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The East of East Anatolia from the Beginning of the 4th Millennium BC to the End of the 3rd Millennium BC: Van, Ağrı, Iğdır - Internal Dynamics, External Stakeholders

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Abstract: *The ground date of Ağrı and Iğdır, which we have assessed in the east half of the Eastern Anatolia Region, has been drawn back to the middle of the 5th millennium BC by means of recent studies conducted. This chronology can be drawn back to the middle of the 6th millennium BC in the Van Lake basin. As some settlements located in the mountainous areas of the South Caucasus during the prehistoric periods came to life in the 7th millennium BC, it is quite difficult in this respect to say that the settlements in the east half of East Anatolia came to life in a much later phase. The fact that Van, Ağrı and Iğdır provinces were in communication with North Syria, North Mesopotamia, Northwest Iran, Central Anatolia and South Mediterranean during the period from at least the 4th millennium BC to the 3rd millennium BC indicate that a similar situation might have been encountered in the earlier phase. Since the earliest common chronology of the three provinces determining Turkey's eastern border in north-south direction can be drawn back to the 4th millennium BC, the article is initiated at this point. The most distinct evidence defining this millennium is buff/light brown, glossy, chaff-faced ware and handmade dark gray pottery. On the other hand, the culture of the next millennium, Kura-Araxes, shows a multi-component, advanced character with its terra-cotta artifacts, architecture, socio-economic structure, belief and cult structures, burial customs, level of development in mining and metallurgy. In this study, the traces of two common cultures that lived throughout the geographies of Iğdır in the north and Van in the south have been traced by taking Ağrı to the center. The strong presence of these cultures and the fact that they have been identified in three provinces throughout South Caucasus and Northwest Iran indicate that they might have experienced the earlier period in common as well.*


Keywords: *Late Chalcolithic Age, Early Bronze Age, East Anatolia, South Caucasus, Cultural Communication.*


MÖ IV. Binyıl Başlarından MÖ III. Binyıl Sonuna Kadar Doğu

Anadolu'nun Doğusu: Van, Ağrı, Iğdır- İç Dinamikler, Dış Paydaşlar

Öz: *Doğu Anadolu Bölgesi'nin doğu yarısında değerlendirmeye aldığımız Ağrı ve Iğdır'ın dip tarihi son yıllarda yapılan çalışmalarla MÖ V. binyılın ortalarına kadar çekilebilir. Bu kronoloji Van Gölü havzasında MÖ VI. binyıl ortalarına kadar çekilebilir. Prehistorik dönemlerde Güney Kafkasya'nın dağlık alanlarında bulunan bazı yerleşimler MÖ VII. binyılda yaşam bulmuşken Doğu Anadolu'nun doğu yarısındaki yerleşimlerin çok daha geç evrede yaşam bulunduğunu söylemek bu açıdan oldukça zordur. En azından MÖ IV.*

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Bu makale araştırma ve yayın etiğine uygun hazırlanmıştır  *intihal incelemesinden geçirilmiştir.*

binyıldan MÖ III. binyıla kadar geçen süreçte Van, Ağrı ve Iğdır illerinin Kuzey Suriye, Kuzey Mezopotamya, Kuzeybatı İran, Orta Anadolu ve Güney Akdeniz ile iletişim halinde olması daha erken evrede de benzer bir durumun yaşanmış olabileceğine işaretler. Türkiye'nin doğu sınırını kuzey-güney yönlü olarak belirleyen üç ilin erken ortak kronolojisi MÖ IV. binyıla kadar çekilebildiği için makaleye bu noktada başlanmıştır. Bu binyılı tanımlayan en belirgin kanıt devetüyü parlak saman yüzü kaplar, el yapımı koyu gri renk kaplardır. Sonraki binyılın kültürlü Kura-Aras ise pişmiş toprak eserleri, mimarisi, sosyo-ekonomik yapısı, inanç ve kültür yapıları, ölü gömme gelenekleri, madencilik ve metalürjideki gelişmişlikleriyle çok bileşenli gelişkin bir özellik sergiler. Bu çalışmada Ağrı merkeze alınarak kuzeyde Iğdır, güneyde Van coğrafyaları boyunca yaşam bulan ortak iki kültürün izleri sürülmüştür. Bu kültürlerin güçlü varlığı, Güney Kafkasya ve Kuzeybatı İran boyunca uzanan üç ilde de tespit edilmiş olması daha erken süreci de ortak yaşamış olabileceklerine işaretler.

Anahtar Kelimeler: Geç Kalkolitik Çağ, Erken Tunç Çağ, Doğu Anadolu, Güney Kafkasya, Kültürel İletişim.

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I. Introduction

Before the extensive researches carried out in the Eastern Anatolia Region, it was thought that the region was used as a living space starting from the very late periods due to climate, challenging living conditions and mountainous structures. However, the findings of the surface surveys and excavations conducted in the Eastern Anatolia Region have shown that human communities have lived in the region since the Prehistoric ages (Kökten, 1971: 14-15; Kökten, 1976: 2-3; Esin, 1974: 109; Erzen, 1986: 3-5.)¹. During the Prehistoric times, the settlements in the flat plains of North Mesopotamia continued to increase their urban development, while the settlements in the “Mountainous Eastern Anatolia” regions including Ağrı region, sticking to their local characteristics, were less developed. The Mountainous Eastern Anatolia, including the Ağrı region, was one of the important transition sites where both Transcaucasian and North Mesopotamian cultures fused. The influence of new cultural elements that will lead to changes, especially, in the Kura-Araxes cultural process has begun to make itself felt in this geography. These innovations, starting from the last quarter of the 4th millennium BC, have spread in a close relation to regions from the Ağrı region and its surroundings to Erzurum and Elazığ-Malatya geography. At the beginning of the 3rd millennium BC, a great cultural unity was experienced in a broad geography including Eastern Anatolia, Georgia, Azerbaijan, Nakhchivan, Armenia and Northwest Iran (Işıklı, 2009a: 52).

The evidence showing that the relations had been ongoing throughout the 3rd millennium BC were found. The richness of the region in terms of mineral resources and its proximity to the mineral resources it lacks, natural passages for trade, convenience and speed provided by waterways were among the reasons for region to be chosen as a settlement during the 3rd millennium BC. The trade colonies found a wide market for a variety of processed and unprocessed metalwork made of lead, silver, arsenic copper and

¹ Findings dating back to the Paleolithic Age were found in Tunceli, Elazığ and Malatya.

copper. Especially in the Elazığ vicinage, some silver and copper resources are thought to be known by the miners of the region and it is interpreted that one of the most important reasons for the development of trade is that the settlements in this region were metal processing centers (Yakar, 1985: 270; Aktüre, 1997: 102-103). Moreover, it has been understood that the region was in close relation to the regions of North Syria, North Mesopotamia, Northwest Iran, Central Anatolia and South Mediterranean (Uçankuş, 2000: 475). The only element that makes these long distanced settlements close is the availability of the geographical structure.

When we take a quick glance at the geography, it is seen that the chain of mountains are getting quite closer to each other and their altitude are increased. The Euphrates and Tigris rivers, along with the peaks of the mountains in the east, west and north, reflect a triangle narrowing towards Central Anatolia. The main reason that the cultures in this triangle have been fused and resided so easily is the availability of the geography. The boundaries of the Eastern Anatolia Region continue towards the piedmonts of the arch that has been formed by Kahramanmaraş and the Southeast Taurus Mountains to the south of the region starting from Kura and the plateau of Lake Urmiye. We can determine the west of the region with the mountain chain of Taurus between Kızılırmak and Euphrates, and the line of water area; and the north with the line that includes Bayburt Plain following the south piedmonts of Blacksea Mountains and then draws an arch to the south (Erzen, 1986: 1-4). As to its geographical location, the Eastern Anatolia Region has formed a central region among Mesopotamia to the south, Iran to the east, Caucasia to the northeast and steppes of Central Anatolia to the west. With respect to this feature, it became the intersection and meeting point of the ancient civilizations that lived thousands of years ago. It is possible to divide the region into four as Erzurum-Kars, Upper Euphrates, Upper Murat-Van and Hakkâri sections in terms of the geographical distribution (Atalay and Mortan, 2007: 506-530). Only 29% of the 11,376 km² surface area of Ağrı within the Upper Murat Basin is plain, 18% is plateau and 46% is mountainous. The region of Ağrı, where almost half of its territory is formed by mountains, is also home to the Mount Ağrı (5137 m), which is the highest mountain of the country (Atalay, 2011: 30, 36; Şahin, Doğanay and Özcan, 2005: 77). In the region where the altitude is 1,000-1,500 m, there are partial flat places consisting of 7 to 10% plateaus, which are interspersed in patches. Despite the elevation of mountains above 3000 m apart from Mount Ağrı, the average height of the low areas from the sea is around 1500 m. In the region, where the plain lands and plateaus are also substantial, the settlements are lined up along suitable plains and valleys. The largest of these is the Ağrı-Eleşkirt Plain. This plain, which is irrigated by the tributaries of the Murat River, has been rarely explored archaeologically though it has convenient potential. The very same plain, which is connected to the Horasan Plain and Erzurum through the passes of Tahir and Kılıç Gediği, has a natural connection with the Muş-Bulanık Plain as well. The “Ahlatlar Pass” which is a low mountain threshold connects it to the Kars Region in the north. Van Lake Basin is reached through the Diyadin Threshold and the Iğdır Plain through the Pamuk Pass and the Çilli Pass (Arınç, 2011: 91, 139-144). Apart from this plain, other plains confronting us as convenient habitats in the region are Tutak, Patnos

and the Eastern Beyazıt plains (Kocaman, Kaya and Korkusuz, 2015: 600; Korkusuz and Sevindi, 2017: 228). The plateaus above the plains turn into large meadow pastures due to heavy snow (28%) in winter and heavy rain (35.6%) in spring. These geographical features are of vital importance for breeder-shepherd groups (Koday, 2005: 90-94, Arınç, 2011: 32-34, 136-138, Grafik I.5; Çetin, 2012: 11, 15)². The breeder-shepherd groups have a key role in the commercial connections carried to the Eastern Anatolia Region with peoples of Kura-Araxes culture (Yaylalı, 2007: 165). Since the Mount Ağrı to which these groups were spread is geographically surrounded by Iğdır Plain from the north, Doğubeyazıt Plain and Van Basin from the south, our study is limited to this framework. As multiple relations had been established between the regions even before the peoples of Kura-Araxes were entirely spread to the region (approximately 3.300-2.200 BC), our study includes the Late Chalcolithic Age (approximately 3.650-3.300 BC) as well (Fig. 1).

