness and "poorness" of iconography allow suggesting that in case of Artsakh stelae we are dealing with the primary manifestation of a broad historical and cultural phenomenon. From this perspective, the similarities between both Iranian, "Cimmerian" and "Early Scythian stelae" are particularly noteworthy. This suggests that Artsakh stelae refer to the earlier group of stone anthropomorphic stelae distributed over an extensive area. It is possible that the appearance of these stelae in Artsakh could be connected to the process of first infiltration of Cimmerians and Scythians into the Western Asia, which happened in the 8th century BC.

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The Issue of the Scythian Presence in Armenia in the Works of Gevorg Tiratsyan

Garegin Tumanyan

Institute of Archaeology and Ethnography, Armenia

Abstract. In his studies, Gevorg Tiratsyan repeatedly referred to the issue of the presence of Scythian tribes in the Armenian Highland. He deeply recognized and emphasized the role of Cimmerian and Scythian tribes in the lives of ancient states of the East. Gevorg Tiratsyan believed that the fact of naming Paroyr as the first king of Armenians in the "History of the Armenians" could not be viewed as a simple coincidence with the known historical fact that Partatua was the first king of Scythians. Based on the facts of discoveries of trappings, complexes of weapons and necklaces typical for Scythian culture in the Armenian Highland, Gevorg Tiratsyan discussed the ties of Scythian tribes with Armenia in the times of both the hegemony of the Van kingdom and after its fall. In his exploration of the origin of Hellenistic cities in Armenian Highland, Gevorg Tiratsyan made an important conclusion that ruining the water supply systems and irrigation constructions of Urartian cities by conquerors was one of the reasons of their fall. The scholar has demonstrated that many features of burial constructions and funerary rites in Classical Armenia were much older and the picture of cultural succession "covers many associated spheres of material culture" in Armenia.

Keywords: Gevorg Tiratsyan, Armavir, Armenian-Scythian relations, Partatua, cultural decline.

Introduction

The presence of Scythian tribes in Armenian Highland was acknowledged long ago and, especially, archaeologists' attention was drawn to it (Samuelyan 1931, 86–87; Manandyan 1944, 23, 41). The distinguished explorer of Armenian archaeology Gevorg Tiratsyan, the best connoisseur of Ancient Armenian culture, was not restricted within the boundaries of the Hellenistic period of the history of Ancient Armenia. Hence, he repeatedly referred in his works to the issue of Scythian presence in Armenia. As far back as in article written in the early period of his scientific carrier, he thoroughly discusses the issue of Armenian-Scythian relations in the Armenian Highland (Tiratsyan 1962, 89–92). In this article, he recites the information of Movses Khorenatsi about the "Dynasty of Skayordies" dominating in Armenia. He states that although the Father of Armenian History, not hiding his joy about it, considers this dynasty native, still, based on the etymology of the names, Skayordi – son of Scythian, Paroyr – Partatua, Prototyes (the name of a Scythian king), in a number of studies an opinion was expressed that a Scythian dynasty dominated in Arme-Shupria in the 7th century BC. G. Tiratsyan emphasizes the role of Cimmerian and Scythian tribes in the lives of Ancient Eastern states. He is convinced that the information passed by Khorenatsi about the existence of Scythian dynasty in Armenia "*bear the imprint of circumstances and occurrences*" associated with the history of Cimmerians and Scythians in the Western Asia.

According to G. Tiratsyan, the fact that in the "History of the Armenians", Paroyr was named as the first king of Armenian people, "cannot be considered a simple coincidence" with the reality that Partatua was the first king of "Scythians", who followed Ishpaka, the chief of "Scythians". Nevertheless, he thinks that researchers studying this issue should be very cautious, considering the fact that the king Paroyr who, as indicated by Movses Khorenatsi, "was born from Skayordi, i.e. son of Scythian or Sak" in the same period is mentioned next to another king, obviously of Scythian origin, carrying the same name (P/Bartatua in Assyrian sources, Prototyes from "Histories" by Herodotus)" (Tiratsyan 1962, 91; 1966, 99–100).

Scythian Presence in Armenian Highland

Based on the facts of discoveries of horse tacks typical for Scythian culture in Armavir, Karmir Blur, Norshuntepe, etc., the explorer made an inference about the presence of Scythians in the Armenian Highland. He paid attention on connections of Scythians with Armenian Highland both during the dominance of the Van kingdom and after its fall (Tiratsyan 1978a,

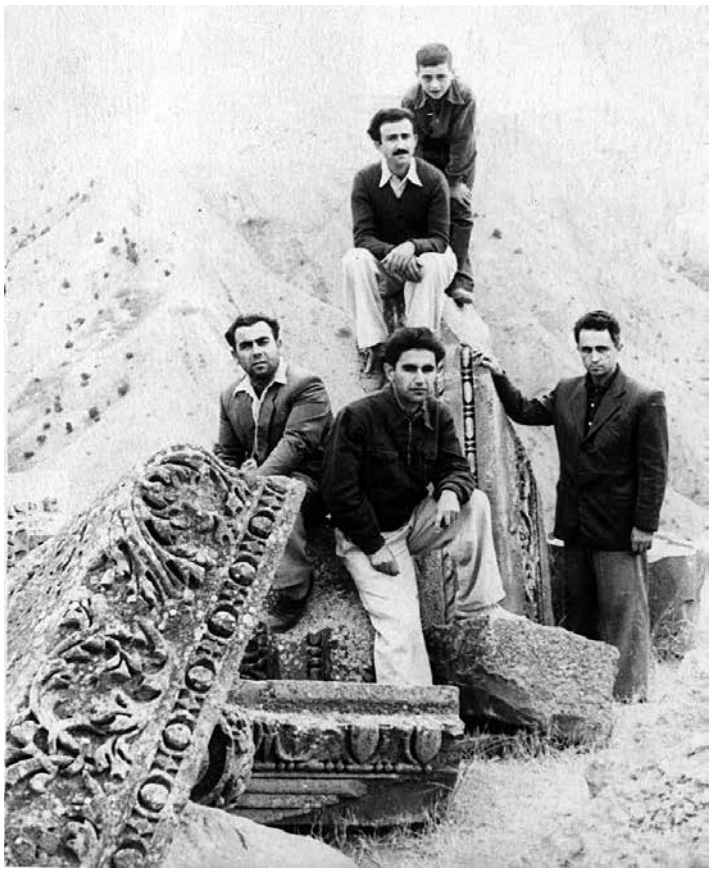

Fig. 1. Gevorg Tiratsyan (first in the centre) in Garni, 1950-s (Personal archive: courtesy of N. Tiratsyan).

111 – 112; 1998 – 2000, 248, fig. 58). Talking about the types of weapons discovered in Armenia, G. Tiratsyan separates two groups of arrowheads in the collection of 6 – 4th centuries BC: local (with a tang) and Scythian (with a socket, double- or triple-winged) (Tiratsyan 1985, 39). When discussing the golden crescent-shaped pectoral uncovered in Armavir, the scientist considers it a perfect sample of jewelry art decorated with stylized images of birds, lotus buds and trees of life. Then he informs that a similar pectoral was found in the territory of Mana land, meanwhile emphasizing the probable dating of Ziwiye treasure at the end of 7th century BC (Tiratsyan 1968, 192; 1969, 153; 1971b, 476). Hence, the researcher helps a reader to make an impression about the cultural belonging of that item. He noticed and proved via stylistic analysis the influence of Urartian art on the Scythian applied art (Tiratsyan 1978a, 113).

It is remarkable a quite logical inference that he makes based on the observation that in the territories of Urartian cities, the fact of finding sepulchers of later periods inside the houses indicates "*the temporary cessation of urban life in the given areas*" (Tiratsyan 1966, 98). During exploration of the genesis of Hellenistic cities of Armenia, he made an important conclusion that one of the reasons of the fall of Urartian cities was ruining of water supply systems and irrigation constructions of those cities by conquerors (Tiratsyan 1979, 160). The fact that in a number of big Urartian cities the urban life was restored and continued after the fall of the Van kingdom, as these cities were administrative centers in the Achaemenid period, did not escape from the scientist's attention. Of these centers of Urartian civilization that continued their life later-on, the example of Erebuni-Arinberd is more evident, as archaeological findings from its excavations provide the best confirmation of the aforementioned. Urban life in the post-Urartian period continued also in Tosp-Van, Argishtihinili-Armavir (Tiratsyan 1966, 95; 1979, 161 – 162, 171). It is not difficult to make an inference from these that Scythian invasions accompanied with destruction and depopulation were not able to completely stop the vital activity of the Urartian state. Based on the traces of fire uncovered during excavations of Armavir, as well as the disclosed material evidence (Scythian type horse bridles, arrowheads, etc.), the principal investigator of excavations brings forward a hypothesis that Scythians participated in the

attack on the city. On the other hand, the presence of pictography of Urartian glyptics on the items belonging to Scythian elite, according to the explorer, "*makes the domains of Urartian influence on the Scythian art more explicit*" (Tiratsyan 1980, 32; Tiratsyan, Karapetyan 1983, 59–60).

G. Tiratsyan is convinced that the Iron Age archaeological complex of Jrarat is one of the connecting pieces between the Developed Iron Age and Hellenistic culture in Armenia (Mnatsakanyan, Tiratsyan 1961, 79; Tiratsyan 1971b, 464). Due to this astute observation, today it becomes possible to exactly define the place of such commonplace burials (Tiratsyan 1964, 69) among Iron Age cultures of Armenia, as the presence of Scythian bronze arrowheads is also emphasized in the collection of artifacts specific for the mentioned transitional complexes (relatively late-dated spears with tube-form socket, curved knives, bracelets with incurvation, etc.) (Tiratsyan 1988, 42–44, fig. 11). According to convincing arguments of the researcher previous local cultural traditions were inherently continued in the ancient Armenian culture in some important fields such as castle building and housebuilding, pottery and other crafts, funerary rites and religious beliefs (Tiratsyan 1964, 78; 1988, 31, 34–35, 40–45, 71–74; 2003b, 160–162). The role of the works of Gevorg Tiratsyan's especially valuable in eliciting cultural linkages. Due to rare scientific intuition, he was able to specify in a couple of words the cultural belonging of any object disclosed in Armenia ("short sword-acinaces, which were widely utilized in Irani-Scythian world"). Like a competent art historian, he determined the specific cultural origin of the art reflected in a given complex ("animal" style typical for Achaemenid art"). He was capable to provide an explicit impression of the cultural world, which was concordant with a discussed complex, using brief expressions and only few apparent correlates (e.g. "Akhalgori, Algeti, Ghazbegi") (Tiratsyan 1988, 52, 62, 71). When discussing a bridle composed of bronze circlets found in Arinberd, G. Tiratsyan compares it with bridles from Akhalgori, hence, making clear its cultural origin. In another place, he disagrees with the opinion that the silver rhyton from Yerznka has "Scythian features" and defines it as a product of "Achaemenid art" (Tiratsyan 1988, 45, 51). The respected scientist considers the clay sarcophagus uncovered in tomb no. 25 of Oshakan to be of Urartian origin (Tiratsyan 1978b, 53)[1]. G. Tiratsyan notifies also "steppe Scythia" among the lands associated with Urartian culture and influenced by it (Tiratsyan 1978b, 59; 2003a, 12). He holds an opinion that in the second half of the 6th century BC, Pontic and Central Asiatic regions were at a lower economic and societal developmental level than Babylonia, Western Asia Minor, Phoenicia, Palestine, and Egypt (Tiratsyan 1971a, 445–446).

The subtle and cautious conclusion of the scientist that in the period immediately following the fall of the Urartian state, "some regression is observed in the life of people" living there, is extremely interesting and actual (Tiratsyan 1966, 98). In particular, apparent decline is observed in the urban life (Tiratsyan 1971a, 459; 1979, 160–161). Indeed, the view that during the discussed period the population of Armenian Highland was in the stage of cultural decline, was not accepted before (Piotrovsky 1949, 115). Even decades after the publication of the "Archaeology of Transcaucasia" by B. Piotrovsky, an opinion was expressed that Scythian tribes and natives of Armenian Highland were in "quite peaceful" interrelations (Pogrebova 1984, 42). Thus, the mentioned observation of G. Tiratsyan allows us to revise the existing rejecting attitude concerning this issue and to accurately restore the historical reality. Notably, the view of the cultural decline taking place as a result of violence and total robbery by Scythians was risen by the Father of History Herodotus: "*For eight-and-twenty years then the Scythians were rulers of Asia, and by their unruliness and reckless behavior everything was ruined; for on the one hand they exacted that in tribute from each people which they laid upon them, and apart from the tribute they rode about and carried off by force the possessions of each tribe*" (Herodotus, I, 106).

Conclusion

The comprehensive ideas of G. Tiratsyan are unique in their depth and clarity. They express the broad scope and extensive knowledge of a proficient armenologist, skillful source specialist, and observant archaeologist, as well as a profound orientalist and elegant art historian. These ideas are still attractive and actual in today's reality. Hopefully, Gevorg Tiratsyan's remarkable ideas will be appreciated by the new generation of researchers exploring the culture of Ancient Armenia.

1 In our opinion, this viewpoint is not confirmed today. Most probably, the sarcophagus is a product of Scythian culture.

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A Review of Trepanations in the Armenian Highland with New Cases

Anahit Khudaverdyan

Institute of Archaeology and Ethnography, Armenia

Abstract. Trepanation is one of the most ancient medical "treatments" on living humans. It is known from prehistoric times all over the world, and is practiced even at the present time among some African tribes. The anthropological investigations of skeleton remains from various periods and areas provide with information on the medical practices in Armenian Highland. The present article discusses the cases of trepanation in the Republic of Armenia, based on the fourteen sculls from the collection of the Institute of Archaeology and Ethnography of Armenia, dated between the Late Bronze Age and Classical period. The most cases of trepanation are identified during the Late Bronze and Early Iron Ages. Trepanned skulls most frequently belong to adult males, sometimes also to women and children under 10 years. Among fourteen cases of surgical trepanations nine had healing signs. 65% of the people survived after the procedure. Various surgical techniques were being employed throughout the region. Paleopathological examinations suggest that trepanation was performed for therapeutic purposes in connection with pathological indications found on the skeleton.

Keywords: Ancient Armenia, medicine, trepanation, craniotomy, paleopathology, surgical instruments.

Introduction

Medicine is an integral part of the ancient culture of Armenia and its roots go back thousands of years. Doctors were able to treat not only internal diseases, but also resorted to surgical interventions, and often quite difficult. Considerable progress has been made in human anatomy and physiology, which has allowed for a variety of operations, ranging from simple autopsies to skull trepanation. The first researcher who ascertained the existence of ancient trephinations was the famous anthropologist and doctor Paul Broca. Trepanation has been known in many parts of the Ancient world and is still practiced in a few traditional communities of Africa, Melanesia and Polynesia (Lisowski 1967, 665). There are proofs of trepanation from all European countries (Baggieri, Di Giacomo 2003, 139–144; Facchini et al. 2003, 249–251; Gokhman 1989, 10–11; Holck 2008, 190–192; Mariani-Costantini et al. 2000, 306–307; Mays 2006, 96–100; McKinley 1992, 334–335; Moghaddam et al. 2015, 58–62; Mountrakis et al. 2011, 2–6; Nemeskéri et al. 1965, 10–25; Powers 2005, 8–12; Roberts, McKinley 2003, 61–75; Rubini 2008, 97–98; Silva 2003, 119–127), Asia (including China, India, Japan and Southern Siberia) (Goroshenko 1899, 8–16; Han, Chen 2007, 23–25; Meschig, Schadewaldt 1981, 19–22; Richards 1995, 205–208; Sankhyan, Weber 2001, 377–378), in the Middle East and Egypt (Açikkol et al. 2009, 30–35; Angel 1971, 80–91; Erbengi 1993, 2–4; Erdal, Erdal 2011, 510–530; Ferembach 1970, 20–60, 1984, 140–141; Güleç, Pelin 1998, 345–348; Hershkovitz 1987, 129–130; Smith 1990, 90–92; Rawlings, Rossitch 1994, 508–511; Zias, Pomeranz 1992, 184–185).

There are three types of trepanations: actual (surgical) – any hole in the skull made in life; ritual – post-mortem autopsy of the skull; symbolic – a life-long operation that does not spread further than the diploë, and the internal bone plate was not exposed. For therapeutic purpose trepanations are performed for removal of bone fragments penetrating into the cranial box as a result of blows, in case of severe headaches, epilepsy, in case of elimination of other intracranial pathologies, which caused physical suffering to the person or cause certain deviations in his behavior (Açikkol et al. 2009, 30–32; Brothwell 1972, 10–12). In post-mortem trepanations, religious motifs played a role, such as the desire to wear the skull suspended on the belt, as an amulet, or to give the soul living in the skull a free exit after death (Cordier 2005, 366–367; Murphy 2003, 210–211). Post-mortem trepanations of skulls were also performed for the purpose of brain extraction for subsequent embalming and mummification). Symbolic trepanations are referred to as surface (non-surface) manipulations that slightly violate the integrity of the skull arch (injury of the bone surface in a strictly defined place, creation of some geometric pattern on the

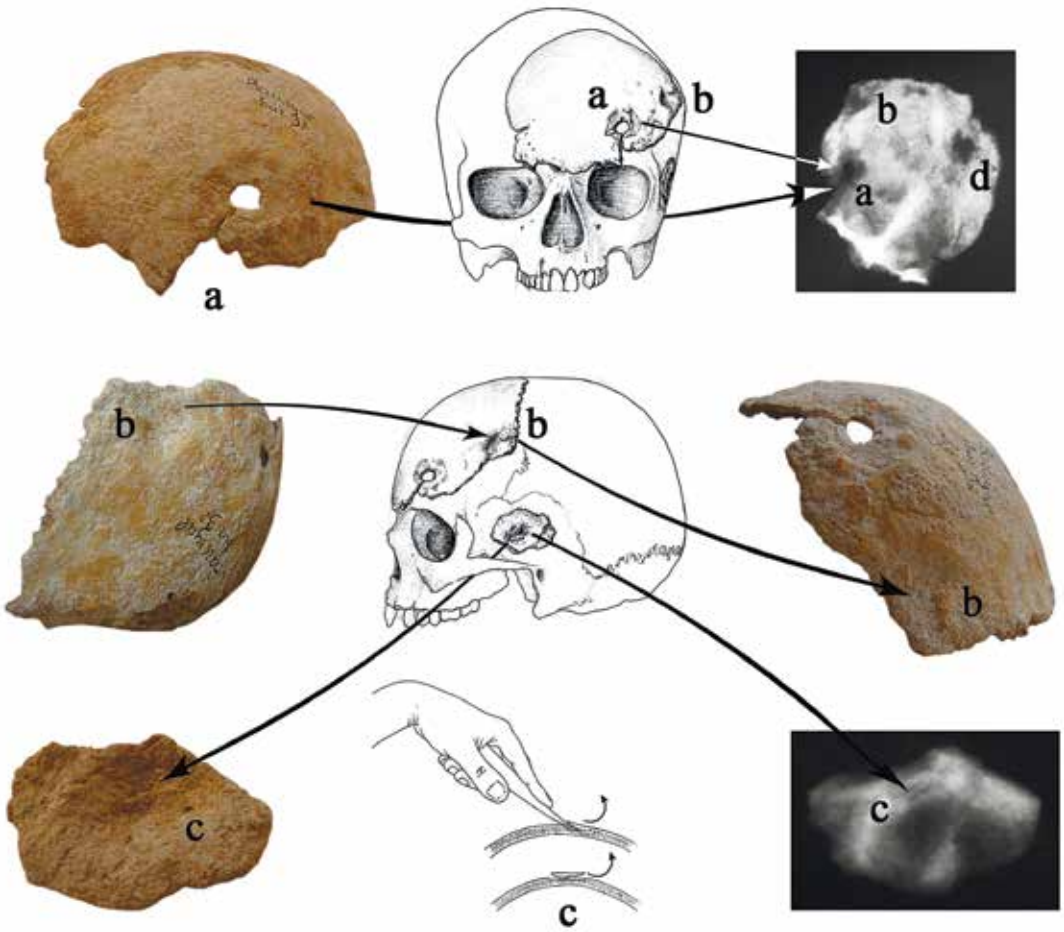

Fig. 1. Frontal (a,b) and temporal (c) bones; (d) Duke-Davidoff-Masson syndrome of a young female with healed trepanations from Bardzryal, Burial no. 97 (Photo: Author).

outside of the brain capsule) (Nemeskery et al. 1960, 22–26). The operation was not considered dangerous, and that even with minimal hygiene, it did not commonlyresult in significant post-operative complications through infection (Margetts 1967, 677–679).

There are four main trepanation techniques: scraping (hole opened with an abrasive instrument), drilling (hole opened with a trephine/drill), cutting (a hole opened with an incisive instrument to produce different types of orifice), and boring-and-cutting (a hole opened with both a drill and an incisive instrument) (Fabbri et al. 2012, 196–197; Lisowski 1967, 659–665).

In our country, initially the priority in the study of trepanation belonged to doctors and anatomists. Professor, Doctor of Medical Sciences A.D. Jagaryan owns the first study of skull trepanation in ancient times in the history of the development of Armenian paleopathology. Note that thanks to A.D. Jagaryan the anthropological portrait of the individual with life perforation on the skull was restored (Fig. 5). Another scientist who made a significant contribution to the development of knowledge about trepanations was A.A. Sarafyan, an anate associate professor of anatomy at Yerevan State Medical University. In the palaeopathological collection he collected, trepanated skulls from the tombstone of Lchashen occupy considerable place (Khudaverdyan 2010, 224–225). It should be noted that the detected trepanated skulls from the tombstone of Lchashen (Burials no. 193/6, 71, 83) with traces of pronounced reparations regeneration. According to scientific literature, prehistoric trepanations had a high survival rate of trepanized individuals without signs of post-operative complications. These figures reached 50–80% (Aufderheide 1985, 121; Verano, 2003, 231). The successful completion of skull operations is attributed to the small diameter of most holes and the application of them in safe places to avoid damage to the sutures and hard brain.

The aim of this study is the investigation of the Armenia cranial trephinations at the Institute of Archaeology and Ethnography National Academy of Science that come from archaeological excavations. In addition, we attempt to shed new light on individuals, diseases, and therapeutic interventions of the remote

past on the very important geographic area Armenian Highland.

Methodology

The examination of the skulls took place at the laboratory of the Physical Anthropological of the Institute of Archaeology and Ethnography National Academy of Science, Yerevan, Republic of Armenia. The protocols established by J.W. Verano (2003, 225–229) were applied jointly to analyze the trepanation. The defect was inspected (location, shape, extent, and appearance) and the extent of healing of the margins was evaluated. The method of examination was macroscopic observation with reflective light. Furthermore, radiographic representation of the skulls was used.

Techniques of Trepanation in Armenia

The techniques of trepanation were similar across all continents, however, some researchers reckon that trepanations in different parts of the world appeared and developed independently (Brothwell 1994, 131–135; Rifkinson-Mann 1988, 413–415; Silva 2003, 121–127). Nevertheless, they could throw light on the prehistoric movements of people and the transfer of surgical skills in closely related people. For this reason, the trepanation techniques used in Armenia were discussed with a consideration of the distribution of their application in different periods, their similarities and differences from other populations around the world.

Trepanation with scraping. Scraping is defined as removing the required area of bones by gradually scraping away bone tissue (Lisowski 1967, 658–662). No publication concerning the particular tools used with this technique in Armenian Highland, it is accepted that tools made of metals, stone, glass and bones (Lisowski 1967, 660).

The age at death of individual from Bardzryal site (Late Bronze and Early Iron Ages, Burial no. 97) is between 20 and 25 years old. Sex was determined as female based on cranial morphology. Trepanation is located on the left part of the frontal bone and measures 35 × 27 mm. Its contour is not quite regular (Fig. 1/a). The edge is slightly damaged, and the type of damage reflects the artificial origin of the hole. There is a slight circular depression surrounding the defect (area 60 mm long and 45 mm wide), which may represent the extent of the original lesion. The depression is surrounded by a distinct, slightly raised margin, and the size and form of the lesion suggest that the trepanation was carried out by scraping. On visual examination, marked features consist of the oblique orientation of the hole walls, the defect edges remodeled into one compact bone layer, and the resulting loss of visible diploë structures. The edges of the trepanation hole, similarly as the mentioned cut surface, exhibit clear traces of healing. Considerable osseous regeneration is also testified by fusion of the outer and inner bone layers at the defect margins and disappearance of the diploë structure. There is also a probability that the trephined area underwent a post-traumatic infection as some porosity possibly related to inflammatory vascularisation is clearly visible in the outer surface. A 19 × 17 mm oval depression is observed on the left part of the frontal bone near the sagittal suture (Fig. 1/b). The surface of the depression is uneven. The presence of cut marks is generally evidenced by the occurrence of short, fine marks or the scraping marks over the surface of the bone.

The left temporal bone presents an osseous, ellipsoidal, infundibular defect, with a striated surface ending in a deep vortex adjacent to an exostotic formation (Fig. 1/c). The size of the lesion is transverse diameter 21.5(?) mm and anterior–posterior diameter 31(?) mm, the surface is 3–3.5 mm deep. The centre of the depression is rough. The smoothed, albeit slightly uneven, edges with beveling indicate the regrowth of bone, as apparent from examination of both the peripheral part of the depression and that close to the centre, characterized by reactive new bone formation and substantial bone remodeling. The radiography reveals a zone of progressive attenuation and the hyperostotic ring (Fig. 1/c), which would indicate the individual's prolonged post-operative survival. The external surface of the skull shows flat, porous, and also thick new bone formations in several areas (Fig. 2f). In addition, both the external and the internal surfaces of the coronoid processes of the mandible display flat porous lesions that extend posteriorly into the mandibular notch and then to the base of the mandibular foramen.

An individual from Bover (Late Bronze and Early Iron Ages, Burial no. 7) is the example of trepanation where also the scraping technique has been used. The skull belongs to a male about 30–39 year old. The depression measuring 33.5 mm × 27 mm is observed on the right side of the frontal bone (Fig. 2). Only the external table and the diploë are perforated and when the internal table has been reached the process has stopped. The surface of the depression is uneven but not rough, the edges cannot be defined due to advanced remodelling. The regular elliptic shape indicates some intentional human intervention.

Fig. 2. Incomplete trepanation: a skull of a 30–39 years old male from Bover, Burial no. 7 (Photo: Author).

Fig. 3. Trepanation by drilling: a skull of a 20–25 years old female from Karmir, Burial no. 7 (Photo: Author).

Scraping was first observed in Asia Minor after the second half of the 3rd millennium BC and continued to be used until the Medieval period. This technique is the least frequently used technique of trepanation in Anatolian cases (12.5%) (Erdal, Erdal 2011, 513). The Neolithic period in Europe, 90% of the European skulls were trepanned with the scraping technique (Ullrich, Weickmann cited in Piek et al. 1999, 149).

Trepanation with drilling. Trepanations performed by drilling technique were a widespread technique in the world (Piek et al. 1999, 148; Stone, Urcid 2003, 239). In the drilling technique, an opening is made in the form of a circle with the use of a cylindrical iron drilling instrument modiolus (Brothwell 1974, 210) or a similar implement.

The skull from Karmir (female aged between 20 and 25 years) has an circular hole in the sagittal suture, 15.2 mm × 16 mm in diameter (Fig. 3). On the external table, the orifice is slightly wider than the diploë and the inner table (10.2 mm × 11.1 mm). This trepanation does not provide evidence of healing, the diploë is exposed and visible in all parts of perforation; that means the individual died during the intervention or immediately post-operative. Besides, there is a lack of overgrowth of bone at the edges of the section, specifying that damage have not been exposed to any scratching process. Another specimen dated to the Achaemenid period from Avan. The Avan specimen was not discussed in detail (Demirkhanyan 2010, 130). Trepanation was observed on the right parietal bone near bregma. Trepanation was small in size (0,5 cm), and on the external table, the orifices were slightly wider than the diploë and inner table. Next specimen dated to the Late Classical period (1st century BC – 3rd century AD) from Black Fortress I, Burial no. 5, belonged to a male at about 35 years of age (Khudaverdyan 2011, 43–44). Trepanation, achieved using a drilling technique, created the hole seen on the left lambdoid suture.

A Late Classical period skull from Shirakavan (Fig. 4/a) also showed evidence of trepanation (Khudaverdyan 2011, 43–44). The individual was a juvenile (8–10 years). Trepanation, achieved using a drilling technique, created a hole which was noted on the right parietal bone of the funnel-shaped type (diameter: 8 mm). The child died not from the trepanation process. Similar trepanation was also known by Ancient Asia Minor people in the Roman period. On the skull (M6-4.1) which was found in the western necropolis in Perge. On the right frontal two arching rows, each consisting of four orifices, were observed (Fig. 4/b). All of the holes were identical in their dimensions and shape: each 6.5mm in diameter and truncated cone shaped. If someone hypothetically completes the rows, he can easily achieve a circle as described in Celsus' determination for the boring and cutting technique (Erdal,

Fig. 4. Trepanation with drilling plan: a. A skull of a juvenile from Shirakavan, Burial no. 1 (Khudaverdyan 2011, 44; b. Trepanation with boring-and-cutting technique on the individual from Perge (Roman period, adult male) (Erdal, Erdal 2011, 519).

Fig. 5. Trepanation with circular plan: a skull of a 30–39 years old female from Lchashen, Burial no. 71 (Photo: Author).

Erdal 2011, 519). The boring and cutting technique involved drilling a series of holes through the cranium and then cutting through the residual bone to remove the central plug.

One of the most widespread techniques of trepanation in Asia Minor is drilling (32.5%) and the earliest examples of this operation were done in this manner (Erdal, Erdal 2011, 511). This technique it was used in Asia Minor until the Ottoman period (Erdal, Erdal 2011, 513). The drilling technique was uncommon in Britain (Parker et al. 1986, 145–148), common in the Portuguese prehistoric period (Silva 2003, 120–123) and were first observed on Iron Age skulls in the Czech Republic (Vlček 1972, 765). The boring and cutting technique was observed on five individuals (12.5%) in Asia Minor (Erdal, Erdal 2011, 518). The boring-and-cutting technique was known also in South America in ancient times (Verano 2003, 232).

Trepanation with sawing. The sawing technique involves the removal of bone through circular, ovoid or rectangular incisions. The sawing technique was used in 11 trepanations dated to the Late Bronze and Early Iron Ages (7 from Sevan basin and 4 from Lori province) and one - to the Late Iron Age (Shirak province).

Trepanation with a circular or ovoid plan. This cutting procedure in a circular or ovoid shape is identical to grooving described by Lisowski (1967, 661). Trepanations three skulls from the Late Bronze and Early Iron Ages have been found in Lchashen necropolis. The trepanation on the individual numbered no. 71 from Lchashen was in the circular form. On the left parietal bone of an adult individual (female 30–39 years, Fig. 5), an trepanation in the proximity of the temporal bone was detected. Dimensions measured 46.4×48.4 mm. The individual had the largest trepanation opening discovered in Late Bronze and Early Iron Ages. The opening did not have any fracture on the internal surface and getting narrowed slightly from the external surface towards the interior suggests that it was cut in a circular form. On this specimen also where no infections were identified (Khudaverdyan 2010, 244–245).

Another example is the skull of an individual from a Burial no. 193/6 (male, 40 and 49 years). The half-face facial reconstruction, made by the doctor A. D. Jagaryan and currently housed in the museum

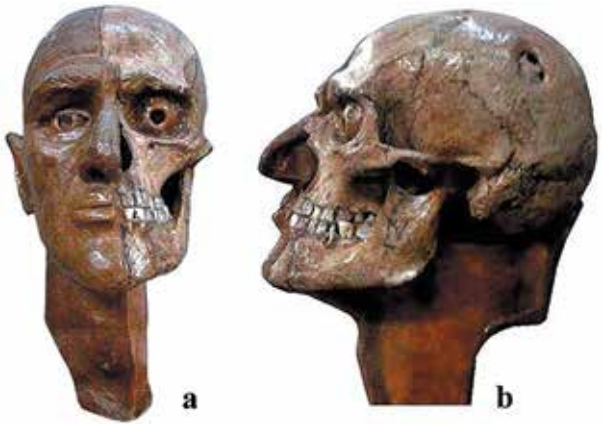

Fig. 6. Skull of an 40–49 years old male from Lchashen. a. A facial reconstruction by A. Jagaryan; b. An intravital perforation of the left parietal bone (Photo: Author).

in Sardarabad, shows possible intravital perforation of the skull on its exposed side (Fig. 6). The trepanation is oval, measures 30.5 mm × 20.5 mm, and is located in the middle of the left parietal bone. The edge of the perforation is partially obliterated, practically through the skull save the lower layer of the inner table. The perforation is associated with a fracture. At the inferior edge of the hole is trace of cracking. At the endocranial surface of the perforation, the compact bone plate is separated by traumatic damage. Trepanation of small dimension (10.6 mm × 26.6 mm) was observed on the left temporal bone of the third individual (male 30–39 years) from Lchashen grave (no. 83) (Khudaverdyan 2016, 455–456). All of the edges of the trepanation were inclined towards the internal surface. Sclerosis is detected in the surrounding area.

The individual from Artsvakar necropolis (Burial no. 5, male, 60–65 years) shows an oval shaped trepanation (Khudaverdyan 2016, 455).The hole, measured 29 mm × 14 mm, has an appearance of a crater, narrowing from its exterior towards the interior parts. On individual from Artsvakhar, cut marks which occurred during the cutting procedure on the anterior edge of the opening were observed (Fig. 12). The individual survived the procedure for a certain period of time. The pitted area indicates an infection following the trepanation and the remodeling of the borders indicates the healing process.

Trepanation two skulls from the Late Bronze and Early Iron Ages have been found in Karashamb necropolis. Trepanation executed on a male aged 18–20 years (Burial no. 6), resulted in the ovoid opening (diameter 14 mm × 10 mm) located on the right parietal bone (Khudaverdyan 2016, 455). Lack of healing in the periphery of the oval section indicates failure of the operation and death of the person. The trepanation was most certainly done using metallic instrument, creating a somewhat dull beveled exocranial border. Another example is the skull of an individual from a Burial no. 1 (male, 20–29 years) (Khudaverdyan 2016, 455). Trephination achieved using a sawing technique, created a hole noted on the occipital bone. The width of the trephination hole, which is circular in shape, is 13.8 mm by 13.3 mm. No sign of specific trauma was found near the hole nor elsewhere on the skull. There was no sign of infection, which proved that the person survived the procedure and then died later, due to post-operative complications.

Another case of circular trepanation, which was dated to the Late Iron Age, was unearthed from the excavations of Shirakavan necropolis. One old-aged male was found to have undergone two surgical procedures. The defect (in diameter approximately 34 mm) on skull is not round-it appears round in the upper part and then has straight sides more inferiorly. The hole was in the left parietal bone (Khudaverdyan 2012, 227–228). Several fine incision marks were observed around the line of the craniotomy cut, some parallel to each other, around the sides of the head. It is likely then that the scalp from the top of the head was removed by cutting across the front and along the sides, (roughly following the hairline in front but cutting through it posterior) and then lifting the scalp back, making sub dermal incisions to the back of the head to further the reflection of the scalp to allow the craniotomy.

There exists 10% of trepanation in Asia Minor on which the cutting procedure was done in a circular or ovoid shape (Erdal, Erdal 2011, 516).

Trepanation with rectangular sawing. This is a technique in which four straight incisions are made, intersecting at right angles (also called crosscut sawing or linear cutting). Trepanations with a rectangular sawing dated to the Late Bronze and Early Iron Ages was found in 5 individuals (1 from Sevan basin and 4 from Lori Province) and one to the Achaemenid period from Avan.

In Bagheri chala necropolis, there are two cases of surgical trephination (Khudaverdyan 2016, 451–452). Skull of an 8 to 10 year-old child showed evidence of two trepanations (Burial no. 22). Skull was the presence of an one opening in the region of sagittal suture on the left parietal bone (Fig. 7/a). Around the hole, deep grooves remained as an evidence of the sawing method for the incisions, which left cut marks along the margins of the perforation. Dimensions of this opening are 15 mm × 15 mm and another 15 mm × 15 mm at the external part, following cut marks (three

Fig. 7. Trepanation with rectangular sawing: a skull of 8–9 years old child from Bagheri chala, Burial no. 22 (Photo: Author).

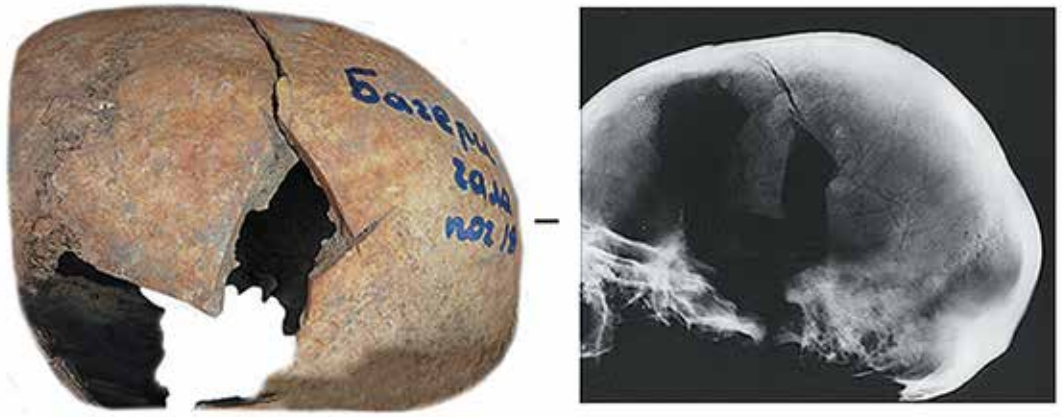

Fig. 8. Trepanation with rectangular sawing: a skull of a 40–49 years old male from Bagheri chala, Burial no. 18 (Photo: Author).

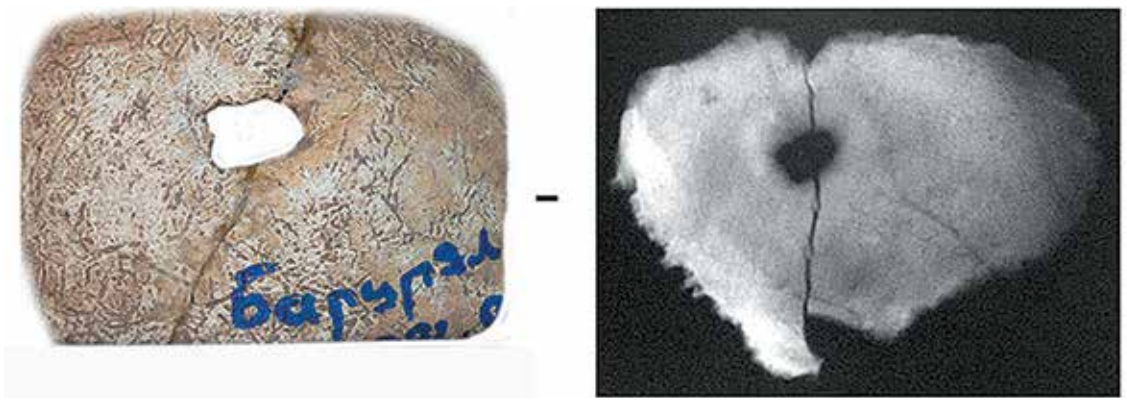

Fig. 9. Trepanation with sawing: a skull of a 20–29 year old individual from Bardzryal, Burial no. 9 (Photo: Author).

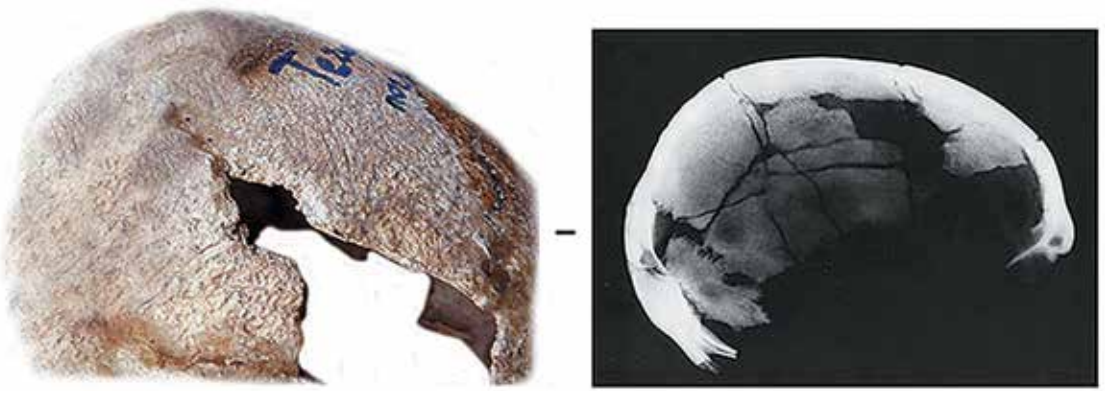

Fig. 10. Trepanation with sawing: a skull of a 30–39 years old male from Tekhut, burial no. 1 (Photo: Author).

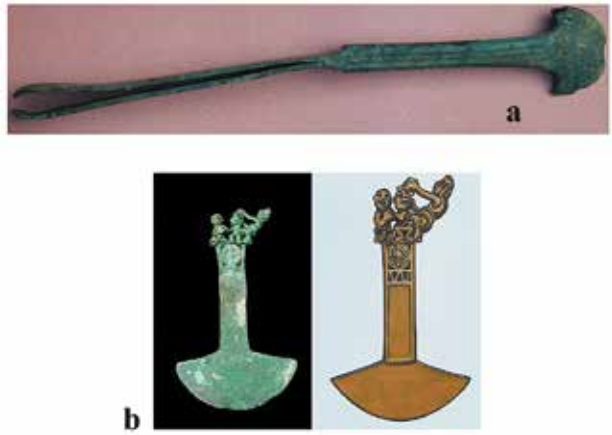

Fig. 11. Surgical instruments: a. Lori Berd (photo: S. Devedjyan), b. Tumi, a metal instrument with a crescent blade and a short central T-shaped handle from Peru (Marino, Gonzales-Portillo, 2000, 948).

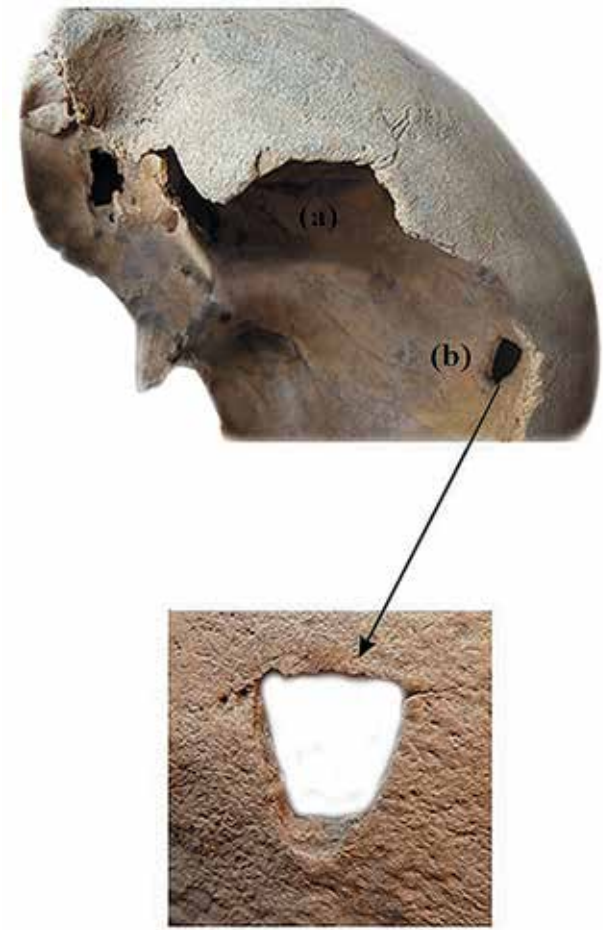

Fig. 12. Trepanation with circular sawing: a skull of a 60–65 year old male from Artsvakar, Burial no. 5 (Photo: Author).

cut marks on a longer side, two on the shorter side). In the left parietal bone, the presence of a second opening was found, which could be owed to a complete attempt of a second trepanation operation (Fig. 7/b).Opening has a diameter of 16 mm × 9 mm × 16 mm × 9 mm and the same morphology as that of the initial one opening. Around the trepanation bone margin, cut marks remain as an evidence of the sawing method used. The child died during or shortly after the trepanation procedure.

Individual from Burial no. 18 is a male 40 to 49 years old. The trepanation is located on the right parietal bone and the hole measures 23.7 × 18.5 × 9.5 × 8.2? mm. Around the trepanation margin of bone, cut marks remained as evidence of the sawing method used. The hole is characterized by an irregular quadrilateral perimeter which is clearly visible (Fig. 8). The trepanation is incomplete suggesting that the individual died during surgery.

A quadrangular trepanation was defined on the cranium of a 20–29 year individual from the Bardzryal necropolis (Burial no. 9) (Khudaverdyan 2016, 452). The part of a right parietal bone was removed, using metal saw (or perhaps, some kind of a chisel) and a hammer (Fig. 9). The square bone fragment was removed from the skull and had the following measurements: 12 mm × 10 mm × 12.8 mm × 5.5 mm at the external part and 13 mm × 8.5 mm × 14 mm × 6 mm at the internal part. Both macroscopic and the radiological analyses made showed that the individual might have remained alive for a long time after the operation.

The next skull comes from the cemetery in Tekhut necropolis (Burial no. 1, Fig. 10) (Khudaverdyan 2016, 453). It belonged to a man aged about 30–39 years. Dimensions of the opening are 14 mm × 13 mm × 7? mm × 9? mm at the external part and only 12.5 mm × 9 mm × 8? mm × 8? mm at the internal part. The border is irregular, rough and contains small pits of an osteitic-nature, while the diploë has been completely obliterated by later deposition of bone as a result of healing. The jagged bor-ders of the hole thin out from its centre, with newly placed formations of laminated tissue and bony protrusions, which are orientated centripetal to the hole. Furthermore, there is also sclerosis in the surrounding area. The extensively healed area of bone suggests that this individual survived the procedure for a considerable time to allow of approximately 15 mm of new bone growth. The radiological analyses showed that the area of the cortical tables around the borders is spongy and thinned. This hypothesis is also based on the macroscopic observation of the diploë and on the internal and external characteristics of the tables.

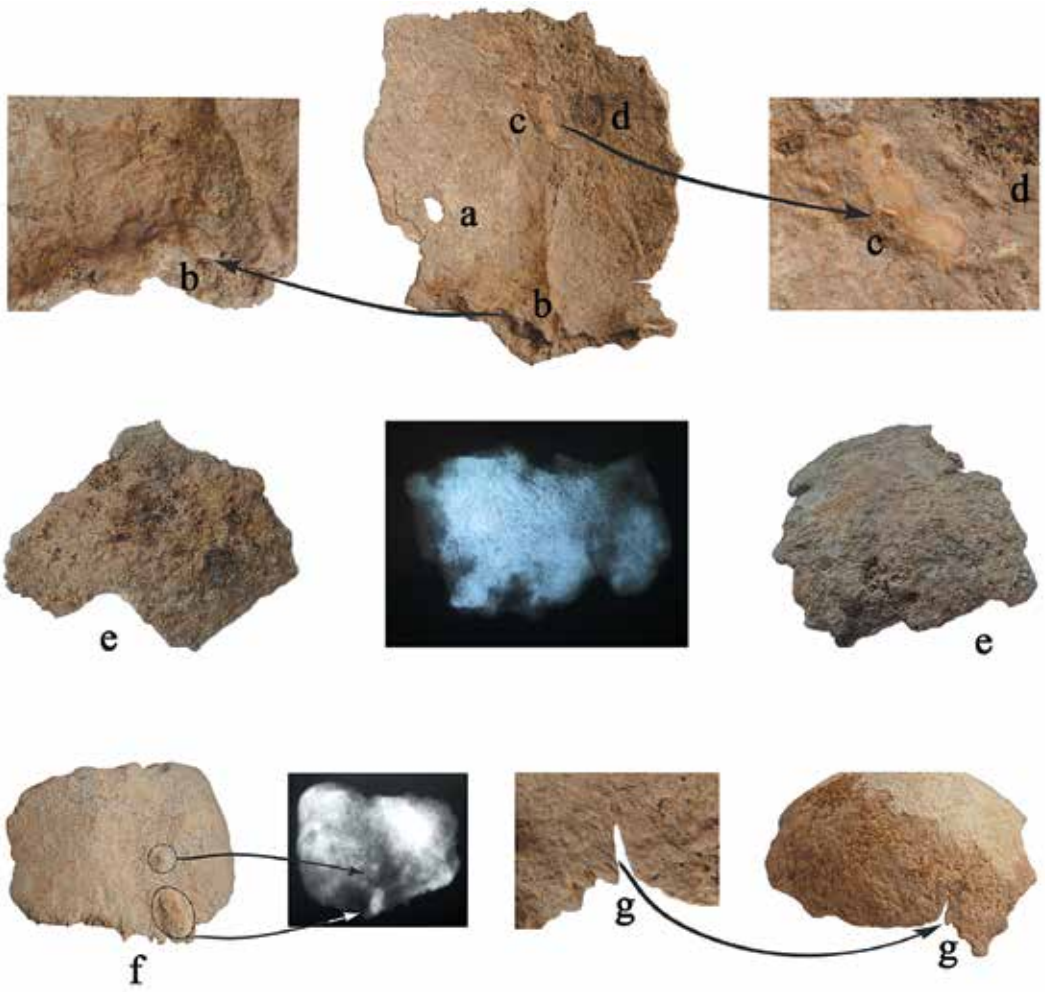

Fig. 13. Frontal (a) bone of a young female with healed trepanation; Dyke–Davidoff–Masson syndrome (b,c,d,e), characterized by isolated, elevated bony island; porotic hyperostosis (f), osteomas (g), fissure (h). Individual from Bardzryal, Burial no. 97 (Photo: Author).

A rectangular trepanation was defined on the frontal bone of a child (age 6–9 years, Burial no. 7) from the Noratus necropolis. The opening had the dimensions of 16.6 mm × 15.5 mm × 12 mm × 21 mm (Khudaverdyan 2016, 452). The bone edges did not show signs of healing such asremodelling or reactive bone, leading to the conclusion that the child did not survive the trepanation procedure.

Another specimen dated to the Achaemenid period. A rectangular trepanation was defined on the cranium of a male individual from Avan (Demirkhanyan 2010, 130). The opening had the dimensions of 4 × 2 cm and started from the right side of the coronal suture, continuing along the left parietal bone. The appearance of the margins of the opening and the obliteration of the diploë suggest the individual survived the operation.

The earliest examples of the rectangular sawing technique were encountered in the Bronze Age as well; its typical examples were represented by two individuals (Cavlum, Ikiztepe SK 420) from Asia Minor (Erdal, Erdal 2011, 516). The frequency of rectangular sawing technique among the Anatolian trepanations was 10%. The sawing technique was also used from Ebla (Syria) and Dashkesan (Azerbaydzhyan), which were dated to the Bronze Age (Kirichenko 2007, 65; Mogliazza 2009, 188). Two other cases, dated to the Iron Age, were discovered in Tell Duweir (Lachish), Palestine (7–8th centuries BC; Parry 1936, 170; Starkey 1936, 170). It was also used among the traditional populations of Algeria and Kenya (Lisowski 1967, 655). Another case of rectangular trepanation was also found in France (Lisowski 1967, 655).

Surgical Instruments and Anesthesia

The Ancient Armenia physicians used various instruments for trepanning. Examination of the operated skulls reveals samples of several techniques, including

circular cutting, scraping, crosscut sawing, and drilling.

From the study of skulls from Bagheri chala (Figs 7–8), it is evident that incisions were performed in a linear sawing. This technique required the use of a very hard and sharp instrument. A metallic blade with a semicircular surface was probably used to make four incisions at right angles to each other, following the classic so-called "crosscut sawing" technique. Surgical instruments have been discovered at the Lori Berd site (Fig. 11/a). Probably, the child and men head was held tightly between the surgeon's knees, and the knife blade, which consisted of a sharp piece of bronze or copper, was then rubbed back and forth along the surface of the skull. In this way, four incisions arranged in a criss cross pattern, were made in the skull. The knife blade increased in thickness close to the sharp edge, thus it was prevented from suddenly penetrating the skull to far. When the incisions were deep enough, the square-shaped piece of bone in the middle of the criss cross was prized out from the skull. The Aztecs and Perus used similar trepanning instruments, consisting of a sharp semicircular surface (Fig. 11/b).

Little is known regarding anesthesia, which probably was based on herbal preparations. Small wine pithoi and goblets were found in burials Bagheri chala, Bardzryal and Bover (Lori province, Late Bronze and Early Iron Ages), next to the deceased. A part of different wine glasses were found in the pithoi, probably immersed in wine (Hobosyan 2011, 205–209; Hovhannisyan et al. 2017, 329). Maybe, alcoholic beverages such as wine were given to patients in large amounts, before an trepanation, causing a soporific effect. Pairing wine and hemp (*cannabis sp.*) have been exploited as medicine practices since prehistoric times (Chu 2004, 212). According to the Chronicle of the Three kingdoms (ca. 270 AD) and the Annals of the late Han Dynasty (ca. 430 AD), Hwa Tuo[1] performed operations under general anesthesia. Before the surgery, he gave patient an anesthetic to drink to become drunk, numb and insensible. The anesthetic was called "foamy narcotic powder" (or hemp-bubble-powder) and probably dissolved in wine (Chu 2004, 212). It proves the importance of intoxicating preparations containing hemp in the conducting trepanation. Yet, for the time in Armenia not being at least, direct evidence is lacking wine and hemp as an anesthetic during trepanation.

1 A Chinese surgeon, Hua T'o carried out operations under anaesthetic over 1800 years ago.

In fact, pairing cannabis and wine is fixed in the mortuary rites of the Areni-1 cave. Clay structures were excavated in close neighborhood of an industrial wine production complex proving the incontestable connection of wine production to unique burial rituals held there (Gasparyan 2014, 18; Hovhannisyan et al. 2017, 328–329). One exceptional example is the traces of cannabis and wine in the pithoi.

Discussion

Motivations for trepanation. Scholars have searched for the rationale for trepanation since Squier's initial discovery in 1865. Proposed explanations have included treatments for cranial trauma, epilepsy, and nonepileptic seizure disorders (Clower Finger 2001, 1420–1422) diseases of the cranium, scalp and cranial infections, and etc.

Trepanation due to trauma. Written information on cranial trepanations is first encountered in the writings of Hippocrates (460–370 BC). According to his book titled "On Injuries of the Head", the main purpose of cutting out a piece from the cranium was to treat cranial injuries (Hippocrates 2004: chapter 10). In paper "On Injuries of the Head", the opening of the skull is mentioned in the cases of fractures and of cranial bone fragmentation with the purpose of removing bone fragments which penetrated the endocranial space, exerting pressure to the brain. The philosophers like Celsus (De Medicina, 25–35 AD) (Celsus 1971, 1–4) and Galen (Singer 1999, 115) reported that surgical operations were performed in cases of cranial traumas.

The classification of cranial fractures by Hippocrates included five categories: (1) fissured fracture which is always accompanied by a brain hematoma, (2) hematoma of the bone, without a fracture, (3) depressed trauma of the outer plate, without any damage to the inner plate, (4) dinted trauma of the outer plate and fracture of the inner plate by opening the skull, (5) indirect fractures as a secondary consequence of direct cranial-cerebral injuries (countercoup injuries). These fractures might have been caused by blunt-force trauma due to war injuries or felled trees.

Practitioners in Ancient Greece and Rome used trepanning to treat convulsions, especially those resulting from trauma (Finger, Clower 2001, 995). K. Oakley and others (1959, 94) report that shamans employed traditional skull opening in post-traumatic treatments with strong religious connotations.

Traces of surgery that unmistakably point to trauma were observed on the Bardzryal (Late Bronze and

Early Iron Ages), Lchashen (Late Bronze and Early Iron Ages), Artsvakhar (Early Iron Age) and Black Fortress I (Late Classical Age) cases. The trepanation from Bardzryal site was performed on individual with the purpose of removing the effect of the trauma and it was ultimately successful. It was probably a surgical clearing for the removal of splinters of bone from an injury to the head caused by fight, hunting or agricultural activity. The individual from Artsvakhar was an example of trepanation with cranial injury. Judging from the healed and unhealed cranial injuries at Artsvakhar, obvious marks of a battle injury were present (Fig. 12). The perforation from Lchashen (Burial no. 193/6) also is associated with a fracture (Fig. 6). At the inferior edge of the hole is trace of cracking. At the endocranial surface of the perforation, the compact bone plate is separated by traumatic damage. Trepanned male from Black Fortress I may show evidence of cranial injuries (Burial no. 5, male, 30–35 yers.). The oval aperture appearing on the left parietal bone, with marked elliptical defects on edges of the injury probably indicates that the person received a sharp blow from a weapon) (Khudaverdyan 2011, 43). Since the aperture were on the left side of the skull it is suggested that a right-handed opponent standing opposite the victim caused the skull injury. The wound was quite large and oval and showed signs of healing.

The most important motive trepanations in Anatolia stood out as cranial traumas (Erdal, Erdal 2011, 519). A plenty of paleopathological studies examining cranial surgery in different parts of the world also conclude that trepanations with therapeutic motives were mainly associated with traumatic lesions (Piggott 1940, 122; Zimmerman et al. 1981, 499; Jørgensen 1988, 4; Merbs 1989, 172; Mays 2006, 99; Weber, Wahl 2006, 538–540, etc.).

Therapeutic purposes other than trauma. There are examples of trepanned skulls that have evidence of disease. The trepanation was performed to somehowtreat or relieve the symptoms of disease. These diseases include mastoiditis, scurvy, ear infection, meningiomas, hydrocephaly, brain tumours, headaches, and seizures.

Eight to ten years old children from Bagheri chala (Late Bronze and Early Iron Ages) and Shirakavan (Late Classical Age), young man from Karashamb (Late Bronze and Early Iron Ages), middle young man from Tekhut (Late Bronze and Early Iron Ages), in addition to trepanations, all had mastoiditis. This is the only clue as to why the trepanation was performed. The severity of the mastoiditis in these cases was obvious. It is likely that trepanation was performed in an attempt to relieve the ear pain. Mastoiditis is an infection of the mastoid process of the skull. Itis usually caused by a middle ear infection (acute otitis media). Otitis media may be caused by a variety of bacteria, but infections caused by Streptococcus pneumoniae, and Haemophilus influenza are the most common (Flohr, Schultz 2009a, 268–270; 2009b, 101). The infection may spread from the ear to the mastoid process of the temporal bone and this could be the reason for the trepanation.

On the right side of the frontal bone at individual from Shirakavan (Late Iron Age) the lesions corresponds with osteomyelitis. Pathological changes observed in the cranial vault include several focal cavitations that penetrate into the diploë but do not affect the inner table. There are also compact bone depressions with radial grooves that create a stellate pattern. The cranial lesions in this case are focused on the frontal bone. The anterior endocranium contains regions of hypervascularity and thickened diploë.

The 40–50 year old male from Bagheri chala, in addition to a trepanation on the left parietal bone, had inflammation (tuberculosis). One of the lesions reported, was on the internal (posterior) surface of the manubrium sterni, which had a latticework appearance, the other–on thoracic vertebrae. Given that tuberculosis is characterized by lytic lesions and is known to affect the sternum to some degree, the presence of pronounced lattice-like porosity on the posterior surface of the manubrium could have potential associations with tuberculosis. Tuberculosis is a chronic infectious disease caused by one of the microorganisms of the group Mycobacterium (Roberts, Buikstra 2003, 40). Trepanation in this case was used to alleviate symptoms of a disease that probably would have been hard to identify in antiquity.

The healing or success of trepanations Leprosy was found in a person from Karmir (Khudaverdyan 2011a, 50–51). Leprosy, also known as Hansen's disease, is caused by slowly growing type of bacteria, Mycobacterium leprae. It is an infectious disease that causes severe disfiguring skin soresand nerve damage in the arms and legs. It is probable that in this case trepanation had a treatment purpose.

Cranium from Bardzryal site (Burial no. 97, female 20–25 years) showed an abnormal thickening of the left frontal bone (Fig. 13/b–e) where the inner cranial plate bulged into the cranial vault, expanding the diploë space, whereas the outer plate remained unaffected. We believe that trepanation was used specifi-

cally to treat the Dyke–Davidoff–Masson syndrome (Khudaverdyan et al. 2019, 452). Dyke-Davidoff-Masson syndrome refers to atrophy or hypoplasia of one cerebral hemisphere (hemiatrophy), which is usually due to an insult to the developing brain in fetal or early childhood period (Sharma et al. 2006, 156). The clinical features present with recurrent seizures, facial asymmetry, contralateral hemiplegia, mental retardation, and speech and language disorders. The purpose of trepanation was to free the individual from generalised or focal uncontrolled seizures.

Among the trepanations discovered in Anatolia, the only individual for whom a relationship can be established between the surgical intervention and an illness other than trauma, was the˙Ikiztepe specimen (SK 603) wherea tumour growth was accompanied by trepanation (Erdal, Erdal 2011, 523). Oakley et al. (1959, 94) reported an ancient trepanned skull from Jericho that showed signs of mastoiditis. They argued that an infection of the mastoid process of the temporal bone could be the reason for the trepanation. The authors also noted a perforation of the external auditorymeatus of the same skull from Jericho. There was no explanation of the severity of the mastoiditis and whether this would have produced pain severe enough to require surgery. In addition, G. Mann (1991, 166) attributes one case of a Peruvian trepanation to a chronic ear infection. They argued that an infection of the mastoid process of the temporal bone could be the reason for the trepanation.

Anthropologists have speculated that trephination was also done for religious reasons, release of "demons or evil spirits." There is unfortunately no material that documents any of these concepts.

Healing or success of trepanations. Many of these Armenian skulls exhibit new bone formation along the edges of the orifice, indicating that the subjects survived the intervention. It is believed that up to 80% of the subjects may have survived and that many deaths were due to post-operative infection and not the operation itself (Verano 2003, 232).

The degree of healing was separated into three categories:

1. no healing, such as the sole rectangular trepanation described earlier,
2. short-term healing, with osteoclastic activity surrounding areas of necrotic bone,
3. long-term healing, with extensive remodeling and rounding of margins (Verano 2003, 232).

The third category of healing comprised of 5 cases (Late Bronze and Early Iron Ages: Bardzryal: Burials no. 9, 97; Bover: Burial no.7; Tekhut: Burial no. 1; Lchashen: Burial no. 193/6), majority with long-term. By contrast, short-term healing was seen in 8 case (Late Bronze and Early Iron Ages: Lchashen: Burials no. 71, 83; Karashamb: Burial no. 6; Artsvakhar: Burial no. 5; Karmir: Burial no. 1; Late Iron Age: Shirakavan: Burial no. 1; Achaemenid period: Avan: Burial no. 1; Late Classical period: Black Fortress I: Burial no. 5), and no healing was seen in 7 cases (Late Bronze and Early Iron Ages: Bagheri chala: Burials no. 18, 22; Karashamb: Burial no. 6; Karmir: Burial no. 7; Noratus: Burial no. 7; Achaemenid period: Avan: Burial no. 2; Late Classical period: Shirakavan: Burial no. 1). Skulls have been found showing incomplete trepanation; this was probably due to death of the individual during the procedure, which was then halted. Infection immediately adjacent to the trepanned area, apparent as additional bony deposits, occurred in 7 individuals (Late Bronze and Early Iron Ages: Bardzryal: Burials no. 9, 97; Bover: Burial no. 7; Tekhut: Burial no. 1; Lchashen: Burial no. 71; Late Iron Age: Shirakavan: Burial no. 1; Late Classical period: Black Fortress I: Burial no. 5). In three of seven cases, the inflammation was only partially healed at the time of death (Bardzryal: Burial no. 97; Bover: Burial no. 7; Tekhut: Burial no. 1). In Anatolia, 60% of the people survived after the trepanations (Erdal, Erdal 2011, 526).

Seems to be some relationship between technique and probability of survival (Nystrom 2007, 44). The highest number of signs of long term healing in the Armenian trepanations was observed in cases where the sawing technique was applied (Bardzryal 9, Lchashen 193/6, Tekhut 1) other than the rectangular sawing. The survival of the rectangular sawing techniques was zero. It is shown that the survival rate of the rectangular sawing techniques was very low, close to zero in Anatolia, Peru etc. (Erdal, Erdal 2011, 527; Piek et al. 1999, 149; Verano 2003, 234, etc.). Another technique where a high rate of healing occurred was the scraping technique (Bardzryal 97; Bover 7). It should be noted that the highest number of signs of long term healing in the Anatolian trepanations was observed in cases where the scraping technique was applied.

Conclusion

Armenian Highland is a region where all known trepanation techniques were performed. The author found 14 skulls with trepanations in the Late Bronze and Early Iron Ages burial sites. Trepanations were found in one individual from Late Iron Age, in 2 individuals from Achaemenid period and 2 individuals from Late

Classical period. In Armenia, **63.2%** of the people survived after the trepanations. Various surgical techniques were being employed concurrently throughout the region. Trepanned skulls most frequently belong to adult males but others have been found from women and children under 10 years. Paleopathological examinations suggest, that it was performed for therapeutic purposes in connection with the many pathological indications found on the skeleton.

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Recent Archaeological Research at Armavir, the Capital of Ancient Armenia

Inessa Karapetyan[1], Amina Kanetsyan[1], Lilit Minasyan[1], Ruben Vardanyan[2], Ruzan Palanjyan[1], Nvard Tiratsyan[1], Diana Mirijanyan[1], Hasmik Hovhannisyan[2], Elizabeth Fagan[3]

[1] Institute of Archaeology and Ethnography, Armenia
[2] History Museum of Armenia, Armenia
[3] Virginia Commonwealth University, USA

Abstract: This paper presents the results of the recent archaeological investigation at the Armavir site, conducted by the Institute of Archaeology and Ethnography of Armenia. The hill of Armavir is a volcanic cone rising in the central part of the Ararat plain in the Armavir province. It is located in the midst of the modern villages of Armavir, Haykavan, Jrashen and Artagers and has a dominant position. The sandy traces of the old bed of the Araxes river, which flows 700 m south and south-east of the hill indicate that the river not only provided water for drinking and irrigation, but it acted also for the defence of the citadel at the top of the hill and the settlement scattered around it.

Keywords: Armenia, Armavir, Iron Age, Urartian Kingdom, Achaemenid empire, Hellenistic culture, cuneiform inscriptions.

Introduction

The hill of Armavir was occupied from early times, as early as the end of the 2nd millennium BC. From the beginning of the 1st millennium, it became a cultic center for the ancient population of the Aza country (Karapetyan, Kanecyan 2007, 49–95). Then, during the rise of the first state of the Armenian highland, Bianili-Urartu, it became one of the most extensive and important cities of the state, namely, the eastern citadel of Argishtihinili (Martirosyan 1974, 44–46). After the collapse of Bianili-Urartu, Armavir became the first capital of the Armenian kingdom and a cultic center, after which it entered into its next stage as an important center of the Achaemenid empire. At the end of the 4th century BC, it was re-established as a capital of the Yervandid state and then became an extensive center of the Hellenistic culture (Karapetyan 2014, 131).

Armavir has always been in the center of attention of historiographers, scholars and travelers who visited Armenia during different periods. The necessity of the investigation of Armavir was mentioned repeatedly, thus partial studies and excavations were carried out. The first trial excavations were conducted by A. Yeritsyan and A. Uvarov in 1880 (Uvarov 1882, 439–449). A small-scale research study was conducted by N. Marr, A. Ivanovsky and cuneiform expert N. Nikolsky between 1890–1893 (Marr 1892, 84; Nikolsky 1896, 36–37, 57; Ivanovsky 1911, 11–13). In September of 1927, the first archaeological expedition was established by representatives of the Historical and Archaeological Institute of the Caucasus, and the Committee for the Preservation of Armenian Antiquities. They conducted a study of the surface monuments on the hill, made drawings, took photos, and composed a topographic plan of the city. In the cave system was found a fragment of stone bearing a segment of a cuneiform inscription. At the southern foot of the hill, on the boulder were identified four Greek inscriptions, another stone had numerous shapes and cuttings almost like hieroglyphs, and a third was shaped like a ram (Ter-Avetisyan 1941, 62–63).

In 1959, the Institute of Archaeology and Ethnography of Armenia was founded. In 1962, the first director of the Institute, B. Arakelyan, initiated the systematic archaeological excavations and scientific examination of the ancient city. Excavations were carried out by dividing the entire area of the citadel into three zones, according to the architectonics of the hill. The excavations opened the wall enclosing the eastern citadel of the Urartian city and its entrance system,

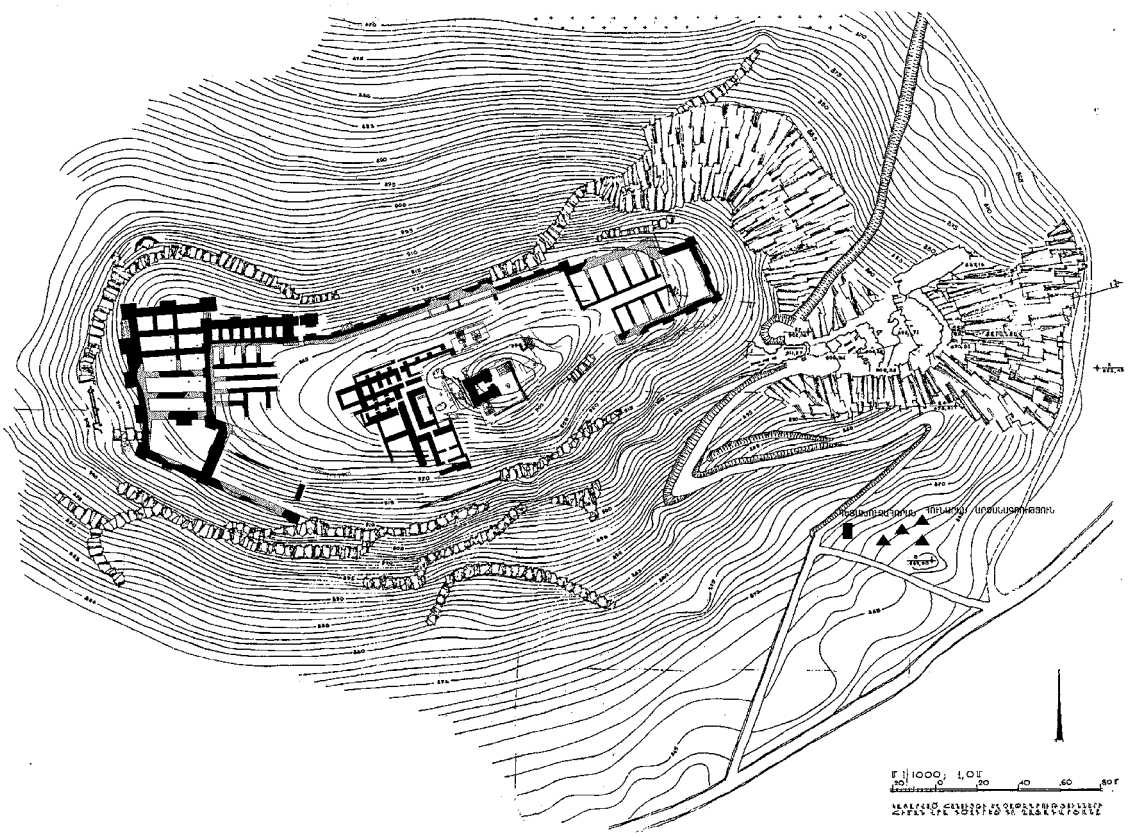

Fig. 1. The topography of Citadel of Armavir (Drawing: Gr. Ghafadaryan).

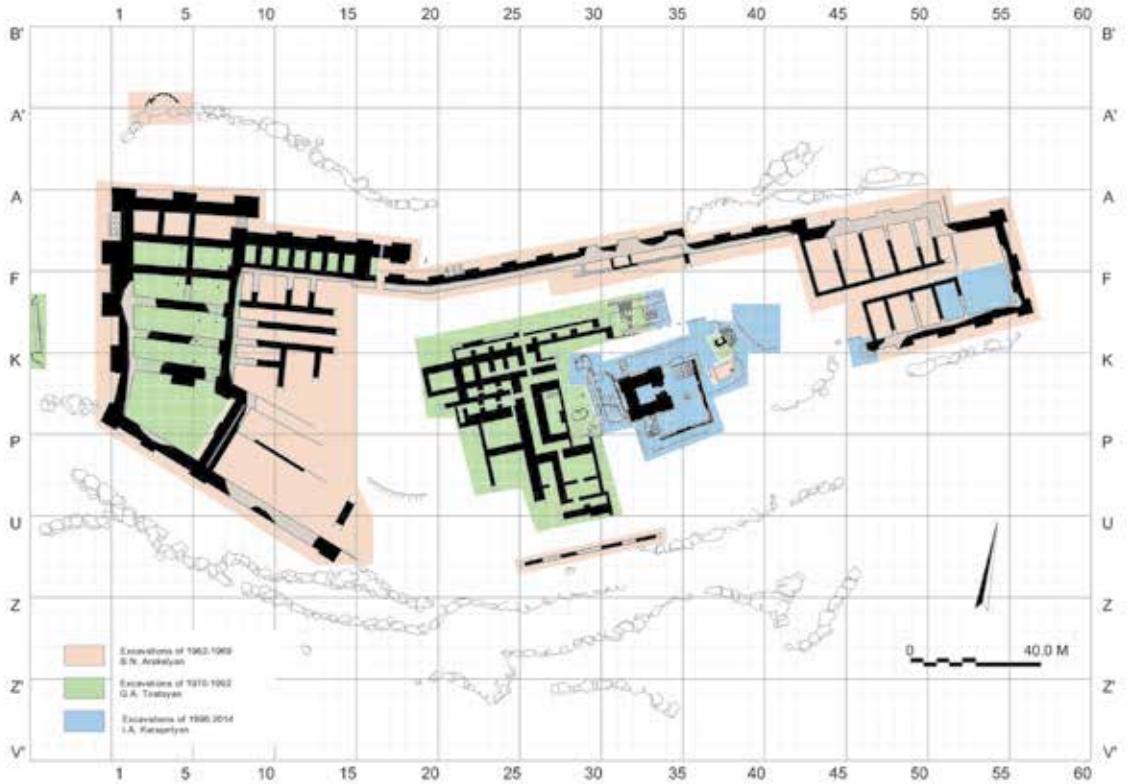

Fig. 2. The plan of excavations of the Citadel according to the years of expeditions (Drawing: A. Kanetsyan).

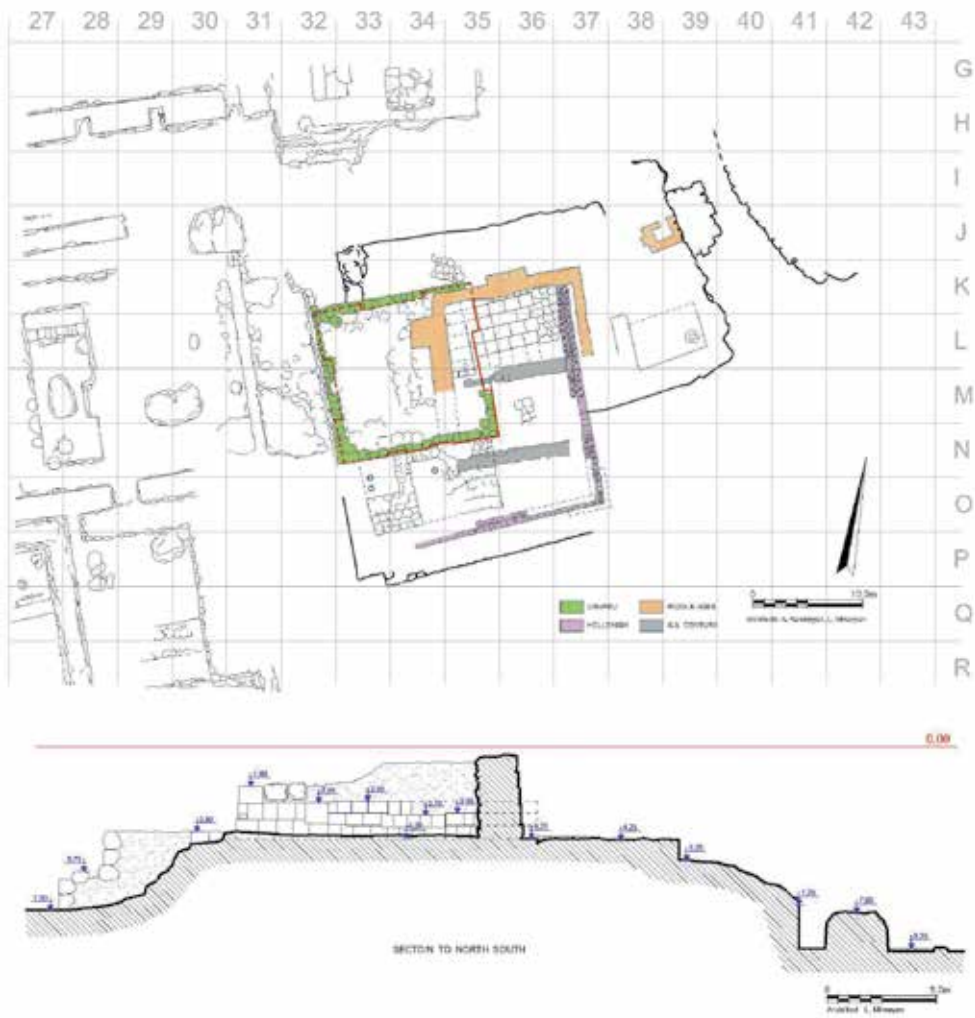

Fig. 3. The topography of Citadel first site excavations (Drawing: A.Kanetsyan, L. Minasyan).

which had been reconstructed in three chronological periods, as evidenced by the construction and building techniques used in the architectural design. In the eastern (second) part of the citadel, were uncovered a palace complex with a throne for an Urartian official (Hmayakyan 1999, 269–274). In the wide western wing (third part), a multi-room temple-palace complex with economic, military, and residential buildings was uncovered. In the middle of the western slope of the hill was cleared a cave formation, the gates of the god Khaldi, and an open-air sanctuary and ceremonial plaza. These investigations of the hill and its environs, together with the reading of Urartian inscriptions, revealed an image of the citadel's chronological development, and the functional significance of its separate parts.

