

**Ministère de l'Éducation  
L'Université Valahia Târgoviște  
Faculté de Sciences Humaines**

# ANNALES



## **D'UNIVERSITÉ VALAHIA TARGOVISTE**

**SECTION  
d'Archéologie et d'Histoire**

**TOME XXIII**

**2021**

*Valahia University Press*  
Târgoviște

*Annales d'Université Valahia Targoviste Section d'Archéologie et d'Histoire* publie des mémoires originaux, des nouvelles et des comptes-rendus dans le domaine de l'archéologie préhistorique, de l'histoire du moyen âge, de l'environnement de l'homme fossile, de l'archéologie interdisciplinaire et de patrimoine culturel.

**Rédacteur en chef:**

prof. univ. dr. Marin Cârciumaru

**Rédacteur en chef adjoint:**

C.S.II dr. Elena-Cristina Nițu

**Secrétariat de rédaction:**

prof. univ. dr. Ioan Opreș, dr. Denis Căprăroiu, dr. Radu Cârciumaru, dr. Monica Mărgărit, dr. Marian Cosac, dr. Roxana Dobrescu, dr. Ovidiu Cîrstina, dr. Daniela Iamandi, dr. Adina Elena Boroneanț.

**Comité de rédaction:**

prof. dr. Eric Boëda, prof. Marcel Otte, prof. dr. Răzvan Theodorescu, prof. dr. Victor Spinei, prof. dr. Sabin Adrian Luca, prof. dr. Gheorghe Lazarovici, prof. dr. Carol Căpiță, dr. Marylène Patou-Mathis, dr. Marie-Hélène Moncel, dr. Cristian Schuster, dr. Adrian Bălășescu.

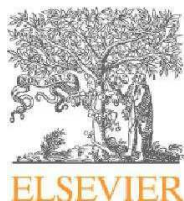
**Correspondants:**

prof. Jacques Jaubert, prof. Jean-Philippe Rigaud, prof. Árpád Ringer, prof. Alain Tuffreau, dr. Aline Averbouh, dr. Nejma Goutas, dr. Alain Turq, prof. Ivor Jancovič, prof. Ivor Karavanič, dr. Eugen Nicolae, dr. Emilian Alexandrescu, dr. Sergiu Iosipescu

**Technorédacteur:**

drd. Remus Constantin Dumitru Dincă

**Indexée dans:**



SCIMAGO Journal and Country Rank,  
AWOL, FRANTIQ

ERIH PLUS  
INDEX COPERNICUS

Tout ce qui concerne la Rédaction des *Annales d'Université Valahia Targoviste Section d'Archéologie et d'Histoire* doit être envoyé à:

[mcarciumaru@yahoo.com](mailto:mcarciumaru@yahoo.com), [www.annalesfsu.ro](http://www.annalesfsu.ro)

ISBN: 1584-1855; ISSN (online): 2285-3669

# Sommaire

## ARTICLES ET ÉTUDES

ESMAIEL M'AROUFI AGHDAM, SAMAD PARVIN, SAIED SATTARNEJAD, SERVAT VALAD BEIGI, **ARCHAEOLOGICAL SURVEY OF THE NEW - FOUND LITHOGRAPHY OF THE AGHRABLOU, SHAHINDEJ - BOUKAN, IRAN**.....7

ALLA KRYLOVA, OLEKSIY ZAMURUYSEV, **ARCHAEOLOGICAL MONUMENTS OF NOMADS OF THE 10TH - 13TH CENTURIES ON THE TERRITORY OF SOUTHERN UKRAINE**.....19

RADU CÂRCIUMARU, **A FORGOTTEN HISTORY. A COMMUNIST HORSE AND THE LAST VANDALIZATION OF THE PRINCELY COURT OF TÂRGOVIȘTE**.....31

## NOTES ET DISCUSSIONS

ALI KARIMIKIYA, REZA REZALOU, AKBAR ABEDI, ARDASHIR JAVANMARD ZADEH, ZAHRA ABTAHI FROOSHANI, LEILA SARHADY, **EXPLANATION OF NEOLITHIC AND CHALCOLITHIC OF QARADAGH REGION BASED ON ARCHAEOLOGICAL DATA FROM AHAR COUNTY**.....43

ALEXANDER KIM, **BOHAI REBELLION OF DA YEN-LIN (1029-1030) IN THE LIAO EMPIRE**.....59

CLAUDIU-ION NEAGOE, **ALBANIAN MERCENARIES IN THE WALLACHIAN ARMY (16TH-17TH CENTURIES)**.....67

## Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County

*Ali Karimikiya\**, *Reza Rezalou\**, *Akbar Abedi\*\**, *Ardashir Javanmard Zadeh\**,  
*Zahra Abtahi Frooshani\*\*\**, *Leila Sarhady\**

\*University of Mohaghegh Ardabili, Iran; e-mail: [ali.karimikiya90@gmail.com](mailto:ali.karimikiya90@gmail.com), [rezaa.rezalou@gmail.com](mailto:rezaa.rezalou@gmail.com),  
[ajavanmard@uma.ac.ir](mailto:ajavanmard@uma.ac.ir), [Leila.sarhady@gmail.com](mailto:Leila.sarhady@gmail.com)

\*\* Tabriz Islamic Art University, Iran; e-mail: [akbar.abedi@tabriziau.ac.ir](mailto:akbar.abedi@tabriziau.ac.ir)

\*\*\*University of Tehran, Iran; e-mail: [Z.abtahi\\_frooshani@yahoo.com](mailto:Z.abtahi_frooshani@yahoo.com)

**Abstract:** Ahar County, located in the northeast of Azerbaijan, has different sites and cultures. Archaeological studies and chronological table of Azerbaijan have been formed based on the data of Urmia Lake basin and the position of other regions of northwestern Iran, including Qaradagh region (meaning very large mountain in Turkish), remained unknown in its cultural sequence. Since this area is located between the South Caucasus region and the northern regions (Mugan region) of northwestern Iran and the basins of Lake Urmia and Ghezel Ozan, it can play an important role in explaining the periods of Neolithic, Chalcolithic. Comparison and analysis of newly discovered archaeological data in the region will provide a relatively new result. In order to promote and achieve the prehistoric cultures of the region (cultural periods), the following questions are raised: 1- How is the chronological sequence of this region explained according to the cultural periods? The main hypothesis related to this question is the existence of New Neolithic periods and New Chalcolithic 2 and 3 (LC2-3) in Ahar area. 2- What cultural features is shown by common and non-common links (cultural interactions) of this region from northwestern Iran including Mugan region and other regions in terms of archaeological data and chronology of the mentioned periods? This writing is done using field surveys and descriptive-analytical study of archaeological data to clarify the cultural horizons and chronological table of the region. As a final result, it can be said that the pottery of the mentioned periods shows similarities with other regions of northwestern Iran, especially with the Urmia Lake basin. Given the vastness of the sites and other archaeological data, it is inferred that the settlements are seasonal and temporary and have probably been used by livestock and nomadic communities.