II. Analysis of a Multi-Component Advanced Culture: Kura-Araxes

Kura-Araxes culture is a less known and less researched multi-component advanced culture in the eastern of Anatolia, the less known and less researched region. It stands out with terra-cotta artifacts bearing the traces of culture, architecture, socio-economic structure, belief and cult structures, burial customs, mining, and advanced metallurgy. In general terms, Kura-Araxes Culture existed in a wide region covering Georgia, Azerbaijan, Nakhichevan, Armenia, Northwest Iran, East Anatolia Region, and North Syria (see Figure 1). There is a terminology problem for the fragmented culture spreading over a wide geography. Based on the archaeological data he obtained during the Sachkere excavation in 1913, Georgian E. S. Takaisvili named this culture "*Koban Culture*" (Takaisvili, 1913: 168-170). According to the results obtained by W. F. Albrigh during the Beth Yerah excavations in Palestine in the 1920s, this culture was named "*Hirbet-Kerak*" (Albrigh, 1924-1925: 27-30). It was named "*Kura-Araxes*" (Kuftin, 1941; Kuftin, 1943: 92-100), based on the accumulation of Georgian archaeologist Boris Kuftin's studies in the 1940s and later on the black burnished ceramics obtained from the excavations at Trialeti Kurgans (Kuftin and Field, 1946: 341-358). In the 1940s, when Kuftin carried out studies, I. Kılıç Kökten conducted surface surveys and at the end of his explorations he called it "*Culture of Karaz*" (Kökten, 1947: 432-470). Koşay who carried out Karaz Excavation in the 1940s also named it "*Culture of Karaz*" (Koşay, 1943: 165-169; Koşay and Turfan, 1959: 349-360). After the surface survey of Eastern Anatolia at the end of the 1950s, Burney called it "*Early Bronze Age Culture of Transcaucasia and Eastern Anatolia*". Burney later stated that it would be more appropriate to call this culture "*Early Transcaucasian Culture*" (Burney, 1958: 157, 183-185; Burney and Lang, 1971: 43-57). Lessen and Barbutyan wanted to illuminate this culture and their regions, which was dated to around 3000 BC by them, by revealing

² By year of 2019, there are approximately 1.400.000 ovine and 400,000 bovine animals throughout the province of Ağrı. Even today, there are livestock-based shepherd groups (We thank the Ministry of Agriculture and Forestry, Ağrı Provincial Directorate of Agriculture and Forestry, Animal Health Breeding and Fisheries Branch Directorate for the information provided).

historical data and terminological denominations of domestic and foreign excavations (Işıklı, 2011: 43). Studying on Korucutepe material, Buccellati named this culture “*Culture Out of Fertile Crescent*”. In this part of the book, the author tries to shed light on the problem of origin along with the problem of terminology. In the third subheading where the Transcaucasian Geography, Elazığ-Malatya Region, and Erzurum Region are mentioned, the spreading process of the culture along with the chronology was also emphasized (Kelly- Buccellati, 1978: 67-88). Van Region, which was the missing link of these studies, took its place with the excavations carried out in Dilkaya Höyük between 1984 and 1988 (Kozbe, 1990: 533-538)³. V. Sevin's Karagündüz Höyük excavations between 1994 and 1999 revealed that the culture spread prominently in this geography (Sevin, Özfırat and Kavaklı, 2004: 36)⁴. This was further supported by the results of excavations at the Van Fortress Höyük, and Ernis Graveyard.

The best representative of this culture, which we receive for consideration under the name of Kura-Araxes, is terra-cotta pots. Although the potter's wheel was known in other cultures that were contemporary with it, the pottery of the peoples of this culture was handmade. The terra-cotta pots are sand, stone added, monochrome, lined and burnished (Kozbe, 1987: 11). Burnish is a common feature where Kura-Araxes pottery was spread (Kiguradze and Sagona, 2003: 38-94)⁵. Decorations consist of lines and these lines generally consist of spiral, parallel or intersecting lines. Fluting, groove and relief techniques were applied on the ceramics (Burney and Lang, 1971: 57). Among the terra-cotta artifacts are lids, fixed and portable ovens, pot stands and figurines. The most important representative of the terra-cotta objects group belonging to culture is, of course, the ovens. It has been determined that the ovens were used as both portable and fixed. It draws attention that along with the richly decorated ovens in relief technique, especially in some of their examples, there are horn shaped protrusions. Ovens, along with heating, became a part of beliefs as well. The two-horned or three-horned ones of the relevant ovens are noteworthy. Also, human-faced or anthropomorphic ovens are taken as cult related objects for ceremonial purposes (Sagona, 1984: Pls. 96-98; Işıklı, 2009b: 333-352; Işıklı, 2011: 75-78; Takaoğlu, 2000: 11-16).

It has not been possible to outline the architecture that characterizes the culture. Generally, the rectangular and round structures in Kura-Araxes architecture were built as one or two-roomed on stone foundation steeply cornered with mud wall. In addition to these, structures that have rounded corners and are circularly planned have been unearthed as well (Kiguradze and Sagona, 2003: 38-94). Whether the communities of this culture were nomadic or not and what their ways of livelihood were has always been

³ It is located on the Van-Gevaş coastal road, 33 km far from the district center. Kura-Araxes was dated to II-III phases.

⁴ The mound is located in the village of Karagündüz, next to the Erçek Lake, 35 km to the northeast of Van.

⁵ Black burnished ware groups date back to the Late Chalcolithic Age. The burnished ceramics of this era can be called Proto Kura-Araxes.

a debated subject. While a number of portable and mobility indicating elements point to nomadic life, public spaces and centers with defense systems point to permanent settlements (Burney and Lang, 1971: 57-62; Işıklı, 2011: 96-100). Much of our knowledge of the burial customs of the culture belongs to the geography of South Caucasus. The discrete samples from the settlements in Eastern Anatolia do not represent the general. There is rather extramural and inhumation burial custom in the graves of the geography where the culture has been spread. Examples reflecting the cremation burial custom were captured in very few graves (Parliti, 2019).

III.Key Settlements in the Eastern Anatolia Region and Tangible Data about Kura-Araxes Culture in the Ağrı Region and its Immediate Surroundings

The number of centers where the traces of KA culture have been reached during excavations in the Eastern Anatolia Region is quite low (Fig. 2). However, it is seen that the number increases fairly when surface surveys are added to these excavations. In the geography of Tunceli, Pulur/Sakyol (Koşay, 1970: 140), Yeniköy/Gavur (Koşay, 1976: 175-176), Kalaycık's (Serdaroğlu, 1971: 25); in the geography of Elazığ, Tülintepe (Esin and Arsebük, 1974: 142), Tepecik (Esin, 1979: 87, 91-93), Norşuntepe (Gülçur, 1988: Pl. 1/7; Hauptmann, 1979: Pl. 37/10), Korucutepe (Russell, 1980: 20), Han İbrahim Şah (Arsebük, 1979: 84), Taşkun Mevkii (French, 1972: 46, 51), Pağnik Ruins (Harper, 1970: 131- 132), İmikuşağı (Serdaroğlu, 1977: 118; Özdoğan, 1977: 65), Köşkerbaba (Bilgi, 1981: 113-119), Şemsiyetepe's (Darga, 1987: 159) architecture and vessels reflect the east-west oriented communication of the cultural influence of Transcaucasia-Northwest Iran. The finds of Arslantepe (Frangipane, Balossi Restelli and Çalışkan Akgül, 2014: 457-459, Picts. 3-4), Değirmen-tepe (Özdoğan, 1977: 39; Esin and Harmankaya, 1987: 99, 101; Esin and Harmankaya, 1988: 81), Pirot/Kıyıcak (Karaca, 1983: 72), İmamoğlu (Uzunoğlu, 1987: 217, 219) in Malatya reflect that the nomadic communities associated with the Transcaucasian world may have an important role in reaching the source of raw materials and the propagation of metal technology (Fig. 3). Büyüktepe (Sagona, 1994: 230) in Bayburt; Sos (Sagona, Erkmen and Sagona, 1998: 249, Fig. 1.4), Karaz, Pulur Güzelova (Işıklı, 2005: 350-387) and Cinis (Yalçın and Sevindi, 2018: 2587, Fot. 5) in Erzurum show that there has been communication between the Transcaucasia and the northeast of Anatolia during the Kura-Araxes cultural process. Apart from the Van Kalesi Höyük (Konyar, Ayman, Avcı, Yiğitpaşa, Genç and Akgün, 2013: 133) in Van geography, pottery samples of Karagündüz, which are influenced by Kura-Araxes, can be compared with frontal positioned grooved, spiral decorated and graphite samples and Nakhichevan Lug samples, which are well known in the Transcaucasia and Urmiye Lake regions (Sevin and Kavaklı, 1996: 342; Sevin, Özfirat and Kavaklı, 2000b: 412, Illustr. 5). Both pottery and round architectural examples (Çilingiroğlu, 1987: 82-83) of Dilkaya Höyük were found in Kültepe I remaining within the borders of Nakhichevan (Başşaliyev, 1997: 17). The Kura-Araxes pots recovered from the Ernis (Sevin, 2004:

182; Özfirat and Marro, 2008: 6)⁶ and Çelebibağ (Uluçam, 1996: 435, Illustr. 6) graveyards are the residuals from the graves.