Studies of the last ten years have focused on the first section of the citadel, which includes parts of the summit and slopes of the hill, up to the first terrace (Fig. 2).

Northern "Shir(i)Khani" Sanctuary

At the end of the northern slope of the summit, previous excavations partially uncovered the "sanctuary" (Tiratsyan, Karapetyan 1994, 29–30). After the excavations of the trench (17.5 × 7.5 × 5 m) it became clear that it had been built into the bedrock of the summit (Fig. 3). The stone foundations (2.5 m wide) of the western wall of the sanctuary served as the northern supporting border of the temple-palace complex, going down the slope of the hill from the eastern retaining wall. The northern wall, because of this, was raised and stood at a distance of 7.5 m from the south wall, stretching east-west and bearing traces of treatment on the bedrock, although the sanctuary was not open on that side. The southern and eastern wall was hewn from bedrock and the upper part was raised up by the east-west stretch of stone wall. The floor of the sanctuary was plastered with clay, except of the northern slope (2.25 × 17.5 m) from the lower section, which was similarly leveled by

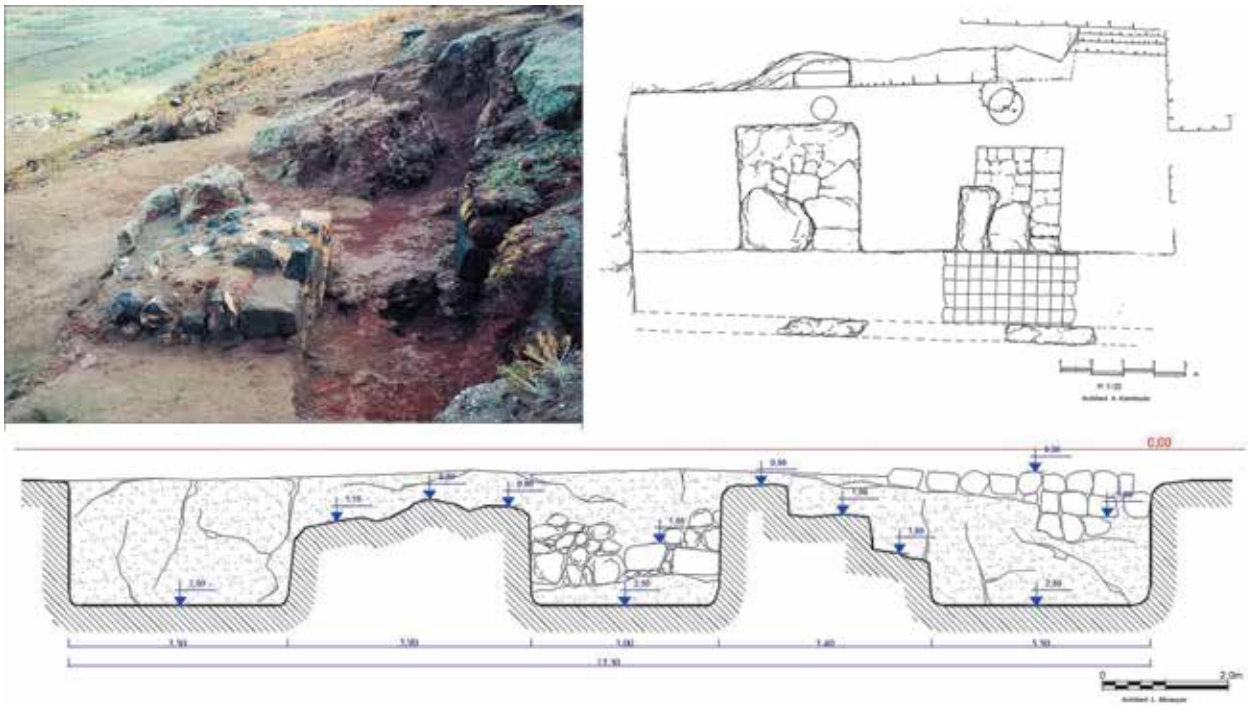

Fig. 4. The photo, plan and east-west section of the northern slope "shir(i)khani sanctuary (Photo: I. Karapetyan; drawings: A. Kanetsyan, L. Minasyan).

tightly-packed rows of coarse masonry (4 × 4 m). Unfortunately, only part of it was preserved in the west.

In the center of the sanctuary, two segments of bedrock remain of the east and west walls, 3.5 m from each other. The smaller western segment (1.6 m high) formed a quadrangular (3.3 m × 3.3 m) two-tiered stone structure (lower step's width is 1.9 m, second step is 1.2 m), creating a three-step pedestal, the third step of which was formed of the raised summit of the bedrock (.45 m). At the foot of the three-step pedestal was found a basalt idol (height: 3 m; width: 15 m; base width: 7 m), which probably fell from the top (Fig. 4). Pedestals of a similar type bearing images of worship, statues of gods, and symbols have been employed in the ancient Near East since the earliest times. In Akkadian this object is known as "asirtu," in Hittite – "istananiya" (Ardzinba 1982, 13 – 15; Garny 1987, 134), in Urartian – "iarani" (Salvini 2018: CTU I, A 3 – 11 Ro5), in Assyrian – "parrakku" (Salvini 2018: CTU I, A 3 – 11 v. 4 – 5), according to the bilingual Kelishini inscription (Salvini 2008, Arutyunyan 2001), and in Canaan – "asera." In front of them were performed rituals and worship, offerings were left.

The larger, eastern bedrock formation (measuring 1.5 m × 3.8 m × 4.05 m with a channel in the top platform measuring 1 m × .8 m × .4 m) was completely covered with animal bones sacrificed by burning. The bones of small cattle were dominant[1]. They were accompanied by ash, charcoal, and pieces of half-burned wood and straw, allowing us to consider this as the altar of burnt offerings.

Traces of plaster and whitewashing are preserved in many places, including the walls of the sanctuary, the offering pedestal and altar. This gives us basis to suggest that the interior of the sanctuary was decorated and whitewashed, maybe even with ornamentation, because in the earth scattered on the floor, plaster chips were found, bearing the red, blue, and black paints used in Urartian frescoes. This is not a new finding, as numerous fragments of plaster and frescoes have been found in the rooms of the temple-palace complexes and especially in the halls that serve as the focal points for such complexes (Tiratsyan 1978, 104 – 106).

In the process of excavating the sanctuary, most of the discovered material is a high quality Urartian red ware: incense vessels with high feet, pithoi, a beer jar, bowls, pieces of urns, and complete vessels, including a large basin, spherical vessels with stands, a complete funnel, a two-handled jug, a small dark cherry-colored flagon (Fig. 5). Some pieces bear stamps, engravings, or are painted with signs. With all these facts in hand,

1 The research and identification of the bones was conducted by Nina Manaseryan, Institute of Zoology of the Armenian Academy of Sciences, to whom we express our sincere gratitude.

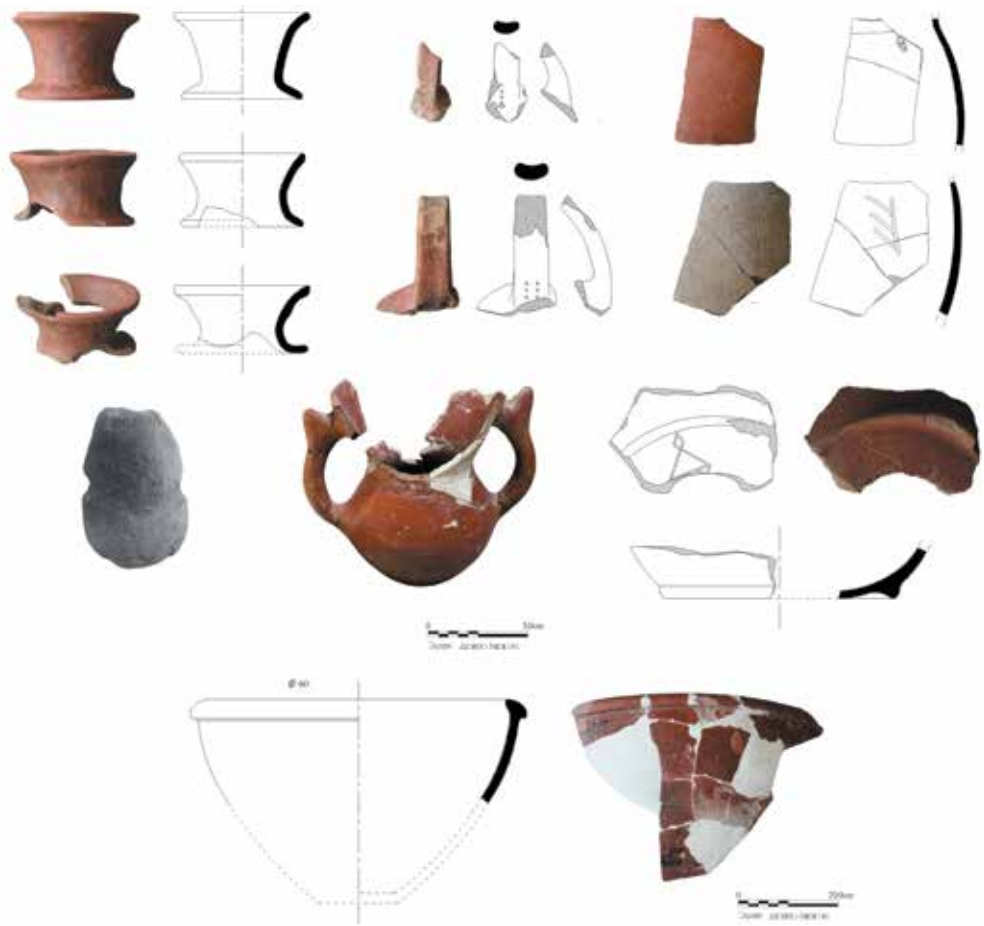

Fig. 5. The Urartian artifacts of the Sanctuary (Photo, drawings: L. Minasyan).

it is possible to introduce the architectural character of the sanctuary and its functional significance. We suggest that this sanctuary corresponds to Urartian "shir(i) khani" and Hittite "sinapsi" religious structures for a variety of reasons: 1. position on the summit of the hill, like a "susi" temple; 2. the architectural character, with the sacred temple in a ritual section adjacent to its northern wing; 3. the evidence of rituals in a rock cut rectangular interior with altars and various types of cremated and sacrificed animal bones; 4. the material culture, including basalt idol figurines and an abundance of ritual vessels around the base of the altar (Arakelyan 1985, 238–244). The existence of shir(i)khani religious structure in the eastern citadel of Argishtihinili is mentioned in the inscription of Sarduri II (Salvini 2018: CTU I A 12-3; KUKN 270) found in Armavir, mentioning the types of sacrifices performed in Shirikhani, with different categories of participating individuals.

In the course of excavations, the stratigraphic analyses and material culture indicate that the sanctuary, after undergoing some modification, was still used in the Classical period. In front of the altar, almost in the center of the southern wall, was situated a bench of 8 m wide and 5 m tall. In the central area between the bench and the altar a pit (1.3 m in diameter) was dug to 7 m deep and was all plastered. Stuccoes with well-pasted, finely-grained clay may have been bleached. Unfortunately, the bench was damaged on two sides by medieval pits. All the material found on the plastered bench, on the floor, and between the pits dates to the Classical period. These include a delicate cup, a bowl painted in a cruciform pattern, a decorated belt from the neck of a vessel, an ear-handled and short-necked ceramic vessel the base of a fired-clay figurine, and a base sherd from a cup with an omphalos protrusion. There was also a four-footed post-Urartian portable altar, carved from a single piece of basalt into the shape of a slanted pyramid, which was found in the southeast corner of the sanctuary (Fig. 6).

Summit of the Hill

The first years of excavation cleaned the summit of the hill, occupied by the external surface walls of the northern half of the medieval building, adjacent to a narrow strip of surface bedrock. We began excavations here, cleaning the lower area and the enclosing walls

where earth and stones had accumulated up to 4 m high. Our aim was to clarify the relationship between the built areas and a high platform opened in earlier years (Karapetyan, Kanecyan 2008, 162–167). After removing the stones, the earthen and cement mortars and grouts, separating the finely-worked square blocks of the Urartian temple and the fragments of the stepped worked paving stones, recording the exposures of opened constructions and material remains, We received the following picture: a) Under the topmost layer of earth covering the walls of the building was opened a section of a structure made of cyclopean Urartian blocks (14.5 m × 8.0 m × 5.0 m × .3 m high). Its walls and floor were plastered with cement mortar. Here were found copper coins minted in the Russian empire in 1883, 1907, and 1911, and when we con-

Fig. 6. The Classical period materials and four-footed portable altar from the Sanctuary (Photo: L. Minasyan; drawings: L. Minasyan, A. Kanetsyan).

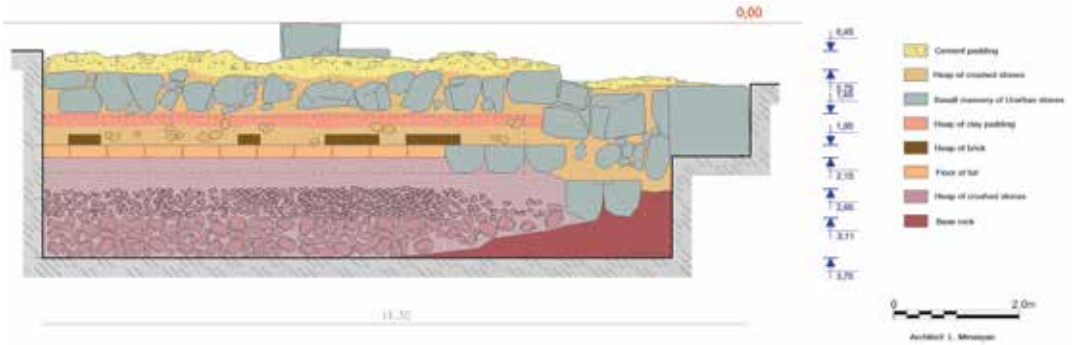

Fig. 7. East-west section of the soil mass accumulated on the top (Drawing: L. Minasyan).

Fig. 8. Plan of the preserved part of the medieval castle (Drawing: A. Kanetsyan, L. Minasyan).

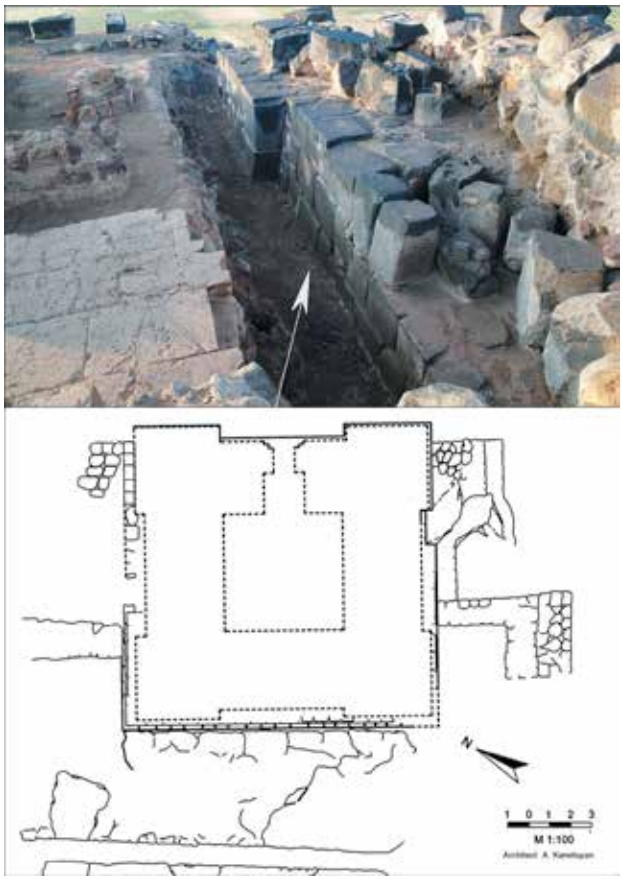

Fig. 9. The eastern facade and plan of "Susi" temple (Photo: R. Vardanyan, drawing: A. Kanetsyan).

Fig. 10. Part of the temple courtyard slabs with the walls of later structures (Photo: I. Karapetyan).

sider also newspapers and materials of the same period found in other parts of the hill, we can conclude that the opened structure served as a military observation dated to the late 19th – early 20th century. b) Under the floor of the north-west corner of the observation point was opened part of a medieval room with a *tonir* and remnants of material culture. c) Under the floor of the mentioned room was opened a stratum of bricks mixed with pieces of Hellenistic ceramics (1.1 m deep). d) The stratum itself was compacted on the surface of the platform made of cyclopean basalt blocks and scattered in the area in front of it (Fig. 7).

Examination of the walls of the medieval building and their lime mortar made it clear that the observation post was built of the third, and occasionally second rows of medieval blocks, using various types of worked stone as building material: columns, complete and broken bases, rearranged with cement mortar. It was clarified that this medieval building has no relation to temple constructions of the earlier periods (except for its position), as it was previously thought (Arakelyan 1969; Tiratsyan 1980, 36). It is not a temple that has been rebuilt multiple times, but a medieval royal residence with a masonry palace, typical to the 10 – 12th centuries (Harutyunyan 2012, 192 – 194) (Fig. 8). In the inner area of the palace were uncovered the walls of its inner apartments and also the foundations of a newer construction (12.5 m × 6.5 m wide). Comparing the position of these new walls, their east-west orientation, a floor plan drawn by N. V. Nikolsky and a photograph of a building at the top of the hill, we are convinced that we had opened the foundations of a church built on the summit of Armavir in 1869 (Nikolsky 1896, 36 – 38). A long-term military outpost was erected on the church and its medieval citadel during the Soviet period, on the southern part of the east wall, in the south-east part of the building.

"Susi" Temple

Excavations over the years have discovered that the palace was erected in a way typical to Urartian "susi" temple architecture, but here it was dedicated to the god Khaldi. The temple, with its square layout (13.8 m × 13.8 m) and corner towers (4.2 m × 4.2 m), is found in important settlements of the Urartian state and mentioned in the Urartian inscriptions of Armavir (KUKN 269, 270, 272). In order to build it and an enclosing sacred precinct on the summit of the hill, a high stone platform was added to the bedrock on the steep slopes of the west and south faces. Half of the temple stands on the western edge of the platform, and half on the bedrock. The temple was erected on the highest part of the hill and distinguished by its unique, monumental architecture; it dominated the city and environs, just as it does now even though it is a ruin (Karapetyan 2010, 36 – 43) (Fig. 9, 10). Most notable of the materials uncovered during the cleaning of the temple are the necks of large Urartian urns bearing stamps and engraved marks, fragments of vessels with eagle-head detail-

Fig. 11. Materials from different periods found during the excavations of the temple and courtyard (Photo: L. Minasyan).

ing, and parts of the three part "eye" decoration that adorns the walls and pedestals of the Khaldi temples, etc. (Fig. 11).

Excavations aimed to clean the temple and its surrounding sacred section in order to determine their function and measurements (32.0 m × 22.0 m). The north and east wings of the complex were organized on the top of the bedrock, while the west and south wings were erected adjacent to the west and south walls of the platform on the first terrace. The sacred area itself was surrounded by buildings connected to the important activities of the Khaldi temple: in the northern upper area we see a shir(i)khani sacrificial hall; to the east, a "barzidibiduni" palace; and to the west, an extensive temple-palace complex. The area directly in front of the east entrance of the temple was opened, in order to carefully level that part of the sacred area, using worked tuff paving stones (measurements 103 m × 79 m; 96 × 90 m; 87 m × 78 m; 9 m × 8 m) to cover parts of the courtyard. Unfortunately, the pavement is in a severely deteriorated condition.

While cleaning the courtyard pavement, a 5.0 m long stretch of masonry was removed from the temple's face. The orientation of the scattered bricks and the presence of blue paint on the surface of some bricks give us the confidence to suppose that it was the fallen and inverted brick upper portion of the temple's eastern facade. Both under and among the bricks, everything was entirely post-Urartian. The Early Armenian and Hellenistic material confirms the reality of a late destruction date for the temple. The dating was inferred by the director of expedition G. Tiratsyan between 1970 – 1993,when Urartian blocks were found among the upper medieval material and include worked fragments of a hollow window, a three-stepped door lintel, and other architectural remains (Tiratsyan, Karapetyan 1981, 285).

Classical Period Structure

In the course of the excavations, in a specific stratigraphic context, a new wall was found with a north-south alignment, under the east wall of the medieval palace, 8.0 m from the facade of the temple. The horizontal surfaces of these stones had "swallow-tail" shaped cavities for clamps (length: 19.0 m, width: 1.2 m), and in the northern part of the wall, wooden clamps were discovered in situ (Fig. 12/1, 2).

The swallow-tail clamps joined the newly-found wall, in the south wing that was erected on the first terrace, with a 5.4 m section of the southeast corner of

Fig. 12. The eastern wall of "swallow-tail" shaped construction (Photo: I. Karapetyan).

the wall opened in 1964. After continuing excavations on the eastern section of the south terrace, we opened lower layers on both sides of that corner. In contrast with the upper rows of worked ashlar blocks, these lower rows were made of large unworked boulders protruding about 5 m to the front of the upper rows.

Fig. 13. The reconstructed wall on the first terrace with the southwest corner of the tower (Photo: I. Karapetyan).

Fig. 14. The retaining wall of flat-edged square Urartian blocks (Photo: I. Karapetyan).

The total measurement of the unworked blocks making up the corner was 420 cm, equal to the masonry of the "susi" temple.

These data and recent excavations at Armavir confirm the plan created during the 1964 excavations by the first architect at Armavir, A. Sahinyan. To the west of this construction was opened a retaining wall made of flat-edged square Urartian blocks, of which only the south-west corner was preserved. According to the calculations of some of the data, at least at the level of the floor plan, the southwest tower was similarly reconstructed, resulting in a structure with angular masonry, which probably was erected to reorganize the south and east wings. This conclusion is based on not only the marked uniformity of the masonry, but also on the equal distances between the newly-opened constructions of the south and east wings, and the temple (8 m) (Fig. 13).

This newly-opened construction, made of Urartian basalt blocks (but with the fastening method of swallow-tail clamps) can be confidently dated to the post-Urartian period (Fig. 14). It appears that the retaining wall of the southern part of the Urartian courtyard for some reason had become dilapidated and so was entirely rebuilt using new techniques. By erecting a new wall in the eastern part of the courtyard with the same form, a new hall was built in front of the temple. The swallow-tail clamps can serve as a basis for its dating. In Iran, Asia Minor, and Asia the earliest appearance of this technique is documented in the end of the second half of the 6th century BC in Sardis and Miletus (Dusinberre 2003, 60–61, figs 16, 17; Ratte 1992, 135–161; 1989, 152–154), Kerkines (Summers, Summers 2004, 18, figs 17–19; Summers 2007, 245–263), Pasargadae (Nylander 1970, 182; Stronach 1978, 24–43), Farmeshgan (Shahrokh, Razmjou 2005, 305, fig. 16), and Didgan (Kleiss 2012, 69, Abb. 04, 10).

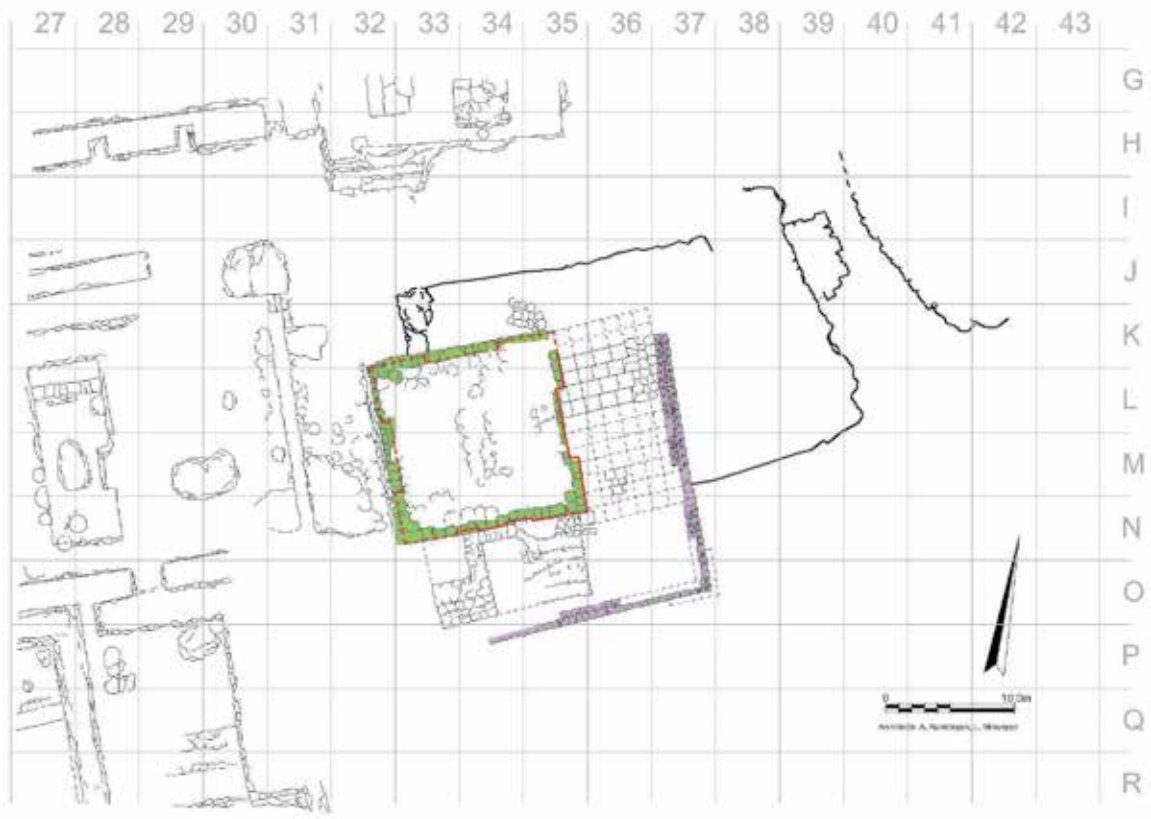

Fig. 15. The plan of the ancient temple (Drawing: A. Kanetsyan, L. Minasyan).

In the sites mentioned above, the technique in question is used only in especially significant structures: temples, royal tombs, palaces, during the construction of reservoirs. Because the use of this technique required huge resources, a large workforce, and state oversight, we believe that its use in Armavir could appear only after the collapse of the Achaemenid empire, during the emergence of independent state entities: for example, in the second half of the 4th century BC, with the beginning of the Yervandid rule declaration of Armavir as the capital of Armenia. This conclusion is supported by the clamps in the tomb of Hasan Ghala, which date to the same period (Ter-Avetisyan 2010, 64).

As a result of this reconstruction, the "susi" courtyard was turned into a sanctuary, leaving it to as a "holy of holies." This confirmed the existence of a Classical period temple construction on the top of the hill. It also settled the question of the material used in the making of the swallow-tail clamps found in the Hellenistic period in Armavir and other sites of Armenia. They were made of wood, as indicate excavations in the "Near Araxes" district at Artashat (Khachatryan et al. 2008, 17), and in the citadel of Jernak Tepe (Nylander 1966a, 133; 1966b, 145–148). Thus, we seem to have the plan of the first Armenian temple structure (Fig. 15).

Mihr-Mithra had come to replace Khaldi by the Early Armenian period and was already worshipped in the converted temple (Dyakonov 1983, 190–193; Petrosyan 2006, 229–232). The priest-king of the temple of Mithra, the civic-religious community of Armavir (it is known that the high priest of the temple often bore the name of the god, worshipped in the temple) is mentioned in the first Greek inscription on the second stone of the "Sosyats" (Pine tree) garden at Armavir. He greets the king Ephrontes-Yervand, wishing him a prosperous kingdom and a good health (Manandyan 1946, 33–42; Trever 1953, 138; Sarkisyan 1960, 40–41; Krkasharyan 1970, 134). Consistent with these phenomena is the account of M. Khorenatsi on the construction of a pagan temple in Armavir, and the erection of statues of the sun, moon, and ancestors (Movses Khorenatsi II: 8).

Conclusions

In the course of excavations were opened:

1) A stone built Urartian sanctuary of "shir(i) khani", built into the bedrock on the summit of the hill, 5 m below the north border of the bedrock, with a sacrificial altar and a three-stepped offering table. The existence of the sanctuary was mentioned in an

inscription of Sarduri II found at Armavir. Excavations also revealed the continued use of the sanctuary in the Classical period.

2) By removing the 4.5 m thick earth and rubble fill covering the inner area of the medieval building on top of the hill, it was ascertained that the medieval structure erected on the summit was not a temple subjected to numerous reconstructions, but a medieval fortress of 10–12th centuries AD.

3) The "susi" temple of Khaldi mentioned in numerous Urartian inscriptions was opened in Armavir, as well its courtyard and the sacred ritual area around it. The circumstance of the late destruction of the "susi" temple was revealed, which was its continuous use in the Hellenistic period as a temple of the god Mihr-Mithra.

4) Part of the temple courtyard was opened, revealing it was made of Urartian basalt blocks, a structure created through reconstruction using a new technique for that period, which interweaves with the earlier construction: the tower-temple as the "holy of holies," and the newly-created hall as a sanctuary. It seems that a new type of cultic structure was formed, finally confirming the account of the father of history, Khorenatsi, about the building of the temple in the Classical period and the erection of statues of new gods in Armavir. Again and again it is archaeologically proven that not only types of Armenian material culture were formed out of earlier Urartian culture, but so were the produced objects made from architectural ideas and construction methods: temples, palaces, economic buildings, and buildings of other significance.

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Reflection on Mass Pottery Production at the Capital Artashat

Hayk Gyulamiryan

Institute of Archaeology and Ethnography, Armenia

Abstract. Targeted research of individual groups of pottery production is especially important in such monuments as the capital of Ancient Armenia Artashat. Here, an important role is played by the excavations recorded stratigraphic circumstances, so that different fragments of material culture can be considered in a historical context. In the case of Artashat, the presented research is focused mainly on pottery found from the VIII hill, since it was here that a number of construction periods of the monument were carefully recorded, from the time of the city's foundation (180–170 BC) until 369 AD. The group of pottery under consideration is richly represented by types ranging from large pithoi to lamps and bowls. The article analyzes the possible syntheses of ceramic products with Western and Eastern traditions, as evidenced by the other types of red polished pottery vessels and terracotta statuettes found from the excavations, which continue to exist with the considered pottery.

Keywords: Armenia, Artashat, Classical period, mass pottery production, dating, historical-cultural context.

Introduction

Among the studies of Classical period, in particular, the pottery of Armenia, there are recently published papers that study in detail different groups of pottery of the mentioned period. However, as a new archaeological data has accumulated, modern estimates of many of them have changed significantly. In addition, the collections of pottery recently found in different monuments have significantly expanded, which modernizes the research of these groups. This paper is devoted to the discussion of one of these groups. The observed group includes various shapes and types of vessels, which are combined by the method of manufacture, processing, finishing, and chronological generality.

Systematic excavations of ancient Artashat conducted by the archaeological expedition of the Institute of Archaeology and Ethnography of the Armenian SSR Academy of Sciences revealed the significant role of the city in the cultural and economic life of Ancient Armenia and the Classical world as a whole, as well as its exceptional production characteristics. Besides, its material intensity can be traced not only in the city itself and its surroundings, but also in the borders of the Ararat valley and the northeastern regions of the entire historical Armenia. The excavations of Artashat show that it was a crossroads of different industries: pottery, metallurgy and other trades.

The topic of this work is a group of a mass pottery production found in Artashat, the large number of samples of which, and the visible similarity of their technical characteristics, allows to conclude that this group has a local origin. These pottery is found in various forms, from pithoi to lamps, and deserve careful study and classification. Examples of the studied group are known throughout the territory of Artashat (in particular, from hills I, II, IV, V, VII, VIII and field quarters of the city (Figs 1; 2/1). In this paper we have focused on some samples found in a residential complex on the VIII hill (Fig. 2/2). This choice is justified by the large number of considered finds, as well as the specific stratigraphic characteristics of the residential structure, which allows to clarify the chronological scope of the production of the studied group of pottery. The presented types of pottery, along with their morphological, functional, dimension and other differences, are integrated by the fact that they are typical of both the Artashat and, at least, the ancient Ayrarat culture.

Technical and Decorative Characteristics of Pottery

The clay of the large majority of vessels is light, the color of cinnamon, pinkish with small grains of sand. They are made on a fast potter's wheel and are characterized by high quality firing. On the front side are dominated light, gray-greenish or yellow-brown tones, a thin layer of slipware, and a polished surface. A separate subgroup consists vessels, with a sloppy belt finish

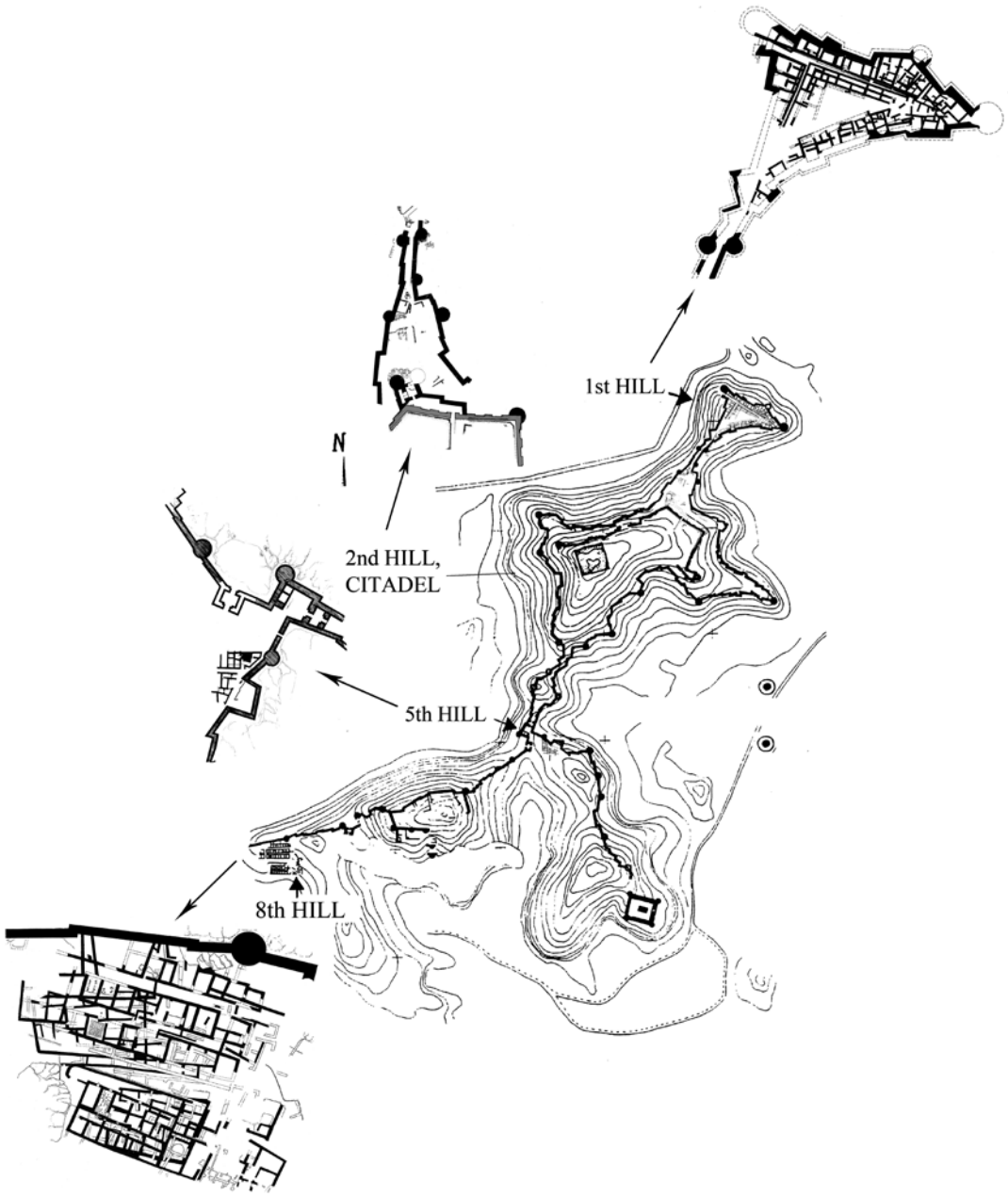

Fig. 1. General plan of the upper city of Artashat (Drawing: A. Kanetsyan, A. Tonikyan).

in red paint. At the same time, the painted belts are applied so carelessly that almost all the vessels have traces of leaking paint. In this group there are vessels of different sizes: on legs with a conical bottom, with handles, oenochoe, vessels with a spout, one-handled and double-handled, large bowls, types of pithoi with handles and without, lamps, base for vessels and funnel. Despite the large number of forms, this group of ceramic vessels combines the above-mentioned characteristics of production and decoration.

Large vessels. Vessels of this group are quite diverse: with a round bottom, one-handled and double-handled, with a flat bottom without handles, one-handled with a trefoil rim /oenochoe/, with a spout, and others. One-handled vessels with a trefoil rim and a spherical body have been known since Urartian times, this form of vessels reached its peak in the Hellenistic period. They have been found in Geghadir (Khachatyan 1966a, 87), Armavir (Tiratsyan 1971, 216–228), Jrahovit, Tsovinar (Khachatryan 1966b, 253–260), Getashen (Khachatryan, Kalantaryan 1972, 58–67) and other sites and continued to be in use until Middle Ages.

One of the oenochoes of the room no. 39 (Fig. 3/1,2) on the spherical body has a carved belt irregularly colored with liquid red paint, which is the

Fig. 2. 1. A view of hills, photographed from northeastern and southwestern sides of the site (Photo: M. Zardaryan). 2. Plan of the VIII hill of the city (Drawing: A. Kanetsyan).

result of fast coating. The trefoil rim (outside and inside) and part of the handle also painted with reddish paint. In the same room, another oenochoe was found with a single handle, a long neck, a light slipware, partially colored body at the place of the handle, on the neck and body with carved simple belts (Fig. 3/3). This group, perhaps, includes the oenochoe with a short neck from the jar burial no. 82 of the VIII hill of Artashat (A silver coin of emperor Trajan was also found from the burial, which was crossed in Cappadocia (Khachatryan 1981, tab. XVI/4).

Among the vessels with handles and without there are a separate subgroup no. 40–43 (Fig. 3/4,5; Fig. 4/1,2). They have a barrel-shaped body and a round bottom, irregular horizontal, carelessly painted red belts are evident on the body, and again as a result of rapid coating, the paint spread unevenly. Exactly the similar vessel was found in the ancient settlement of Avan-Arinj on the northeastern outskirts of Yerevan (Demirkhanyan 1981, tab. 30).

Fig. 3. 1–3. Oenochoe vessels; 4, 5. Yelllow-pinkish vessels no. 40 and no. 41 (Photo: H. Gyulamiryan).

Fig. 4. 1, 2. Yelllow-pinkish vessels no. 42 and no 43; 3. One-handled vessel no. 28; 4. Double-handled vessel no. 37 covered with light-brown slip; 5. Large vessel with a spout and wide lip no. 38 (Photo: H. Gyulamiryan).

Above-mentioned one handled vessel of the room (no.28) doesn't have external paintings, the surface is matte, there are carved belts on the body (Fig. 4/3). Similar vessel was found in the burial of no. 12 from Artashat (Khachatryan 1981, tab. 15/4). Double-handled vessel no. 37 covered with light-brown slipware, has a matte surface, a spherical body and at the base of the annular leg (Fig. 4/4). Special attention deserves a large vessel with a spout and wide lip (no. 38), it has a rough, unfinished surface on the ledges and the body carved belt, the handle twisted and arranged horizontally, the spout is located under an angle of 45 degrees (Fig. 4/5).

Jugs. Among the discussed pottery there is a subgroup of jugs. Small jug no. 5 with a wide rim, ring-shaped leg (Fig. 5/1,2) with two handles, which is located on three relief buttons. On the inner circle of the rim is a recess, probably designed for the lid. A thin slipware have a light cinnamon color, the surface is polished, made on a fast potter's wheel. Jug no. 32 is a vessel with a flat bottom, light slipware, spherical body and unpolished surface, which has a cover with a sharpened handle (Fig. 5/3). A jug with a light slipware no. 45, has a wide rim, a ring-shaped leg on the barrel-shaped body there are carved belts, unpolished surface, on the rim and shoulders and carelessly painted red belts (Fig. 5/4). One-handled jug no. 17 has a cinnamon color slipware, on the body and shoulders there are partial traces of horizontal polishing (Fig. 5/5).

Jars. Known types of jars included in the production group of pottery are vessels with a flat and sharpened bottom. Jar no. 47 has a thin leg, covered with a light layer of slipware, the surface is unpolished. Jar no. 44 has a flat bottom, carved belts on the shoulders; the rim and shoulders are painted with carelessly painted red color. Double-handled jar no. 46 is incomplete, its surface is covered with a light slipware, on the shoulders are careless red belts (Fig. 6/1–3).

Large bowls. Two of the many of flat-bottomed bowls found in the room have the same technical characteristics: light paste, unpolished surface, and wide rim. They belong to the above-mentioned group (Fig. 7/3,4).

Lamps. In this discussed group lamps are richly represented. The vast majority of them have one sharpened spout (no. 67a, Fig. 7/1). The other type is char-

Fig. 5. 1, 2. Small jug no. 5 with a wide rim and ring-shaped leg; 3. Jug no. 32 with light slipe and cover with a sharpened handle, 4. Jug with a light slipe no. 45; 5. One-handled jug no. 17 (Photo: H. Gyulamiryan).

Fig. 6. 1–3. Jars with light slip; 4. Large funnel (Photo: H. Gyulamiryan).

acterized by four angular ledges (no. 67b, Fig. 7/2). The surfaces of lamps are covered with a light yellow-greenish paste, they are unpolished; some samples have carved belts under the rim.

Funnels. Also noteworthy is a large funnel found in the same room, with a single handle with a wide rim and covered with a light paste. It's also included in this group and is also made on a fast potter's wheel (Fig. 6/4).

Stands. They are part of a group of stands for vessels, relatively rare and at the same time typical. With an abundance of vessels, it's natural that the production of stands was also mass-produced. Stand no. 49 has a wide diameter, on the body-two relief wavy belts, light slipware, unpolished surface. The last one similar to the clay pedestal found from Artashat Burial no. 22 (Fig. 7/5) (Khachatryan 1981, tab. 16/6).

The Problem of Dating and Historical-Cultural Context

Excavations on the VIII hill of capital Artashat in 1973–1984 demonstrated that here was located one of the ordinary quarters of the city, in which there were various crafts and, in particular, pottery production. Especially from this hill were found the pottery of discussed group in 1982 (Khachatryan, Kanetsyan 1982, 77).

The process of the construction of the VIII hill of Artashat Zh. Khachatryan divided into four periods: 1) 180–170 BC–59 BC); 2) the 60s of the 1st century AD until the second quarter of the 2nd century, 3) the end of the 2nd century BC–early 4th century AD, 4) the 30s of the 4th century BC–369 AD. Following excavations on the hill made it possible to clarify the stratigraphy of the territory. The studied group of ceramics, which comes from a single building complex, belongs to the "second" construction period, mainly the second half of the 1st century AD until the beginning of the 2nd century AD.

To clarify the dating, some circumstances should be considered. The cultural layer is located at a depth of 20 cm up to 150 cm from the surface of the second construction period on the topography of the hill. Notable is a double-handled bowl found in the pool of a hill (square 14 F), which by its Asia Minor parallels dates back to the 1st century AD. This dating is confirmed by fragments of a glass bottle with an egg-shaped body,

Fig. 7. 1. Lamps with one sharpened spout; 2. Lamp with four angular ledges; 3, 4. Flat-bottomed bowls; 5. Stand for vessel no. 49 (Photo: H. Gyulamiryan).

which is considered to be a local production.

Among the ceramic vessels from the 2nd layer construction most are also burnished red slip trays and plates that are the imitation of Late Hellenistic Roman (Republican) red slip so-called "Eastern terra sigillata" pottery, imported from Asia Minor, the Lebanese centers from the early 1st century AD (Zardaryan 1977, 27–28; Zardaryan 1979, 24–26).

In fact, it can be assumed that the traditional group of local vessels defined, enriched, well-known forms of imported ceramics. The production group of the studied vessels with light slipware, certainly has a local Artashat origin with its characteristic features. The correct dissemination area of the group under discussion and further transformations are still under investigation.

Analysis of the materials of the VIII hill shows that the 2nd construction period begins in the second half of the 1st century and continues until the first quarter of the 2nd century. It is notable that this group also shares features with the ceroplastics of one of the groups of Ancient Armenia, mostly known also from the excavations of Artashat. Most samples of this terracotta statues have yellow-green shades and unpolished surface (mother and child figures). Results of the research indicate that the statuettes of the Classical period, found in Armenia (Petrosyan 2014, 140–144) were not processed and finished after firing (Khachatryan 1981, 179–197). The group of the above-mentioned statuettes is associated with Eastern traditions; in particular, the statuettes of horsemen in their style and figurative structure resemble similar Parthian copies (Koshelenko 1966, 201).

Conclusion

We can make a conclusion: if the imitations of "Terra-sigillata" ceramics discovered at Artashat had a Western character, then the discussed vessels with their parallels are more of Eastern origin, but in details they differ in local compositions. Taking into account the fact that the group of our discussed clay products actually belong to the periods of Roman proteges, the recognition of the Armenian Artashesid dynasty (66 AD), the proclamation of Armenia as a province by Emperor Trajan (114–116 AD), the victorious end of the anti-Roman revolt and the restoration of the Artashesid power (117 AD). Considering the above circumstances, we suggest to use the term "Artashesid pottery" group A when describing this group of ceramics, in order to combine the features and regularity of the Artashesid's material culture in further research.

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Pithos Burials of Tirganakert in Artsakh

Hamlet Petrosyan[1], Vardges Safaryan[2], Inessa Karapetyan[3], Lyuba Kirakosyan[1], Ruben Vardanyan[4], Tatyana Vardanesova[1], Armine Gabrielyan[3]

[1] Yerevan State University, Armenia
[2] Artsakh State University, Artsakh
[3] Institute of Archaeology and Ethnography, Armenia
[4] History Museum of Armenia

Abstract. The issues of origin, spatial distribution, chronology, cultural and ethnic affiliation of pithos burials have been subject to scholarly discussion for more than a century. Among the Late Hellenistic burial structures of Artsakh and Utik (cist, stone box, burial with oval chamber, pit grave etc.) the pithos burials became predominant at the end of the 1st century BC and 1st century AD. In this regard, the study of the Late Hellenistic burial structures, ritual and inventory of Tigranakert, as one of the largest towns of the region, becomes particularly important. The currently studied Late Hellenistic necropolis of Tigranakert of Artsakh extends over a plain, at a distance of one and half kilometers to the north-east of the town. A stone box and six pithos burials have been excavated and studied. A single pithos burial was also unearthed within the fortified quarter, not far from the northern fortification wall. The overall picture of the burial data of Tigranakert is supplemented with burial materials excavated in the vicinity of the town and at numerous ancient settlements of Artsakh and Utik. The pithoi and burials have no similar orientation relative to the geographic cardinal directions. The pithoi were placed in a horizontal position and are oriented from the north-west to south-east or vice versa – from the north-east to south-west with some deviations, with a pitcher-shaped vessel (oenochoe, spouted pithos, flask) placed adjacent to its bottom or rim. This is a materialization of the ritual, which can be found in the sites, spread over the steppes of Artsakh and Utik up till the Kura river. The traces of fire and fragments of grindstones are also related to the burial rite. Three burial pithoi of Tigranakert and Martakert are particularly noteworthy. Their bodies are decorated with the scenes of hunt and ritual procession painted with reddish-brown pigment. The burial inventory consists of different vessels, examples of individual weapon, numerous pieces of jewelry, including pendants and beads made of various stones, paste, glass, silver and gold. The coins (seven Parthian coins of 70–50's BC) and glass seals set into metallic rings with Hellenistic iconography are characteristic of Tigranakert burials.

Keywords: Artsakh, Utik, Tigranakert, Hellenistic period, pithos burials, coins, gems.

Introduction

In Late Hellenistic period[1] the pithos burials were spread in the Near East, Mediterranean and considerable part of Asia Minor, as well as Armenian Highland and Transcaucasia up till the Kura river. These burials acquired local peculiarities in different regions (Martirosyan 1974, 50–55; Tiratsyan 2010, 36–48; Khachatryan 1975; 1981; Alekperov 1960; Kaziyev 1953, 5–35; 1960; Golubkina 1956, 73–87; 1961, 21–36; Vaidov 1965; Goshgarly 2005; Huseynova 2014; Osmanov 2006, 93–97; Asadov 2010, 91–97; Noneshvili 1992; Akopyan 1987, 15–17).

The archaeological investigation of every classical city can be considered holistic, when it is possible to study the fortress-town quarters-necropolis system simultaneously. Understanding the importance of the ritual and cultural role of ancient necropoli of Tigranakert in research and clarification of issues of structural and cultural unity of the town, the archaeological expedition have carried out systematic survey investigations in the surroundings of the town aimed at discovery of traces of Late Hellenistic burials. Hence, it was discovered in 2010, and the results of archaeological investigation are presented in this article.

The Eastern Necropolis. The First and Second Pithos Burials

In 2010, while digging a defensive trench in the plain that stretches at a distance of 1,5 km to the north-east of the town, fragments of the Late Hellenistic pithos, glass beads and a painted flask were discovered (Fig. 1) For this reason, the excavations were car-

1 The Late Hellenistic period in this case includes the timespan from the early 1st century BC to the end of the 3rd century AD.

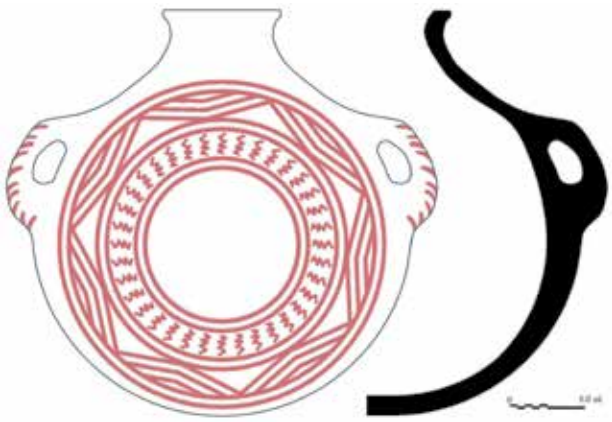

Fig. 1. Painted flask, eastern necropolis, 2010 (© The Archive of Tigranakert Project).

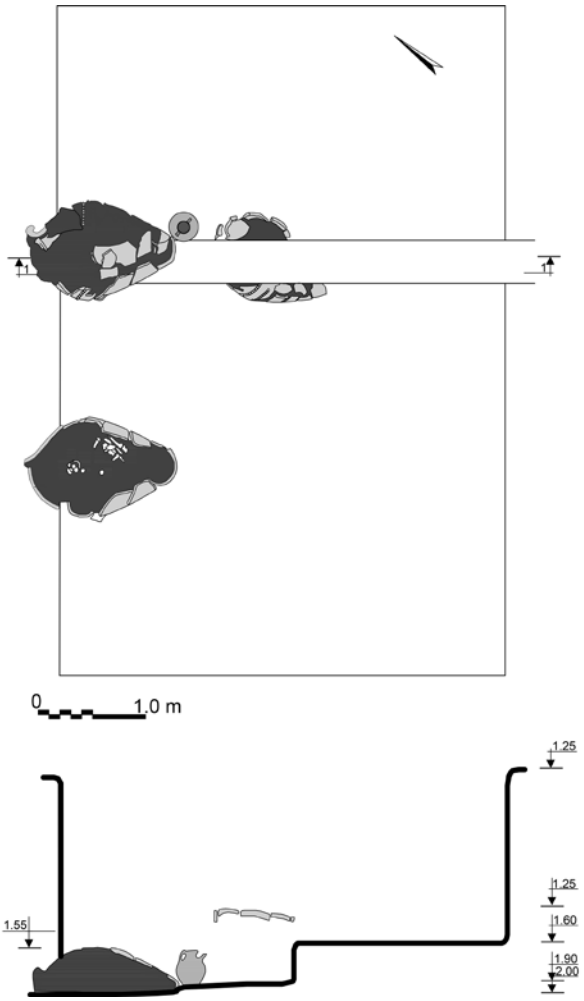

Fig. 2. The first and second pithos burials, eastern necropolis, 2010 (© The Archive of Tigranakert Project).

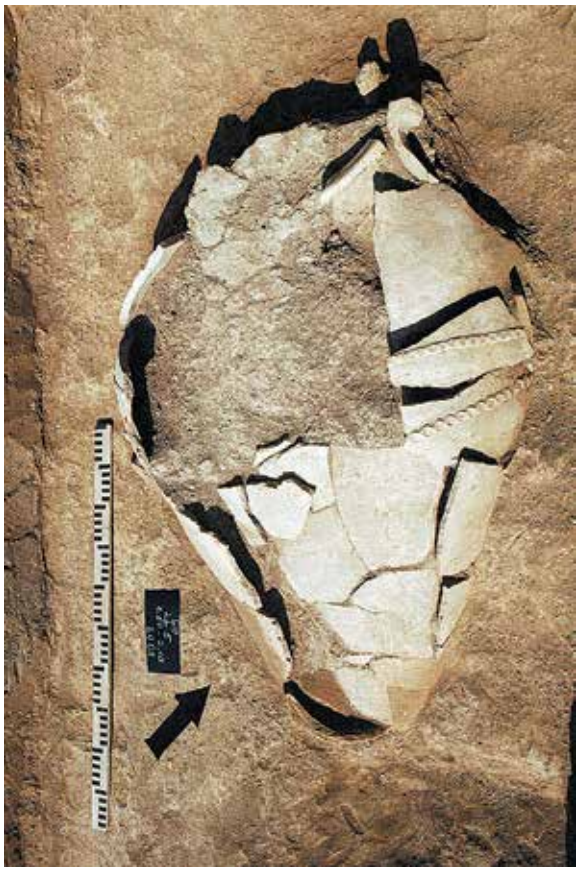

Fig. 3. The second pithos burial (© The Archive of Tigranakert Project).

Fig. 4. One-handled painted pitcher with spout, the second pithos burial (© The Archive of Tigranakert Project).

ried out at the same location. In the separated area ($6.00 \times 4.00\,m^2$) two pithos burials were unearthed in the clayey layer, at a depth of 2.00 m. They were discovered in a single row, at a distance of 0.35 m from each other (Fig. 2). Only separate fragments of the first burial were preserved, without any other accompanying materials. The second pithos burial, although smashed and cracked, but potentially restorable, was placed in horizontal position, oriented from north-west to south-east[2], with a gradient of 26° to the east

2 By orientation of pithos burial is meant direction of the pithos from the rim to its bottom.

Fig. 5. Glass beads, covered with golden foil, the second pithos burial (© The Archive of Tigranakert Project).

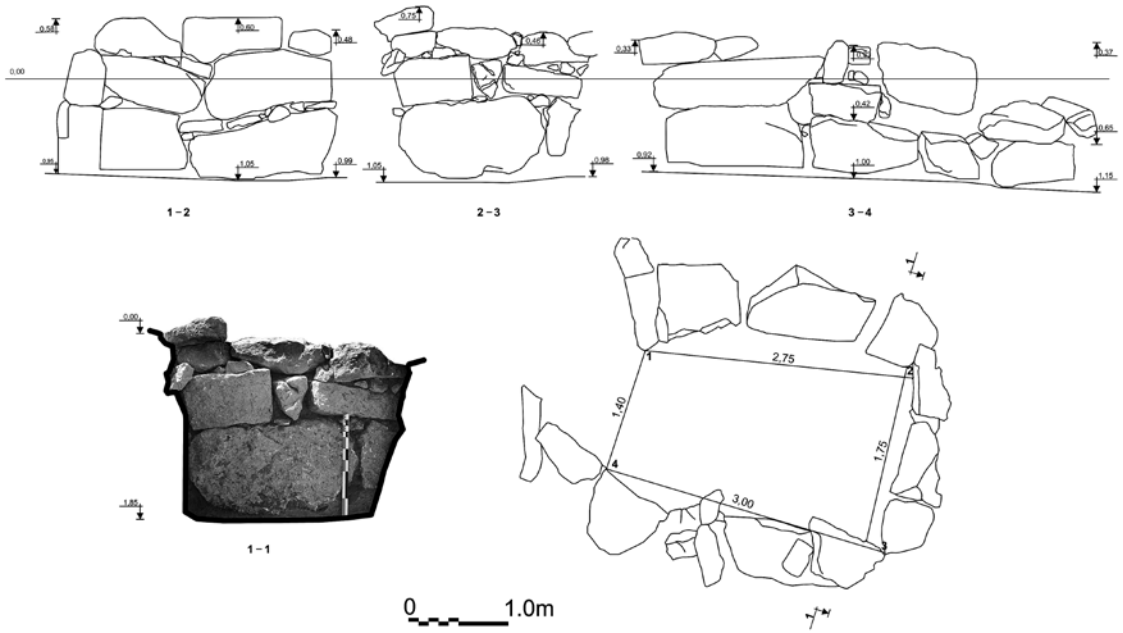

Fig. 6. Stone box burial, eastern necropolis, 2016 (© The Archive of Tigranakert Project).

(height – 1.20 m, rim diameter – 0.44 m, bottom diameter – 0.20 m, Fig. 3). The body is ovoid and bears two relief, rope horizontal decorative bands in its widest part. The flared rim is flat. Its edge is decorated with a wavy band. Between two pithoi, a single-handled elaborately decorated pitcher with spout was discovered, leaning against the bottom of the second pithos (Fig. 4). The examples almost identical to the spouted pitcher are known from both Hadrut region and Martakert (both are accidental finds, out of their archaeological context and, most probably, were a part of inventory of pithos burials), as well as among materials of pithos burials and settlements on the right bank of the Kura river (Trever 1959, 157 – 177; Kaziyev 1960, 21, tabs 6 – 11; Rzayev 1964, 26 – 28, figs 21, 63, 68; Eminli 2010, 301 – 303, figs 1 – 3).

Several dozens of similar examples of pottery, potentially restorable and fragmented, decorated or plain were discovered in the Fortified and the First Late Hellenistic quarters of Tigranakert. The colours of ceramics varied from reddish, light ochraceous to dark yellowish-brown. It testifies that this type of spouted vessels was widely used, and, probably, these were ceramics product of Tigranakert (Gabrielyan 2017, 53 – 58).

Similarly, the abovementioned painted flask, most probably, was placed leaning against the first pithos. Only the fragments of skull, ribs and upper extremities of the deceased individual's skeleton were preserved. The skull was unearthed near the shoulder of the pithos, pointing with its parietal part to the vessel's rim and facing westwards. The bones of the deceased supposedly belonged to a male individual. Two silver coins were found in the mouth and between the ribs of the dead person. A bronze mirror with a handle, iron rings, a necklace made up of cornelian, glass paste, bronze beads, glass beads covered with gold foil

Fig. 7. Stone box burial, the chamber part with the secondary burial (© The Archive of Tigranakert Project).

Fig. 8. Parthian drachmae (one belongs to an unknown king, 80–70 BC, three belong to Orodes II, 57–38 BC), stone box burial (© The Archive of Tigranakert Project)

Fig. 9. Seal with an image of a bird, light milky paste, stone box burial (© The Archive of Tigranakert Project).

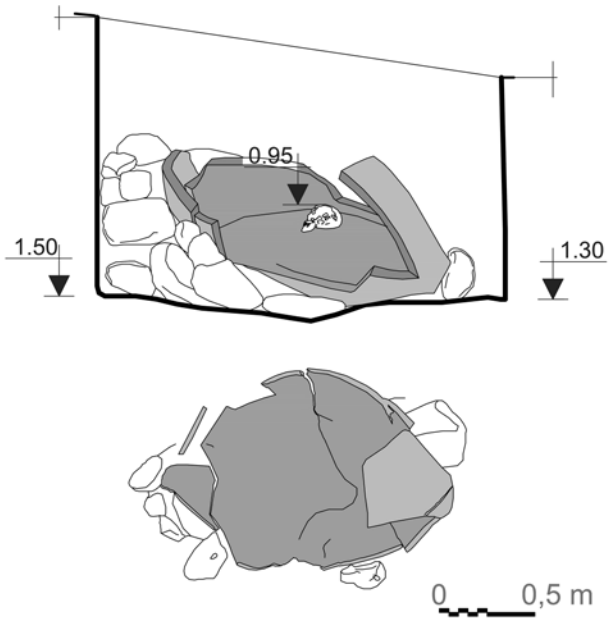

Fig. 10. The third pithos burial, Fortified quarter, 2017 (© The Archive of Tigranakert Project).

(Fig. 5) were discovered on his chest. After cleaning the coins, it became apparent that these are very well preserved Parthian drachmae of the kings Mithradates III (57–54 BC) and Orodes II (57–38 BC).

The Eastern Necropolis. Stone Box Burial

One stone box burial was also discovered and excavated in the eastern necropolis in 2016. It is a large structure built of large rough hewn blocks laid in three rows horizontally. The burial is oriented approximately from the north to south, with an entrance at the northern side (the inner sizes of the burial chamber: 2.75 m × 3.0 m., depth: 1.85 m, Fig. 6). The chamber floor was formed of the clayey soil.

Seven individuals were buried in the tomb, two of which (no. 2 and no. 3) were unearthed in situ (depth: 1.30–1.36 m). The skull of one deceased was found near the burial entrance, meanwhile the other skeletons – near the southern wall of the burial (Fig. 7). As demonstrated by the results of excavation, here was a secondary burial: older human remains were accumulated in the southern part of the chamber. Four skeletons inside the burial were placed across the chamber. Judging by position of the skeletons, the deceased were buried on their left or right side, in a fetal position and oriented from the north-east to the south – west.

The burial inventory consists of a bronze crescent-shaped medallion near the left rib bones of the de-

ceased no. 2, four Parthian drachmae found under the skull no. 3 and with the replaced bones of the deceased individuals (one belongs to an unknown king, (Selwood, type 30), 80–70 BC, three belong to Orodes II, Fig. 8), a fine leaf-shaped bronze pendant, a string-like object and a light milky paste seal with an image of a bird (Fig. 9). There are two vessels: a well-preserved pitcher with a horizontal handle and three red painted horizontal lines, engirding the widest part of the body, as well as a painted Late Hellenistic bowl in pieces. Judging from the findings, the burials can be dated back to the second half of the 1st century BC.

Fortified Quarter. The Third Pithos Burial

In 2017 one pithos burial distinguished by its burial inventory and some characteristics of ritual was unearthed in the northwestern corner of the Fortified quarter of Tigranakert, within the fortification wall. The pithos burial that was placed in horizontal position at a depth of 1.15–1.20 m below the mountain slope level is oriented from the north-east to southwest (Fig. 10). The fragmented pithos (height: 1.30 m, width[3] – 1.10 m, bottom diameter: 0.18 m) had a flat bottom, a swollen body decorated with two bands of relief rope ornaments. The rim has not been preserved.

In the central part of the pithos a poorly preserved skull leaning against the western wall and skeletal remains were discovered. The research demonstrated that the deceased was laid transversely across the pithos, on the right side, in a fetal position, facing southwestwards, with his arms folded across his chest. Previously, the deceased was laid lengthwise on his right or left side, in a crouched position, with his legs flexed in the pithos burials discovered in series of ancient settlements (Tchankatagh, Haterk, Martakert, Stepanakert, Artashat, Garni, Agarak, Karchaghbyur etc., Safaryan 2011, 170–186; Khachatryan 1981, 6–30).

Similar pattern can be observed in case of pithos burials excavated in Tigranakert in 2010 and 2018. Four skeletons of the Late Hellenistic stone box burial of Tigranakert (2016) were also laid transversely across the chamber. It can be assumed that we are dealing with a new form of inhumation.

The study of the burial area revealed another new phenomenon that can be found in Tigranakert for the first time. Prior to placement of pithos, the area of burial was covered with lime mortar (thickness – 1.0 cm),

Fig. 11. Golden pendants, the third pithos burial (© The Archive of Tigranakert Project).

Fig. 12. Iron scissors, the third pithos burial (© The Archive of Tigranakert Project).

3 By width it is meant the diameter of the widest part of the body.

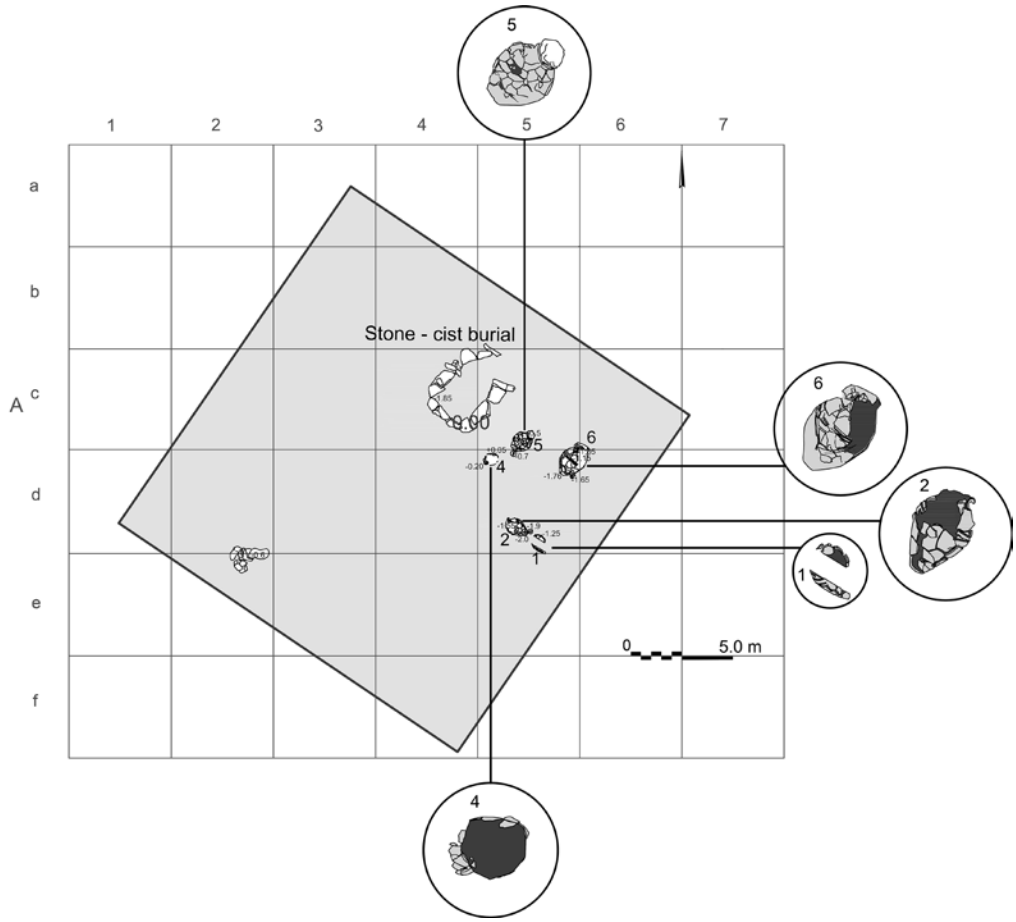

Fig. 13. The fourth, fifth, sixth pithos burials, eastern necropolis, 2018 (© The Archive of Tigranakert Project).

and then was further strengthened with stones put in circle. The preserved traces of fire on the plastered surface, such as the ashes, the pieces of burnt wood, probably vine, suggest that we are dealing with evidences of fire consecration of the area previous to (which must have been held right before) the placement of pithos.

A part of materials accompanying the deceased individual was discovered outside the vessel, in the adjacent area, another part – inside the pithos. Three pieces of a bronze mirror, fragments of bronze earring or small bracelet, iron worn item (probably, a spear), a wide-mouthed one-handled pot refer to the first group.

The glass, paste, cornelian, bone beads and two golden pendants (Fig. 11) were found in the pithos. The latter are made up of a tubes with grooved ornamentation and two crescent-shaped foils, hanging from them, a bronze needle-shaped item, a very plain iron scissors with flat handle (length: 16.0 cm, blade length: 8.3 cm, the width of the flat handle: 2.0 cm, Fig. 12). It is very similar to the finds from Tchankatagh of Artsakh, the southeastern necropolis of Artashat and Agarak burials (Safaryan 2011, pl. 1/7; Khachatryan 1981, 70).

The same kind of scissors are also known from other Late Hellenistic burials of the South Caucasus (Aghayani, Mingechaur, Garni etc., see Khachatryan 1981, 70; Noneshvili 1992, 101; Golubkina 1956, 74 – 86). Zh. Khachatryan dated those back to the 1 – 3rd centuries AD (Khachatryan 1981, 70). A small one-handled oenochoe-shaped pitcher was found to the east of the pithos, leaning with its rim against the pithos. The pitcher was made very carelessly, without decoration and engobe that is characteristic of pottery of 2 – 3rd centuries AD.

The Eastern Necropolis. The Fourth, Fifth and Sixth Pithos Burials

In 2018 systematic excavations were launched within the eastern necropolis. For this purpose a 400 m^2 area was separated, in which the previously studied burials (first and second pithos burials, stone box burial) were located. Excavations of its northern section have been productive. Three new pithos burials were discovered at a distance of 2.5 m from the previous pithos burials (Figs 13, 14). The distance between those pithoi was 2.50 m, but they were placed at different depths.

The fourth burial[4] was found at a depth of 0.30 m from the surface and oriented from south-west to north-east. The skeleton was placed upside down, with his head pointing to the pithos bottom. Other bone remains have been poorly preserved.

The pithos was fragmented as it was buried near the surface and damaged in result of operation of heavy machinery. Its walls are light yellowish.

The traces of painted ornamentation are hardly visible on separate salinized sherds. Inside the vessel cornelian beads (13 pieces) and small circular earrings (2 pieces) were found mixed with bone remains. The most remarkable item is the pithos. After its cleaning and restoration (height: 0.80 m, width – 0.60 m) it became apparent that the deceased was buried not in a common pithos, but in an amphora-shaped pithos with two large handles, wide mouth and flat, flaring rim (Fig. 15). Such use of amphorae in the Late Hellenistic period was not an innovation neither in Armenia (Khachatryan 1982, 22, 32, il. 47/4, tabs 5/3, 18/4), nor in the Hellenistic oecumene (Greece, Crete, Cyprus, Rhodes, the Mediterranean and the Black sea cities, Childe 1927, 33, 77, 103, 127; Kuftin 1950, 74; Belov 1950, 275 – 276).

The surfaces of the vessel's handles and rim were painted red, the junction of the neck and body was accentuated with two red lines and finger pressed convex band. The body of the vessel is decorated with similar four red bands from its upper part to the middle.

Two upper bands are decorated with geometric designs, the middle one- with human and animal figures, meanwhile the lower – with row of arches. A scene of "deer hunting" is depicted in the third band. The action takes place on either side of a branchy tree. The mounted and unmounted hunters armed with spears, arrows and bows follow the deers accompanied by their dogs.

The ornamentation on a fragment of pithos found recently at Nargiztepe[5] (Fig. 16) is almost identical to the iconography of the vessel from Tigranakert. The hunt scene in this case is depicted in circle: it seems like the participants are walking around the tree. The landscape scene of the second frieze is noteworthy, with triangular mountains and images of the sun and the moon between them. The third frieze shows a simi-

Fig. 14. The fourth, fifth, sixth pithos burials (© The Archive of Tigranakert Project).

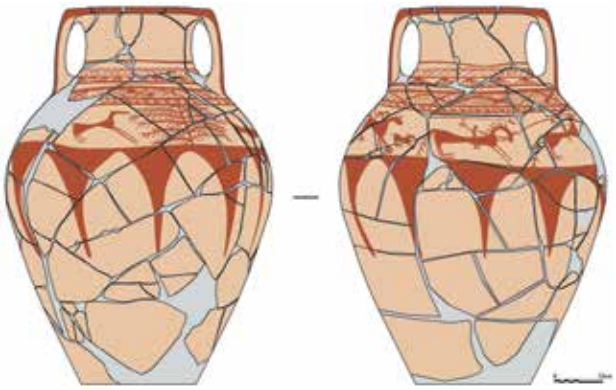

Fig. 15. Painted pithos burial, fourth burial (© The Archive of Tigranakert Project).

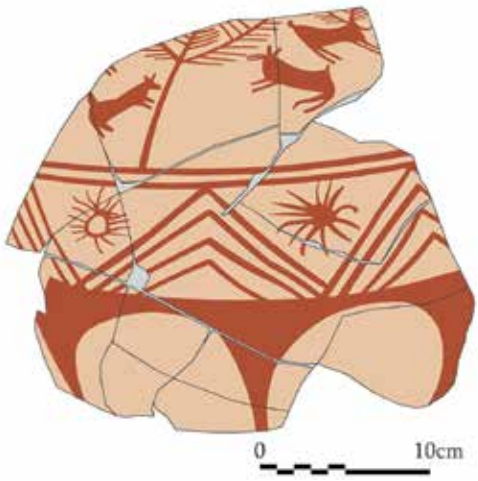

Fig. 16. A fragment of a painted pithos, Nargiztepe (©:http://dostoyanieplaneti.ru/5710-Nargizpepe; drawing: The Archive of Tigranakert Project).

4 Numbering is given according to the sequence of the deceased individuals found in the burial.

5 The site of Nargiztepe is located around 30 km to the south-east of Tigranakert, in the territory of Martuni of Artsakh occupied by Azeri people, immediately adjacent to the defense line.

Fig. 17. Iron and bronze rings, the fifth pithos burial (© The Archive of Tigranakert Project).

Fig. 18. Beads and pendants, the sixth pithos burial (© The Archive of Tigranakert Project).

Fig. 19. Glass gem with an image of two angels, the sixth pithos burial (© The Archive of Tigranakert Project).

lar row of arches (Fig. 4). The scenes with images of people and animals have been also preserved on two pithoi of the Late Hellenistic burials discovered in Martakert in 2013. One presents a ritual procession (on Martakert burials, see below, Fig. 21).

Thus, three-four painted burial vessels have been discovered from Tigranakert and surrounding territory. It is not excluded that these vessels were specially made for burial. It is noteworthy that in the abundant ceramic material unearthed from the town territories of Tigranakert only several insignificant fragments of similar vessels were found.

The fifth pithos burial was opened in the same trench, at a depth of 0.60 m, with orientation from the north-east to the south-west. The pithos was a middle sized, pear-shaped, light orange vessel (height: 0.92 m, width: 0.83 m) with a low neck and wide flat rim that had been used for household purposes and for burial ritual in the region. Below the rim is a rope relief band.

The mouth of the pithos was covered with flat stone. The skeleton was poorly preserved. Judging from the teeth of the one part of jaw, the deceased was apparently a mature individual. The finds include a Parthian drachma (probably of Orodes II), glass paste beads (54 beads) and fragments of bronze and iron rings (5 pieces, Fig. 17).

Two rings had paste gem: one gem obviously bears an image of Cupid (winged angel). A double-handled vessel with spherical body was opened leaning against the near-bottom part of the pithos vertically (height: 0.30 m, width: 0.27 m). This kind of spherical vessles were the transformed forms of flasks commonly used in transitional trade in the Hellenistic period. They appear in the Late Hellenistic period and date back to 2–3rd centuries AD (Khachatryan 1981, 123).