**Key Words:** Azerbaijan, Ahar County, Neolithic and Chalcolithic, pottery, Qaradagh region, chronology.

### Introduction

Due to its good environmental conditions and specific location, northwestern Iran has a sequence of settlements from prehistoric to Islamic periods. Identifying archaeological cultures and settlement sequences of different geographical regions and introducing it to the archaeological community seems necessary (S. Bakhtiari *et al.*, 2019, p. 8). Due to its proximity to important cultural areas such as the Caucasus, Anatolia, Zagros and Mesopotamia,

this region of Iran has long had a special place in archaeological studies, and among these, Northwest Iran (Azerbaijan) alone is an important cultural and geographical area of the Iranian plateau during the prehistoric periods of Iran (H. Talaei, 2011, p. 63-64). Investigating the cultural periods of an area and comparing its archaeological data with neighboring regions with the aim of studying settlement patterns and examining bilateral and multilateral regional and extra-regional interactions in each period are among the earliest stages of explaining the evolution of old societies in prehistoric archeology. The lack of regular excavations and studies, as well as the lack of publication of all archaeological findings, has caused many problems and complexities in the chronology and cultural explanation of this region. On the other hand, the archeology of northwestern Iran relies on the chronology of Lake Urmia, which cannot be generalized to the whole of northwestern Iran due to its geographical nature and excavations that were carried out in that region before the Islamic Revolution. On the other hand, although this geographical region has good environmental conditions and many ancient sites, we have very little information about its different prehistoric periods, its adaptation, sequence, and chronological sequence with neighboring areas. Archaeological activities, including excavations and surveys has been done in neighboring regions, but the cultural and geographical region of Ahar County has remained somewhat unknown in terms of archaeological studies.

Investigation and study of the role of northwestern Iran in Neolithic and Chalcolithic, comparison of its cultural data with neighboring regions, study of regional and transregional interactions, and presentation of a chronological framework are the main objectives of this study. The questions of the present study have also been raised in this regard. The Neolithic and Chalcolithic of northwestern Iran have received less attention than other regions (E. Henrickson, 1983). Previous activities done in this region have focused on excavating Hasanlu, Dalma and Pisdeli sites, and finally the results of these studies have led to the introduction of Hasanlu X (Neolithic), Hasanlu IX (Dalma - Early Chalcolithic) and Hasanlu VIII (Pisdeli period - middle and New Chalcolithic) in Hasanlu chronological table. The beginning and the end of the Neolithic period are different in various regions of Iran and considering the heterogeneous climatic situation, and a chronological table revision seems necessary due to recent studies in other regions of northwestern Iran in addition to the Lake Urmia basin, whose chronology has been considered as the basis of northwestern Iran.

Due to some questions and ambiguities in the archeology of this region, Ahar cultural area, which is located in the northwest of Iran, is connected with Mugan region on the one side and by Lake Urmia and Ghezal Ozan basin (Zanjan province) on the other side. This region was selected as one of the important regions for the study. These questions are raised in relation with the relative chronology of the studied area in the Neolithic and Chalcolithic: 1- How is the chronological sequence of this region explained according to the cultural periods? The main hypothesis related to this question is the existence of New Neolithic periods and New Chalcolithic 2 and 3 (LC2-3) in Ahar area. 2- What cultural features is shown by common and non-common links (cultural interactions) of this region from northwestern Iran including Mugan region and other regions in terms of archaeological data and chronology of the mentioned periods? Based on the hypothesis that can be presented on this question, it can be said that based on studies, this cultural region shows connections and commonalities with the Mugan region and especially with the Urmia Lake basin based on archaeological data.

### **Research method**

In this study, by using the descriptive-analytical method of pottery data obtained from archaeological survey, the relative chronology of Qaradagh region is presented to complete the chronology table of Neolithic and Chalcolithic to determine the cultural situation of the region in the mentioned periods. In order to complete and confirm the findings and relative chronology, radiocarbon dating of 14 cases used in other sites of northwestern Iran has been used as the basis of archaeological studies.

## Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County

### Geographical location of the studied region

Ahar County, with an area of 3073/93 square kilometers, is one of the most important cities of East Azerbaijan, including eight villages of Azghan / Azqan, Uech Hacha, Bozqush (Buzkash), Dodangeh, Dikleh, Qishlaq, Goyjah Bel and Vargahan. This county, as the center of Qaradagh region, has a large mountainous area, which part of the land of this region was registered by UNESCO organization as a biosphere reserve in 1976. It is surrounded by Meshgin Shahr and Mugan in the east, by Sarab in the south and by Tabriz and Marand in the west (Fig. 1) (B. Khamachi, 1991). The important salient point of Qaradagh region is the existence of good and excellent environmental conditions for human societies from prehistoric times to the present period.

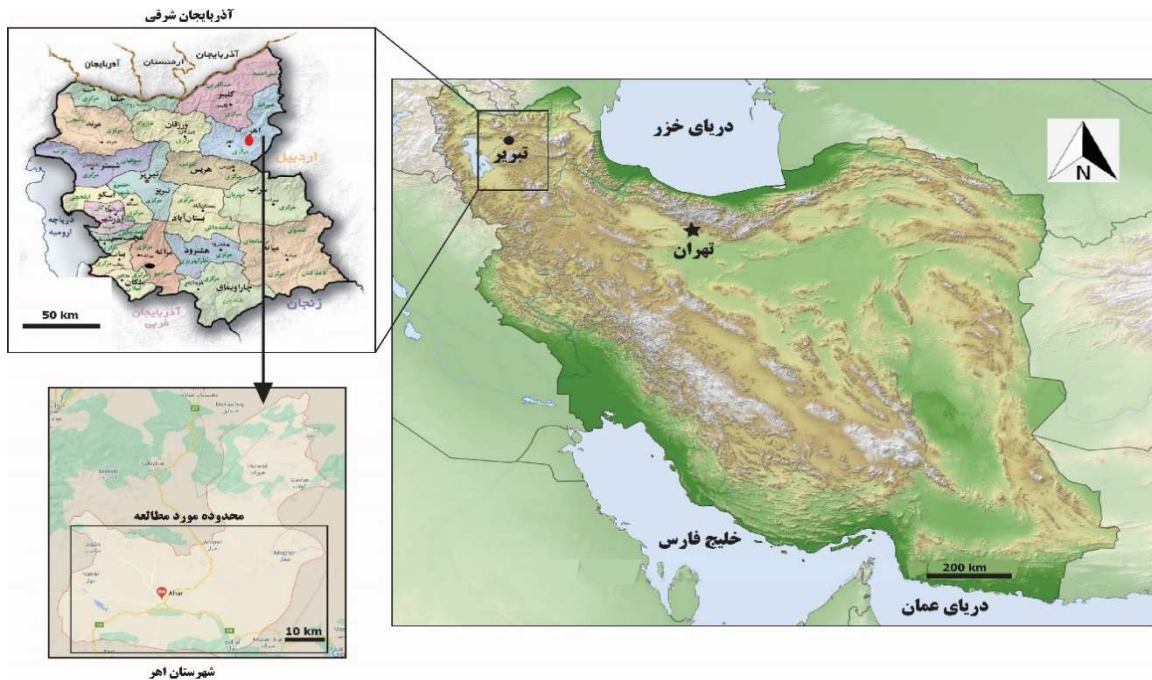


Fig. 1- Geographical location of Ahar County.

### Studied materials

As a result of field surveys conducted in 2012 (R. Salmanpour *et al.*, 2012), 10 sites from the Neolithic and Chalcolithic were identified in the Ahar region. The study of pottery of the mentioned periods obtained from Ahar County shows similarities with the collected pottery of areas such as Idir Tepe of Aslan Duz in Mugan region, Kol Tepe in Jolfa and Dava Goz in Khoi, etc. around Lake Urmia. The ancient sites of Ahar has been dated from about 3400/3500 - 5000 BC. These sites belong to the Late Neolithic period (Hasanlu X, Idir Tepe VI, Kol Tepe IX, Dava Goz IX) and Chalcolithic. Most of them belong to the New Chalcolithic 2 and 3 (Idir Tepe III, Kol Tepe VI, Dava Goz I). Among the excavated areas, areas that have two or more periods have also been obtained, which indicates the subject of transfer from one period to another.