As being a transition point between the above-mentioned regions, Ağrı region and its surroundings have become one of the living spaces of human communities due to the presence of water resources, rich vegetation and abundant prey animals. Besides, the geography in question has important mineral resources. Therefore, it should be the case that commercial, social and cultural relations with the surrounding regions were developed and close relations with Transcaucasia and Euphrates Basin were developed since Chalcolithic Age. It is understood from the Halafian Pottery (Late Neolithic-Early Chalcolithic) that Mesopotamian based cultures reached up to the Muş and Van Plains, just south of Ağrı region (Rothman and Kozbe, 1997: 108, Fig. 3, Table 1; Parlütü, 2011: 213-215). It has become clear in archaeological studies carried out in recent years that these relationships date back to at least 4th millenium BC. Findings belonging to this period were found in Sağlıksuyu, at the mouth of the Balıkgöl valley in Doğubeyazıt district of Ağrı, near the Doğubeyazıt Plain (Fig. 4a) (Marro and Özfirat, 2003: 389); in the Mollacem/Bozkurt archaeological settlement area (Fig. 4b) located in the Mollacem Location within the borders of Bozkurt Village, after which it is named; in Koruktepe Höyük (Fig. 4c)⁷, west of Karakoyunlu district center. The red-brown, bright faced wares and light brown, bright, chaff faced wares of the settlements belong to the Late Chalcolithic Age. Sioni type handmade, dark gray wares are another example of this period. A part of sherds belonging to Late Chalcolithic Age was also matched with Amuq E/F pottery samples (Fig. 6a-b) (Marro and Özfirat, 2004: 232, Photog. 4, Pl. I: 1-3; Özfirat, 2009b: 238-239, Figs. 13-14; Özfirat, 2012a: 113, Figs. 1-3, 4, 5:1-7, 5:8; Özfirat 2012b: 155, Picts. 1-2; Özfirat, 2015: 158). These light brown, brown and cream colored, chaff faced ceramics and the Tilki Tepe II type ceramics with scrape decorated rims, which can be extended to the first half of the 4th millennium BC, were also found at Hazine Tepe, at the end of the place where Mount Ağrı lava meets the plain (Özfirat, 2004: 16, Illustrs. 2-4; Marro and Özfirat, 2003: 389)⁸. In Gıcık Location (Fig. 4e) (Özfirat, 2004: 16; Marro and Özfirat, 2003: 390) located in about 5 km to the south of Hazine Tepe, in Gönlüaçık (Karavet) Fortress (Fig. 4f) (Işık, 2008: 23-24, Map 5, Pict. 9)⁹, 25 km to the south of the Patnos district, north of Mount Süphan, in Çimen Höyük (Fig. 4g), (Marro and Özfirat, 2005: 322, 325-326, Photog. 3, Pl. III.4; Özfirat and Marro,

⁶ The recovered materials can be dated to Kura-Araxes II phase.

⁷ It is situated on a small rocky hill on the northern piedmont of Mount Ağrı, along the borderline extending to the plain of Iğdır.

⁸ Hazine Tepe is important because it is the control point at the connection between Doğubeyazıt and Iğdır on the western end of Mount Ağrı, at the southwest end of the Iğdır Plain. It is also in a position to connect the high plateaus of Eastern Anatolia and the plains of Mesopotamia, in the North-South communications.

⁹ Patnos district is located 500 m south of Gönlüaçık Village.

2008: 2, Pict. 2)¹⁰ located in the Mimen Location of the Büvetli Village of the Diyadin district and in Sarıgül (Marro and Özfırat, 2005: 325; Özfırat and Marro, 2008, 4)¹¹ located in 40 km to the east of Çimen Location, Amuq F type pottery belonging to the Chalcolithic Period (first half of the 4th millennium BC); in the Kaderçavuş Cave (Fig. 5a), (Özfırat, 2013: 293, Pict. 1)¹², brown-testaceous, plant-tempered ceramics and in the Hesar Cave (Fig. 5b; 6d), (Işık, 2008: 9, Picts. 2-3, 61)¹³, obsidians to be dated to this age at the latest were obtained. In general, the wares consist of chaff-tempered materials of Late Chalcolithic Age, which have typical light brown, cream colored or brown extracts (Özfırat and Marro, 2004: 16, Picts. 2-3).

The contemporary data of the Late Chalcolithic Age settlements, which were located within the provincial borders of Ağrı, were also found in the surrounding provinces. The chaff faced simple wares known from phase F settlements in the Amuq Plain of Hatay are used for the ceramics of Tilkitepe III. pots recovered during the settlement of the second phase; parallels were formed with horizontally decorated vessels decorated with decorative decoration on the 2nd century BC (first half of the 4th millennium BC). Some parallelisms were drawn between the chaff faced simple wares known from phase F settlements in the Amuq Plain of Hatay and the wares recovered from the third phase settlement of Tilkitepe located in the Van Lake Basin together with the wares belonging to the second phase, decorated horizontally in the form of line engraved for decorative purpose (Marro and Özfırat, 2003: 389-390; Özfırat, 2004: 92, Map, Picts. 1-2, Illustrs. 1-2)¹⁴. Similarly, Amik E-F type chaff faced wares were found in the surface surveys conducted in Aştepe Höyük (Marro and Özfırat, 2003: 389-390; Özfırat, 2004: 92, Map, Picts. 1-2, Illustrs. 1-2)¹⁵, Aşağı Gölalan, Baklatepe¹⁶, Çaldıran Fortress, Çavuşbaşı and Ernis/Evditepe¹⁷ within the Van Lake Basin (Fig. 6c), (Özfırat, 2007a: 114, Fig. 3; Özfırat, 2007b: 143-144, Pict. 1). On the grounds that similar finds are scattered up to the South Caucasus brings to mind groups that were in communication with each other in a wide geography (Kelly- Buccellati, 1974: 351; Kushnareva, 1997: XIII). The fact

¹⁰ It is a flat mound 1 km south of the Doğubeyazıt-Diyadin highway. It is claimed that Çimen Höyük and Aştepe might be settlements of nomadic groups coming from North Mesopotamia in the early 4th millennium BC; and that Colban might be the permanent settlement of those coming from the North Mesopotamia and that Sarıgül and Çetenli might be the permanent settlement of Late Sioni settlers.

¹¹ It is a contemporary settlement with Çimen Höyük on the lower slope of the mountain where Eski Doğubeyazıt is located.

¹² It is located on the southern piedmont of Mount Ağrı within the borders of Kaderçavuş Village, within the borders of Doğubeyazıt district.

¹³ The cave, which is located in 3 km east of Patnos district on the rocks of the Ziyaret Village Road, has an entrance of 1.20 m width, 2.10 m height and an internal volume of 4 m length and 3 m height.

¹⁴ In both centers, there are also kurgan type graves. The earliest use of these graves has not been clarified. However, it is reported that they were used until the Iron Age.

¹⁵ The mound is located in 20 km north of Van, facing the Özalp River.

¹⁶ They are located to the north and the east of the Erçek Lake.

¹⁷ They are located in the Çaldıran Plain.

that Late Sioni type wares were found in settlements such as Aştepe (Özfirat and Marro, 2008: 2, Pict. 4), Çimen Mevkii, Sarıgül (Marro and Özfirat, 2005: 322-325, Pl. III.3; Pl. IV: 2; Özfirat and Marro, 2008: 4, Pict. 6), Çetenli (Marro and Özfirat, 2005: 322-325, Pl. III.3; Pl. IV: 2; Özfirat and Marro, 2008: 4, Pict. 6)¹⁸ supports that the region played an intersection role in the east-west and north-south communications. In Deliktaş and Lanetlitepe within Iğdır, findings belonging to Late Chalcolithic Age were found as well. These two centers are located at the point where the lava of Mount Ağrı extends towards the Iğdır Plain. Deep bowls with outwardly open, simple rim, jugs with vertical neck and round body and low-neck jugs with slightly outward-pulled rim can be cited as samples of ceramic wares belonging to this period of Deliktaş and Lanetlitepe (Fig. 6e). These are composed of three ware groups, which are cream lined, brown-testaceous and gray. Cream lined bowls have red-brown paste. The band and red colored decoration engraved on the two wares are likened to the Amuq E-F type (Özfirat, 2006: 177, 182, Figs. 3-4; Özfirat, 2008: 197-198, Picts. 1-2)¹⁹.

Our knowledge about the Ağrı Region and its immediate surroundings, which remain in the middle of the spreading geography of Kura-Araxes culture, is quite limited since no archaeological excavations have been conducted. The region, which is located within the borders of Upper Murat Basin, is a place that should be within the spreading area of culture, especially with regard to its location. Ağrı has lived a contemporary culture up to Iğdır in the north, Muş and Van Plains in the south (Kozbe, 1995: 35-45). The studies of C. A. Burney in 1956 provides the first data on the spreading of Kura-Araxes culture in the region. In these studies, apart from Patnos, he found two mounds within the provincial borders of Ağrı, in the Karaköse Plain, which yielded materials contemporary with the Kura-Araxes culture (Burney, 1958: 158-187). Researches conducted after a long time in 2001 showed that the region was as rich as expected in this respect. In the surface surveys conducted by Başaran, Keleş, Geissler (Başaran, Keleş, Geissler, 2008: 77) and Marro, Özfirat (Marro and Özfirat, 2003: 390-391, Map 2) in the province of Ağrı, findings belonging to Kura-Araxes culture were recovered. During the surface surveys conducted in Arzap/Sağlıksuyu Höyük (Fig. 4a) located in the Doğubeyazıt Plain, on the western side of the Mount Ağrı, terra-cotta pots belonging to Kura-Araxes culture were found. These ceramics indicating the Kura-Araxes culture have black on the exterior face and red-gray tones on the interior face with their known features. As to their rims, they rather have cream, gray or light brown colors. These heavily burnished ceramics are coarse structured and intensely sand-tempered. On to the surfaces of the remaining terra-cotta pots from the people of this settlement, scraping and geometric decorations such as fluting/groove were applied (Marro and Özfirat, 2004: 17-18, Illustr. 6: 1-7). In Çetenli/Teperiz Fortress (Fig. 7d), (Konyar, 2004: 67; Marro and Özfirat,

¹⁸ Çetenli Höyük is located in the Kale Location within the borders of Çetenli Village of Doğubeyazıt District of Ağrı Province.

¹⁹ Deliktaş and Lanetlitepe are located on low lava hills where Mount Ağrı extends to Iğdır Plain.