The sixth burial was within an orange pithos (height: 1.60 m, width: 0.95 m) buried at a depth of 1.20–1.50 m. It was oriented parallel to the previous one- from the north-east to south-west. Two skeletons were discovered in the pithos, buried on their left side, on top of each another, with flexed extremities. The mouth of the pithos was covered with a piece of body of another pithos, which indicates that the deceased was laid after the rim of the vessel had been removed (Kocharyan 1991, 23–31). Like in previous case, an oinochoe type pitcher (height: 0.25 m, width: 0.27m) was found near the bottom of the pithos. A necklace was found on the chest of the lower skeleton, made up of glass, coloured paste and cornelian beads, agate and bronze bell-shaped pendants (Fig. 18). A blade of a small dagger and fragments of handle were unearthed near the thigh of the deceased, as well as a glass paste seal with an image of two angels (Fig. 19). Glass paste intaglios were widespread in the Late Hellenistic world, especially in 2–3rd centuries BC. During this period among the deities of the Graeco-Roman pantheon, Eros-Amor-Cupidon and his attendants were particularly celebrated. Cupidon was depicted both alone and accompanied with butterflies, dolphins and

other angels, riding a hippocampus or on the boat. The examples from Tigranakert with images of angels are also dated to the abovementioned period and are reminiscent of the materials of the Western museums and private collections (Guiraud 1988, 124–129, pl. 22/336A-345A, 23/346-361A, 24/362A-381A; Dimitrova-Milcheva 1980, 63–67,135–149).

Fine pieces of copper foil in a very worn condition were also found in the burial, which can refer to the mirrors usually placed in the Late Hellenistic burials. Three bronze rings with oval-rhomboid bezels were on the phalanges of skeletons, with traces of paste gem. The rounded bezel of the fourth iron ring was inlaid with a glass seal with an image of a boat with one sail (Fig. 20). Gemstones with an image of a galley and glass paste intaglios are known from the territory of France. The examples that are similar to an item from Tigranakert are dated back to 1st century BC–1st century AD (Guiraud 1988, 152–153, pl. 38/552A-557A). Two glass paste seals kept in the British Museum are also reminiscent to our find. Both are considered Roman and refer to the 1st century BC (https://www.britishmuseum.org/collection/object/G_1814-0704-2665).

The study of the burial materials suggests that we are dealing with a burial of a married couple. The necklace belonged to a woman, meanwhile the dagger belonged to a man.

Pithos Burials in Artsakh-Utik Region

It is important to note that the Late Hellenistic pithos burials within the territory of Artsakh and Utik are the most widespread and archaeologically documented types of burials. Thus, in 1939 three pithos burials were studied by J. Hummel in the southwestern part of Stepanakert (Hummel, manuscript). In 1954, during excavation of the Middle Bronze Age settlement Uzerlik Tepe, K. Kushnaryova discovered eight Hellenistic burials, four of which were pithos burials (Kushnaryeva 1959, 389–428). In 1964, pithos burials were discovered in course of construction activities at the southern limit of Stepanakert. A silver denarius of Emperor Augustus was found in one pithos[6].

In 1998, a necropolis with pithos burials was discovered accidentally in a place named "Meghraker", at a distance of 2 km to the south-west from Tchankatagh village of Martakert region, which occupies an area of around 600 m^2 (Safaryan 2011, 179–186). Exploratory

Fig. 20. A glass gem with an image of sailing ship, the sixth pithos burial (© The Archive of Tigranakert Project).

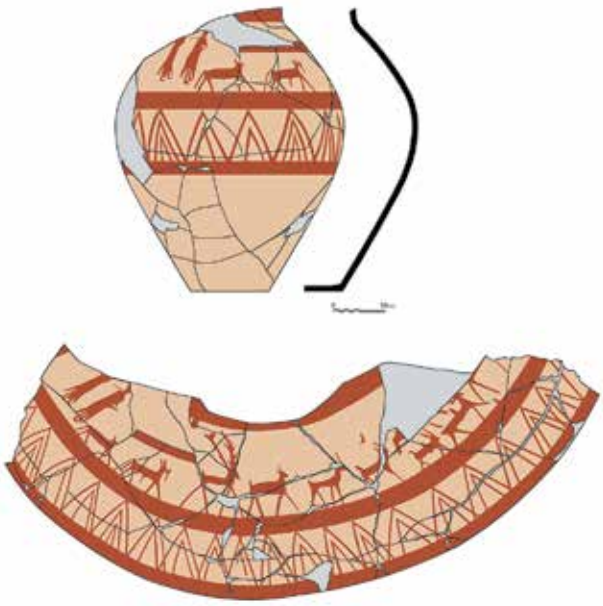

Fig. 21. Painted pithos, Martakert, 2013 (© The Archive of Tigranakert Project).

archaeological excavations demonstrated that pithoi are oriented from east to west. The deceased were laid in the pithos in a crouched position, with their heads to the east. The maximum height of the pithoi reaches 1.65 m, the maximum width: 1.00 m. The mouths are covered with small slabs.

In 2006, in the area "Purtchaghak" of Haterk village (Martakert region), in the course of the Trghi river diversion into the Sarsang water reservoir, pithos and pit burials were discovered. The fragments of pithoi, pots, bowls, iron spearheads, jewelery were collected. It is impossible to find out the sizes of pithoi, but these bear ornamentation similar to decoration of pithoi found in Tchankatagh (Safaryan 2012, 487–498).

In 2007, the pithos burials were recorded in the village Arajadzor of Martakert region, within the terri-

6 The coin is kept in the Artsakh Museum of History and Regional Studies.

tory named "Papen Kal". The pieces of pithoi, bronze bracelets and a red painted pot were collected.

Two pithos burials were documented in 2011, in course of earthworks at the southwestern limit of Stepanakert (the sizes of pithoi: the height of the first pithos is 1.35 m, the width: 1.05 m, the height of the second pithos is 1.45 m, the width: 1.06 m (Safaryan 2012, 491–492).

Two pithos burials were studied in 2013 by our expedition. These pithoi were discovered and considerably damaged during construction of a canal in Martakert. They were found in horizontal position. Although the burial inventory was abundant, it was found by the locals out of the context. On the body of one burial pithos (only separate fragments of the pithos are preserved, the diameter of the rim is 0.38 m, diameter of the bottom: 0.17 m) a rider oriented to the left is depicted. Above it are depicted uncertain images, which, like the rider, are painted with red stiff pigment. The images are poorly preserved, but it can be seen that the rider holds a bridle in his hand. Most probably, he had a weapon in his second hand. An image of deer, moving to the left is depicted on the shoulder of the same pithos. The parts of its body and branching antlers are portrayed accurately. On the burial pithos, most probably, is depicted a scene of hunt. A fragmented wide red painted plate and a painted pan are particularly noteworthy.

Among materials accompanying the pithos burial, a small elaborately decorated pithos is worthy to note (the height of the preserved part is 0.57 m, diameter of the bottom: 0.15 m). Its yellowish-brown spherical body has been restored up to its neck. The vessel shoulders below the neck are decorated with two ornamental bands. The first band illustrates the rhythmical sequence of people and deers (Fig. 21).

At the end of the row consisting of nine animals, two human figures dressed in shin-length fur clothes are depicted. At the bottom edge of the garment are extremities of the animal furs. Between the latter the naked legs of human figures can be seen. The third figure from the end is a walking stag that is distinguished by large body size and branching antlers.

All images are static. Even though an action can be mentioned here, there is no dynamics, no motion. The lack of flying spears and wounded animals, characteristic of the hunt scenes, as well as presence of human static figures, wearing long clothes allow to suggest that, nevertheless, a scene of ritual procession is depicted on the pithos[7].

The following band consists of inscribed red painted triangles with upward-directed vertexes that remind of a mountain landscape. The "landscape" composition illustrating triangles with pointed upwards vertexes, which includes the sky with signs of luminaries can be presumably depicted on the second band of a pithos from the burial no. 4 of Tigranakert, and on the pithos fragment found from Nargiztepe (Fig. 4 and 16), not far from Tigranakert.

The painted pithoi bearing decorative ornamentation that were discovered in other archaeological contexts, according to scholars, were used to serve beverages during celebrations. These were discovered together with plain pithoi, both in contemporary sites of Armenia (Arakelyan 1976, 74, tab. 10; Tiratsyan, Karapetyan 1985, 223, il. 6/2; Kocharyan 1991, tabs 15/3, 7, 13, 17, tab. 17/1,2; Demirkhanyan 2010, 20, tab. 33) and from the Achaemenid and Late Hellenistic horizons of the sites in neighboring countries (Kleiss 1973, 164, 166, 168, tab 67/20; Gagoshidze 1979, tab. 14/54, 55; 16/234). Sometimes they were used as pithos burials, as in the case of pithoi from Tigranakert and Martakert.

In 2019 two necropoli with pithos burials were also recorded in Sos village of Martuni region. Pithos burials were also recorded in Karmir Shuka, Kolkhozashen and Avetaranots villages.

The pithos burials of Utik have been studied by the Azerbaijani archaeologists (Mingechaur, Galatepe, Garakobar etc., see: Alekperov 1960; Kaziyev 1953, 5–35; Kaziyev 1960; Golubkina 1956, 73–87; Golubkina 1961, 21–36; Vaidov 1965; Goshgarly 2005; Huseynova 2014; Osmanov 2006, 93–97; Asadov 2010, 91–97). Regardless of various, often conflicting or intentional historical-cultural and ethnic interpretations made by scholars, the ritual and materials of these burials are identical to the burials of Artsakh.

It should be noted that Tigranakert of Artsakh is located almost at the center of this culture, and its further research can help to address a series of issues related to the pithos burials.

Conclusion

It is evident that the abovementioned burials of Tigranakert are a part of manifestation of the Late Hellenistic burial culture. It is testified by various burial structures within the territories of Artsakh and Utik, up till the Kura river. The Late Hellenistic burial struc-

7 The procession of animals depicted on the painted pithos is reminiscent of the incised images of deers on a censer from Armavir, dated back to the 6-4th centuries BC (cf. Karapetyan 1973, 71, Ill. 2, 3/3).

tures that were discovered in this region in result of excavation or accidentally are of different types (cist, stone box, burial with oval chamber, pit grave, pithos burial etc.), but at the end of the 1st century BC and during the first centuries AD the pithos burials became predominant.

In the mentioned period, this type of burial became widespread through the Hellenistic world, including also Transcaucasia. Summarizing the results of previous and ongoing excavations it can be suggested that several dozens of necropolises have been recorded in Artsakh and Utik with an absolute predominance of the pithos burials.

The quantitative ratio of these six pithos burials and one stone box burial (which still constitute a small group) that have been excavated inside the Late Hellenistic necropolis and the fortress of Tigranakert, support the advanced argument. Moreover, certain local specifics can be observed in the ideological roots and ritual of the pithos burials in various regions.

The burials under discussion maintained the characteristic feature of the pithos burials of other ancient sites of that period, more specifically, the absence of identical orientation relative to the geographic cardinal directions. Nevertheless, they represent also new regional specifics: the transversal inhumation inside the pithos, creation of lime plastered platforms adjacent to the pithos burial and fire consecration of these areas, a habit of placing vessels near the bottom of pithos, canonic presence of ring-seals with glass gemstone, a common habit of putting a coin or coins with the deceased, and the most obvious feature resulting from certain cultic beliefs of the people of the region, such as use of painted vessels in the burial ritual.

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Catégorie des sanctuaires en Arménie antique selon leurs emplacements: étude historiographique et archéologique

Arevik Parsamyan

Université de Rouen-Normadie, France
Université d'Aix-Marseille, France

Abstract. The historiographical and archaeological study allows us to identify seven categories of sanctuaries: Category A. Priestly principality: The sanctuary of a priestly principality is very old. Armavir is an example. Armavir's archaeological excavations confirm the testimony of Movses Khorenatsi. Several shrines discovered on the spot attest its function of priestly principality, which kept its role during the Hellenistic period. Category B. Urban temple: known from written sources, an example of this category was the subject of archaeological studies at Artashat, the remains of this temple were not found during the excavations. However, architectural fragments as well as several statuettes representing ancient gods allow us to assume the existence of such a temple at Artashat. Category C. Temple in the suburbs (outside the city): Mentioned by written sources and found in Erazamuyn, near the city of Artashat, this type of temple had a public space intended to realize commercial, financial and judicial activities. Category D. Rural sanctuary: It is more difficult to identify. It seems to us that the sanctuaries of Shirakavan and Hoghmik (?) fall into this category. Indeed, excavations have discovered an agricultural complex associated with the site. However, these two archaeological sites still raise several questions, which require additional archaeological studies. Category E. Temple in a royal dastakert: observed at Ervandashat, this site is a royal dastakert*, which has a villa, a temple, a large cellar, a tower, and low walls intended to trap animals during royal hunts. Category F. Temple in a fortress: Even if in the sources there is little information on this type of temple, the archaeological study gives us a real example of this category. The temple of Garni is built in a fortress difficult to access. It was surrounded by a palace, thermal baths and various constructions. Category G. Temple distant from habitats: The isolated sanctuary in the mountains is very old. It has been identified in Erpin, Byurakan, Astghi blur and has been located in the mountains, with no nearby village.*

Keywords: Armenia, Classical period, history, archaeology, religion, sanctuary, temple.

Introduction: constats, problématique et objectif[1]

Suivant les textes des auteurs anciens, tels que Hérodote, Strabon, la majorité de la population rurale de l'Asie Mineure ainsi de l'Arménie se rassemblait autour des temples locaux. En Arménie, à part ces temples ruraux les temples se situaient aussi dans des grandes villes, des bourgs, des lieux isolés dans les montagnes, etc.

En 1959, A. Perikhanyan propose de classer les temples du IV^{e} siècle av. J.-C. au III^{e} siècle ap. J.-C. situés en Asie Mineure et en Arménie en trois types généraux (Perikhanyan 1959, 5):

- Temple théocratique d'une communauté
- Temple dans une cité
- Temple d'État (royal), c'est-à-dire dédié au culte du roi

Dans son ouvrage l'auteur consacre une étude approfondie aux temples de la catégorie théocratique en Asie Mineure mais passe rapidement sur les temples arméniens. Par ailleurs, les deux autres catégories restent en dehors de son sujet d'étude. Les chercheurs plus tardifs reprennent la classification de A. Perikhanyan. Par exemple, G. Vardumyan (1991, 123–124), d'une part reprend la classification de A. Perikhanyan, et d'autre part propose trois groupes généraux:

- Groupe de temples éloignés d'une ville ou d'un village (храмовые хозяйства)
- Village sacré (храмовые деревни)
- Cité sacrée (храмовые города)

Se fondant sur Strabon, I. Moga, quant à elle, différencie aussi trois catégories importantes de sanctuaires indigènes dans le monde anatolien (Moga 2010, 166):

1 Légèrement modifiée, cette étude est tirée de ma thèse de doctorat soutenue le 9 novembre 2018 à l'Université de Rouen. À cet effet, je tiens à remercier mes directeurs de thèse, et notamment mon codirecteur, M. Patrick Donabédian, pour son aide et pour ses conseils durant mes études.

- Les États-temples
- Les sanctuaires urbains ou appartenant aux grandes villes
- Les sanctuaires ruraux ou appartenant aux petites villes et aux villages

Cependant, les classifications proposées par ces spécialistes sont incomplètes. La classification de A. Perikhanyan est d'une part partielle et d'autre part ne correspond aux cultes arméniens. Tout d'abord, outre le temple théocratique d'une communauté et le temple dans une cité, il existait aussi en Arménie des temples dans les villages, dans les cantons dans les dastakert (propriété), etc. Deuxièmement en Arménie le roi n'était pas déifié. Il était le représentant du dieu sur la terre, mais pas le dieu. Il n'y avait donc pas de temple dédié au culte du roi.

La classification de G. Vardumyan est lacunaire: outre les groupes de temple cités, il existait d'autres catégories de temples, mentionnées dans les sources historiques: prenons l'exemple du temple urbain à Artachat cité par Moïse de Khorène. C'est un temple situé dans une ville urbaine. Il ne s'agit donc pas d'une cité sacrée.

Quant à I. Moga, sa classification est incomplète pour le territoire d'Arménie parce qu'en plus des temples urbains et des temples ruraux, il existait aussi des temples dans les cantons, forteresses, éloignés d'habitat, etc.

Notre objectif est donc de reprendre toute la documentation historiographique et archéologique pour classifier les temples antiques d'Arménie (IVe sicle av. J.-C. au IVe ap. J.-C.)[2]. Si nous suivons les sources textuelles les auteurs anciens précisent l'emplacement des temples arméniens dans leurs ouvrages.

Voici quelques témoignages historiographiques:

« *Ils détruisirent la statue de Nané […] dans le bourg de Til* » (Agathange 1909, §786).

« *Puis le roi alla lui-même avec toute l'armée de Vagharchapat à la ville Artachat, pour y détruire les autels d'Anahit* » (Agathange 1909, §779 – 781).

« *Il éleva une petite ville, semblable à la sienne, sur le fleuve Akhourian et lui donna le nom de Bagaran, ce qui voulait dire qu'il y avait disposé l'ensemble des autels* » (Agathange 1909, §779 – 781).

« *Ensuite, il se dirigea sur la province d'Ekeghiats qui est sur les confins, dans le bourg d'Eriza où se trouvaient les temples les plus considérables des rois d'Arménie, consacrés spécialement au culte d'Anahit* » (Agathange1909, §786).

« *Il parvint dans le canton de Daranaghi pour y détruire le temple des faux dieux, parce qu'il y avait dans le bourg de Tordan le temple d'un dieu glorieux et célèbre, appelé Barchamin*» (Agathange1909, §784).

« *Quant à la statue d'Apollon, il la dresse hors de la ville près de la route*» (Moïse de Khorène 1991, II, 49).

« *Il alla également au temple de Mihr qu'on disait fils d'Aramazd, dans le village de Bagarij dans l'idiome des Parthes* » (Agathange 1909, § 789 – 790).

« *Le lieu lui (Artaches) ayant plu, il y éleva une résidence (dastakert) royale d'automne […] creuse au centre, portant en haut la statue d'Astghik, et tout auprès, une maison devant servir de dépôt d'idoles* » (Tovma Artzruni 2010, I, VIII).

« *Tigrane, érigea la statue de Zeus Olympien dans la forteresse d'Ani […]* » (Moïse de Khorène 1991, II, 14).

« *Elles allèrent au sommet du mont Paghat, […] on honorait la maison d'Aramazd et d'Astghik* » (Matenagrutiunk 1865, 301).

Suivant ces témoignages, les auteurs anciens distinguent huit lieux différents d'emplacement des temples antiques:

- *Temple dans une principauté sacerdotale* (տաճար սրբազան քաղաքում)
- *Temple dans une ville* (տաճար քաղաքում)

Ville – Agglomération relativement importante dont les habitants ont des activités professionnelles diversifiées, notamment dans le secteur tertiaire.

- *Temple en banlieue* (տաճար արտաքոյ քաղաքին)

Banlieue – Territoire et ensemble des localités qui environnent une grande ville.

- *Temple dans un bourg* (աւան)

Bourg – Agglomération rurale moins importante que la ville où se tient ordinairement le marché des villages environnants.

- *Temple dans un village* (գեօղն, գեւղն)

Village – Agglomération rurale; groupe d'habitations assez important pour former une unité administrative, religieuse ou tout au moins pouvant avoir une vie propre[3].

- *Temple dans une résidence royale* (ապարանս արքայանիստ)
- *Temple dans une forteresse* (ամուրն)

Forteresse – Lieu fortifié de plus ou moins grande étendue, destiné à défendre une place ou une région.

2 À propos de la classification des lieux de culte en Arménie de la période néolithique jusqu'à la période hellénistique voir Avetisyan, Bobokhyan 2019, 19-33.

3 La définition des termes est prise du Dictionnaire TLFI du Centre National de Ressources textuelles et Lexicales [archive]. Consulté le 1 Août 2017.

● *Temple isolé dans les montagnes* (ի սևարս լերին)

Notons aussi, que jusqu'à présent, il reste impossible d'éclaircir de façon satisfaisante l'importante question de différences entre les villages, les bourgs, ainsi qu'entre les villes et les forteresses pour la période préhellénistique et hellénistique. Les sources se limitent à nommer les villages, les bourgs, les forteresses, les centre cultuels, mais sans parler de leurs particularités architecturales. D'après G.Tiratsyan, mentionnant les temples d'Ani-Kamax, d'Erez et d'Achtichat, les historiens parlent succinctement des *kômopoleis* (villes-villages) situés autour de ces temples (Tiratsyan 2000, 175–176). Notre théorie proposée ci-après reste donc hypothétique.

Compte tenu des sources historiques, nous pouvons distinguer sept catégories de sanctuaire en Arménie, fondées sur leur emplacement et structure interne.

Catégorie A. Principauté sacerdotale ou État-Temple (Սրբազան քաղաք)

Catégorie B. Temple urbain ou temple dans une ville (քաղաքային)

Catégorie C. Temple en banlieue (hors de la ville) (արտաքաղաքային)

Catégorie D. Temple rural ou temple dans un bourg/village (աւանային/գյուղական)

Catégorie E. Temple dans un dastakert royal (արքայական դաստակերտ)

Catégorie F. Temple dans une forteresse (ամուրն)

Catégorie G. Temple éloigné des habitats (բնակավայրերից հեռու)

Catégorie A. Principauté sacerdotale ou État-Temple

Les principautés sacerdotales[4] sont très caractéristiques de l'Asie Mineure. Elles sont situées dans la partie orientale de l'Asie Mineure, dans le Pont, en Cappadoce et en Cilicie Trachée, ayant à leur tête un prêtre aux pouvoirs étendus (Bernadet 2012, 293). Strabon nous témoigne à plusieurs reprises à propos du pouvoir des prêtres de cette catégorie en Asie Mineure et dans les pays voisins de l'Arménie.

D'après lui, par exemple, en Ibérie, qui est située sur la frontière au nord-est de l'Arménie les habitants se répartissaient en quatre classes:

« *La deuxième est celle des prêtres, qui s'occupent aussi des affaires de droit à l'égard des peuples voisins*» (Strabon XI, 3, 5).

Toujours selon Strabon la même situation se retrouve en Albanie du Caucase, située sur la frontière au nord-est de l'Arménie:

« *Le prêtre en office est l'homme le plus vénéré après le roi. Il a autorité sur le territoire sacré, qui est, comme celui du roi, très grand et très peuplé, et sur les esclaves du temple, dont plusieurs pratiquent la transe divine et délivrent des prophéties* » (Strabon XI, 4, 7).

Strabon nous témoigne à propos de Comana de Cappadoce, l'une des principautés sacerdotales:

« *Celui-ci (le prêtre) est le maître du sanctuaire et des esclaves sacrés, qui étaient plus de six mille à l'époque où je fis le voyage de Comana, hommes et femmes. Du sanctuaire relève un territoire très étendu dont les revenus vont au prêtre. Aussi celui-ci tient-il en Cappadoce le deuxième rang après le roi. En général, d'ailleurs, les prêtres étaient de la même famille que les rois*» (Strabon XII, 2,3).

À propos de Comana du Pont, Strabon nous témoigne que le prêtre avait le droit de porter couronne et tenait le deuxième rang après le roi (Strabon XII, 3, 32).

Les principautés sacerdotales ont leur économie et leur propre commerce. Leurs marchés locaux sont aussi utilisés par des marchands venus des pays voisins. Strabon nous témoigne à propos de Comana de Cappadoce, qu'elle était aussi une place de marché importante pour les populations qui y viennent d'Arménie (Strabon XII, 3, 36).

L'Arménie possédait aussi des principautés sacerdotales. Un des plus anciens centres religieux de cette catégorie est Armavir. D'après Moïse de Khorène, elle fut construite en des temps immémoriaux par Aramayis, un des descendants de Hayk. Il construisit une demeure sur une colline au bord du fleuve et l'appela de son nom, Armavir (Moïse de Khorène 1991, I, 12). Les statues du Soleil et de la Lune, une forêt sacrée et les sanctuaires d'Anahit, d'Apollon et de Mihr-Mithra se trouvaient dans ce grand centre païen.

Les vestiges des sites et leurs mobiliers découverts pendant les fouilles archéologiques de la colline Saint-David (hauteur 50 m) et de celle d'Armavir (72 m) montrent que ce site fut habité à la fin du IV^{e} millénaire av. J.-C. De plus la découverte de marches, de petites fosses, de signes gravés dans les grottes et sur les rochers, ainsi que la présence d'un temple rupestre (remontant au bronze récent et au fer ancien), ne laissent pas de doute: la colline d'Armavir était auparavant un lieu sacré (Karapetyan 2010, 67).

4 Nous préférons cette expression utilisée par L. Bernadet (Bernadet 2012, 293), à celle de « État-temple » employée par P. Debord (Debord 1982, 60-99).

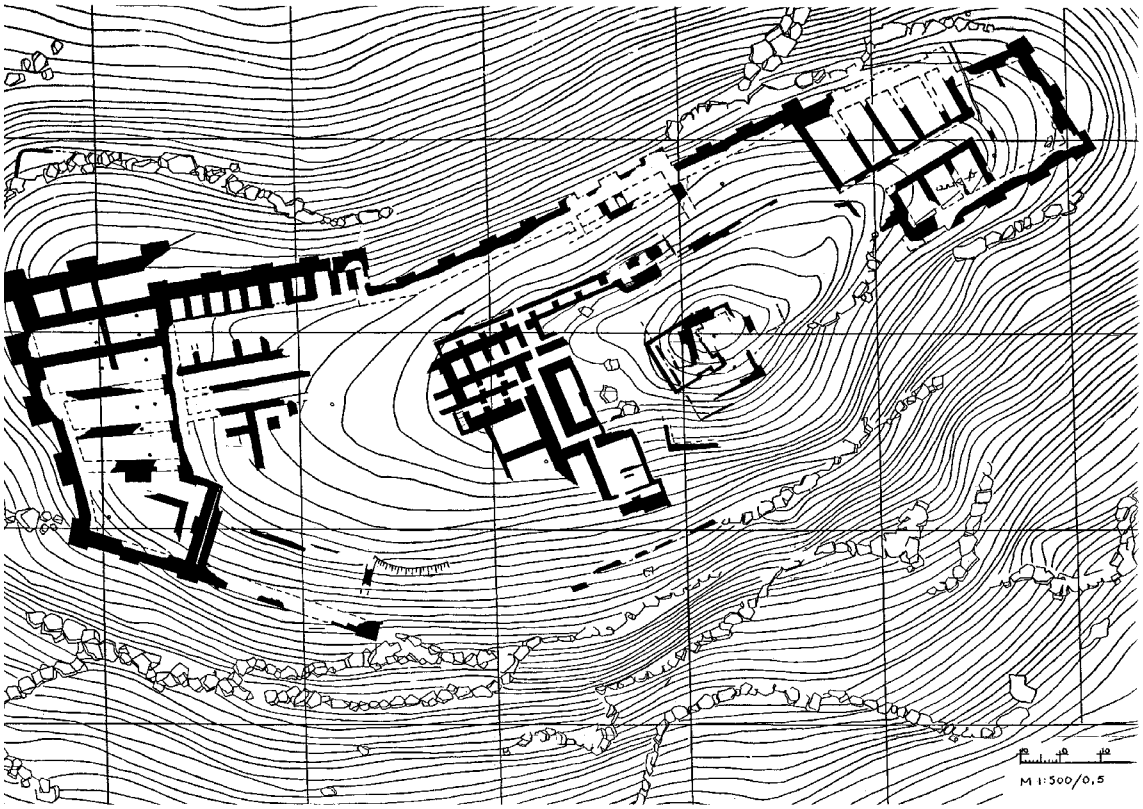

Fig. 1. Armavir, topographie et plan général (Tiratsyan 1998–2000, 151).

Composé de différents types de bâtiment construits avec une technique différente, le site archéologique d'Armavir conduit à plusieurs interrogations. Cet ensemble formé de deux citadelles, d'une agglomération, de plusieurs canaux et d'une nécropole, présente cinq grandes périodes d'occupation:

I^{ère} période d'occupation: époque du fer ancien: IX^{e}–VIII^{e} siècle av. J.-C.

II^{e} période d'occupation: époque ourartéenne: VIII^{e}–VII^{e} siècle av. J.-C.

III^{e} période d'occupation: époque achéménide: VII^{e} – V^{e} siècle av. J.-C.

VI^{e} période d'occupation: époque Ervanduni (Orontides): IV^{e} siècle av. J.-C.

Ve période d'occupation: époque hellénistique: III^{e}–I^{e} siècle av. J.-C.

Les éléments correspondant aux premiers siècles chrétiens et au haut Moyen Age sont mal conservés (Tiratsyan 1980, 28; Mahé 1996b, 1281).

Dans la forteresse occidentale fut construit un grand complexe palatin avec une salle à colonnes (40,70 × 15,20 m) entourée de nombreuses pièces. L'édifice central de la citadelle avait une grande cour intérieure, entourée de bâtiments (Fig. 1). Le portail nord donnait sur la cour.

Les quartiers urbains ourartéens possédaient des maisons disposées le long des rues. Parmi celles-ci se trouvaient des maisons spécialisées, telles que la maison du f*abricant de sceaux*, du *pharmacien, maison du forgeron*. Quatre canaux ramifiés apportaient l'eau de l'Araxe à la ville.

Dans la forteresse orientale se trouvait un temple à quatre contreforts avec cour. La cour du temple était dallée de gros blocs de tuf bien taillés (Fig. 2). Un complexe cultuel accolé à la cour ouest comportait une salle de parade aux murs décorés de différentes couleurs.

À 13 m de cet édifice, sur le flanc nord de la colline, les fouilles mirent au jour un sanctuaire rupestre (27,5 × 7,5 m) au centre duquel s'élevait un autel creusé dans le rocher. Un autel d'offrande fut découvert à son côté est (Karapetian 2010, 70).

Plusieurs années de fouilles archéologiques menées par les spécialistes (Marr, Arakelyan, Tiratsyan, Karapetyan, etc.) montrèrent que la forteresse occidentale d'Argichtikhinili fut totalement ruinée après la chute d'Ourartou. Seul un complexe de constructions de la période hellénistique fut aménagé sur le côté est de la colline Saint-David. À cette époque, la ville s'étendait principalement à l'ouest de la colline d'Armavir. Concentrées sur l'antique citadelle, les

fouilles ont attesté que la ville avait été remise en état à l'époque hellénistique. Les murailles entouraient le sommet de la colline de tous les côtés et avaient une entrée au nord-est.

À l'est, à l'intérieur de la citadelle, deux bâtiments de trois et cinq pièces ont été aménagés, il s'agit probablement d'édifices palatiaux de la période des Ervanduni/ Orontides (Tiratsyan 1988, 82; Tiratsyan 1996, 214).

Un autre bâtiment ourartéen qui a été réutilisé pendant la période hellénistique se situe au sommet de la colline. Il s'agit du temple à quatre contreforts mentionné plus haut. Construit sur la plateforme en basalte, il a été réutilisé durant cette période. Cela est attesté par la présence de la technique en *queue d'aronde* des murs ourartéens (Tiratsyan 1996, 214).

Durant la période hellénistique, le temple avait probablement la même forme que pendant la période précédente. Cela prouve que l'architecture ourartéenne fut conservée après la chute du royaume d'Ourartou. Elle a également laissé son influence sur l'architecture de l'Arménie hellénistique même durant les siècles suivants. Cela est bien visible à Ervandachat.

Les bâtiments situés près du temple ont également été réutilisés. La présence de plusieurs objets en céramique et en verre, datés du III^e – I^er s. av. J.-C. confirme son utilisation durant cette période (Tiratsyan, Karapetyan 1981, 281 – 288). Ces bâtiments furent construits suivant un plan en deux espaces, l'un au nord et l'autre au sud, séparés par une cour. Un de ces bâtiments (n° 20) a une place unique. Comme les autres bâtiments, cette salle est aussi construite de murs à base de pierre, surmontés de murs en brique crue. Dans cette pièce, on a retrouvé un rhyton zoomorphe à tête de taureau, plusieurs poteries avec différents décors (une jarre décorée avec un *œil*, une deuxième jarre décorée d'une tour, un gobelet ourartéen décoré d'un arbre de vie (Tiratsyan, Karapetyan 1988, 219), ainsi que des ossements animaux brulés. G. Tiratsyan suppose que cette pièce était destinée à conserver les animaux sacrifiés et les objets rituels (Tiratsyan, Karapetyan 1988, 221 – 222).

Sur la colline d'Armavir des dizaines de grottes furent aménagées. Une de ces grottes, située sur la pente nord de la colline d'Armavir, où se situait auparavant la *Forêt des platanes*, était un des lieux sacrés de l'Armavir. Ce lieu de culte d'Armavir, très ancien, a continué à tenir son rôle jusqu'à nos jours sous le nom de Tzaghkavank (monastère de fleur) (Karapetyan, Khatchatryan 2004, 267).

Le sanctuaire le plus élaboré d'Armavir fut celui du Soleil et de la Lune, mentioné par Moise de Khorène (Moïse de Khorène 1991, II, 8). Les archéologues ignorent sa localisation. Cependant, au cours de ces dernières années, deux grands autels rectangulaires sont identifiés au nord de la citadelle d'Armavir. S'agit – il des deux grands autels de sacrifices dédiés à la vénération du Soleil et de la Lune mentionnés par Moïse de Khorène?

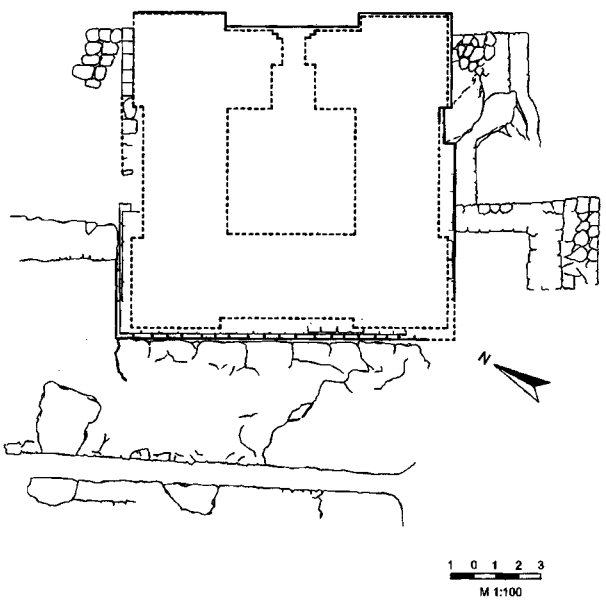

Fig. 2. Armavir, temple de Soussi (Karapetyan 2010, 70).

Une dizaine d'inscriptions furent trouvées à Argichtikhinili-Armavir, gravées principalement sur des pierres, parfois sur des briques. Elles appartiennent à différentes époques, de l'âge du bronze récent et fer ancien jusqu'au I^er s. av. J.-C. Elles sont écrites en différentes langues: en hiéroglyphes, en ourartéen, en élamite et en grec ancien. La langue grecque était répandue dans la cour royale, comme le mettent en évidence les deux stèles gravées de sept inscriptions grecques, élevées dans la *Forêt des platanes*, et retrouvées en 1911 et en 1917. Suivant une de ces inscriptions trouvées sur place, vers le III^e siècle av. J.-C. cette ville fut dirigée par un prêtre qui avait également le titre de roi:

« *Mithras, roi d'Armavir, au roi Ebrontès, salut ! Si tu te portes bien, tant mieux ! Santé aussi à ta descendance. En bonne santé tu passeras ton règne (...)*» (Mahé 1996b, 185 – 186).

Étant donné qu'Armavir était toujours le centre cultuel des Arméniens, même après la construction de Bagaran nous pouvons déduire qu'il s'agit d'un grand prêtre local, qui porte le nom de son protecteur Mithra et qu'il s'adresse à Ebrontès[5], le grand prêtre

5 D'après M.-L. Chaumont et G. Traina, il faut lire «Orontès et non pas Ebrontès» (Dédéyan 2007, 112).

du pays. Ce dernier est mentionné aussi dans l'ouvrage de Moïse de Khorène sous le nom d'Ervaz (Moïse de Khorène 1991, II, 39–40).

Les fouilles livrèrent un riche matériel hellénistique, surtout de la céramique aux formes et aux décors variés. L'une des pièces les plus remarquables est un rhyton retrouvé dans la salle destinée aux animaux sacrifiés, cité plus haut. C'est un rhyton zoomorphe à panse allongée en forme de cor (27,2 cm, diam. 13.2 cm). L'animal porte un collier au pointillé entre deux gorges avec une frange en dent-de-loup et un versoir. Les cornes de l'animal sont bien taillées et soulignées, la bouche est semi-ouverte. Les yeux sont grands et en forme d'amande. Il s'agit d'une génisse destinée à la vénération de la déesse Anahit, car sur son front elle porte un triangle (torche), le signe de la déesse. Les statues en terre cuite représentant la déesse Anahit, type *Mère à l'Enfant*, sont au nombre de trois.

La céramique se présente sous tous les types de poterie de cette époque (Tiratsyan 1988, 226). La grande quantité d'outils, d'armes et de bijoux découverts, la variété des procédés de fabrication, ainsi que l'existence d'une forge dans la citadelle attestent le caractère local de la production et permettent à I. Karapetyan d'affirmer que cette ville fut un centre de la culture hellénistique en Arménie et influença considérablement les autres villes et localités.

Les fouilles archéologiques confirment le témoigne de Moise de Khorène, sur sa construction très ancienne. D'après les fouilles, Armavir, entouré des murailles défensives, était un des centres religieux du pays dirigée par un grand prêtre connu dans des inscriptions grecques. Le temple de la principauté sacerdotale était riche, ayant à sa disposition un large territoire, des fermes, des forges, des sites d'échanges avec l'étranger, des bibliothèques où le grec était sans doute utilisé comme langue littéraire.

Moïse de Khorène témoigne aussi qu'Artaches (début du II^e^ siècle av. J.-C.) fit porter avec lui les statues des dieux Apollon et Artémis, en cuivre doré « *les ayant reçues, les chefs des prêtres, dressèrent à Armavir…* » (Moïse de Khorène 1991, II, 12). D'après ce témoignage, Armavir continua d'avoir une place particulière dans la société antique malgré le déplacement du centre religieux d'Armavir à Bagaran.

À la fin du IIIe siècle av. J.-C., le roi Ervand, après avoir construit sa nouvelle capitale, édifia aussi la ville religieuse de Bagaran.

À ce propos Moïse de Khorène écrit: « *Ervand, ayant construit sa ville, y transporta tout ce qui était à Armavir, sauf les idoles […] À une distance de quarante stades environ, au nord, il éleva une petite ville, semblable à la sienne, sur le fleuve Akhourian et lui donna le nom de Bagaran, ce qui voulait dire qu'il y avait disposé l'ensemble des autels. Puis il y transféra toutes les idoles d'Armavir* » (Moïse de Khorène 1991, II, 40; Mahé 1993, 196).

Bagaran devint donc un centre religieux séparé de la capitale. Nous disposons de peu d'informations sur cette principauté sacerdotale. D'après Moïse de Khorène, c'était une ville riche avec des murailles défensives qui régnait sur un large territoire, et avait plus de cinq cents esclaves (Moïse de Khorène 1991, II, 48). Le grand prêtre du pays y avait établi sa demeure.

Moïse de Khorène nous témoigne aussi qu'après la mort d'Ervand, Aratches ordonna à Smbat, d'aller à la forteresse de Bagaran, pour tuer le grand prêtre Ervaz (Moïse de Khorène 1991, II, 48):

« *Après l'avoir jeté dans un tourbillon du fleuve, Smbat mit à sa place, pour veiller sur les autels, un familier d'Artaches, disciple d'un mage capable d'interpréter les songes, appelé pour cette raison Mogpachté*».

Nous pouvons estimer que le temple de cette catégorie fut construit auparavant par la population. Plus tard, durant la période hellénistique, le roi lui-même construisit la ville religieuse et ses temples. Les prêtres de ces temples avaient un grand pouvoir. Le grand prêtre considéré comme le deuxième personnage du pays en faisait sa résidence. Le temple de principauté sacerdotale était riche, ayant à sa disposition un large territoire et des esclaves sacrés. À partir du IIe siècle av. J.-C. la principauté sacerdotale laisse sa place à la ville urbaine.

Catégorie B. Temple urbain

Après la chute de l'Empire achéménide, la royauté arménienne put être restaurée à la fin du IV^e^ siècle av. J.-C. Le facteur administratif devint à nouveau décisif. Vers la fin du III^e^ siècle av. J.-C. la ville n'évolue pas en fonction du temps, elle est de fait construite par le roi, comme dans les autres pays hellénistiques, et très souvent elle prit le nom du roi (Artachat, Tigranakert, etc.). Ces villes se distinguaient par leur nette structure urbaine, leur construction compacte, la disposition des complexes d'habitation (Ter-Martirosov 2010, 297).

La ville d'Ervandachat, mentionnée par Moïse de Khorène fut un des premiers exemples d'urbanisme hellénistique en Arménie.

La description de Moïse de Khorène nous apprend

que la ville était située sur une colline bordée sur trois côtés par la rivière et ceinte de hautes murailles avec des portes de bronze ; des escaliers de fer s'élevaient du bas jusqu'à ces portes et, avaient des marches au milieu desquelles étaient dissimulés des pièges pour intercepter quiconque voulait monter secrètement pour attenter à la vie du roi (Moïse de Khorène 1991, II, 40). Le roi Ervand fit également creuser des canaux depuis la rivière jusqu'à la citadelle pour alimenter la ville en eau. Située sur les voies commerciales Ervandachat connut un essor économique très important et compta cinquante mille habitants au IVe siècle (Buzandaran, IV, 55).

Toutefois, d'après F. Ter-Martirosov Ervandachat était la résidence royale, sans les fonctions publiques propres aux villes hellénistiques. Elle était donc le centre administratif du pays, caractéristique des villes achéménides, tels que Pasargades (Ter-Martirosov 2010, 297).

La première ville de type hellénistique en Arménie est Artachat. Construite par le roi Artaches dans la première moitié du IIe siècle av. J.-C. elle était entourée d'une vaste région agricole. Artaches Ier ayant construit sa nouvelle capitale Artachat, il y transporta toute la richesse d'Ervandachat et toutes les idoles de la principauté sacerdotale de Bagaran (Moïse de Khorène 1991, II, 12). Contrairement à Bagaran, Artachat était une ville administrative, avec sa structure interne bien organisée, avec son complexe défensif, ses centres commerciaux et administratifs. Moïse de Khorène nous renseigne sur la construction de la ville d'Artachat.

«*Artaches, allant au confluent de l'Araxe et du Metsamaur, trouve la hauteur à son gré et y élève une ville appelée Artachat, d'après son nom. L'Araxe lui fournit les bois de ses forêts ; c'est pourquoi il construit la ville sans peine et rapidement*» (Moïse de Khorène 1991, II, 49 ; Mahé 1993, 209).

Grâce à ces conditions favorables, Artachat prit rapidement son essor et devint bientôt un grand centre administratif, politique, religieux, économique et culturel de l'Arménie. À ce propos, Strabon témoigne que cette dernière est bien construite et c'est le siège du roi. Elle est située dans une anse de la rivière, entourée d'un rempart, sauf l'ouverture qui donne sur la rivière. Cette ouverture est protégée par un fossé et une barrière (Strabon, XI, 14, 6).

D'après Strabon et Plutarque, l'emplacement d'Artachat fut choisi et son plan établi par le fameux général carthaginois Annibal (Plutarque 1972, XXXI, 3–4; Strabon 1975, XI, 14, 6). La ville fut construite d'après un plan unique, préalablement établi, selon la volonté et les ordres du roi. La ville fut peuplée par *synoikismos*, par déplacement des populations. Les villes hellénistiques nouvellement construites étaient peuplées de cette façon. Artachat devint aussi le centre cultuel le plus important d'Arménie. Moïse de Khorène nous renseigne qu'Artaches y érige un temple et y transfère depuis Bagaran la statue d'Artémis et toutes les idoles de ses pères (Moïse de Khorène 1991, II, 49).

D'après les sources écrites, les temples urbains d'Artachat disposaient de trésors, de terrain, de serviteurs et de plusieurs prêtres païens. Agathange mentionne que lors de la christianisation du pays saint Grégoire distribua les trésors qui y étaient accumulés aux mendiants, aux pauvres et aux nécessiteux. Les fermes, les serviteurs avec les prêtres païens et leurs biens furent donnés pour le service de l'Église (Agathange 1909, §781).

Le temple urbain disposait aussi d'armées. Les prêtres et les habitants de la ville luttèrent contre l'armée royale lors de la christianisation du pays.

À ce propos, Agathange écrit: « *Là, apparut une immense troupe de démons, ayant la forme humaine, montés sur des chevaux ou à pied, armés de lances et de javelots, munis d'armes et de projectiles, ils couraient, criaient et poussaient des hurlements terribles. Lors de leur fuite, ils se précipitèrent dans le temple d'Anahid. De là, ils combattaient contre ceux qui s'approchaient, et, du sommet de l'édifice, ils décochaient contre ceux qui se trouvaient en bas des flèches inoffensives et une grêle de pierres, ce qui effraya peu les nouveaux adeptes* » (Agathange 1909, §779–781; Langlois 2001, 164–166).

Les ruines de la capitale d'Artachat (Artaxata) se situent au centre de la plaine de l'Ayrarat, dans l'actuelle région d'Ararat, à 30 km au sud d'Erevan, près du confluent de l'Akhurian et de la Metzamor.

D'après les sources historiographiques (Strabon XI, 14, 6; Tacite XIII, 39; Moïse de Khorène, II, 49) et archéologiques, la ville d'Artachat occupait les dix collines de Xor Virap (h. 20m–70 m), ainsi que les parties sud et sud-est de la plaine adjacente, où il y a également deux grandes collines, qui ne furent toutefois pas incluses dans le système général des murailles de la ville.

D'après J. Khatchatryan, dès la seconde moitié du Ier siècle av. J.- C., la ville occupait tout le triangle entre les rivières Araxe et Metzamor. À cette époque, elle s'était développée au-delà des remparts. D'après les sources historiques et archéologiques, Artachat

Fig. 3. Artachat, topographie et plan général (Khatchatryan 2010, 91).

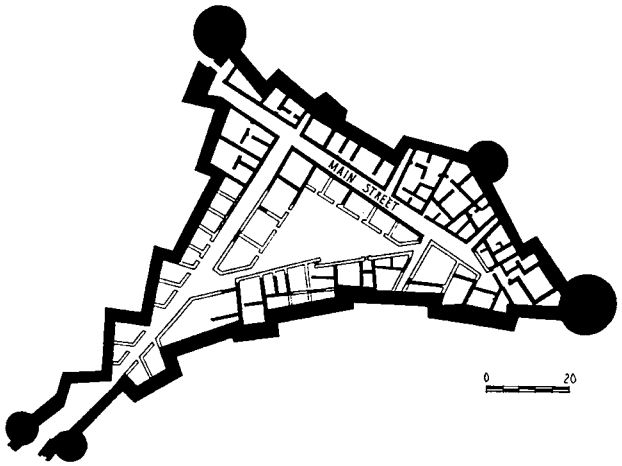

Fig. 4. Artachat, colline n° 1(selon A. Tonikian).

était l'une des grandes villes d'Orient. Elle dut avoir plus de 150 000 habitants. Elle fut détruite, construite et reconstruite plusieurs fois.

D'après les fouilles archéologiques et l'étude historiographique, les périodes d'occupation du site sont les suivantes (Tiratsyan 1996, 217–219):

I[er] période d'occupation: époque d'Ourartou[6].

II[e] période d'occupation: 189/188 av. J.-C.–66 av. J.-C. (188 av. J-C., fondation de la ville, 66 av. J.-C., ravages causés par les troupes parthes sous le commandement de Tigrane le Jeune.

III[e] période d'occupation: 66–59 av. J.-C., (la ville fut détruite par Corbulon.)

VI[e] période d'occupation: 60 ap. J.-C.- 163 ap. J.-C., (en 60, reconstruction de la ville par Tiridate Ier, en 163, destruction partielle de la ville par Statius Priscus.

V[e] période d'occupation: 170–335 (date de la destruction partielle de la ville par Sanesan, roi des Massagètes.

VI[e] période d'occupation: 336–368/369, (destruction de la ville par Chapur II).

Ensuite, la vie à Artachat se développa sur la colline n°6 et sur la petite colline au bord de l'Araxe.

La citadelle et certains quartiers centraux de la ville se trouvaient sur les neuf collines rocheuses, d'une superficie totale de 100 hectares (Fig. 3). Au pied de ces hauteurs, en plaine, les autres quartiers de la ville s'étendaient vers le nord-est et vers le sud. Chacune des collines était entourée de remparts qui, réunis entre eux, formaient un vaste et puissant système de défense. Sur deux autres collines qui se trouvent à 350m au sud-est des neuf collines, des vestiges de remparts ont été conservés. Autour des collines, dans les régions nord-est et est on a repéré les traces d'un fossé, vraisemblablement rempli d'eau, relativement large et profond, creusé dans une intention défensive (Arakelyan 1984, 372).

La colline n°1 est située vers le côté nord-est, et est la partie la mieux conservée. Elle était protégée par des murailles et des tours. Les bâtiments près des remparts sont de facture identique (Fig. 4). Ils étaient probablement destinés aux militaires (Arakelyan 1996, 220). Dans cette zone, on a retrouvé 3 000 pointes de flèches en fer produit sur place, des épées, des poignards, etc. On a aussi retrouvé plusieurs boulets de pierre, qui étaient utilisés par les défenseurs de la ville comme projectiles de balistes. La colline a été incendiée deux fois. Des restes de charbons et des cendres sont partout visibles.

D'après les fouilles archéologiques, la citadelle de la ville royale se situait sur la colline n° 2 (h. 70 m). Les murailles de la citadelle, partiellement révélées (400 m), se sont conservées à une hauteur de 5 à 6 m, avec une largeur de 2,7 m. De l'extérieur, elles présentent des tours carrées d'une largeur de 5,5–6,5 m, avançant d'un mètre sur la ligne générale de la muraille, et disposées à distance presque égale l'une de

6 À propos des périodes antérieures identifiées à Artachat voir Zardaryan 2018.

l'autre, toujours à 5,5–6,5 m. Les fondements des murailles sont en pierres brutes, liées par du mortier d'argile et recouvertes d'une couche d'argile, surmontée d'une assise régulière de briques crues. Les angles des assises en briques des contreforts sont à trois denticules, à passages de 30 cm, tandis que les contreforts (L. 1 m, P. 30 cm) et les murs entre eux (L. 1,7 m, P. 60 cm) présentent dans leur partie centrale des niches avec des passages analogues.

Sur la colline n°8, cinq rues parallèles avec des bâtiments identiques, des bains avec une piscine ont été découvertes (Arakelyan 1984, 373). Les constructions ont été faites suivant un plan cohérent qui a été maintenu pendant des siècles sans grand changement chaque fois que la ville était ruinée puis reconstruite. Le long des rues, les bâtiments accolés les uns aux autres formaient des rangées continues (Arakelyan 1984, 373). Les bâtiments sont construits en pierre débitée mais non taillée. Ils avaient des toits étroits couverts par des roseaux, qui étaient recouverts par une couche d'argile ou de terre . À côté de cela, plusieurs bâtiments de la ville, et particulièrement les bâtiments publics importants, étaient construits d'une pierre calcaire à grain fin, d'une couleur claire, parfaitement travaillée. Au milieu d'un quartier d'artisans potiers on a retrouvé les vestiges de deux bains. Les bains ont un double sol et sont chauffés par un hypocauste, caractéristique des thermes hellénistiques et romains (Arakelyan 1984, 374).

Des colonnes et leurs bases en calcaire, plusieurs tuiles en argiles ont également été mises au jour. D'après B. Arakelyan, de nombreux bâtiments de la ville était couverts de toits en tuiles à deux pentes. Ce type de construction apparait en Arménie à partir de l'époque hellénistique (Arakelyan 1984, 374).

La ville d'Artachat occupait un grand territoire, ce qui explique l'existence de plusieurs nécropoles dans la ville et à son alentour (Khatchatryan 1981, 189). Les fouilles archéologiques de la nécropole sud-est nous révèlent, que la ville était peuplée par des habitants de différentes classes sociales. Auprès de sépultures seulement accompagnées de quelques pièces de céramiques, on trouve de riches sépultures accompagnées de nombreux objets: poterie décorée, statuettes en terre cuite, bijoux, des pièces de monnaie, une couronne funéraire en or, etc (Khatchatryan 1981, 190).

Les vestiges du temple d'Anahit mentioné dans les sources n'ont pas été retrouvés. Cependant, les archéologues B. Arakelyan et J. Khatchatryan supposent que le complexe cultuel d'Artachat aura dû se situer sur la colline n°6 (h. 50 m). Les fragments architecturaux tels que les fragments de corniches dentelées, les fûts de colonnes et plusieurs bases de colonnes en tuf ont été retrouvés alentour de l'ancienne ville (Tiratsyan 1996, 222). Étant donné que les bases des colonnes sont de différentes tailles, il est évident qu'elles appartenaient à différents édifices. Elles sont soigneusement taillées, semblables à celles de Chirakavan, Hoghmik, Beniamin. Peut-on déduire que ces fragments architecturaux appartenaient au temple d'Anahit ? D'après Agathange, Grégoire l'Illuminateur refuse de participer au culte de la Grande déesse, et pour cela il est emprisonné à proximité du temple de la déesse, dans une fosse profonde (Khor Virap), devenue lieu de pèlerinage après la christianisation du pays au début du IVe siècle (Khatchatryan 2010, 93).

Même si les vestiges du temple n'ont pas été retrouvés sur place, car le monastère de Khor Virap a été probablement construit au même emplacement, les données archéologiques, telles que les statues de la Mère à l'Enfant attribuées à la déesse Anahit, les rhytons en forme d'ours, les figurines d'aigle, une figurine d'Éros-enfant (?), des pièces de monnaies représentant la déesse Anahit attestent l'existence d'un complexe de sanctuaire à Artachat, probablement situé sur la colline n°6. Ce temple faisant partie d'une ville urbaine (non sacrée) disposait d'une riche céramique rituelle. Etant donné qu'Artachat était une ville riche et avait une architecture remarquable, le temple d'Anahit aussi dut être riche et impressionnant. Malheureusement les résultats des fouilles ne nous renseignent pas davantage sur ce temple d'Anahit.

Selon les sources historiographiques nous pouvons estimer que le temple urbain, construit dans une ville administrative par son dirigeant, avait à sa disposition des fermes, des prêtres, des serviteurs, des trésors et une armée.

Catégorie C: Temple en banlieue

Nous disposons de peu d'exemples de cette catégorie: Le véritable exemple est le temple de Tir près de la ville Artachat, au lieu-dit Erazamuyn.

D'après Moïse de Khorène, ce temple fut construit par le roi Artaches, après avoir construit sa capitale. « *Quant à la statue d'Apollon, il la dresse hors de la ville près de la route* » (Moïse de Khorène 1991, II, 49). Agathange aussi nous apprend que le temple de Tir se situait sur la route vers Artachat (Agathange1909, §778). D'après cette source, ce temple disposait aussi d'un lieu, où les prêtres enseignaient la sagesse et les arts. Toutefois, Agathange qui témoigne de sa destruction par l'armée royale ne mentionne pas

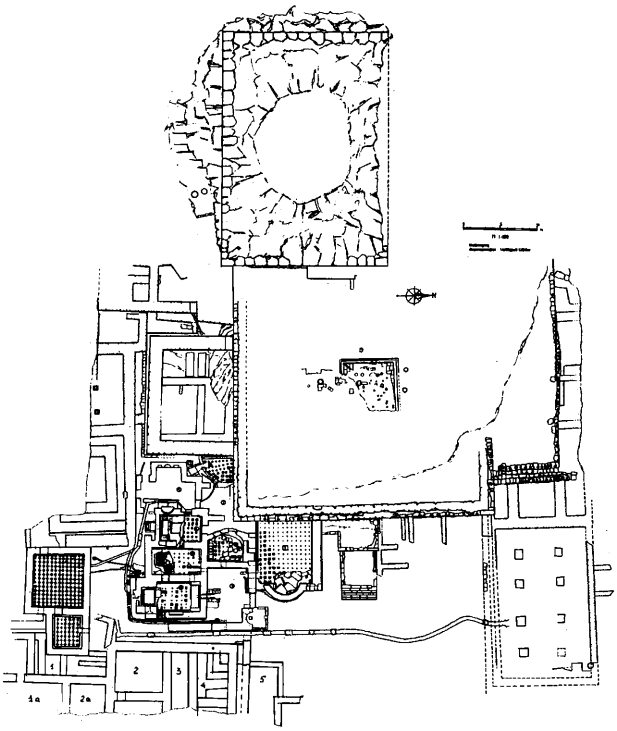

Fig. 5. Erazamuyn, plan et la plateforme du temple (Khatchatryan 2011, 290).

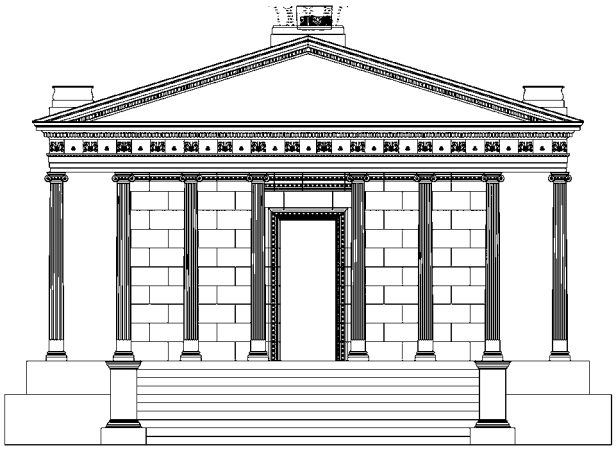

Fig. 6. Reconstitution du temple de Tir à Erazamuyn (selon G. Gyulamiryan).

l'existence de biens territoriaux pour ce temple. Il appartenait probablement à la capitale située à proximité.

D'après les fouilles archéologiques de J. Khatchatryan, à l'emplacement de ce temple, les fouilles ont relevé un fragment de 28,30 m du mur nord de la première plateforme (IIe siècle av. J.-C.) et un fragment de 10,30 m du mur oriental. Il était construit en blocs de calcaire. Seule l'assise est conservée, sans mortier. Les blocs de pierre sont seulement liés entre eux horizontalement. Les blocs sont taillés de façon rustique, caractéristique des blocs préhellénistiques. Le temple et la plateforme ont été détruits par Corbulon en 59. Sous Tiridate I^{er} (63 – 88), une autre plateforme a été construite avec un nouveau temple dédié à Apollon-Tir. On y montait par des marches en calcaire et on accédait au temple par une cour (Khatchatryan 2010, 93), (Fig. 5).

Les colonnes à cannelures, à bases attiques, du temple ont été découvertes entières ou en morceaux. Des fragments d'un chapiteau corinthien, une volute d'un chapiteau ionique, des pierres sculptées provenant d'architraves, d'antes et de corniches ont également été retrouvés. Malheureusement ces fragments architecturaux ne peuvent être reliés à une phase archéologique (Khatchatryan 2009, 134; Khatchatryan 2010, 93). Un acrotère décoré de feuilles d'acanthe aussi a été retrouvé. Après la première destruction du temple il a été réutilisé pour la construction de canalisation des thermes construits près du temple. D'après J. Khatchatryan, cet acrotère appartenait au premier temple de Tir construit par le roi Artaches, car ces décors sont différents de ceux du second temple construit au premier siècle (Khatchatryan 2013, 181). Une reconstitution du temple de Tir est proposée par G. Gyulamiryan et J. Khatchatryan (Khatchatryan 2013, 192) (Fig. 6), puis par F. Devedjian.

Près du temple de Tir, une salle à colonnes (L. 12,5 m, l. 20 m) fut découverte. Toujours d'après J. Khatchatryan, elle fut construite en même temps que le temple. Elle fut probablement détruite en 59 avec le temple avant d'être reconstruite en 60. Les murs sont en pierres grossièrement taillées, liées par une gâchée d'argile. Elle présente huit bas de colonne sur deux rangs. Il s'agit d'un édifice à trois nefs. La nef centrale est plus large que les nefs latérales. J. Khatchatryan estime, qu'elle a eu un toit voûté en tuiles (Khatchatryan 2011, 289). Les soixante pièces de monnaies retrouvées dans cette salle à colonnes et dans la pièce à côté laissent penser à J. Khatchatryan qu'il s'agit d'un édifice public destiné à abriter des activités commerciales, financières et judiciaires (Khatchatryan 2011, 289).

Un grand complexe de bains, composé de dix pièces, deux couloirs et deux tuyaux d'eau a été retrouvé à deux mètres au sud des marches en direction du temple. La partie des murs sauvegardés va de 2,5 à 4,35 m de hauteur. Les murs sont constitués de blocs de basalte, de briques et de galets liés par un mortier de chaux. Les angles des pièces et les entrées sont faits de blocs de calcaire bien taillés. La paroi intérieure des murs conserve des restes de deux couches de revêtement de plâtre, la première, blanche, d'une épaisseur de 2 – 2,5 cm, la seconde d'une épaisseur de 0,5 cm.

Toutes les pièces ont un double sol. Le chauffage

est effectué par hypocauste. Ce système est caractéristique des constructions romaines. Il n'était pas voûté à la manière d'un four, mais était un espace couvert d'un sol « suspendu », reposant sur un grand nombre de petits piliers, presque toujours construits de briques carrées. À Erazamuyn, ces petits piliers étaient formés de briques carrées et rondes de 6 à 10 cm d'épaisseur et de 20 à 24 cm de diamètre reliées entre elles par de minces couches de mortier. Le sol formé d'une épaisse couche de mortier de tuileau, souvent doublé d'un lit de briques. Ce sol épais était long à chauffer, en revanche, il conservait mieux la chaleur (Khatchatryan 2009, 122 – 124).

Deux morceaux d'ailes en onyx semblables aux ailes de la déesse Victoria ont été retrouvés dans une des pièces. Elles sont probablement sculptées dans un onyx provenant d'une carrière située près d'Artachat (Khatchatryan 2009, 129). Par ailleurs, un petit pied féminin (l. 10,2 cm, L. 4 cm) en marbre, soigneusement taillé a été mis au jour. Il est probable que les objets en marbre sont aussi fabriqués sur place, car une carrière de marbre est connue à Surenavan en 23 km sud – est d'Artachat.

Deux pièces de monnaies sassanides ont été retrouvées. Chapour II figure sur la face des monnaies ; au revers se trouvent Chapour II et le dieu Ahouramazda, et un temple du feu, constitué d'une base de colonne, d'une colonne et d'une flamme (Khatchatryan 2013, 183).

Un autre temple de cette catégorie se trouvait probablement sur la route vers Vagharchapat, à l'emplacement de l'église Sainte-Hripsimé (Tiratsyan 1996, 231). Les recherches archéologiques ont livré trois pièces de corniche d'un édifice antique (1,30 × 0,80 × 0,40 mètre) avec des ornements, très semblables à celles du temple de Garni, sauf qu'ici il s'agit de pierre de tuf et non de basalte (Tiratsyan 1996, 252). Il ne s'agit donc pas d'un élément de corniche rapporté du temple de Garni. Selon les archéologues A. Sahinyan et M. Hasratyan, un temple antique devait exister avant la construction de l'église, à l'endroit où sainte Hripsimé fut martyrisée.

L'étude archéologique des temples cités nous conduit à penser qu'un temple de cette catégorie disposait d'un endroit public destiné à abriter des activités commerciales, financières et judiciaires. D'après les sources, ce temple disposait aussi d'un lieu, où les prêtres enseignaient la sagesse et les arts. Toutefois, ce lieu d'enseignement n'a pas encore été retrouvé pendant les fouilles. Plus tard, des bains publics furent construits à côté du temple de Tir.

Catégorie D: Temple dans un bourg/village

1. Temple dans un bourg

En Arménie les temples les plus riches étaient de cette catégorie, particulièrement les temples dédiés à la déesse Anahit. Son temple principal situé dans le canton d'Eriza était un des plus riches. Il avait à sa disposition des esclaves des deux sexes (Strabon 1975, XI, 14, 16). Les rois s'y rendaient pour faire des sacrifices:

« *La première année de son règne dans la Grande Arménie, Tiridate se rendit […] au village*[7] *d'Erez, dans le temple d'Anahit, pour y faire des sacrifices. Ayant rempli cet indigne ministère, il descendit et campa sur la rive du fleuve Lycus (Gaïl)*» (Agathange 1909, §48 – 49).

D'après Pline l'Ancien une statue massive en or était érigée dans ce temple d'Anahit (Pline l'Ancien 1983, XXXIII, XXIV, 82). Elle fut mise en pièces et volée pendant l'expédition d'Antoine contre les Parthes (Pline l'Ancien 1983, XXXIII, XXIV, 83). Plus tard, une autre statue en or fut érigée, qui fut détruite pendent la christianisation du pays. Ce temple possédait une grande quantité d'or et d'argent, qui fut dérobée par les armées royales (Agathange 1909, §786).

Le temple disposait aussi d'armes. Agathange nous apprend que lors de la christianisation, la communauté du temple lutta contre l'armée royale.

« *Là, les démons, s'étant réunis comme une armée, avec des boucliers, combattaient en faisant retentir les montagnes d'un bruit épouvantable et de leurs hurlements* » (Agathange 1909, §786).

Il ne s'agit pas d'une armée régulière, mais d'une milice locale. Ce sont des habitants, des serviteurs des temples, qui en cas de nécessité protégeaient leurs lieux sacrés.

Le temple dédié aux autres dieux possédait de larges domaines territoriaux. À ce propos, Agathange mentionne, que le temple de Nané à Til disposait également de richesses (Agathange 1909, §786).

À cette liste il faut ajouter aussi le fameux complexe de sanctuaire d'Achtichat. Il est mentionné comme étant situé dans un lieu (ոեղ) par Moïse de Khorène et Agathange (Moïse de Khorène 1991, II, 12; Agathange 1909, §809). Ce lieu possédait les temples des trois divinités arméniennes où les rois réalisaient des sacrifices. D'après Moïse de Khorène, sous les rois Artaches et Vagharchak ce bourg appartenait

7 Dans les autres cas, Eriza est mentionné comme un bourg.

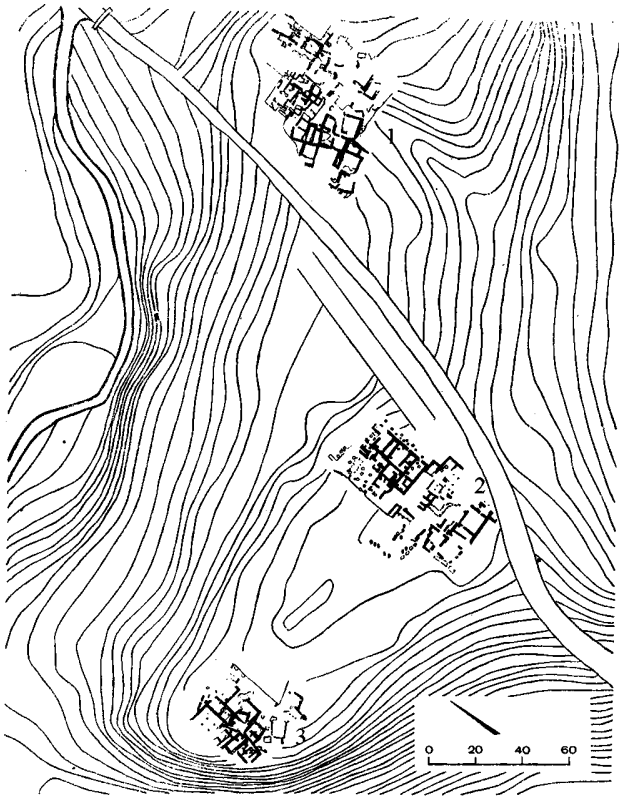

Fig. 7. Topographie de Chirakavan, trois secteurs (Tiratsyan 1996, 232).

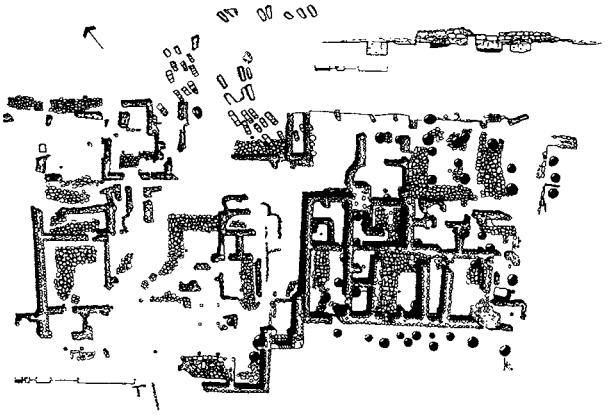

Fig. 8. Chirakavan, secteur 2 (Tiratsyan 1996, 235).

aux prêtres de la dynastie de Vahuni puis est devenu bien d'État sous le roi Tigrane (Moïse de Khorène 1991, II, 8). D'après Zenob de Glak, Achtichat disposait sept villages, qui appartenaient au complexe de sanctuaires (Zenob de Glak 1832, 37; Yovhan Mamikonean 2005, 1026). Pendant la christianisation du pays, le roi Tiridate donna le canton et ses environs à saint Grégoire.

Les prêtres Vahuni étaient riches et portaient également une couronne (Moïse de Khorène 1991, II, 14). Le bourg sacré d'Achtichat est semblable à celui de Zéla. Les prêtres de Zéla étaient aussi très riches. Strabon (XI, 8, 4) nous apprend qu'un grand nombre d'esclaves sacrés et d'honneurs sont accordés aux prêtres par les rois. « *Les rois n'avaient pas administré Zéla comme une cité, mais comme un sanctuaire des dieux perses, et le prêtre y était maître absolu en tout*».

Le temple de cette catégorie disposait donc non seulement d'argent, d'or et d'autres trésors, mais aussi d'esclaves sacrés, de terrains et de nombreux animaux pour les sacrifices.

2. Temple rural ou temple dans un village

Si auparavant les habitants se rassemblaient autour des sanctuaires, à partir du IIe siècle av. J.-C., comme dans les cas des villes, les temples furent aussi construits au sein du village.

D'après Moïse de Khorène, le roi Tigrane érigea la statue de Mihr dans le village Bagarij. C'était un temple riche de trésor et de terrain. Agathange mentionne que Grégoire fit détruire ce temple, les trésors du temple furent distribués aux pauvres et le terrain consacré à l'Église (Agathange 1909, §790).

Le temple de Vahagn à Petit Aghbak construit par le roi Artaches II (30–20) pour garder la population sur place (Tovma Artzruni 2010, 97), appartient aussi à cette catégorie. De même, le temple de Barchamin dans le village de Tordan (Agathange 1909, §784), qui possède une statue de dieu Barchamin fait d'ivoire, de cristal et d'argent (Moïse de Khorène 1991, II, 14).

D'après B. Arakelyan, l'État exploitait les habitants des communautés rurales placées sous sa dépendance, en exigeant taxes ou impôts, tandis que les cités ou leurs habitants exploitaient les villages qui leur appartenaient (Arakelyan 1984, 375).

Les temples de cette catégorie sont des sanctuaires animés par la communauté villageoise et religieuse, créant leur propre vie socio-économique. Selon les sources historiques, ils disposaient aussi de terrain pour l'agriculture.

Contrairement aux sources historiques, dans lesquelles nous pouvons voir la différence entre temple dans un bourg et temple dans un village, il est très difficile à différencier ces deux catégories par des données archéologiques. Les habitats trouvés par des fouilles peuvent appartenir aussi bien au bourg qu'au village. C'est la raison pour laquelle nous présentons ensemble les sites archéologiques de Chirakavan et de Hoghmik, qui possèdent des habitats et des sanctuaires.

Le site archéologique de Chirakavan se trouve dans la région du Chirak ; sur la rive gauche de l'Akhurian, à 3 km au nord de cette rivière, près de sa confluence avec le fleuve Kars. Actuellement, ses

vestiges sont submergés par les eaux du réservoir de l'Axurian construit en 1983.

Les fouilles ont révélé trois secteurs archéologiques. Le premier secteur (habitat) se situe sur la terrasse inférieure du site, du côté Est. Le deuxième secteur (lieu sacré) se trouve au centre de la terrasse supérieure et enfin le troisième secteur (palais ?) se situe à l'Ouest de la terrasse supérieure (Fig. 7). D'après F. Ter-Martirosov les vestiges de ces secteurs datent du IIe siècle av. J.-C. à la fin du III^{e} siècle après J.-C. comprenant quatre phases d'occupation:

I^{er} phase: première moitié du II^{e} siècle av. J.-C.
II^{e} phase: deuxième moitié du II^{e} siècle av. J.-C.
III^{e} phase: I^{er} siècle av. J.-C. et Ier siècle ap. J.-C.
IV^{e} phase: II^{e} et III^{e} siècle ap. J.-C.

Au-delà du III^{e} siècle, il n'y a pas de trace d'habitat. C'est seulement au IX^{e} siècle que ce site fut reconstruit et habité pendant une période très courte. Ceci est confirmé par la présence de certaines céramiques et de deux pièces de monnaie. Il n'est pas exclu que pendant cette période la vie fût concentrée dans la partie occidentale du site (Tiratsyan 1996, 233).

Dans le secteur n°1, des ensembles de maisons de deux à cinq pièces avec courette ont été decouvertes. Dans les maisons, les dallages sont en pierre et portent des bases carrées ou cylindriques en tuf ou en calcaire (Ter-Martirosov 1996, 233). Le sol des maisons est blanc et présente plusieurs couches fines de calcaire blanc. On peut en déduire que la couverture du sol de couleur blanche a été renouvelée périodiquement. Nous rencontrons le même phénomène à Ervandachat, où les couches blanches sont si bien conservées qu'on peut même les compter. Des fosses comblées de cendre ont été retrouvées dans les pièces, de même que des banquettes, des meules, des aiguilles et du mobilier de cuisine.

Une idole de forme phallique, une représentation de la *kteis*, ont été découvertes dans la première pièce, ouverte sur la cour, de la maison composée de cinq pièces. Sur un dallage de cette pièce, reposait une tête humaine en tuf noir, probablement une idole (h. 7.3 cm; l. 5.5 cm). Les traits de cette tête, de forme ovale, sont grossièrement taillés (Ter-Martirosov, Karakhanyan 1998, 23).

Dans une autre maison, un four carré fait de dalles de pierre (l. 50 cm, h 35 cm) a été mis au jour. Le four était comblé de cendres ; à côté, furent trouvés des morceaux de pierre ponce, une grande quantité de scories, une goutte de verre, une perle en pâte de verre bleue, un tube en céramique (L. 10 cm). Il est probable que le verre fut fabriqué par la technique de soufflage. Une autre pièce renfermait des outils en os et des fusaïoles à tisser (Karaxanyan, Ter-Martirosov 1977).

Dans le secteur archéologique n°2 (sanctuaire), un espace ouvert a été aménagé (15 m × 35 m), délimité au nord et au sud par un mur d'enceinte. Dans sa partie orientale, se trouvait une grande plateforme rectangulaire empierrée mal conservée. Cinq bases de tuf en forme de tore sur plinthe (h. 20 – 25 cm, d. 25 – 30 cm) se trouvaient devant elle, ce qui laisse à penser que durant l'antiquité sept bases étaient placées devant cette plateforme. D'après F. Ter-Martirosov, il s'agit d'un espace cultuel, un *temenos* (Fig. 8). Devant, le sol présente un dallage fait de petits galets. Le long de la façade du mur situé à l'est du téménos, on a trouvé plusieurs crânes de cerfs, chevreuil, bélier, mouflon, chèvre à bézoard. F. Ter-Martirosov en a déduit que la façade de l'édifice cultuel était ornée de têtes de ces animaux (Ter-Martirosov, Karaxanyan 1998, 20 ; Ter-Martirosov 1982, 201).

Au sud-est du secteur n°2, à côté de l'espace ouvert, se trouve un ensemble de maisons qui comprend neuf pièces et deux cours. Il est très probable que ce complexe fut composé de deux maisons: la première avec trois pièces et une cour, la seconde avec cinq pièces, une cour et un abri pour les animaux. Le sol des cours et de l'abri des animaux est recouvert d'un dallage de pierre.

Au bord du mur sud-est de ce complexe, côté extérieur, à environ 1 m – 1,5 m, onze fosses comblées de cendres furent découvertes. Ces fosses renferment des cendres mêlées à des restes d'animaux domestiques ou sauvages et des matériaux archéologiques riches et variés. Les ossements des animaux sont ceux de cerfs, chèvres, bœufs, chevaux.

Dans la première fosse, trois poteries ont été trouvées. Elles sont en pâte gris foncé à surface bien lustrée. La première est une cruche à deux anses, les deux autres sont des coupelles à pied en anneau.