### Background of Archaeological Studies of Chalcolithic in Northwest Iran

Most of the archeological activities of northwestern Iran (Azerbaijan) have been carried out around Lake Urmia and other data, findings and datings of this region are considered as the basis of archaeological studies. The first excavated prehistoric sites include: the hills of Haji Firuz Tepe, Dalma (C. Hamlin, 1975) and Pisdili (R. H. Dyson, C. Young, 1960); Charles Burney (1962, 1964) at Yaniq Tepe; B. Brown (1951) in Göy Tepe; study and excavation of Ahranjani Tepe (H. Talaei, 1983); surveys of Behrooz Omrani in the East of Lake Urmia (B. Omrani, 1993); the emergence of prehistoric remains at Qosha Tepe in Meshgin Shahr (A. Hejebri Nobari, A. Pourfaraj 2006; H.

Derakhshi *et al.*, 2008); excavation of Lavin Tepe related to Dalma culture (A. Binandeh *et al.*, 2012, p. 32); recent excavation in Kol Tepe and Dava Goz in Khoy (A. Abedi *et al.*, 2014; A. Abedi 2017); Idir Tepe in Aslan Duz (M. Hesari, H. Akbari 2005; M. Hesari 2019); survey of Horand region in Qaradagh (R. Salmanpour, Z. Abtahi Foroushani 2013; S. Bakhtiari *et al.*, 2018); sondage by Mr. Chaichi Amirkhiz in Shiramin Tepe of Azarshahr and Dagirman Tepe of Bostan Abad (A. Chaichi Amirkhiz, 2008); excavation of Ms. Maziar in Kohnehpasgah of Tepesi (S. Maziar. 2010); stratigraphic excavation of Kol-e-Yeri Tepe in Zanjan (S. Ali Beigi *et al.*, 2014); excavation and survey of Dalma pottery in Sahachai Tepe in Zanjan (R. Rahimi Sorkhani *et al.*, 2016) and archaeological studies of Saed Mocheshi in Ghezel Ozan region of Chai Bijar etc (A. Saed Moucheshi, 2013). Studies conducted by domestic and foreign researchers on the culture of Chalcolithic, especially on the interpretation of pottery of this cultural period, change and completion of chronology, regional and supra-regional interactions and even diffusionism, provided important results to researchers.

In recent years, one of the important issues in introducing and studying the Chalcolithic culture in northwestern Iran was the ambiguity in the chronological table of the Chalcolithic of this region. Because this period was introduced after the New Neolithic period, which was identified in areas such as Haji Firuz, Hasanlu, Yaniq Tepe, etc., with an interval of almost a thousand years. In recent years, Abedi's excavations in the Jolfa and Dava Goz Tepe of Khoy (A. Abedi *et al.*, 2014; A. Abedi 2017) removed an interruption in the chronology of Chalcolithic of northwestern Iran (Azerbaijan). In general, the prehistoric chronology of Azerbaijan has been explained based on the excavations carried out in the area of Lake Urmia. But no site has known to contain all the prehistoric periods in the stratigraphic sequence. In this regard, prehistoric periodization has been done based on the studies and data of sites that are located at close and far distances in this area. American archaeologists, as pioneers of archaeological activities in the region, have generalized the results found from an area such as Sulduz 1 to all regions of the North Zagros and beyond during periodization of prehistoric cultures in northwestern Iran (A. Ali Yari, H. Talaei, 2005).

#### **Research data obtained from archaeological surveys**

As a result of archeological excavations in Ahar city, five sites related to the New Neolithic period named Qarachilar (Qara Chiller) in Aqa Kandi village, Gon Batedi ruins in Anbaq-e Olya, Qarah Dash ruins in Anbaq-e Sorkhay, Sarkhosh Cherei in Ghezelja (Ghezeljeh), Qarpiz Qayasi in Qalandar and five sites of Chalcolithic were identified. The relative chronology of these sites is based on the study of pottery samples and their comparison with samples obtained from scientific excavations. Accordingly, the five identified and introduced sites of the Chalcolithic (Qabri Tomb in Reyhan, Amirno in Nahar, Kol Tepe in Khuniq, Ao Qabaqi in Reyhal, Topchilar Tepesi in Azghan) are related to the New Chalcolithic. Among them, one site has New Neolithic, Chalcolithic works. Comparison of data from previous findings and chronological analysis of dating done in some sites will be used to better understand and provide more accurate results. In the following, the studied pottery will be introduced.

#### **Late Neolithic pottery**

The obtained pottery (Qarachilar, Gon Batedi ruins, Qarah Dash ruins) are handmade with vegetable chamotte, incomplete cooking in the range of beige, red, gray and brick colors. But most pottery is brick, red and beige. Although pottery with geometric patterns in black with a thick red coating can be seen among the pottery pieces, the pottery of this period are often hollow and most of them are simple. Geometric motifs are comparable to Haji Firuz motifs. Among them, combed ornaments can also be seen (Table 1, Fig. 2). Some sites, such as Sarkhosh Cherei and Qarpiz Qayasi, have been attributed to the Neolithic period due to the acquisition of blades and stone tools (Fig. 3). Regarding the form of the vessels, the pottery is related to shallow vessels such as bowls, cups, as well as short-necked jars and inverted curb. This type of pottery is found in most Neolithic sites in northwestern Iran, the South Caucasus, including the Göy Tepe (F. Quliyev, Y. Nishiaki, 2012), Haj Alam Khanli (Y. Nishiaki *et al.*, 2015), Mantesh Tepe (B. Lyonnet, F. Quliyev, 2010 ) of Azerbaijan and the site of Khatun Ark- Aknashen- in Armenia. Archaeologists consider the Neolithic period to be an important event and a salient point in human life.

**Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County**






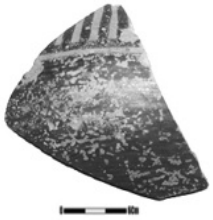
Row	Ancient site	Construction	Cooking	Colour Motif Background	Form	Chronology	
						Period	
1	Qarachilar	Hand made	Enough	Brown, beige, brick	Body curb	Neolithic	 <p>(H. Razzaqi, F. Fahimi, 2004, p.56)</p>
2	Gon Batedi ruins	Hand made	Not enough	Black and red	Body	Neolithic	 <p>(A. Abedi. 2017)</p>
3	Qarah Dash ruins	Hand made	Not enough	Beige	Body curb	Neolithic	-
Site name	Göy Tepe		Kamil Tepe	Haj Alam Khanli		Kol Tepe	
Pottery sample							
Source	(B. Lyonnet, F. Quliyev 2010, p. 228)		(B. Lyonnet <i>et al.</i> , 2012)	(Y. Nishiaki <i>et al.</i> , 2015, p. 11)			

Table 1. Characteristics of Late Neolithic pottery in Qaradagh and South Caucasus regions.

Studies show that several areas in the Middle East have experienced Neolithization, and among these, Azerbaijan is one of the marginal areas and in the first phase of Neolithic; groups have settled around Lake Urmia. Neolithic research in Azerbaijan has received less attention than other parts of Iran (S. Bakhtiari *et al.*, 2019a, p. 7). Based on surveys conducted in Ahar County, several Neolithic sites have been identified, which seems to be temporary settlements due to the distribution of pottery and the size of the sites. The initial inference of Ahar pottery with neighboring areas indicates the coincidence of the sites with the culture of Haji Firuz (Hasanlu X). The samples of pottery studied in the areas of Dava Goz in Khoy, Kol Tepe in Jolfa, Lavin Tepe, Jelbar (Babakhan) Tepe are on the same horizon with the pottery obtained from Ahar County. According to the relative and absolute chronology of Idir Tepe in Mugan, Dava Goz in Khoy and Kol Tepe in Jolfa, etc., and the samples of pottery in terms of technique, form and decoration are placed in the transition period from Neolithic to Early Chalcolithic (A. Abedi, 2017)). In the eastern regions (Ardabil province) and the north (Mugan region) of northwestern Iran, Qosha Tepe in Shahar Yeri and Idir Tepe in Mugan have been studied in this time range (H. Derakhshi *et al.*, 2008; M. Hesari, 2019).