2005: 326; Özfirat, 2008: 198; Özfirat and Marro, 2008: 6)²⁰ located in the Doğubeyazıt district of the Ağrı province; apart from Gölyüzü (Ceylan, 2004: 44, Map), in Mollacem/Bozkurt²¹ (Fig. 4b), which is the slope settlement on the western piedmont of Mount Ağrı and on the northeastern edge of the plain; and in Kızıltepe (Özfirat, 2009c: 346), findings belonging to this period were found. The hand-made Kura-Araxes ceramics consist of two-colored (brown and red) burnished and polished (Fig. 9a) groups with the same form properties, cream lined exterior face, slippery surface (Özfirat, 2009b: 240, Figs. 15-17; Özfirat, 2012a: 113, Fig. 6:1-9, 6:10-11). In Yiğnitepe (Özfirat, 2008: 198) located in 12 km to the northwest of Eleşkirt; in Sadaklı Höyük (Özfirat, 2006: 182; Özfirat, 2008: 198)²²; in Hazine Tepe (Özfirat, 2009c: 346) in Patnos; in Giriktepe/Değirmentepe (Fig. 7c; 9b), (Işık, 2008: 10, 39, Maps 2, 10, Illustr. 13, Picts. 31, 54)²³; in Bağdışan (Fig. 7a; 9c), (Işık, 2008: 10, 22, Maps 2-3, Picts. 4, 53)²⁴; in Zali Höyük (Marro and Özfirat, 2005: 326; Özfirat and Marro, 2008: 7; Işık, 2008: 11)²⁵; in Gönüaçık/Karavet (Işık, 2008: 24); in Gresor²⁶ (Fig. 7e), (Özfirat, 2010b: 225, Pict. 2); in Esenbel, Şemse Tepe, Büyük Taştepe, Dorukdibi (Özfirat, 2009a: 211, 215; Özfirat, 2009c: 346)²⁷ in Tutak, north of Patnos; and in Kocadağ Fortress in Taşlıçay²⁸ (Fig. 7b), (Çetin, 2012: 43), archaeological findings contemporary with the Kura-Araxes cultural period were found.

Since the region of Ağrı plays a key role in terms of kurgan tombs and the settlements that can be associated with these tombs, it should be briefly evaluated. The terra-cotta pots belonging to this culture were found during the researches carried out in and around Suluçem Kurgans located in Korumark Altı Location in Suluçem Village of Doğubeyazıt District (Fig. 8a, c-d). Late Chalcolithic Age and Kura-Araxes type ceramics were collected during the surface surveys conducted at Bozkurt Kurgan Graveyard (Fig. 8b, e-f), (Özfirat, 2010a: 526-527, Fig. 8). Within the borders of Doğubeyazıt, a number of kurgans were identified at Hazine Tepe, where the first settlement was dated to the Late Chalcolithic Age. However, it has not been possible to determine when they were used

²⁰ It is located in 12 km east of Doğubeyazıt district, south of Çetenli Village. It is a quite strategic mound on the route of Erzurum and Tabriz, with the Van Lake Basin and Dogubeyazit Plain on the elevation leaning its back against the mountain ridge.

²¹ The mound rests against the ridge of the mountain, above the Doğubeyazıt Plain and has a strategic location extending over the Aras Valley and the Caucasus pass to the Van Lake Basin in the south and the Iranian geography in the east.

²² It is located in the Sadaklı Village, on the Eleşkirt Plain.

²³ The mound, which lies on the edge of Üçbulak (Sekani) Water, a branch of the Bağdışan Stream, 2 km southeast of Patnos, has a height of 10 m.

²⁴ The mound has 10 m height and 700 m² area and located in the Bağdışan neighborhood, on the right side of the Bağdışan Stream, after which it is named, about 2 km southwest of Patnos.

²⁵ It is strategically located between Patnos and Erciş, in the Zali Hamlet of Dedeli Village, 22 km east of Patnos district. It is located on a medium-sized, natural rock and near the water.

²⁶ It is located in Bağdışan Stream Valley, northwest of Patnos district center.

²⁷ Dorukdibi consists of a fortress and a mound on a high hill within the village it is named after.

²⁸ Taşlıçay district is located in the Hürriyet Neighborhood, <https://kulturportali.gov.tr/turkiye/agri/kulturenvanteri/kocadag-kalesi> (12.09.2019).

at the earliest due to intense destruction (Marro and Özfirat, 2003: 389). Apart from the kurgan type graveyards, it is stated that stone cist and stone weave graveyards were found on the western slope of Dorukdibi settlement in the north of Patnos (Özfirat, 2009a: 211; Özfirat, 2009c: 347)²⁹. Undoubtedly, the most problematic chronology of these grave types belongs to kurgan type graves. It is noteworthy that numerous kurgan graves belonging to the Early Bronze Age were opened in Azerbaijan and Nakhichevan, the nearest neighbors of Ağrı and Iğdır. For example, similar kurgan graves belonging to Kura-Araxes culture were found on the dry hills, 7 km north of Maxta Village located on Arpaçay Water, which is one of the important water resources of Aras Valley (Parker, Ristvet, Baxşeliev, Aşurov and Headman, 2011: 192, Table 1, Fig. 1, 10-12; Parker, 2012: Fig. 1, 8-10).

A number of archaeological materials similar to the ones found in Kura-Araxes settlements in Ağrı region were also found in Kura-Araxes settlements in the surrounding regions. The sample wares found in Zali Höyük, which have sharp contrasts with simple decoration, do not match with the Karaz and Sos Höyük samples in the Erzurum Plain; Mokhra Blur and Shengavit samples in Aras Valley; Pulur, Norşuntepe and Korucutepe samples in Keban Basin. Because the Kura-Araxes wares found in these centers have rich decoration (Marro and Özfirat, 2005: 326; Özfirat and Marro, 2008: 7)³⁰. The Kura-Araxes ceramics found in Çetenli in the Doğubeyazıt Plain are distinguished from the finds of Zali Höyük with a rich decoration approach as in these regions (Özfirat and Marro, 2008: 6). A large number of black or blackish-gray polished Kura-Araxes ceramics collected in Çetenli, which can be dated to the middle of the 3rd millennium BC, can be likened to those in the Van Lake Basin. For example, other similar samples together with Ernis finds can be dated to EBA II. Among the decorated ones, it is possible to see the parallels with groove motifs, oblique lines, concentric circles in the ceramic samples of Mokhra Blur, Shengavit or Schresh Blur, which are dated to the middle of the 3rd millennium BC (Marro and Özfirat, 2005: 326, Pl. VI: 3-5; VII.V: 3; Pl. VIII: 4; Pl. VIII: 2; Özfirat and Marro, 2008: 6-7). The Kura-Araxes ceramics found in Arzap / Sağlıksuyu are likened to those in Erzurum Çiğdemli Höyük, Toprakkale, Bulamaç II, Sos Höyük II and Elazığ settlements (Başaran, Keleş, Geissler, 2008: 77). Similar to the red-brown Kura-Araxes ceramics found in Gönlüaçık, Esenbel, Büyük Taştepe, Şemse Tepe and Hazine Tepe have been reached in Hacı İbrahim located in Çaldıran Plain, Çubuklu, Küçük Gır, Mezarlıktepe (Özfirat, 2009c: 346) located in Komtepe Karasu Valley and Kalecik (Özfirat, 2009a: 215, Figs. 2-3; Özfirat, 2009c: 347, Pict. 1)³¹. To be pointed out here, similar to the Gölyüzü archaeological settlement model found on the rocky hill within the borders of Gölyüzü Village in Doğubeyazıt district of Ağrı province, where Kura-Araxes ceramics were recovered, have been reached in Ziyaret Fortress

²⁹ It is not stated clearly whether the graveyard in question belongs to the Kura-Araxes peoples.

³⁰ While the majority of the Kura-Araxes wares collected in this center point to EBA III, it is possible to say that it has been inhabited since the EBA II due to Nakhichevan lugs.

³¹ It is located on a high rock within the Kalecik Village, after which it is named, near the Sarı Mehmet Dam Lake.

(Özfirat, 2010b: 224, Pict. 1)³² within the Van Lake Basin, Çaldıran Fortress (Fig. 10a) located in Çaldıran Plain, Çavuşbaşı, Hacı Hatun, Şehitlik, Kıratlı on the east and the north coast of Erçek Lake, Baklatepe, Aktaş (Fig. 10a), Kilisetepe, Şehirtepe and Dilimli Fortress (Özfirat, 2006: 182, Figs. 1-2, 5-6; Özfirat, 2007a: Figs. 5-6; Özfirat, 2007b: 144-145, Map 1, Picts. 2-3; Özfirat, 2008: 198-199; Özfirat, 2012b: 156, Pict. 3)³³.

After the drilling excavation carried out in 1914 by P. F. Petrov in Melekli/Kültepe, 6 km east of Iğdır, on the Iğdır Plain, which is the northern continuation of the Ağrı Region, the finds of the Kura-Araxes culture were found during the surface survey conducted by Kökten in the 1940s (Kökten, 1943: 602-603). By the year 1966, Balkan carried out a small-scale drilling in Melekli/Kültepe (Mellink, 1967: 165). During the survey conducted by Marro and Özfirat in Melekli/Kültepe in recent years, typical, hand-made, pottery sherds belonging to Kura-Araxes culture, with black exterior face, red interior face or with black exterior face, gray interior face were found (Özfirat and Marro, 2004: 93, Pict. 4; Özfirat, 2010a: 526). The decorations of the pottery found in this geography were made of lines in the technique of scraping and fluting/groove, and concentric, geometric motifs such as loops, stairs, rings. Gökçeli Höyük, another center in the immediate vicinity of Melekli, where concrete findings with similar characteristics were found, also hosted the people of Kura-Araxes (II-III) culture³⁴. This center, where findings that have similar characteristics to the Kura-Araxes ceramics of Melekli were found, is unusual for the application of brown paint to the interior face of one of the two ware pieces and the exterior face of the other (Fig. 10b), (Marro and Özfirat, 2003: 385-391, Pl. VI, 1, 7; Özfirat and Marro, 2004: 18, Illustrs. 5: 1, 7- 5:1, 3 - 5: 1, 3 - 6: 1, 3)³⁵. During the visit of Burney, it is stated based on the examined terra-cotta pots that the settlement may have been inhabited during the phases KA II and III. According to him, the bowls with the outward-turned rim, which are representatives of this culture, must be pointing to the KA II period (Burney, 1958: 169-172, 187)³⁶. Kökten visited Gökçeli Höyük during his surface survey in the 1940s including Ağrı and Iğdır provinces and reported that archaeological finds belonging to Kura-Araxes culture were recovered (Kökten, 1943: 602-603). In recent years, archaeological finds belonging to Kura-Araxes culture have been found in Gacerdoğanşalı within Karakoyunlu village to the east of

³² It is located on a high rocky hill in Balıksuyu, an important valley opening to Ağrı within the province of Van.