La deuxième fosse contenait un gobelet à pâte brune, couvert de rouge, décoré d'un chamois en relief. Cette fosse renfermait aussi des cendres, des os d'animaux, une lame de couteau en fer et une poignée en bronze de 3 cm. Un poids conique (3,34 g) en pierre rouge-marron (probablement du jaspe) et la statuette d'un soldat à tête brisée portant épée et bouclier ont été découverts dans ces fosses rituelles. Il s'agit de la statuette d'un personnage vêtu à la phrygienne, main posée sur l'arme (épée ?) à sa droite. Sa tête et le socle sont brisés. Cette statuette ressemble à celle trouvée à Hoghmik, considérée comme étant la représentation de Mithra. Il est en effet probable que cette statuette

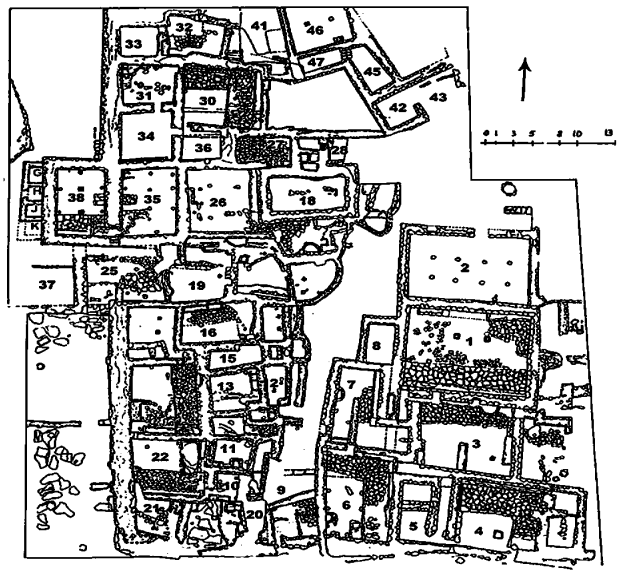

Fig. 9. Plan de Hoghmik (Hakobyan 2007, 122).

représente le dieu Mithra. Une autre représentation de Mithra-chevalier combattant un lion a été trouvé Chirakavan sur un sceau en pâte de verre bleue (Ter-Martirosov 2007, 204).

L'objet le plus intéressant trouvé dans une de ces fosses est un rhyton zoomorphe. Les morceaux de ce rhyton en céramique représentent un cheval. Au-dessous de ces pièces, il y avait deux têtes de chevaux sacrifiés et enterrés avec le rhyton (Ter-Martirosov, Karakhanyan, 1998, 21).

Au sud-est de l'espace cultuel nous avons des sépultures réalisées en pleine terre ou dans des jarres. Une des jarres renfermait le squelette d'un chien, probablement sacrifié (Tiratsyan 1996, 237).

Secteur n°3 possède un grand bâtiment de 1 000 m2. Malheureusement, la fonction de ce bâtiment ne peut être définie en raison de son état de délabrement. Toutefois, une salle à colonnes de 16,5 m x 12 m en partie sauvegardée fut mise au jour. Le mur occidental de cette salle est totalement détruit. Du coté oriental, il y des pièces avec des entrées (1,1 m). Au milieu de cette salle quatre grandes bases bien taillées en forme de tore furent mises au jour (Tiratsyan 1996, 237). D'après F. Ter-Martirosov, cette salle à colonnes devait appartenir à un palais, car elle est de grandes dimensions et est au cœur de ces nombreuses constructions (Tiratsyan 1996, 237–238). Par ailleurs, l'esplanade de cette salle à colonnes possède un *autel* en pierre. Au sud de la salle, une fosse faite de dalles de pierre était probablement destinée aux sacrifices (Ter-Martirosov 1980, 425).

Les données archéologiques nous permettent d'estimer que le site de Chirakavan appartient aussi aux sanctuaires de catégorie D. C'est un complexe des sanctuaires situé dans un bourg destiné à servir la communauté villageoise et religieuse. Les fouilles ont permis de relever un sanctuaire, un téménos, des bâtiments pour les prêtres et pour les habitants.

De nombreux squelettes d'animaux domestiques et d'outils retrouvés nous montrent que les habitants élevaient des animaux et cultivaient des champs. À cet effet, des étables étaient prévues pour l'élevage d'animaux servant aux cérémonies rituelles. À Chirakavan, il existait aussi un petit atelier pour fabriquer des pots en verre et en céramique.

Néanmoins, ce site archéologique pose encore plusieurs questions, tels que la vérification des fonctions des bâtiments notamment dans les secteurs n°2 et 3.

Pendant les fouilles archéologiques de Hoghmik, deux grands complexes composés de plusieurs bâtiments et d'espaces ouverts furent retrouvés. Ces deux ensembles (secteur Est et secteur Ouest) comptent au total 46 pièces et sont séparés par une rue (Fig. 9). D'après H. Hakobyan, les vestiges de ce site qui datent du II^{e} siècle av. J.-C. jusqu'à la fin du III^{e} siècle ap. J.-C. présentent trois phases d'occupation, bien que l'archéologue ne précise pas ici les datations des phases d'occupation (Hakobyan 2006, 212); il indique que la partie supérieure du site fut très endommagée lors des travaux agricoles du XX^{e} siècle.

Le noyau du secteur Est est composé de trois salles à colonnes avec leur entrée à l'est. Ces trois salles (N° 1, 2 et 3) mesurent 13 m × 10 m, avec huit bases de colonnes. Nous avons étudié très attentivement ces trois salles, pour tester l'hypothèse de H. Hakobyan, qui estime qu'il s'agit de trois temples dédiés aux dieux suprêmes des Arméniens (Hakobyan 2015, 193 ; Hakobyan 2010, 171).

Le long du mur sud de la salle n°1 un dallage de 13 m de long, 2,5 m large et 0,2 m de haut, est fait de grandes pierres plates, quadrangulaires et triangulaires. À 2,5 m au nord de ce dallage, sept dalles de pierre destinées à supporter des colonnes en bois furent retrouvées ; la huitième base, déplacée, fut retrouvée plus loin, au coin nord-est, dans le dallage construit lors de la deuxième phase d'occupation. Il est clair ici qu'il y eut deux phases de construction. Ce dallage occupe une surface de 2,3 m × 4,5 m au sud-ouest et entoure une des bases en forme de tore sur plinthe (Hakobyan, Vardanyan 1993, 109) (Fig. 10).

D'après H. Hakobyan, lors de la première phase, cette construction devait être une salle rectangulaire à huit bases destinées à supporter des colonnes en bois qui soutenaient le toit. Les quatre colonnes cen-

trales sont plus éloignées (3,40–3,55 m) que les autres (2,40–2,45 m), ce qui permet à H. Hakobyan d'en déduire que la partie centrale du toit devait être plus élevé (Hakobyan 2010, 171). Cette salle renfermait les ossements de nombreux animaux. Durant la deuxième phase d'occupation, la base des colonnes de cette salle est entourée d'un dallage, en continuité avec l'ancien dallage vers le nord. Ce nouveau dallage est moins épais (0,10–0,15 m) que l'ancien, et monte progressivement vers le nord-est. L'entrée située à l'est fut fermée.

La première hypothèse émise avec réserve par H. Hakobyan et R. Vardanyan était qu'il s'agissait d'une étable (Hakobyan, Vardanyan 1993, 111). Beaucoup plus tard, H. Hakobyan conclut qu'il s'agissait d'un temple. Cette salle avait sur toute sa longueur une banquette de 0,5 m de hauteur et 0,5 m de largeur reposant sur un dallage près du mur sud. En face du mur nord, il y avait une seconde banquette. Au coin du mur nord-est on trouva un coffre en pierre contenant les ossements d'une chèvre. En face de ce coffre, à côté de la banquette il y avait une fosse quadrangulaire qui, d'après H. Hakobyan, servait de socle à une idole (Hakobyan 2015, 193).

Au nord de cette première salle, une autre salle (n° 2) à colonnes fut aménagée. Elle avait la même longueur que la n° 1. Le sol fait de terre battue avait une couleur rose-marron près du mur sud, due à l'utilisation du foyer portatif. Il y avait huit bases de colonnes en deux rangées. Cette salle fut construite à la même période que la première. L'entrée était située du côté nord, devant laquelle un mur fut construit. Au nord de cette salle, devait se trouver une cour, où fut aménagé un silo (d. 1 m, p 1,5 m) recouvert de cinq blocs de pierre de taille moyenne.

Au nord de la salle n° 3 il y avait une esplanade dallée, à l'est de laquelle a été aménagée une fosse semi-circulaire. Trois cavités (d. 1 m, p. 1 m) furent découvertes dans ce mur. Le passage vers l'esplanade était limité par des pierres verticales. Le rocher naturel servait de sol, aplani par de petites dalles de pierre et d'argile. Près de l'esplanade une simple base fut retrouvée. Vers le mur sud, à l'intérieur de la salle, une cloison avait été aménagée pour diviser la salle en deux parties. Cette cloison possédait deux bases ; la deuxième base en forme de tore sur plinthe fut retrouvée non pas à sa place, mais un peu plus loin, près du mur oriental qui supportait le toit de la salle (Hakobyan, Vardanyan 1993, 111) . Cette salle a été modifiée durant la phase suivante: la cloison fut abaissée au même niveau que le sol, tout en gardant sa fonction de mur, qui cette fois, soutenait le toit à l'aide de deux

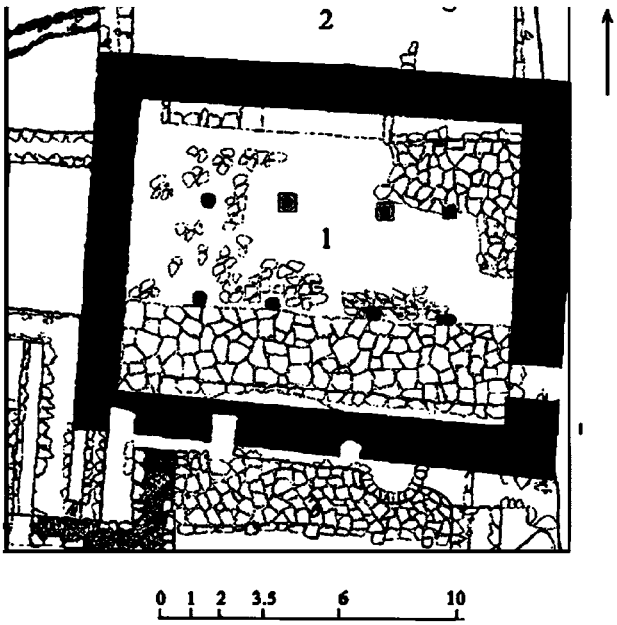

Fig. 10. Hoghmik, salle n° 1 (Hakobyan 2015, 204).

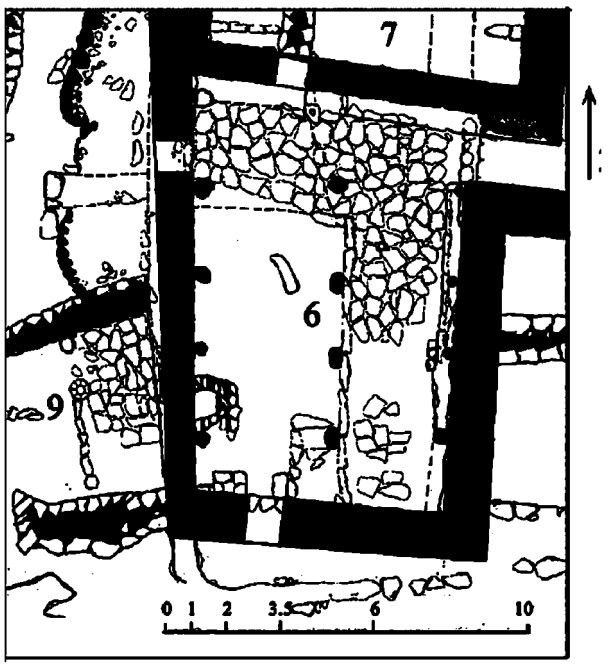

Fig. 11. Hoghmik, salle n° 6 (Hakobyan 2015, 204).

bases semi-taillées. Un couloir étroit livrait un passage vers le sud. Devant cette salle, s'étendait une grande cour présentant les restes d'un dallage de pierre, et des fosses rectangulaires (Hakobyan 2006, 213).

Salle n°6 est allongée du nord au sud avec une entrée côté sud, sur le bord du quai rocheux. À l'intérieur, le long du mur sud, se trouve un dallage en forme de «L» (Fig. 11). Au nord-est il y a une entrée à hauteur de la pièce n° 3. Sur le dallage se trouve un deuxième dallage qui s'étire de l'entrée jusqu'au mur sud. Un deuxième dallage fut également construit sur le dallage

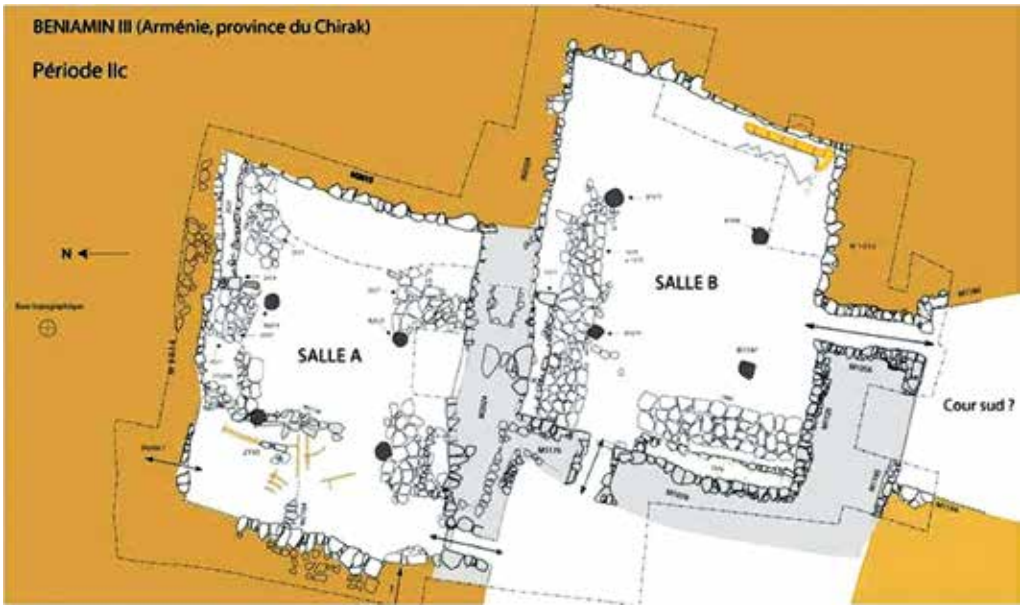

Fig. 12. Beniamin III, salle B, étable (Deschamps 2009, Rapport des fouilles).

nord, il s'allonge jusqu'à la moitié de la pièce, près de laquelle se trouve un coffre en pierre.

Dans cette pièce, huit bases de colonne en tuf, quadrangulaires sont visibles, dont quatre situées le long du mur ouest. On trouve aussi une petite table d'offrande (?) (54 × 104 cm) près du mur ouest, et une rigole en pierre près du mur sud (Hakobyan 2015, 193–194). D'après H. Hakobyan, cette salle est un sanctuaire dédié à Mithra. Cependant, deux salles semblables considérées comme étables ont été découvertes à Beniamin. Ces deux salles sont construites vers le V^e^ siècle av. J.-C. et liées à une activité de métallurgie du fer. Au cours d'une deuxième période, antérieure au milieu du IV^e^ siècle av. J.-C., on assiste à l'abandon des structures artisanales qui sont recouvertes par l'aménagement de dallages et de mangeoires destinés aux bovins et vraisemblablement aux ovins (Ter-Martirosov, Deschamps 2007, 105) (Fig. 12). Quant à la salle n° 6 de Hoghmik, qui possède des dallages et des mangeoires, il s'agit probablement d'un édifice destiné à garder des animaux.

Le mobilier de ce site archéologique comprend plusieurs pièces de poterie en terre cuite ; ce sont des objets rituels et cultuels, des objets en métal. Comme sur d'autres sites archéologiques de la période hellénistique et post-hellénistique (romaine), ils se classent selon les fonctions en deux grandes catégories: poterie de la vie quotidienne et poterie rituelle.

Le site archéologique de Hoghmik, s'agit-il vraiment d'une principauté sacerdotale? Ces constructions sont-elles vraiment des temples destinés aux différentes divinités (Aramazd, Anahit, Mihr) comme l'affirme H. Hakobyan? Compte tenu de la présence, aux alentours, de constructions destinées aux habitants et d'étables prévues pour l'élevage d'animaux domestiques servant aux cérémonies rituelles, nous estimons plus vraisemblable qu'il s'agissait d'un complexe de sanctuaires de catégorie D (sanctuaire rural). Comme nous l'avons vu plus haut, la principauté sacerdotale de cette période était le centre cultuel du pays, était très riche, disposait de remparts et d'un large territoire. On n'a pas découvert de rempart autour du complexe de sanctuaires de Hoghmik. En effet, sans le complexe défensif, l'habitat est considéré comme un village. Il est probabale ce site archéologique est un grand habitat rural (bourg), qui dispose des sanctuaires (?). Toutefois, plusieurs pièces de poteries de commerce (gourdes) nous laissent penser qu'elle était en relations commerciales avec d'autres habitats de cette époque. Néanmoins, ce site archéologique pose plusieurs questions, tels que la vérification des fonctions des salles n^os^ 1, 2, 3, 6 etc. Pour répondre à ces questions, des études archéologiques supplémentaires nous seront nécessaires.

Catégorie E: Temple dans un *dastakert*[8] royal

Construit par le roi, le temple de cette catégorie est destiné à l'usage de la famille royale. Un tel exemple est la résidence royale du roi Artaches qui construisit un

8 À propos des différentes significations de *dastakert* voir Sargsyan, 1962. Ici nous utilisons ce terme comme *dastakert-agarak*, désignant une terre de propriété privée, un domaine, une propriété.

beau *dastakert* royal d'automne avec son temple dédié à la déesse Astghik près de la ville Van, à Artamet. Tovma Artzuni nous la décrit en détail: « *Le lieu lui (Artaches) ayant plu, il y éleva une résidence royale d'automne, qu'il orna d'une belle muraille, avec perspectives sur la face riante du lac, au nord, le soleil inondait de ses rayons les promenades ; les poissons, allant et venant, s'agitaient à la surface des vagues ; en face, la grande montagne de Masik […]. Au-dessus de la source sortant du sol, il éleva un tertre en pierre, afin d'en abriter l'eau, et la déguisa si bien par une muraille, qu'elle était invisible et inaccessible aux entreprises des ennemis, la muraille, étant merveilleusement disposée et atteignant les profondeurs de la mer*» (Tovma Artzruni 2010, I, VII, 95 – 96). Là, au milieu d'une petite vallée, le roi construit une haute tour portant la statue de la déesse Astghik et une maison pour déposer des offrandes. Le roi établit également de nombreuses rues et des boutiques suffisamment fournies en marchandises. Ayant encore découvert une source relativement abondante, il fit creuser au sud un canal afin d'amener l'eau au centre de la vallée. Enfin, pour le plaisir des yeux, sur les bords du lac du côté de l'occident, il ordonna de remplir le fond de la vallée de vignobles serrés, agréables à regarder. Le roi amena la reine Saténik, pour la faire jouir en automne des agréments de sa villa (Tovma Artzruni 2010, I, VII, 96).

Un tel *dastakert* fut édifié aussi par le roi Ervand (prédécesseur d'Artaches) après avoir construit sa capitale Ervandachat. Moïse de Khorène décrit ainsi la résidence d'Ervandakert: « *Il m'est doux de parler de la belle fondation d'Ervandakert, que ce même Ervand bâtit d'une manière si belle et si élégante. Il remplit le centre de la grande vallée d'habitants et d'édifices magnifiques brillant comme la prunelle de l'œil. A l'entour de l'endroit habité, s'étendent des jardins fleuris et odoriférants, comme autour de la prunelle se décrit le cercle de l'œil. […]* » (Moïse de Khorène 1991, II, 42).

Le roi Ervand planta aussi la *Forêt des Naissances* (Moïse de Khorène, 1991, II, 41). Les recherches archéologiques conduites de 2005 à 2014 pres du vilage Ervandachat, sous la direction de F. Ter-Martirossov, ont permis de préciser la localisation du *Bois des Naissances*.

Le site d'Ervandachat se situe entre les villages d'Ervandachat et de Bagaran, près du confluent de l'Araxe et de l'Axurian, dans la région d'Armavir (Fig. 13).

D'après la coupe stratigraphique, trois phases d'occupation ont été identifiés.

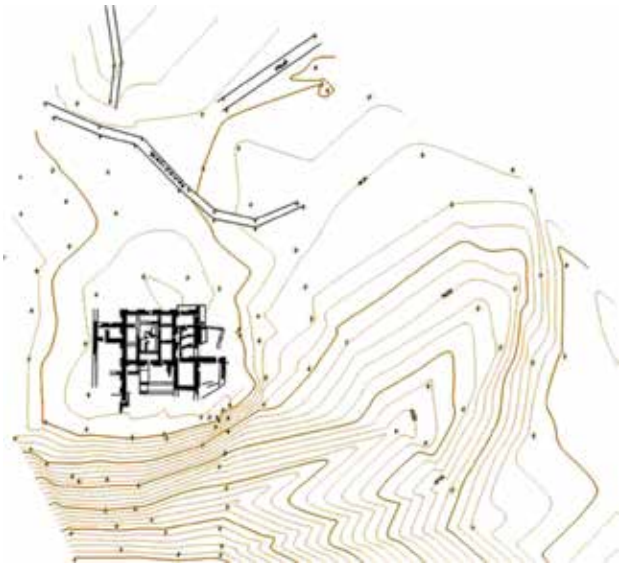

Fig. 13. Ervandachat, topographie du site (F. Ter-Martirosov-archive).

I^{er} phase: deuxième moitié du III^{e} siècle av. J.-C.
II^{e} phase: II^{e} siècle av. J.-C.
III^{e} phase: I^{er} siècle av. J-C et I^{er} siècle ap. J.-C.

Au-delà du I^{er} siècle il n'y a pas de trace d'habitat. Toutefois, quelques sépultures ont été découvertes dans les salles n^{os} 1 et 6. Plus tard, au IXe siècle une partie de ce complexe fut reconstruite et habitée pendant une période très courte (Ter-Martirosov 2015, 40).

Au III^{e} s. av. J.-C., le bloc central des bâtiments était une construction à plan carré de 24,40 × 24,80 m, avec des contreforts et avec des murs faits de blocs de basalte, encore conservés jusqu'à 2,19 m de hauteur et 1,50 m de largeur. La salle centrale est entourée par les huit pièces plus petites.

Pandent des fouilles archéologiques, un petit sanctuaire de plan carré (2,10 × 2,10 m) avec quatre contreforts a été mise au jour dans la partie sud du pavillon. Elle est située à 90 cm au sud du pavillon, à la droite de l'entrée principale Par son emplacement, elle est séparée du pavillon tout en complétant le complexe palatial (Fig. 14). Devant lui s'étend une vue magnifique: la rivière Araxe s'écoule au pied d'un haut rocher, sur lequel des ruines d'une forteresse sont encore visibles.

Construite de blocs de basalte bien taillés, l'entrée (0.95 cm) de cet édifice se situe au sud. Le seuil et l'entrée sont en dalles de pierre. Le sol du bâtiment est en terre battue (argile) recouvert par une couleur blanche. Le long du mur nord, une plateforme (h. 30 cm) en pierre a été aménagée. Il s'agit probablement d'une table d'offrande. Le plan de cette construction est semblable à celui du temple ourartéen (temple

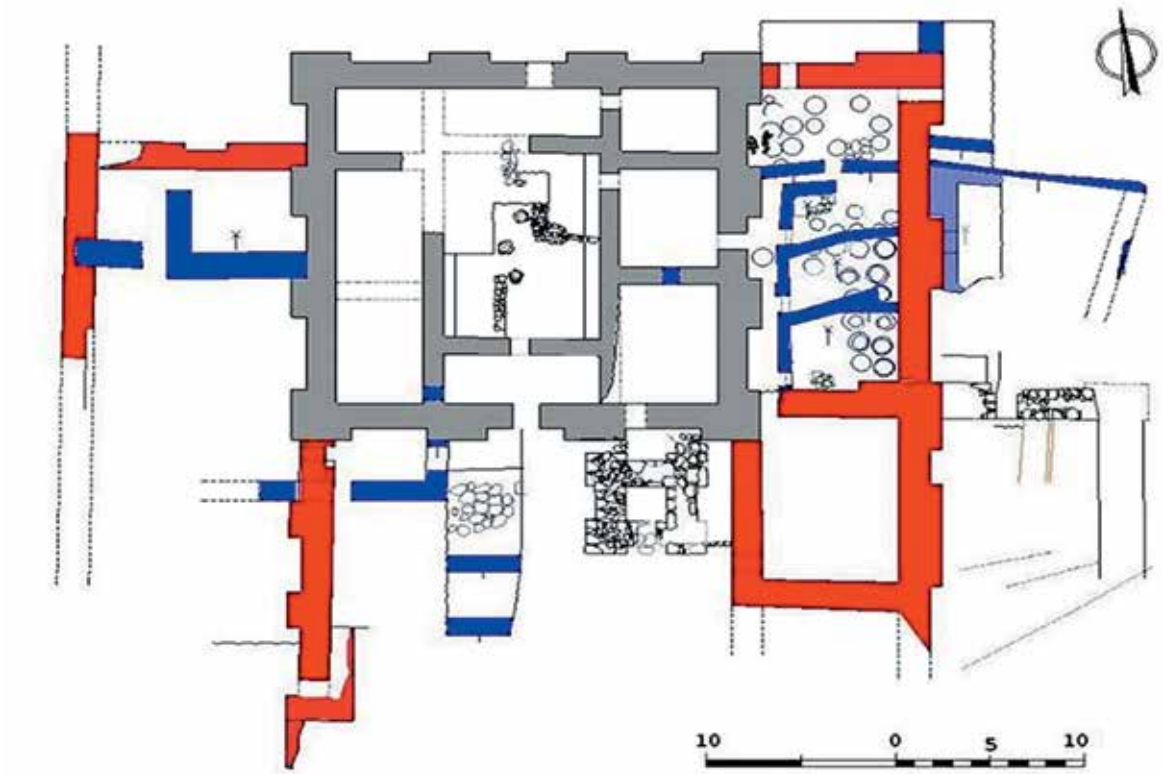

Fig. 14. Ervandachat, plan du site (F. Ter-Martirosov-archive, Dessin: H. Kyureghyan).

d'Armavir, d'Altintépé). Réutilisé au III^e – II^e siècle av. J.-C., il garda le plan du temple plus ancien (Parsamyan, Gabrielyan 2020, 285 – 286).

Lors des fouilles archéologiques d'Ervandachat, on a découvert également des pièces de céramique rituelle dans le temple. À l'extérieur du temple, près du mur ouest, nous avons trouvé aussi des ossements d'animaux, des cornes de taureau, des mâchoires de mouton, etc. Une sépulture de jeune enfant (h. 47 cm) sans mobilier a été mise au jour au même emplacement, à côté du mur extérieur du temple. On a retrouvé aussi un foyer en argile, une lance en fer, une bague en bronze près de cette sépulture. Le dernier jour de fouille archéologique du site, une sépulture d'adulte fut découverte près du contrefort nord-ouest du temple. Malheureusement, cette dernière est restée sur place recouverte de terre par nos soins, en attente pour la prochaine saison de fouilles (Parsamyan, Gabrielyan 2020, 286).

Le site d'Ervandashat est un *dastakert* royale[9] localisé dans la *Forêt des Naissances*, qui possède un pavillon de chasse, un temple, une grande cave, une tour, et des murailles basses: Au sommet de la colline, au sud-ouest du complexe palatial, trois couples de rangées de gros blocs de basalte entourent la colline, et délimitent des terrasses. Ces murailles basses servaient probablement à piéger des animaux lors des chasses, comme l'indique Moïse de Khorène (II, 41) (Fig. 15). Le bâtiment central est construit selon une tradition ourartéenne[10] avec, au centre, une grande salle entourée de pièces plus étroites.

L'influence de la culture ourartéenne est visible aussi dans la cave siutuée à l'est du bâtiment central. Les décors des jarres de la première phase d'occupation ressemblent à ceux de la période ourartéenne (Parsamyan, Gabrielyan 2020, 284,287).

Il est intéressant de remarquer que la culture ourartéenne est très présente ici. Cependant, à ce jour, la coupe stratigraphique du site ne nous livre pas une phase d'occupation caractéristique à cette époque. Il est probable que la phase d'occupation de la période ourartéenne est complétement détruite (rasée) tout en

9 Dans sa communication datée du 17 avril 2020, S. Muradyan estime que le *dastakert* Ervnadakert mentionné par Moïse de Khorène se situait à l'emplacement du site archéologique d'Ervandachat (la communication est consultable sur le web de *Armenian Monuments*, intitulée *Les fouilles archéologiques d'Ervandachat (en arménien)*..

10 Notons aussi qu'une construction à plan carré avec des contreforts semblables est observée à Solak, dans la région de Kotayk, qui date de la période ourartéenne. Toutefois, la construction de Solak possède, au centre, une petite salle (couloir) entourée de pièces étroites; voir Petrosyan, Dan et al. 2017, Fig. 1.

gardant le batimant ourartéen, qui a été réutilisé à partir du IIIe siècle av. J-C.

Catégorie F. Temple dans une forteresse

Un exemple de cette catégorie est situé dans la forteresse d'Ani-Kamakh. Cette forteresse disposait d'un complexe de sanctuaire avec un temple d'Aramazd, d'une bibliothèque et d'une nécropole royale. Agathange témoigne que saint Grégoire, après avoir dressé dans cet endroit le signe divin, donna le bourg et la forteresse pour le service de l'Église (Agathange 1909, §785).

Un autre exemple de cette catégorie se situe dans la forteresse de Garni. La date précise de la construction de la forteresse est inconnue. La chronique rattache sa fondation au lointain passé légendaire du peuple arménien. Selon Moïse de Khorène Garni a été fondé par Gegham, un des descendants de Hayk (Moïse de Khorène 1991, I, 12).

Cette information est confirmée par les fouilles archéologiques. Dans la partie centrale de la forteresse, les fouilles ont révélé des vestiges datant du Bronze ancien et ont montré qu'un sanctuaire aurait pu exister là, à cette époque. On a également trouvé une stèle en pierre (appelée « vichap », – dragon) avec l'image en relief d'une tête de taureau et de ses pattes avant. Cette stèle est réutilisée pendant la période ourartéenne, ce qui est confirmé par l'écriture cunéiforme gravée sur la stèle au nom du roi d'Ourartou Argichti I^er^. L'étude des sources textuelles, épigraphiques et archéologiques montre que la forteresse existait dès la période du royaume Artaxiades ou peut-être même du temps des Orontides (Sahinian 1969, 182).

Pour la première fois le nom de Garni sous le nom de Gornéas est mentionné par l'historien romain Tacite en tant que forteresse imprenable (Tacite, *Annales*, XII, 45).

Une inscription grecque concernant des travaux de reconstruction fut retrouvée sur place. Elle fut étudiée par plusieurs savants: H. Manandyan, A. Abrahamyan, K. Trever, B. Arakelyan, H. Bartikyan ou encore S. Krkacharyan. Nous citons le texte d'après la traduction de Krkacharyan: «*Hélios Tirdates, grand souverain d'Arménie Majeure, en tant que maître, a construit la forteresse imprenable pour la reine affectionnée, la onzième année de son règne…*» (Krkacharyan 1965, 235–238). D'après K. Trever et A. Sahinyan la date de construction (reconstruction) de la forteresse est de 77 après J.-C, onzième année du règne de Tiridate I^er^ (Sahinyan 1983, 133).

Moïse de Khorène fait également mention de travaux dans la forteresse. D'après A. Sahinyan,

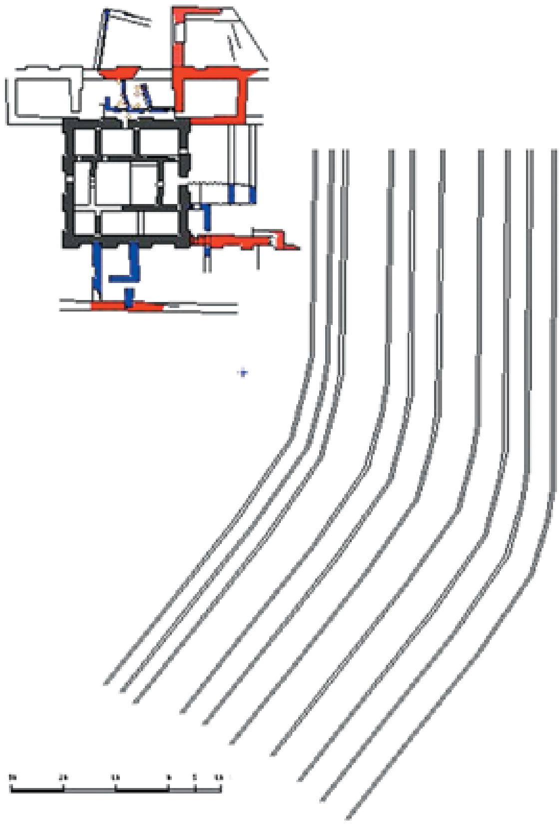

Fig. 15. Ervandachat, plan du site et les murailles basses (F. Ter Martirosov-archive, dessin: H. Kyureghyan).

l'historien attribue les travaux de reconstruction effectués de Tiridate I^er^ à Tiridate III (IV) (Sahinyan 1983, 133).

« Vers ce temps-là, Tẹrdat achève la construction de la forteresse de Garni, avec des blocs de pierre taillés, très durs, reliés ensemble par des crampons de fer et des joints de plomb. À l'intérieur, il construit un palais d'été avec des colonnes et de magnifiques sculptures en haut reliefs pour sa sœur Khosrovidoukht, et il y fait graver en lettre grecques une inscription commémorative » (Moïse de Khorène 1991, II, 90).

F. Ter-Martirosov estime que le roi construit aussi un mausolée pour Khosrovidukht. Ce que signifie le mot մահարձանօք (stèle funéraire) dans le témoignage de Moïse de Khorène (Ter-Martirosov 1995).

Dans Buzandaran, Garni est mentionné comme une puissante forteresse royale (Buzandaran 1933, VII, 29). L'historien du Ve siècle Eghiché la décrit « *comme ville munie d'une forteresse inexpugnable servant de lieu de garnison* » (Eghiché 1989, III, 137).

Cependant dans les sources écrites il n'y a aucune mention sur la construction de temple dans cette forteresse. Toutefois, un temple du type gréco-romain

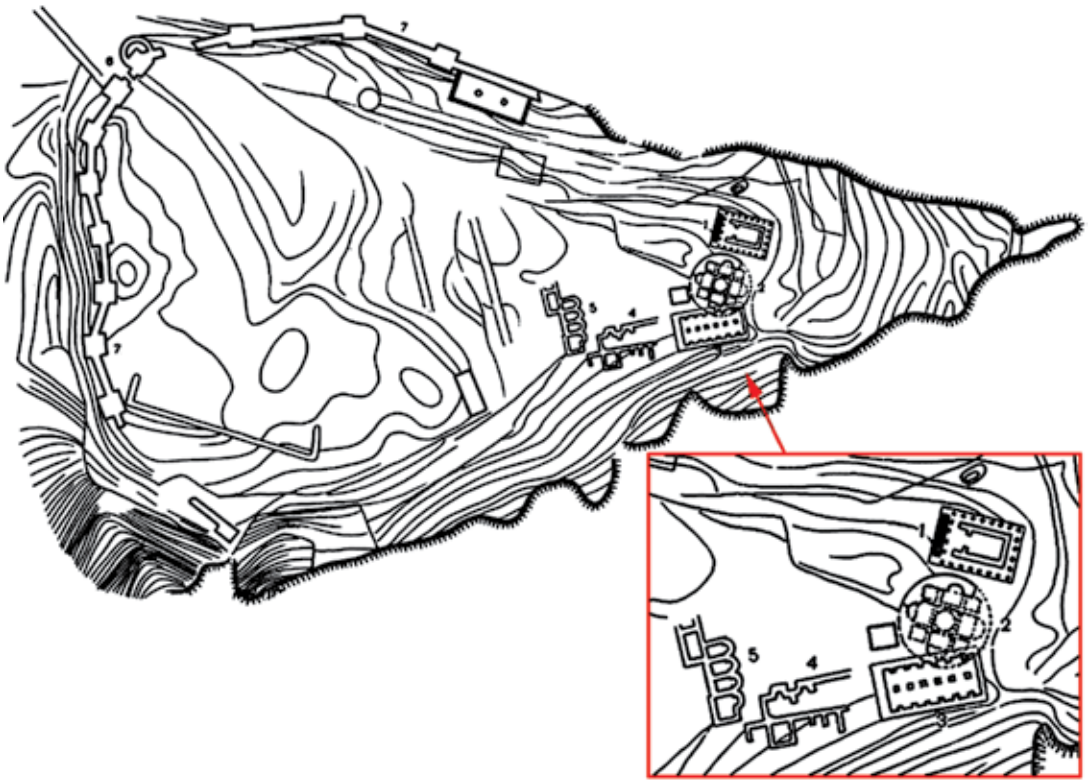

Fig. 16. Topographie de Garni (Tiratsyan 1996, 238, 243).

est découvert pendant les fouilles archéologiques de Garni.

Située dans la région d'Abovyan à 28 km d'Erevan sur la rive droite de l'Azat, à 1 400 m d'altitude, la forteresse de Garni a une place importante pour l'étude de l'histoire et l'archéologie de l'Arménie antique. Ce site fut étudié par plusieurs spécialistes: archéologues, historiens et voyageurs aussi bien arméniens qu'étrangers (Chardin, Morier, Ker Porter, Dubois de Monpéreux, Telfer, Schnaase, Marr, Smirnov, Romanov, Buniatyan, Trever, Manandyan, Arakelyan, Sahinyan, etc.).

Placé sur un haut rocher triangulaire, la forteresse est naturellement protégée du côté sud-est, tandis que les autres côtés sont défendus par un système de fortifications (Fig. 16): un solide rempart muni de quatorze tours.

La forteresse a connu plusieurs périodes d'occupations.

- I^{ère} période d'occupation: période pré-Ourartou
- II^{e} période d'occupation: période d'Ourartou
- III^{e} période d'occupation: III^{e} – II^{e} siècle av. J.-C.
- VI^{e} période d'occupation: I^{e} siècle (en 77) après J.-C.
- V^{e} période d'occupation: III^{e} siècle après J.-C. (thermes)
- VI^{e} période d'occupation: VII^{e} siècle après J.-C. (église)
- VII^{e} période de reconstruction: XII^{e} siècle après J.-C.

Le palais (longueur de 40 m, largeur de 15 m) est situé à 20 m à l'ouest du temple, au bord du précipice. Sa façade principale est orientée vers le temple, tandis que sa seconde façade est tournée vers le paysage.

Le temple est un périptère posé sur un haut podium, de plan rectangulaire. Il est entouré à l'extérieur sur les façades de colonnes d'ordre ionique-romain (Fig. 17). Certains spécialistes tels que K. Romanov, N. Buniatyan, K. Trever estiment que le temple portait un toit de bois. En revanche l'étude de A. Sahinyan a montré que l'édifice avait un système particulier de construction: en plus des monolithes de l'architrave, toutes les parties de l'édifice: frise, corniche, fronton de la porte, plaques constituant le plafond de la colonnade étaient faites de pierre à jonctions biseautées caractéristiques des constructions voûtées.

L'intérieur du temple recevait la lumière du portail, dont l'embrasure était relativement large. Les détails architecturaux sont traités avec le plus grand soin. Des bas-reliefs ornent chapiteaux, architraves, frise, corniche, pronaos et toutes les dalles en pierre des plafonds des galeries.

Les ornements sculptés sont diversifiés en re-

spectant l'art oriental local; ces particularités sont visibles dans les reliefs des soffites de l'architrave, les caissons du plafond, les reliefs bordant ces derniers, les roses ornant leur milieu, les têtes de lion figurant sur la corniche principale au milieu des ornements, les détails du chapiteau ionique (Sahinian 1969, 195).

D'après K. Trever, le temple de Garni s'apparente surtout aux constructions d'Asie Mineure (Termessos, Sagalassos) par sa construction et l'élaboration des parties et des détails (Trever 1953, 51–59). Les motifs ornementaux sont assez proches de l'art syrien. Toutefois d'après A. Sahinyan, l'architecture du temple de Garni est fondée principalement sur les traditions architecturales et techniques locales, tout en conservant une communauté de forme avec l'art hellénistique (Sahinian 1969, 197). Cependant rien n'atteste l'existence de la tradition architecturale locale sur la technique de construction de Garni. De plus, tous les éléments architecturaux (tels que podium, l'approche unilatérale, la grande obliquité du fronton etc.) et la technique de construction donnent à penser que ce temple est un exemple de l'architecture romaine.

Notons aussi qu'il est probable qu'un temple plus ancien a existé ici. En 1969, lors des travaux de renforcement des fondations du temple de Garni, on a découvert des vestiges d'un bâtiment plus ancien mis au jour sous le mur sud. Une fosse remplie des cendres d'un feu sacré, de tessons et d'ossements d'animaux sacrifiés a été découverte sous la fondation du mur est. D'après A. Sahinyan, il s'agit d'un bâtiment de l'époque paléoarménienne (Sahinyan 1978, 45).

À 50 m. au nord-est du temple, les ruines des thermes constitués de quatre pièces successives de même orientation: vestibule, frigidarium, tepidarium, caldarium, et la chaufferie qui leur est accolée, ont été découvertes.

Le chauffage était assuré à la façon d'un hypocauste. Des vestiges de mosaïque ont été mis au jour dans la salle du vestibule. Selon B. Arakelyan la mosaïque et les thermes datent de la fin du III^{e} siècle (Sahinyan 1978, 45).

Même si le temple de Garni a fait l'objet de plusieurs études, plusieurs interrogations restent en cours. La première interrogation a trait à sa datation.

D'après K. Trever et A. Sahinyan, qui s'appuient sur l'inscription grecque trouvée dans la forteresse, le temple fut construit en 77 après J.-C. (Sahinyan 1983, 133), la onzième année de Tiridate I^{er}. Cependant F. Ter-Martirosov estime que le temple fut édifié vers II^{e} siècle ap. J.-C. (Ter-Martirosov 1995, 7–18). Son argument est fondé sur le fait que l'inscription grecque

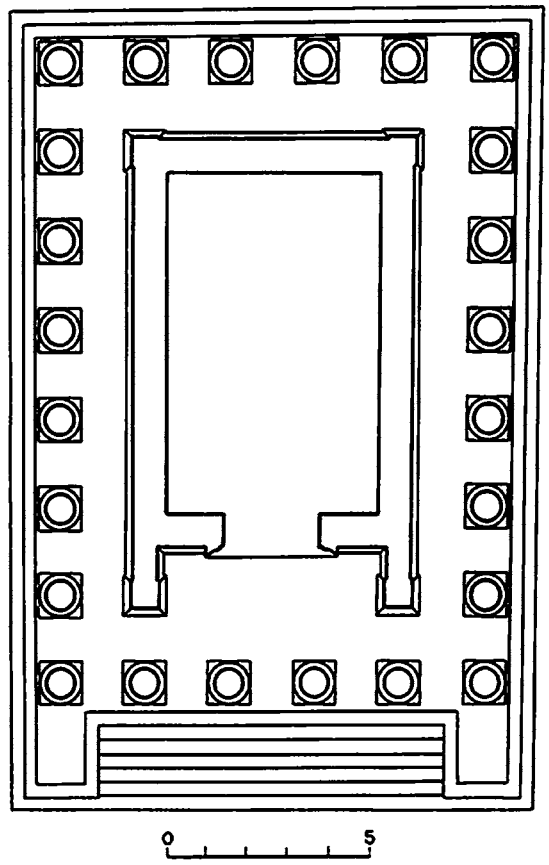

Fig. 17. Plan du temple de Garni selon A. Sahinyan.

est gravée sur le mur de la forteresse. Pour lui, *la onzième année de Tiridate* (77 ap. J.-C.) concerne la reconstruction de la forteresse, car le temple n'est pas mentionné dans cette inscription.

D'après K. Trever il été dédié au dieu Mihr (Mithra) (Trever 1949, 66). Les chercheurs acceptant l'hypothèse de K. Terver sont nombreux: A. Sahinyan, G. Tiratsyan, etc. (Tiratsyan 1988, 163) Cependant, F. Ter-Martirosov estime qu'il s'agit d'un temple dédié aux ancêtres royaux protégé par Mithra (Ter-Martirosov 1995, 17). Selon lui ce temple est devenu un *hereon, martyrium* pour la sœur du roi Tiridate au début du IV^{e} siècle (Ter-Martirosov 1995, 23–27). Une autre interrogation concerne sa réutilisation après la christianisation du pays.

D'après certains spécialistes, le temple de Garni n'a pas été détruit pendant la christianisation et fait figure d'*heureuse exception* (Parsamyan 2015, 4): il a été détruit à la suite du tremblement de terre de 1679. Cependant, à notre avis il est un véritable exemple de sécularisation (Parsamyan 2015, 12; Parsamyan 2016, 35). Après sa désacralisation, le temple de Garni a été réutilisé comme palais d'été (*unւն hnվաձng*) pour Khosrovidukht, la sœur du roi Tiridate (Moïse de Khorène 1991, II, 90–91).

Fig. 18 Sanctuaire de Byurakan (Photo: N. Parsamyan).

Catégorie G: Temple éloigné des habitats

Le sanctuaire de cette catégorie est un lieu de pèlerinage situé souvent dans les montagnes, sur des emplacements très hauts et difficiles d'accès. Dans la province du Vaspourakan, près du mont Paghat, il y avait un complexe de sanctuaires avec des temples d'Aramazd et d'Astghik. D'après *Maténagrutiunk* (1865, 301), près de ce complexe de sanctuaire, au lieu appelé Bout, se trouvait la maison de feu, une source d'eau, un autel divin et des statues de vichaps (dragons) (Parsamyan 2015, 6). Sur cet autel, et devant les vichaps, on réalisait des sacrifices humains: des jeunes hommes et des filles vierges. Puis les participants s'amusaient avec du sang des victimes (sur ce lieu sacré voir Bobokhyan 2017, 32–46).

Des exemples de cette catégorie sont observés aussi à Erpin, Byurakan, Astghi blur. Ils sont réservés uniquement pour des pèlerinages. Souvent les sanctuaires de cette catégorie se situent en plein air, avec un grand autel, paraît très ancien. Ce sont des places sacrées situées dans les lieux très élevés et inaccessibles. Prenons l'exemple de Astghi berd, il s'agit d'une place publique sacrée, située sur un bloc de rocher à 10 m de hauteur, 40 m × 25 m de surface. L'autel sacré (15 m × 15 m) est placé au sommet du rocher. On y accédait par huit marches taillées dans le rocher. Il est probable que ce sanctuaire était utilisé en été, quand des bergers accompagnaient leurs troupeaux dans les montagnes (Karapetyan 2003, 21). Ce type de sanctuaire est caractéristique des sanctuaires perses. À ce propos, Strabon témoigne que les Perses n'érigent à leurs dieux ni statues ni autels. Ils sacrifient sur des lieux élevés, à ciel ouvert, avant de célébrer leurs sacrifices ils choisissent une place dépourvue de toute impureté, la sanctifient par leurs prières et amènent ensuite la victime couronnée de fleurs. Le mage qui préside à la cérémonie dépèce lui-même la victime, dont les assistants se partagent les morceaux, sans rien réserver pour la divinité, puis se séparent. Ils prétendent que les dieux ne réclament de la victime que son âme et rien d'autre (Strabon, X, V, 3).

À cet effet, les marches sacrées d'Erpin (région de Vayots Dzor), d'Armavir et de Byurakan (région d'Aaragatsotn) nous conduisent au sommet du rocher où une petite place est réservée pour des offrandes et des libations rituelles (Fig. 18). La datation de ces lieux sacrés n'a pas été déterminée. Toutefois, d'après le tombeau de la période d'Ourartou trouvé près des marches sacrées d'Erpin ainsi que la « maquette » sacrée d'Armavir (site de la période d'Ourartou) portant des inscriptions grecques, nous pouvons déduire qu'ils furent construits probablement pendant la période d'Ourartou et continuèrent à être utilisés durant la période hellénistique.

Quant au sanctuaire de Byurakan, Ts. Gevorgyan et A. Petrosyan le datent vers XVI–XV^{e} siècle av. J.-C., en s'appuyant sur la datation d'une hache retrouvée aux alentours du sanctuaire (Gevorgyan, Petrosyan 1993, 22–23). Cependant cette datation est très hypothétique, on n'a pas retrouvé d'autre objet en métal ou en céramique, qui pourrait justifier cette hypothèse de datation.

Conclusion et perspectives

L'étude historiographique et archéologique nous permet d'identifier sept catégories de sanctuaires (annexe n° 1):

Annexe n° 1: Liste des sanctuaires et leurs catégories*

Province	Sanctuaire/lieu	Divinité	Source	Catégorie
Ayrarat	Armavir	Anahit, Tir, Mithra	Moïse de Khorène, II,12; Inscription Krkacharyan S., 2005, 113 Fouillé par B. Arakelyan, G. Tiratsyan, I. Karapetyan	A
	Artashat	Anahit	Agathange, § 778; Moïse de Khorène, II, 49	B
	Artashat-Erazamuyn	Tir	Agathange, §778, Moïse de Khorène, II, 49, Fouillé par J. Khatchtryan, M. Zardaryan	C
	Bagaran	Anahit, Tir	Moïse de Khorène, II, 49	A
	Bagavan	Amanor et Vanatur	Agathange, §836; Moïse de Khorène, II,66	D/1
	Bagavan	Aramazd-Ormizd	Moïse de Khorène, II,77 ; II,49	D/1
	Dvin	Aramazd-Ormizd	T. Artzruni, II, 1	B
	Garni	Mihr/Mithra(?)	Fouillé, B. Arakelyan, A. Sahinyan	F
	Hoghmik	Anahit, Mithra(?)	Fouillé par H.Hakobyan	D
	Ervandashat	(?)	Fouillé par Ter-Martirosov	E
	Vagharshapat (?)	(?)	Sahinyan A., 1996,252	C
	Chirakavan	(?)	Fouillé par F. Ter-Martirosov	D
Bardzr Hayk (Haute Arménie)	Ani -Kamakh	Aramazd	Agathange, §785; Moïse de Khorène, II, 86	F
	Bagarij	Mihr	Agathange, §790; Moïse de Khorène, II, 14	D/2
	Derjan (Salahunyats) (?)	Vahagn	Alishan Gh. 1910, 318–319	D/2 (?)
	Eriza	Anahit	Agathange, §786 ; M. Kh. II, 14, 60; Strabon XI, 14, 16	D/1
	Mont Aryuc	Anahit	Buzandaran, V, XXV, 394	G (?)
	Til	Nané	Moïse de Khorène, II, 12 Agathange, §786	D/1
	Tordan	Barshamin	Agathange, §784; Moïse de Khorène, II, 14	D/2
Turuberan	Ashtishat (Karké)	Astghik et Vahagn	Agathange, 813–814; Buzandaran, III, 14, p. 225	D/1
	Ashtishat (Karké)	Anahit	Agathange, 809	D/1
	Montagne de Paghat	Astghik et Aramazd	Matenagrutiunk, 1865, 301	G
	Taron	Demetré et Gisané	Yovhan Mamikonean, Histoire du Taron, 2005, 1023	B (?)
Vaspurakan	Artamet	Astghik	T. Artzruni, I, 8	E
	Darbnats-kar	Anahit	Matenagrutiunk 1865, 301	?
	Mont Paghat	Aramazd et Astghik	Matenagrutiunk 1865, 301	G
	Ahevakan	Vahagn	T. Artzruni, III, 18	D/2
Korjayk	Petit Aghbak	Vahagn	T. Artzruni, I, VIII	D/2
	Petit Aghbak	Spandaramet	T. Artzruni, I, VIII , 97	D/2

* À propos de la liste complète des sanctuaires antiques arméniens voir Parsamyan 2019.

Catégorie A. Principauté sacerdotale: Le sanctuaire d'une principauté sacerdotale est très ancien. Armavir en est un exemple. Les fouilles archéologiques d'Armavir confirment le témoignage de Moïse de Khorène. Plusieurs sanctuaires découverts sur place attestent sa fonction de principauté sacerdotale (ville sacrée), qui garda son rôle pendant la période hellénistique.

Catégorie B. Temple urbain: connu par les sources écrites, un exemple de cette catégorie a été l'objet d'études archéologiques à Artachat, les vestiges de ce temple n'ont pas été retrouvés durant les fouilles. Cependant des fragments architectures ainsi que plusieurs statuettes représentant des dieux antiques (Anahit, Aphrodite) autorisent à supposer l'existence d'un tel temple à Artachat.

Catégorie C. Temple en banlieue (hors de la ville): Mentionné par des sources écrites et retrouvé à Erazamuyn, à proximité de la ville d'Artachat, ce type de temple disposait d'un espace public destiné à abriter des activités commerciales, financières et judiciaires.

Catégorie D. Sanctuaire rural: Il est plus délicat à identifier. Il nous semble que les sanctuaires de Chirakavan et d'Hoghmik (?) entrent dans cette catégorie. En effet, les fouilles ont mis au jour un complexe agricole associé au site: présence d'étables et d'espaces comparables à des chambres pour les serviteurs, présence d'ateliers artisanaux de verrerie et de céramique qui ont fonctionné en même temps que les sanctuaires. Néanmoins, ces deux sites archéologiques posent encore plusieurs questions, qui nécessitent des études archéologiques supplémentaires.

Catégorie E. Temple dans un *dastakert* royal: observé à Ervandachat, ce site est un *dastakert* royale, qui possède un pavillon de chasse, un temple, une grande cave, une tour, et des murailles basses destinées à piéger des animaux lors des chasses royales.

Catégorie F. Temple dans une forteresse: même si dans les sources il y a peu d'informations sur ce type de temple, l'étude archéologique nous donne un véritable exemple de cette catégorie. Le temple de Garni est construit dans une forteresse difficile d'accès. Il fut entouré d'un palais, de thermes et de différentes constructions.

Catégorie G. Temple éloigné des habitats: Le sanctuaire isolé dans les montagnes a été identifié à Erpin, Byurakan, Astghi blur. En effet, il est localisé dans la montagne, sans village à proximité.

L'étude archéologique nous permet de souligner quelques aspects de ces catégories:

- Le temple de catégorie C et F fait partie d'un complexe architectural ; où une salle à colonnes (ou un palais) et plus tard des thermes sont construits auprès du temple.
- Le temple de la catégorie D est entouré par des bâtiments et des étables.
- Le temple de la catégorie E est bâti à côté du pavillon royal, il s'agit d'un petit temple construit dans une forêt, utilisé pendant des chasses.
- Le temple de la catégorie G est un grand autel en plein air, sans édifice à proximité.

Notons aussi qu'actuellement plusieurs sites archéologiques en Arménie (Armavir, Artachat/Erazamuyn, Dvin, Tigranakert, etc.) sont en cours de fouilles. Il y a aussi un projet pour continuer les travaux archéologiques à Ervandachat. Ces recherches archéologiques peuvent éventuellement changer, compléter, confirmer ou infirmer notre théorie proposée dans cette étude.

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Recent Archaeological Research at Dvin

Hamlet Petrosyan, Koryun Ghafadaryan, Niura Hakobyan, Frina Babayan, Aghavni Zhamkochyan, Gayane Kocharyan

Institute of Archaeology and Ethnography, Armenia

Abstract. Dvin, the capital of Armenia, and a major administrative, cultural, spiritual and craft center, is being excavated since 1937 up to now. The present report considers the main results of excavations which took place during 2009–2019 focused on the four sections of the city. The excavations held on the hilltop platform of Citadel were directed to reveal the city's classical layers and habitable complexes. Excavations in the Central Quarter were carried out mainly in the southern and western parts of the 5th century Catholicos's palace: owing to the final investigations, the architectural changes of the three naved Cathedral are fully studied now. Archaeological works in the neighborhood of the fortification wall demonstrate that, according to structural features of the dwelling houses, there are seven periods of occupation in this section. Excavations in the northeastern slopes of the Citadel revealed a building with walls made of bricks set on a rectangular layout: it is difficult to specify the functionary significance of the structure because it needs further investigations and additional studies. By considering the rich archaeological and architectural evidence, Dvin appears to be a settlement which was consistently populated since the 9–8th centuries BC up to its abandonment in the 14th century AD.

Keywords: Armenia, Ararat valley, Dvin, citadel, central quarter, fortification wall.

Introduction

The ruins of the ancient city Dvin, the capital of Armenia, a major administrative, cultural, spiritual and craft center are located 35 kilometers to the south of Yerevan. The city was founded in the 30ies of the 4th century, during the reign of the Armenian Artashesid king Khosrov Kotak (332–339) in the district Vostan. In the context of the study of Medieval Armenian cities the history of Dvin is of special importance. It is quite natural that many conclusions and generalizations concerning social and cultural relations, handicraft production, trade and circulation of values in Medieval Armenia were based on the materials discovered in the course of the long excavations in Dvin. The first archaeological explorations in Dvin began in 1937–1939 (by Smbat Ter-Avetisyan. During the Second World War the interrupted works restarted in 1946 and were guided by Karo Ghafadaryan up to 1977. Between 1977 and 2009 the head of the expedition has been Aram Kalantaryan. Nowadays the head of the staff is Hamlet Petrosyan. The city's archaeological values have been resulted in a series of significant investigations. The personnel staff of the expedition are archaeologists Niura Hakobyan, Frina Babayan, Aghavni Zhamkochyan, Gayane Kocharyan. The architect is Koryun Ghafadaryan.

The comprehensive archaeological activities in Dvin took place in 1977. The aim of the project was to clear the general stratigraphic character of the city, reveal the architectural layouts of the best preserved buildings, bring in evidence the archaeological artefacts, and simultaneously make more precise the chronological changes of the archaeological layers (Figs 1, 2) In order to reach the above-mentioned goal between 2009–2019, archaeological works were focused 1) on the Citadel's hilltop platform 2) on the territory of the Central Quarter, 3) an area adjacent to the fortification walls (south tower), 4) northeastern slope of the citadel.

Citadel's Hilltop Platform

The excavations held on the Citadel's hilltop platform was directed to revealing the city's classical layers and habitable complexes[1]. Although the medieval layers partially spoiled the classical ones, however, the general picture of Dvin's Classical period became known as a result of archaeological discoveries at habitable complexes and architectural analysis carried out during the excavations (Fig. 3). The exploration occupied a large territory along the Citadel's hilltop. For this purpose in the neighborhood of the Artashesid's pal-

1 The excavations were carried out by G. Kocharyan.

Fig. 1. The layout of the Citadel (© The Archive of Dvin expedition).

Fig. 2. The layout of the Citadel and the Central Quarter (© The Archive of Dvin expedition).

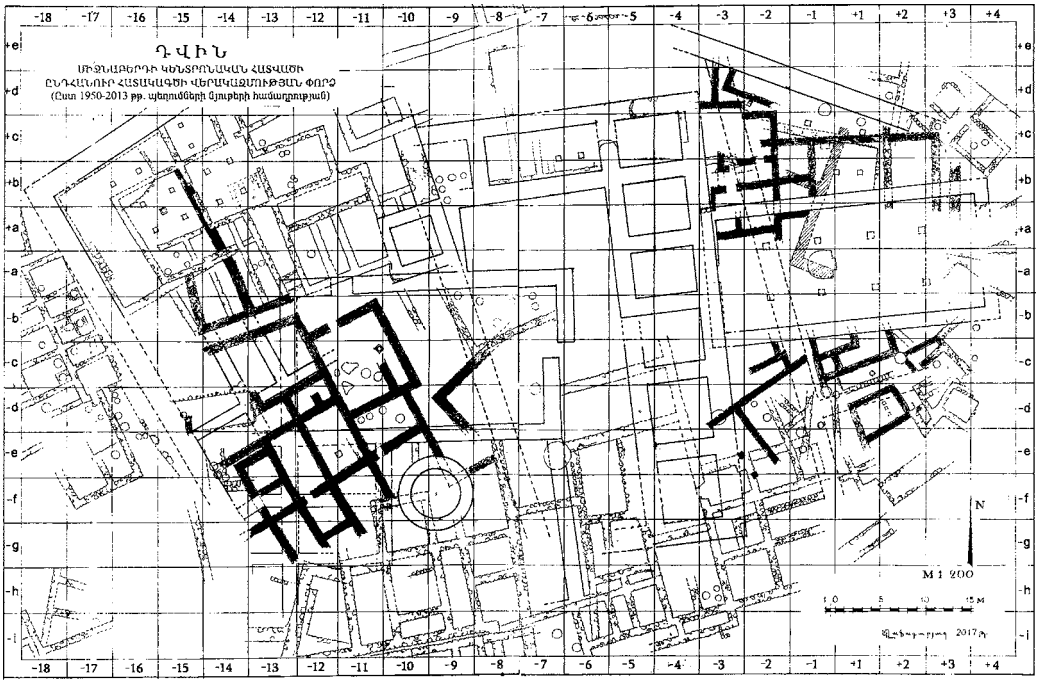

Fig. 3. The classical layers on the hilltop (© The Archive of Dvin expedition).

ace (4th century AD) a territory of about 800 m2 was chosen. Here the strong layers of 2 – 1st centuries BC were uncovered (Figs 4, 5).

The excavations carried out in the western part of the Citadel occupied an area of slightly greater than 100 m^2 and were promising. The results achieved from the investigation of a messy archaeological heap, testified that the 2nd century BC layer was concrete on the top of the 9 – 8th centuries BC layer.

Lastly, investigations proved that the hilltop platform in the Classical period was densely populated and the habitable complexes were surrounded by a massive wall. Although poorly preserved, the large set of a square tower's foundation was discovered at the southern part of the Citadel (Fig. 8). The study of the architectural features proved the utilization of this defensive construction in a long span of time – since the 1st millennium BC up to great earthquake in 893 AD.

Important conclusions can be drawn from the architectural and archaeological evidences. The torus-shaped column basements discovered *in situ*, testify the data of the buildings belonging to the 2 – 1st centuries BC (Fig. 9). The explored levels were filled with ceramics. In this regard, the interpretation of these findings acquired from the fieldworks, may be interesting. They are evidence of advanced urban technologies and delicate taste of Dvin's classical area. Fragments of this period are ceramic jars, pots, pitchers, jugs, flasks, oenochoe

Fig. 4. The walls and floors of the classical building (© The Archive of Dvin expedition).

Fig. 5. Walls of the classical buildings (© The Archive of Dvin expedition).

Fig. 6. Fragments of ceramics discovered in the classical layers 2 – 1st centuries BC (© The Archive of Dvin expedition).

Fig. 7. Pitchers and fragments of ceramics 2 – 1st centuries BC (© The Archive of Dvin expedition).

shaped household specimens (Figs 6, 7). The preferred polychrome colors of drawings were red and brown. The design motives are chevrons, waves, spirals, strips, triangles, ribbons ray like and other various adornments, that is typical for the pottery of the 2 – 1st centuries BC The shapes and the decorations corroborate the cultural characteristics of this period, moreover, they have close connections with pottery excavated from other Armenian classical contemporary sites like Garni, Artashat, Yervandashat and etc. Taking into consideration the traces of the wall debris and wooden ashes discovered in situ, we may suppose that a great fire was broken and caused the collapse of the site. Comparing the narrative sources with the archaeological studies, we propose that this was caused during the invasion of the Roman military commander Corbulon in the 1st century AD.

The Central Quarter

From the very beginning, the excavations were carried out in this part (1937 – 1939) and the best preserved buildings were the single nave, the three naved basilicas and the palace of Catholicos of the 7th century. The discovery of these buildings were strong arguments for investigators to presume that this area was the spiritual center of the city.

The fieldworks between 2009 – 2019 were resumed in the southern and western parts of the 5th century Catholicos's palace (excavated in the 1970s) (Fig. 13)[2]. The excavations revealed the ruins of a structure made of raw bricks during the Arabs reign (7 – 8th centuries AD) (Fig. 16). In spite of the fact that the building was totally uncovered and showed a long period of utilization, it is difficult to comment on the function and significance of it. To solve the problem the requirement of additional archaeological explorations remain valid.

During the fieldworks, our attention was drawn to a glassmaking workshop with two kilns and tools for making glassware. Meantime, a ceramic workshop was discovered (Fig. 17). The research of the pottery around the kiln makes possible to emphasize that the workshop dates back to the 9 – 8th centuries BC (Figs 15, 18) A five-step staircase leading to a storage pit was uncovered in the neighborhood of the northwestern and northeastern walls of the 5th century Catholicos's palace.

With the purpose of studying the water supply system of the city, excavations were carried out near the gateway that bridged the Citadel to the Central Quarter. The city's water distribution system was also

2 The excavations were conducted by N. Hakobyan.

Fig. 8. The basis of the Square Tower being used from 1st millennium BC up to 893 AD (© The Archive of Dvin expedition).

Fig. 10. The St. Gregory three naved Cathedral church (© The Archive of Dvin expedition).

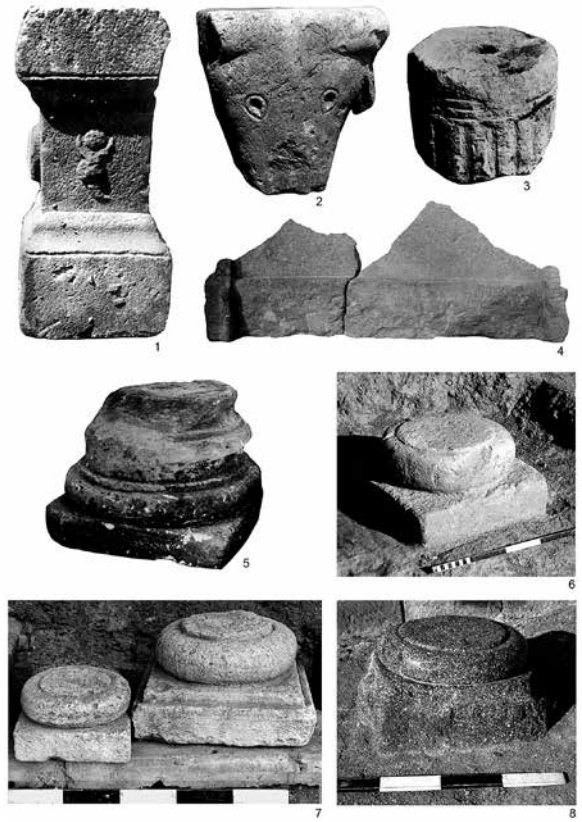

Fig. 9. Torus-shaped column basements and the sculpture of an ox (© The Archive of Dvin expedition).

Fig. 11. The north wall of the Cathedral (© The Archive of Dvin expedition).

Fig. 12. A test trench on the north-west corner (© The Archive of Dvin expedition).

Fig. 13. The 5th century Catholicos's Palace (© The Archive of Dvin expedition).

Fig. 14. The pipeline of the Central Quarter (© The Archive of Dvin expedition).

Fig. 15. Pottery of the 9–8th centuries BC (© The Archive of Dvin expedition).

Fig. 16. Ruins of a building during the Arab's reign 7–8th centuries AD (© The Archive of Dvin expedition).

stretched to the Central Quarter. A pipeline was discovered (Fig. 14) between two strong walls made of tufa. Most probably it was the main pipeline that supplied water to the Central Quarter.

Meantime, extensive researches were conducted to make more precise the chronological and architectural changes of the three naved St. Gregory Cathedral church (Figs 10, 11). For this purpose, a test trench of 2,5 m deep has been opened along the corner of the northwestern walls (Fig. 12). The results testified the former information given by the scientists T. Toramanyan, K. Ghafadaryan on the reconstruction of the Cathedral church in the 5th and 7th centuries. Built in the second half of the 4th and early 5th centuries, the Cathedral church has been reconstructed twice. During the final reconstruction, the cathedral was transformed to a Basilica church with a cruciform layout. The covering construction made of ceramic tiles in the center had a dome-shaped appearance. The architectural analysis and other data prove the reality that St. Gregory Basilica's basis was laid on the top of the ruins of the pagan temple. Owing to the final investigations, the architectural changes of the three naved Cathedral are fully studied now.

The Neighborhood of the Fortification Wall

The fieldworks carried out nearby the southern tower of the Citadel's fortification wall occupied an area of 1500 m long and 500 m width (Fig. 20)[3]. The constructive layers and the stratigraphic data of the site have been studied by the outcome of the excavations. Taking into consideration the structural features of the dwelling houses, the cultural characteristics of the items which strictly differ from each other, we should stress that there are seven main periods of occupation throughout the site. The upper weak layer, belonging to the last period of the city's existence, dates back to the second half of the 13th and 14th centuries. The carelessly constructed dwellings, the walls often made by heaping stones, have been attached to the fortification walls. Remnants of archaeological artefacts proved the simplicity of the inhabitant's mode of life.

The successive 12th and 13th century layer is the strongest in the site. The dwelling houses, as a rule, carry a regular layout. The axis of symmetry was a street the measurements which were 10 m width. It divided the district into the eastern and western parts. The abundance of the archaeological artefacts assure

3 The excavations were conducted by A. Zhamkochyan.

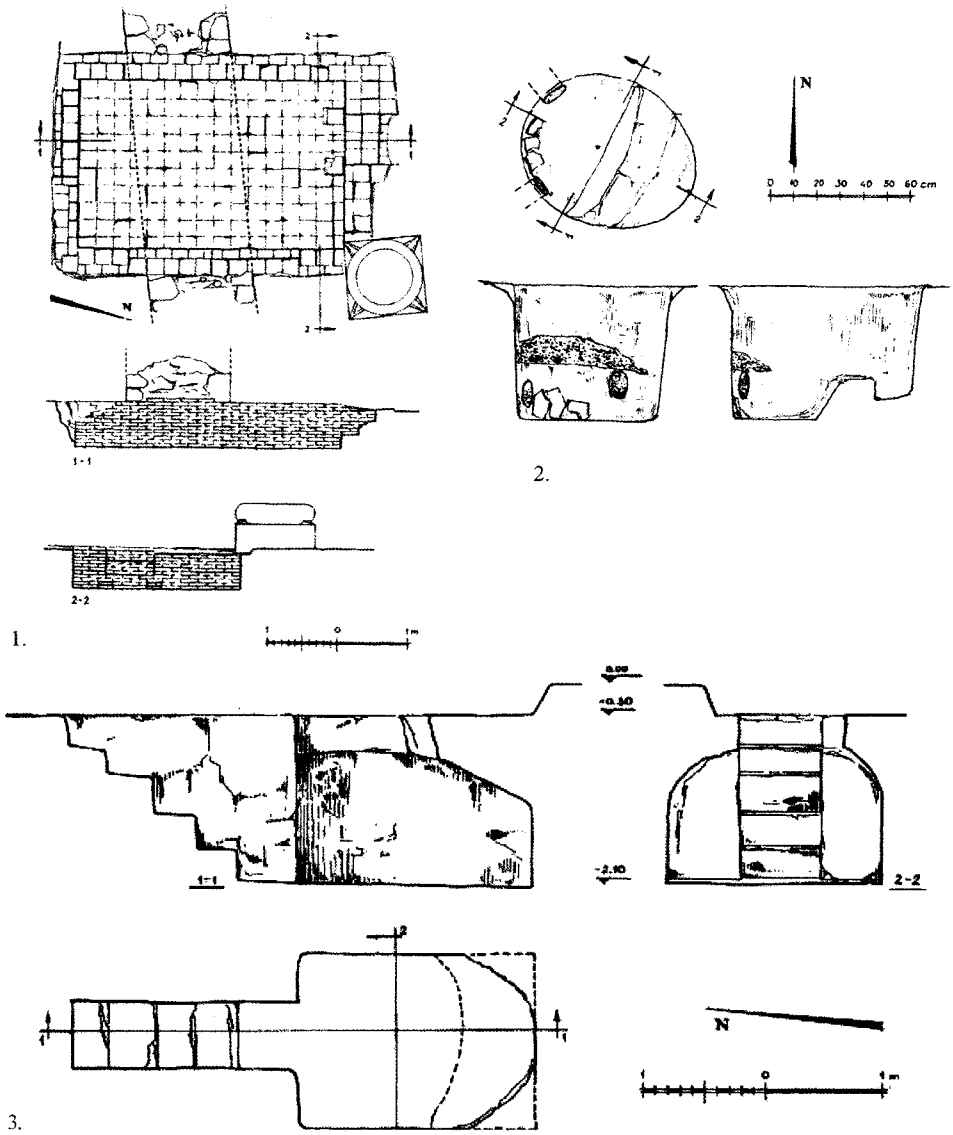

Fig. 17. The plan of the ceramic kiln (© The Archive of Dvin expedition).

Fig. 18. The pot of 9–8th centuries BC (© The Archive of Dvin expedition).

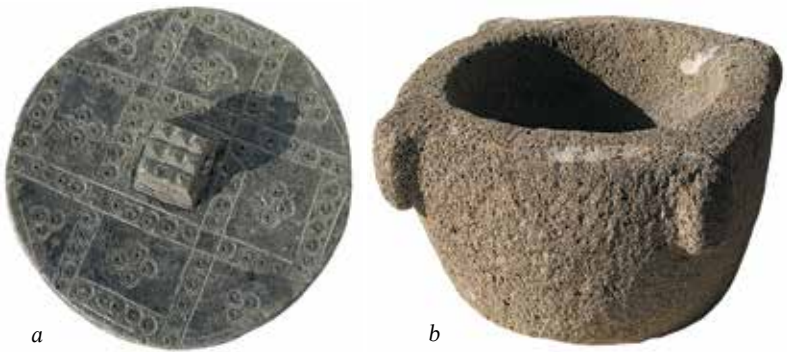

Fig. 19. A lid (a) and mortar (b) made of basalt stone 9th century AD (© The Archive of Dvin expedition).

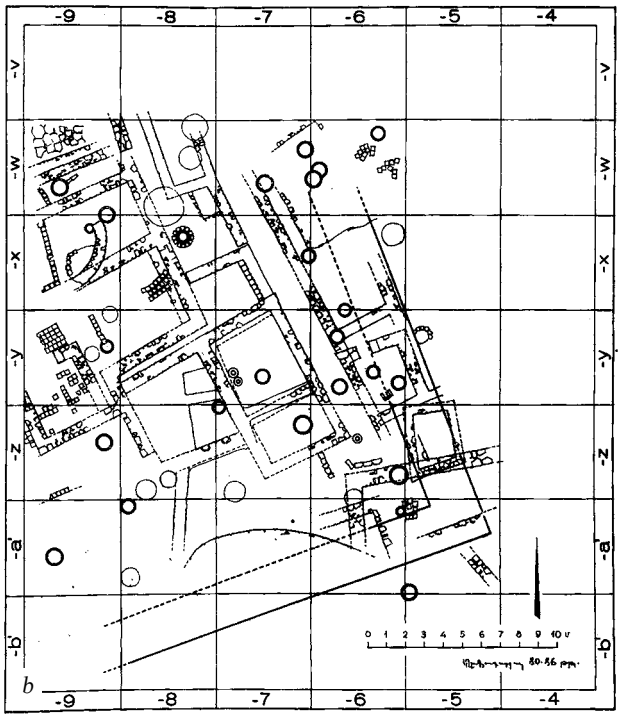

Fig. 20. a. The southern tower, b. The layout of the excavated area (© The Archive of Dvin expedition).

that the western part has been densely populated (Figs 21, 28). In this regard, the ceramics discovered there is of high quality and variety. The hearths (bakery pits) are of special interest (Fig. 22). These domestic necessaries of life were used in kitchens and in habitable rooms. They were periodically renovated and replaced when it became useless.

The next 11th century layer has been clearly outlined in different parts of the site (Fig. 23). Sometimes the constructive interruption of the 12–13th layers for the usage of the 11th century walls, caused a mess, so the 11th century layer's absolute date is often suspicious. Lastly, fieldworks brought to light the reconstruction traces of the southern tower in the 11th century. The reason was the battles between the armies of (Abul-Asvar) Dvin and Byzantine king (K. Monomach), that destroyed the defensive walls. Of course, the interpretation of this problem needs additional studies in future.

The layers of the 9–10th centuries are irregularly visible. Not only the city, but also the site was greatly demolished because of the earthquake of 893. Therefore, the investigation of the layer belonging to the 9–10th centuries provides some difficulties. We give particular attention to the existence of ceramics belonging to the 9–10th centuries – metal lids and Arabic coins discovered in this layer.

The biggest success of the excavations on this site has been the invention of the Early Medieval building of the 5–6th centuries AD. In the depth of 7 m, a strong building with powerful walls was unearthed. The standard walls had an average width of 2,5 m. They were made from irregular sandstones, cobblestones and tufa blocks coating with plaster of 4 or 5 cm thickness both on the inner and outer surface.

Today, the southern wall is totally cleaned up: the longitude is 42,3 m, the eastern wall (Figs 24, 25) has been excavated nearly 28 m, the western one 6 m. The excavations are underway. A test trench of more than 25 m^2 width was opened (Fig. 26). The results prove that the building has undergone several reconstructions and architectural changes. It remains obscure under which circumstances collapsed the building. After the disaster of this great building the territory was not followed by a period of neglect, just opposite it was rebuilt into dwelling houses and the ample of archaeological findings (glazed pottery, tiles, Sassanid coins, glass wares) emphasize the populations social being in the 7th century. This large Early Medieval building's foundation has been set on the 9–10th centuries BC layer. The hypothesis is supported by the research of the pottery discovered under the large building.

Fig. 21. A view of the 12-13th centuries layer (© The Archive of Dvin expedition).

Fig. 24. The eastern wall of the Early Medieval building (5–6th centuries AD) (© The Archive of Dvin expedition).

Fig. 22. Hearths (Bakery pit) discovered in buildings (© The Archive of Dvin expedition).

Fig. 25. The southeastern corner of the Early Medieval building (© The Archive of Dvin expedition).

Fig. 23. A view of the 11th century layer (© The Archive of Dvin expedition).