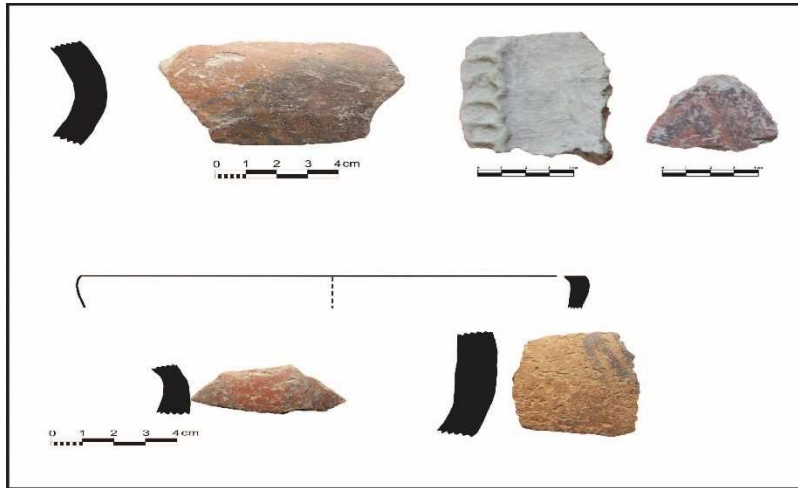


Fig. 2 - Late Neolithic pottery of Ahar region

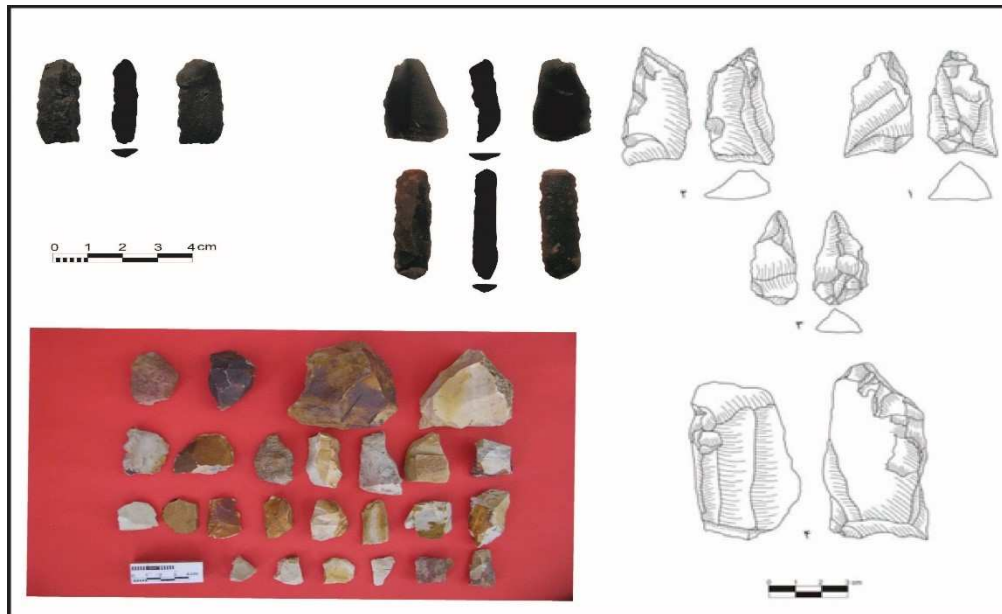


Fig. 3 - Stone tools belonging to the late Neolithic period of Ahar region

Based on the comparison of pottery, samples of Ahar pottery have also been reported from the geographical area of the South Caucasus (trans-regional area), including the Neolithic period pottery of the Göy Tepe site in the Republic of Azerbaijan. The pottery in site has mineral and organic chamotte. They are in simple and decorated forms and have a red clay coating. There are also signs of reed mats among them. This type of pottery decoration is also seen in the later phase of Shulaveri-Shomu culture (B. Lyonnet, F. Quliyev 2010, p. 222). It should be noted that the later phases of Shulaveri-Shomu culture (layers IV-V) coincide with the late Neolithic period (T. Kiguradze, M. Menabde, 2004, p. 362). Pottery related to Shulaveri-Shomu culture has also been obtained from the site of Haj Alam Khanli in Azerbaijan, which is later in time than the Göy Tepe (Y. Nishiaki et al., 2015). This type of

**Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County**

decoration has not been reported from the Aratashen site yet. Aratashen pottery is in different colors (yellow, beige, gray) and minerals such as basalt, mica and sand is used as chamotte and their surfaces has been polished with wet hands. Mantesh Tepe pottery is in gray colors, Bright and inclined beige in which most of their surfaces has been polished. Their chamotte is vegetable and most minerals and the form of pottery consists of a wide mouth pot and bowl. There is a type of handle among them (B. Lyonnet et al., 2016, p. 178-179). Aknashen - Khatun site in Ark, located in Armenia, is one of the most important sites for studying the cultures of the sixth to fifth millennium BC. This is the first site in the South Caucasus obtained in terms of stratigraphy, sequence and continuation of the Late Neolithic to the Chalcolithic. In terms of chronology, this site has 5 time horizons. Horizons II-V related to the Late Neolithic and horizon I related to the Chalcolithic. The decorated pottery obtained in this site is similar to the pottery of other sites of the South Caucasus (Table 2) (R.S. Badalyan et al., 2010).


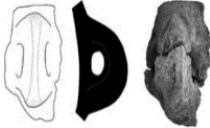


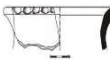

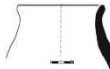

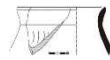

Row	Ancient site	Pottery sample	Construction	Cooking	Decoration	Form	Chronology
1	Qabri Tomb		Wheel made	Enough	-	Curb, Body, Handle	 (A. Abedi et al., 2014)
2	Amirno		Hand made	Not enough	Polished	Body	 (A. Abedi, 2017)
3	Kol Tepe		Hand made	Enough	-	Body curb	 (A. Abedi et al., 2014, p. 118)
4	Ao Qaba Qey		Hand made	Not enough	-	Curb	 (S. Maziar, 2010, p. 189)
5	Topchilar Tepesi		Hand made	Not enough	Polished	Curb	 (A. Abedi et al., 2014)

Table 2 - Characteristics of Chalcolithic period pottery in Qaradagh region.

**Pottery of Chalcolithic and their analysis**

According to the initial study of pottery and their comparison with other sites in terms of form, motif, coating, etc., all the pottery obtained is related to the New Chalcolithic 2 and 3 / chaff-faced ware (CFW) 7. The pottery of this period is both handmade and wheel-made and has vegetable chamotte (chaff) and minerals (fine and coarse sand). The core of most pottery is beige, brick red, and gray, and the surface is often rough. Most pottery has enough cooking and some of them have incomplete cooking. The outer and inner coating of the pottery is changed to red,

beige and gray. The pottery is simple and without decorations and sometimes are shiny and polished. The most common forms of pottery of this period are open-mouthed vessels with short necks, vessels with short necks turned outwards, vessels with angled bodies, jars with turned curbs and short necks, large conical bowls with shallow and open mouth and small vats.