³³ These settlements, where Kura-Araxes ceramics were recovered, have the characteristics of a fortress settlement located on the rocky hills of the piedmonts in the Early Bronze Age. It is possible to say that among these, only Aktaş and Şehirtepe were permanent settlements. Şehitlik was a settlement only during the EBA period.

³⁴ It is located 16 km east of the Iğdır province see Özfirat and Marro, 2004: 17-18, Illustr. 5, 1,4,7; For the Kura-Araxes terra-cotta pots found in Gökçeli, Melekli and Sağlıksuyu see Özfirat, 2004: 93, Illustr. 3.

³⁵ A similar application was found in one jug in Khvayskhelebi and in Sağlıksuyu.

³⁶ According to the reports, archaeological finds belonging to Phase I of Kura-Araxes culture were not recovered within the provincial borders of Ağrı.

Iğdır Plain, Yaycı Höyük (Özfirat, 2010a: 526, Fig. 1) in Yaycı village in the northwest of the plain and Karakoyun Settlement (Özfirat, 2013: 293) in Tuzluca.

IV. Conclusion

Thanks to the studies carried out by scientists such as Burney, Belli and Özfirat, Marro, we have information about a certain part of the region. We see that the region has been home to numerous settlements since the Late Chalcolithic Age (as of the beginning of the 4th millennium BC) (Fig. 1). Amuq F and Sioni (Georgia) and Kültepe (Nakhichevan) type of ceramics found in the Hazine Tepe and Gıcık Location of these settlements indicate that the region has become an important route between the Syrian geography and the Caucasian world. We see that the region has become a strong settlement life model with the Kura-Araxes culture. The Kura-Araxes settlements of this culture, as in Çetenli and Zali Höyük, are located in quite convenient places according to their surroundings and close to the water source. They also draw attention as they have been located on valleys that will form natural roads. We see that some centers have been located in high places on the piedmonts in fortress type (Fig. 1). At the end of the third millennium BC, when the Kura-Araxes cultural hegemony weakened, settled life came to an end on a large scale and the shepherd nomadic life model gained weight in parallel with the kurgan graves. At the center of this chronological process is the KA culture. However, although the plains and plateaus in and around the Ağrı region should be within the spreading area of the KA Cultural Complex, the spread of the culture towards these areas could not be clearly resolved due to the lack of researches.

Settlements such as Sağlıksuyu, Melekli, Gökçeli indicate contemporary settlements, from the similarity of the temper of the hand-made, typical Kura-Araxes ceramics to the similarities in decorations applied to their surfaces and application techniques. These ceramics can be included in KA II and KA III periods in terms of both form and decoration features. Among these, the ones with scraping and fluting decoration should be evaluated in KA III. On the other hand, it would be correct to evaluate Nakhichevan Lug ceramics in KA II. However, it is foreseen that some ceramics might belong to KA I period when evaluated in terms of form (Özfirat and Marro, 2004: 17-18, Illustr. 6: 1-3). The ceramics found in Gökçeli and Yaycı settlements located in the Iğdır Plain were extended to EBA I. Among the ceramics belonging to KA culture, *Nakhichevan Lugs*, which were understood to be used willingly in daily life, play a key role in our understanding of the spreading of the culture in Iğdır-Ağrı region. Ceramics defining this culture were also found in the Yığnitepe and Musuri settlements in the Ağrı Karaköse Plain (Tiryaki, 2018: 638). The Kura-Araxes wares found in the Musun I-II Kurgans show that the people who built the kurgan type graves reached the Eastern Anatolia Region at least in the 3rd millenium BC. Although the archaeological studies carried out in the provincial borders of Ağrı are insufficient, we see that the region has been home to the people of Kura-Araxes culture, who subjugated a wide geography under their hegemony. The terra-cotta ceramics recovered show typical characteristics of Kura-Araxes reaching from the South Caucasus up to the interior of Syria, but they also contain

local features. They consist of hand-made, black-gray burnished, brown-testaceous burnished, double colored, cream lined ceramic groups. Apart from the geometric decorations formed by scraping, printing and fluting, concentric rings, spirals, handles with or without rope holes, Nakchivan lug samples can be given as examples of decoration (Özfirat, 2008: 199, Illustrs. 2-3).

As the unproductive data reached in a small number of centers within the provincial borders of Ağrı are evaluated together with the studies carried out in the surrounding regions, it gives the hints that rich results will be achieved. Because the region has a rich pasture potential, high plateau areas and flat sheltered areas for nomadic-semi-nomadic peoples, which are the distinctive features of Kura-Araxes culture. For the time being, when we make an evaluation on a small number of researches carried out in the region, it is necessary to research especially the fields that are elevated and excavate the detected places. Because, even today, as in the past, there are similar settlements which are specified as “summer pasture/plateau” in the mountainous parts of the Eastern Anatolia and Caucasus, including Ağrı. In order to conclude the discussions about the extent to which the mountainous parts of culture were used, virgin regions such as Ağrı should be researched carefully. Again, these studies are needed to clarify the local characteristics of the culture and the dimensions of the communication with the strong Kura-Araxes cultural regions in the east.

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Figure 1: The centers mentioned in the article (base on: Özfirat, 2009a, Fig. 1a-b; Başaran, Keleş, Geissler, 2008; Işık, 2008, Lev. II, Har.2,5).

Figure 2: Kura-Aras settlements excavated in the Eastern Anatolia Region

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References

- Aktüre, S. (1997). *Anadolu'da Bronz Çağı Kentleri*, Tarih Vakfı Yurt Yayınları, İstanbul.
- Albrigh, W. F. (1924-1925). "The Jordan Valley in the Bronze Age", *The Annual of the American Schools of Oriental Research*, Vol. 6, The American Schools of Oriental Research, 13-74.
- Arınc, K. (2011). *Doğal, İktisadi, Sosyal ve Siyasal Yönleriyle Türkiye'nin İç Bölgeleri*, Eser Ofset Matbaacılık, Erzurum.
- Arsebük, G. (1979). "Altınova'da (Elazığ), Koyu Yüzlü Açıklı ve Karaz Türü Çanak-Çömlek Arasındaki İlişkiler" *Türk Tarih Kongresi 8*, 81-92.
- Atalay, İ. (2011). *Türkiye Coğrafyası ve Jeopolitiği*, Meta Basım Matbaacılık, İzmir, 2011.
- Atalay, İ. and Mortan, K. (2007). *Resimli ve Haritalı Türkiye Bölgesel Coğrafyası*, İnkılâp Yayınevi, İstanbul.
- Bahşaliyev, V. (1997). *The Archaeology of Nakhichevan*, Arkeoloji ve Sanat Yayınları, İstanbul.
- Başaran, C., Keleş, V. and Geissler, R. (2008). "Mount Ararat Archaeological Survey", *Bible and Spade vol. 21, No. 3*, 70-96.
- Bilgi, Ö. (1981). "Köşkerbaba (Göçkerbaba) Höyük 1979 Yılı Kazıları Sonuçları", *II. Kazı Sonuçları Toplantısı*, Ankara, 113-119.
- Burney, C. A. (1958). "Eastern Anatolia in the Chalcolithic and Early Bronze Age", *Anatolian Studies*, 8, 157-209.
- Burney, C. A. and Lang, M. (1971). *The Peoples of the Hills Ancient Ararat & Caucasus*. London: Weidenfeld & Nicolson.
- Ceylan, A. (2004). Doğubayazıt'ın Eskiçağ Tarihine Bir Bakış (İlk Tunç Çağından Demir Çağına), *Güneşin Doğduğu Yer Doğubayazıt Sempozyumu*, İstanbul, 41-51

- Çetin, Y. (2012). *Tarihi Kalıntıları ve Kültürel Değerleri ile Ağrı*, Ağrı İbrahim Çeçen Üniversitesi Yayınları No: 008, Ağrı.
- Çilingiroğlu, A. (1987). “Van-Dilkaya Höyüğü Kazıları 1985”, *VIII. Kazı Sonuçları Toplantısı, Cilt, I*, Ankara, 81-94.
- Darga, M. (1987). “Şemsiyetepe Kazıları 1985 Sezonu Sonuçları”, *VIII. Kazı Sonuçları Toplantısı, Cilt, I*, Ankara, 157-172.
- Erzen, A. (1986). *Doğu Anadolu ve Urartular*. TTK 2, TTK Basımevi, Ankara.
- Esin, U. (1974). “Tepecik Kazısı 1971”, *Keban Projesi 1971 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I. No. 4, Türk Tarih Kurumu Basım Evi, Ankara, 109-135.
- Esin, U. (1979). “Tepecik Kazısı 1973”, *Keban Projesi 1973 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I. No. 6, Türk Tarih Kurumu Basımevi, Ankara, 79-114.
- Esin, U. and Arsebük, G. (1974). “Tülintepe Kazısı 1971”, *Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I. No. 4*, Türk Tarih Kurumu Basım Evi, Ankara, 138-159.
- Esin, U. and Harmankaya S. (1987). 1985 Değirmentepe (Malatya İmamlı Köyü) Kurtarma Kazısı, VIII. Kazı Sonuçları Toplantısı, Cilt, I, Ankara, 95- 138.
- Esin, U. and Harmankaya S. (1988). Değirmentepe (Malatya) Kurtarma Kazısı 1986, IX. Kazı Sonuçları Toplantısı, Cilt, I, Ankara, 79-126.
- Frangipane, M. Balossi Restelli F. and Çalışkan Akgül, H. (2014). “Arslantepe 2011-2012 Yılı Kazı Sonuçları: İlk Tunç Çağı I’ın Yeni Buluntuları”, *35. Kazı Sonuçları Toplantısı, 2. Cilt*, Muğla Sıtkı Koçman Üniversitesi Basımevi, Muğla, 456-469.
- French, D. (1972). “Aşvan Kazıları, 1970”, *Keban Projesi 1970 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri. 1, No. 3, Türk Tarih Kurumu Basımevi, Ankara, 45-62.
- Gülçur, S. (1988). *Die Chalkolithische Keramik von Norşuntepe (Elazığ, Südosttürkei)*, Eberhard-Karls Universität, Yayınlanmamış Doktora Tezi, Tübingen.
- Harper, R.P. (1970). “1968 Pağnik Öreni, Kaşpınar Kazısı Ön Raporu”, *Keban Projesi 1968 Yaz Çalışmaları, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri.1- Yayın: I, Türk Tarih Kurumu Basımevi*, Ankara, 131- 138.
- Hauptmann, H. (1979). “Kalkolitik Çağ’dan İlk Tunç Çağı’nın Bitimine Kadar Norşuntepe’de Yerleşmenin Gelişimi”, *TT Kong. VIII/1*, Ankara, 55-63.