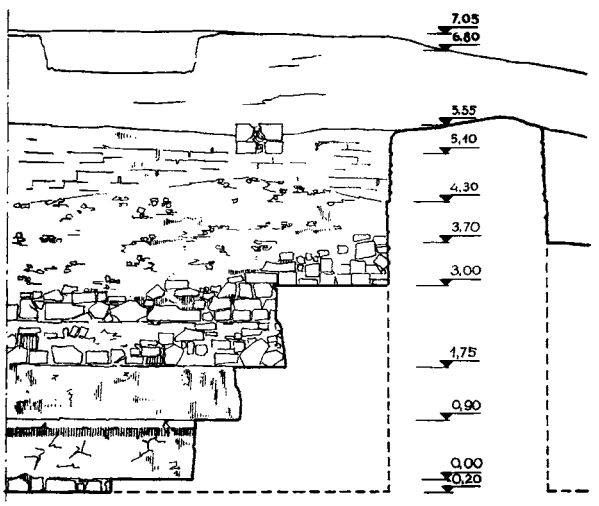

Fig. 26. The test trench nearby the Eastern wall (© The Archive of Dvin expedition).

Fig. 27. The southwestern corner of the building (© The Archive of Dvin expedition).

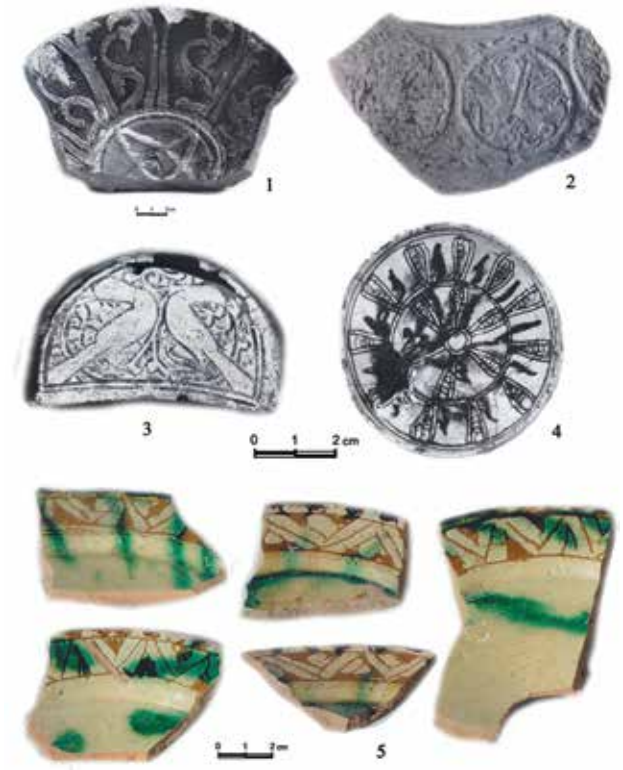

Fig. 28. Glazed medieval pottery of different periods and a lid made of metal (© The Archive of Dvin expedition).

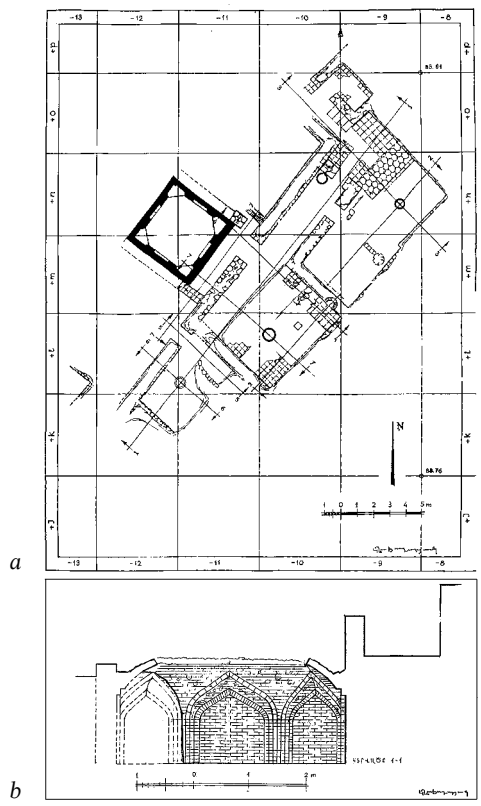

Fig. 29. a,b. The layout of the structure discovered in the north-east slope of the Citadel (© The Archive of Dvin expedition).

Fig. 30. The ruins of the building (© The Archive of Dvin expedition).

The Northeastern Slopes of the Citadel

We put particular importance to the building discovered during the excavations at the northeastern slopes of the Citadel[4]. The walls made of bricks are set on a rectangular (measuring 3 × 4 m) layout (Figs 29, 30). The covering construction system had an appearance of an eight-sided dome. The niches inside are dug into the wall. Additional decorations of the interior are plaster mold stuccoes and light or dark colored faience bowls and plates, which probably are the allegory of the sky (Figs 31–34). The access opening is below the north niche. It is difficult to specify the functionary significance of the structure because it needs further investigations and additional studies which are underway throughout the site.

Taking into consideration the obtained archaeological and architectural evidences, it can be concluded that Dvin as a settlement was consistently populated since the 9–8th century BC up to its abandonment in the 14th century AD.

4 The excavations were conducted by F. Babayan.

Fig. 31. The interior's decoration (© The Archive of Dvin expedition)

Fig. 33. The faience bowls serving as decoration (© The Archive of Dvin expedition).

Fig. 32. The faience bowls serving as decoration (© The Archive of Dvin expedition).

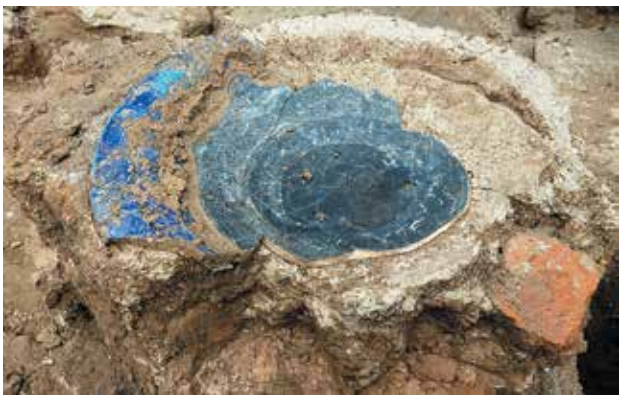

Fig. 34. The faience plate serving as decoration (© The Archive of Dvin expedition).

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Yereruyk: A Site Rich in Enigmas and Promises. The Armenian-French Archaeological Mission of LA3M in Armenia (2009–2016)

Patrick Donabédian

Aix-Marseille University, LA3M, France

In memory of Larisa Yeganyan and Georges Marchand

Abstract. The aim of the article is to present the main results of the investigations carried out from 2009 to 2016 on the Early Christian and Medieval site of Yereruyk, located in the Shirak province at the northwestern extremity of the Republic of Armenia, by the LA3M laboratory of medieval archaeology, from Aix-Marseille University, in cooperation with the Institute of Archaeology and Ethnography of the Academy of Sciences of Armenia, represented on the spot by the Regional Museum of Shirak. The survey concerned notably the Yereruyk basilica, its dating, architecture, carved decor, its place in Early Christian Armenia and its links with Syria, as well as the hypothesis of a pre-Christian stratum. A special attention was also paid to the memorial area south of the church, with remains of monuments once supporting cross-topped stelae. The excavations in this zone brought to light a cemetery, in which the examination of more than seventy graves yielded twenty-nine dates obtained by radiocarbon analysis of human bones. It allowed the exploration of the hitherto poorly studied area of funerary archaeology in medieval Armenia, providing a first picture of the evolution of a Christian cemetery from Late Classical period almost to the 20th century. Geomorphological and archaeological studies carried out on the remains of monuments located to the east of the basilica allowed to better understand the function of these constructions and to approach their dating. The presentation reviews the results achieved by the mission, the questions raised by its investigations, some answers that could be brought, as well as the enigmas that still remain to be elucidated.

Keywords: Armenia, Yereruyk, Late Classical and Medieval periods, basilica, architecture, art, funerary archaeology.

Introduction: An Armenian-French Archaeological Cooperation

The remains of Yereruyk are found in the northwestern part of the Republic of Armenia, at the southwestern end of the present-day "marz" (province) of Shirak, 45 km southwest of the capital of province Gyumri, on the eastern edge of the village of Anipemza. This village and the archaeological site of Yereruyk are located on the eastern bank of Akhuryan river ("Arpa Chay" in Turkish), which marks the current border between the Republics of Armenia and Turkey. The medieval capital of Armenia, Ani, is a few km north-west of Yereruyk, on the other side of the border. The deep canyon dug into the lavas by the Akhuryan crosses from north to south a volcanic plateau with an average altitude of 1400 m that stretches from the Gyumri region to that of Kars in the Republic of Turkey, and roughly corresponds to the province of Shirak of ancient and medieval Armenia.

The eight archaeological campaigns of nearly one month each that took place from 2009 to 2016, which this article will attempt to report briefly, are the result of a fruitful cooperation between the Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia, represented on site by scientists and members of the Shirak Regional Museum of Gyumri, and the Laboratory of Medieval and Modern Archaeology in the Mediterranean basin (LA3M, Aix-en-Provence, France), a scientific structure under the dual tutelage of Aix-Marseille University (AMU) and the French National Centre for Scientific Research (CNRS).

This mission was made possible by the continuous financial support of the French Ministry of Foreign Affairs, and contributions from the CNRS, AMU and private foundations. It also benefited greatly from the assistance of Armenian administrations, in particular the government department then called the Ministry of Culture. It could not have been achieved in the excellent conditions it enjoyed without the constant solicitude of the Institute of Archaeology, and in particular

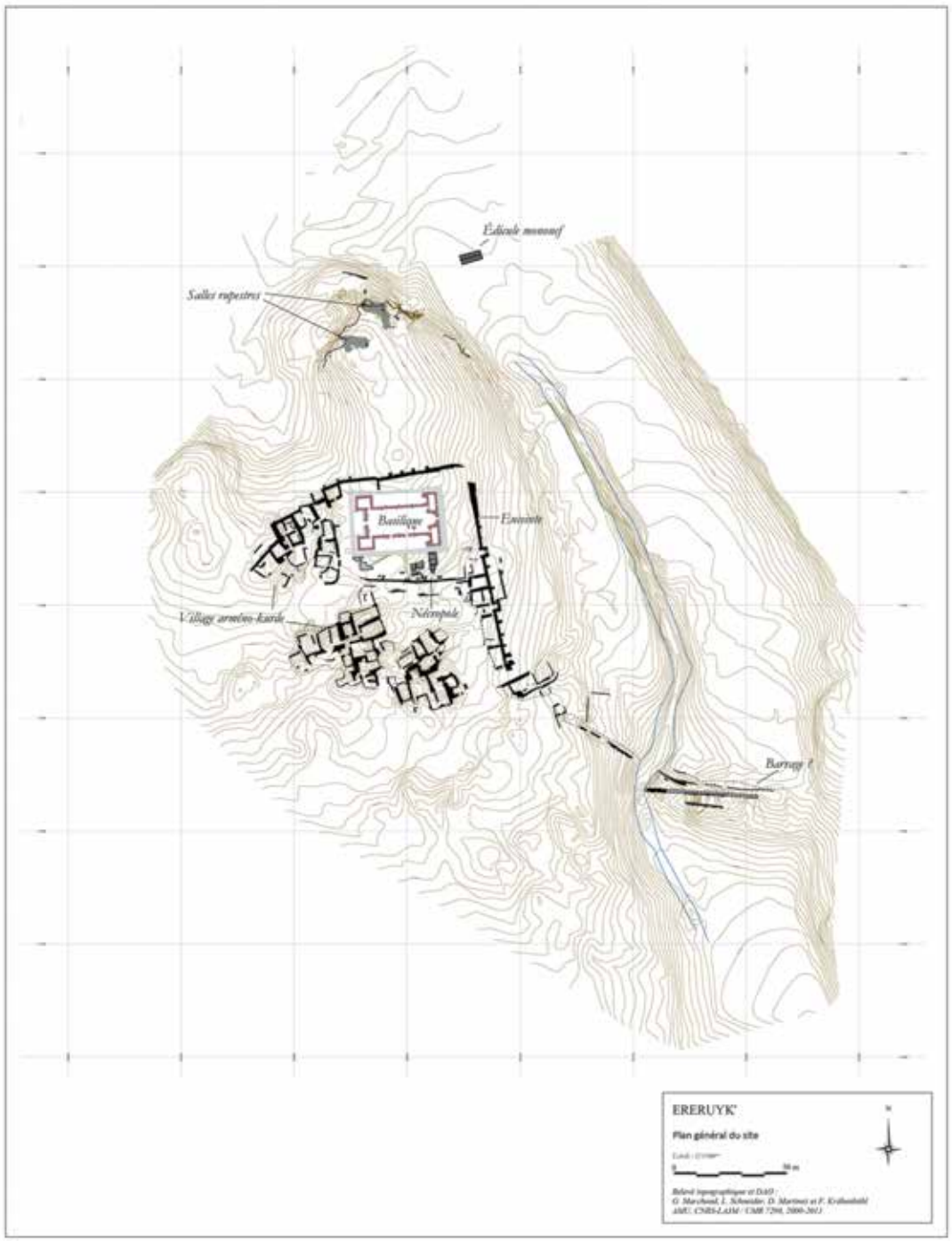

Fig. 1. Yereruyk. General plan of the site, (Topographical survey and CAD: G. Marchand, L. Schneider, LA3M, 2009–2011).

its director Pavel Avetisyan. The 60th Jubilee that this publication contributes to celebrate is a good opportunity to pay tribute to this venerable institution and to salute the dedication of its collaborators to their noble mission of enabling us to deepen our knowledge of the past and discover its hidden layers.

The campaigns of the LA3M expedition in Yereruyk were carried out with the participation, friendly assistance and watchful care of the Armenian co-responsible of the mission, the archaeologist, former director of the Shirak Regional Museum, Hamazasp Khachatryan, and of the late archaeologist Larisa Yeganyan, then regional heritage inspector, and collaborator of the museum. It is a duty of gratitude and respect to dedicate this article to the memory of Larisa Yeganyan. The mission also benefited greatly from the valuable help of the museum's team of archaeologists, with countless talents as conservators, drivers, mechanics and in a wide range of technical, artistic and other unsuspected specialties.

This essay is based on the mission's annual reports, online on the LA3M website, as well as on published reports in which the reader will find a detailed bibliography on the subject (Bailet et al. 2012; Donabédian 2014a,b).

A Site Studied Since the 19th Century

As early as the 19th century, the site of Yereruyk and the ruins of its basilica attracted the attention of travellers and scholars. Sent on an archaeological mission to Ani by the Academy of St. Petersburg between 1892 and 1917, the Russian scholar Nikolai Marr organized, in 1907 and 1908, two campaigns in Yereruyk. He is the author of the first monograph on the basilica, which includes valuable photographic documentation (Marr 1968). Since then, the Yereruyk site has continued to impose its presence in the study of Armenian architecture. In 1977, the Italian collection *Documenti di Architettura Armena* (DAA) devoted a volume to it. The Yereruyk site was one of the first, as early as 1928, to benefit from the attention of the communist authorities of Armenia. A series of consolidations took place during the 20th century. In 1958 architect Alexander Sahinyan undertook a partial clearing and a brief study of the presumed dam, southeast of the basilica. In 1985–86, investigations were carried out by archaeologist Felix Ter-Martirosov on the two rock rooms north of the basilica, on the small building of the valley to the northeast, and again on the "dam" (Ter-Martirosov 1987; 2001). In the last years of Soviet rule (1987–88), an extensive campaign was conducted by the architect Vahagn Grigoryan on the entire site and in particular on the houses and stables to the south and west of the church. A general scheme for the valorisation of the site was envisaged, which was however interrupted by the strong tremors, first telluric, then political, of December 1988 and following months and years. This intervention remained very little documented and the site was almost abandoned.

With the violent 1988 earthquake endangering the stability of the Yereruyk basilica, urgent interventions were undertaken by the World Monuments Fund of New York and by the Centro Studi e Documentazione della Cultura Armena (CSDCA) of Milan/Venice. At the invitation of the latter, between 1989 and 2005, specialists carried out several interventions on the basilica: studies of building archaeology by Cristina Tonghini and Nadia Montevecchi (Montevechi,Tonghini 2012), analyses of the construction technique by Jean-Claude Bessac (Bessac 2011; 2012), surveys and consolidations. Finally, from 2009 to 2016, the LA3M of Aix-Marseille University conducted its program.

Preparatory Work: 2009–2010

During an exploratory trip in 2008 by a group of LA3M members including the art historian and specialist in building archaeology Andreas Hartmann-Virnich, the archaeologist and medievalist Laurent Schneider and the author of these lines, the choice of a site for future investigations was focused on Yereruyk, a complex obviously rich in enigmas and promises. The first two campaigns in 2009 and 2010 were devoted to indispensable preparatory tasks. The mission first collected documents on works previously undertaken on Yereruyk site, from specialized institutions in Armenia, as well as in St. Petersburg (Marr archives) and in Milan and Venice (CSDCA documentation), and began to study on the spot the questions raised by the different remnants of this complex. Priority tasks included the laying out of an accurate topographical survey of the entire site, as such a plan did not exist. The overall plan of the site (Fig. 1), which is the result of a thorough work by one the expedition's dedicated members, the geometer engineer Georges Marchand, is both a valuable achievement of the mission and a tribute to the memory of this colleague and friend, who died during the 2014 campaign.

A Vast and Enigmatic Ensemble

The archaeological complex of Yereruyk includes the remains of several buildings:

- in the centre: the basilica;
- to the north, east and south of it: walls forming a partial "enclosure" or "rampart";
- on the southeastern edge of the basilica: a funerary and memorial area with several square pedestals and, to the east: remains of sarcophagi;
- to the south and west of the church: a group of houses and barns or sheepfolds;
- to the north-east, in the valley: a small vaulted building;
- further to the southeast: a set of parallel walls that served in the 19th century as a dam.
- two rock rooms under the rocky platform to the north of the basilica.
- in addition to numerous scattered building blocks, two hundred fragments of carved stones, many of them deposited on the northern rocky platform.

This complex raises many questions. The first one concerns the choice, for its location, of an area now deprived, at the end of the plateau, near the Akhuryan canyon. Would the presence of an ancient place of

Fig. 2. Yereruyk basilica. General views from south-west and north-west (Photos: Author, LA3M, 2011–2014).

worship have already sanctified the site, justifying this choice? Another question arises logically in front of such a large group of remains: could it be a monastic complex, as northwestern Syria gave many examples in the Early Christian period (4–6th centuries), while Armenia, and Yereruyk particularly, had close ties with this country? Ani's proximity cannot be ignored either: what could the nature of the connection that necessarily existed with the great city of Ani be in the Middle Ages, especially at the time of its zenith, around the year thousand?

Another difficulty is the absolute and relative chronology of the various components, which remains largely uncertain. The sources are almost silent as to the circumstances of their construction, which is surprising, knowing the density, in this central province of ancient Armenia, of the written and epigraphic testimonies relating to the numerous foundations. Fortunately, the dating of the basilica can, thanks to a comparative study of its composition, technique and decoration, be located with a good probability during the Early Christian period. Can a more accurate dating be proposed?

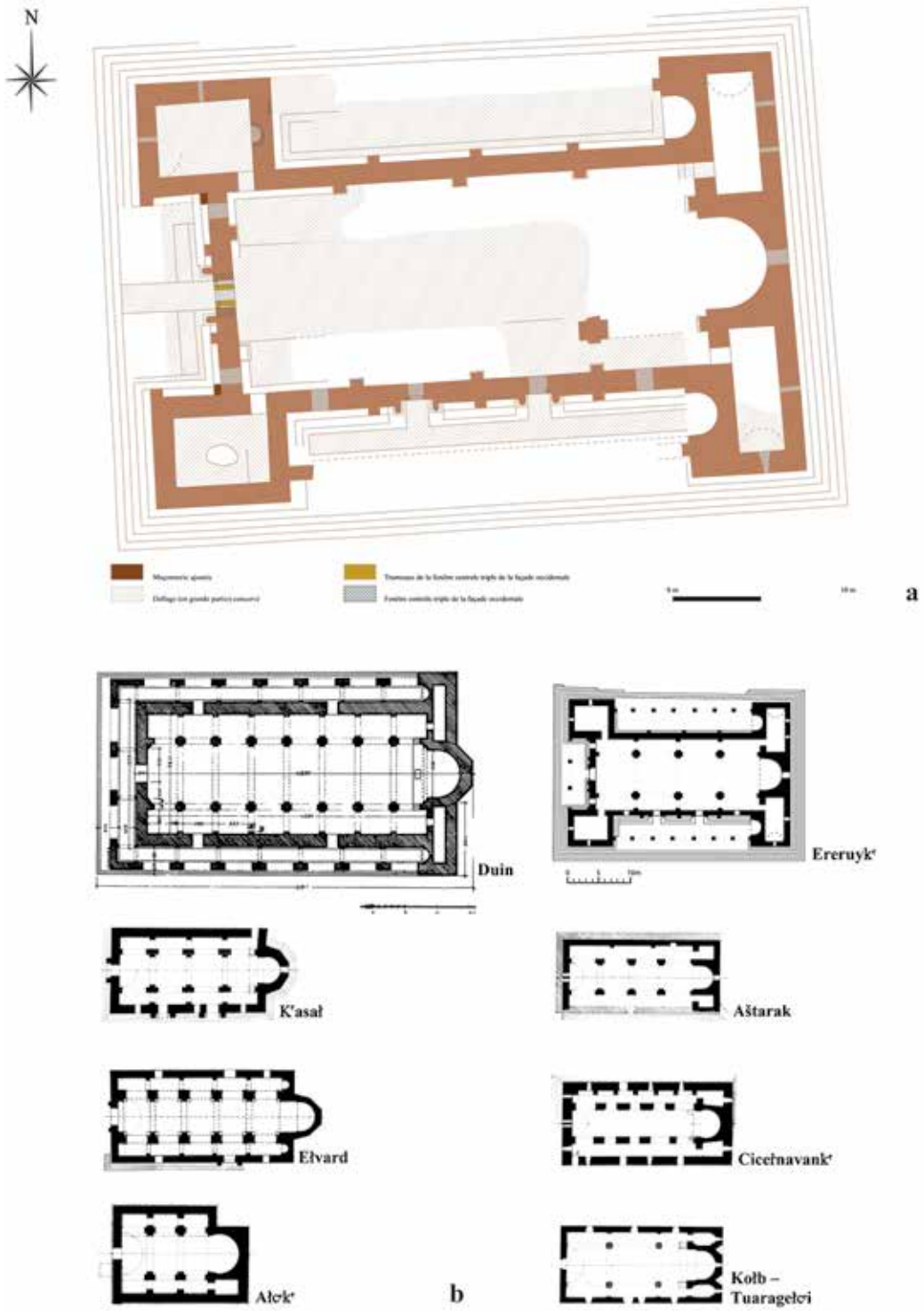

Fig. 3. a. Yereruyk basilica. Plan of the current state (Survey and CAD: G. Marchand, P. Donabédian, H. Hansen, L. Maggiori, LA3M, 2013–2015); b. Plans of Yereruyk (Drawing: F. Krähenbühl, LA3M 2013) and three-nave basilicas of Early Christian Armenia (K. Ghafadaryan (Dvin) and P. Cuneo 1988, II, 716).

The group of dwellings and stables seems essentially modern, but what is known about their origin? The dating of the other remains is obviously very difficult to establish, and the function of many of them is uncertain…

Archaeological Campaigns of 2011–2015

From 2011, in parallel with the continuation of the surveys on history of art and architecture, on building archaeology, and on the lapidary material scattered on

the site, the mission, anxious to implement a global and environmental archaeology, launched several investigations of underground archaeology. To this end, the mission added to its expertise the competences of archaeologists medievalists Damien Martinez and Fabien Krähenbühl, anthropologist and archaeologist Paul Bailet, and archaeologist geomorphologist Christophe Jorda.

Through this multidisciplinary approach, the expedition sought to advance knowledge on several points concerning both the whole of Yereruyk complex and, separately, its various components. In assessing these advances, however modest they may be, it is necessary to take into account that they were achieved despite the negative legacy of the disturbances suffered by the site during the Soviet period as a result of poorly documented interventions and, more recently, of wild "excavations".

One of the Largest Basilicas in Armenia

The Yereruyk complex is dominated by the imposing remains of the St. John the Baptist and St. Stephen Basilica (Fig. 2). It belongs to the group of structures elongated from west to east, without a dome, which predominated in Armenian religious architecture of the first Christian period. It is more exactly part of the group of eight or nine three-nave basilicas, a type which ceased to be used at the end of the 6th century (Fig. 3). It is built of local ochre volcanic tufa, according to the traditional local technique, close to the Roman *Opus caementicium*, which consists of a formwork with two sidings of blocks carefully cut on their outer face, in which is poured a lime mortar filling mixed with sand and shards of stone.

The roofing of the naves is gone. N. Marr reports that, during the 1907 visit and after clearing the basilica, no trace of stone vault was discovered in the main nave (Marr 1968, 10–11). For this reason, and given its width, it is assumed that the central nave was covered with a wooden ceiling and a wooden frame, as may have been the case in the initial phase of other Early Christian basilicas in Armenia like Aghtzk and Ashtarak. On the contrary, the two lateral naves, given their width twice as small, and an ancient trace of a vault, now erased, were probably covered with stone vaults.

Within its group, Yereruyk has a singular place. It measures, at the level of the crepidoma, more than 40 m in length and nearly 30 m in width, and it had, along its north, west and south facades, galleries (Fig. 6/a), now destroyed. These galleries were opened outside by an arcade on a colonnade (16 fragments of shafts lie on the site, most north of the basilica); the north and south galleries have retained, at their eastern end, a high niche-apse (Fig. 2). By these features, Yereruyk approached the patriarchal cathedral of Dvin, exceptionally large (Fig. 3/b), according to the criteria of Armenia (53 m in length), after its restoration at the end of the 5th century.

Crepidoma: Characteristic of Church-Martyrium

Attention is drawn to the wide platform, with five or six steps around/under the basilica. This reminiscence of the Greco-Roman crepidoma, relatively rare in monumental architecture of Early Christian Armenia, probably had a special meaning. A similar platform was present under another church, St. Sergius of Tekor, built in all probability a little earlier than Yereruyk, at the end of the 5th century (Donabédian 2008, 54–57). Located about 20 kilometres south-west of Yereruyk, now in Turkish territory and destroyed, Tekor had a remarkable structure for its time: an inscribed cross crowned by an archaic dome, but despite this difference, it had a close kinship with Yereruyk. Both were located on the lands of the Kamsarakan, a great Armenian dynasty of the Late Classical period and shared a series of features, both architectural and decorative (Donabédian 2014a, 252–253).

Tekor was named in its dedicatory inscription "martyrium of St. Sergius". For its part, Yereruyk, in an inscription engraved inside the basilica, is called "martyrium of the Precursor and the Protomartyr", that is of St. John the Baptist and St. Stephen. Sergius, John the Baptist and Stephen are among the most revered saints in Armenia. A third example of such a platform, a little later (middle of the 7th century), can be seen, restored, under the cathedral of Zvartnots. The latter is dedicated to St. Gregory the Illuminator, whose relics had in all probability been placed in the centre of the church, and his head, in the eastern annex (Donabédian 2008, 190–198). These three churches, preceded by their high stepped crepidoma, thus have in common a very important characteristic: their martyrial function. It is highly plausible that, like Zvartnots, the great martyria of Tekor and Yereruyk, dedicated to the memory of particularly venerated saints, sheltered their relics. It is interesting to note that, inside the basilica, in front of the northwestern engaged pillar (south of it), a small monolithic, slightly trapezoidal chest[1] is placed under

1 External length: 71 cm; external width at the west end: 36 cm; at the east end: ca. 30 cm; height/depth: ca. 15 cm.

Fig. 4. Yereruyk basilica. Foundations of the south part of the apse (Photo: D. Martinez, LA3M, 2013).

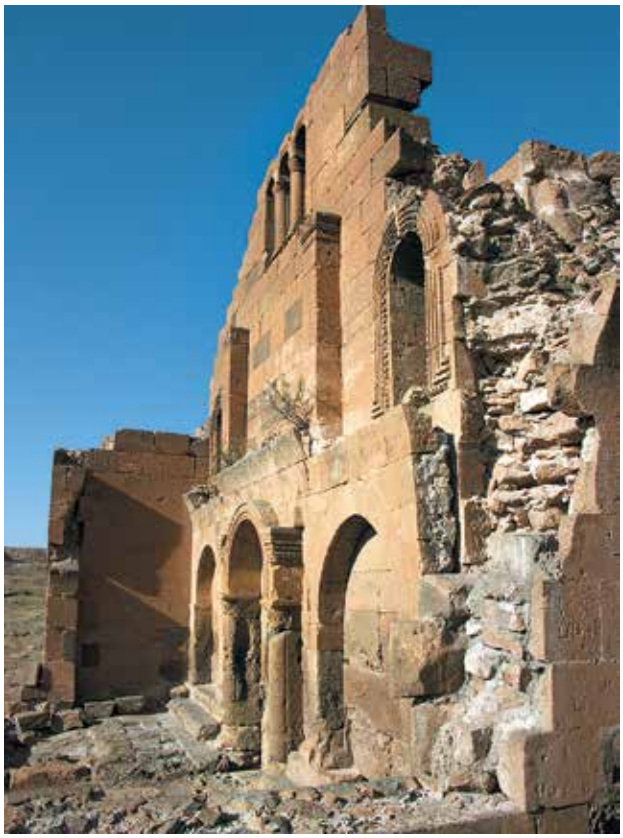

Fig. 5. Yereruyk basilica. Masonry leaning against the western facade for the addition of a new gallery, lowered (Photo: Author, LA3M, 2013).

the pavement, torn off there (Fig. 7/a). This chest could be either the sarcophagus of a child, against the canons of the Armenian Church, or, more probably, a reliquary. Partially broken, it is deprived of a lid and has been emptied of its contents; nevertheless, it could be an indirect argument in favor of the presence of relics in Yereruyk.

Coming back to the crepidoma, it should be noted that it is not a real one that is found in Yereruyk, but its imitation. Excavations carried out under the south end of the apse revealed that there was no platform under the construction, the walls of which are laid on the bedrock through very modest foundations (Fig. 4). Likewise, investigations under the southwest corner chamber showed that its pavement rested directly on the rock (Fig. 7/b). Earlier soundings by Italian specialists had already suggested this. The important thing was therefore the impression produced: that of a high stepped platform, probable mark of an important martyrial function. The same principle of a podium with several steps was observed, we will evoke it later, at the foot of vertical monuments with cross topped stela or column.

Galleries of the Basilica

It is assumed that the galleries that lined some Early Christian chapels and basilicas were intended for unbaptized catechumens and penitents not allowed to enter the church (Donabédian 2008, 37, 43). As these galleries often have a niche-apse at their eastern end, it can be assumed that specific liturgies were celebrated there. At Yereruyk, in the north gallery which is totally isolated from the interior of the church (Figs 2, 3), it is permissible to consider, among these particular rites, the exhibition and veneration of relics, perhaps kept the rest of the time inside the sanctuary.

On the contrary, the south gallery communicated widely with the internal space of the church and preceded the two doors that open there. At the same time, it also formed, like the north gallery, a relatively autonomous liturgical space, with an eastern niche-apse. As for the west gallery, tightened between the two angular chambers, it initially had the same height as the two side galleries, but a redesign, probably completed shortly after construction, significantly changed its appearance. As shown by the masonry leaning against the west facade and the departure of the vault that rested on it, the height of this new gallery was significantly lowered (Fig. 5). It may have been surmounted by a kind of balcony, as was frequently practiced in the 5 – 6th centuries on the western facade of Syrian basilicas.

A hypothetical reconstruction of the basilica attempts to give an idea of the original height and appearance of the galleries in the overall volume of the building (Fig. 6/a). As attested by a portion of the south wall preserved at its junction with the top of the west facade, at the south-west corner of the basilica, the central nave was raised relative to the lateral naves. One can therefore imagine that the lateral walls, at the top of the central nave, were pierced with a clerestory, a form attested in Armenia on Tzitzernavank basilica,

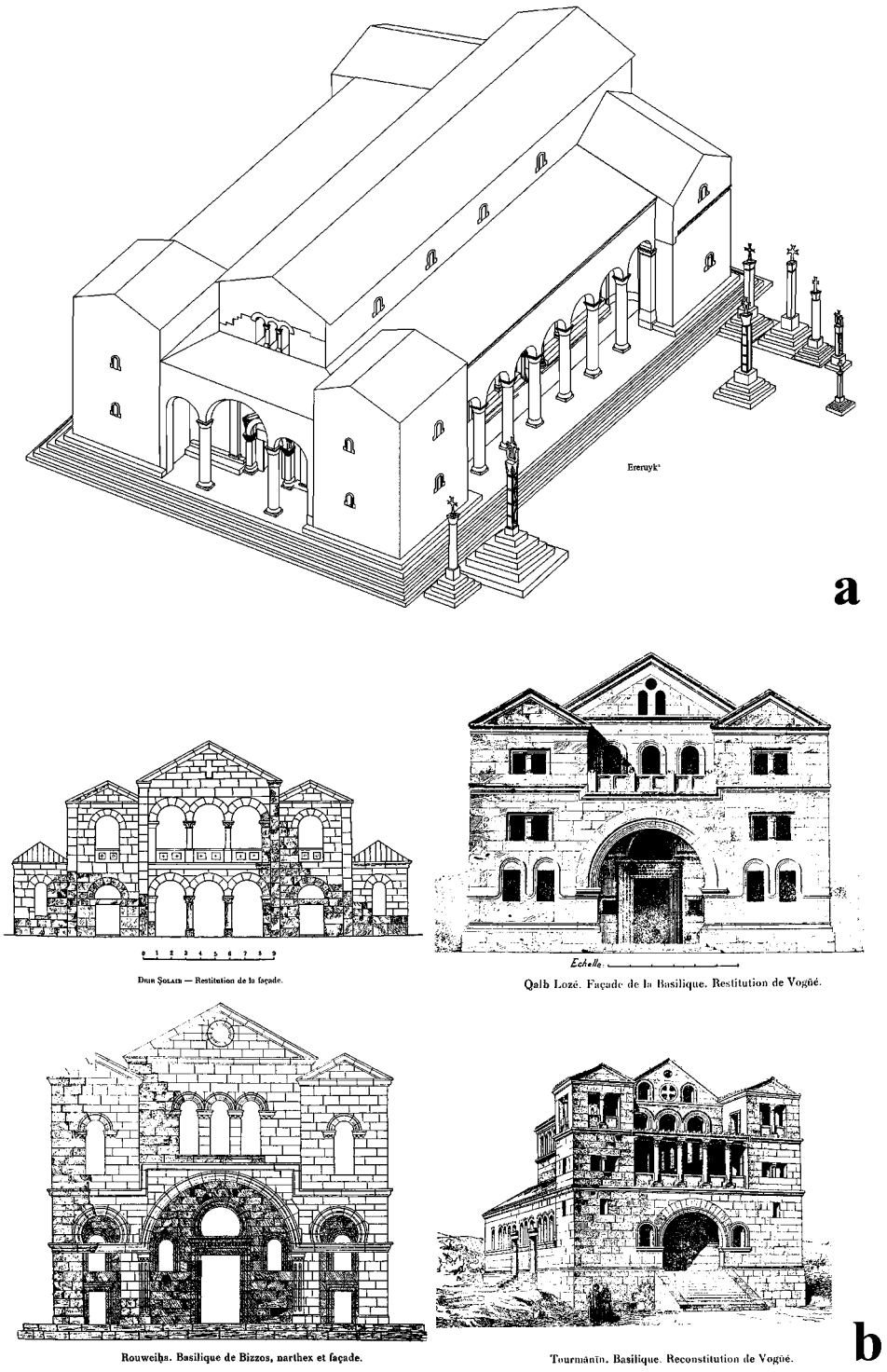

Fig. 6. a. Yereruyk basilica. Three-dimensional hypothetical reconstruction. General view from south-west (Design: Author; CAD: D. Ollivier, LA3M, 2013), b. Reconstructions of four Early Christian Syrian basilicas (5th – 6th centuries): Deir Solaib, Kalb Loze, Ruweiha and Turmanin (Drawings: J. Mattern and M. de Vogüé; Mattern 1944, pl. LVI).

as well as on several basilicas of Georgia. As mentioned above, the central nave was probably topped with a wooden roof. A little further down, starting from under the clerestory, a roof, also wooden, continuous, sloping (a long pent roof), probably passed over the two side aisles and covered the galleries, necessarily surmounting the top of their eastern niche-apse. These roofs were covered with tiles, many of which were discovered during the excavations.

Observations and calculations by the mission allowed to advance, for the north and south galleries of Yereruyk basilica, the hypothesis of seven or eight

Fig. 7. Yereruyk basilica. a. Northern aisle of the basilica. Small chest (reliquary?) in the ground, in front of the northwestern engaged pillar (Photo: D. Martinez, LA3M, 2011); b. Southwestern chamber. Two superposed floors (Photo: Author, LA3M, 2013).

arches on six or seven columns. But in a country with high seismic activity such as Armenia, the lack of connection between the arcades-colonnades and the walls of the building is surprising. Indeed, the pillars engaged in the facades certainly did not have the function of wearing anything and there were no vaults or arches starting from the walls and falling on the arcades. The colonnades and arcades of the galleries were therefore very weak. This is likely the reason why they collapsed, probably very early. Their destruction may reflect the foreign origin of this device, rare in Armenia.

Two "Pastophoria" of the Basilica

As in Dvin and in several Armenian basilicas, the apse of Yereruyk is flanked by two sacristies, partly preserved. These angular chambers or "*pastophoria*" in which, in Armenia as elsewhere, priestly garments and objects of worship were stored, are here cross-stretched, narrow and laterally protruding. These peculiarities were also found in Dvin, as well as in the domed churches of Echmiadzin and Tekor. The laterally elongated eastern sacristies are observed elsewhere in the Early Christian world, especially in Syria, but their marked narrowness seems to be an Armenian specificity.

Each of the eastern sacristies of Yereruyk had two floors. The upper floor of the northeast corner is partially preserved, although it has lost its roof. Each floor was covered with a stone vault, carefully fitted, with a transverse orientation (north-south). Moreover, these sacristies had a unique feature, still visible today on the second floor of the north-east *pastophorion*: while the vault of the first level is a horizontal barrel and is surmounted by a horizontal floor, the upper vault is steeply inclined (Fig. 2/b). It is significantly higher on the nave side (south) and lower outward (north). On such a vault, one can imagine, in Armenia, only a saddle-roof, necessarily inclined, that is to say lowering outwards (Fig. 6/a).

Two Western Rooms of the Basilica and its Close Link with Syria

The Yereruyk basilica also has several peculiarities that link it to Syrian churches of the 5–6th centuries and make it, in Armenian context, a singular monument (Donabédian 2014a, 249–250). One of these features is the presence, at the ends of its western facade, of two protruding angular chambers, very poorly preserved. These oblong chambers open to the side aisles inside the basilica. Some signs show that they had two floors, so a turret appearance. Unknown in Armenia, such turrets are on the contrary frequent at the western corners of around fifteen Syrian basilicas, among which Deir Solaib, Turmanin, El Bara, Kalb Loze, St. Sergius of Resafa and the Church of Bizzos in Ruweiha (Fig. 6/b). One of the hypotheses put forward by Jean Lassus as to the function of these rooms in Syria, that of a stairwell, is confirmed by the Georgian example of Tsromi (7th century) (Chubinashvili 1969, 26–27, 35), partly comparable to Yereruyk, but it does not seem to be appropriate here. In Yereruyk, unlike Tsromi, there was certainly no narthex nor tribune upstairs; as for the redesign of the western facade, which may have resulted in the addition of a kind of "balcony" in Syrian fashion, it is obviously posterior to the construction of the two chambers. The question of their function therefore remains open.

By the position of its four angular chambers protruding from the sides, the Yereruyk basilica, like Tsromi in Georgia, is similar to two almost contemporary monuments: the basilica of Deir Solaib in Syria (prob-

ably end of the 5th century) and the basilica n° 32 in Binbir Kilise, Asia Minor (probably 6th century). Given that Deir Solaib (Mattern 1944, 151 – 155) housed a baptismal basin in its southwestern angular chamber, it was tempting to imagine that this might also have been the case in Yereruyk. This is why the archaeological expedition, taking advantage of the fact that a missing portion of the pavement allowed an intervention, carried out a survey under this ground (Fig. 7/b). This investigation revealed the existence of two superimposed pavements, the lower of which rested directly on the mother rock. Traces of a partial destruction of the old pavement were discovered, probably as the result of a fire, after which a second paving, coarser, was laid on it. Radiocarbon analysis of lumps of charcoal collected at this location determined that the fire and pavement repair likely occurred in the 8 – 10th centuries. However, the survey showed no trace of baptistery, nor of any stratum prior to the current construction.

Other traits of kinship with Early Christian Syria, as well as with Asia Minor, including Cappadocia, can be seen at Yereruyk in the treatment of the facades, traits by which this basilica, together with Tekor, stands out from other churches in Armenia. This is the case of the continuous moulded strips, independent of any architectural element, which run horizontally through the building, and those that surround the windows to the bottom of their bay where they form two horizontal folds (Fig. 2/a). The triple window at the top of the western facade is also a common feature with Syria, where it is observed for example on the church of Baqirha (546). Lastly, a Greek inscription engraved on the southern facade of Yereruyk, on which we will return later, creates a precise link with a Syrian church.

These affinities with Syria should not, however, obscure the features that clearly situate the basilica of Yereruyk within the Armenian tradition, such as its technique and building material, the use of stone vaults, the narrowness of the eastern sacristies, the shape of the portals and most of the motifs of its ornamentation.

Notes of Building Archaeology Concerning the Basilica

The preserved elevations of the basilica were submitted to an in-depth analysis of building archaeology[2], including a survey by tacheometer, a systematic stone-to-stone study of the walls and an examination of the links, chains and ruptures of courses, of the changes and combinations of bond, and certain characteristics of the stone cutting. These detailed observations revealed, beyond certain irregularities, the conceptual and metrological homogeneity of the building. This constructive cohesion of the building's components, which reflects the coherence of an overall project, concerns the main phase of construction, that is the three-nave building, with its angular parts and crepidoma. These observations seem to disprove the assumptions of long ruptures and major reconstructions.

Clearly visible alignment fractures on the west facade of the church and on the internal wall of the main apse were likely corrected immediately after probable subsidence of the rocky soil. The facing, both exterior and interior, of the masonry shows changes in the bond, in the colour of stones and in the size of blocks, as well as variations in the treatment of the edges of blocks, bevelled on some portions of the walls and of engaged pillars. But these differences do not seem to be related to a significant stopping of the building process, accompanied by a change in design. Similarly, the destruction of the cornice under the semi-dome in the main apse, to lay a coating and probably a mural painting, and the hammering, for unknown purposes, of part of the sculpted decoration on the eastern end of the south facade do not appear to be related to structural changes.

However, one can find traces of interventions after the first construction phase:

- Redesign of the western facade with a new lowered gallery (perhaps in addition to a renovation of the top of the south facade after the collapse of the galleries).
- Walling and partial scraping of the southern windows, at an indeterminate period in the Middle Ages.
- Restoration and filling in the 20th century, especially at the bottom of the east and south facades, at the bottom of the apse, on the angular chambers and on the crepidoma.

Sculpted Decoration and the Inscriptions of the Basilica

The limitations of this article do not allow to extend to all aspects of the basilica. In its sculpted decoration, we mentioned features of closeness to Early Christian Syria, such as moulded strips and windows frames. An important role in the decoration of the monument

2 The author is grateful to his colleague Andreas Hartmann-Virnich for his valuable contributions in the field of building archaeology.

belongs to the portals (Fig. 2/a). Their form, which goes straight back to Roman models, without any Syrian intermediary, illustrates the most widespread type of Armenian portal from the beginning of the Christian period up to the 7th century included. One of their main features is the vigorously moulded and slightly horseshoe arch connecting the two jambs. Its role is so important that the gable which should have leaned on the two stylized Corinthian capitals is "propelled" upwards.

The inscriptions of the basilica, without providing information on the circumstances of its construction, lift some of the veil on the political-dogmatic and socio-economic context of its history and of the interventions it has undergone (Donabédian 2014a, 262–279). The double dedication to two very popular saints sheds new light on the attractiveness that the sanctuary must have had. The term *martyrium* applied to it underlines its eminent functional specificity. As the text containing mentions of dedication and of martyrial function may date from the 10–11th centuries, this could explain a significant change at the turn of these centuries in the life of the sanctuary and its cemetery, on which we will come back later. The existence attested in the Middle Ages, near the church, of a village that probably lived from its agricultural activity gives special weight to the role that could have played the device that blocked the valley, downstream of the ecclesial area. This gives a slight glimpse of the reasons for the presence, in a region now underprivileged, of such a prestigious sanctuary, within a large ensemble, probably actively integrated into regional life. Finally, the Greek inscription engraved at the eastern end of the southern facade, very similar to a late 5th century Syrian inscription, and probably contemporary with the consecration of the basilica, in addition to numerous architectural and decorative features already mentioned, attests to the very close link between Yereruyk and Syria, and offers a complementary argument for dating the church to the 6th century.

The Memorial / Funerary Area. Tiered Pedestals

The area south and southeast of the basilica attracts attention by remains of sarcophagi and square-plan pedestals. These correspond to the lower part of a type of vertical cruciferous monuments, widespread in Armenia and Georgia, attributed to the Early Christian centuries and considered in all cases prior to the 8–9th centuries. They were composed of several superimposed elements: on a square-plan podium with a few steps, a cubic base is laid, on which is fixed a quadrilateral and sculpted stele (more rarely a column), surmounted by a stone cross, through a capital and sometimes an intermediate element called "cross-bearer" (Mnatsakanyan 1982; Grigoryan 2012; Tchakerian 2016).

This type of monument, preserved only in the state of remains (except some recent attempts of reconstruction), was often erected near the chevet of an Early Christian church or chapel. It is usually represented on the same site by only one, two or three items. On the contrary, in Yereruyk there are six to eight pedestals of this type, on the southern edge of the basilica, which suggests a memorial complex of unusual magnitude (Figs 2/a; 6/a). A main row of four cruciferous monuments stood, almost in line with the chevet of the basilica, south of its crepidoma, near its southeast corner. A fifth monument was located a little further west, a sixth one further south, and finally, the traces of two others can be seen at the western end of this area. Nowhere else in the South Caucasian region (it is not known whether such vertical memorials also existed in Western Armenia[3]) is such a "forest" of cruciferous monuments known on the same site. In addition to the pedestals, many other elements of such monuments are present: bases and fragments of stelae, capitals and stone crosses, most of which are deposited on the rocky platform to the north of the basilica.

Uncertain indications from a brief study of such a pedestal at Kasagh (Sahinyan 1955, 55) led to question the function of these devices: were they simple podiums supporting cross topped monuments, or did they also serve as tombs? Examination of the second one, in the row of four pedestals near the south-east corner of the basilica, provided an answer, at least partial: the pedestal, unviolated, was empty of any burial and its internal space was only filled with earth (Fig. 8/a). Thus, the funerary hypothesis can be rejected, for the time being on the basis of this case alone: the pedestals were used to highlight the cross topped memorials they bore. As for the monuments themselves, it can be assumed that, in addition to their main mission of glorifying the victorious cross (as well as for the *khachkars* that will multiply from the 9th century), they could also carry a memorial message related to individuals or families whose members were buried nearby. Indeed, the study of the area revealed the presence, near these pedestals, of many tombs, obviously attracted by them. Study also showed that the cross topped monuments were certainly erected after the basilica and before the graves surrounding them immediately. This

3 The fragments found in the Kars region (Agarak, Ani, Çengelli, Kars, Kechror, Mren...) belong to Eastern Armenia.

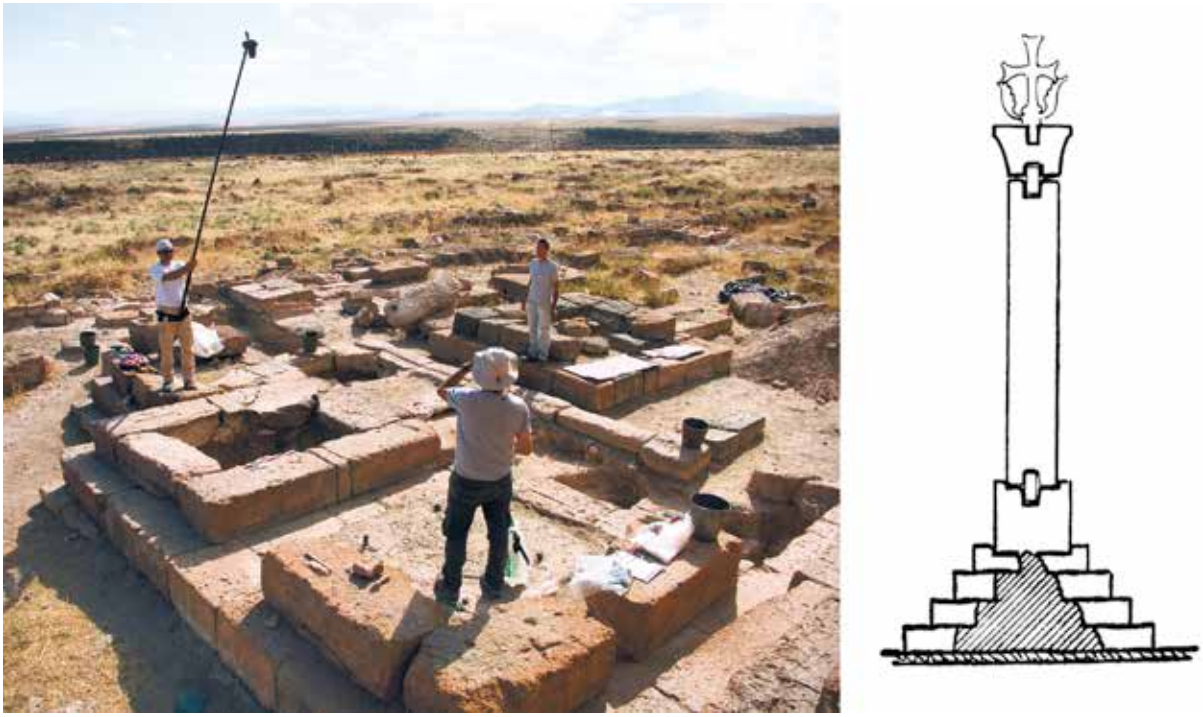

Fig. 8. a. Yereruyk. Memorial zone south of the basilica. Excavation into pedestal n° 2 (Photo: Author, LA3M, 2013), b. Schematic section of such a memorial (Mnatsakanyan 1982, 44, pl. XIII).

allowed to propose, for these monuments, a dating hypothesis between the 6th and 8th centuries.

Burial Area: Chronology of Funerary Sequences

Archaeological survey of the cemetery began since the first excavation campaign in 2011. The study of 72 tombs provided an accurate image of the evolution of the site, both chronologically and in terms of mode and density of occupancy in the vicinity of the basilica[4]. Two surveys were carried out within the funerary area. The first one, with an area of about 50 m^2, was located south of the basilica, between it and the wall marking the cemetery's south boundary. The second survey, in the form of a 3 m wide trench, was executed east of the church, between it and the eastern wall. Twenty-nine radiometric analyses were carried out on bones. On this basis, and through stratigraphic arguments, seven funerary sequences were individualized, from the Early Christian period to the early 20th century (Fig. 9).

The earliest funerary sequence must be placed at the widest between the second half of the 3rd century and the beginning of the 6th century, thus potentially before the construction of the current basilica. However, the cross-referencing of radiocarbon analyses invites to tighten this chronological range in the 4–5th centuries. This first phase is represented by five tombs including a reduction (Tomb no. 44 A) laid out at the end of a tomb of the next burial horizon. Four of them are located east of the basilica (Tombs no. 44A[5], 72[6], 73[7] and 121[8]), while the fifth one is isolated south of it (tomb no. 70[9]). The latter, beyond its position, is distinguished by the presence of two individuals – an adult and a child – buried simultaneously, perhaps with a kinship (Fig. 10).

The distribution of the tombs of this first burial sequence invites us to consider, already for this period, the existence of an extensive burial area, within a zone

4 With regard to the study of funerary archaeology and the cemetery, the author draws on the analysis and reports of his colleague Damien Martinez, a member of the Yereruyk expedition, whom he sincerely thanks.

5 CDRC, Université Lyon I, Lyon 10640 (OxA) R_Date (1696, 26) : 95,4% probability 256 (17,8 %)-299 cal AD / 318 (77,6 %)-407 cal AD.

6 CDRC, Université Lyon I, Lyon 9588 (GrA) R_Date (1625,35) : 95,4% probability 345 (5,6 %)-372 cal AD / 377 (89,8 %)-539 cal AD.

7 CDRC, Université Lyon I, Lyon 11889 (GxA) R_Date (1690,36) : 95,4% probability 256 (16,3 %)-299 cal AD / 318 (79,1 %)-416 cal AD.

8 CDRC, Université Lyon I, Lyon 11868 (SacA-40378) R_Date (1620,30) : 95,4% probability 382 (95,4 %)-539 cal AD.

9 CDRC, Université Lyon I, Lyon 10639 (OxA) R_Date (1683,22): 95,4% probability 256 (13,7 %)-298 cal AD / 319 (81,7 %)-421 cal AD. From the beginning, the stratigraphic study had shown that it predated the pedestals.

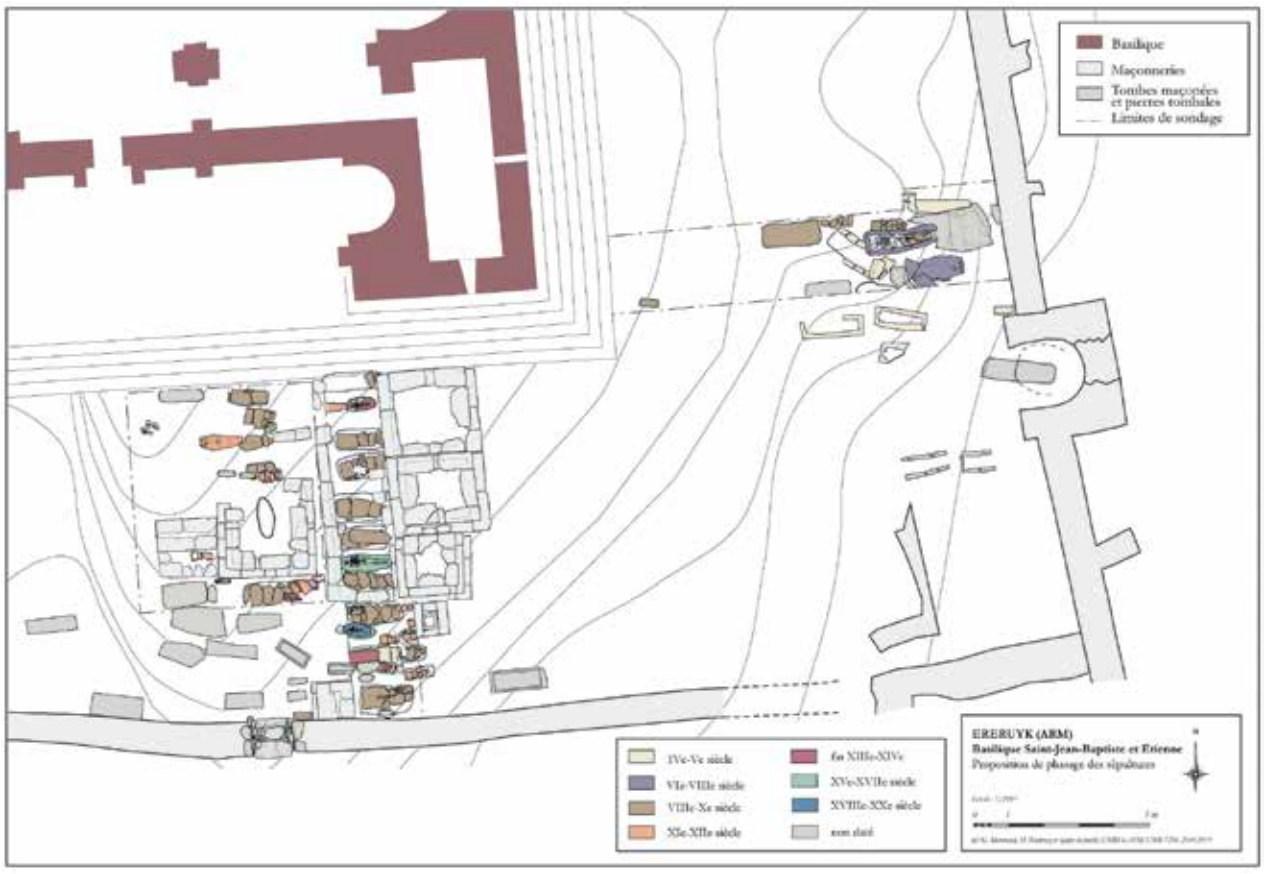

Fig. 9. Yereruyk. Funerary zone south-east of the basilica (Proposal of phasing (periodization) of graves: D. Martinez, LA3M, 2015).

already bounded by the eastern and southern walls. The south wall, in which a gate with a threshold built above a gutter was discovered (Fig. 11), belongs to a stratum in which the double burial is installed. This offers a *terminus ante quem* of the 4–5th centuries for the wall's construction. It is not known, in the present state of research, whether the location of these tombs is related to a monumental complex or a religious building. Nevertheless, one may assume an attraction by the horseshoe apse of the eastern wall, in the direction of which the tombs east of the basilica are partly turned.

The second funerary sequence is represented by two graves (Tombs no. 44B and no. 46: 7th century). These follow the axis marked by the church. The individual from Tomb no. 46[10] was buried dressed, as evidenced by the presence of a belt buckle with a stylized decoration (Fig. 12/b). The second tomb (no. 44B)[11] belongs to an immature individual; its funerary architecture is distinguished by the arrangement, at the end of the container consisting of vertically placed slabs, of a reduction box housing the bones of an adult from a grave of the previous funerary phase.

The third sequence reflects the establishment, between the 8th and 10th centuries, of a real cemetery whose organization is conditioned by the basilica and the pedestals. The tombs are distributed to the south and east of the church. If the attraction of the sanctuary remains the norm, the role of tiered monuments, intended to carry steles or columns surmounted by crosses, is evident in the general organization of the burial area. While magnifying the cross that crowned them, they probably also served commemorative purposes. Their appearance may reflect the diffusion of a liturgy centred around the memory of the dead. However, there remains the question of the patrons of these monuments. Do they honour the memory of the "dead" in general, or that of a particular person (prelate, prince…)? Archaeological analysis, coupled with anthropological survey of the tombs, allows to identify some avenues for reflection.

The study of the graves located directly to the west of the three adjoining memorials is particularly

10 CDRC, Université Lyon I, Lyon 9587 (GrA) R_Date (1365, 35) : 95,4% probability 606 (91,00 %)-709 cal AD / 747 (4,4 %)-766 cal AD.

11 CDRC, Université Lyon I, Lyon 10641 (OxA) R_Date (1497,26) : 95,4% probability 427 (1,1 %)-445 cal AD / 473 (2,1 %)-486 cal AD / 535 (92,2 %)-638 cal AD.

interesting (Fig. 9). Six of these tombs are placed in a privileged area within the burial zone, delimitated, on about 10 m^2, by reused blocks of tufa. The memory of this privileged location seems to have endured, as suggested by the small number of graves placed in this space between 8 – 10th and 20th centuries. Indeed, if in the other areas of the cemetery the density of tombs is high, with many overlaps, the space located at the foot of the three pedestals is scrupulously respected. Only three post-8th century graves, two of which date back to the Late Middle Ages, were installed within this area. In addition, their location does not disturb the previous tombs and fills vacant spaces. The tiered monuments thus play an undeniable structuring role within the burial area. They are the main markers of the cemetery. Obviously intended to attract attention, they also organize the circulation within the cemetery.

This third funerary sequence provides the image of a heterogeneous population, where women and men of all ages, as well as adolescents, children and infants, are found. This image reflects a "parochial" recruitment, probably linked to the presence of a village on the outskirts of the basilica. In addition, it underlines the vitality of the basilica complex between the 8th and early 11th centuries, during which there seems to be a phase of partial redevelopment of the western block of the basilica, attested in the south-west angular chamber by the upgrading of the floor, and probably of restoration, evidenced by an inscription inside the church.

The fourth funerary period, dated from the 11th to the 12th centuries, is distinguished from the previous one by a change in the recruitment of the cemetery. While the density of individuals appears to be equivalent, this phase is characterized by an over-representation of infants and young children. Among the tombs of this period there is only one adult, a woman who died after the age of 50. This image of the cemetery in 11th to 12th centuries contrasts significantly with that of the previous sequence and raises questions about a possible change of the cemetery's destination. It may also reflect particular liturgical practices, perhaps related to burial of small children who died before baptism, as well as a possible change in the basilica's dedication.

The inscription engraved inside the basilica, which, according to epigraphists, dates back to the 10 – 11th centuries (perhaps to 951: CIA 2017, 17), must be recalled here. It mentions the "true believers" and the restoration of the church called "martyrium" and dedicated to "the Precursor and the Protomartyr". This "restoration" can be interpreted both as an architectural repair and as a re-establishment of the dedication,

Fig. 10. Yereruyk. Funerary zone. Tomb no. 70, south of the basilica, with double burial, dated between 256 and 421 AD (Photo: D. Martinez, LA3M 2013).

Fig. 11. Yereruyk. Funerary zone. South wall, gate with a threshold (Photo: L. Harutyunyan, LA3M 2013).

that is to say the reaffirmation of a dedication a time forgotten or deleted (Donabédian 2014a, 269 – 275). In the context of dogmatic and military crises of which medieval Armenia is customary in its relations with Byzantium, such a jolt can be envisaged, before the restored sanctuary and the reconfirmed dedication are returned to the "true believers". This allows the hy-

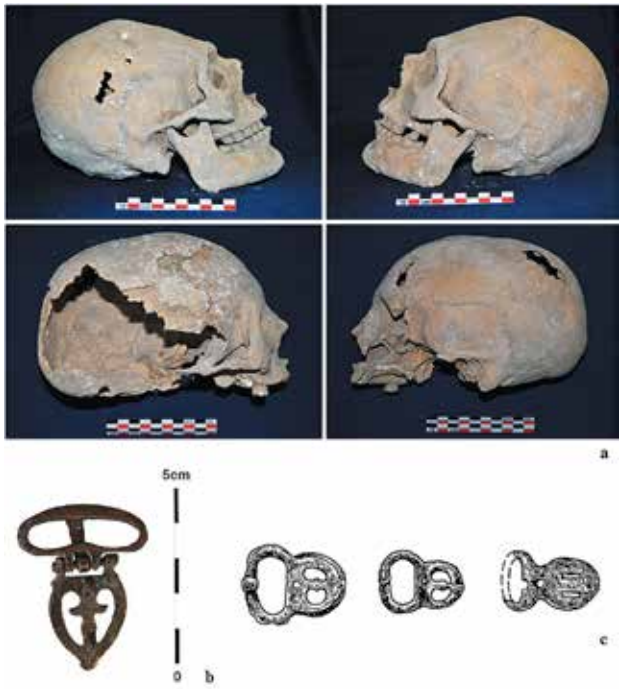

Fig. 12. Yereruyk. Funerary zone. a. Intentional deformation of two skulls from Tomb no. 44A, dated between 256 and 407 AD (Photo: P. Bailet, LA3M 2013); b. Belt buckle found under a bone dated between 606 and 766 AD (Photo: D. Martinez, LA3M, 2013); c. Dvin. Buckles dated to 9th–13th c (Arakelyan 2003, 443, tab. 157/26-28.).

pothesis that the restoration of the dedication to saints directly related to baptism and to newborns may have constituted a derogatory permission for burying, in the cemetery of Yereruyk, near the chevet of the famous shrine, infants who died before baptism. Indeed, John the Baptist, the Forerunner, is the saint who baptized Christ, and Stephen, as the first martyr, is, according to apocryphal tradition (*Protevangelium of James* and *Armenian Gospel of the Infancy*), the leader of the "heavenly firstborns" (*andraniks*)[12].

The following burial sequences run from late 13th to early 20th centuries. They are difficult to approach because they concern only a few tombs that seem anecdotal. This could reflect the presence of a small population near the basilica or a moving of the cemetery[13].

First Attempt of Typo-Chronology of the Tombs

The 72 tombs exhumed in the burial area allow a first typo-chronology of the funerary methods encountered at the site of Ereruyk. The first three burial sequences (from 4th to 10th centuries), apart from the use of sarcophagi, are exclusively marked by the presence of rock and masonry tombs, all sealed by butt-jointed tufa slabs. The morphology of the two oldest tombs, of the 4th century (Tombs no. 70 and no. 72), is significantly different from that of the later graves. They are strictly rectangular, while those of the following sequences adopt a trapezoidal form. The passage from rectangle to trapeze in the tombs architecture seems to have happened no later than the 6th century[14].

The fourth funerary sequence, from 11th to 12th centuries, is marked by a gradual passage from the masonry chest with vertical slabs set on edge, to burial in a simple pit dug in the ground. While the presence of covering slabs remains the norm, the deceased are gradually buried directly in the earth, often wrapped in a soft linen. The only adult burial identified for this phase is a simple pit grave, with only three blocks set on edge at the bedside (the western end) of the tomb. The last three funerary phases (from the end of the 13th to the 20th century at the latest) are characterized by very sober practice, the deceased being buried directly in the pit.

Anthropological Observations

The archaeological study of the cemetery went along with an anthropological examination of the exhumed skeletons, facilitated by their very good conservation[15]. In addition to details on pathologies that the population of Yereruyk had suffered from, this survey highlighted the existence of a practice that was known in Classical Armenia and the Iranian world, but which had never been observed in a Christian context: a deliberate ovoid elongation of the skull, resulting from a bandage of the head since an early age. This deformation was observed on two subjects in a grave (Tomb 44A) where several individuals had been re-buried: it concerns a male adult between 20 and 49 years of age and an 8–9 years old child (Fig. 12/a). Given the radiocarbon dating between 256 and 407 of the adult's skeleton, the original burial might predate the adoption of Christianity and the deformation could still be a pagan practice.

12 The author thanks Jean-Pierre Mahé for his comments and explanations on this issue.

13 The present cemetery is located at the foot of a small hill located about 200 m southeast of the basilica. The tombs do not predate the 1930s.

14 This is also true in western European cemeteries.

15 For these observations, the author thanks his colleague, the anthropologist Paul Bailet, a member of the Yereruyk mission.

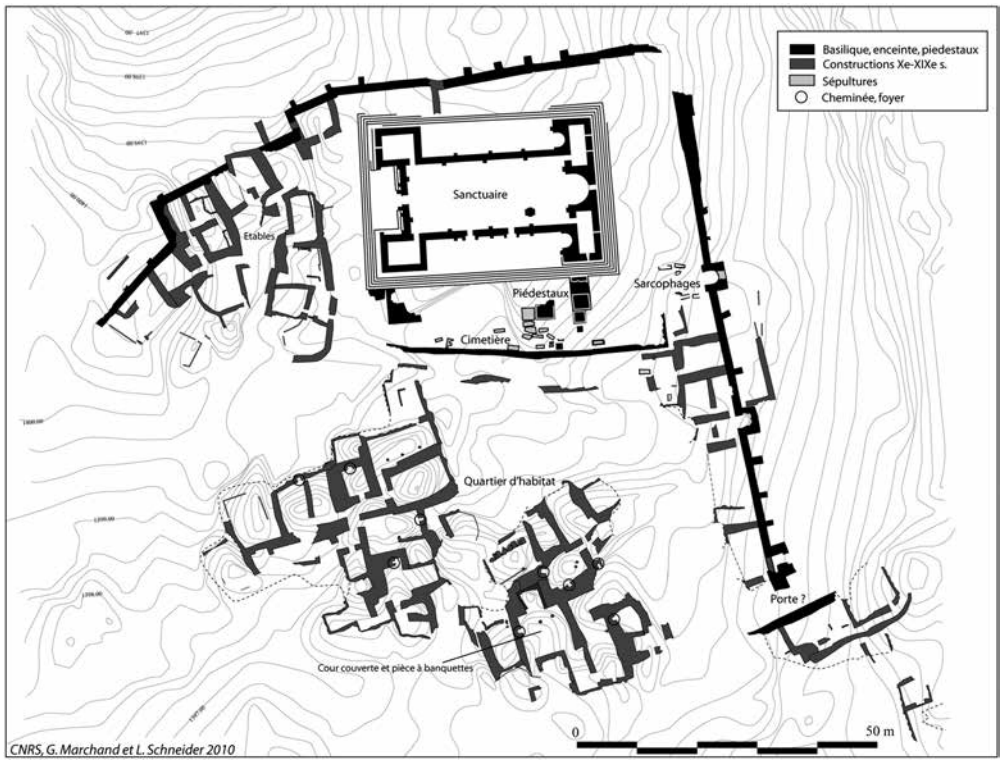

Fig. 13. Yereruyk. Plan of the central part of the site with "pseudo-rampart" (Topographic survey: G. Marchand, L. Schneider, LA3M, 2010).

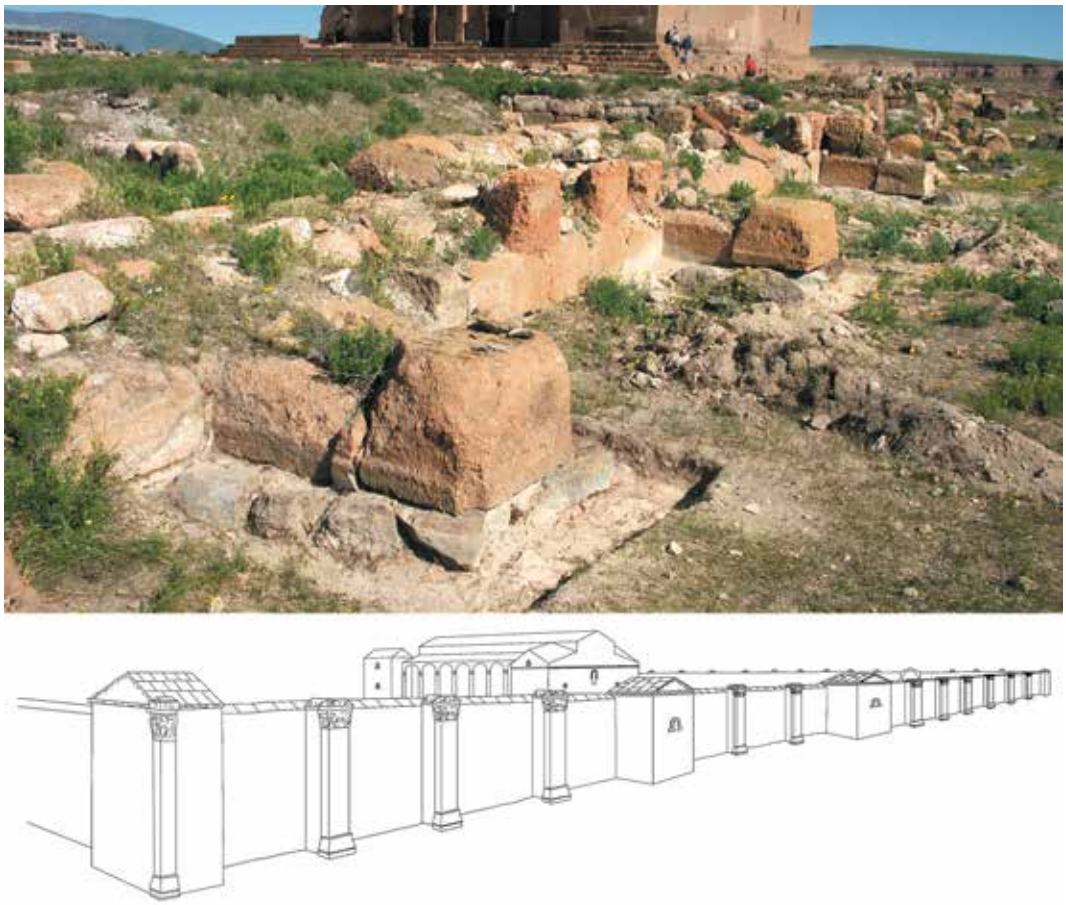

Fig. 14. a. Yereruyk. The "pseudo-rampart" from south-east (Photo: Author, LA3M, 2014); b. Eastern "pseudo-rampart". An Attempt of hypothetical reconstruction (Design: A. Hartmann-Virnich; CAD: D. Ollivier, LA3M, 2019).

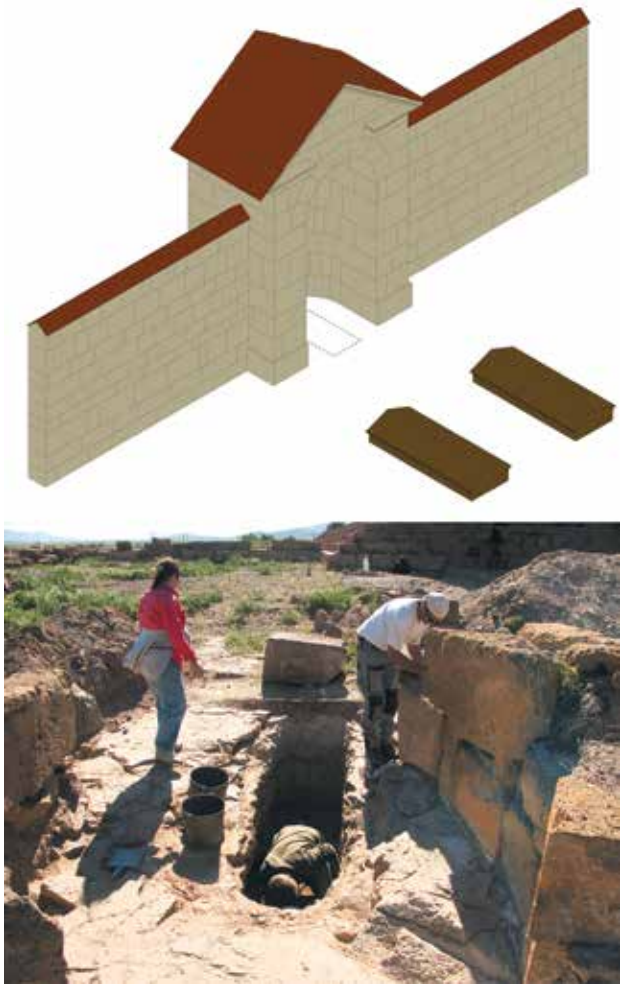

Fig. 15. Yereruyk. Eastern "pseudo-rampart". Northern "exedra". a. Schematic reconstruction (Design: A. Hartmann-Virnich; CAD: L. Maggiori, LA3M, 2018); b. View from east to west (Photo: Author, LA3M, 2015).

Funerary Furniture

Only five graves delivered objects accompanying the deceased. This apparent sobriety must, however, be nuanced by the looting that affected the majority of the graves. In a few cases, the covering slabs were put back in place after the desecration. A belt buckle was present, as we said, in a tomb dated to the 7–8th centuries (Tomb no. 46), a knife appeared in an 11–12th centuries tomb, and two pearl necklaces were found respectively in tombs dated to the 13–14th and 16–17th centuries. A bell was also found in a child's tomb dated between the 4th and 6th centuries. Concerning the belt buckle of the 7–8th centuries, its radiocarbon dating allowed to revise the chronological allocation of analogous objects: buckles of the same type, discovered in Dvin, had been imprecisely attributed to a period between 9th and 13th centuries (Arakelyan 2003, 443) (Fig. 12/b, c).

"Rampart" of the Basilica Area

The basilica and its memorial-funerary zone are bordered, on the north, east and south sides, by portions of very eroded walls (Fig. 13)[16]. The "enclosure" thus formed is incomplete, since it does not have a fourth component to the west, while its eastern portion draws a long line descending to the south-south-east. The hypothesis of a defensive function of this set of walls, moreover of a small thickness, seems therefore excluded. We will see that several arguments support the idea of an ostentatious device designed to enhance the ecclesial and funerary area.

The south wall, particularly eroded and deformed, looks so coarse today that it is impossible to propose any dating. However, as mentioned above, the stratigraphy revealed by the archaeological study of this part of the cemetery, near the pedestals, indicates that, in its ancient state, this wall dates back at least to the 3–5th centuries, which means that it probably preceded the basilica. During the excavations, in front of the fifth pedestal, as already mentioned, a door was discovered, which opened the area of the basilica on the village further south (Fig. 11). A street apparently stretched along the outer face of this south wall.

The north and east "rampart", partially eroded to its foundation or even to the bedrock, is kept only at a maximum height of two to three courses. Curiously, the northern segment, which has undergone several changes, is gradually approaching within 5 m the foot of the church podium, beyond which it continues westward through a line several times disoriented and tilted. The noticeable shift in orientation between the northern and eastern walls, and the basilica suggests a lack of synchrony between the two structures and the anteriority of the former in relation to the second. However, the constructive and monumental analogies that link the "rampart" and the basilica suggest rather a common project, in which case the "rampart" would probably have been built on the site of a more modest anterior enclosure, which existed before the construction of the current church. It could also be assumed that this disagreement is the result of taking into account the axis of a pre-existing place of worship. However, the surveys carried out inside the basilica have not identified any trace of it.