The maximum thickness of the pottery wall is 3 cm and the minimum is 1 cm. Scattering and diffusion of this type of pottery was observed in most sites of northwestern Iran and the South Caucasus (Mantesh Tepe, Leila Tepesi, Goygol, Ochan Aghil, Kol Tepe, Tekhut, Uzun Oba, Nakhchivan Tepe). In addition, a number of parent rocks, discarded stones and flint tools have been obtained and most of the sites have been severely damaged due to unauthorized excavations and agricultural and horticultural activities (Fig. 4).



Fig. 4 - Pottery samples of Chalcolithic 2 and 3.

Ahar County, due to its location in the highlands and mountainous region known as Qaradagh, has a different landscape than other parts of eastern Azerbaijan. Most of the Neolithic sites are located at an altitude of 1400 to 1800 meters and the settlements are seen as both nomadic and sedentary. The main feature of these sites is having a small area and the lack of continuity of settlements from the late Neolithic to the Chalcolithic (S. Bakhtiari *et al.*, 2019a, p. 9). In terms of comparative study, pottery related to the late Neolithic period of Ahar County has been obtained from Horand of Qaradagh sites (S. Bakhtiari *et al.*, 2019), Dava Goz in Khoy (A. Abedi, 2017), Kol Tepe in Jolfa (A. Abedi 2014; 2016a), Idir Tepe in Mugan (M. Hesari, 2019), Lavin Tepe (A. Hejebri nobari *et al.*, 2012), Qosha Tepe in Shahar Yeri (A. Hejebri Nobari, A. Pourfaraj, 2006) (H. Derakhshi *et al.*, 2008) and Jelbar (Babakhan) Tepe (H. Razzaqi, F. Fahimi, 2004), being similar to Ahar pottery in terms of technique and form. This group of pottery such as cups, jars with turned curb, and conical bowls with open mouths, is classified under Hasanlu X, Dava Goz I, Kol Tepe IX, Idir Tepe VI groups, and based on relative and absolute dating, the 5400 to 5000 BC period is considered as the coincidence of the transition from Neolithic to Chalcolithic (Table 1) (A. Abedi, 2017).

Pottery similar to the above-mentioned pottery was obtained from the lower layers of the Lavin Tepe site and attributed to this period, but its exact sequence is not mentioned (A. Hejebri Nobari *et al.*, 2012) (A. Binandeh *et al.*, 2012). In the eastern and northern regions of Ahar County, the sites of Qosha Tepe and Idir Tepe have Late Neolithic pottery. In these two sites, pottery, especially the form of bowls with different shapes, has obtained and

## Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County

is located between the periods of Haji Firuz and Dalma (H. Derakhshi et al., 2008, p. 21). During the excavation of Idir Tepe of Mugan plain, large bowls were found and classified under the Neolithic period (M. Hesari, H. Akbari, 2005). In terms of technique and form, the pottery of this site shows many similarities with Ahar, Horand, Qosha Tepe, Dava Goz and Lavin Tepe. Ahar clay studies and their comparison with neighboring regions and sites show similarities and long-standing relationships with sites around Lake Urmia. In general, the surface data obtained from the Chalcolithic surveys of the studied region include pottery pieces and stone tools made of flint and obsidian. The main cultural data are from pottery. According to previous studies, the height of the Chalcolithic sites of Qaradagh region from sea level (studies of Horand region) varies from 500 meters to 2000 meters and generally covers the area from 0.3 to 2 hectares (R. Salmanpour *et al.*, 2015). The altitude factor is directly related to decreasing air temperature and increasing precipitation. This factor will cause the accumulation of snow and the creation of canal feeding nests when the weather warms up and the snow storage melts, which in turn leads to access to water resources, pastures and vegetation. According to the statistical studies conducted in Horand region, which can be generalized to Ahar region, 88% of the settlement sites are located in mountainous areas and 12% of them are located in plain areas. These sites are 500 to over 2000 meters away from water resources, most of which are located at a distance of 500 to 1000 meters from water (S. Bakhtiari *et al.*, 2019b).

The studies of the Chalcolithic of northwestern Iran were denominated based on the chronology of the tables of Hasanlu, Hasanlu IX and Hasanlu VIII, and the term “Chalcolithic” was not used to introduce the mentioned classes. In recent years, one of the considerable issues in introducing and studying the Chalcolithic culture in northwestern Iran has been the ambiguity in the chronological table of the Chalcolithic of the region, because the period was introduced after the Neolithic with an interruption of almost a thousand years. Until the recent excavations of Abedi in Kol Tepe in Jolfa and Dava Goz in Khoy (A. Abedi et al., 2014; A. Abedi 2017, 2016a, 2016b) eliminated the interruption in the chronology of the Chalcolithic of Azerbaijan. In general, the prehistoric chronology of northwestern Iran has been explained based on the excavations carried out in the Urmia Lake basin. Based on preliminary and comparative studies of pottery obtained from field surveys in Ahar region, Chalcolithic pottery is related to the New Chalcolithic 2 and 3 / chaff-faced ware. The pottery of this period is often handmade, although wheel-made pottery can be seen among them. The pottery has chamotte of organic and mineral materials and most of the pottery is simple and without decorations and is sometimes decorated with a polished method. The most common forms of pottery of this period are vessels with a short neck with turning curb, vessels with an angled body, shallow conical bowls, and so on. The pottery coating is changed in red, beige and gray colors and the effect of burnt chaff can be seen on the surfaces of the vessels. The pottery samples obtained from Dava Goz IV and Kol Tepe VI have similarities with the pottery of Ahar region in terms of form and technique. According to the absolute chronology of the mentioned sites (Dava Goz and Kol Tepe), the time range of 3600/3700 - 4200 BC can be considered for the data of this period of Ahar County. The pottery of Dalma and Pisdeli periods has been identified from Lavin Tepe, but the New Chalcolithic 2 and 3 LC2-3 have not been identified (A. Binandeh et al., 2012).

From Qosha Tepe site of Shahar Yeri, pottery with handmade features, chaff-faced ware with basket design and red and brick coating has been obtained. They are similar to the pottery group of the east of Lake Urmia. By a significant reduction in the motif on the pottery of this period, they are comparable to the New Chalcolithic in other regions of northwestern Iran and has been obtained from period 2a of this site (A. Hejebri Nobari, A. Pourfaraj 2006, p. 7-9). Similar samples of this type of pottery have been obtained from Ali Komak Tepe of Azerbaijan and Sioni of Georgia. All the triple Chalcolithic have been obtained from Idir Tepe of Mugan and its layer III is related to the New Chalcolithic. In terms of form and technique, the pottery of this site shows similarities with other regions of northwestern Iran and also with Ahar region. Apart from simple pottery, decorated pottery is seen more among the pottery of the New Chalcolithic of Idir Tepe (M. Hesari, 2019, p. 32-33).

Another key site is Kohnehpasgah of Tepesi, from which a lot of documents from the New Chalcolithic, including chaff-faced ware with groove and combed decorations, have been obtained. It has been radiocarbon dated in the time range of 3787-3955 BC. The site of Kohnehpasgah of Tepesi is one of the sites from which data on the economy-livelihood of New Chalcolithic communities have been obtained (S. Maziar, 2010, p. 170-171). During the archaeological excavations in Bostan Abad, chaff-faced ware have been uncovered from most sites and based on comparative studies and relative chronology, it has been dated to the New Chalcolithic (H. Naseri Someh, 2014). Another important newly excavated site is Kol Tepe site in Jolfa, in which New Chalcolithic data has been obtained from Trench III and from layer VI, including pottery with groove / combed motifs that are features of the pottery of Chalcolithic 2. Chaff-faced ware are also features of the New Chalcolithic 3. It should be noted that all periods of Early Chalcolithic / Dalma (4500-5000 BC), New Chalcolithic 1 LC114 (4200-4500 BC) and New Chalcolithic 2 and 3 LC2-3 (3800/3900 -4200 BC) has been studied in this site like the site of Dava Goz in Khoy (A. Abedi, 2016b).