- Işık, K. (2008). *Patnos ve Çevresinde Erken ve Orta Demir Çağ Yerleşim Dokusu*, Yüzcüncü Yıl Üniversitesi, Sosyal Bilimler Enstitüsü, Yayınlanmamış Yüksek Lisans Tezi, Van.
- Işıklı, M. (2005). *Doğu Anadolu Erken Transkafkasya Kültürünün Karaz, Pulur ve Güzelova Malzemesi Işığında Tekrar Değerlendirilmesi*, Ege Üniversitesi Sosyal Bilimler Enstitüsü Arkeoloji Anabilim Dalı, Yayınlanmamış Doktora Tezi, İzmir.
- Işıklı, M. (2009a). “M.Ö. III. Binyılda Ağrı Dağı Civarı”, *II. Uluslararası Ağrı Dağı ve Nuh'un Gemisi Sempozyumu*, Edt. Oktay Belli, Ağrı Valiliği Kültür Yayınları Nr. 9, İstanbul, 52-57.
- Işıklı, M. (2009b). “Erken Transkafkasya Kültürü'nde Din ve Dini Aktiviteler ile Kült Objelerine Yönelik Genel Bir Değerlendirme”, *Prof. Dr. Altın Çilingiroğlu'na Armağan*, İstanbul, 333-352.
- Işıklı, M. (2011). *Doğu Anadolu Erken Transkafkasya Kültürü*, Arkeoloji ve Sanat Yayınları, İstanbul.
- Karaca, Ö. (1983). “Pırot Höyük 1981 Kazıları”, *IV. Kazı Sonuçları Toplantısı*, Hacettepe Sosyal ve İdari Bilimleri Döner Sermaye İşletmesi Tesisleri Basımevi, Ankara, 69-82.
- Kelly-Bucellati, M. (1974). *The Early Trans-Caucasian Culture: Geographical and Chronological Interaction*, Phd Dissertation, University of Chicago, Chicago.
- Kelly-Bucellati, M. (1978). *The Early Bronze Age Pottery, Korucutepe*, M. V. Loon (Ed.), North Holland Publishing Company, Amsterdam.
- Kiguradze, T. and Sagona, A. (2003). “On the Origins of the Kura-Araks Cultural Complex”, A. Smith, K. Rubinson (Ed.). *Archaeology in the Borderlands: Investigations in Caucasia and Beyond*, Los Angeles: Cotsen Institute of Archaeology, 38-94.
- Kocaman, S., Kaya, F. and Korkusuz, T. (2015). “Ağrı İlinin İdari Coğrafya Analizi”, *Coğrafya'ya Adanmış Bir Ömür: Prof. Dr. Hayati Doğanay*, Pegem Akademi Yayıncılık, Ankara, 599-620.
- Koday, S. (2005). *Doğu Anadolu Bölgesinde Hayvancılık*, Atatürk Üniversitesi Yayınları No: 949, Ankara.
- Konyar, E. (2004). “Demir Çağında Doğubeyazıt ve Çevresi”, *Güneşin Doğduğu Yer: Doğubeyazıt Sempozyumu*, Çekül Vakfı, İstanbul, 51-72.
- Konyar, E., Ayman, İ., Avcı, C., Yiğitpaşa, D., Genç, B. and Akgün, R.G., (2013). “Van Kalesi Höyüğü 2011 Yılı Çalışmaları”, *34. Kazı Sonuçları Toplantısı*, 2. Cilt, Pegasus Görsel İletişim Hizmetleri, Ankara, 127-136.

- Korkusuz, T. and Sevindi, C. “Coğrafi Çevrenin Ekonomik Gelişme Üzerindeki Etkilerine Tipik Bir Örnek: Hamur (Ağrı)”, *UNIDAP International Regional Development Conference*, 2017, 226-239.
- Koşay, H.Z. (1943). “Karaz Sondajı”, *III. Türk Tarih Kongresine Sunulan Bildiriler*, Ankara 1943, 165-169.
- Koşay, H. Z. (1970). “Pulur (Sakyol) Kazısı 1968 Ön Raporu”, *1968 Yaz Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri 1, Yayın:1, Ankara 1970, 139- 146.
- Koşay, H.Z. (1976). *Keban Projesi, Pulur Kazısı 1968-1970*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları Seri. III, No. 1, Ankara.
- Koşay, H.Z. and Turfan, K. (1959). “Erzurum-Karaz Kazısı Raporu”, *Belleten*, 23, 349–413.
- Kozbe, G. (1987). *Van-Dilkaya Höyüğü 1984-1986 Kazı Dönemlerinde Ele Geçen Erken Transkafkasya Çanak Çömleği*, *Ege Üniversitesi Sosyal Bilimler Enstitüsü, Yayınlanmamış Yüksek Lisans Tezi*, İzmir.
- Kozbe, G. (1990). “Van-Dilkaya Höyüğü Erken Transkafkasya Keramiği”, *VII. Araştırma Sonuçları Toplantısı*, Ankara Üniversitesi Basımevi, Ankara, 533-554.
- Kozbe, G. (1995). “Muş Ovası Yüzey Araştırmalarında Ele Geçen Erken Transkafkasya Çanak Çömleği Işığında Bölgenin Erken Tunç Çağı'nın Yeniden Değerlendirilmesi”, *Arkeoloji Dergisi III*, Ege Üniversitesi Edebiyat Fakültesi Yayınları, İzmir, 35-50.
- Kozbe, G. (2004). “Activity Areas and Social Organisation Within Early Trans-Caucasian Houses at Karagündüz Höyük, Van”, *A View from the Highlands Archaeological Studies in Honour of Charles Burney*, *Ancient Near Eastern Studies*, Supplement 12, Peeters, 35-45.
- Kökten, K. (1943). “Kars’ın Tarih Öncesi Hakkında İlk Kısa Rapor”, *Belleten*, 7, 601-613.
- Kökten, K. (1947). “1945 Yılında Türk Tarih Kurumu Adına Yapılan Tarih Öncesi Araştırmaları”, *Belleten Cilt. XI, Sayı. 43*, 431-472.
- Kökten, K. (1971). “Keban Baraj Gölü Alanında Taş Devri Araştırmaları 1969”, *Keban Projesi 1969 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I. No. 2, Türk Tarih Kurumu Basımevi, Ankara, 13- 21.
- Kökten, K. (1976). “Keban Baraj Gölü Alanında Taş Devri Araştırmaları 1972”, *Keban Projesi 1972 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I. No. 5, Türk Tarih Kurumu Basımevi, Ankara, 1-8.

- Kuftin, B. A. (1941). *Arkheologicheskie Raskopki v Trialeti /Archaeological Excavations at Trialeti*. Izdatelstvo Akademii Nauk Gruzinskoi SSR, In Russian with Georgian and English Summaries, Tbilisi.
- Kuftin, B. A. (1943). "An Urartian "Columbarium" on the Slopes of Ararat and the Copper Age of the Kuro-Araxes Basin", *Urartskij " Kolumbarij " u Podosvy Ararata i Kuro-Araksskij Eneolit Vestnik Gosudarstvennogo Muzeja Gruzii* 13b, 92-123.
- Kuftin, B. A. and Field, H. (1946). "Prehistoric Cultural Sequence in Transcaucasia", *Southwestern Journal of Anthropology* 2/3, 340-360.
- Kushnareva, K. (1997). *The Southern Caucasus in Prehistory: Stages of Cultural and Socioeconomic Development from the Eighth to the Second Millennium B.C.* The University Museum, University of Pennsylvania, Philadelphia.
- Marro, C. and Özfirat, A. (2003). "Pre-Classical Survey in Eastern Turkey. First Preliminary Report: The Ağrı Dağ (Mount Ararat) Region", *Anatolia Antiqua XI*, 385-422.
- Marro, C. and Özfirat, A. (2004). "Pre-Classical Survey in Eastern Turkey. Second Preliminary Report: The Erciş Region", *Anatolia Antiqua XII*, 227-265.
- Marro, C. and Özfirat, A. (2005). "Pre-Classical Survey in Eastern Turkey. Third Preliminary Report: Doğubeyazıt and the Eastern Shore of Lake Van", *Anatolia Antiqua XIII*, 319-356.
- Mellink, M.J. (1967). "Archaeology in Asia Minor", *American Journal of Archaeology* 71/2, 155-174.
- Özdoğan, M., (1977). *Aşağı Fırat Havzası 1977 Yüzey Araştırmaları*, Orta Doğu Teknik Üniversitesi Aşağı Fırat Projesi Yayınları, Seri I, No. 2, Tek Ofset, İstanbul.
- Özfirat, A. (2004). "Ağrı Dağı Arkeolojik Yüzey Araştırması", *Güneşin Doğduğu Yer: Doğubeyazıt Sempozyumu*, Çekül Vakfı, İstanbul, 91-102.
- Özfirat, A. (2006). "Pre-Classical Survey in Eastern Turkey. Fifth Preliminary Report. Van Lake and Mt. Ağrı Region", *Studi Micenei Ed Egeo-Anatolici Vol. XLVIII*, Roma, 177-207.
- Özfirat, A. (2007a). "A Survey of Pre-Classical Sites in Eastern Turkey. Fourth Preliminary Report: The Eastern Shore of Lake Van", *Ancient Near Eastern Studies Vol. XLIV*, Peeters Louvain, 113-140.
- Özfirat, A. (2007b). "Van, Ağrı ve Iğdır İlleri Yüzey Araştırması, 2005", *24. Araştırma Sonuçları Toplantısı, 1. Cilt*, Ankara, 143-157.