The "rampart" and its salients represent an irregular but coherent whole, marked by the same

16 The author is indebted, for the following chapters, to the contributions of his colleague Andreas Hartmann-Virnich, a member of the Yereruyk mission.

connections and discrepancies that characterize the implementation of the basilica. Although a metrological system is not clearly detectable, the relative regularity of certain dimensions shows an orderly design, and the quality of the ashlar bond reflects a desire to partially surround the site of the basilica with a wall whose monumentality would be comparable to that of the great religious building. The thickness of the wall corresponds to the average of that of the walls of the basilica, which varies in the vast majority of cases between 112 and 122 cm, another fact that argues for the relative contemporaneity of the "rampart" and the church despite their orientation divergence.

Eastern Section of the "Rampart" and its Salients

The eastern section of the wall cleared for almost 100 m is the best preserved. It is punctuated by a series of buttresses spaced about 3 to 5 m apart and by two small rectangular protruding chambers, open toward inside like exedras (Figs 13, 14). Despite their formal, dimensional and constructive variety, these salient structures form a coherent whole whose morphological differences are similar to those of the many changes in courses and foundation level within the "rampart" wall itself. The recurrence of a 57.7 cm module observed both in the sizing of the plan and certain walls of the basilica, as well as in the ordinance and construction of the small building in the valley, corroborates the other ties with the basilica, and the probability of a proximity in time, despite their discordant orientation.

At uneven intervals, but at a fairly regular pace, the outer side of the wall was marked by a series of powerful protruding buttresses that alternated with two rectangular-plan aedicules, whose interior had the shape of a slightly horseshoe "apse". The intentional integration into the eastern wall of the two salients, opened on the interior of the ecclesial area, confirmed by the study of the construction, raises the question of their function; it should be noted that the excavations revealed in the centre of the larger chamber to the north, in the south-east corner of the basilica enclosure and in the alignment of a group of sarcophagi, a deep natural cavity in the rocky soil, which had been artificially enlarged (Fig. 15).

The strong erosion of the "rampart" and the dispersion of the components of its superstructure and decor deprive us of the elements necessary for a reconstruction of its elevation. Thus, the height of the wall and that of its pilasters to which one is led to attribute certain fragments of monolithic shafts and carved

Fig. 16. Yereruyk. Vaulted building in the valley. East and west facades, and internal view from west to east (Photos: Author, LA3M, 2010–2014).

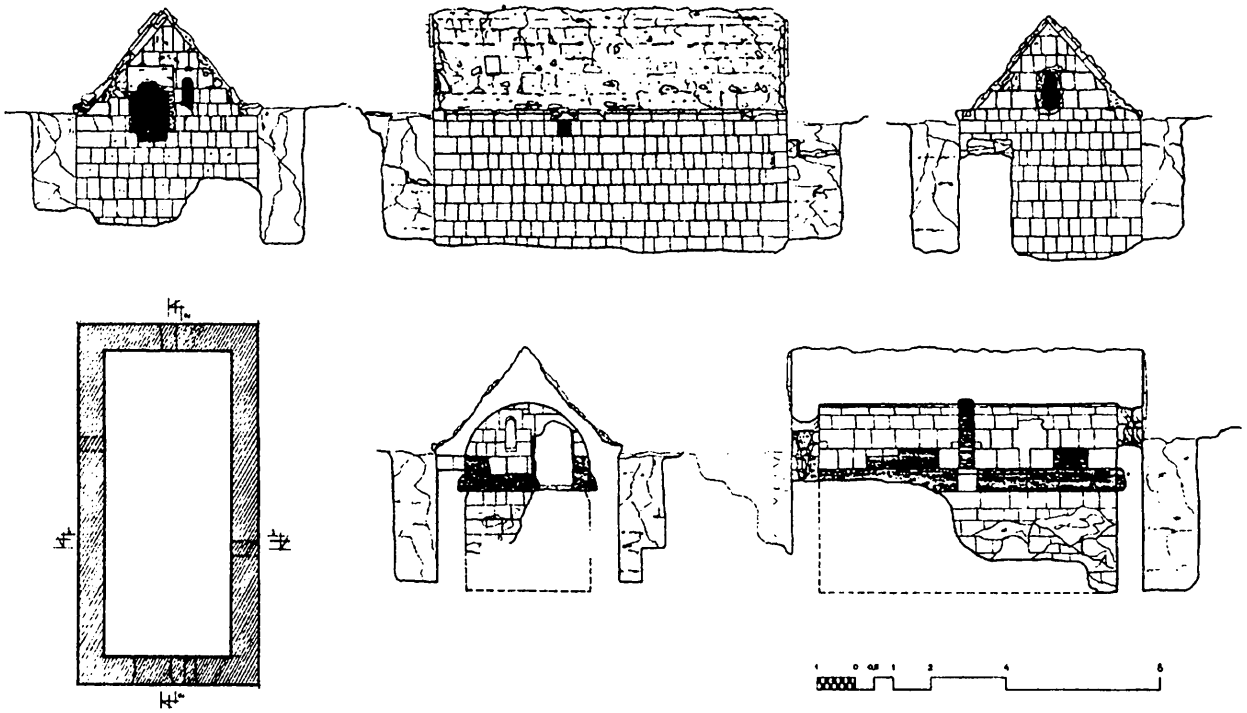

Fig. 17. Yereruyk. Vaulted building in the valley (Architectural survey: H. Sanamyan (1985), Ter-Martirosov 2001, 241, fig. 3).

capitals, the height of the protruding chambers and the shape of their vaulting, as well as the shape, order and trajectory of the wall to the south of the basilica remain speculative. There can be no doubt, however, that the eastern and northern "rampart" must have strongly marked the landscape by the solemn cadence of the ornate buttresses, and prepared the visitor mentally and spiritually for the approach to the sacred place and its necropolis. The draft restitution, purely hypothetical, that we propose has only the ambition to give a summary idea of its appearance (Fig. 14/b).

Several modifications suggest that the "rampart" remained in elevation and function, but without retaining its original monumental character. At a later time, the south-angle salient was incorporated into a larger structure that can be interpreted as the remains of a monumental gate, closed in a third time by a wall in the extension of the eastern line. The southern foothills of this passage were made up of a larger massif, the starting point of an extremely thick wall (about 250 cm) that followed an oblique trajectory towards the valley. The rough and irregular technique of these buildings composed of reused stones is quite different from that of the basilica's "enclosure", and their ordinance implies a substantial reorganization of the site and its access, at an indeterminate period. The same is true of the many parasitic constructions that have been raised against or at the expense of the "enclosure".

Small Vaulted Building of the Valley

Less than a hundred meters north-east of the basilica, a rectangular, vaulted, oriented building of small dimensions (9.25 m × 4.75 m; 6 m high) is partly drowned in the sedimentary deposits of the valley. It is the only architectural structure of the Yereruyk complex that has retained much of its elevations (Fig. 16). However, its roof has lost its covering plates – only two fragments remain –, and its interior is severely damaged. Its vault was further deteriorated by heavy rains in the spring of 2012, especially at the eastern end of the north wall. A temporary wooden support was installed in 2016, pending a more sustainable consolidation. This small building, partially cleared in 1985 – 1986, was the subject of an archaeological and architectural study (Ter-Martirosov 2001). It was then identified as a medieval cistern (Fig. 17).

As part of the LA3M mission's program, the building was submitted to further investigation. The study of building archaeology identified a metrological kinship between the vault of this hall and the basilica. The courses of the barrel vault mostly respect a module of 57.3 to 57.7 cm in tangential dimension. At the eastern bay, two courses of a larger size (70.3 and 71.2 cm) intersperse symmetrically on either side, a dimension that responds exactly to the thickness of the peripheral walls. For its part, the 57.3 – 57.7 cm module corresponds, with a variation of four centimetres, to

the sixth of the width within the perimeter of the room (337 – 339.5 cm) and, with a variation of six centimetres, to the 16th of the length without the perimeter. The same module is also identified in the construction of the basilica where it corresponds to half the average thickness of the walls[17].

The small vaulted hall remains problematic, both in terms of dating and function. With regard to dating, as we have just seen, the metrological and technical kinship of the internal bond, especially of the vault, with the masonry of the basilica, speaks in favour of a first building phase towards the 6th c. On the other hand, a few indications seem to reveal a second step. Indeed, as F. Ter-Martirosov had observed, the steep incline of the roof and the vertical position of several stones on both external and internal masonry suggest a repair of the walls and roof at an imprecise period of the Middle Ages. Nevertheless, the analysis of building archaeology favours the hypothesis of a coherent design, as it has not identified any evidence of partial modification or reconstruction.

As for the function of this construction, a religious (liturgical) use can be ruled out from the outset, since, although oriented west-east, it is deprived of apse, its eastern wall being flat, and was apparently deprived of door. Because it is partially drowned in the valley and almost devoid of openings, it was assumed to be a cistern. Presumably it indeed performed this function at a late period because the lower edge of the small bays pierced in the west and east walls shows marks of wear likely due to the friction of a rope. But the absence of any trace of waterproof plaster on its internal walls seems to exclude a main and durable function of cistern. On the other hand, the hypothesis of a funerary function seems plausible: the kinship of this building with a series of Armenian mausoleums, first of Early Christian and pre-Arab period (4 – 7th centuries: Zovuni, Jrvezh, Nakhtjavan, Mren), then Medieval (11 – 14th centuries: Ani, Sanahin, Dzagavank, Urtsadzor/Zinjirli, Noravank), which present a rectangular, often underground hall, deprived of apse, with limited access (in Urtsadzor, early 14th century, the burial chamber of the three-storey funerary chapel, although built above the ground, was deprived of any access) and reduced lighting, could argue in its favour. This would explain why the building was partially buried in the valley[18].

The precarious stability of the building and especially the poor condition of its vault forbid any excavation in its interior, as well as in its immediate surroundings. On the other hand, the mission was able to conduct a geo-archaeological survey outside, in the lower layers of the area almost immediately to the east of the building. This survey revealed the presence, a few meters further east, of a thick artificial pile of rocks. Presumably, this device was intended to protect the construction by forcing the seasonal stream of the valley to bypass it. This finding could disprove the hypothesis of a cistern from the beginning and instead confirm that of a mausoleum designed (at least in part) as a *hypogeum*.

The Row of Walls Downstream, Southeast of the basilica

At the south-east end of the site, the imposing ensemble of three (or four) walls whose remains, perpendicular to the valley, seem to have crossed it, with a portion of wall to the north-west appearing to outline a junction with the "enclosure" of the basilica area (Fig. 1), had been reported, as early as 1907, as a water retention dam in use in the 19th century. Here, too, there is the same double question of original function(s) and dating(s). The clearings and excavations undertaken in 1958 by A. Sahinyan, and the brief examination by F. Ter-Martirosov in 1985 – 86 could not provide convincing answers. After several interventions, mainly geomorphological, along with surveys of underground archaeology and building archaeology, the LA3M expedition, without deciding on the exact dating of successive phases, was able to propose a nuanced interpretation.

It considers that the row of walls was gradually formed from south to north, from downstream to upstream. The southern wall, probably the oldest, very rustic in its part that could be studied, had a function of hydraulic dam, since the mission discovered fragments of ceramics of Classical period deposited at the foot of its north face. According to H. Khachatryan, these shards date back to a period between the 1st century BC and the 1st century AD. This initial use, which

17 In the basilica, the multiples of a 57.3-57.4 cm module are in keeping with certain dimensions: double (thickness of the walls), 12 (length of the nave bays, north-south width of the western corner chambers), 20 (width of the nave), 42 and 63 (dimensions of the building without perimeter), but it does not appear to be a coherent system in the strict sense of the word.

18 A different functional hypothesis was suggested at the Yerevan international conference of 24-26 June 2019 by Walter Kuntner: that of a cooler, as is sometimes found in ancient and medieval Middle East. An original lead which would require further investigation, notably excavations to verify the existence of an indispensable sump. However, the absence of a door already seems prohibitive.

Fig. 18. Yereruyk. "Dam". North face of the two north walls: the middle wall, at the top and the one upstream, at the bottom (Photos: Author, LA3M, 2015).

was perhaps not the only one, was then combined, in two stages, with a function of strong viaduct spanning the valley, by the successive addition of two walls upstream, forming a much more accurate and monumental work. The spaces between these walls were filled in. To this second function was apparently added a third one. Indeed, by their very neat and lively north faces, with pilasters on the second wall and powerful bleachers at the foot of the third one, the two successive north walls were likely intended to underline the perspective towards the ecclesial area (Fig. 18). In addition to the effect produced by the "rampart" to the east of the basilica, the multi-walled structure thus highlighted the approach of the site from the south-east, where one of the main accesses to the site was probably located. It is thus probable that the structure had also an ostentatious function, that of bringing out the solemnity, the sanctity of the place.

Regarding dating, in addition to the information given by the southern wall, the study of building archaeology provided an indication, although still thin, but worthy of attention: the north face of the intermediate wall shows, by the quality of its bond, its pilasters and the arrangement of its courses, a design and technique similar to those of the basilica. From these observations and results, an approximate and hypothetical picture emerges: the first wall to the south was erected at an "ancient" period (Classical, Early Christian?); the second wall was erected a few metres further north, at a time perhaps close to the 6th century[19]; finally, the third wall was built north of the previous one, at a later period, impossible, for the time being, to fix, itself modified in its lower sections and diverted to the north-west.

Rock Halls and Dwellings

Two irregularly shaped rock rooms are dug into the rocky platform about sixty-eighty meters north of the basilica. Roughly arranged in natural cavities, these more or less parallel oblong spaces of approximately equal length are oriented roughly west-east. F. Ter-Martirosov surveyed them in 1985–86, interpreted them as Early Christian chapels on the basis of their orientation, and considered that they could have preceded the basilica. There is however no confirmation of this hypothesis, neither for the function, nor for the dating.

A group of irregular ruins can be seen to the west and south of the basilica. Their uncovering is the result of an extensive excavation campaign undertaken in 1987–88 by the architect Vahagn Grigoryan, but interrupted in December 1988 and left undocumented. The remains of these coarse constructions evoke modest, late (modern–ca. 19th century) dwellings, with, in the southern zone, the remains of chimney houses and, in the western zone, attachment devices proper to barns or sheepfolds. The ensemble corresponds obviously to the "wretched hovels of a poor village" seen by N. Marr in 1907. However, there is little doubt that an ancient village existed here, and also well beyond, as attested by inscriptions, archaeological evidences and tombs dating. This was the large medieval (probably Late Classical) village of Yereruyk.

Headstones near the Basilica

The Yereruyk site has a high number of tombstones (ca. fifty) of a type common in Early Christian and medieval Armenia. Many of these stones have been assembled north of the basilica (Fig. 19). These are monolithic blocks, rectangular at their base; their upper part has the appearance of a more or less inclined saddle-roof, while the lower part has the shape of a small shelf, a

19 A fragment of charcoal taken from this location and dated by radiocarbon between 340 and 535 seems to confirm such contemporaneity.

sort of plinth, usually a little wider. Sometimes, at the junction of the "saddle-roof" and the "plinth", one or two degrees are cut, and the lateral ends of the saddle-roof are underlined by a slightly protruding band. The largest tombstone on the site – 204 cm long – is located south of the south-east corner of the basilica (Fig. 20/a). It may have remained in its original location and may have belonged to an eminent figure in the history of the site, perhaps distinguished by his piety, since it is the only one to present a carved cross on its western pediment. The cross, slightly elongated, with a simple design and moderately flared arms, is slightly protruding on a barely recessed background, which constitutes a slightly oval medallion.

The archaeological study showed that these stones were surface markers for tombs placed a few dozen centimetres below the ground. They indicated not only the location, but also the dimensions of the grave, that is the age range of the deceased. The tombstones of medieval Armenia constitute a large and quite diverse category that has not yet been the subject of a detailed and comprehensive typological study. The high number of those preserved in Yereruyk and the comparison of their forms allow some observations. The main one is that a number of apparently archaic pieces are distinguished by their reduced height and in particular a very low incline of their "saddle-roof" (Fig. 20/b). Similar headstones can be seen at other Early Christian sites in Armenia, for example in Aghts/Aghtzk. This must be compared to the shape of the little-marked saddle-roof of the sarcophagi lids of Late Classical and Early Christian period recently discovered in Tigranakert of Artsakh. This leads to the hypothesis of an evolution from almost flat volumes, still close to sarcophagi lids, towards significantly higher parallelepipeds, with a sharper saddle-roof. Examples of this kind of rather high and tapered headstones can be seen here and, sometimes with even greater height and incline, in other medieval cemeteries in Armenia. It is curious to note that this evolution leads, no longer to a slightly raised representation of the sarcophagus lid, but, in a monolithic piece, to a symbolic reminder of the entire volume of the sarcophagus surmounted by its lid.

In Armenian medieval cemeteries, another type appeared alongside the previous one, apparently later. It has the shape of a parallelepiped with a top rounded in cradle. In the Late Middle Ages and modern times, other types spread: stones in the shape of rams, and simple parallelepipeds often decorated with sculptures. In Yereruyk, only variations of the old type, "saddle-roof on plinth", are attested.

Fig. 19. Yereruyk. Sculptured stones and tombstones gathered north of the basilica (Photo: Author, LA3M, 2015).

Fig. 20. Yereruyk Tombstones. a. Tombstone (Lap. n° 78) south of the basilica's chevet (L-204 x W-76 x H-36cm) (Photo: Author, LA3M 2015); b. Two "archaic" tombstones on the northern platform, with relatively small height (Lap. 22: L-93 x W-60 x H-24 cm; Lap. 23: L-53 x W-61 x H-24 cm) (Photos: Author, LA3M, 2015).

Lapidary Collection

More than two hundred moulded and/or carved ochre tufa stones are scattered on the site. Most of them have been laid on the ground on the rocky platform north of the basilica. The campaigns of the LA3M's mission were also devoted to the census and study

of these fragments, with a view to create a comprehensive catalogue of Yereruyk's lapidary collection. Their study is obviously of great importance for a good knowledge of the constructions that stood here. They can be divided into two groups: a) architectural fragments, especially from the basilica; b) elements from the memorial sphere, especially from the monuments with a cross-topped stele or column on a stepped pedestal. However, many of these stones are heavily eroded, which does not allow an accurate attribution. They have benefited from the meticulous work of the archaeologist-designer Anna Azizyan, a collaborator of Erebuni Museum of Yerevan, whose drawings will significantly enrich this catalogue. Four examples of the second category (stelae fragments) were exhibited some years ago in the History Museum of Armenia (Grigoryan 2013).

Have at Least Partial Answers to Questions and Enigmas be Found?

We mentioned in the introduction the many questions posed by the enigmatic site of Yereruyk. Regarding the hypothesis of an ancient, pre-Christian place of worship, which could have justified the choice of location, the study showed that this entirely logical hypothesis remains weak. The place was undoubtedly occupied before the construction of the current basilica, but there is no tangible evidence of a previous shrine built on its site. Concerning the assumption that the Yereruyk ensemble, given the close links between its basilica and Syria's Early Christian churches, could correspond to a Syrian-style monastic complex, a rather negative position can be defined. Indeed, the study of the site, the comparison with Syrian monasteries, and the absence in Armenia at the time and at least until the 9th century, of any trace of coenobitic organism make the monastic hypothesis improbable. On the other hand, important arguments make it quite plausible that Yereruyk, along with Tekor, was a place of pilgrimage with great attractiveness due to the presence of highly revered relics, not only for Armenians, but probably also for Syrians. The link that necessarily existed in the Middle Ages between Yereruyk and the large nearby city of Ani also required to be clarified. The epigraphic data revealed the attention paid by Ani authorities to the agricultural capacities of Yereruyk. The fertility of its land was probably aided by an effective irrigation in which one can easily imagine the role of a water retention dam. The current aridity of the plateau should not prevent us from imagining an agricultural production intended for the population of the neighbouring city.

As previously stated, the basilica must obviously be dated to the first Christian centuries, before the radical change introduced in Armenian architecture at the end of the 6th century by the generalization of domed compositions. But the study brought together a series of arguments including comparative analyses of architecture, sculpted decoration, kinship with Syria, epigraphic data... which allowed to tighten the focus of dating on the 6th century. With regard to the group of dwellings and stables near the basilica, whose present state is essentially modern, research conducted by the LA3M mission, with examination of many elements including epigraphy, dating of tombs and other archaeological arguments, showed that a medieval (or perhaps even Late Classical) origin is very likely. For the rest of the vestiges, as we saw, dating remains difficult. Nevertheless, in several cases, a chronological relationship could be detected between them, and archaeological data and kinship with the basilica gave some dating elements. This was the case with the walls around the basilica, the small building in the valley and the presumed dam. Finally, the delicate question of the function of several components of the ensemble was also partly resolved thanks to the multidisciplinary approach of the LA3M expedition. In this regard, the observations on the north and east walls of the "rampart" and on the two northern walls of the "dam" created a new perception of the Yereruyk complex: an original prospect linked to the hypothesis of a wide bridge over the valley and an access road from the south-east, with an ostentatious function for these two large wall ensembles.

In the field of funerary archaeology, it is worth noting the novelty of the investigations carried out in Yereruyk with, probably, a first in the archaeology of medieval Armenia: the systematic study of a cemetery that had operated for more than a millennium and a half. It does not seem an exaggeration to consider that the progress thus made have had a useful impact on Armenian archaeology. This experience, it seems, contributed to the awareness of archaeologists of Early Christian and medieval Armenia on the usefulness of funerary archaeology, which until recently remained outside the main field of view. Several recent investigations undertaken in Armenia and new publications bear witness to this (Nalbandyan *et al*. 2015; Mirijanyan 2017 (and, by the same author, several articles in press); Simonyan *et al*. 2017–18; the part of the 2018 conference on "The Rite of Burial" devoted to Middle Ages). Thus, the idea of promoting "the archaeology of Christian death in Armenia" to the status of a subject worthy of special attention began to make its way.

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Christian Funerary Archaeology in Armenia

Diana Mirijanyan

Institute of Archaeology and Ethnography, Armenia

Abstract. The practice of burying people is one of the earliest testaments to the development of human society. Practically all funerary structures, burials, and related materials provide invaluable data on the social structure, worldview, beliefs, burial rites, art, burial landscape, and a number of other issues that are the subject of funerary archaeology. Armenian Christian graves have not been considered as subjects of a separate archaeological study before, because of the absence of funerary goods and other evidence of religious belief and practice. Armenian Medieval burials remain only partially excavated, largely due to the difficulty of removing the upper layer of monuments. And of course, the incomplete study of the topic is explained especially by the absence of the grave goods. Burials were barely mentioned in the general descriptions of the sites (e.g. in the case of churchyard cemeteries of monastic complexes or churches), which might list the tombstones, their type, and the presence of inscriptions. Decorative reliefs have been examined as artistic objects and have been presented from an art historical point of view. In recent decades, it has become clear that the previous approaches to the study of Christian burials in Armenia don't meet the needs of the Medieval archaeology of Armenia. Therefore, the challenges of the Christian graves require us to apply interdisciplinary approaches, including architectural, anthropological, lithographic and ethnographic analyses. The present article is an attempt to present the archaeology of Christian funerary monuments and practices in Armenia as a separate scientific discipline, to list its progress and current state, and to argue that it is a crucial component of Medieval archaeology, which sheds new light on many socio-anthropological issues of the period.

Keywords: Armenia, Medieval period, funerary archaeology, burial construction, tombstone.

General Observations on the Issue

As the great armenologist Garegin Hovsepyan rightly noted, there are many remains of gravesites scattered in different regions which haven't been studied yet, and which are very important for a comprehensive understanding of Armenian culture (Hovsepyan 1987, 153). In the case of Christian cemeteries, this problem is still relevant, as a number of them unfortunately have been preserved only partially and some are only indicated by memorials. Compared to the study of pre-Christian burial structures that were conducted within both individual structures and multi-person tombs (Arakelyan 1957; Khachatryan 1981), Christian burials in Armenia have been only partially excavated, mainly due to the difficulty of removing the upper layers of each monument, and the results typically have been presented as particular case studies of separate monuments. Therefore, the comprehensive and thorough presentation of the study of Christian funerary archaeology of Armenia is still an open question, and the examination of the material will make it possible to form a deeper and more complete picture of the issue.

Here we want to introduce some of the previous studies, which are had analyzes except descriptions. First of all, we have to mention the work of famous architect Toros Toramanyan. In his studies, he touched upon different burial grounds and focused on matching the constructions with names from historical and lithographic sources (Toramanyan 1948, 53–56).

According to Christian ritual practice, it was forbidden to put items and mementoes in graves with the deceased, but at the same time, we still see graves that contained certain items. For example, a child-sized sarcophagus with four beads was excavated from the cemetery in Jrvej, and according to the investigator A. Zhamkochyan, the reason for the beads was that the child had an illness (Zhamkochyan 1986, 220–225).

From the Early Middle Ages, we have exhaustive information from excavations in Talin. The excavated burials were dated to the transitional period between the antique period and the Early Middle Ages, and revealed noteworthy details about funeral ritual. E. Asatryan came to the following conclusions about Christian rituals: the typical measurements of the sepulchers in Christian burials lengthened to two meters; the direction of burials were exclusively east-west, with certain deviations depending on the position of

the sun, with which people oriented the burials. It was also a new phenomenon to engrave a cross on the oriental perpendicular slabs, and to fill the burials with earth (Asatryan 1987, 4–6).

Christian funeral is basically formed by underground constructions and by the over ground obelisks which indicate their place and which are to keep the remembrance of the deceased in a vivid memory.

As we mentioned, the archaeology of Christian burials in Armenia has been never considered as a separate sphere. The exceptions are the over ground monuments that are part of the burial structures, which have long attracted the attention of Armenian and foreign scientists. Today there are many articles and number of monographs on the study of over ground monuments of burial constructions – wing khachkars, memorial columns, four-sided stelae etc. (Arakelyan 1949; Azaryan 1975; Mnacakanyan 1982; Petrosyan 2008). The same can't be said about the underground structures. The articles on the study of Christian burial structures are few, and those that exist are limited to a mere description without delving into the details. The bibliographic data on medieval burial structures are also few. Some information about the names of medieval burial structures has been preserved in written sources. Instead the reports on canonization of burial ceremonies, details of architectural and construction ways of burial structures are few, and the absent data often comes from recent excavations.

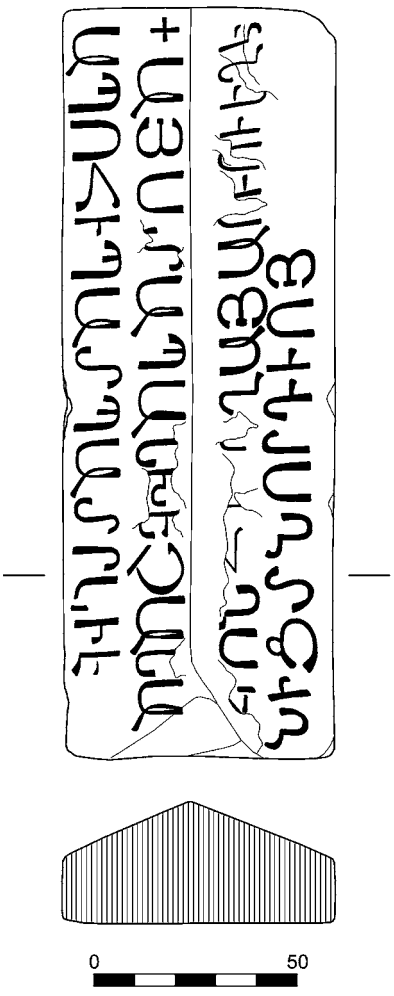

Fig. 1. The tombstone of Khechan Aragveyan (Drawing: S. Aghaian).

Previous Investigations

Archaeological excavations have been carried out in a number of archaeological sites of Armenia in recent decades, the results of which are of key importance for the archaeology of Christian funerary ritual in Armenia. These studies once more demonstrate that modern research on Christian burial constructions is inextricably linked to a number of related disciplines and therefore must be approached from an interdisciplinary perspective. In the present article, we have distinguished five of these monuments, which also are basis of our investigations.

1. In the 1990s, Early Christian burials were excavated near the basilica church found by the Etchmiadzin House of Culture. One grave had a two-sided tombstone (Kharakhanyan et al. 1992).The inscription on the gravestone proves that the burial belongs to Khechan from the famous Aragveyan dynasty (Fig. 1). The historian Sebeos writes about Khechan, that he, along with other princes, informed the authorities at Dvin about the Arab invasions of Ayrarat (Sebeos 1979). In this case, the combination of historical and lithographic evidence becomes crucial to correctly dating this type of tombstone.

2. Remarkable data on Early Christian rock burials were obtained during excavations at the site of Agarak. Here, in the northeastern part of the first rock formation, four rock-cut burials laid out in irregular rows have been unearthed (Karapetyan, Yengibaryan 2002). In these graves, the western sides have rounded or rectangular corners, and they are wider than the eastern sides. Of this group, the no. I burial is particularly distinctive in its structure, size and design, with rectangular, smooth walls and floor (2,27x0,89x0,8m). The burial's upper edges were stepped to allow for a cover slab (Fig. 2). The study of the Agarak rock burials proves that here we are dealing with family funerals where pagan and Christian members of the same family are buried. It is important to note that since we are not talking about a Christian cemetery around a

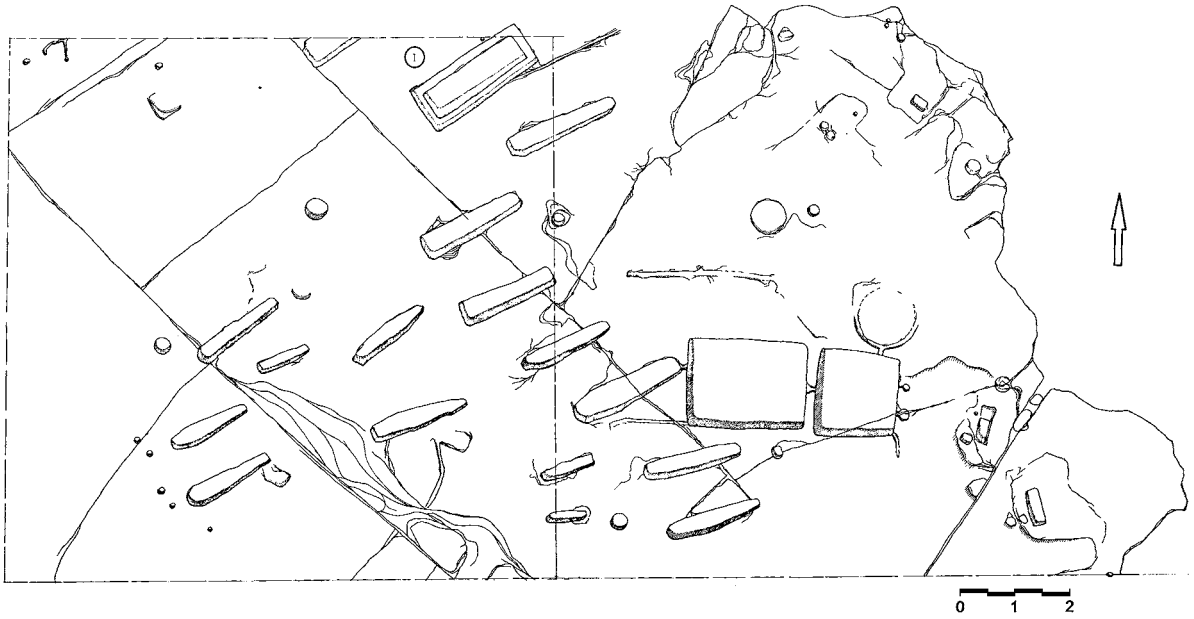

Fig. 2. The rock burials of Agarak (Drawing: H. Sanamyan, computer design: S. Aghaian).

church, it was possible to bury members of the same family in the same place, side by side, regardless of religion.

3. New and interesting evidence has also been uncovered by the excavations of Chichkhanavank, where the Christian cemetery (Nalbandyan et al. 2015) was spread around the Early Medieval church. The most remarkable of these burials are the tombs containing ceramic oil-lamps, which are still unique among the Christian burials of other sites (Mirijanyan, Nalbandyan 2019, 108–121). The study of these burials suggests that although the pagan custom to put the lamp with the deceased was passed on to Christian burials, there was nevertheless a semantic change (Fig. 3). It is likely that in the Early Middle Ages, oil lamps were votive symbols of the teachings of Christ. The symbol of light signified ascending to the eternal kingdom, since the prophetic word is considered as a lamp that dispels darkness until the sun shines and the sun rises in the hearts of believers (Bible, 2, Peter, 1.19).

4. The next important monument is Yereruyk, which was excavated in 2011–2015. For the first time, both the burial structures and the anthropological material were considered in detail here, resulting in the discovery that in the 11–12th centuries, an unusual number of women, children and infants were buried around the church. At the same time, the excavations at Yereruyk in 2013 have shown that there are not always burials under large monuments with a stepped stylobate, and their absence is particularly evident in this cemetery. However, during the excavation of the basilica in Kasaкh, at the southeast corner of the temple, in the middle of the stone slabs of the memorial monument, skeletons of an adult and a child were found (Tonapetian 2014, 229–233). In addition, during the 2018 excavations of St. Vartan Church in Angeghakot, 9 in-ground burials were found, on which a monument had been erected, the fragments of which were scattered around (Aleksanyan 2019, 59–74).

5. In recent years, the burials found at the Aghtsk archaeological site have provided interesting information. The most remarkable of them are three ossuaries made of red and white tuff found in 2016 (Simonyan et al. 2017–2018, 27–29). They were found near the altar of the Early Medieval church, under the slab floor, holding human remains in a dilapidated condition. These ossuaries are interesting both in appearance and in their mixed human bones. For example, in one of the earliest centers of Christianity in Palestine, dozens of such ossuaries were found in caves (Belaev 2000, 26–27), while in Armenia they were discovered for the first time near the church altar, which proves the high class of the deceased. It should be noted that such stone boxes have a sign of the cross. There are two points of view on their function. Some researchers think that the sign has a purely practical meaning, for correctly putting and hermetically closing the cover slab on the stone box. The second group unequivocally acknowledges the symbolic significance of the cross (Belaev 2000, 28–30). We think that the two goals were combined at the same time, as other markings could be used to direct the cover slab.

Besides the excavations of famous archaeological sites, valuable research on the issue under consideration is also provided by individual discoveries. One of the most remarkable findings is the use of sarcophagi in the developed Middle Ages, about which information was absent until recently. In particular, there is a sarcophagus in front of the History Museum of Sisian (Qaredaran) (Fig. 4). Based on the archaeological features of the letters, the sarcophagus dates to the 11 – 12th centuries. The lithographic examination of the inscription shows that the sarcophagus belonged to King Gregory 2 of Syunik, who died in 1166. He was probably originally buried in the Shaki monastery (Harutyunyan 2018, 142 – 148).

Current Studies and Further Research

In the last 5 years, the author carried out field surveys combined with an analysis of the written sources to revise our knowledge of the Christian grave structures and burial practices of Medieval Armenia. Based on the previous and current research on the problem, we have tried to examine the types of underground structures of Christian burials, the types of above-ground tombstones, chronological boundaries, the course of development, changes in practices, and so on. Medieval underground burial structures are divided into the following types: clay and wooden coffins; in-ground and rock-cut burials; slab boxes; sarcophagi. Excavations in recent years have revealed a new type of burial structure, which we conventionally call "tile burials" because the burial structures were covered with flat tiles (Mirijanyan 2014, 284) (Fig. 5). At the same time, we have examined in detail changes in the burial rites compared to the previous period. Historians prove that during the reign of Catholicos Nerses 1 the Great (353 – 373), the church meeting convened in Ashtishat (353) stressed the need for Christian behavior during funerary rituals, which had to be performed with psalms, hymns, and blessings, with candles and lighted lamps. This information is confirmed by the excavation of burials with oil-lamps around Chichkhanavank. We have made a detailed analysis of about two dozen tombstones from the Early Medieval period around Armenia, which we have studied and drawn (with architect S. Aghaian) in order to present their types, changes, and the trajectory of their development. Previous researchers were mostly interested in the inscriptions, and as a result, Early Medieval tombstones, their types and structural details weren't carefully considered. In recent years, archaeological excavations and incidental finds have provided an opportunity to pres-

Fig. 3. The tomb with oil-lamp from Chichkhanavank (Photo: T. Aleksanyan).

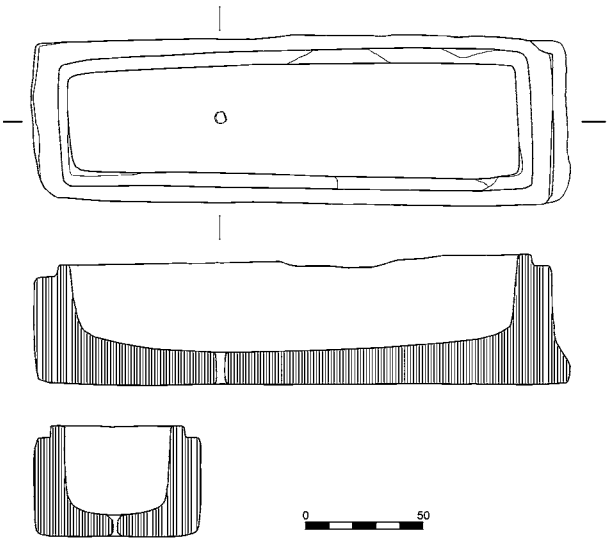

Fig. 4. The sarcophagus of King Gregory II of Syunik (Drawing: S. Aghaian).

Fig. 5. The burial structures covered with flat tiles (Photo: S. Hobosyan).

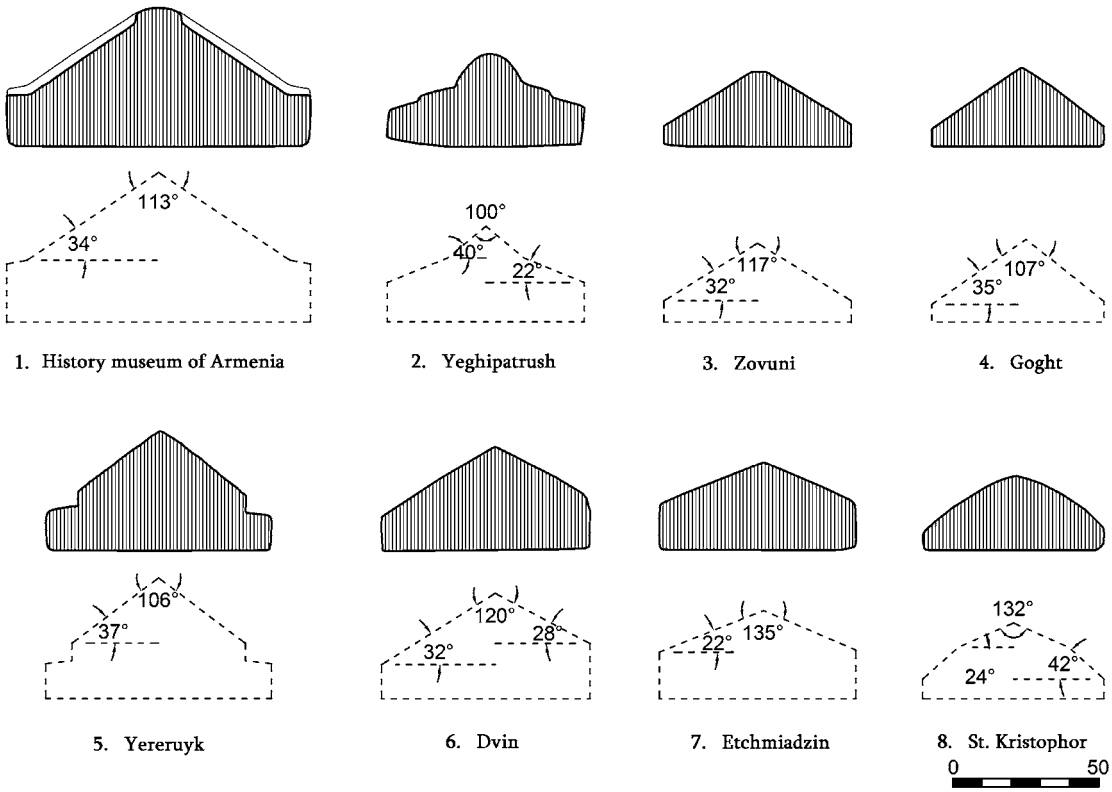

Fig. 6. The shapes of Early Medieval tombstones (Drawing: S. Aghaian).

ent the diversity of Early Medieval tombstones, both in width of the sides and in types, and to give more exact dating. Based on the carving of Early Medieval tombstones, the gravestones can be divided into three types: 1. symmetrical-triangular, 2. asymmetrical-triangular, 3. asymmetrical-stepped (Mirijanyan 2019, 121–129).

The best examples of symmetrical triangular tombstones are the gravestones of David Gntuni, Yereruyk, Zovuni, Goght, Etchmiadzin (Fig. 6/1, 3–5, 7). The angular parts of their tops range between 106˚–135˚, and the upper sides-between 22˚–37˚.

From the asymmetrical-triangular examples, we highlight the gravestones of Dvin and St. Christopher in Dashtadem (Fig.6/6,8). The angle of the top of the first of them is 120˚, and the angle of the second is 132˚. The angles of their sides are very different, with the Dvin gravestone measuring 28˚–32˚, and St. Christopher 24˚–42˚.

The type of asymmetrical-stepped tombstones is represented by the example of Yeghipatrush (Fig. 6/2). Similar tombstones are also known from Aruch, Aghtsk and Chichkhanavank. They are located with two-slope gravestones and dating to the same period, 7–8th centuries.

Thus, at first glance, the Early Medieval tombstones look the same, but detailed studies show that they differ in size, processing of the stone, and in the angles of their upper sides and decoration.

The detailed examination of the morphological changes found in High Medieval tombstones gives grounds to divide them into two periods: 10–11th and 12–13th centuries. And according to this typology, there are three groups of gravestones: two-slope, smooth, and with round tops, which are preserved with certain changes in the following centuries. The two-slope tombstones of the 10–11th centuries represent an intermediate stage between the examples of previous and following epochs.

To illustrate the morphological changes of tombstones between the 10th to the 13th centuries (Fig. 7), we have presented two-slope examples, because the smooth and with round tops gravestone types weren't significantly altered. In particular, from the presented examples, the tombstones of Sevan (10th century) and Gogaran (end of the 9th century, beginning of the 10th century) are similar to the examples of the 7–8th centuries (Fig. 7/3, 6). However, two tombstones of Marmashen (11th century) are slightly higher and similar to the examples of the 12–13th centuries according to their structure (Fig. 7/2, 5). The examples of the 12–13th centuries in the table are represented by tombstones from Harich and Arinj, which are much higher

and have clear proportions (Fig. 7/1, 4). During this period, the two-slope tombstones come to be placed on a separate pedestal, which further emphasizes their smoothness.

So for the first time, this comparative analysis of High Medieval tombstones' structural features reveals the similarities and differences between them, and shows that from the end of 11th century, the two-slope tombstones get their elongated, symmetrical view, significantly different from the previous period.

In the developed Middle Ages, numerical inscriptions became the norm for tombstones, through which it became clear who the deceased was, and sometimes the circumstances of his death, which is what makes the study of tombstones important as a source. It should be noted that previous and current studies provide some clarification on the typology and chronology of burial structures and tombstones, but some questions remain unanswered. One of the most difficult issues in the study of Early Medieval tombstones is the possibility of erecting stelae and using gravestones at the same time. It is known that in the following centuries, the combination of khachkar (stelae) and tombstone became widespread, and many examples of this have been preserved in different places (Petrosyan 2008). However, the medieval memorial stelae are also found without tombstones, and vice versa. And while hundreds of stelae have not been found in their original location, and it is not clear whether the four-sided stelae on the tombs had separate gravestones or not, it is still clear that the two-slope tombstones which are known from the 5th century are in their original location and so have no stelae.

Note that Christian funerary archaeology in Armenia still has a serious omission: anthropological research. If we don't take into account the detailed anthropological study of Yereruyk material, in the case of the other monuments, anthropological studies are either absent or based on the examples of several monuments (Chichkhanavank, Agtsk, St. Vardan, Arnadzor necropolis in Artsvanik, Dvin, Hovannavank, Ushi, Monastery of St. Sargis and others) (Khudaverdyan et al. 2018, 60–88; Zhamkochyan et al. 2019, 33–67). Thanks to the study of anthropological material, especially radiocarbon (C14) analysis, many questions can be answered regarding the date and illnesses of the Christian period, life expectancy, and other details. At the same time, richer anthropological data will allow us to consider the anthropological and genealogical characteristics of the Medieval population of Armenia in a regional context.

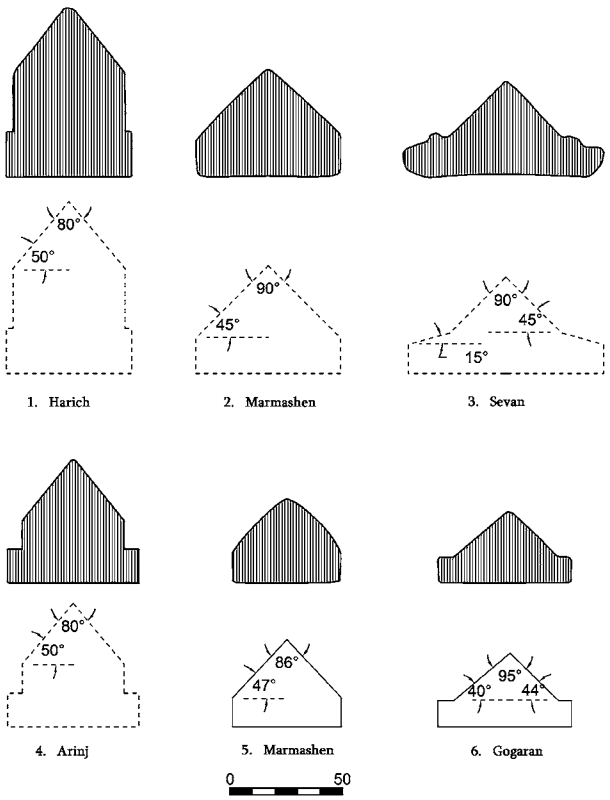

Fig. 7. Comparative table of High Medieval tombstones (Drawing: S. Aghaian).

Discussion

This article's comprehensive examination of known and the newly discovered burial structures is an attempt to reveal the temporal and typological changes in Christian burial rites, structures, and tombstones. Note that the studies are conducted regarding burial structures and gravestones of the 5–13th centuries. The chronological limits of the study were selected by taking into account the innovations that took place in the Medieval culture of Armenia as a result of important political events, which led to changes in burial rites and practices. Due to the new political events that took place in the first quarter of the 13th century (the establishment of Mongol rule), some changes took place in various spheres of Armenian culture. In burial structures, those changes are testified by the variety of tombstones, sculptures, and by the innovation and abundance of khachkars as a part of Medieval tombs. However, the Late Medieval examples remain outside the limits of this study, as they are a separate subject of study with their type, ornaments and a variety of sculptural themes. We must consider archaeology, ethnography, architecture, lithography, and, of course, anthropology, as integral parts of contemporary archaeological research, which also will help in the comprehensive study of the above issues.

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A View on Life in the Medieval Fortress at Dashtadem: Results of the 2015 and 2018 Excavation Campaigns

Astghik Babajanyan, Soseh Aghaian, Davit Davtyan, Husik Melkonyan

Institute of Archaeology and Ethnography, Armenia

Abstract. This paper presents the main results of the last excavation campaigns at the fortress of Dashtadem conducted by the archaeological team of the Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia based on the contract with the Implementing Partner AMAP Human Development NGO and founded by the US Ambassador's Fund for Cultural Preservation. The aim of the excavations was to complete the general structure of the inner defensive wall to carry out a reconstruction project. Between the citadel and at the southern and eastern sections of the inner defensive wall excavations opened foundations and uncovered a rich collection of archaeological finds from important periods of the castle's life. The excavations revealed two distinct cultural layers of the castle's history, from the late 12–14th and 15–18th centuries that were uncovered, below layers of inhabitation dating up to the 19–20th centuries. The excavated area demonstrates a distinct, dense complex of residential and household structures with numerous traces of construction and rebuilding at different periods.

Keywords: Armenia, Aragatsotn region, Medieval and Early Modern periods, fortress, architecture, material culture.

Location of the Fortress of Dashtadem

The fortress of Dashtadem is one of the few standing fortresses in the territory of the Republic of Armenia and has an important place in the fortification system of Medieval Armenia. The fortress is located at the southern edge of Dashtadem village (former Nerkin Talin), 5 km south from the city of Talin, in the Aragatsotn region (Fig. 1). The fortress consists of the citadel, surrounded with secular and ecclesiastical buildings, residential and household complexes and subterranean cisterns which are enclosed within the inner defensive wall (Fig. 2). The medieval complex was encircled by the outer defensive wall of the 19th century, fortified with seven towers in four-faceted shape with a triangular beak to deflect projectiles, and one semi-circled tower at the north which opens the entrance towards the fortress (Fig. 3). The entire complex is surrounded by the ruins of dwellings, production facilities, cemeteries, and isolated *khachkars* as well as various archaeological sites of the other periods.

Situated on a high plateau (at 1450 m above sea level) extending from the southeastern foothills of mount Arteni the fortress has dominant position towards Ararat plain from the north-west. During the High Middle Ages the fortress at Dashtadem was a node in the fortification chain surrounding the capital city of Ani and was built to the same fortification standards as fortresses at Tignis, Maghasberd, Yerazgavors-Aralegh (now in modern Turkey), Anberd, Aruch, Kosh etc. (cf. Toramanyan 1948, 176, 234–235; Dangles, Prouteau 2005–2007; Dangles 2014; 2015; Harutyunyan 1978; Khachatryan 2017).

The fortress positioned overlooking the medieval Silk Road highway that connected the major cities of Dvin to the capital city of Ani and led to the coasts of the Black Sea and Mediterranean; the fortress was involved in ensuring the safety of the caravan trade routes (cf. Arakelyan 1964, 32–33; Harutyunyan 1960, 55–60). The impressive ruins of the 13th century multi-hall caravanserai located near the fortress as well as rich findings of imported wares attest to the role the fortress played in facilitating commercial and cultural relationships during High Medieval period.

Historical Background and Overview of Research History

Written sources are scarce on the establishment and history of the fortress[1]. Only several epigraphic records are preserved on the walls of the citadel and were found as well as architectural spolia during the excava-

1 On this stage of the study of the history of the Dashtadem fortress both written sources and archaeological materials don't demonstrate the castle's foundation earlier than the 12th century.

Fig. 1. The location of Dashtadem fortress in the fortification system of the capital of Ani (Map: D. Davtyan).

tions. The first dated source is an Arabic inscription preserved on the wall of the south-western horseshoe-shaped tower of the citadel (Fig. 4). According to that inscription,

> *"To the glory of Allah, in the blessed month of Safar 570* [September 1174] *emir, great isfahsalar* [commander], *adud ad-din* [trustee of religion], *muiz al-islam* [glorifying Islam] *Sultan ibn Mahmud ibn Shavur erected this fortification…*" (Khachatryan 1987, 46, no. 1).

This inscription is very important as it both informs on the construction of the fortification and earliest mention of the full name and ranks of the last ruler of the Shaddadid dynasty (Khachatryan 1979; Margaryan 2014b, 224). His name was preserved in the Armenian inscription (1193) of the church of the Saviour in Ani "*... honored Suldan, son of emir Mahmud, grandson of Manuche ...*" (Orbeli 1966, 47, no. 134) and last dated (1199) on the wall of Ani's Abu-l-ma-Amrani mosque "*Sultan ibn Mahmud ibn Shavur ibn Manuchihr al Shaddadi…*" (Gyuzalyan 1935, 633; Minorsky 1953, 100–101).

After the Seljuk conquests in the mid 11th and the 12th century a series of emirates was established between the Armenian principalities in different parts of the Greater Armenia which ruled under the sovereignty of the Seljuk Empire (Bedrosian 1997, 248–250; Peacock 2005, 209–211). One of the Muslim emirates which played a significant role in the history of Armenia was the Shaddadid dynasty of Kurdish origin (951–1198/99), branches of which were established in Dvin, Gandzak and Ani; the central regions in the Ayrarat and Shirak provinces were under their control as well (Minorsky 1953, 33–106; Bornazyan 1980, 61–63, 235; Margaryan 2014a, 206–211). The cadet branch of Shaddadids (1064–1199) which had Armenian origins as well and a seat at Ani, was known by their construction activities, especially fortifications, as attested by their still-preserved buildings and the content of inscriptions (Marr 2011, 32, 78; Khachatryan 1987, 53–56). In the 12th century during the struggles for the city of Ani between the Georgian kingdom and Shaddadids, emir Sultan – the last heir of the throne of the Shaddadids escaped from the city and probably, took refuge in the fortress of Dashtadem. In 1199 the Shaddadid emirate was ultimately disestablished when Georgian queen Tamar (1184–1213) captured Ani and granted the city to the Zakaryans, the Armenian most powerful martial family (Minorsky 1953, 103; Margaryan 2014b, 224–225, 230). According to the colophon published in the list of manuscripts at Jerusalem Zakaryans took Ani after the Sultan Shaddadid's death (Matevosyan 1997, 281–282).

At the end of the 12th through the early 13th centuries the Armenian-Georgian combined army commanded by the Zakaryan brothers liberated the northeastern and central provinces of Armenia. Thus, among the northwestern parts of the reconquered lands the province of Aragatsotn was handed to Zakare Zakaryan and ruled by his offsprings: this line of the Zakaryan house was called after the name of his elder son Shahnshah I – Shahnshahyan (Bedrosian 1997, 253; Margaryan 2014b, 224–225, 230).

The second key inscription of Dashtadem, located in front of the Arabic inscription was still preserved in the beginning of the 20th century, but due to the tower's collapse a few fragments were found during the excavations in 2006. Fortunately, an old photo of the tower with this inscription is preserved informing that

> "*In 1307* [ՉԾՉ/756] *Aghbugha, son of Ivane, grandson of Shahanshah* [Shahnshah I] *was freeing his village of Talin from the wine tax for the favor of his brother amirspasalar Shahanshah* [Shahnshah II], *himself, his wife Sitikhatun, his offsprings and for commemoration of his ancestors….*" (Fig. 5).

In the travel accounts of Shahkhatunyants, Alishan and Toramanyan as well as other researchers this inscription was interpreted and dated to 1267 [ՉՀՉ/716] (Shahkhatunyants 2016, 241; Alishan 1890; 141; Toramanyan 1948, 130, 170; Hovhanissyan 1970, 801; Yeghiazaryan 1971; 64). Interestingly,

Fig. 2. General view of the medieval castle of Dashtadem, photographed from the south-east (Photo: A. Mkrtchyan).

Toramanyan while traveling to Talin in 1913 and 1926 twice dated this inscription – first to 1267, repeating Shahkhatunyants and Alishan; later correcting his own date to 1307 (cf. Toramanyan 1948, 130, 170).

According to the inscription from the Arakelots church of Ani,

> "I*n 1301 the lord Aghbugha coming to Ani by the command of his brother Shahanshah found the city impoverished and ruined because of tax burden that never had been. He was freeing three taxes for bullocks, cows and sheeps for the favor of his brothers and tombs of ancestors…..*" (Orbeli 1966, 27 – 28, no. 84).

The last inscription mentioned lord Aghbugha and his wife was preserved on the bema of S. Astvatsatsin church at Horomayr monastery "*…in honor of the prolongation of days of lord Aghbugha and his wife Sitikhatun…*" and dated to 1321 (Barkhudaryan et al. 2012, 317, no. 687).

Based on historical sources, epigraphic data and archaeological finds we can argue that during the 13th century and first decades of the 14th century the fortress at Dashtadem was a seat of government for the representatives of the Shahnshahyan line of Zakaryan princely house. The Zakaryans deployed their authority in wide constructions, in particular in the reinforcement of fortification system in the capital of Ani and elsewhere (cf. Orbeli 1966, 1 – 8, nos 1 – 23). Among their construction projects they fortified the citadel of the Dashtadem fortress by semi-circled towers and built the inner defensive wall (Fig. 6).

The inscription of lord Aghbugha at Dashtadem has critical significance as it contains the toponym of Talin as well, attesting that in the Medieval period the fortress was known by the name of Talin. Another fragment of inscription with the toponym of Talin was found during the excavations in 2015 (Melkonyan et al. 2017, 269, no. 3).

The study of the further history of the fortress is hindered by the paucity of primary sources. The travel accounts written by Shahkhatunyants, Alishan and Toramanyan in the mid 19th and early 20th centuries have inestimable value (Shahkhatunyants 2014, 240 – 243; Alishan 1890, 140 – 142; Toramanyan 1948,

Fig. 3. General view of the Dashtadem fortress, showing the citadel, inner and outer defensive walls, photographed from the south-east (Photo: S. Aghaian).

Fig. 4. Arabic inscription of Sultan Shaddadid on the southwestern tower of the citadel (Photo: A. Harutyunyan).

Fig. 5. Armenian inscription of Aghbugha Zakaryan, photographed in the beginning of the 20th century (Photo: G. Sargsyan).

130, 170–171, 251–252). Describing the ruins of the fortress and nearby sites they provided data on the last stage of the history of the region and as well as the modes of life of the inhabitants resettled at the territory of the fortress from the 19th to the beginning of the 20th centuries.

The study of the archaeological material obtained through excavations is the only major source revealing the sequence of the fortress' history and demonstrating living patterns during the Medieval and Early Modern periods.

In 1989–1990 the first archaeological excavations at Dashtadem were carried out by E. Asatryan and were concentrated at the northern section between the inner defensive wall and the citadel as well as the first and second storeys in the citadel (Asatryan 1990; 1991; 2004, 50–51).

During 2005–2007 and 2011 a series of diggings were carried out within the frameworks of preservation of historical and cultural monuments at different parts of the inner defensive walls and the citadel (Sargsyan 2007; Alexanyan, Mirijanyan 2012).

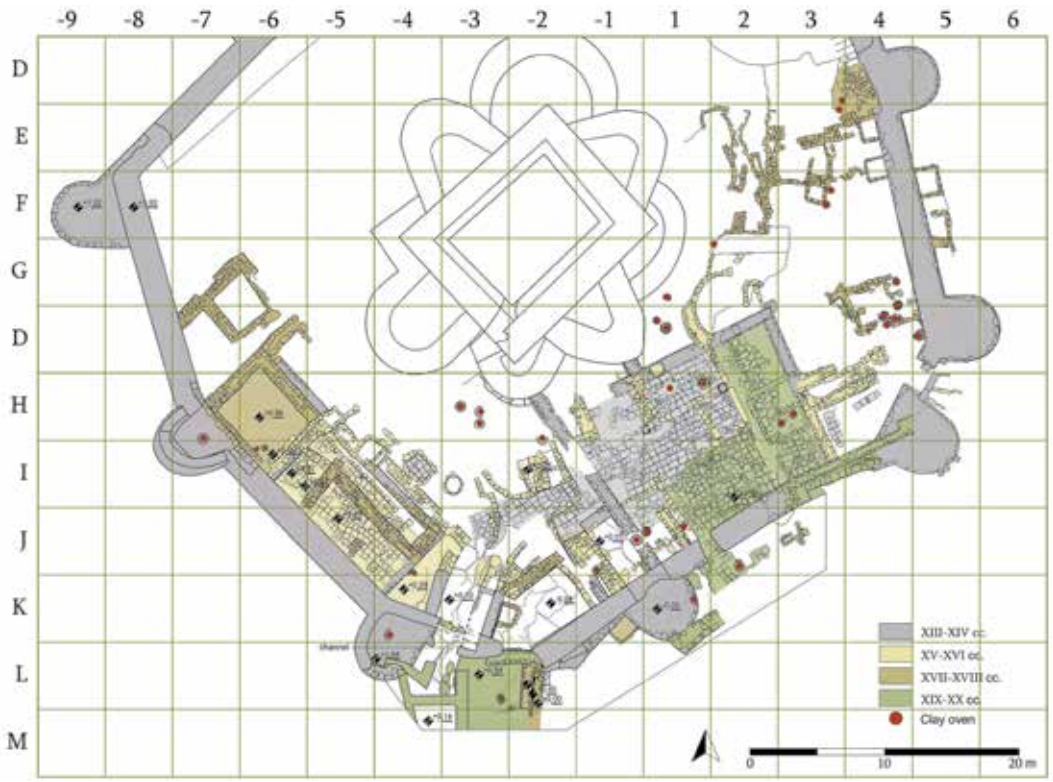


Fig. 6. Stratigraphic plan of excavated area in 2015 and 2018 (Drawing: S. Aghaian).

The contribution of the Armenian-Italian and Armenian-French archaeological campaigns is a valuable resource in the exploration of the architectural characteristics of the citadel and the arched entrance of the inner defensive wall, in the context of broader study of historical and architectural comparisons with the fortification system of Ani (Matteini 2006; Augé et al. 2011; 2012).

Unfortunately, the results of those excavations were not widely published but summarized only in the several brief reports and theses.

The large-scale excavations in 2015 and 2018 opened a complete view of the foundations of the inner defensive wall with eleven support-towers and two entrances to the citadel, as well as clarifying the stratigraphy and chronological phases of inhabitation in the fortress.

Stratigraphic Plan of the Excavated Area

The fortress of Dashtadem is the only excavated medieval site in Armenia that demonstrates the continuous inhabitation and stratigraphy from the 12th to the end of the 20th century. This is important both for the study of fortress history and typological classification and analysis of medieval archaeological finds, systematic study of which was chronologically interrupted from the 13th (Dvin) and 14th centuries (Ani and Garni) as well as by the limited analysis of ceramic material of Armenia only in the 14–17th centuries (cf. Kalantarian et al. 2009; Zhamkochyan 1981; Petrosyan 1988; Babajanyan 2015).

At the southern and eastern sections between the inner wall and the citadel (a total area of approx. 1700 m2) two distinct cultural layers from the late 12th to the 14th and 15–18th centuries with different construction stages were unearthed below layers of dwellings from up to the 20th century (Fig. 6). The excavated area shows a dense complex of residential and household structures transformed numerous times throughout its history. All architectural and archaeological deposits were uncovered beneath the thick 1m layer soil and rubble mixed with archaeological finds of different periods.

We will discuss the stratigraphic plan of the excavated area in reverse, presenting the cultural layers of the 19–20th centuries, the 15–18th centuries and the late 12th to the 14th centuries.

The presence of the 19–20th centuries is observed over the entire excavated area and is especially well-visible in the southeastern sections, both external and internal parts showing residential and household buildings such as bakehouse, stable, storeroom etc. (Fig. 6).

The layers corresponding to the 15–18th centuries were detected throughout the internal excavated area and were mainly concentrated at the southern

Fig. 7. Multi-room complex, photographed from the north (Photo: A. Babajanyan).

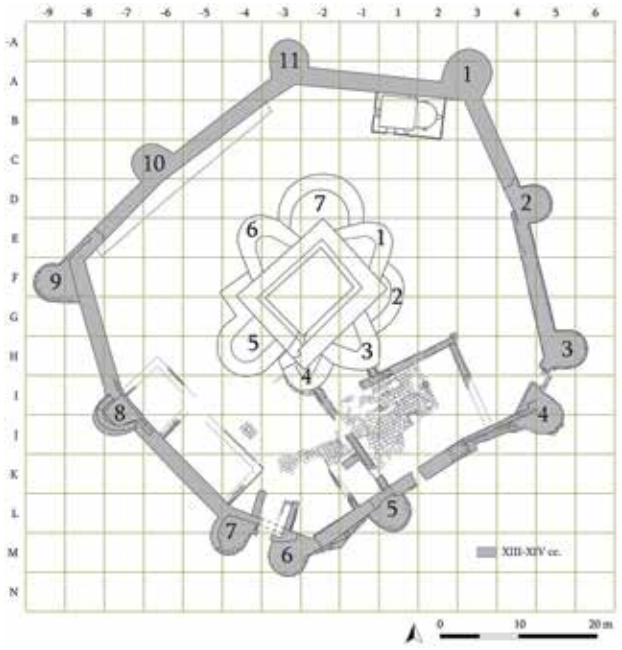


Fig. 8. General plan of the medieval castle, showing the 13th century layer (Drawing: S. Aghaian).

and southeastern sections. The 15 – 18th centuries are demonstrated by the remains of various structures distributed at different parts of the excavated area: square and round granaries built from dressed ashlar stones removed from the earlier buildings and coated with plaster, irregular rough walls as well as numerous built-in clay ovens (*tonirs*) of different sizes. The regular stratigraphic plan of this period is presented by the multi-room residential complexes situated on the ruined walls of monumental buildings dating to the 13 – 14th centuries (Figs 6, 7). These complexes were formed by crossing new and reused walls and underwent many reconstructions of different stages. The single-faced and double-faced walls were built from rough stones as well architectural spolia (bases of columns, gravestones, fragments of *khachkars* and stones with inscriptions) and contain (in the case of double-faced walls) a rubble and soil core. The floors were paved by flagstones but dressed with yellow clay during further reconstruction phases.

The architectural structures and analysis of the uncovered archaeological findings (multifarious household items, coins and weapons) shed new light on the post-Zakarid period of the fortress' history demonstrating different phases and aspects of intensive inhabitation during the periods of Persian-Turkish and Russian domination. The changes in construction techniques and qualitative and functional differences in the archaeological collections, especially visible in the ceramic assemblages were effected the socio-economic modifications to life in the fortress. Artifacts corresponding to that period show as well some military events during the Turkish-Persian and Russian-Persian conflicts: Ottoman and Safavid coins, an archer's ring, cannonballs of different sizes, shots, a stone mold for a 14 mm gun ball, gun flint and bullet cartridges with Ottoman stamps can support the narrative that Dashtadem was the site of certain military acts.

The lower layer of the excavated area corresponds to the late 12th to the 14th centuries. However, through the mid of 14th century a brief construction gap was observed in certain parts of the excavated area, which is particularly visible in the stratigraphic profile of the monumental building stretching along the southern defensive wall caused probably by extensive destructions (Fig. 8).

A remarkable phase of the fortress' history coincides with the rise of the Zakaryan princely house in the 13th and early 14th centuries, which liberated the fortress from the Shaddadids and embarked on large-scale construction. The Zakaryans additionally reenforced the citadel with semi-circular towers and built the inner defensive wall with eleven support-towers, as well as the castle chapel adjacent to the northeastern fortress wall and two newly found monumental buildings (Fig. 8).

The architecture corresponding to this cultural layer mainly dated to the 13th and the eve of the 14th centuries, however based on the integrated study of archaeological findings we enlarge our dating range of this cultural layer to the 12 – 14th centuries, dividing it into two phases: a) 12 – 13th centuries as many findings especially expressed in the glazed ceramic assemblages are typical of both the 12th and the 13th centuries, though the usage of some groups kept on as well into the 14th century and b) late 13th to the 14th centuries, the occurrence and circulation of new types of glazed

ceramics caused by new technological achievements. Archaeological findings include both everyday objects (ceramic, metal and glass collections) of local production, and expensive imports (Byzantine glass objects, Chinese celadon, Iranian, Near Eastern ceramics) as well Byzantine and Seljuk coins, which attested to the fortress' involvement in active trade and cultural relations during the High Medieval period.

Interestingly, the excavations at the external side of defensive wall revealed only two cultural layers; a) 12–13th centuries and b) 19–20th centuries. The hiatus between the 14–18th centuries can support the hypothesis of dating the defensive wall to the first half of the 13th century as well a decrease in the inhabitation between the citadel and defensive wall during the post-Zakarid period.

Architecture of the Excavated Structures

Though according to standard medieval fortification practice, the fortresses or fortified sites used inaccessible topographic position as an additional defence feature, the castle of Dashtadem situated in lowlands which do not offer natural protection, and therefore was enclosed by a high fortress wall. The core of the medieval castle is the citadel, the main and earlier structure of which is a rectangular vaulted building erected probably between the 10–12th centuries. During the 12–13th centuries this structure was protected by the support-towers holding the residential and cellar storeys. The citadel was surrounded by civic and religious buildings enclosed with the inner defensive wall. The entire complex was built directly on the rocky basalt bedrock following the topography of the site.

Defensive walls. During excavations in 2015 and 2018 the general structure of the defensive wall was opened with six newly discovered towers. The 190 m long fortress wall is polygonal in shape with eleven support-towers and two gateways, enclosing 2.5 ha area (Figs 8, 9). The preserved height of the walls is barely 1.0–1.50 m, and up to 4.50 m locally. The main arched entrance was between two towers at the southern side; the second similar entrance was uncovered at the eastern side (Melkonyan et al. 2017, 267). The 2.10–2.20 m thick walls and approx. 5.0–5.20 m of diameter towers were built from dressed red volcanic tuff blocks of 0.45–0.60 m sizes and with a core filled with crashed stones and lime mortar. The smooth ashlar with narrow interstices is so fine that the mortar is barely noticeable, forming a cohesive masonry which was protected from rainwater runoff. On the facing of tuff blocks incisions from hatcheted linear cutting from the stonemason's tool are highly visible (cf. Bessac 2011, 387, 391–393). Some of the blocks bear master-masons' lapidary marks (Melkonyan et al. 2017, 270; Bessac 2011, 407–412). Interestingly, the inscriptions containing the name of master-mason Ovanēs and a human figure with tool (probably the mason) were preserved on the wall of the citadel and the inner defensive wall (Melkonyan et al. 2017, 265).

The semi-circled and horseshoe-shaped towers are divided into two types: a) towers with a solid poured core forming platforms on top, certain having single or double stairway access, and b) the second type has a hollow internal space intending to be an armoury store or to house the castle garrison.

The main gatehouse, located between two irregular horseshoe-shaped towers was designed as a 3.35 m long vaulted passage of 3.60 m width, having an internal niche at the eastern side (Fig. 10). The portal or gate consists of 1.80 m wide opening, closing a section of arc (partly reconstructed in 2005–2006). The vertical monoliths of a door jamb which supported the door through its hinges are preserved on both sides of the entry. The rectangular small sockets for door hinge were cut on the threshold directly into the rock. This swinging mechanism allowed opening the double door inward.

The excavations carried out to the external side of the arched entrance revealed an irregular structure in front of the gateway: the seventh tower was set on the flattened bedrock while the sixth was based at a comparatively deep level, thus forming a quite uneven surface in front of the entry (Fig. 11). A 14.7 m long rock-cut channel passed directly through the centre of the entranceway along the north-south orientation. Supposingly, a drawbridge crossed over this uneven platform; however, the remains of a drawbridge were not found (probably due to later large-scale transformations in the 19–20th centuries) and should be corroborated by further extensive excavations at the external side.

The second newly found eastern entrance is a fortified gateway of 2.15 m width span, having a lintel with door sockets (Melkonyan et al. 2017, 267).

Civic buildings. Two monumental buildings typical of the 13th to the eve of 14th centuries were discovered in the course of excavations in 2015 and 2018. One of them is a four-columned, approximately square structure, a palace or ceremonial hall with 15x16 m floor space, located between the southeastern defensive wall and the southern front of the citadel (Fig. 8).

Fig. 9. General view of the medieval castle (Photo: S. Aghaian).

Fig. 10. Main gate between no. 5 and no. 6 towers, photographed from the south (Photo: A. Mkrtchyan).

Fig. 11. Platform in front of main gate, showing door sockets, uneven rocky terrace and streamlet (Photo: A. Babajanyan).

The double-faced walls of building are preserved over 1.0 m in height. The floor was paved by flagstones. A square fireplace for heating is located in the centre of the building (Melkonyan et al. 2017, 267–268). The location of the doorway, recorded at the western corner of the hall and an adjacent wall to the citadel barring the passageway to the west, suggest its secondary role. The main portal was probably opened in the southern wall, which is interrupted in southwestern section. Between the ceremonial hall and the gatehouse the remains of a courtyard of the castle are preserved, paved by flagstones and spanning to the west.

This type of ceremonial hall originates from the Armenian vernacular architecture known as *glxatun* which developed as well in the construction of narthexes during the High Medieval period (cf. Toramanyan 1911, 33; Harutyunyan 1992, 254–258). Two preserved column bases (0.65×0.65 m) consist of a square slab (plint) decorated with triangular sloping flanks in the four corners and a circular low cushion (torus). It is not possible to reconstruct the interior design of this ceremonial hall, though it is suggested that the wooden columns resting on these stone bases supported the timber arches or beams and ceiling. The record of an ornamental cornice used in the partition wall of the later period construction hints at the hall's ornate decoration (Fig. 12).

The contours of another monumental building were opened between the southern defensive wall and the citadel, extending from the gatehouse to the southwestern tower. This is a rectangular building with approx. 19×6.2 m floor space constructed using the same architectural technique as the ceremonial hall and dates to the 13th century. The 0.75 m thick walls are preserved to over 0.6 m in height. The late multi-room complex set on the walls of this building covered the entire floor space (Figs 6–8). Further excavations will shed light on the architectural structure as well as the function of this building. Undoubtedly, these two monumental buildings belonged to the ruling family's entourage, and their presence shows the important administrative role of Dashtadem castle in the 13th and the beginning of the 14th centuries.

Archaeological Materials

The excavations at Dashtadem fortress uncovered a rich collection of archaeological artifacts dominated by ceramics but also containing metal, glass and stone finds including fragments of inscriptions, *khachkars* (cross-stones), and gravestones. In the following sections we will present the main categories of finds.

Pottery

A large bulk of the archaeological materials consists of ceramics with a preponderance of unglazed pottery for daily domestic use. Due to many transformations over the castle's history the archaeological finds were mainly found in mixed back-fill contexts. However, the ceramic study was organized in the following di-

rections: all potsherds first were recorded on site with all necessary field data (date, provenance, locus, and structure). Secondly, the database was created with descriptions of diagnostic sherds and the ceramic corpus was analysed to define their typological and textural characteristics. We present and discuss the diagnostic assemblages from secure contexts which were counted, labeled, drawn and analyzed. By generating data obtained from the integrated study of ceramic material we can characterize the living patterns at Dashtadem fortress throughout its history. The ceramics wares will be briefly presented typologically[2].

Unglazed wares. Unglazed pottery is represented by a large variety of functional types that were utilized for storing, cooking, serving and lighting, wares of different domestic and craft use, as well as construction ceramics (cf. Figs 15–16):

The unglazed wares were made of red or yellow clay and gritty fabrics with coarse to fine textures characterized by a preponderance of medium-coarse to medium-fine red fabrics. The buff fabrics are less common and not widely represented. The unglazed pottery was made both on a potter's wheel and by hand. The handmade wares are rather rough and plain, being fired in simple open kilns or directly in ovens. These wares were of local production more characteristic for rural settlements than for urban sites. The very fine unglazed wares are less numerous and is characterized by red burnished jugs and bowls made of yellowish or pink clay. The surface of the unglazed pottery is generally untreated, more or less smoothed and decorated with sgraffito, incised, carved, stamped and applique ornaments.

a. Storage vessels. This group consists of large and small pithoi, large jar/jugs, made in various forms and sizes, featuring medium-coarse to coarse fabrics. The large pithoi and jars were employed for storage of dry and liquid products. The thick-walled pithoi shapes are characterized by an everted pronounced rim mainly decorated with fingerprint impressed ornament, a short neck, a globular upper body converging to the narrow flat base. This shape of pithoi generally preserves its form and function across the Medieval and Early Modern period, differing in fabric quality. A type of red-burnished pithos is distinguished in this group which is characterized by relatively small sizes, a large open thickened rim and a spherical or biconical body possessing two or four handles and decorated

Fig. 12. A section of the ceremonial hall, showing a 13th century column base, an ornamental cornice wall and built-in tonir of the 17th century (Photo: A. Harutyunyan).

Fig. 13. Architectural spolia (inscription) in the 17th century wall (Photo: A. Babajanyan).

Fig 14. A 15th/16th century gravestone turning to a trough in the masonry of the multi-room complex, photographed from south (Photo: A. Babajanyan).

with a stamped ornamented belt. These pithoi were typical of the 11–14th centuries and employed for serving wine during feasts. These pithoi are widely found from contemporary medieval sites of Transcaucasia (cf. Arakelyan 1958, 223–227; Akhmedov 1959, 197–205; Babajanyan 2015, 71–74).

The most common shape in the group is jar/jug, having everted or round open rims of various forms, a short neck and a globular or ovoid body slightly con-

2 The comprehensive analysis of ceramics found will be discussed in forthcoming papers.

vergent to a flat base. They may differ in shape and size, employed for storage of dry and liquid product. A type of jug with a flat handle attached under the rim, having a spout for pouring, a relatively narrow neck and oblong body is typical for liquid storage.

b. Kitchen wares. The best representative shape is cauldron-pot made of coarse fabric completely or partly burnt. Cauldron-pots are characterized by everted round open rim or troughed rim, spherical body and flat base. Most often one or two flat handles were attached on the rim and set on the shoulders of the vessel forming an ear-shape profile. Over the Medieval to the Early Modern periods they differ in fabric, shape and decoration. This type of cooking pot was employed for the slow and long cooking of food with more liquid volume (cf. Vroom 2009, 241).