Chronology / Date	Sequence of Kohnehpasgah in Tepesi	Sequence of Qosha Tepe	Sequence of Idir Tepe	Sequence of Kol Tepe in Jolfa	Northwest of Iran
2500-3000 BC	Phase 3d			Kol Tepe IV	Kura-Araxes II
3000-3400 BC	Phase 2			Kol Tepe V	Kura-Araxes I
3600/3700-3800/3900 BC	Phase 1	Period 2A	Idir Tepe II	Kol Tepe VIA	New Chalcolithic 3LC3
3800/3900-4200 BC			Idir Tepe III	Kol Tepe VIB	New Chalcolithic 2LC2
4200-4500 BC			Idir Tepe IV	Kol Tepe VII	New Chalcolithic 1LC1
4500-5000 BC		Period 2B	Idir Tepe V	Kol Tepe VIII	Dalma
5000-5400 BC		Period 2C	Idir Tepe VI	Kol Tepe IX	Late Neolithic / Transitional Chalcolithic

Table 3 - Chronology table of northwestern Iran (authors)

In addition to radiocarbon dating, another important point is the continuation of the pottery data of the New Chalcolithic 3 in Kura-Araxes I period; thus, chaff-faced ware with gray-black gloss pottery with a Nakhjavan handle has been obtained, which shows the continuation of the previous tradition in the very extensive cultural tradition of Kura-Araxes. The third floor of the site of Qishlaq Talvar, which is considered to have the same horizon as Godin VII, has pottery related to the New Chalcolithic similar to the pottery of other regions of Azerbaijan (M. Sharifi, 2020). The triple periods of Chalcolithic in Dava Goz settlement is without interruption and this site has been considered by the digger as the winter pasture of the livestock communities of Urmia Lake basin and the IV floor belongs to the New Chalcolithic 2. The pottery is both simple and decorated, and chaff-faced ware with grooved and combed motifs can be seen among them (Table 3) (A. Abedi, 2017).

**Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County**

The Chalcolithic cultural period in the South Caucasus archeology is known as the Eneolithic cultural period. In this geographical area, the two rivers named Kura and Araxes are called the Mesopotamia of the Caucasus, because it has very important settlements (A. Karimikia et al., 2020). Even today, however, Caucasus archaeological studies have become one of the favorite sites of Western archaeologists (B. Lyonnet, F. Quliyev, 2010). The main features of the New Chalcolithic 2 and 3 are pottery with a combed and grooved design, with a simple potter's sign, and without chaff-faced motif, which has been obtained from the excavation of Suyouq Bolaq's kurgans, one of the famous kurgans / cemeteries of this period. Like those from the Aknalich Korgans of Armenia (F. Muradyan, 2014), the Yeni Yul site and in the Uchular Hill area have been obtained. Most of the pottery is chaff faced, although the pottery with relieved work can be seen among them. Mantesh Tepe, which is one of the important prehistoric sites of this region, has been studied without interruption from the Neolithic period to the Kura-Araxes period. Rectangular architectural structures of unburnt brick, storage wells, large jars and pottery with combed and chaff-faced design as well as signs of metalworking activities have been observed from this site (B. Lyonnet *et al.*, 2012). Weaving evidence (basket and cloth weaving) were discovered from Areni Cave (C. H. Chataigner *et al.*, 2010).



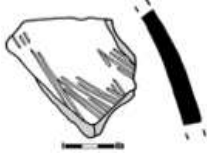

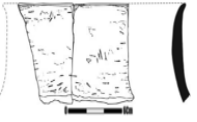





<b>Site Name</b>	<b>Qara Jamirli</b>	<b>Qalayeri</b>	<b>Rabati</b>	<b>Rabati</b>	<b>Areni Cave</b>
<b>Pottery sample</b>					
<b>Source</b>	(T. Dostiyev, 2007)	(N. Museibli, 2019)	(G. Bedianashvili <i>et al.</i> , 2019, p. 68)	(G. Bedianashvili <i>et al.</i> , 2019, p. 70)	(K. N. Wilkinson <i>et al.</i> , 2012)
<b>Site Name</b>	<b>Godzur</b>	<b>Darah Shahbuz</b>	<b>Aknalich</b>	<b>Yeni Yul</b>	<b>Mantesh Tepe</b>
<b>Pottery sample</b>					
<b>Source</b>	(C. H. Chataigner <i>et al.</i> , 2010)	(E. Bakhshaliyev, 2017)	(F. Muradyan, 2014, p. 358)		(B. Lyonnet <i>et al.</i> , 2012, p. 102)

Table 4: Features of New Chalcolithic pottery (chaff-faced ware), trans-regional (South Caucasus region).

Cultural relations between the Caucasus and Mesopotamia reached their peak in the New Chalcolithic 2 and 3. This cultural phase in the Caucasus is known as the "pre-Uruk expansion" phenomenon. Clay molds, bone and stone tools made of flint and obsidian and pottery with a groove motif near the curb, combed design in the forms of jars, pitchers were excavated from Qalayeri. Some pottery has signs (probably potter signs), which are prominent features of this cultural period (N. Museibli, 2019). Also, pottery with the features of this period, including pottery with a combed design originates from the site of Qara Jamirli (T. Dostiyev 2007, p. 5) and Khoja Khan (M. Huseynov, B. Jalilov, 2007, p. 7). Also, pottery in the forms of bowls, cups and plates has been obtained from archaeological studies of the sites of the Darah Shahbuz and Salah Suz located in Nakhchivan of Azerbaijan, some examples being discovered and studied from the Kol Tepe site of Hadi Shahr (E. Bakhshaliyev, 2017). Along with decorated pottery, simple, polished, chaff-faced, and combed pottery in different colors was analyzed from Rabati site in Georgia (G. Bedianashvili *et al.*, 2019), similar to the two-hectare Orchosani site, which is a multi-period

site of the New Chalcolithic, pottery, bone, clay structures (human and animal figurines) as well as clay seals (I. Gambashidze *et al.*, 2018) (Table 4).

### **Conclusions**

As a result of archeological excavations in Ahar city, five sites related to the New Neolithic period named Qarachilar (Qara Chiller) in Aqa Kandi village, Gon Batedi ruins in Anbaq-e Olya, Qarah Dash ruins in Anbaq-e Sorkhay, Sarkhosh Cherei in Ghezalja (Ghezaljuh), Qarpiz Qayasi in Qalandar and five sites of Chalcolithic were identified. The relative chronology of these sites is based on the study of pottery samples and their comparison with samples obtained from scientific excavations. Accordingly, the five identified and introduced sites of the Chalcolithic (Qabri Tomb in Reyhan, Amirno in Nahar, Kol Tepe in Khuniq, Ao Qabaqi in Reyhal, Topchilar Tepesi in Azghan) are related to the New Chalcolithic. Among them, one site (Amir No site) has New Neolithic, Chalcolithic discoveries. Comparison of data from previous findings and chronological analysis of dating done in some sites will be used to better understand and provide more accurate results. In the following, the studied pottery will be introduced.