- Özfirat, A. (2008). "Van, Ağrı ve Iğdır İlleri Yüzev Araştırması, 2006", 25. *Araştırma Sonuçları Toplantısı, 1. Cilt*, Kültür ve Turizm Bakanlığı Dösimm Basımevi, Ankara, 197-220.
- Özfirat, A. (2009a). "Pre-Classical Survey in Eastern Turkey. Sixth Preliminary Report: Lake Van Basin and Mt. Ağrı Region", *Archäologische Mitteilungen aus Iran und Turan (Amit), Band 41*, 211-232.
- Özfirat, A. (2009b). "Excavation of the Bozkurt Kurgan Cemetery, 2007: First Preliminary Report", *Archäologische Mitteilungen aus Iran und Turan (Amit), Band 41*, 233-247.
- Özfirat, A. (2009c). "Van, Ağrı ve Iğdır İlleri Yüzev Araştırması, 2007", 26. *Araştırma Sonuçları Toplantısı, 1. Cilt*, Ankara, 345-366.
- Özfirat, A. (2010a). "Archaeological Investigations in the Mt. Ağrı Region: Bronze and Iron Ages", *Proceedings of the 6th International Congress on the Archaeology of the Ancient Near East, Vol. 2*, Harrassowitz Verlag, Wiesbaden.
- Özfirat, A. (2010b). "Van, Ağrı ve Iğdır İlleri Yüzev Araştırması, 2008", 27. *Araştırma Sonuçları Toplantısı 2. Cilt*, İsmail Aygöl Ofset Matbaacılık San. Tic. Ltd. Şti., Ankara, 223-238.
- Özfirat, A. (2012a). "Earlier Settlements of Bozkurt Cemetery: from Chalcolithic to Middle Bronze Age", *Azerbaycan'ın Erken Ekincilik Dövrü Abideleri*, Azerbaycan Milli Elmler Akademiyası Arxeologiya ve Etnoqrafiya İnstitutu, Bakü.
- Özfirat, A. (2012b). "Van, Ağrı ve Iğdır İlleri Yüzev Araştırması, 2010", 29. *Araştırma Sonuçları Toplantısı, 1. Cilt*, İsmail Aygöl Ofset Matbaacılık San. Tic. Ltd. Şti., Ankara, 155-171.
- Özfirat, A. (2013). "Van, Ağrı ve Iğdır İlleri Yüzev Araştırması, 2011", 30. *Araştırma Sonuçları Toplantısı, 2. Cilt*, Pegasus Görsel İletişim Hizmetleri, Çorum, 293-302.
- Özfirat, A. (2015). "Ağrı Dağı-Bozkurt Son Tunç-Erken Demir Çağ Kalesi", *Uluslararası Doğu Anadolu Güney Kafkasya Kültürleri Sempozyumu Bildiriler II*, Edt. Mehmet Işıklı ve Birol Can, Cambridge Scholars Publishing, 158-170.
- Özfirat, A. and Marro, C. (2004). "2002 Yılı Van, Ağrı ve Iğdır İlleri Yüzev Araştırması", 21. *Araştırma Sonuçları Toplantısı 1. Cilt*, Ankara, 15-32.
- Özfirat, A. and Marro, C. (2008). "2004 Yılı Van, Ağrı ve Iğdır İlleri Yüzev Araştırması", *Türk Arkeoloji ve Etnografya Dergisi, Sayı. 7*, İ. Aygöl Ofset Matbaacılık San. Ltd. Şti. Ankara, 1-20.
- Parker, B. J. (2012). "In the Shadow of Ararat: Preliminary Results from Intensive Surveys in Naxçıvan, Azerbaijan," in *7ICAANE Proceedings of the 7th International*

Congress on the Archaeology of the Ancient Near East 12-16 April 2010, The British Museum and UCL, London, 99-117.

Parker, B.J., Ristvet, L., Baxşeliyev, V., Aşurov, S. and Headman, A. (2011). "In the Shadow of Ararat. Intensive Surveys in the Araxes River Region, Naxçıvan, Azerbaijan", *Anatolica XXXVII*, 187-205.

Parlıtı, U. (2011). *Mezopotamya'da Halaf Seramikleri ve Önasya'da Yayılım Alanlarının İncelenmesi*, Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, Arkeoloji Anabilim Dalı, Yayınlanmamış Yüksek Lisans Tezi, Adana.

Parlıtı, U. (2019). *MÖ III. Binyıl Doğu Anadolu Bölgesi'nin Ölü Gömme Gelenekleri ve Mezar Tipleri*, Atatürk Üniversitesi Sosyal Bilimler Enstitüsü, Protohistorya ve Önasya Arkeolojisi Ana Bilim Dalı, Yayınlanmamış Doktora Tezi, Erzurum.

Rothman, M.S. and Kozbe, G. (1997). "Muş in the Early Bronze Age", *Anatolian Studies, Vol. 47*, British Institute at Ankara, Ankara, 105-126.

Russell, H. F. (1980). *Pre-Classical Pottery of Eastern Anatolia, Based on a Survey by Charles Burney of Sites along Euphrates and around Lake Van*, BAR International Series 85.

Sagona, A. (1984). *The Caucasian Region in the Early Bronze Age, 3 vols.* Oxford: BAR International Series 214, John and Erica Hedges/Archaeopress.

Sagona, A. (1994). "Büyüktepe Höyük 1992", *XV. Kazı Sonuçları Toplantısı, Cilt I*, Ankara Üniversitesi Basımevi, Ankara, 229-234.

Sagona, A., Erkmén, M. and Sagona, C. (1998). "Excavations at Sos Höyük 1996", *XIX. Kazı Sonuçları Toplantısı, Cilt I*, T.C. Kültür Bakanlığı Milli Kütüphane Basımevi, Ankara, 245-250.

Serdaroğlu, Ü. (1971). "Ağın ve Kalaycılık Kazıları 1969", *Keban Projesi 1969 Çalışmaları*, Orta Doğu Teknik Üniversitesi Keban Projesi Yayınları, Seri I-No: 2, Ankara, 24-26.

Serdaroğlu, Ü. (1977). *Aşağı Fırat Havzasında Araştırmalar 1975*, ODTÜ Aşağı Fırat Projesi Yayınları Seri I, No. I, Türk Tarih Kurumu Basımevi, Ankara.

Sevin, V. (2004). "Pastoral Tribes and Early Settlements of the Van Region, Eastern Anatolia", *Ancient Near Eastern Studies Supplement 12, A View from the Highlands Archaeological Studies in Honour of Charles Burney*, Edt. Antonio Sagona, Peeters, 179-203.

Sevin, V. and Kavaklı, E. (1996). "Karagündüz Höyüğü ve Nekropolü 1994 Yılı Kurtarma Kazıları", *XVII. Kazı Sonuçları Toplantısı, Cilt I*, T.C. Kültür Bakanlığı Milli Kütüphane Basımevi, Ankara, 337-362.

- Sevin, V., Özfırat, A. and Kavaklı, E. (2000a). "Van-Karagündüz Höyüğü kazıları (1997 Yılı Çalışmaları)", *Belleten, LXIII*(238), 847-881.
- Sevin, V., Özfırat A. and Kavaklı, E. (2000b). "Karagündüz Höyüğü 1998 Yılı Kazıları", *21. Kazı Sonuçları Toplantısı, 1. Cilt*, T.C. Kültür Bakanlığı Milli Kütüphane Basımevi, Ankara, 409-420.
- Şahin, C., Doğanay, H. and Özcan, N.A. (2005). *Türkiye Coğrafyası (Fiziki-Beşeri-Ekonomik-Jeopolitik)*, Gündüz Eğitim ve Yayıncılık, Ankara.
- Takaisvili, E.S. (1913). "O Sachherskom Kurgane Shorapanskogo Uezda1, Izvestiya Kavkazskogo Otdeleniya Moskovskogo Arkheologicheskogo Obshchestva 3/1, Tbilisi, 167-172.
- Takaoğlu, T. (2000). "Hearth Structures in the Religious Pattern of Early Bronze Age, Northeast Anatolia", *Anatolian Studies, 50*, 11-16.
- Tiryaki, S. (2018). "Başlangıçtan Orta Demir Çağı'na Kadar Dağlık Doğu Anadolu", *TOD, Tarih Okulu Dergisi, Yıl. 11, Sayı. XXXVII*, 621-661.
- Uçankuş, H.T. (2000). *Bir İnsan ve Uygarlık Bilimi Arkeoloji, Tarih Öncesinden Perslere Kadar*, Kültür Bakanlığı Yayınevi, Ankara.
- Ulaşam, A. (1996). "Eski Erciş Kalesi ve Çelebibağı Selçuklu Mezarlığı Kazısı 1994", *XVII. Kazı Sonuçları Toplantısı, Cilt. 2*, Milli Kütüphane Basımevi, Ankara, 1996, 429-452.
- Uzunoglu, E. (1987). "Malatya-İmamoğlu Höyüğünde 1985 Yılı Kazı Çalışmaları", *VIII. Kazı Sonuçları Toplantısı, Cilt, I*, Ankara, 213- 230.
- Yakar, J. (1985). *The Later Prehistory of Anatolia-the Late Chalcolithic and Early Bronze Age*, Cilt:2, Part I, Oxford.
- Yalçın, F. and Sevindi, C. (2018). "Erzurum'un Tarih Öncesi Kır Yerleşmelerine Bir Örnek: Ortabahçe (Cinis) Köyü", *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 22*(4), Aralık 2018, 2575-2601.
- Yaylalı, S. (2007). "Doğu Anadolu Erken Tunç Kültürü", *Atatürk Üniversitesi 50. Kuruluş Yıldönümü Armağanı, Doğudan Yükselen Işık: Arkeoloji Yazıları*, Hazırlayanlar: Birol CAN ve Mehmet IŞIKLI, İstanbul: Zero Prod. Ltd, 165-188.