The cooking assemblage includes as well various shallow pans with low vertical or slightly slanting walls, simple or thickened rims and flat bases. These vessels were used mainly for stewing or simmering (but not boiling) of food. They were typical of the Late Medieval period and their shapes and functions were associated with the changes in the diet and eating habits of this period (cf. Vroom 2018, 392–394).

The shapes and sizes of lids depend on their associated vessels. The largest, which may have covered large jars, pithoi and *tonirs* are of coarse to medium quality, flat and usually have a handle. Lids corresponding to pots are disc-shaped with straight, offfolded or fingerprint edges, and have raised knobs. A type with domed centre is as well common in Armenian medieval sites and has a raised knob with conical top (cf. Babajanyan 2015, 77–79).

The group also includes shallow and deep basins, as well as colanders employed in processing and preparing of different foods. Similar shapes of these open vessels have been found in other medieval sites (Babajanyan 2015, 79–80; Babajanyan, Franklin 2018, 163).

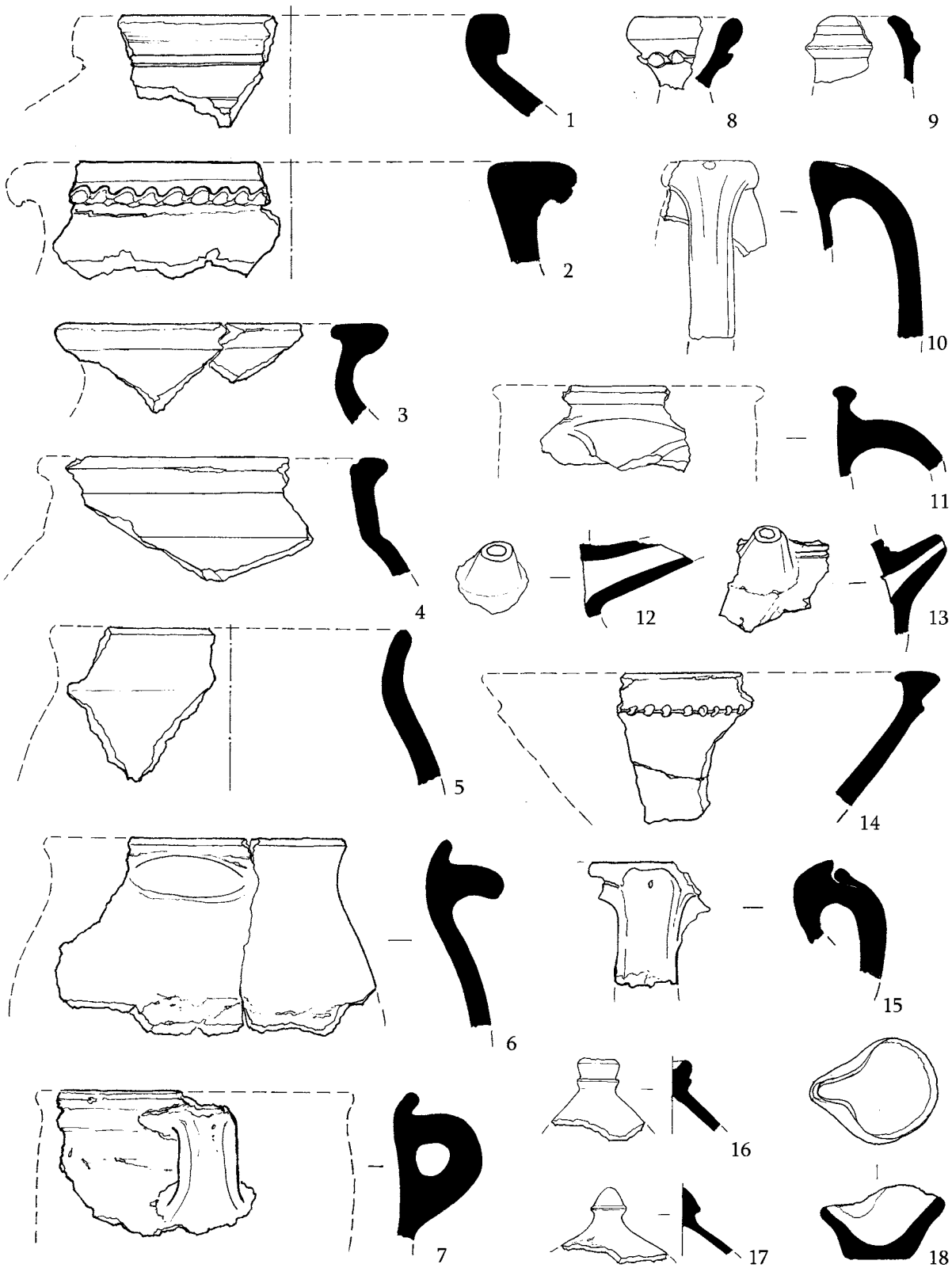
c. Serving vessels. This group represents dining wares for food and liquid consumption and serving, including pitchers, bowls of various shapes, and salt-cellars. These vessels are found both unglazed and glazed. The predominant shape in this assemblage is bowls with hemispherical or carinated profiles, having ring-form bases. The bowls may be styled with variously shaped rims, mainly inverted plain round, rounded flared or T-shaped rims. Similarly-shaped bowls are common for both the other medieval sites in Armenia and for the countries of the Near East. The bowls were made of fine to medium-fine red or yellow clay fabrics and decorated through different methods: red painting, burnishing, and engraving. Among this assemblage a type is distinguished bearing a roller-stamped decoration made with a rotating instrument that produces a series of well-arranged indentations in parallel lines on the exterior wall of the bowl. The bowls with this decoration were found at other medieval sites and dated to the 13th century (Petrosyan 1988, 61; Smithline et al. 2013, 98).

The group contains as well several globular cups with a flat base and footed bowls with a pronounced flat rim.

Drinking jugs and pitchers used for serving and consumption of drinks were made of fine to fine-medium fabrics, usually coated with slip or red burnished. The shapes of jugs demonstrate a variety of forms from globular to ovoid, differing in forms of neck and rim; some jugs have spouts on the upper part of body. The assemblage includes a type of very fine small jug coated with red slip and burnished to a gloss. These fine wares were widely found in the cities of Dvin, Ani and other urban sites and met demand of elite class (Arakelyan 1958, 222; Ghafadaryan 1952, 186). The production of these vessels was typical of Armenian ceramic centres and not spread beyond the borders of Caucasus (Izmaylova 1947, 194–195).

d. Illumination. The best representative ware of this category is that of wheel-made and handmade oil lamps, formed as a small bowl with pinched rim and flat base. This basic type of oil lamp has a long chronological range. The oil lamps are partly covered by fired traces, especially on the nib where the wick burned. A red burnished leaf-shaped oil lamp is unique in the ceramic corpus of Dashtadem and dates to the 12–13th centuries.

e. Tobacco pipes. The tobacco pipes found at Dashtadem fortress are of type common in the Eastern Mediterranean basin during the 17–19th centuries (cf. Smithline et al. 2013, 77). They are made of very fine yellow or red fabrics and vary in shape and designs. The tobacco pipes were decorated with stamped, engraved, incised and fluted design. The most characterisitic type is a red burnished tobacco pipe consisting of a bell-shaped bowl and a shank decorated in dot design. A unique bell-shaped pipe bears a master's stamp of an Armenian letter "Ա". Similar tobacco pipes with Armenian letters were found at other Armenian and Georgian Late Medieval to Early Modern sites (cf. Babayan 1996, 33–34; Babajanyan 2015, 92). Among



Principle shapes of the unglazed pottery found at Dashtadem fortress (13th-17th c.)

0 3 6

Storage vessels 1-5, 10, 11; Cooking wares 6, 7, 14-17;
Drinking jugs 8, 9, 12, 13; Oil-lamp 18

Fig. 15. Unglazed pottery: Storage and kitchen wares (Drawings: N. Mkhitaryan).

the tobacco pipes found at Dashtadem one complete pipe contains tobacco residue in its chamber. Previously, based on the comparisons with the similar findings at other Armenian sites we dated tobacco pipes to the 16–17th centuries (Melkonyan et al. 2017, 272; Babajanyan 2015, 89–93). However, based on the detailed stratigraphic analysis and thorough studies on tobacco pipes found in wider spatial range and carried out in recent years we can define their dating to the mid 17th to the 19th centuries (cf. Robinson 1985; Simpson 2008; Gusach 2016).

f. Other objects. Within this assemblage a group of ceramic items made of potsherds of discarded vessels is most numerous. These objects were elaborated generally through the rounding of edges and employed in different uses such as craft tools, playing chips or scrapers for personal hygiene. The finds of these objects are common in different medieval sites (Babajanyan 2015, 94; Badeev 2019, 30–34).

g. *Construction ceramics*. This group includes several fragments of red slipped flat tiles (solen) which were found mainly nearby the single-nave church. The recovery of *solens* suggests the roofs of religious or civic buildings were covered with tiles over the High Medieval period.

Glazed wares. The excavations uncovered a large variety of glazed ceramics, mainly fragmentary dated to the 12–20th centuries. The glazed pottery is represented generally by tablewares (small and large bowls, small jars, salt cellars, coffee cups), and oil lamps as well as storage jars of the Late Medieval to Early Modern periods (Figs 17–18): The most represented shape is deep and shallow bowls of very small to large sizes varying in profiles the predominant types of which changed across the High and Late Medieval periods. The hemispherical, segmental, cono-segmental and carinated profiles were typical of the 12–13th centuries, and proto-biconical and biconical profiles were most common in the 13–15th centuries, continuing as well the usage of shaped bowls from the previous period[3]. The bowls feature as well a variety of rims and ring-foots.

The assemblage of glazed wares consists mainly of earthenwares made of reddish, yellow and buff fabrics which are essentially of good quality, being fine and medium-fine. The percentage of fritwares and stonepaste is relatively low. The glazed corpus is dominantly of local production; the imports which came from different sources have also been included. Based on their technical and decorative characteristics, the glazed ceramics will be presented chronologically.

a. Glazed ceramics of the 12–13th centuries. The prevalent type of this group is monochrome (green, yellow, turquoise, purple) glazed and sgraffito decorated bowls, green glaze being most common. The glaze is applied over the thick white slip (*engobe*) in the interior extending just below the rim of exterior; the glaze was usually well melted, but occasionally tends to flake off. The decoration of geometric and stylized ornaments was made by a thin pointed tool or deeply incised. The monochrome glazed type includes as well closed shape vessels which were covered by one color glaze inside and the other outside.

The group includes duochrome and polychrome splash-painted as well as polychrome glaze-painted and sgraffito decorated wares. The common colors are various tints of yellow, green and brown. The wares decorated in reserved slip or slip-painted technique which were most common to the 12th to the early 13th centuries are less numerous among the glazed ceramics of the 12–13th centuries. All of the types presented in this group have parallels in contemporary sites of Armenia and Middle Eastern and Central Asian countries (cf. Yakobson 1978, 153–156; Kalantaryan et al. 2009, 107–109). The monochrome and polychrome glazed and sgraffito decorated wares continued to be in use as well in the late 13th and the beginning of 14th centuries, turquoise glaze being most common.

b. Glazed ceramics of mid 13th and 14th centuries. The majority of glazed wares found at Dashtadem dates to this period. These wares feature monochrome, duochrome and polychrome painting (escentially black, green, purple, blue dyes) under transparent colorless or colored alkaline-based glaze, most often various tints of blue-turquoise (known as under-glazed painted wares). The polychrome glaze painted and splashed glaze painted types were characteristic to this period. The bowls were decorated with geometric, and stylized floral and vegetal motifs. A set of glazed ceramics typical of this period was well presented in the assemblage of the medieval settlement of Arpa (Babajanyan, Franklin 2018, 164–165). These types of ceramics were widespread in different ceramic centres from Central Asia to the coasts of Mediterranean (cf. Vakturskaya 1959, 322; Sayko 1969, 45; Jenkins-Madina 2006, 78–113; Daiber 2006, 309).

The group includes as well a few wares with slip-painted decoration a type which is more common

3 See geometry of the principle medieval bowl shapes in Mason 1997, fig. 2.

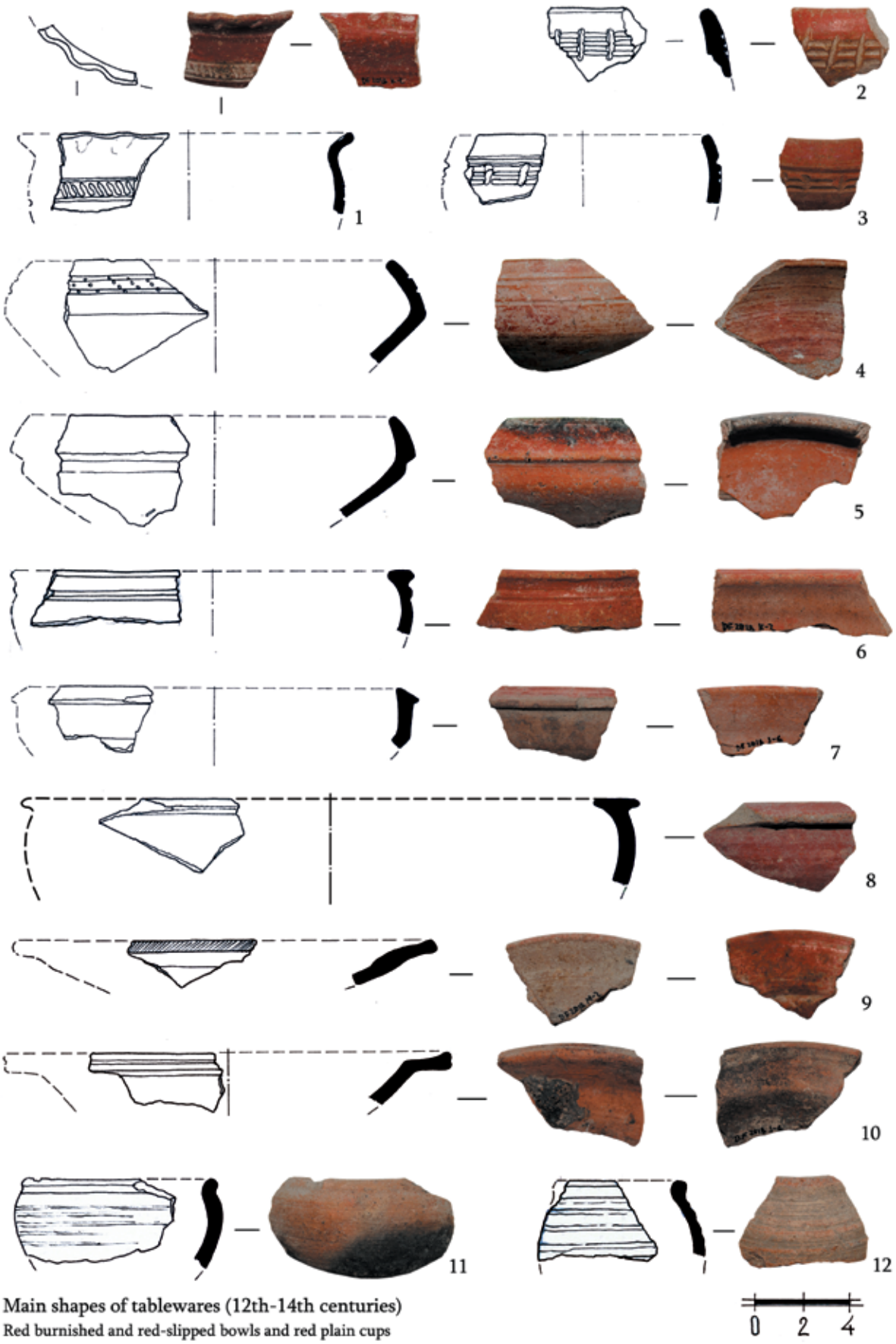


Fig. 16. Unglazed pottery: Tablewares (Photo: A. Babajanyan, drawings: N. Mkhitaryan).

for the Mamluk-period sites (cf. Kletter, Stern 2006, 190–191).

A collection of fritwares dated to the 13–14th centuries makes up a small percentage in this group. These wares were made of a soft-paste, fired to a fritty white-colored fabric. The majority was imported from different provenances in Iran and the Eastern Mediterranean basin. Local fritwares are also present; a bowl decorated with an applique floral belt is considered to have been manufactured in the ceramic centres at Dvin or Ani (Zhamkochyan 1981, 101).

Two sherds of Chinese celadon were found at Dashtadem and were dated to the 13th century. These wares were made of grayish, compact stonepaste and covered with a thick, pale green-gray glaze resembling jade in color and texture. The surface of the fragment of a bowl was designed with cannelures. Findings of Chinese celadon are rarely found in Armenian medieval sites and are known from Ani, Garni, Loreh fortified town and elsewhere (Babajanyan 2015, 132–134; Babajanyan 2018, 276).

The presence of expensive luxury fritwares and celadons demonstrates the castle' inhabitants' high social rank as well as the role of the fortress in trading interconnections between East and West.

c. Glazed ceramics of late 14–16th centuries. This group is distinguished by bowls decorated with cobalt painting on a white background under colorless transparant glaze, known as "blue and white ware". This type originated in China and quickly became widespread in the countries of Central Asia, the Middle East and the Mediterranean basin. The leading ceramic centres of that period manufactured a variety of the "blue and white wares" imitating the technology and decoration of porcelains of the periods of the Yuan (1271–1368) and Ming (1368–1644) dynasties. The assemblage includes both earthenwares and fritwares of various provenances decorated in Miletus and Rhodian styles (Lane 1957, 43–65). A small quantity of wares decorated with duochrome painting (black and blue or black and green) and polychrome splashed glaze technique (potentially Rhodian) is presented in this group as well. (cf. Top, Ölçer 2018, 351–353).

A few finds of cono-segmental shaped bowls (earthenware) with a ledged rim and a low ring-foot base and covered with a monochrome green or yellow glaze on the interior are also present and date to the 15–16th centuries. This type of bowl was common for the Early Ottoman-period ceramic centres.

d. Glazed ceramics of the 17–18th centuries. This group is best identified by the fine fritwares decorated in Kütahya style which were produced both in Iznik and Kütahya. The most common shapes are small bowls with a simple rim and a low ring base as well as coffee cups. A unique shard of a coffee cup bears a master's or atelier's mark on the base. The Kütahya wares found at Dashtadem were decorated with underglaze light cobalt blue painting consisting of vegetal ornaments and thin encircling lines outlining the base. Two fragments of bowls manufactured in Kütahya and dated to the 18th century were decorated with underglaze multicolored painting and overglaze outlined with black contours. The bowls and coffee cupes imported from Kütahya are widely found at the Loreh fortified town (Gharibyan 2009, 232–233).

e. Glazed ceramics of the 18–19th centuries. The majority of the glazed ceramic corpus consists of fragments dated to the 18–19th centuries up to early 20th century. The most common wares are jars with an everted round or T-shape rim, a short neck and oblong body possessing two handles. The vessels were covered with muddled turquoise or green glaze directly onto the pottery, without a white slip background. The group includes vessels having slip-painted or incised decoration.

A few shards of Russian cylindrical fondant cans or pharmacy jars made of a white soft-paste fabric and covered with a lilac color glaze were found and date to the 18th century. These jars were employed for ointments, blusher, and antimony storage.

Metal Finds

The quantity of metal finds is relatively low. The assemblage consists of domestic items, craft and agricultural tools, and weaponry made of iron and copper as well as copper and silver coins of different periods (Fig. 19/1–15). The artifacts were recorded in the mixed back-fill contexts thus hampering their dating. However, the analysis and provisional dating are based on comparative study with contemporary sites of Armenia and elsewhere.

The findings of coins are important sources which attested the fortress' role in the study of political, economic, trade and cultural interconnections. The assemblage includes Byzantine, Seljuk, (possibly) Mongol, Safavid and Ottoman coins. Previous excavations uncovered Georgian and Ilkhanate coins as well. Two Byzantine coins recorded in back-fill contexts are *Anonymous folles* (976–1028) featuring the bust of Jesus

Fig. 17. Glazed ceramics: Earthenwares (Photo: A. Babajanyan).

Christ on the obverse, and a four-line Greek inscription "Ιησούς Χριστός Βασιλεύς Βασιλέων" on the reverse which is translated as "Jesus Christ, King of the Kings".

These coins were struck during the 10th–11th centuries but their circulation continued into the 13th century (Hovhannisyan 2014, 126–128). The *Anonymous folles* were the most common copper coins found at Armenian medieval sites (mostly in Ani) and met the demand of internal market.

A copper Seljuk coin of Asia Minor dated to the 12th century is quite worn, so the letters are illegible. Another copper coin, probability of Mongol-period is entirely worn and was drilled and used as jewelry after its circulation.

The other discovered coins dated to the 17–18th centuries represented by a Safavid copper coin minted at Yerevan and two Ottoman silver coins of Sultans Mahmud I (1730–1754) and Mustafa III (1757–1774).

The assemblage of metal artifacts includes iron animal shoes, flat-headed iron nails, knife blades, chain links of different sizes, fragments of copper bowls, a pot handle, a scraper, a sickle, a hoe, a jewelry or pharmacy tool, a latch, a rumbler bell, a candlestick, an cense lid, a silver spoon and a number of fragments of undetermined items (Fig. 19). The agricultural, craft tools and weapons were made of iron which is firmer than copper or bronze. The different household items were made of bronze or copper through beating, engraving and tinning. The most numerous category of artifacts are iron animal shoes, similar findings to which were uncovered at other medieval and early modern sites. The links are simple molten circles of different sizes without any decoration and were the most common finds in the medieval sites serving as chain links or part of horse bridles connecting snaffle bits and leather straps (Petrosyan 1988, 41; Melkonyan et al. 2017, 273).

The knives are the most common agricultural, craft, domestic and weaponry tools consisting of a fixed single-edged blade with a straight or concave profile. These types of knife blades have a long use; the parallels with these finds are known from Armenian medieval sites (Ghafadaryan, Kalantaryan 2002, 118; Petrosyan 1988, 39–40).

A fragment of a sickle and a hoe are the only agricultural tools found. The sickle with a concave blade sharp inside is a common farming tool used for harvesting grain crops. The hoe is a versatile agricultural and horticultural hand tool which was used to shape and clear soil, remove weeds and dig drills for planting. The hoe shape is concave having a hole for wooden handle. The similar hoe was found in Garni and its use continued to the Early Modern period (Petrosyan 1988, 39).

The category of craft tools is represented by a crescent-shaped tool with a pointed handle (possibly a scraper) and a jewelry tool which is a long flat rod decorated with a dot-engraved design and having a flat scoop-shaped edge. Similar jewelry or pharmacy tools were found in Dvin, Ani and Garni (Arakelyan 1958, 172, fig. 26; Petrosyan 1988, 44).

The weapons found at Dashtadem correspond to the later period of the fortress and consist of two cannonballs of different sizes, a round shot from rotary cannon and a number of bullets cartridges two of which bear Ottoman mark.

Glass Finds

Only a few glass fragments were uncovered, mostly consisting of bangles made of transparent blue, green, yellow and opaque black glass (Fig. 19/16-28). The profiles of bangles feature flat interiors with bulging external side, round, triangular and convoluted monochrome and duochrome types which were common in medieval sites in Armenia and elsewhere and which date to the 11–14th centuries (Janpoladyan 1974, 21–22). The glass repertoire contains a number of glass sherds among which a unique fragment of a black shallow cup or saltcellar was adorned with an applique belt of modeled ornaments; this form was typical of the 12–13th centuries and was widespread in Armenian contemporary sites (Janpoladyan 1974, 19). Among the glass findings was a fragment of bowl made of colorless glass designed with incised decoration and gilded staining. This type of glass is considered to have been imported from Byzantine or Levantine glass-making centres (Ritsovska 2009, 200–203, 217).

Stone Objects

The discovered stone assemblage consists of a variety of household items, architectural or decorative fragments, *khachkars* and gravestones. The household objects were made of basalt and tuff and consists of mortars of different sizes and forms (some of them quite worn), pounders, fragments of upper and lower quern-stones, whetstones, various tools employed in textile craft and metalwork, and conical and irregular four-faceted small objects used probably as figures for tabletop games or weights (Fig. 20/1-2). The household and craft stone objects found at Dashtadem in 2015 were classified and analyzed by A. Martirosyan (2019).

Among the stone craft object a plate of bullet mold is unique; this object would have been used to

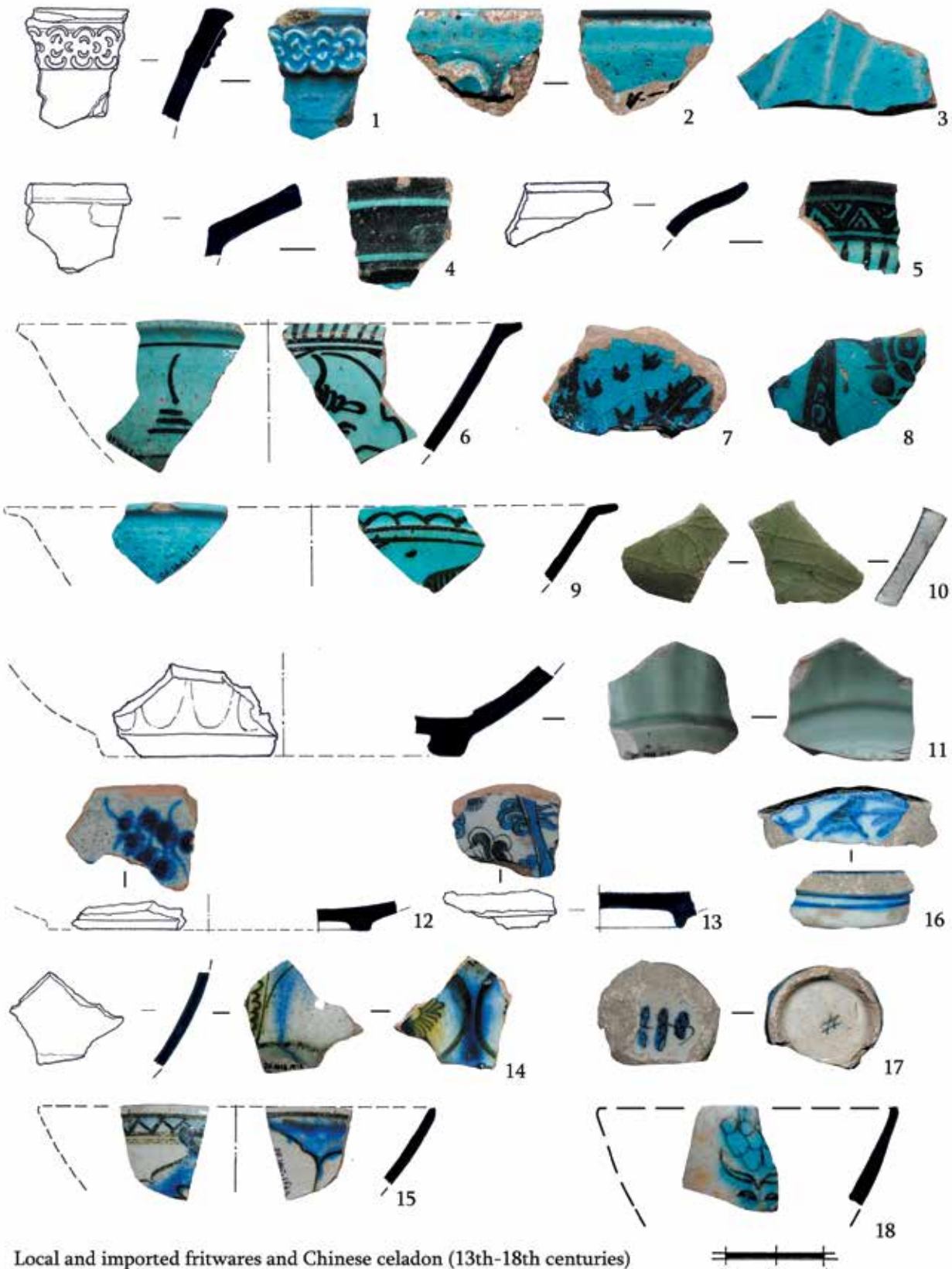


Fig. 18. Glazed ceramics: Fritwares and celadon (Photo: A. Babajanyan, drawings: N. Mkhitaryan).

produce 14 mm lead bullets and dates to the 18–19th centuries (Fig. 20/4).

Hundreds of tuff ashlar facing stones, including architectural details and waterspouts were found; these were partly used in reconstruction works in 2018. The stone assemblage includes fragments of khachkars and gravestones as well as inscriptions which were used as architectural spolia in the walls and flagstone pavements of later reconstruction stages (Fig. 13). Based on typological and decorative characteristics, these stones mainly date to the 12–13th centuries (more detailed in Melkonyan et al. 2017, 268–271).

Small Finds

The collection of small finds consists of several cylindrical and round beads made of faience, glass paste and carnelian. One of the paste-made round beads bears an applique bluish snake image.

An oyster shell and a cowrie shell were uncovered during the excavations; these were used to make various kinds of decorative objects for clothing and jewelry, most often as amulets. For a long period the cowrie was historically used as currency from China to the Near East, but is unusual for Armenian medieval markets (Tiley, Burger 2002).

Two bone rings were found made of roe deer horn (Figs 20/5, 6). One presents an archer's thumb ring uncovered in the secure context of the 17th century. This is a ring having a pointed lip to protect the thumb from abrasion and assist in holding the string. The usage of archer's rings were widespread in the 13–14th centuries and were associated with characteristics of Mongolian shooting technique using the thumb which continued to be in use in later periods in the Ottoman, Safavid and Mughal Empires (Grayson et al. 2007, 9; Özveri 2005, 5). A lipped archer's ring, made of bronze, was found at Loreh fortified town. I. Gharibyan who excavated this site suspectedly defined this archer's ring as a tool employed in the leather craft (Gharibyan 2009, 169).

Discussions, Problems and Questions

In this chapter we presented a brief overview of the fortress' history and results of excavations in 2015 and 2018, a study which has a high significance both for revealing new data on the political and cultural aspects of the Medieval and post-Medieval periods, and for the valorization of the site in the cultural heritage preservation and public use. Based on the analysis of the repertoire of archaeological finds we can demonstrate the incessant life in the fortress from the 12th to the 20th century and can reconstruct the modifications of inhabitants' lifeways during different stages. Investigations concerning to the characteristics of the site, its role in political and cultural interconnections across the different periods, and various realms of everyday life will be deepened in our future researches involving multidisciplinary approaches to various questions.

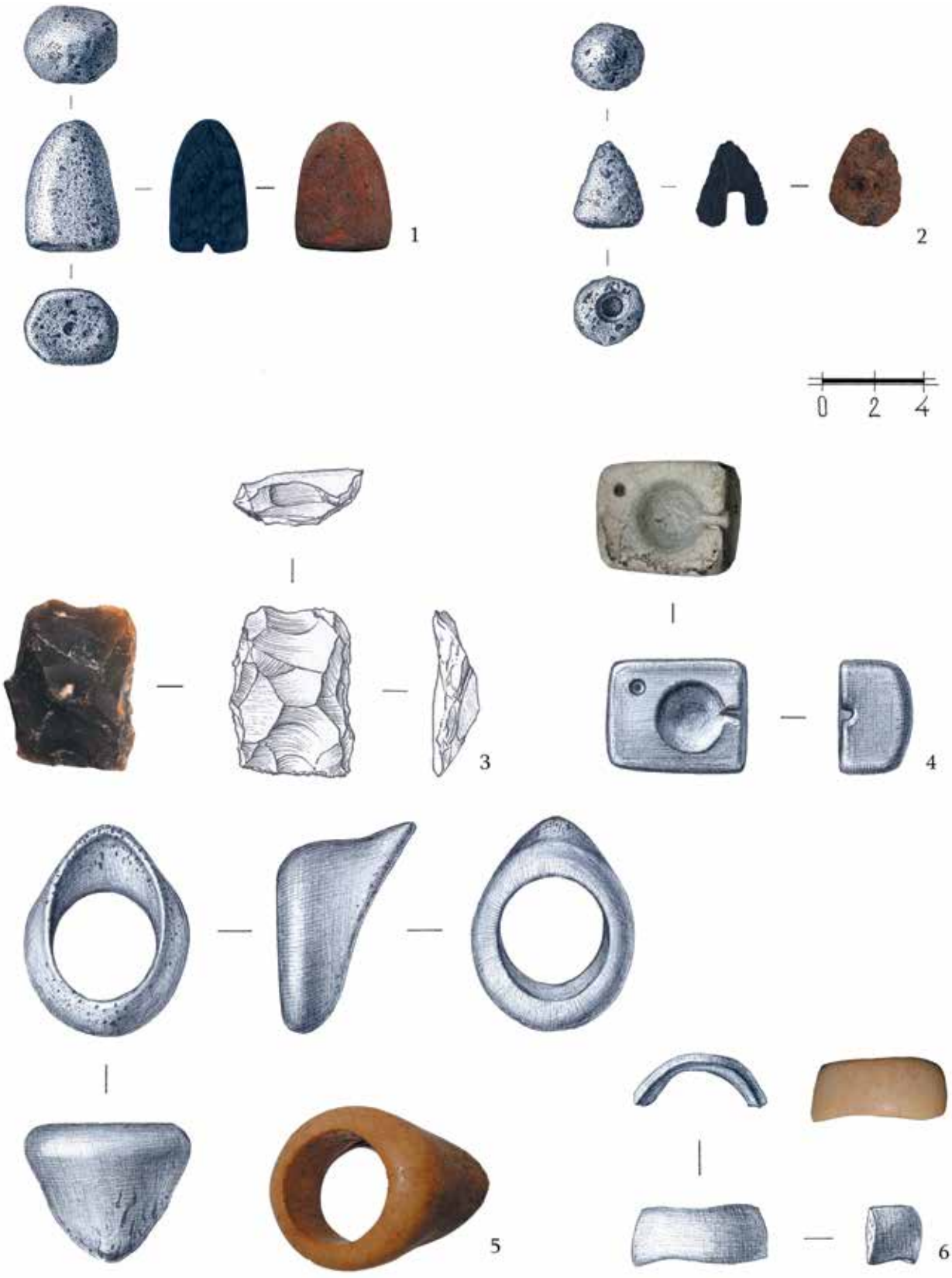
However, considering the results obtained through excavations it would be premature to offer here definitive conclusions on the foundation and dating of the fortress. This critical question remains open and needs additional studies as written sources don't provide sufficient information, and continued excavations and architectural examinations of the citadel are required. It should be noted that the site was registered as a fortress dated to the 7–19th centuries in the *Historical and Cultural Immovable Monuments List* maintained by the Historical-Cultural Heritage Research Centre. In the widespread literature the fortress at Dashtadem is known as the fortress of Qagheni, a place considered to be a settlement near the fortress (cf. Yeghiazaryan 1971, 52–55; Sargsyan 2007, 35). This is based on the mention of the historian Hovhannes of Draskhanakert, in the context of historical events relating to the massacre committed by the Arab governor in *Qaghin*, *Aren* and the town of *Talin* and dated between 770–773 (Draskhanakertci 1996, 111; Ter-Ghevondyan, Ter-Ghevondyan 2018, 319). Note that the toponyms of Qaghin and Aren (probably Mren) settlements mentioned in written sources were used as *Qagheni* and *Areni* in contemporary publications. We do not have weighty arguments in support of locating *Qaghin* settlement near the fortress of Dashtadem; on the contrary, the preserved inscriptions on the walls of the nearby S. Kristapor church, lord Aghbugha's inscription on the citadel wall (Fig. 4), as well as newly found inscription mentioned the site as Talin (Yeghiazaryan 1971, 63, inscriptions nos 5, 6; Melkonyan et al. 2017, 269, inscription no. 3; Matevosyan 2010, 247–248).

The evidence for earlier dating of the fortress is quite vague; the few indirect data and traveler accounts which exist were previously interpreted without considering a comprehensive study and, unfortunately, spread in the public audience. Our crucial contribution will be the clarification of this problem in future works.

Finally, questions arise concerning the fortress' last phase which is as yet unstudied. The archaeological excavations provide new data on the history of the Modern period; furthermore, historical and ethnographic sources document that in the 18–19th centuries the fortress was resettled by Muslim inhabitants. In

1-3-knife blades; 4-scraper; 5-jewelry or pharmacy tool; 6-silver spoon; 7-9 animal shoes; 10-pot handle;11-cense lid; 12-candlestick; 13-rumbler bell; 14-15-bullets; 16-glass painted with gilded staining; 17-glass round object (weight?); 18-shallow cup with applique modeled ornaments; 19-glass handle; 20-base of bottle; 21-28-glass bangles

Fig. 19. Metal and glass findings (Photo: A. Babajanyan).



Stone and bone objects

1-2- stone figures for tabletop game or weights; 3-gun flint; a plate of bullet mold;
5-bone archer's ring; 6-fragment of bone ring

Fig. 20. Stone and bone objects (Photo: A. Babajanyan, drawings: A. Sahakyan).

1812 Husein khan of Yerevan built the outer defensive wall and appointed Bek, a Persian governor along with his family to control the road leading to the province of Shirak (Shahkhatunyants 2014, 242). According to traveler accounts, various ethnic groups (Turks, Persians and Armenians) replaced each other during the 19th to the early 20th centuries (Shahkhatunyants 2014, 242; Toramanyan 1948, 251–252). After the Genocide the fortress was settled by Armenian migrants from the Alashkert and Mush regions of Western Armenia whose descendents continued to build their dwellings on the ruins of the castle expanding the settlement to the contemporary village of Dashtadem. Integrated research combining archaeological, ethnographic and archival data will be incorporated within the framework of our future research to understand the interrelations of the cultural heritage site and these resettled communities.

Conclusions

To sum up, based on results of archaeological excavations we can reconstruct the fortress' history with continual phases of resettlements in Bagratid?, Shaddadid, Zakarid, post-Zakarid, Safavid and Ottoman as well as Soviet periods. The most remarkable stage of the fortress history corresponds to the governing period of the Zakaryan princely house when it was one of their residential castles. During the High Medieval period Dashtadem was a typical castle built according to Armenian fortification standards which have been widely applied as well in fortifications of Armenian Cilicia and the Crusader kingdoms (cf. Edwards 1987, 31–33).

Acting as a centre of administration for the Zakaryans, the castle had a dominant position on the trade route between cities of Dvin and Ani. The archaeological artifacts (ceramic, metal and glass collections) found in Dashtadem show the modes of everyday life in the fortress meanwhile imported goods (Byzantine glass objects, Chinese celadon, Middle Eastern pottery), Byzantine and Seljuk coins attest to Dashtadem's involvement in active trade and cultural relations during that time.

During the post-Zakarid period the castle restricted its territory and became a rural settlement. In the 15–18th centuries we find stages of extensive reconstruction, including new-built walls, floors and built-in tonirs.

An important period in the fortress' history corresponds to the 17–19th centuries, coinciding with Safavid-Ottoman rule. Ottoman and Safavid coins, cannonballs, and bullet cartridges with Ottoman stamps can support the narrative that Dashtadem was involved in certain military events. In the 19th century the role of the fortress again grew with the Persian governor's reinforcement project and took control over the road leading to the province of Shirak.

The last well-visible period in the history of the site connects with migrants of Western Armenia escaping from slaughter by Ottoman forces; they settled at Dashtadem and their descendants continue to inhabit the area.

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Local Canyons, Global Views: Results of the Vayots Dzor Silk Road Survey Project Based on the 2015–2019 Seasons

Astghik Babajanyan[1], Kate Franklin[2]

[1] Institute of Archaeology and Ethnography, Armenia
[2] Birkbeck, University of London, UK

Abstract. This paper presents a summary of the ongoing research of the Armenian-American collaborative "Vayots Dzor Silk Road Survey" (VDSRS), and its goals, methods and results from the past five years.The aim of our investigations is to reconstruct the medieval archaeological landscape in Vayots Dzor region in the broader cultural and historical context of the "Silk Roads", over a pivotal period running from the 12th to the 15th centuries. The targeted area of our research is the road networks which extended along the Arpa and Yeghegis rivers and their tributaries. The physical remains of archaeological sites and architectural buildings make up the medieval archaeological landscape of Vayots Dzor, which was actively integrated into the material and cultural exchanges, entailed within the phenomenon of the Silk Road.

Across the 2015–2019 seasons the VDSRS has carried out an integrated study in the broad area from Chiva village to Vardahovit and from Gnishik to the Selim pass, recording and mapping multifarious archaeological sites (settlements, fortresses, caravanserais, bridges, monastic complexes, chapels, khachkars *(i.e. cross-stones), cemeteries) located both along the primary routes and within tributary valleys. The core of our research is based on the combination of three main groups of methods: a) fieldwork, including site-based surveys and excavations generating spatial and material data, b) study of literary and epigraphic sources, c) study of travel notes, archival materials and ethnographic data, as well as related literature. The VDSRS is also focused on the study of daily life in the local communities which lived along the route, and questions how local people were linked with external worlds in all directions. As we will explore, our research program provides a picture of the Vayots Dzor region as a local world; at the same time, we will explore how due to the political strategies of the Orbelyans the region was involved in the greater Silk Road system. Ultimately, our ongoing work moves between explorations of how medieval inhabitants of Vayots Dzor experienced the world, and reflections on the continuing importance of the medieval landscape of Vayots Dzor in negotiations of Armenian memory, identity, and world politics.*

Keywords: Armenia, Vayots Dzor, Silk Road, historical archaeology, medieval landscape, VDSRS project.

Introduction

The "Silk Road" is a contemporary term for the phenomena of travel and trade, exchanges of taste and culture, religious and philosophical ideas, information and technologies which articulated the Armenian highland with Europe, the Near East and Asia for more than a millennium[1]. During the High and Late Medieval periods, two main arteries of Silk routes linking Central Asia and Northern Iran to the Eastern Mediterranean and Black Sea coasts passed through the Armenian highland (cf. Manandyan 1936; Manandyan 1954). The branches of these major highways and the network of local routes spanned all regions connecting cities, towns and villages with northern and southern transit roads. The archaeological landscape of Medieval Armenia is therefore to a large extent a record of Armenian participation within, and agency in constructing, these interrelated Silk Road cultures.

This article situates the ongoing research of the Vayots Dzor Silk Road Survey within the longer tradition of medieval archaeology in Armenia. The study of Armenia's archaeological heritage is crucial both for understandings of national identity and for long-term management of heritage sites and landscapes; the study and conservation of medieval heritage is especially critical, as the material culture, architecture, and sociality of the Middle Ages are central within modern cultural imagination for both citizens of the Republic of Armenia and for the broader diaspora. Numerous early works of scholarship on the medieval archaeology of Armenia were regional in scale: for instance, the

1 Abbreviations used in the text are: ARISC – American Research Institute of the South Caucasus; CHMAG - Collaborative Heritage Management in Armenia Grant; VDFLP - Vayots Dzor Fortress Landscapes Project; VDSRS - Vayots Dzor Silk Road Survey; VDP - Vayots Dzor Project.

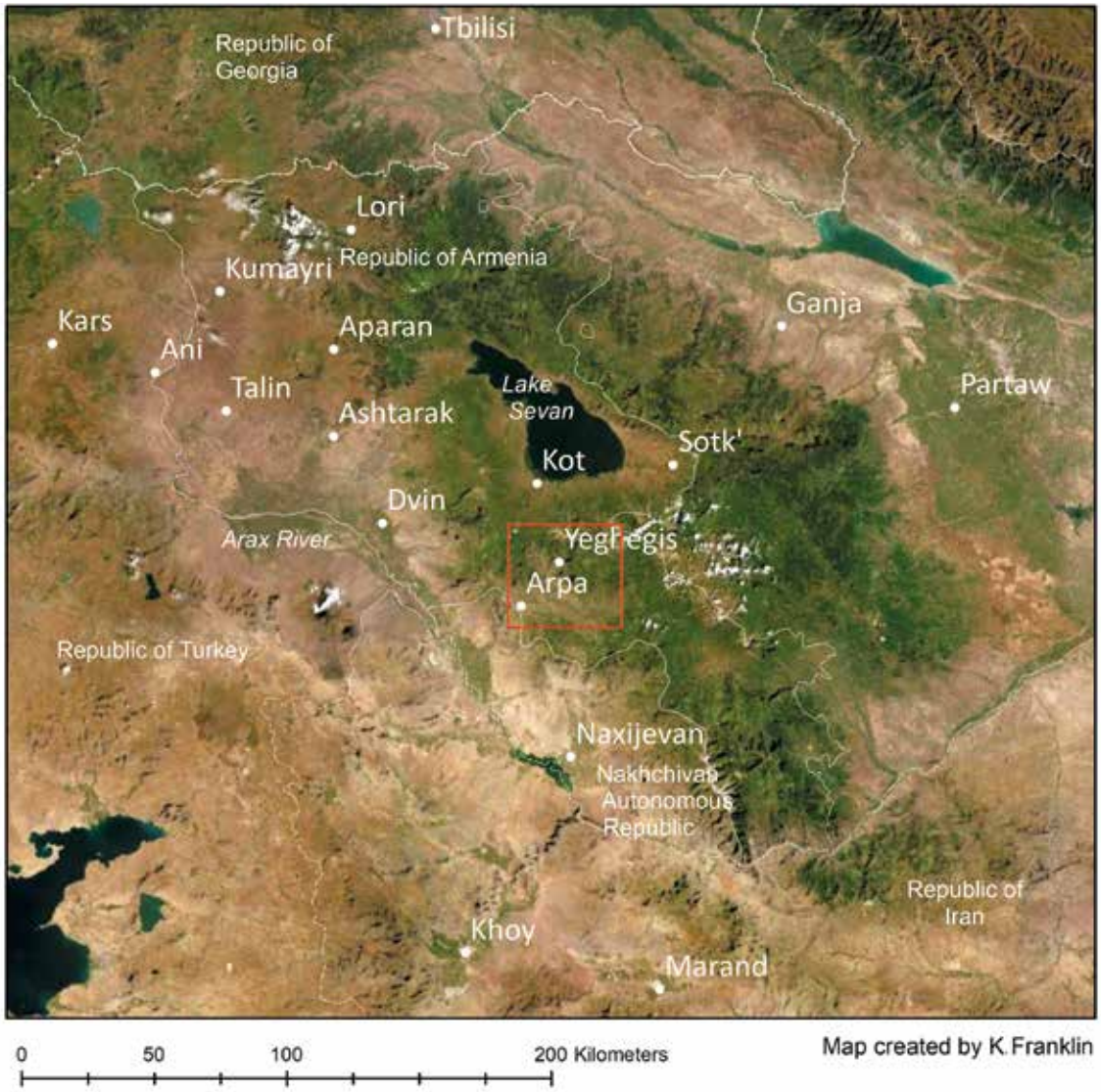


Fig. 1. The VDSRS study area and the location of major cities on the silk routes (Map: K. Franklin).

surveys of T. Toramanyan reviewed monuments and sites from cities and towns to villages (Toramanyan 1942). Other works, like V. Harutyunyan's *Caravanserais and Bridges of Medieval Armenia* considered networks of structures across the region (Harutyunyan 1960). For much of the 20th century and into the first decades of the 21st century, medieval archaeology in Armenia has centered on the ongoing excavations at the city of Dvin revealing new data in the study of urban planning, crafts and material culture as well as propounding issues relevant to the intense studies of architecture, spiritual and cultural life in monasteries and churches[2] (Kalantaryan, Melkonyan 2005, 101-102). However, the ongoing work at Dvin has always been complemented by investigations of sites across diverse landscapes, from monasteries and fortresses to small churches, palaces, and caravanserais. Agricultural deep ploughing and construction of new buildings as well as infrastructure such as roads or conduits have generated new opportunities for excavations of multifarious medieval sites (e.g. Vostink (Hostun) settlement in Vayots Dzor, a 14th century underground tomb in Yerevan etc.). These excavations shed new light on the understanding of the past and have enabled revision of the medieval history of Armenia; however, the paradigm of these works still to a large extent remains local and 'closed' to colleagues beyond the borders of Armenia and Transcaucasia.

In order to meet the challenges of modern archaeological approaches, medieval archaeology in Armenia is taking a new course in the study of the

2 In recent decades the excavations of medieval sites were mainly directed to the monuments to be restored which were funded by state or international organizations of preservation of world cultural heritage, as well by private sponsorship.

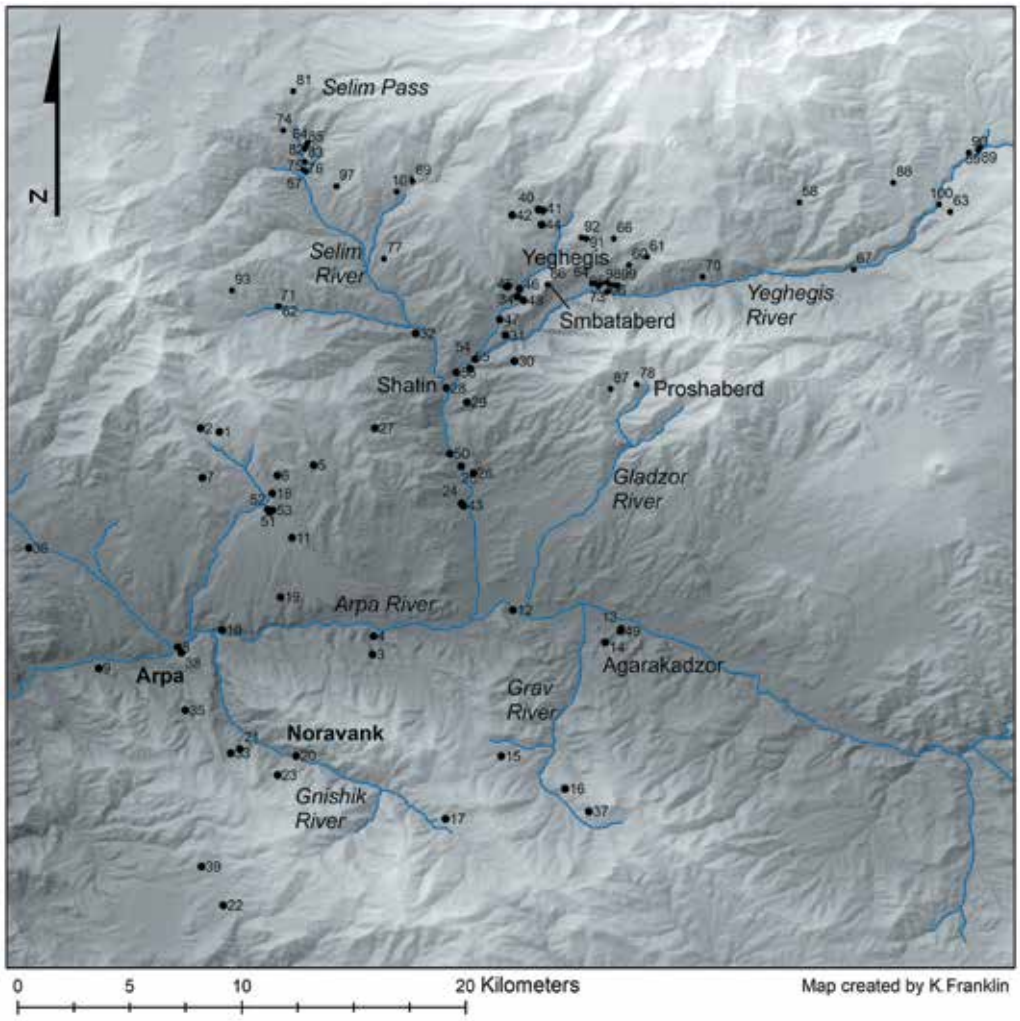


Fig. 2. The distribution of main sites, recorded by the VDSRS in 2015-2019 (Map: K. Franklin, Topographic imagery provided by earthexplorer.usgs.gov.).

1. Aghavnadzor: Nerkin Ulgyur (S. Astvatsatsin); 2. Aghavnadzor: Verin Ulgyur (S. Stepanos church); 3. Arpi: Jrov-vank (cave); 4. Arpi: Erdech fortress; 5. Aghavnadzor: Apana ruins; 6. Aghavnadzor: Mirash settlement; 7. Rind: Chknavor cave-matur; 8. Areni: Arpa bridge; 9. Areni: S. Sargis matur; 10. Tsitsakhach site; 11. Aghavnadzor: Hobkakhach matur; 12. Agarakadzor: Dadali bridge; 13. Agarakadzor: cemetery; 14. Agarakadzor: Anapat settlement; 15. Gandzak church; 16. Boloraberd settlement; 17. Gnishik church; 18. Aghavnadzor: Khachi-til khachkar; 19. Aghavnadzor: caravanserai site; 20. Noravank; 21. Nor Amaghu; 22. Khachik: S. Astvatsatsin church; 23. Hin Amaghu (Tkharb); 24. Getap-1 (Dadayi) fortress; 25. Tsaturi bridge; 26. Getap: medieval settlement; 27. Shatin: Aghvank; 28. Shatin: Chubuk-Kyorpi bridge and khachkars; 29. Shatin: Berdakar and Angueghi (Nahataki) matur; 30. Shativank; 31. Shatin: Vostink (Hostun) settlement; 32. Shatin: Gheshlagh ruined church; 33. Pir-Bulagh spring, khachkar; 34. Artabuynk: Chri-vank; 35. Hrasekaberd; 36. Chiva: medieval settlement; 37. Vardablur (Tsughrik settlement); 38. Areni: Arpa settlement; 39. Kachik: Karkopi Vank; 40. Horbategh: Bakchajugh ameliorated settlement; 41. Bakhchajugh khachkars; 42. Horbategh: Gutani Art (ameliorated church); 43. Getap: Bridge and khachkar; 44. Horbategh: Hreshtakapetats church; 45. Artabuynk: zhamatun; 46. Artabuynk: cemetery 1; 47. Artabuynk: cemetery 2; 48. Artabuynk: matur near water mill; 49. Agarakadzor: church; 50. Shatin: Bridge; 51. Aghavnadzor: khachkar dated 1561; 52. Aghavnadzor: Matur (central); 53. Aghanvnadzor: Matur (eastern); 54. Shatin: Hasan-Chplan Matur; 55. Shatin: Vanki dzor S. Hovhannes church; 56. Shatin: Matur (NE); 75. Aghnjadzor: Early period Fortress?; 58. Arates monastery; 59. Getikvank: surface collection; 60. Yeghegis: Kura-Araxes site; 61. Yeghegis: Chknavori kar Anapat; 62. Hors: Chesar Orbelyan's mansion; 63. Vardahovit: Jani settlement; 64. Yeghegis: khachkars near school; 65. Yeghegis: ruined church (Katoghike); 66. Tsaghats-kar monastery: stone formations (Ishxani art); 67. Goghtanik church; 68. Aghnjadzor: Cemetery; 69. Hin Karaglukh ameliorated settlement; 70. Hermon Vank; 71. Hors: church; 72. Yeghegis: Collected khachkars; 73. Yeghegis: Water mill; 74. Bridge (near Selim pass);75. Aghnjadzor: Bridges; 76. Aghnjadzor: Lernantsk caravanserai; 77. Salli: S. Mamas church, cemetery; 78. Vernashen: Boloraberd (Proshaberd); 79. Yeghegis: S. Nshan (Karapet) church; 80. Yeghegis: S. Astvatsatsin church; 81. Selim caravanserai; 82. Selimberd ruins; 83. Selimberd lower; 84. Selimberd upper; 85. Selimberd-khachkar; 86. Smbataberd; 87. Vernashen: Spitakavor monastery; 88. Sevazhayr: khachkars and grave markers; 89. Getikvank: Grave markers; 90. Sevajayr: Turkish cemetery; 91. Tsaghats-kar monastery: S. Karapet church; 92. Tsaghats-kar monastery: S. Hovhannes church; 93. Hors: Vank ameliorated settlement; 94. Yeghegis: Four khachkars; 95. Yeghegis: Jewish settlement; 96. Yeghegis: Jewish cemetery; 97. Aghnjadzor: Yavar ameliorated settlement; 98. Yeghegis: Zorats (S. Stepanos) church; 99. Yeghegis: Zorats surrounding wall; 100. Vardahovit: Jani mill stone; 101. Karaglukh: Tukh-Manuk matur.

medieval past. Firstly, this involves integrating and opening Armenian archaeological data to wider academic discussions, and secondly, consists of following governmental strategies in making tourism (the critical potential of which is medieval heritage) one of the priorities in economic development of the country. In this case the development of landscape archaeology contributes to the study of both cultural transformation of the landscape through time, as well as the effects of natural changes, the efforts of environmental conservation, and the construction of such landscapes as a tourism product. At the core of a landscape approach is integrating past and ongoing research of sites, monuments, inscriptions, and material culture into a networked understanding of human society in space - but the approach also centres on questions of how people in the past created spaces and landscapes which framed (and continue to frame) social lives. In the study of landscape archaeology, the research of roads and infrastructure (including bridges and routes as well as agricultural and industrial construction) has an important significance spanning all realms of the medieval history of Armenia; a long view on the processes of landscape creation supports investigations of social and economic life, culture, architecture and technology, discussed in global perspective.

Out of a shared curiosity about the political and socio-cultural role of participation in the "Silk Roads" in the formation of Medieval Armenian cultural landscapes, in the last five years the co-authors started and developed the multiscalar "Vayots Dzor Silk Road Survey" (VDSRS) project focused on the study and preservation of medieval "Silk Road" landscapes of the Vayots Dzor region (Franklin, Babajanyan 2018a,b; Babajanyan, Franklin 2018; 2019). On the one hand, this project emerged out of intersecting academic conversations about the connectivity, dynamism and cosmopolitanism of overlooked aspects of Armenia's medieval past; on the other hand, the project responds to increasing state and public-private interests in Silk Road narratives as part of economic development strategies. In particular, working in Vayots Dzor it is impossible to ignore the entanglement of archaeology, tourism and development, as the construction of modern trade routes connecting Armenia with the Republic of Georgia, the Nagorno-Karabakh Republic, and northern Iran coincide with the development of touristic heritage corridors, wine trails, and ecotourism zones.

Like many places in Eurasia, Vayots Dzor is situated between multiple international narratives of the Silk Road in the present just as it was in the medieval past. These modern narratives include UNESCO World Heritage Organization strategies for designating sections of the Silk Road as universal heritage, as well as the mission of China's *One Belt One Road* strategy to unify Eurasia through overland commerce and through construction of transnational infrastructures and economic dependencies which would enable such commerce. As we work in Vayots Dzor, we see the local implications of these world-scale shifts. A new hotel opening in 2020 will cover nearly 1.5 ha of the environs of the medieval village of Arpa; the newly-constructed highway brings tourists to a new organic winery whose label features the local Dadali bridge, built in the Middle Ages to allow travelers to cross the Arpa river. Local inhabitants of the villages of Vayots Dzor work part time as archaeological excavators, guides, and re-enactors demonstrating traditional *lavash* baking and dance to increasing numbers of tourists.

From an academic standpoint, the study of the medieval "Silk Road" cultural heritage is especially significant considering that the existing research and publications on the network of the Silk Roads through Medieval Armenia were carried out more than 50 years ago, mainly on the basis of Armenian and foreign written sources as well as architecture, infrastructure, and archaeology known at the time (cf. Manandyan1936; Manandyan1954; Arakelyan 1964; Harutyunyan 1960). In order to develop scientific approaches to problems rooted in historical sources, the VDSRS accentuates the importance of integrated study and especially the results of archaeological investigations and excavations both to reveal patterns of local life through materiality, and to ask how local people participated in the material and cultural interconnections created by the Silk road phenomenon.

The landscape of the medieval "Silk Roads" centred in Vayots Dzor, which presents a mountain branch of the medieval travel networks as well a local centre of politics and cultural life, is therefore the basis for conceptual work on the Silk Road culture heritage that unifies the scientific interests of both collaborators (see more detailed in Franklin, Babajanyan 2018b). Following on a dissertation focused on the social life of trade oriented around the caravanserai at Arai village in Aragatsotn, K. Franklin turned to the links between travel and trade and everyday life in neighboring village landscapes (Franklin 2014; Franklin et al. 2017). Meanwhile, A. Babajanyan's doctoral research explored late medieval society and culture through the lens of ceramic data, reconstructing and interpreting

the archaeological landscape through craft production and materiality (Babajanyan 2015).

Beginning in 2015 with a seed grant from ARISC, we transformed our ongoing conversations about material, economic and social life in the High and Late Middle Ages into a systematic project aimed at reconstructing and researching the medieval archaeology of Vayots Dzor at the nested scales of texts, routes, landscape, sites, architecture, and material culture.

The Silk Road Network in Armenia and the Vayots Dzor Region

The Vayots Dzor region is centrally located within the medieval travel networks of the South Caucasus, and the area had an important strategic significance serving as a node between southern and northern branches of the medieval "Silk Roads". In the 12–15th centuries, routes running along the Arpa and Yeghegis rivers linked local towns to the major cities such as Dvin, Tabriz, Partav, Tbilisi and the coasts of the Black and Caspian Seas. The geographic position of Vayots Dzor had internal significance as well, connecting the central province of Ayrarat to the southeastern peripheral province of Syunik. Thus the network of human settlement, political and religious activity, and infrastructure of Vayots Dzor had vital geographical significance for the integration of the region in the political, economic and cultural processes of the country. The records of roads and infrastructure were attested both in written sources, and in the landscape which preserves a system of caravanserais, bridges, controlling fortresses and watch-towers as well as settlements (Fig. 1).

The landscape of Vayots Dzor (one of the 12 administrative regions of the Medieval Syunik province) is marked by high reliefs and sudden changes: plateaus, canyons and peaks carved by the seismic changeability of riverbeds and mountain slopes. Alternating layers of ancient sea beds and volcanic flows are now raised hundreds of meters above the valley floors, a visual reminder of the complex geology further reflected in the shifting colors of stone architecture from valley to valley.

The distinctive landscape combined with environmental conditions has attracted human occupation from prehistoric (Lalayan 1904, 246–248; Gasparyan 2014, 185–186; Gasparyan et al. 2016, 148–150) to historic periods. The landscape of the region testifies to successive periods of construction and orientation around travel, including during the 9–7th centuries BC when the Urartian Empire marked the valleys and hilltops of Vayots Dzor with a well-preserved fortification system[3] (Melkonyan et al. 2010; Earley-Spadoni et al. 2019; Gasparyan et al. 2016, 153–155).

Fig. 3. A view of Proshaberd Fortress, photographed from the north-east (Photo: A. Babajanyan).

Fig. 4. A view of Ertech Fortress, photographed from the north-east (Photo: K. Franklin).

Fig. 5. A view of Selimberd fort/settlement, photographed from the north-west (Photo: D. Davtyan).

In historical sources Vayots Dzor was first mentioned in the 5th century, in the context of the events succeeding the battle of Avarayr (Yeghishe 1958, 114, 178; Stepanos Orbelyan 1986, 107). From the 5th to the end

3 The Urartian landscape and fortification system in Vayots Dzor are explored by the joint Armenian-Italian (VDP) and Armenian-American (VDFLP) expeditions.

Fig. 6. Selimberd fort/settlement, remains of structures on the hilltop (Photo: K. Franklin).

Fig. 7. A view of Hermon monastery, photographed from the south-east (Photo: A. Babajanyan).

Fig. 8 A view of Shativank monastery, photographed from south (Photo: K. Franklin).

of the 8th century, information related to the province is rare; however, the situation changes and political life becomes more historically visible from the 9th century onwards when the Vasakyan princes of Syunik transferred their residence from Shaghat (Tsghuk region) to Yeghegis (Vayots Dzor). In the 9–11th centuries a complicated political situation was sustained in Vayots Dzor, as the result of first feudal conflicts and then Arab invasions. After the decline of the Bagratid kingdom the region was under the rule of the Seljuks (late 11th to late 12th centuries). At the end of the 12th century combined Armenian-Georgian armies united Armenia under the Zakaryans. Vayots Dzor (as well the greater province of Syunik) was then ruled by the Orbelyan princely family on behalf of a series of empires, including the Georgian kingdom and the Mongol Ilkhanate.

The VDSRS focuses on the High Medieval period, which coincides with the period of Orbelyan administration and is one of the most visible periods of the region's history in terms of its effect on the built landscape. For this reason, as well as due to their dominance in the historical and epigraphic records, our work is oriented around the lives and works of the Orbelyans and their contemporaries.

This period was remarkable in the development of connectivity and commerce in Eurasia that maintained what has been termed the *pax mongolica*, a century of relatively stabilized social, economic and cultural life following the extensive Mongol conquests. Unifying a large part of Eurasian continent under their political authority the Mongol state sustained and supported trade and the network of routes of the Silk Road under its rule, managing through networks of regional administrators and the army (Yakubowski 1931, 2–3; Weatherford 2017, 10–12). As a result, trade circulation (and also the assortment of available goods) increased intensively between formerly isolated empires of East and West as the routes became safe for caravans and merchants (Abu-Lughod 1987, 7–16; 1989, 33–38). Due to the established postal and relay system (*yam*) along the roads the communication and information transportation was carried out faster (Lane 2004, 35; 2012, 261; Margaryan 2014, 284), intensifying the connections among cultures and markets.

After the Mongol invasions (AD 1230s) the Orbelyans took a flexible, pragmatic political stance in relationships with the Mongols and received *inju* status, and thus were liberated from the sovereignty of the Zakaryan martial family which, historians have argued, conserved their sociopolitical autonomy (Orbelyan 1986, 326–331; Shahnazaryan 2014, 293–295). The integration of the Orbelyans and of Vayots Dzor within the global system of the Mongol government is visible in art and architecture produced under their patronage, as well as in the role that they played in state-controlled international trade and cultural policies. Following a long-standing medieval political tradition in Armenia, the Orbelyans deployed their local authority in widespread construction projects (monasteries,

fortresses, infrastructures). Along with their contribution to the formation of cultural landscape, from our surveys in the field and examination of written sources we have observed the Orbelyans' investment in the irrigation system and resulting integration of unploughed lands for increased farming and agriculture.

Finally, within the globalization processes of the medieval world system, the 13–14th centuries were marked by the progress of technologies, sciences and education, and Vayots Dzor emerged as a dense centre of education and literacy in the Caucasus, featuring some of the most famous universities (Gladzor and Hermon) where students coming from different parts of Greater Armenia as well from Cilicia were educated. Despite this historical significance, the medieval landscape of Vayots Dzor has not until very recently been the subject of integrated study. The research program of the VDSRS builds on decades of research by architects, archaeologists and historians at scattered sites and monuments, in order to reconstruct the physical and social landscape of this critical region.

The Vayots Dzor Silk Road Survey: Goals and Methods

The VDSRS methodology is oriented towards unifying new with existing datasets in order to generate a fuller understanding of the Vayots Dzor Silk Road landscape to support both future research at the landscape scale and more effective management of the archaeological heritage in this region. The project methodology is oriented by two main aims: 1. to record and map medieval sites (as well as archaeological and architectural remains of other periods) opening possibilities of future study of both medieval landscape and its further transformation (Fig. 2), and 2. systematic research of the everyday life of local people in medieval settlements, in the context of both local cultures and large-scale exchange. This methodology consists of integrated approaches corresponding to the nested scales of research discussed above, including survey, epigraphy, excavation, and materials analysis in collaboration with laboratory specialists. Here, we will focus in particular on the application of techniques of historical archaeology, which are of special importance for understanding a period during which places were constructed in written texts as well as from the stones and soil of Vayots Dzor's canyons. As we will discuss, analyses of texts-in-place (such as inscriptions) and textual narratives of the landscape then serve to contextualize and complement the data collected in fieldwork.

Fig. 9. 17th century church in Vostink settlement, photographed from the south-west (Photo: A. Babajanyan).

Fig. 10. Chesar Orbelyan's mansion in Hors village (Photo: A. Babajanyan).

Written testimonies and oral narratives. Historical descriptions of places are necessary for archaeological research, both for providing information about the topography of places in the past, and for showing how medieval and modern perceptions of landscapes are shaped by the reading of texts. The key medieval source for reconstructing Vayots Dzor's medieval landscape is the *History of the Province of Syunik* by the 13th century historian Stepanos Orbelyan, who described the region's history from antiquity but with detailed attention given to the 13th century, corresponding to the administration of the Orbelyan princely house. Through the 'lens' of Orbelyan's *History* we see his vision of the medieval built landscape. The historian describes the construction of monasteries, churches, and bridges; the author acts as an epigraphist as well, copying inscriptions of those buildings which are no longer preserved. For example, Orbelyan recorded a version of the dedication inscription of the "stupen-

Fig. 11. 14th century Chubuk-kyorpi bridge over Sulema river (restored in the 17th and 20th centuries) and khachkar with inscription informing the construction of bridge (Photo: A. Babajanyan).

dous" bridge of Arpa, from which only a single destroyed pier is preserved (Orbelyan 1986, 341; Franklin, Babajanyan 2020, Fig. 7).

Architectural inscriptions as well as manuscript records written in the literacy centres of Vayots Dzor constitute precise sources that provide information about the built landscape. These contain data of built edifices, names, toponyms and dates as well as endowment of lands, orchards, and production facilities by the Orbelyans and their liegemen (Barkhudaryan 1967; Khachikyan1950; 1955). Numerous inscriptions have been recorded from the architectural remains in Vayots Dzor; a major aim of the VDSRS is to re-situate these texts in their landscape, so as to understand the spatial as well as temporal relationships between the medieval places named in the inscriptions.

Travellers' accounts of the 19–20th centuries and oral narratives are the third critical sources that provide data on medieval landscape and the changes during subsequent periods. Between the Medieval period and the present numerous events and contingencies contributed to the continuing transformation of the landscape, including devastating invasions of Turkoman tribes, resettlements after the widescale deportations of Safavid Shah Abbas the Great (1587–1629), and agricultural amelioration works during the Soviet period (cf. Jalalyants 2016; Kajberuni 2003; Lalayan 1904; 1916; Yeghiazaryan 1955).

The authors of travel narratives recount the history of the region and describe the historical sites and villages that they traveled, along with the lifeways, traditions and legends of local people. Some travelers provided drawings and photos of significant monuments and copied inscriptions.These travelers made early attempts to tie historically-attested places to locations in the landscape: for instance, drawing upon Armenian and foreign historians, the late 19th century traveler Kajberuni confirmed the locations of numerous settlements and monuments and their historical names, which had inevitably been distorted over the 17–19th centuries.

In combination with these historical travel accounts, we collected information from numerous interlocutors among the elder generation of villagers during our survey in order to record and map the location of sites that are lost due to resettlements or ameliorations, but preserved in local memory (Fig. 13). The best example is the 13th century caravanserai which was located on the medieval road led from Arpa village to the Selim pass, at the southwest of Aghavnadzor village. No traces of this building can currently be seen despite the fact that the caravanserai was partially excavated in 1953 (Yeghiazaryan 1955, 77–78) and was described by V. Harutyunyan (Harutyunyan 1960, 35–37). We reconstructed the approximate location of this site in the place known by the comparatively new toponym

qarvansara, located near local farmer Saro's apricot orchard, and based on the reminiscence of one of the few people who saw the ruins of the caravanserai: one informant remembered how as a schoolboy he had helped to transfer the ashlar stones of the building to the village to build the Club (an institution of cultural activities in villages dating from the Soviet period).

Fieldworks. The systematization of written and oral accounts frames the ongoing collection of spatial and material data through field investigation. Our fieldwork to date has consisted of site-based survey, surface collection, and excavations at the site of Arpa, a central place in the medieval history of Vayots Dzor and a central node in our surveyed landscape. In research seasons from 2015 to 2019 surveys were carried out along the Arpa and Yeghegis rivers and their tributaries: the Gnishik, Grav, Aghavnadzor, Hors, Selim, and Artabuynk streams. Surveys were guided by the *Historical and Cultural Immovable Monuments List* maintained by the Historical-Cultural Heritage Research Centre. Although the list provides rough descriptive information on the locations, categories and dating of sites, this information is in many cases quite vague. One of our primary aims in the framework of our site-based survey in Vayots Dzor is therefore to improve the accuracy and usefulness of available knowledge about listed archaeological heritage in the region. During surveys we use also Soviet 1:100.000 and 1:25.000 scale topographic maps, modern cartographic materials, satellite and aerial imagery as well as the data from collaborating projects in the region. As it is augmented every season, our dataset is shared via a map currently hosted by the Harvard WorldMap open-source platform.

A critical aspect of the archaeological survey is intensive material collection, mainly of ceramics but also metal and glass; such finds are a key indicator of the presence of a site and its estimated dimension. Moreover, diagnostic materials contribute to establish the chronology of ruined settlements or other sites. The VDSRS also records and maps those sites that contain no traces of structures but which feature a rich collection of ceramic sherds (we also note the location of moved gravestones and *khachkars*) which sometimes are the only evidences of once-existing medieval settlements mentioned in historical sources or maps, but which were entirely destroyed due to Soviet amelioration or later development (Figs 15, 16). Analysing ceramic material obtained both through surveys and through excavations at Arpa, we try to understand

Fig. 12. Angueghi matur, dedicated to the martyrs of Vardanants (Photo: A. Babajanyan).

Fig. 13. Gheshlagh ruins at Shatin. A local showing the ruins with a stelea with princely family iconography in front of Holy Virgin (Photo: A. Babajanyan).

Fig. 14. Chri-vank chapel in Artabuynk village (Photo: K. Franklin).

Fig. 15. A new-built shrine at the ameliorated field of Vank settlement site in Hors (Photo: K. Franklin).

Fig. 16. K. Franklin and K. Azatyan surveying and collecting surface material at the ameliorated field of Hin Karaglukh settlement site (Photo: D. Davtyan).

Fig. 17. A view of abandoned Apana village to the north of Aghavnadzor (Photo: D. Davtyan).

Fig. 18. Fragments of gravestones and khachkars in the masonry of the Club in Areni village (Photo: A. Babajanyan).

not only chronology but also the materiality of daily life and the characteristics of human activities in the High and Late Medieval periods.

Results and Discussion

As we continue to gather and analyze data, one major result is an evolving account of material and spatial patterns of Medieval Vayots Dzor as a region. This landscape-scale picture of medieval life transcends, but also serves as the context for, the study of individual sites. Working back and forth across scales of data supports diachronic analysis of how places changed over time, as well as broader synchronic assessment of how networks were constructed within Vayots Dzor and connecting to external regions. Through the application of methodologies that are innovative to medieval archaeology in Armenia, the project aims to lay the foundations for a landscape approach framing both ongoing excavation and a developing understanding of Vayots Dzor's participation in the Silk Road cultural ecumene. The results of our studies have been discussed in terms of general site types (Franklin, Babajanyan 2018a, 137–140) and as has been the excavation of Arpa specifically (Babajanyan, Franklin 2018, 2019), but here we will accentuate the categories of sites for discussion in the context of medieval built landscape and its further transformation.

The first category of recorded sites is settlements, which are found predominantly ruined presenting only faintly visible contours of dwellings. A number of medieval settlements were mentioned in historical sources as endowments to monasteries, but we also located those with no attributed name, such as an extensive settlement north-east of Getap. Some settlements had historical significance such as Yeghegis town and Arpa village that were seats of government for the Orbelyans. A proportion of medieval settlements were resettled in the 17th–18th centuries and later were abandoned, such as Apana and Boloraberd (Fig. 17); others make up a part of modern towns and villages such as Yeghegis and Vostink. The VDSRS also located settlement sites that had been significantly destroyed by Soviet-era field amelioration; due to the disturbance of sediment, these frequently provide the most abundant collection of surface material. The presence of new-built shrines or isolated *khachkars* may also indicate the location of previously inhabited sites, as modern visitors collect surface materials over time into sites of reflection and veneration (Fig. 15–16). The distribution of recorded settlement sites suggests that during the High and Late Medieval period settlements in Vayots Dzor not only punctuated the main valley routes, but were also distributed in a network through the uplands, connected by small trails and associated with numerous springs.

Fortifications constitute the second major category of recorded sites (Figs 3–6). Forts and fortresses are distributed throughout the survey area. This category includes sites with clear architectural fortifica-

tions built by medieval standards such as Smbataberd, Proshaberd, and Erdech, which have settlement components positioned on the slopes (Orbelyan 1986, 71; Sargsyan, Khachatryan 1980, 59–62; Zaryan 1993); as well as those situated on inaccessible hilltops serving as watch-towers or forts for defensive garrisons (Selimberd, Hrasekaberd, Berdakar). The latter type (for example Selimberd, Hrasekaberd) may also feature some visible architectural structures or evidences of human activities on the hilltops and slopes (Figs 5, 6). The distribution of medieval forts and fortresses was potentially based in part on intervisibility, to provide defensive connectivity between each other during warfare (cf. Earley-Spadoni 2015; Hammer 2014). In this mode, the landscape of surveillance and connectivity continued in use from the Urartian period to the modern day. A series of medieval forts and settlements were built upon the foundations of Urartian fortresses (cf. Melkonyan et al. 2010) and now the same hilltops are used for transmission stations.

The third category of sites is monasteries, which played an important role in the organization of religious, economic, cultural and educational life. Monastic complexes may consist of churches, narthexes, bell-towers, familial cemeteries, residential and economic buildings (including mills, oil presses, pottery and glass kilns) surrounded by defensive walls (Figs 7, 8). Stepanos Orbelyan recorded the construction of gardens and other infrastructure around monasteries of which now primarily the walled centre remains, such as Hermon; part of our long-term project is to record the productive landscapes around these sites. We recorded also churches that are ruined but preserve only the apse and collected fragments of *khachkars*, inscriptions or ashlar stones (Figs 9, 13).

The fourth category – civic buildings (mansions, caravanserais, bridges), though long of interest primarily as demonstrations of architectural typology, had a great significance in the formation of the medieval built landscape. Written sources attest several princely halls, such as Tarsayich Orbelyan's mansions in Yeghegis and Arpa, or Proshyan's mansion in Vernashen. A number of these buildings have been detected only as architectural spolia, either in studies of the beginning of the 20th century or by our excavations at Arpa (Orbelyan 1986, 342; Hovsepyan 1928, 125, fig. 49; 1969, 432–433, fig. 1; Babajanyan, Franklin 2018, 160–161). The best-preserved building is Chesar Orbelyan's mansion in Hors village (Fig. 10). The rectangular hall of the building is divided with two rows of columns, and had a protruding apse with bema in the northern part, as well as large niches to either side of the surviving doorway. As sites for systematic excavation, these civic or elite buildings have huge potential to inform on the artifact assemblages associated with the administrators of Vayots Dzor who straddled Armenian and Mongol worlds.

The caravanserais and bridges are the most durable, and potentially the most important component in the infrastructural system of the Silk Roads network which was constructed under Orbelyan sponsorship. Acting on behalf of the Mongol state and following local traditions of donation and hospitality, the Orbelyans in the 13–14th centuries ensured routes and created comfortable conditions for the movement of caravans by marking roads with stone pillars such as those found along side the Harzhis caravanserai (Harutyunyan 1960, 26–27).

The VDSRS mapped preserved caravanserais such as Selim (partly excavated in 2012, see Babajanyan, Zaqyan 2014) and Aghnjadzor as well as locating the site of a medieval caravanserai in Aghavnadzor (see above). We also marked the general site of a guest house (still unlocated) associated with the Noravank monastery that is attested in a large inscription and Lalayan's description and drawing (Barkhudaryan 1967, 246; Lalayan 1916, 45–46). The monastic guest house probably catered for both pilgrims and passing caravans making revenues for the Noravank monastery. As interest in the history and culture of the Silk Road grows, these impressive sites may potentially serve as increasingly popular tourist destinations; this possibility raises the issue of their frequently precarious state of preservation. While the Selim caravanserai was excavated and reconstructed in the Soviet era, other buildings, like the caravanserais at Harjis and Aghndjadzor, are unconsolidated ruins.

A critical part of the landscape of long-term mobility through Vayots Dzor, bridges mark the locations of medieval river crossings, points of administrative intervention in travel and, in their differential states of preservation, the ways that routes of travel have shifted over the last several centuries. For example, while the VDSRS recorded medieval bridges that are still in use, such as the 13th century Dadali bridge near Agarakadzor mentioned above, we also found and recorded ruined fragments of the 13th century bridge at Arpa and the 17th century (AD 1666) Tsaturi bridge on the Yeghegis river south of Shatin (Franklin, Babajanyan 2018a, fig. 6). Bridges, especially those that are still in use, demonstrate the ongoing importance of the fabric of the medieval past in the present. An example of

this continued significance is the 14th century bridge of Chubuk-Kyorpi which was restored in the 17th and 20th centuries (Yeghiazaryan 1955, 49-50). The inscription of the nearby erected *khachkar* attests the construction of the bridge (Fig. 11).

The cemeteries, shrines and isolated *khachkars* are grouped in the last category of sites recorded by the VDSRS. The cemeteries may be isolated tomb-fields but are more frequently associated with churches and contemporary graveyards with gravestones; many medieval cemeteries are identified by the presence of erected or flat-lying *khachkars*, mostly of simple design but sometimes with rich ornament and inscriptions. The examination of cemeteries provides information of the chronological sequence of sites as the types, iconography and inscriptions of gravestones and *khachkars* are frequently a primary source for dating as well as attribution, such as the Orbelyan family markers and the presence of the Jewish community cemeteries of the 13–14th centuries in Yeghegis (Amit, Stone 2002; Stone, Amit 2006). Numerous carved High-to-Late Medieval grave markers in Vayots Dzor depict everyday artifacts and scenes of ritual practice, providing a glimpse into medieval material life. Cemeteries also attest to the history of resettlement and demographic change in later periods, as in the case of a Late Medieval-Early Modern Muslim cemetery near Sevazhayr.

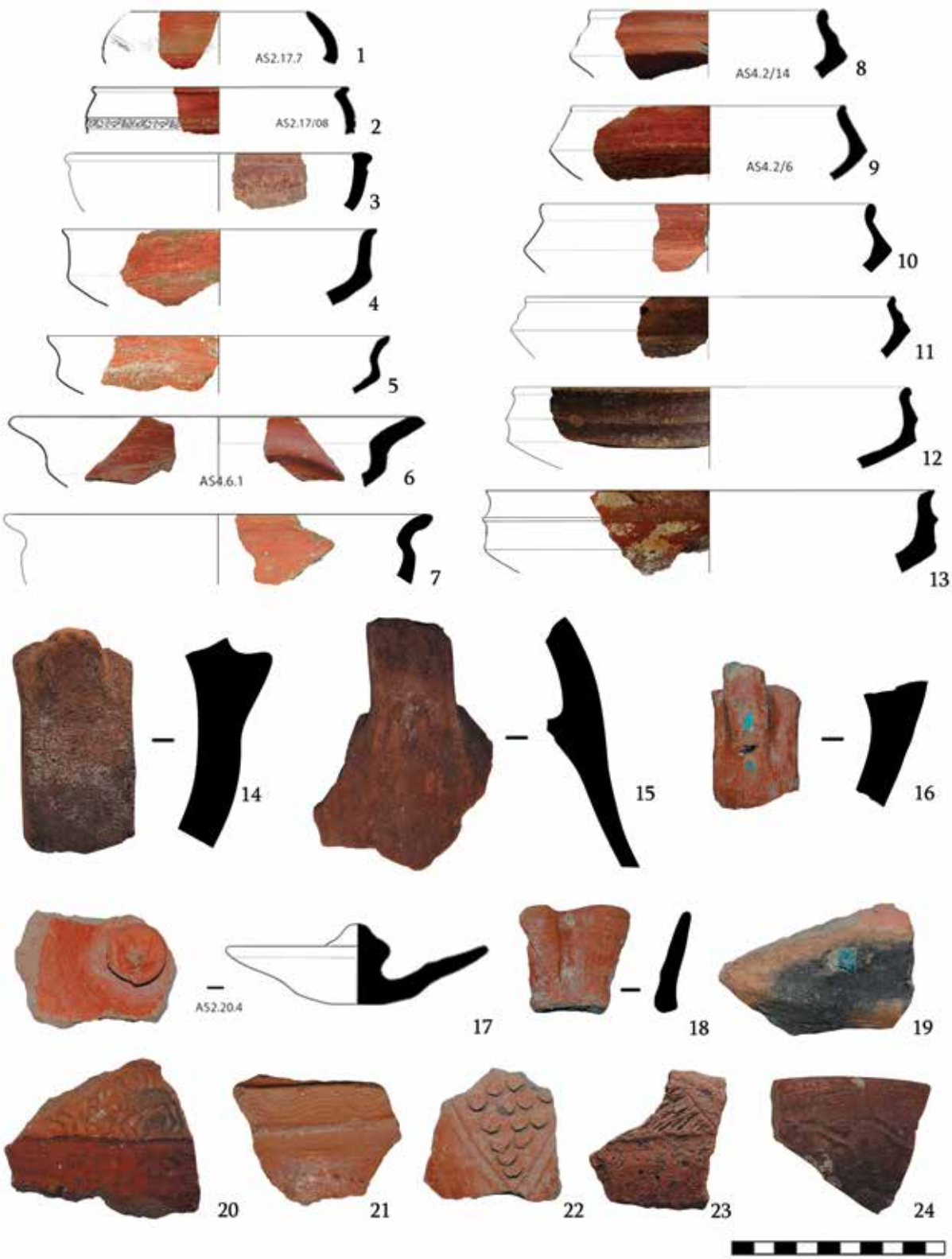
From the perspective of architectural history numerous relatively new-built small shrines have been overlooked; these shrines are built of collected and stacked stones and are the site of ongoing ritual by local people and visitors. However, fragments of *khachkars*, gravestones or architectural spolia we find in the masonry or erected inside serve as a memory of medieval built landscape. The shrines (as well as isolated *khachkars* or gravestones) may be located at or near the places of historical events (battle, martyrdom) (Fig. 12), may mark the presence of sites (settlement, cemetery, church, water-source, crossroad etc.) (Figs 15, 16) or may be entirely built from stones of earlier churches (Fig.14). Medieval churches frequently contain earlier *khachkars* as spolia within their walls; this practice continues into the present, demonstrated by the numerous gravestones and *khachkars* used to build clubs or Cultural Houses in towns and villages such as Areni, Aghavnadzor, and Horbategh (Fig. 18).

Material Culture

In parallel with the study of the Silk Routes network in Vayots Dzor, one of the significant results of the VDSRS is the exploration of the activity of people dwelling in the villages situated along the roads through the analysis of material culture, in its own right and in conjunction with architecture, texts and landscape. The excavations at Arpa village have been critical for our understanding of the material particularities of daily life and the integration of villages into the social and cultural life of Medieval Armenia. In addition, as the first site in Vayots Dzor systematically excavated by the VDSRS, Arpa serves as an anchor for our developing typologies linking sites across the research area. The medieval site at Arpa had well-preserved living contexts dated to the 13–14th centuries, was a significant station along the transit road leading from Nakhijevan to the southeastern coasts of Sevan lake, and had been a residence of Tarsayich Orbelyan (see more detailed in Babajanyan, Franklin 2018). In spite of its significance as an archaeological site and as a setting for significant medieval events, Arpa is quite precarious. The seismicity of the Vayots Dzor landscape has covered the site in layers of landslide from the overhanging limestone cliffs; meanwhile, the residents of modern Arpa dig into the medieval strata to construct new graves in the expanding cemetery. The first season of VDSRS excavations at Arpa continues to inform on everyday life in the village in a number of aspects, raising new questions about both local culture and more regional relationships which will continue to be investigated at Arpa and other sites.

The integration of excavations with survey and surface collection has enabled us to begin the work of reconstructing Medieval Vayots Dzor as a network of interrelated sites of different types, with different roles in the dynamics of medieval society.

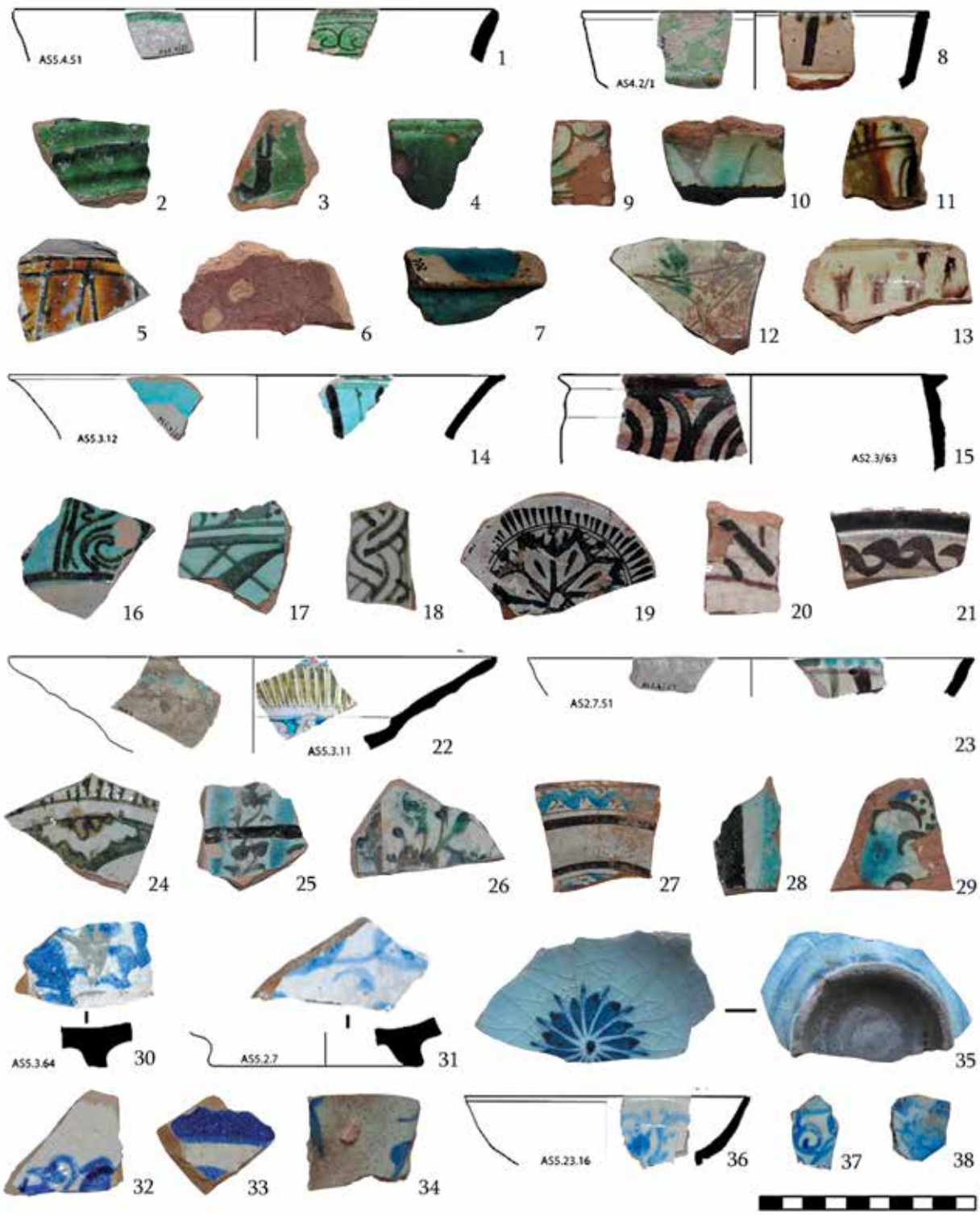
The examination of ceramics collected through surveys in comparison with assemblages of Arpa and other medieval sites of Armenia demonstrates the presence of the main functional and typological types unearthed at Arpa and mainly correspond to the 12–15th centuries. The analysis and classification of pottery reveals the specific type of ceramic which is preeminent to the Vayots Dzor region, which we have informally termed 'Vayots Dzor style' ceramic. This type of ceramic is distinguished by a bright, flame-red burnished surface, and, though produced in the Medieval period (12–15th centuries), bears an intriguing resemblance to the wares of the Urartian or Classical periods (Babajanyan, Franklin 2018, 164, 179; 2019, 131). Although red burnished wares were found in medieval sites of Armenia from the 9–10th centuries and were widespread in the 12th–13th centuries, this pottery of Vayots



Red burnished earthenwares decorated through sgraffito, incised, inlaid and stamped ornaments (12-14th c.)
(photos from VDSRS sites and Arpa excavations)

Arpa settlement - 1, 2, 6, 8, 9, 15-18, 20; Anapat settlement - 3, 4, 10, 14, 23, 24; Erdech fortress - 5, 7; Getap settlement - 11, 13; Berdakar fort/settlement - 12; Smbataberd fortress - 19; Selimberd fort/settlement - 21, 22.

Fig. 19. "Vayots Dzor style" wares from the VDSRS surveyed sites and excavations at Arpa (Photo: A. Babajanyan, drawings: K. Franklin).



1-7. monochrome glazed and sgraffito decorated earthenwares (12th-13th c.); 8-13. polychrome glazed, splashed and sgraffito decorated earthenwares (12th-13th c.); 14-24. monochrome painted earthenwares coated with transparant glaze (late 13th-14th c.); 22-29. polychrome painted and splashed earthenwares coated with transparant glaze (late 13-14th c.); 30-34. 'blue on white' earthenwares (late 14th-15th c.); 35-38. 'blue and white' fritwares (15th c.)

Arpa settlement- 1, 5, 8, 12, 14-19, 22-26, 30-33, 36-38; Karkop monastery- 2; Selimberd fort- 3; Vank settlement (Hors) - 4;Proshaberd fortress- 9; Anapat settlement- 10, 11; Hrasekaberd fort- 7; Getap settlement- 13; Erdech fortress 28 [photos by VDSRS]; Selim caravanserai- 20, 21, 29, 34, 35 [photos from Babajanyan, Zaqyan 2014]; Noravank monastery [photo by Babajanyan 2015 (from Yeghegnadzor Museum, inv. no. 1333/5696)].

Fig. 20. Glazed pottery from the VDSRS surveyed sites and excavations at Arpa (Photo: A. Babajanyan, drawings: K. Franklin).

Dzor made of fine-medium to coarse red fabrics has a distinctive style, technology, typology and distribution (Fig. 19). Our working hypothesis moving forward is that this local production of 'Vayots Dzor style' ware corresponded to the local "taste" situated within Vayots Dzor and was used in conjunction with the "imported taste". This latter category is expressed especially in the glazed wares, representing types typical of both the 12–13th centuries – monochrome and polychrome glazed, sgraffito and splashed decorated wares and late 13th and 14th centuries – monochrome, duochrome and polychrome painted and splashed wares coated with transparent colored or colorless glaze (Fig. 20).

The analysis of ceramics suggests a well-preserved coherent cultural landscape of Vayots Dzor in the 12–15th centuries, which remains to be fully comprehended through further investigations in the future. The emerging significance of the 'Vayots Dzor style' ceramic demonstrates that a central aspect of ongoing work on the Medieval archaeology of Vayots Dzor (and Armenia more broadly) must be the study of red bodied and 'plain' ceramic types, alongside the glazed forms which have long been the backbone of study. Of course, the glazed ceramics found at Arpa and at surveyed sites represent both local production and imports, or emulations of imports, from production centres elsewhere in Armenia and further afield within the Silk Road ecumene. Assessed together, the pottery assemblage of Vayots Dzor makes up a material world that is both self-contained and tangled within the other spaces of the region. That is, even as ceramics represent a realm of aesthetics, technology and taste, they also intersect with economic, ecological, and even architectural cultures of the same time and place. To give just one example, the ceramic evidence for wine making – such as two large Vayots Dzor style wine jars recovered from Arpa (Babajanyan, Franklin 2018, fig. 11/12) and now in the Yeghegnadzor Regional museum – complements accounts of vineyards and wineries within textual accounts, as well as suggesting the need for further survey to locate remains (terraces, field systems) of the intensive medieval investment in a fruitful landscape.

Conclusions and Future Directions

This collection of articles dedicated to the 60th Anniversary of the Institute of Archaeology and Ethnography has provided a space to reflect on the achievements of medieval archaeology in Armenia to date, and to consider what lies ahead for the study of Armenia's rich medieval heritage. For more than a century, Medieval archaeology has progressed in step with Medieval history – sometimes in quite visible ways, as new epigraphic texts are literally unearthed. Medieval archaeology is also increasingly and by necessity collaborative, as specialists in botanical and zooarchaeological data, GIS and remote sensing have joined the excavators, epigraphers, and architects in the field. As we have examined in this brief summary and continue to explore in ongoing research, Armenia's rich textual history of the Middle Ages and the vast archaeological record must continue to be studied together, not just as corroborating one another but as densely overlapping layers forming a complex image of medieval society.

We have briefly discussed the present stage of the VDSRS investigations, our aims, methods and main results, demonstrating the high significance of the area in the integration of the Silk Routes network in cultural and political modes, and as a case study in medieval archaeology at the landscape scale. In the 2015–2019 seasons we have focused our survey into multiple tributary branches of the Arpa river, and future investigations will be directed at an expanding survey area.

We carried out a first season of excavations at the medieval village of Arpa which is important for our frameworks of the study of Silk Roads culture in Vayots Dzor, as well being significant for the future directions of medieval archaeology. The medieval villages excavated in Armenia are quite few in number, and their archaeological investigation in tandem with ongoing work on urban, monastic, fortified and infrastructural sites is crucial for a full understanding of the complex topography of Medieval Armenia and the wider South Caucasus. Our landscape-scale study of ceramic assemblages has also raised the importance of museum collections for the re-consideration of older datasets. As A. Babajanyan's recent work at the Metsamor Museum has recently shown, curated collections allow for connections to be made across sites studied in isolation (Babajanyan 2017); we intend to continue this comparative work in Vayots Dzor.

In undertaking medieval landscape archaeology, we are inevitably drawn into consideration of the ongoing perceptions, transformations, and reconfigurations of the medieval landscape of Vayots Dzor during later periods. In order to recover the medieval landscape, we contend with Early Modern re-use and 20th century erasure, as well as the selective reconstruction or curation of medieval buildings and monuments in the Soviet and post-Soviet periods. It is impossible as well not to consider the evolving importance of the medieval landscape of Vayots Dzor to both Armenians

and international visitors. As we continue to work in Vayots Dzor we are looking for more ways to share our research with broader popular as well as academic audiences, whether through open-source data sharing, or exhibitions and public events. Just as our work demonstrates the agency of Armenians like the Orbelyans to shape their own destiny within the world of the Silk Road, we hope that our research will provide narratives through which people in Vayots Dzor and further afield can situate themselves both within a long history and a changing world.

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The Research of Epigraphs of Tatev Monastery and Surrounding Monuments

Arsen Harutyunyan

Institute of Archaeology and Ethnography, Armenia
"Matenadaran" Institute of Ancient Manuscripts after Mesrop Mashtots, Armenia

Abstract. The history of Tatev monastery and surrounding monuments is preserved on the pages of its rich written-cultural inheritance, where the epigraphs have their respectable place. The monastery, which was founded in the Early Middle Ages, since 9th century was reconstructed and replenished with a new buildings, which are testified by epigraphs preserved on the walls of different structures. In fact, the epigraphic inheritance of Tatev monastery and surrounding monuments needs to be completed and properly studied. Therefore, during last years we carried out epigraphical investigations in the abovementioned territory. In the 10th century the small churches were built in the surrounding settlements of Tatev monastery, which epigraphs also provide new information about the monastery and activity of its congregation. From an architectural perspective is more interesting the monastic structures of Harants and Tatev's Mets (big) hermitages, where the monks lived by special monastic order. The comprehensive study of epigraphical inheritance of Tatev monastery will present in a new way the role and significance of religion center of Syunik in the Armenian reality.

Keywords: Armenia, Tatev monastery, congregation, epigraph, church, narthex, hermitage, memoirs of khachkars, epitaph.

Introduction

Tatev monastery is one of the famous religion and cultural centers of medieval Armenia (at present in the Tatev community of Syunik region of Republic of Armenia), which unlike our other monastic complexes almost has always functioned (Fig. 1). The written-cultural inheritance of monastery as well as several sanctuaries – epigraphs and manuscripts, didn't receive properly attention so far. Due to that fact by us carried out an archaeological excavations (2014 – 2015)[1] and epigraphical investigations (2018 – 2020)[2] in the monastery and surrounding monuments, as a result of which we have copied 125 unpublished epigraphs, have introduced corrections in a number of published epigraphs, measured and took photos of all inscribed monumental monuments, such as khachkars (cross-stones), tombstones etc. Preliminary results of our investigations we have published on the pages of different scientific journals (Harutyunyan 2016, 129 – 146; Harutyunyan 2017a, 122 – 136; Harutyunyan 2017b, 555 – 571; Melkonyan et al. 2017, 305 – 320; Harutyunyan 2018a, 80 – 87; Harutyunyan 2019, 40 – 42), as far as we don't compleate the studies about a written inheritance of Tatev monastery and surrounding monuments.

Considering that our epigraphical investigations of monuments we have almost finished so we decided to present the main results of our epigraphic materials according to monuments. First we will present short information about the history of given monument, than the paleographic and content features, quantitative analysis etc. Of course, the main part of our materials is from Tatev monastery, but considering that fact that the monastery was connected also with surrounding monuments, such as the churches of Tsakut (translated as a thorny, prickly), Tsuravank, Kotrats khach (translated as a broken cross), St. Astvatsatsin of Tamalek, St. Minas of Tatev village, the church of Aghandz village, Halidzor's Harants and Tatev's Mets hermitages, the monument of Petrosakhach (translated as a cross of Peter) by us were also investigated that all, which we will present below starting at Tatev monastery.

Tatev Monastery

Recently we have addressed to the previously publications of epigraphs of Tatev monastery and to the results of our copies (Harutyunyan 2016), so we don't

1 The archaeological excavations at Tatev monastery carried out by scientific expedition of the Institute of Archaeology and Ethnography of the National Academy of Sciences of Republic of Armenia, consisting of Husik Melkonyan (head of expedition), Arsen Harutyunyan and Davit Davtyan (members) (Fig. 2). Lately we have published the main results of excavations (Melkonyan et al. 2017).

2 I would like to express my gratitude to my friends from Tatev village Saghatel Isaverdyan and Vahagn Gevorgyan who earnestly accompanied me to almost all the monuments.

Fig. 1. A general view of Tatev monastery from the south-west (Photo: Author, 2015).

Fig. 2. The members of archaeological excavations of Tatev monastery with abbot Mikayel (Photo: Author, 2015).

provide the same details in this article. It should be noted that despite the fact that epigraphs of Tatev monastery and its surroundings were published in the second volume of Corpus of Armenian epigraphs by famous epigraphist Sedrak Barkhudaryan – 93 epigraphs (Barkhudaryan 1960, 13 – 39), but more comprehensive work about epigraphic heritage of Tatev monastery is the book of Archbishop Mesrop Ter-Movsisyan Magistros (translated as a Master degree), where were published 146 epigraphs (Ter-Movsisean 1938, 44 – 53)[3]. Earlier 45 epigraphs from Tatev monastery were published in "Ararat" journal by the same Archbishop Mesrop (Ter-Movsisean 1918, 2010).

3 Still in the 13th century the metropolitan of Syunik and historiographer Step'anos Orbelyan mentioned 2 epigraphs from Tatev monastery. Later many epigraphs from Tatev were published in topographic works of Archbishop Sargis Jalalyants, Bishop Hovhannes Shahkhatunyants, Ghevond Alishan, Yervand Lalayan. Some epigraphs from Tatev monastery we can find also in the works of Matteos Papazyants, Aleksandr Yeritsov, Karapet Kostanyants, archaeologist Aram Kalantaryan and in our articles too.

Fig. 3 a,b. The pedestal in the name of St. Pandaleon, 9–10th centuries (Photo and drawing: Author, 2015).

The former leader of the diocese of Syunik and abbot of Tatev monastery Bishop Artak Smbatyan during his leadership (1922–1926) wrote a brief history of monastery, as well as presented the chronology of abbots enthronement and published 55 epigraphs from Tatev monastery and its surroundings (Smbatean 1930). Due to the absence of abovementioned publications many epigraphs were left out from the mentioned academic volume or were presented as a newly-found.

At the beginning of this century among unpublished epigraphs of the settlements of Syunik, epigraphist Suren Saghumyan addressed to the epigraphs of Tatev monastery, who also didn't use the abovementioned publications (Saghumyan 2001). According to S. Saghumyan there were about 3–4 dozen unpublished epigraphs on the ancient walls of Tatev monastery, study of which will contribute to the coverage of the history of this religion center (Saghumyan 2001, 100).

Turning to our collection of Tatev's epigraphs it should be noted that since 2015 we have copied about 110 inscriptions which haven't been published in the abovementioned Corpus. 24 of them are published by Mesrop Magistros (some of them by Smbatyan too), 13 of them by Suren Saghumyan, so the quantity of unpublished epigraphs of monastery is 73. The chronology of Tatev's epigraphs is from the 9th to the 19th centuries. Oldest of them is dated to the 9–10th centuries, which is preserved on the two sides of the pedestal or the base of column standed near previously leader's building (Fig. 3/a, b). According to inscription on the initiative of vilely religious figure (ecclesiastic) Giorg hazarapet (translated as a leader) was erected a monument in the name of St. Pandaleon. "ԿԱՆ|ԳՆ|ԵՑԱԻ ՍՐՈՒ/ՐԲ ՊԱՆՏԱՂԻՈՆ/Ն Ի ՁԵՌՆ ԳԻՈՐ/ՐԳ|ՀԱՁԱՐԱ[Ր]-Պ|ԵՏԻՆ|" ("The monument named after St. Pandaleon was erected by Giorg hazarapet"), on the other side. "ՅԻՇ|Ե|Ա|Յ| Ք|ՐԻՍՏՈ|Ս / Ա|ՍՏՈՒԱ|Ծ ՁԳԻ-/ՐՈՐԳ ՆՈՒ/ԱՍՏ ԿՐԱ/|ԻՆԱ|ԻՈՐ" ("Crist, God remember vilely religious figure Giorg") (Harutyunyan 2016, 137; Harutyunyan 2017b, 557–558). This

Fig. 4. A newly-found fragment of cornice in the name of Vasak hazarapet, 10–11th centuries (Photo: Author, 2019).

Fig. 5 The pedestal in the name of Vasak hazarapet, 10th–11th centuries (Photo: Author, 2018).

epigraphic unique evidence is about a cult of doctor St. Pandaleon in the Armenian reality.

From the perspective of early paleographic features is remarkable also the fragment of cornice decorated with lines, which was found during construction works of the buildings attached to the fortress in 2018 (Fig. 4). On the central part of newly-found stone with comely letters is written. "ՐՎԱՍՒԱԿ ՀԱԶԱՐԱՊՐԵՏ" ("Vasak hazarapet"). The name we have deciphered *Vasak*, because in the other epigraph engraved on the pedestal, which is situated near the western wall of St. Paul-Peter cathedral, is mentioned the name of Vasak hazarapet. "ՁՀԱՅՐ ՎԱՍԱԿ/Կ ՀԱԶԱՐ|Ա¸ՊԵՏ / ՅԻՇԵՑԷՔ" ("Remember abbot Vasak hazarapet") (Fig. 5). The word of *hazarapet* which is mentioned in this and previously epigraphs in our opinion it doesn't mean a soldarly officer (Malkhaseants 1944, 9), but as a leader of monastery, so as an "officer" of congregation. Father Ghevond Alishan, then Bishop Artak Smbatyan and Mesrop Magistros from Tatev monastery also published one of the epigraphs, where was mentioned the name of Vasak hazarapet. "ՁՀԱՅՐ ՎԱՍԱԿ ՅԻՇԵՑԷՔ" ("Remember abbot Vasak"), who propably was the same leader (Alishan 1893, 235; Smbatean 1930, 324; Ter-Movsisean 1938, 45_{24}).

A lot of epigraphs of Tatev monastery were found in 1970's as a result of the large-scale construction and reconstruction works after an earthquake in 1931. During that works archaeologist Aram Kalantaryan found pair copper bells casted by Step'anos Orbelyan order, which are dated to 1302 and 1304 (Kalantaryan 1974, 117–118). It should be noted that many khachkars were found during the renovations of the church of St. Gregory the Illuminator, which were used to inside the walls (Saghumyan 2001, 94). Later some of them moved to the Geological museum of Goris and at present three of them dated to 991, 1273 and 1291 are situated in the yard of the church of St. Gregory the Illuminator of Goris. Due to the mentioned circumstances a lot of epigraphs were left out from the second volume of the Corpus.

In terms of content most of Tatev's epigraphs are memoirs which are engraved on the khachkars or cross-carved stones. On the walls of different structures of monastery we can see simply and stylized small and big crosses with short memoirs. These are often dated, which allows us to decide the approximate time of undated memoirs, which are mainly from the 15th to the 17th centuries. The existence of cross-carved on the walls of the buildings of monasteries

Fig. 6. Tsakut's church from the south-west and the fallen stone in the name of Sarges, 10th century (Photo: Author, 2018).

is frequent. There isn't single explanation for understanding the significance of their existence. The cross as a symbol of Christianity and christians is dedicated to visitors-donators as well to any christians for their soul's salvation and intercession, because the walls of church as a sacred area turned into a pages of Book of life (Petrosyan 2008, 331).

The existence a lot of cross-carved of Late Middle Ages as well as the placed of khachkars on the walls of churches was mainly due to christian donations for the construction or renovation works of churches or any buildings. Members of monastic congregation mentioned the names of donators during the liturgies or on that occasion they erected khachkars (or cross-carved stones) mainly with short memoirs. According to Zakaria Aguletsi on the southern, northern and western walls of the church of St. Christopher of Agulis were placed inscribed 25 khachkars, stones and one high-relief, for which the donators dedicated per person one tuman (Persian gold money) for renovation of church in 1671–1675 (Aguletsi 1938, 96; Hasratean 1997, 213; Ayvazean 2005, 28)[4]. We don't exclude such a function of the cross-carved stones memoirs of Tatev monastery.

Tsakut's Church

Half-destroyed this church is located in the center of hill not far from the natural bridge called "Satana" (translated as a devil). The dome as well as the eastern and western walls of church are destroyed (Fig. 6). According to Step'anos Orbelyan the church of Tsakut

4 Epigraphist Argam Ayvazyan has published the all 26 epigraphs, where were mentioned only the names of donators (Ayvazean 2005, $71\text{-}75_{34\text{-}57}$).

Fig. 7. a. Tsuravank's church from the south-west; b. A general interior of Tsuravank's church (Photo: Author, 2018).

(translated as a thorny, prickly) was built and illustrated by Bishop Hakob of Syunik in 932. Bishop Hakob bringing water from Dzagedzor's mountains to the eastern side of Tatev monastery, the all desolate slope became as a flower's garden, so "thakut" (thorny) became "vardut" (flower's garden) (Orbelean 1861, 185). The motive of building of church was to create a sanctuary for the monks-gardeners, because the monastery was quite far away (Smbatean 1930, 289).

There are many sings of masters on the walls of church and on the fallen stones mostly the letters "U" (S), "ՍՍ" (SA) and on the one of the fallen stones is "ՍԱՐԳ/ԷՍ" (Sarges), from which can be assumed that master of church was a Sarges (Sargis). On the walls of church and surrounding we haven't fixed other epigraphs.

Fig. 8. The khachkar standed in 1334 in the place of "Cross of Svarants" (Photo: Author, 2018).

Tsuravank

About 600 m to the north-east from the village of Tandzatap, in the place called "Cross of Svarants" is located a small church of Tsuravank (Fig. 7/a, b). According to Step'anos Orbelyan princ Ashot of Syunik not only Tsuravank, but also the fortress of Tsur and the river of the same name, farms and villages of Tandzatap and Deghnadzor bought and dedicated to the Tatev monastery in 906 (Orbelyan 1861, 167). Today is preserved one nave basilica small church of St. Astvatsatsin, which is dated to 10th century. The walls of church are lined with uncultivated stones and decorated with simply khachkars. The church was built by abbot Thaddeus, which was testified by epigraph preserved on the cornice of stage's facade. "ՊՀՂԱՅՐ ԹԱԴԷՈՍ ՇԻՆՈՂ ՍԲ. ԵԿԵՂԵՑՈՅՍ, ՅԻՇԼԵ-ՑԷՔ Ի ՔԼՐԻՍՏՈՍ" ("Abbot Thaddeus, the builder of saint church, remember Christ") (Barkhudaryan 1960, 41$_{95}$).

Sedrak Barkhudaryan published 3 epigraphs from this monument, one of which was kept on the khachkar standed at a little south-west to the church (Fig. 8). According to inscription, dated to 1334, Friar Husm, who was a son of Archimandrite (vardapet) Set's sister, erected a khachkar in the name of St. Astvatsatsin on the occasion of the church renovation. "…ՆՈՐ/ ՆՈՐ/ՈԳԵ/ԱՑ Ձ/ՍԲ. Ե/ԿԵՂԵ/ՑԻՍ, / ԿԱՆԳ-

/ՆԵՑ/Ի ՉԽ/ԱՉՍ / ՅԱՆ/ՈՒՆ ՍԲ. / Ա╷ՍՏՈՒԱ╷ԾԱ/ԾՆԻՆ…" ("I just repaired the saint church and erected a cross (khachkar) in the name after of St. Astvatsatsin") (Barkhudaryan 1960, 40[94]). 2 epigraphs of them and also 5 earlier were published by Mesrop Magistros (Ter-Movsisean 1938, 55–56[147–148, 151–155]). In our collection are included 7 epigraphs from Tsuravank, 2 of which are unpublished yet. Some epigraphs published by Mesrop Magistros haven't been preserved at present.

Kotrats Khach

On the road of Tatev's Mets (big) hermitage from the monastery, not far from spring are located the remains of Kotrats khach (translated as a broken cross) church (Fig. 9). Judging by proportions and preserved epigraphs this church was also built in the 10th century parhaps by the same Bishop Hakob of Syunik. This monument most likely was destroyed by an earthquake in 1931, because at the biginning of the previously century Mesrop Magistros saw it standed and likening it to the abovementiond Tsuravank's church, described as a building with uncultivated stones (expect for the roof) (Ter-Movsisean 1938, 57).

There are some khachkars and pedestals in surrounding of church. One of them is erected on the high pedestal (Fig. 10), date of which Mesrop Magistros read "ՉԼ", so 1281 (Ter-Movsisean 1938, 57[158]). In 1953 during his pilgrimage to Tatev Bishop Derenik P'oladyan described this khachkar but couldn't to decipher the inscription, because he didn't have enough time (Derenik Bishop 1955, 40). Being unfamiliar of decipherment of Mesrop Magistros, later the correct date of inscription read epigraphist Grigor Grigoryan–"ՇԼ", so 1081 (Grigoryan 2009, 67). According to inscription Priest Step'anos erected a khachkar for salvation of his father Khachanun's soul. Khachanun name decipherment is ours.

The previously publishers from this monument presented dual epigraphs. We have copied 5 epigraphs one of which is one of the oldest inscriptions of our collection (Fig. 11). It's preserved on the rectangular pedestal of khachkar and after decipherment turned out that khachkar was erected in memory some Gagor and his mother. "ՆԼԸ. (989) Թ╷ՈՒ╷Ի╷Ն╷, ՉԳԱ/ԳՈՐ ԵՒ ՉՄԱ/ՅՐ ԻՒՐ ՅԻՇԵ/ՅԷՔ Ի Ք╷ՐԻՍՏՈ╷Ս" ("Gagor and his mother, remember Christ, in 989").

One of the newly-found khachkars is dated to 1400. Another khachkar, according to paleographic and sculptural features, is typical in the 12–13th centuries. Due to the decipherment of inscription turned out

Fig. 9. The remains of church called Kotrats khach (Photo: Author, 2018).

Fig. 10. The khachkar erected in 1081 in memory of Priest Khachanun (Photo: Author, 2018).

Fig. 11. The inscribed pedestal in 989 (Photo: Author, 2018).

Fig. 12. The church of St. Astvatsatsin in the medieval Tamalek village, 10th century (Photo: Author, 2018).

Fig. 13. The khachkar erected in 1301 by Priest Hovhannes (Photo: Author, 2018).

Fig. 14. A general view of Petrosakhach mountain (Photo: Author, 2018).

that khachkar erected some Vorotshah in memory of his parents Mamakhatun and Hasan. This inscription with some omissions published Grigor Grigoryan too (Grigoryan 2009, 67).

A little to the south-east from Kotrats khach monument, in the place called "Honynkuzut" (translated as a berry and walnut) we have copied inscription of fallen khachkar, which is dated to 1176. According to inscription some Arsen and Mkhitar (perhaps only Arsen) erected a khachkar in memory their brother Khaghik. "...ԵՄ ԱՐՍԷՆ ՈՒ ՄԽԻ-Թ/ԱՐ, ԿԱՆԳՆԵՑԻ ՋԽԱ/ՉՍ ԵՂԲԱՒՐ ԻՄ ԽԱ-/ՂԻԿԱՅ…" ("I–Arsen and Mkhitar erected a cross in memory my brother Khaghik").

In fact, this place previously was a cemetery about which testified a few tombstones.

St. Astvatsatsin Church of Tamalek (Tumbalants)

The destroyed church of St. Astvatsatsin is located a little to the south from Tatev monastery, on the opposite bank of the river of the same name, in the medieval village of Tamalek (Fig. 12). Most likely this church was also built in the 10th century. According to Step'anos Orbelyan this village was bought and donated to the Tatev monastery in 906 (Orbelean 1861, 167). Despite this fact the residents of villages of Tamalek and Tsur always have been disobedient to the congregation of Tatev monastery.

At present only the northern wall of the church is preserved. There is a khachkar on the eastern side of church, far away only 0,60 m (Fig. 13). Previously Mesrop Magistros published the epigraphs of this and other khachkars (Ter-Movsisean 1938, 53–54$_{145-146}$). Unfortunately, the second khachkar hasn't been preserved. It didn't see Sedrak Barkhudaryan too, because he published only the inscription of at present standed khachkar (Barkhudrayan 1960, 33$_{64}$). According to inscription the khachkar erected Priest Hovhannes, who under the leadership of friers Hayrapet, Hovhannes and Step'anos (1290's) come to this church and erected khachkar for monastic brothers who must be exempt from taxes (Ter-Movsisean 1938, 53–54$_{145}$; Barkhudaryan 1960, 33$_{64}$).

In opinion of Sedrak Barkhudaryan probable creation time of this khachkar is the last decades of the 13th century, because the part of date is damaged (Barkhudaryan 1960, 33). It should be noted that earlier Mesrop Magistros read the correct date which is "ՉԾ" so 1301 (Ter-Movsisean 1938, 53–54$_{145}$).

Petrosakhach

The mountain of Petrosakhach (2031 m) (translated as a Cross of Peter) is located about 4 km to the north-west from Tatev monastery (Fig. 14). Here was situated the medieval village of Petroskavank, which according to tariff mentioned by Step'anos Orbelyan paid 10 points tax to the Tatev monastery (Orbelean 1861, 375). On the top of abovementioned mountein is erected a lower part of khachkar, which is dated to 11–12th centuries. The other half of monument, according to Roman Hovsepyan, is located near the spring called Khozaghbyur (translated as a spring of pig), in the foot-hill of the same mountain on which the villagers making rain-related rituals. It was the following: during a drought the girls visited to the spring and immersing the cross-stone into the water (in case a stopping of rain the women making fire on the same stone) (Hovsepyan 2018, 349–351).

During our visit to the Petrosakhach in 2018, we have copied the epigraph preserved on the lower part of the same khachkar. According to inscription some Degh, under the leadership of Friar Hovhannes, erected a khachkar in memory of his parents. "ԵՍ ԴԵՂՍԻ, / ԿԱՆԳՆԵՑԻ / ՁԽԱՁՍ ԾՆՈՂ/ԱՑ ԻՄՈՑ, ՅԱՌ/ԱՋՆՈՐԴՈՒ/ԹԼԱՆՆ ՏԼԷՐ ՈՀԱՆԻՍ/Ի…" ("I–Degh, erected a cross in memory of my parents, under the leadership of Ter Ohanis") (Harutyunyan 2018a, 82) (Fig. 15/a, b).

In our opinion Friar Hovhannes, mentioned in the inscription, was a leader of Tatev monastery, who acted in the first half of the 11th century. His name we can find in Tatev's epigraphs too. Most likely the khachkar isn't its original place, but was brought from other place, for example, from Tatev monastery and was erected on the top of mountain as a "Tsasman khach" (translated as a cross of anger) and as a sacred place for pilgrims.

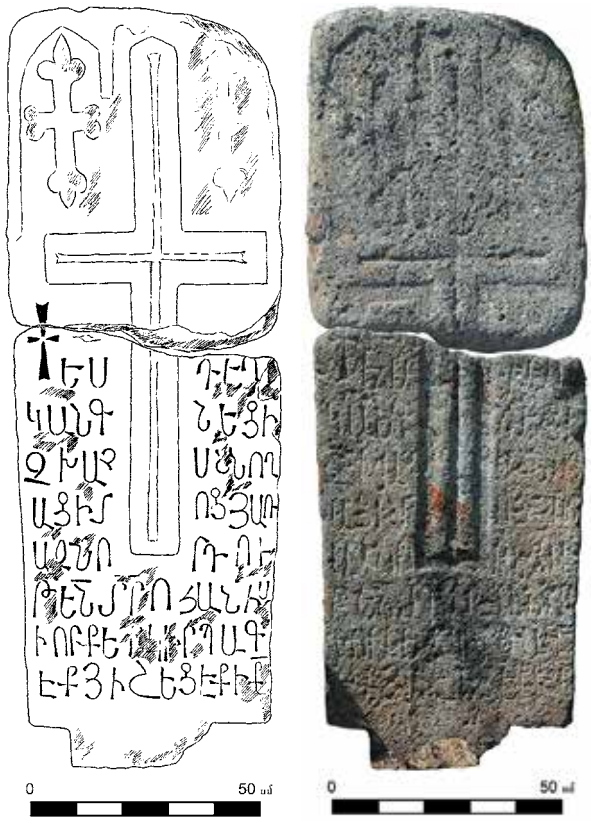

Fig. 15 a, b. The khachkar erected on the top of Petrosakhach mountain (lower part), 11th–12th centuries (Photo and drawing: Author, 2018).

The Church of Aghandz Village (Gyunein)

Almost in the middle of the road from Tatev to Tandzatap villages, on the left bank of the Aghandz river is located the one nave basilica church. This place is called also Gyunein (translated as a sunny) (Fig. 16/a, b). In the same place there was a medieval village Aghandz. In the 15–19th centuries it was also mentioned in a tariffs of Tatev monastery (Alishan 1893, 209; Hakobyan et al. 1986, 156; Poghosyan 2011, 211). At present from medieval village almost nothing has been preserved, except for some parts of the walls of buildings, khachkars, cross-carved stones, tombstones

Fig. 16. a. The church of Aghandz village (Gyunein) from the south; b. A general interior of Aghandz's church (Photo: Author, 2019).

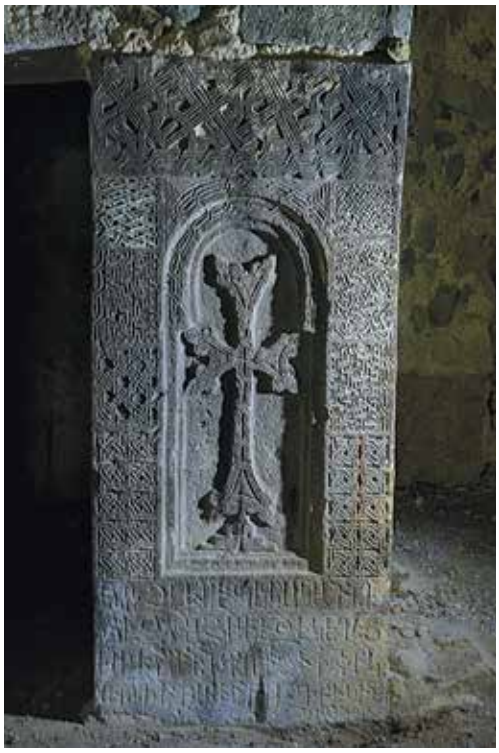

Fig. 17. The khachkar erected in 1281 on the occasion of repair of church (Photo: Author, 2019).

Fig. 18. The entrance of narthex of Harants hermitage, 18th century (Photo: Author, 2019).

Fig. 19. The western door of St. Astvatsatsin church of Harants hermitage, 18th century (2019).

and abovementioned one nave basilica church with three pairs of pilasters reconstructed at least in the 18th century, because on the walls were placed a lot of khachkars, cross-carved stones, tombstones dated to 13–17th centuries and some of them inscribed. Some evidences about this church we didn't find. According to one of the epigraphs placed on the left side of altar the church was repaired in 1281 by some Elpek, on which occasion erected a khachkar. "ԹՈՒԻՆ ՋԼ. (1281), ԵՄ ԷԼՊԷԿՍ, ԿԱՆԳՆԵ/ՑԻ ԶԽԱՉՍ ԵՒ ՁԵԿԵՂԵՑ/ԻՍ ՎԵՐՍՏԻՆ ՆՈՐՈԳԵՑԻ…" ("I–Elpek, erected a cross and again repaired this church in 1281") (Fig. 17). This important epigraphical evidence testifies about the existence of church before the 13th century and in the following centuries it was repaired and changed several times. From this church we have copied 11 epigraphs.

Halidzor's Harants or Former Mets Hermitage of Tatev

Halidzor's Harants or former Mets hermitage of Tatev, which in the literary sources famous also as a Mets hermitage of Syunik, is located in Vorotan's canyon, on the opposite hill of the old Halidzor village (Fig. 18). The monastic complex, which was found at the beginning of the 17th century, according to historiographer Arakel Davrijetsi, demaged by an earthquake in 1658 (Davrijetsi 1990, 222). After that the congregation of hermitage moved and in the place of the present Tatev's Mets hermitage founded a new monastery by initiative of Archimandrite Aristakes Tatevatsi (Aguletsi 1938, 75–76).

Decades after the abovementioned earthquake, the previously hermitage has been repaired, fenced and replenished with a new buildings. The epigraph preserved on the western door's lintel of the three nave basilica church of St. Astvatsatsin, testifies about that works, according to which Friar Hovhannes's son Monk Sahak. "...ՆՈՐՈԳԵԱՑ ԵԿԵՂԵՑԻՍ ԵՒ ՇԻՆԵԱՑ ՁԳԱՒ/ԻՔՍ, ՁՊԱՐԻՍՊՍ ԵՒ ԱՅԼ ՇԻՆՎԱՑՔ / ՍԲ. ԱՆԱՊԱՏԻՍ…" ("…repaired the church and built narthex (gavit'), fortress and other buildings of the saint hermitage…") (Ter-Movsisean 1938, 59168; Barkhudaryan 1960, 54134; Harutyunyan 2018b, 320) (Fig. 19). Despite the inscription haven't exact date, but in our opinion probable time of that works is at the beginning of the 18th century. Another epigraph, preserved on the semicircular stone placed on the top of the western entrance of the fortress, testifies also about the abovementioned works, which is following: Monk Sahak built the fortress of hermi-

tage during the catholicosate of Astvatsatur Hamadantsi and under leadership of Archimandrite Kirakos[5] of Tatev monastery (Ter-Movsisean 1938, 59171; Barkhudaryan 1960, 54131). As we know, Astvatsatur Hamadantsi was reign in 1715–1725.

From Harants hermitage we have copied 8 epigraphs, 2 of which unpublished. In Corpus from this monument were published 6 epigraphs (Barkhudayan 1960, 54131–136), earlier Yervand Lalayan published 4 epigraphs (Lalayean 1898, 147) and 6 epigraphs were published by Mesrop Magistros (Ter-Movsisean 1938, 59166–171). From newly-found inscriptions is remarkable a constructural epigraph preserved at the narrow side of the stone placed on the top of the western entrance of the chapel (probably chapel-baptistery). This monument is attached to the northern wall of general church. According to epigraph, one of the famous meliks of Syunik prince Haykaz II (1534/6-1621/3) built a church named after St. Hovhannes (John) in 1611. "ԿԱՍ Ա Ի Ն Ա ԱՍՏՈՒԾՈՅ, ԵՍ ՀԱՅԿԱԶ ԻՇԽԱՆ, ՇԻՆԵՑԻ ՍԲ. ԵԿԵՂԵՑՑԻՍ / ՍԲ. ՅՈՎԱՆԷՍ…" ("By God's will, I–prince Haykaz, built a saint church named after St. Hovhannes…"). It should be noted that according to this epigraph turned out the name, construction time and donator of chapel. In fact, prince Haykaz was famous with his church-constructural and cultural activities (Ghulyan 2001, 24–25). His name was also mentioned in the fortress construction epigraph (1613) of Tsitsernavank monastery (now in Kashatagh province of Artsakh Republic) (Barkhudaryan 1982, 193690).

This mysterious sanctuary was also a famous writing center in the first half of the 17th century, from where passed to us more than a dozen manuscripts (Harutyunyan 2018b, 316–342).

Tatev's Mets (Big) Hermitage

Tatev's Mets (big) hermitage is located in the Vorotan's canyon, on the right bank of the same name river, to the south-east from Tatev monastery (Fig. 20). As mentioned above it was founded at the beginning of 1660's, after an earthquake in 1658, when destroyed the Harants or former Tatev's hermitage, during the reign of the Catholicos of All Armenians Hakob Jughayetsi (1655–1680). Founder of a new hermitage is abbot Archimandrite Aristakes Tatevatsi who is burried in front of the western entrance of the three nave basilica church of St. Astvatsatsin, where later by donation of Melik Yegan was built a narthex (gavit')

Fig. 20. A general view of Tatev's Mets hermitage from Kotrats khach monument (Photo: Author, 2018).

Fig. 21 a, b. The tombstone of Archimandrite Aristakes in the narthex of Tatev's Mets hermitage, in 1674 (Photo and drawing: Author, 2018).

in 1743. The large epitaph of Archimandrite Aristakes is remarkable evidence about foundation of hermitage, where abbot Aristakes was called a leader of monastery, founder of church and other buildings. "… ՄԵՆԱՍՏԱՆԻՍ ԱՌԱՋՆՈՐԴԻ, ԵԿԵՂԵՑԻՈՅ ԿԱՏԱՐՈՂԻ ԵՒ ՀԱՄՕՐԷՆՍ ՇԻՆՈՒԱԾԻ…" (Ter-Movsisean 1938, 58161b; Grigoryan 2009, 65–66) (Fig. 21/a, b). Near mentioned Aristakes are also buried archimandrites Ghazar Norashinketsi (+1681) and Nerses Tatevatsi (+1765).

There are 21 epigraphs in our collection from this hermitage[6], only one of which was published in Corpus (Barkhudaryan 1960, 3567). Mesrop Magistros and later Grigor Grigoryan published about 7–8 epigraphs

5 Mesrop Magistros the name read Marcos (Ter-Movsisean 1938, 59171).

6 Last year in the Institute of Archaeology and Ethnography of the National Academy of Sciences of Republic of Armenia we presented a report about epigraphic inheritance of Tatev's Mets hermitage (Harutyunyan 2019, 40-42).

Fig. 22. St. Minas church of Tatev village from the east, in 1646 (Photo: Author, 2016).

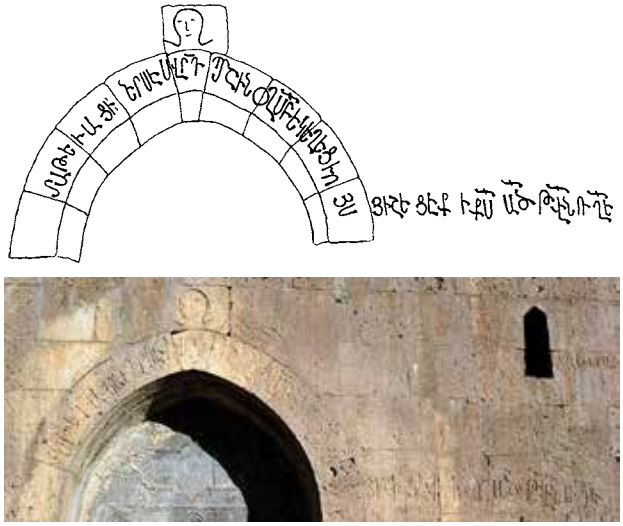

Fig. 23 a, b. One of the constructural epigraphs of St. Minas church (Photo and drawing: Author, 2016).

(Ter-Movsisean 1938, 57–58159–165; Grigoryan 2009, 65–66). The main part of our collection's epigraphs are epitaphs preserved on the gravestones in front of western entrance of small narthex. As a result of the decipherment of epitaphs turned out the names of some monks, who had their activities in the 18th century. They are Friar Barsegh Gharadaghtsi (+1700), Priest Hovhannes Aghuetsi (+1715), Archimandrite Sargis (+1752), Caliph Yeremia Tatevatsi (+1771) and one epitaph is from outside of hermitage where was mentioned the name of Friar Baghdasar's son Nerses (+1726).

In terms of concept the epigraphs of Tatev's Mets hermitage provide information about foundation of hermitage (constructions church and monastic cells), later constructions narthex, fortress and finally about congregation.

St. Minas Church of Tatev Village

The three nave basilica church of St. Minas is located on the northwestern side of Tatev village, which was built in 1646 (Fig. 22). A lot of churches were built in the middle of the 17th century in the some communities of Syunik, such as Harjis, Khoznavar, Tandzatap, Halidzor, Bardzravan etc., which are called St. Minas. It's nice evidence about a cult of St. Minas in this area.

According to pair constructural epigraphs engraved on the southern wall of the church, it was built by Archimandrite Nerses Tatevatsi. "ՏԱԹԵԻԱՑԻ ՆԵՐՍԷՍ ՎԼԱՅՐԼԱՊԵՑՏ՝ ՇԻՆՕՂ ՍԲ. ԵԿԵՂԵՑԻՈՅՍ, ՅԻՇԵՑԷՔ Ի ՔՐԻՍՏՈՍ ԱՍՏՈՒԱԾ, ԹՎԻՆ ՌՂԵ (1646)" ("Archimandrite Nerses Tatevatsi, builder of the saint church, remember Christ, God, in 1646") (Barkhudaryan 1960, 34₆₆; Harutyunyan 2017a, 123ı) (Fig. 23/a, b). According to literary sources Nerses was one of the learned clergymen of that time. He also held a position of the leader of Tatev monastery. He died in 1655 and was buried in Tatev monastery (Acharean 1924, 4). The tombstone of Archimandrite (in epitaph – Bishop) Nerses was considered lost, but according to S. Saghumyan lately it was found under the southwestern pilaster's base of the bell tower of Tatev monastery (Saghumyan 2001, 98).

A few years ago we published 17 epigraphs from this church and 1 inscription engraved on the southern door of the church. 13 epigraphs from this church are epitaphs of surrounding cemetery which are dated to 17–19th centuries (Harutyunyan 2017a, 129–134). During our epigraphic investigations turned out a number of famous family names of Tatev village, such as Totunts, Ghalamats, Hiranats, Slerants, Avchunts, Pozonts etc.

Conclusions

Completing the results of our epigraphic investigations carried out in the last years in the Tatev monastery and surrounding monuments, can be recorded the following:

a. The research of epigraphic inheritance of Tatev monastery turned out the chronology of construction and renovation works of the monastery and other monuments. In fact, the monastery developed in the 10–11th, 13–15th, 17–18th centuries and became as a famous scribal center with its high school and university.

b. The adjacent small churches of monastery, such as churches of Tsakut, Tamalek, Kotrats khach

etc., are dated to 10th century. In our opinion the existence of churches is due to the inaccessibility of the monastery to the residents of the surrounding villages. Apparently for the same reason in the 17th century was built the church of St. Minas in Tatev village, not far from the monastery.

c. Hermitages of Vorotan's canyon are masterpieces of Late Medieval architecture of Syunik, where monks lived by special monastic order. Epigraphs of this hermitages are very important sources of the history of them, according to which turned out many details about the foundation and further periods of the monuments.

d. The quantitative analysis of our research today is the following:

1. Tatev monastery – 111 epigraphs, 74 of which unpublished (the years of our investigations – 2014 – 2016, 2018 – 2020).
2. Tsakut's church – 1 unpublished epigraph and signs of masters (2018).
3. Tsuravank – 7 epigraphs, 2 of which unpublished (2018).
4. Kotrats khach – 5 epigraphs, 3 of which unpublished (2018 – 2019).
5. St. Astvatsatsin church of Tamalek – 1 epigraph (2015, 2018).
6. Petrosakhach – 1 unpublished epigraph (2018).
7. The church of Aghandz village (Gyunein) – 11 unpublished epigraphs (2019).
8. Halidzor's Harants hermitage – 8 epigraphs, 2 of which unpublished (2019).
9. Tatev's Mets hermitage – 21 epigraphs, 12 of which unpublished (2018).
10. St. Minas church of Tatev village – 18 epigraphs, 16 of which unpublished (2015 – 2016), and 3 unpublished epigraphs from medieval cemetery of Tashu settlement (2020).

Finally, it should be noted that as a result of our investigations, we have copied 125 unpublished epigraphs, have introduced corrections in a number of published epigraphs. Of course, all this material must be completed and published in the near future as a fundamental research.

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The Way to Dvin: Life and Work of Karo Ghafadaryan

Aghavni Zhamkochyan, Nyura Hakobyan

Institute of Archaeology and Ethnography, Armenia

Abstract. This paper aims to present the life and scientific activity of the devotee of Armenian archaeology Karo Ghafadaryan. He was the head of the Department of Medieval Archaeology at the Institute of Archaeology and Ethnography of Armenia (1959–1976), as well as the director of the History Museum of Armenia (1940–1965). He also directed the first systematic archaeological investigations at Dvin, the ancient capital of Armenia. The scientific heritage of Karo Ghafadaryan is immense in the fields of Armenian archaeology, epigraphy and textology.

Keywords: Armenian Academy of Sciences, Institute of Archaeology and Ethnography, Karo Ghafadaryan, life, scientific activity, excavations of Dvin.

Introduction

Karo Ghafadaryan is one of the most profound armenologists of the 20th century. He was born on 24th of April, 1907 in Akhaltsikhe, Georgia, where he got the primary education. In 1927, he was admitted at Historical-Geographical Faculty of Yerevan State University, from where in 1931 he graduated with honour. In the same year, he started a research work at the manuscript library (Matenadaran) in the Cathedral of Etchmiadzin. In 1932, by the order of the Commissariat of Education he continued his research at the Institute of the History of Culture (later Institute of History and Literature) in Yerevan. In parallel to practical work, he was engaged in the research of historical-philological issues of the Armenian script, the outcome of which was a remarkable and inquisitive study "Early Types of Armenian Script", which in 1935 was awarded the special prize of the Melkonyan Foundation and later (1937) was published by the same publishing house. The study received a proper attention and response by scientific community. K. Ghafadaryan drew a special attention to handwritten manuscripts, especially to the unique collection of alchemy which required decipherment and interpretation of corresponding texts. The result of this hard prolific work is the unique monograph "*Alchemy in Historical Armenia*" (Ghafadaryan 1940).

Museological and Scientific Activity

In 1940 the presidium of the Armenian Branch of the Academy of Sciences of the UdSSR appointed K. Ghafadaryan as the Director of the History Museum of Armenia, where he worked nearly 25 years, spending there the best years of his scientific life. The finest years of the revival of the History Museum of Armenia commenced under his authority. Assuming the responsibility of the director, K. Ghafadaryan was wholly devoted to the renovation and further development of the museum. He fundamentally changed the administrative structure of the museum, organized basic scientific exhibitions covering various remains of material culture of Ancient Armenia. He also actively contributed to the enrichment of museum funds. Being a restless and responsible person by nature, he demonstrated a great devotion to every job. He was fastidious not only to himself, but also to his colleagues. On his immediate initiative in 1948 was published the first issue of the "Scientific Works" of the History Museum of Armenia. He is also the author of some museological papers (Ghafadaryan 1961; 1972; 1974).

During the above-mentioned years, the scientific activities of K. Ghafadaryan were not restricted only to various functions at the museum. In 1930–1940s he dedicated his best 5 years to the edition of the scientific heritage of the devotee of Armenian architecture Toros Toramanyan, as a result of which two volumes were published. The purpose of these publications was to get the Armenian society acquainted not only with the rich scientific heritage of T. Toramanyan, but also with the cultural, architectural masterpieces of Armenia, overwhelming majority of which currently is beyond of borders of modern Armenia. While compiling the collections, K. Ghafadaryan has made additional measurements and inserted new photos in the texts

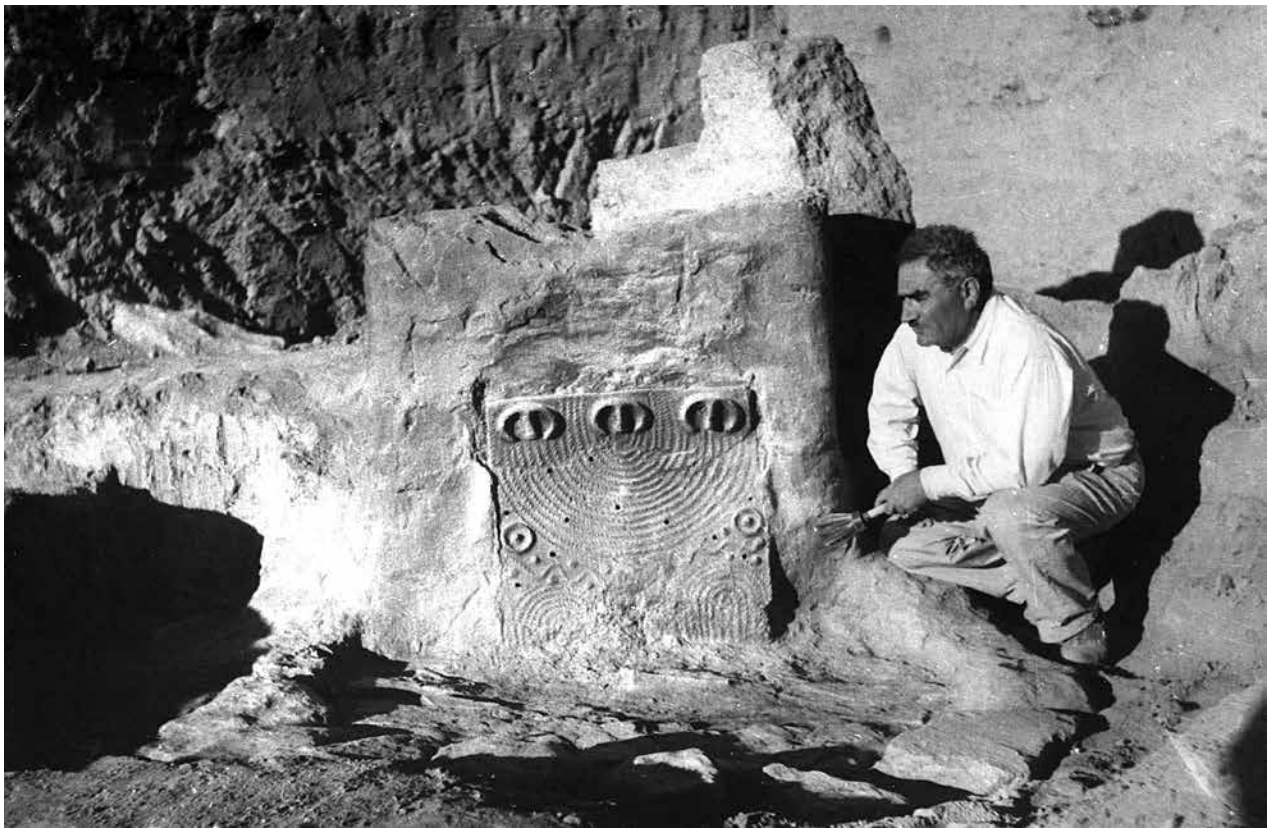

Fig. 1 Karo Ghafadaryan during the Iron Age sanctuary excavations, 1961
(Photo archive of the Dvin Museum, photo 25, provided by A. Zhamkochyan and N. Hakobyan).

of Toramanyan. This was a work requiring labor and great skill (Toramanyan1942; 1948).

The scope of interests of K. Ghafadaryan was extensive and multifaceted including history of Armenia and Armenian culture, museology, textology, epigraphy and archaeology. In parallel to his everyday activities, he dedicated his time also to the collection of epigraphs, among them inscriptions of monastic complexes of Haghpat, Sanahin, Hovhannavank, Avan, Tekor. K. Ghafadaryan not only collected, deciphered, commented those inscriptions, but also made an investigation on the author's historic mission and vital activities. The outstanding scientist also investigated the history and architecture of the mentioned monastic complexes, which was published in the series "*Corpus of Armenian Epigraphic Inscriptions*". His investigations have been published as articles and monographs, which are of an immense value, because the majority of the investigated monuments nowadays are not preserved (Ghafadaryan 1948; 1957; 1963; 1975).

Excavations at Dvin

K. Ghafadaryan had another mission: that is archaeology. He was supposed to become the first comprehensive investigator of Dvin, the great capital of Armenia. His devotion and love to Dvin was immeasurable and knew no boundaries.

Before the investigations of K. Ghafadaryan, at the end of the 19th and the beginning of 20th century Russian, Armenian and international specialists were interested in Dvin. In 1850, the first tentative excavations were held by A. Tokarev, official of the Archive of Caucasus Viceroyality. However, the beginning of the archaeological investigations at Dvin is associated with N. Marr, who carried out excavations at the citadel in1899 with the help of a highly talented Armenian linguist Hrachia Acharian. In 1907 – 1908, by the decision of the Imperial Archaeological Commission, excavations were conducted in Dvin by priest Kh. Dadyan. He opened the first monumental structures which became the cause of further excavations. His excavations gave an opportunity to T. Toramanyan and Austrain architect J. Strzygowski to reproduce the general image of the layout of Saint Gregory the Illuminator Cathedral in Dvin. Later, for many years, the ruins of Dvin remained abandoned and forgotten. One of the Armenian outstanding ethnographers St. Lisitsyan, who visited Dvin in 1925, witnessed a sad scene: "*Comparing the ruins to Charles Dubois's plan, it is impossible to notice that the ruins of the city*

have undergone considerable destructions. At present, there are no traces of any stone structures, except some stone bases. The whole surface is covered with fragile clay layer, remnants of daily clay vessels and broken burnt bricks scattered all around. It is difficult to imagine that it has been the medieval capital of Armenia, one of the famous centres of trade of its time" (National Archives of Armenia, Unit 428.4.634).

Before taking part in the excavations of Dvin, K. Ghafadaryan has been involved in the expedition of Vagharshapat (Etchmiadzin) in 1931. In 1936 he participated in the excavations of Amberd fortress headed by Hovsep Orbeli. In 1939 excavations were held at Karmir Blur. In 1936 excavations began in the Armenian medieval capital Dvin. The works were headed by S. Ter-Avetisyan and the assistant K. Ghafadaryan. They started in 1937 and finished in 1939. The excavations were mostly concentrated on the spiritual quarter of the city, which is conditionally called the "Central Quarter". The territory of St. Gregory Cathedral was being cleaned from accumulated clod of earth.

After a long break caused by the World War II the excavations were re-launched in 1946 and continued up to the present times (certainly with some intervals). Between 1946 and 1976 the expedition was headed by K. Ghafadaryan. It was the revival of the former capital, giving testimony to the one of the biggest medieval cities of the Middle East. Due to K. Ghafadaryan, the site received an earthly life and turned from history to reality, from an ordinary city to a real eminent one. The respect and devotion of K. Ghafadaryan to Dvin was well-known and is reflected in the two-volume monograph (Ghafadaryan 1952; 1982).

The work of K. Ghafadaryan had an honorary place in the field of the greatest scientific achievements of the Armenian archaeology. The author always underlined that he didn't have the goal to give the vocational study of various objects discovered during the excavations of Dvin as it is beyond the power of a man, and a number of scientists of different professions should work for many years for the implementation of it. So, under the auspice of K. Ghafadaryan, a group of young scholars realized his strongest desire, leading different spheres of Armenian archaeology.

The task set before K. Ghafadaryan was of high responsibility. Through a detailed study of rich findings uncovered in Dvin, the scientist represented the commercial and economic standard of the country, and monetary relations with the neighbouring countries during the 5 – 14th centuries, as Dvin was a crossroad between the South and the West, especially in medieval times. Dvin was also one of the most important strategic corridors, as well as the most significant transit trade place of a vital importance in the Middle East. According to N. Adonts, "*Dvin was the main artery of international trade of Asia and served as a market fot the exchange of historical and Roman goods*" (Adontz 1971, 222).

Comparing the preserved architectural remnants with the information of narrative sources, K. Ghafadaryan managed to present to the scientific community the restorations of the spiritual (the single naved church and St. Gregory the Illuminator Cathedral) and the secular (Patriarchal Palaces of the 5th and 7th centuries) monumental buildings. During the whole period of excavations at Dvin, it was possible to develop the chronological, stratigraphic system, give real characteristics of the settlement presenting Dvin as a settlement known since the 3rd millennium BC. In the 2nd and 1st millennia BC it was one of the religious centres of the Ararat valley. In the course of the excavations, sanctuaries, ruins of temple complexes, clay tablets with incrustations of deity images, as well as ritual pottery belonging to the Iron Age (9 – 8th centuries BC) were unearthed in different parts of the site (Citadel, Central Quarter). Long-term observations of K. Ghafadaryan demonstrated that the city with all the institutional structures, social wealth typical of a classical city was not only the great capital of medieval Armenia, but also one of the largest cities of South Caucasus and Western Asia.

One of K. Ghafadaryan's achievements in the studies of Dvin is the explanation of the name "Dvin". Many scientists tried to etymologize the name, to reveal the roots of its origin. N. Adontz identified the word Dvin with the name of Darana city of Lesser Armenia, which means "village" (Adontz 1971, 222). According to L. Melikset-Bek the name "Duin", "Dvin" (Armenian), "Adabin" (Assyrian) and "Doubil" (Arabic) have some remote relation with the tribe name of Daieni-Daiani, Diauch(i) mentioned in the Assyrian and Urartian cuneiform inscriptions (Melikset-Bek 1954, 84). An interesting etymology is proposed by M. Brosset: "*Dov in qui se dit (les antres anteurs disent, qui sappelle) colline: maisilya une variante, Dovin, quiest sur une colline". Peut-e'tredonc lelieu, la colline en question, s'appelait Dovin, avant que la villey fût fondee. lette interprétation épargnerait aux lecturs une, fansse étymologie* (Brosset 1870, 9). K. Ghafadaryan with persuasive interpretation, arguments was certainly the first to reject the first etymologist Movses Khorenatsi (1961, 272), who writes: "*He (Khosrov III)*

transported the Court over the forest to a Hill, built a palace secured from the Sun. (This place) is called Duin, meaning "Hill" in Persian (Faustus of Byzantium 1968, 78) opposing Khorenatsi records: "*To bring a wild oak and plant in the Ararat province starting from the solid royal court of the king.... From Garni to Metsamor plain, the hill that is called "Dvin"*. So, according to Faustus Byzantium, the hill was called Dvin, as a clear name. Ghazar Parpetsi (1982, 304–305) calls the city by its name without mentioning the word hill: "*When mournfulness hasn't spread in Dvin, so that the devil won't rejoice by making the city noisy*". K. Ghafadaryan glorified Movses Khorenatsi and his followers, quoiting M. Saint-Martin: "*There is no such a word Dvin meaning Hill in Persian*" (Saint-Martin 1818, 119). He puts forward his own hypothesis: "*It seems that all of them are baseless explanations and the origin of the word Dvin is older than we have supposed". The hill of Dvin has been a populated area since Eneolithic period. Probably the name of Dvin was the name of a tribe living on that hill, which remains as appellation*" (Ghafadaryan 1952, 11).

After several years of thorough research K. Ghafadaryan confirms T. Toramanyan's theory: "We can add to Toramanyan's opinion, that during conversion to Christianity, the great pagan temple of Dvin was not destroyed and the church was not built with its stones, whereas it has been preserved similarly and only the heathen temple has been abolished. Meantime, the central part of the eastern straight wall of the temple was destroyed and the main faceted altar, protruded out of the general quadrangle structure, was built (Ghafadaryan 1966, 41). In the recent years, the excavations carried out in and around the central quarter of Saint Gregory the Illuminator Cathedral (Kor. Ghafadaryan, A. Zhamkochyan, N. Hakobyan, 2016, 2018) confirmed once more that all the Early Christian buildings such as St. Gregory's Cathedral, single-naved church, the complex of the Catholicosate of the 5–6th centuries are based on foundations of the pagan temples, showing the continuation of beliefs. This proves that the the new, Christian faith preserved the ancient memory. The excavations undertaken in the area of the single-naved church in 2018, once again confirmed that it was built on the ruins of a pagan temple. The walls of the temple were destroyed, the pottery dates back to the Iron Age (9–8th century BC). In 1987, the ram-shaped carvings on (tablet) clay altar of the pagan sanctuary were discovered at the eastern corner of the southern wall of basilica. Another one was opened in the northern part of Basilica in 1973. So, Dvin was not only a great city in the Middle Ages, but also a major center of worship during the Early Iron Age.

Conclusion

K. Ghafadaryan gently combined the positions of the director of the History Museum of Armenia, with the head of the Department of "Medieval Archaeology of Armenia" at the Institute of Archaeology and Ethnography of the Academy of Sciences of the Armenian SSR. He also took part in pedagogical activities. In 1942–1972 he taught the "*Basics of Archaeology*", "*Archaeology of Armenia*", "*History of Archaeology*", "*Fieldwork Methodology*" and "*Epigraphics*" at the Faculty of History of Yerevan State University. Along with the lectures, he often organized practical thematic excursions for students to different sites of Armenia.

Due to many years of faultless works, the highly talented scientist was awarded with many orders and medals ("For Valiant Labour in the Great Patriotic War 1941–1945"; in 1961 he got "Honoured Worker of Science of the Armenian SSR" and General Commission of the Academy of Sciences of the Armenian SSR awarded him with "Certificate of Honor"). He was member of the numerous scientific councils and commissions ("Academic degrees of the Institute of History of the Academy of Sciences of the Armenian SSR", etc.). He was also the chairman of the architectural commission, Scientific-Methodological Council at the Board for Conservation of Historical and Cultural Monuments.

Karo Ghafadaryan passed away in 1976. His scientific works are valuable contribution to Armenian Studies and archaeology in particular. The great Armenian painter Martiros Saryan once made an expressive assessment on K. Ghafadaryan's scientific activity: "Karo is a rock, a khachkar on a rock."

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