Based on archaeological evidence obtained from Ahar, pottery of New Chalcolithic 2 and 3 were obtained after the Neolithic, and among these, the new Neolithic pottery shows similarities with other regions of northwestern Iran, especially with the Urmia Lake basin. As the pottery of New Chalcolithic 2 and 3 are mostly simple in terms of visual and surface decorations, it is inferred that the settlements are seasonal and short-lived and probably used by ranchers and small communities of the New Chalcolithic. It should be noted that in the New Chalcolithic, we are witnessing an increase in settlements and population both in the northwestern region of Iran and the Caucasus region. Most of the Chalcolithic sites of Qaradagh region are located next to seasonal rivers or water springs and most of them are located at a distance of 500 to 1000 meters from water sources. In general, the area of settlements in this region is 0.3 to 2 hectares.

According to the analyzes performed, the settlement pattern of this cultural period in the discussed region is completely influenced by natural and environmental variables such as water resources, land topography, land slope, vegetation, animal cover and altitude. Among these, the altitude factor has a direct relationship with decreasing air temperature and increasing rainfall. This factor causes the accumulation of snow and storage of water resources for hot seasons, and as a result, causes access to water resources, pastures and vegetation.

Based on the studies of the data obtained from Ahar region and neighboring regions, the prehistoric situation of the region is clarified to some extent and determines both the completion of the chronological table and the dispersion and expansion of the sites of the mentioned periods. According to the chronologies of Kol Tepe in Jolfa and Dava Goz in Khoj, in the cultural and chronological sequence of Qaradagh region, we can see the new Neolithic / Transitional Chalcolithic (5000-5400 BC) and New Chalcolithic 2 and 3 (3600 / 3700- 4200 BC). Based on cultural findings, we find that there is a cultural and temporal gap between the Late Neolithic and the New Chalcolithic 2 and 3. Considering the fact that the Nakhjavan group, whose samples were obtained both from Kol Tepe in Jolfa (Trench IV) and from the geographical area of the South Caucasus, is one of the main reasons and signs of the pottery data of the New Chalcolithic 3 in the Kura-Araxes period I. This issue is one of the main cultural and archaeological ambiguities in northwestern Iran and the South Caucasus. If we accept this coexistence of two cultural traditions and the communities of New Chalcolithic 3 and Kura-Araxes I, this leads to an important issue that most likely the culture of Kura-Araxes I has been derived from the native tribes of New Chalcolithic 3. Of course, this problem needs more scientific studies and research.

### **Acknowledgement**

The present article, based on the research in the doctoral dissertation of Ali Karimikiya, entitled *Cultural, social and economic process of copper and stone societies of northwestern Iran; chronology and periodization review*

## Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data from Ahar County

based on new findings has been written and compiled in the Department of Archeology of Mohaghegh Ardabili University with the guidance of Reza Rezalou and Akbar Abedi, and the advice of Ardeshir Javanmardzadeh.

### References

- Abedi A., 2016a, *Preliminary report of the second season of archeological excavation of Kol Tepe region of Hadi Shahr, northwest of Iran*, Archaeological Studies, nr. 8(1), p. 91-111.
- Abedi A., 2016b, *Absolute chronology (C14) and relative chronology of Dava Goz in Khoi site using Accelerator Mass Spectrometry (AMS) method; Evidence from the Period of Transitional Chalcolithic, Dalma and Pisdeli*, Archaeological Research, nr. 1(1), p. 39-54.
- Abedi A., 2017, *Iranian Azerbaijan pathway from the Zagros to the Caucasus, Anatolia and northern Mesopotamia: Dava Goz, a new Neolithic and Chalcolithic site in NW Iran*, Mediterranean Archaeology and Archaeometry, nr. 17(1), p. 69-87.
- Abedi A., Khatib Shahid H., Chataigner C., Eskandari N., Kazempour M., Pirmohammadi A., Hosseinzadeh J., Ebrahimi G., 2014, *Excavation at Kul Tepe (Hadishahr), North-Western Iran, 2010: First Preliminary Report*, Ancient Near Eastern Studies, nr. 51, p. 33-167.
- Ali Beigi S., Khosravi Sh., Nikzad M., Heidari Dastnani M., Saghafi Yazdi N., Akbari, M., Jafarzadeh Z., 2014, *A report on the stratigraphic excavation of Kol-e-Yeri Tepe (caravanserai) in the eastern highlands of Zanjan province*”, Reports of the 13th Annual Iranian Archaeological Conference, p. 235-239.
- Ali Yari A., Talaei H., 2005, *Structural analysis of Neolithic pottery motifs in northwestern Iran*, Journal of the Faculty of Literature and Humanities, nr. 56(173), p. 61-73.
- Badalyan R.S., Harutyunyan A., Chataigner A., Francoies, Adrian B., Valentin R., Hovsepyan., R., 2010, *The settlement of Akhnashen – khatunarkh, A neolithic site in the Ararat plain (Armenia), Excavation results 2004-2009*, TUBA – AR, nr. 13, p. 185-218.
- Bakhshaliyev E., 2017, *New monuments of the Eneolithic period*, News of Azerbaijan National Academy of Sciences, nr. 4, p. 13-18.
- Bakhtiari S., Omrani B., Salmanpour R., Abtahi Foroushani Z., Bakhtiari S., 2019a, *Analysis of the Neolithic period in the east of Lake Urmia based on archaeological studies of Horand County*, Archaeological Studies of Parseh, nr. 7, p. 7-21.
- Bakhtiari S., Shirazi R., Omrani B., Bakhtiari S., Salmanpour R., Abtahi Foroushani Z., 2019b, *The Impact of Environmental and Geographical Factors on the Distribution of Chalcolithic Settlements in Horand area*, Geographical Research Quarterly, nr. 4(2), p. 234-243.
- Bakhtiari S., Shirazi R., Omrani B., Musa Pournegari, F., 2018, *Cultural evolution of Qaradagh region during the sixth to fourth millennia BC: Based on the data of Horand survey*, Iranian Archaeological Research, nr. 8(18), p. 25-43.
- Bedianashvili G., Sagona C., Longford C., Martkoplisgvili I., Losaberidze L., Kirkitadze G., 2019, *Archaeological investigation at the multi-period settlement of Rabati, southwest west Georgia: preliminary report, (2016, 2018 seasons)*, Ancient Near Eastern Studies, nr. 56, p. 1-133.
- Binandeh A., Hejebri Nobari A., Neyestani J., Vahdati Nasab H., 2012, *A new archaeological research in northwestern iran: prehistoric settlements Zab river basin*, Humanities, nr. 19(2), p. 27-42.
- Brown B., 1951, *Excavation In Azarbaijan, 1948*, London.
- Burney C.A., 1964, *The Excavations At Yaniq Tepe, Azerbaijan, 1964: Third Preliminary Report*, Iraq, nr. 26, p. 54-61.
- Burney, C. A., 1962, *The Excavations at Yaniq Tepe, Azerbaijan, 1961 Second*, British School of Archaeology in Iraq, London.



Chaichi Amirkhiz A., 2008, *Stratigraphy report for sondage of Deirman Tepe in Bostan Abad (first season of winter 2008)*. East Azerbaijan: Archive of the Directorate of Cultural Heritage, Handicrafts and Tourism of Tabriz, (unpublished).

Chataigner CH., Avetsyan P., Palumbi G., Uerpman H., 2010, *A late Ubaid-related settlement in the southern Caucasus*, Oriental institute of the university of Chicago studies in ancient oriental civilization, nr. 63, p. 391-409.

Derakhshi H., Hejebri Nobari A., Firoozmandi B., 2008, *Relative chronology of the pottery of Qosha Tepe in Shahar Yeri*, Payam Archaeologist, Fifth Year, nr. 10, p. 20-32.

Dostiyev T., 2007, *Excavation of Qarajamirli, Point 355 of Baku- Tbilisi- Ceyhan and South Caucasus Pipelines Right of Way*, Azarbaijan National Academy of Sciences, Institute of Archaeology and Ethnography, p. 1-15.

Dyson R. H., Young C., 1960, *The Solduz Valley, Iran: Pisdeli Tepe*, Antiquity, nr. 40, p. 19–27.

Gambashidze I., Gogochuri G., Otkhvani N., Murvanidze B., Kakhiani K., 2018, *The Late Chalcolithic settlement in Orchosani (south – western Georgia)*, rescue archaeology in Georgia.

Hamlin, C., 1975, *Dalma Tepe*, Iran, nr. 13, p. 111-127.

Hejebri Nobari A., Binandeh A., Neyestani J., Vahdati Nasab H., 2012, *Excavation at Lavin Tepe in north west Iran*, Ancient Near Eastern Studies, nr. 49, p. 95-117.

Hejebri Nobari A., Pourfaraj A., 2006, *Explanation of Neolithic and Chalcolithic Period in Ardabil Region Based on Archaeological Data of Qosha Tepe in Shahar Yeri*, Journal of the Faculty of Literature and Humanities, University of Tehran, University of Tehran, nr. 2, p. 21-26.

Henrickson E., 1983, *Ceramic Styles And Cultural Interaction in The Early And Middle Chalcolithic Of The Central Zagros*, Ph.D. Dissertation, Department Of Anthropology, University Of Toronto (unpublished).

Hesari M., 2019, *Analysis and study of changes in the tradition of Chalcolithic pottery of Idir Tepe, Mugan plain, Ardabil province*, Iranian Archaeological Research, nr. 9(21), p. 23-40.

Hesari M., Akbari H., 2005, *Sondage Report of Idir Tepe in Aslanduz*, Tehran: Archaeological Research Institute.

Huseynov M., Jalilov B., 2007, *excavation of Khojakhan settlement, Point 355 of Baku- Tbilisi- Ceyhan and South Caucasus Pipelines Right of Way*, Azarbaijan National Academy of Sciences, Institute of Archaeology and Ethnography, p. 1-89.

Karimikia Ali., Rezalou R., Abedi A., Javanmardzadeh, A., 2021, *Cultural Interactions of Northwestern Iran and the South Caucasus in the Chalcolithic*, Parseh's Archaeological Studies, nr. 5(16), p. 7-28.

Khamachi B., 1991, *Geographical Culture of East Azerbaijan*, Tehran: Soroush Publications.

Kiguradze T., Menabde M., 2004, *the Neolithic of Georgia, A view from the highlands archaeological studies in honour of Charles burney*, Ancient Near Eastern Studies, supplement, nr. 12, p. 345-398.

Lyonnet B., Quliyev F., 2010, *New findings from the Neolithic and Chalcolithic period in Western Azerbaijan*, TUBA-AR, nr. 13, p. 219-228.

Lyonnet B., Quliyev F., Bouquet L., Bruley-Chabot G., Samzun A., Pecqueur L., Jovenet E., Baudouin E., Fontugne M., Raymond P., Degorre E., Astruc L., Guilbeau D., Dosseur G., Beneckr N., Hamon C., Poulmarch M., Courcier A., 2016, *Mentesh Tepe, an early settlement of the Shomu-Shulaveri culture in the Azerbaijan*, Quaternary international, nr. 395, p. 170-183.

Lyonnet B., Quliyev F., Helwing B., Aliyev T., Hansen S., 2012, *Ancient Kura 2010–2011: The first two seasons of joint field work in the Southern Caucasus*, Iran und Turan, nr. 44, p. 1-195.

Maziar S., 2010, *Excavation at Kohnepasgah Tepesi, Araxes valley, Northwest Iran: First Preliminary Report*, Ancient Near Eastern Studies, nr. 47, p. 165-193.

**Explanation of Neolithic and Chalcolithic of Qaradagh region based on archaeological data  
from Ahar County**

- Muradyan F., 2014, *Discovery of the first chalcolithic burial mounds in the republic of Armenia*, Stone Age of Armenia, p. 339-363.
- Museibli N., 2019, *The Galayeri settlement: Chalcolithic traditions of eastern Anatolia and the Caucasus*, TUBA-AR, nr. 25, p. 63-76.
- Naseri Someh H., 2014, *Study and analysis of settlement patterns in Bostan Abad County during the Chalcolithic*, Master Thesis, Department of Archaeology, University of Tehran.
- Nishiaki Y., Quliyev F., Kadowaki S., Alakbarov V., Miki T., Salimbayov SH., Akashi CH., Arai S., 2015, *Investigating cultural and socioeconomic change at the beginning of the pottery Neolithic In the southern Caucasus: the 2013 excavations at Haci Elamxanlı Tepe, Azerbaijan*, American schools of oriental research. BASOR, nr. 374, p. 1-28.
- Omrani B., 1993, *Archaeological appearance of the east of Lake Urmia from the Neolithic to the Iron Age*, Master Thesis, Department of Archaeology, University of Tehran.
- Quliyev F., NishiaKi Y., 2012, *Excavations at the Neolithic settlement of GöyTepe", the middle kura valley, Azerbaijan, 2008–2009*, Archaeopress Archaeology, p. 71-84.
- Rahimi Sorkhani, R., Niknami K., Eslami M., 2016, *Non-Dalma pottery in the Dalma bed: Archaeological diagnosis and laboratory explanation of a case study: Saha Chay Tepe in Zanjan*, Archaeological Studies, nr. 8(2), p. 51-70.
- Razzaqi H., Fahimi H., 2004, *Preliminary Report of the sondage of Jalbar Tepe (Khan Baba), West Azerbaijan, August 1996*, Archeology and History, nr. 18(2), p. 52-59.
- Saed Moucheshi A., 2013, *Ghezeli Ozan River Basin in the Chalcolithic Age: Based on archaeological studies of Bijar County*, Iranian Archaeological Research, nr. 3(5), p. 25-50.
- Salmanpour R., Abtahi Foroushani Z., 2012, *Final Report on the Archaeological Survey and Identification of Ahar County"*, East Azerbaijan: Archive of the Directorate of Cultural Heritage, Handicrafts and Tourism of Tabriz, (unpublished).
- Salmanpour R., Abtahi Foroushani Z., 2013, *Final Report on the Archaeological Survey and Identification of Horand County*, East Azerbaijan: Archive of the Directorate of Cultural Heritage, Handicrafts and Tourism of Tabriz, (unpublished).
- Salmanpour R., Abtahi Foroushani Z., Omrani B., 2015, *Study and explanation of the Chalcolithic period in the northern slopes of Qaradagh (Horand)*, the Second National Conference on Archeology of Iran, p. 1-16.
- Sharifi M., 2020, *Archaeological excavations of Qishlaq Tepe in Bijar (east of Central Zagros)*, Tehran: Cultural Heritage and Tourism Research Institute.
- Talaei H., 2011, *Prehistoric Iran: Stone Age*, Tehran, Samat Publications.
- Talaei H., 1983, *Pottery Evidence From Ahranjan Tepe, A Neolithic Site In The Salmas Plain (Azerbaijan, Iran)* Archäologische Mitteilungen aus Iran, nr. 16, p. 7-18.
- Wilkinson, K. N., Gasparian B., Pinhasi R., Avetsian P., Hovsepyan R., Zardaryan D., Areshian G., Bar-oz G., Smith A., 2012, *Areni-1 cave, Armenia: A chalcolithic-early bronze age settlement and ritual site in the southern Caucasus*, Journal Field of Archaeology, nr. 37, p. 20-33.