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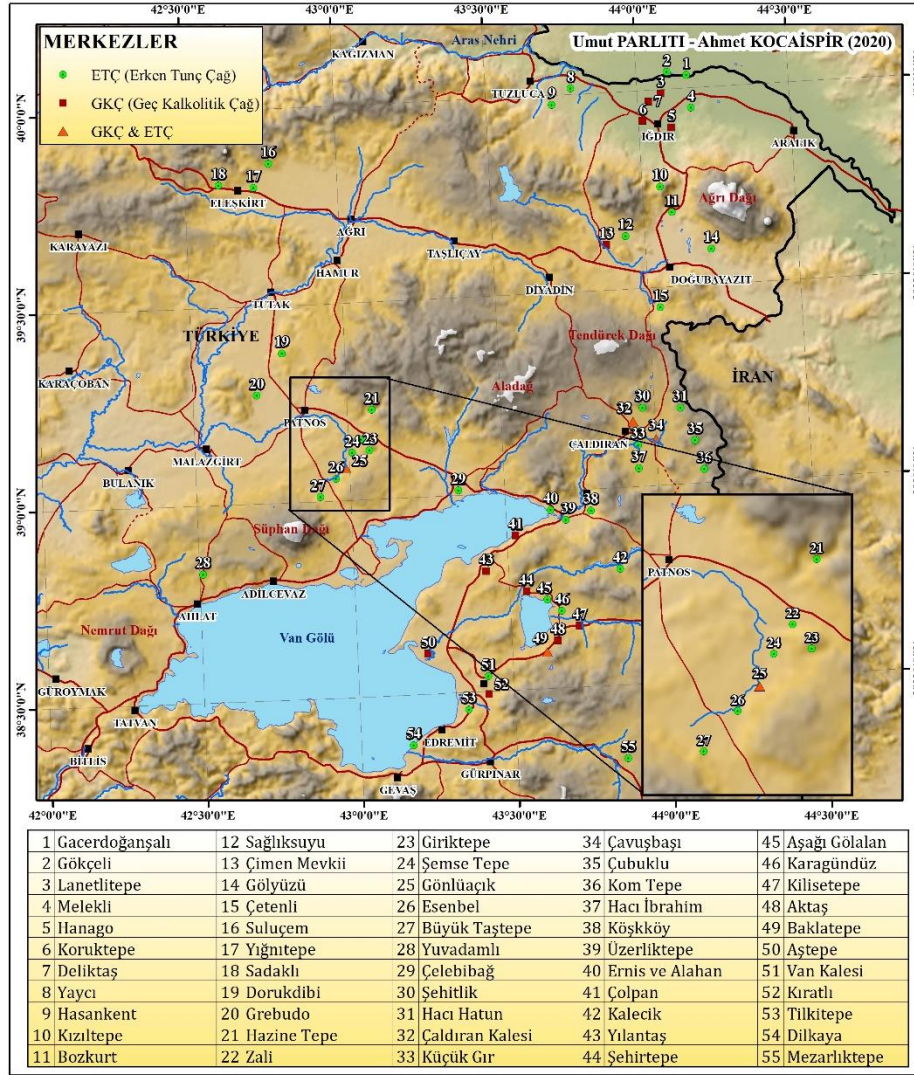


Figure 1:

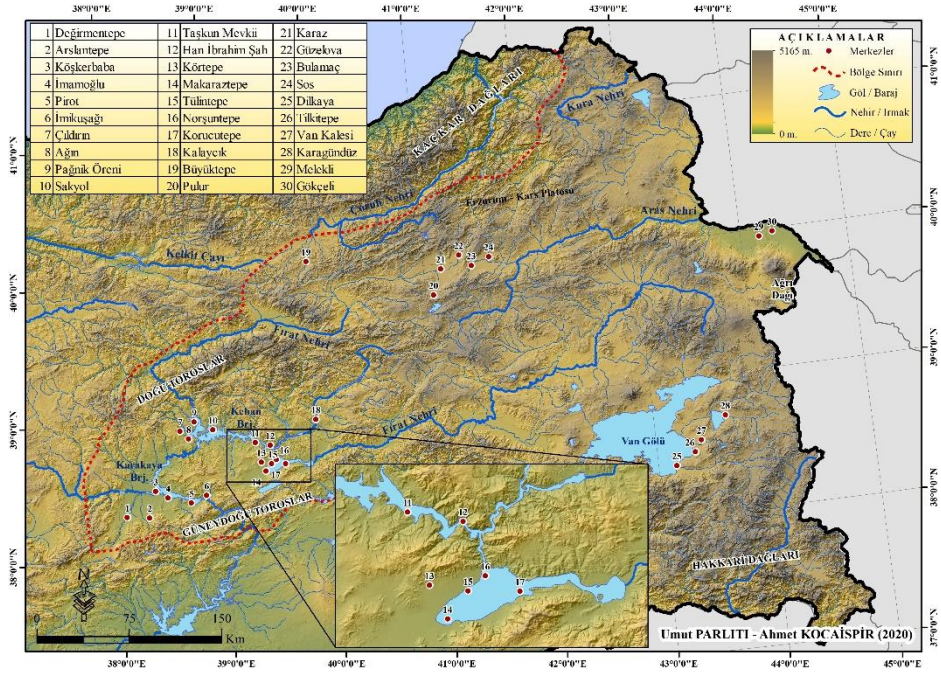


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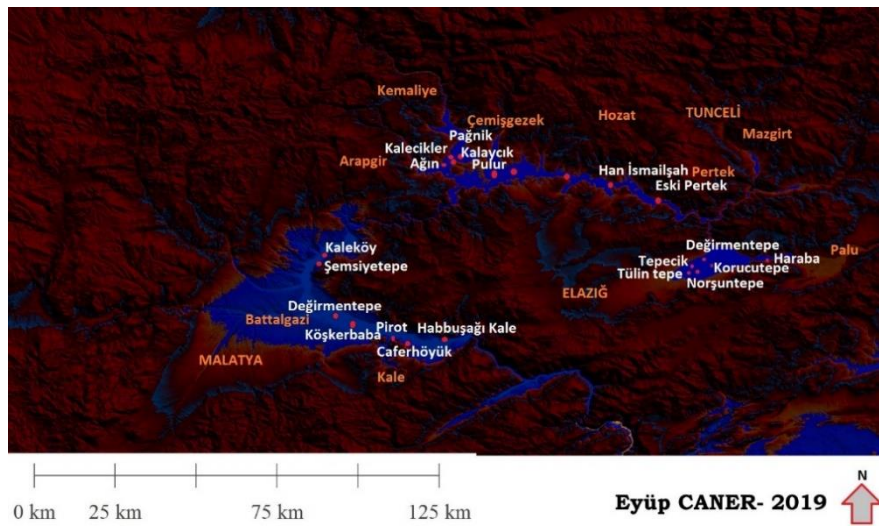


Figure 3:



Figure 4:



Figure 5:

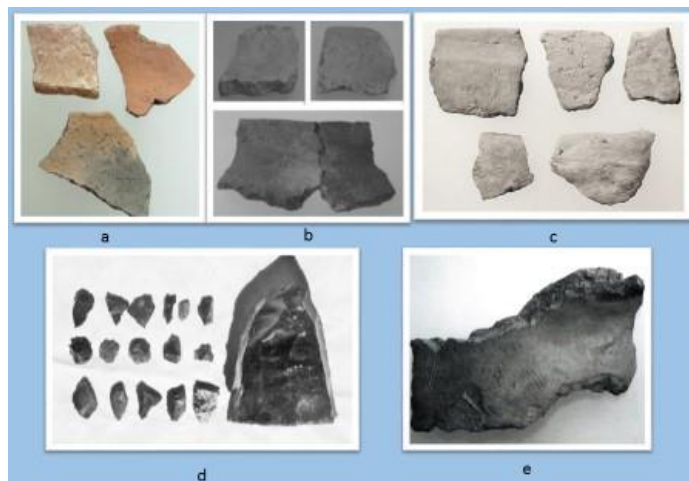


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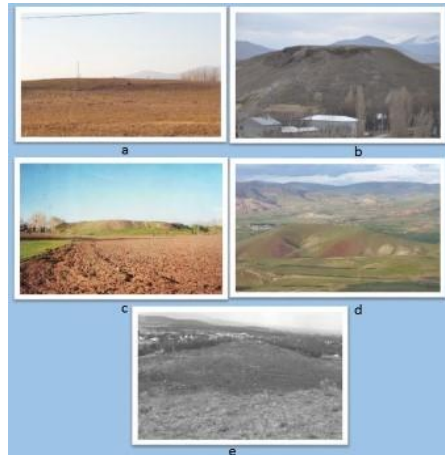


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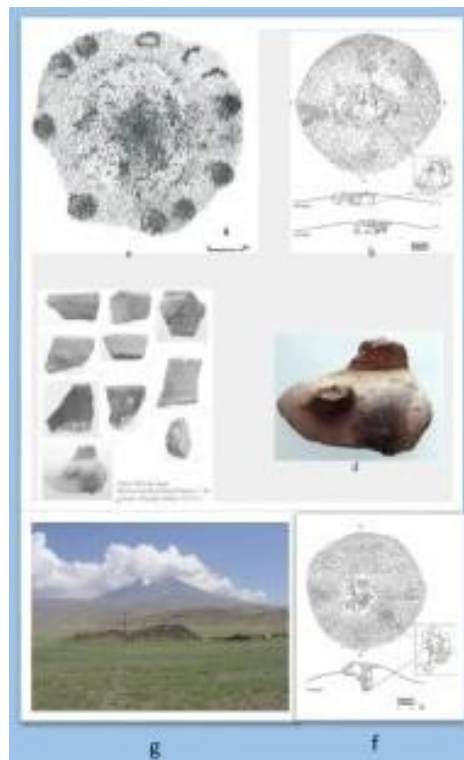


Figure 8:



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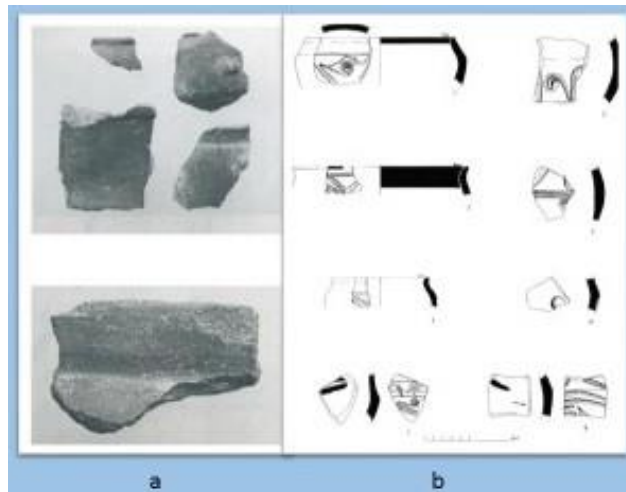


Figure 10: