

# Worlds in Transition: Migration, Innovation and Environmental Change in the Caucasus from the Neolithic to the Iron Age

*International Research Network*



## Work Package #2: The integration of the mountains into the Caucasian agro-pastoral systems between the Neolithic and the Bronze Age.



*A petroglyph depicting caprines at Gemikaya (Nakhchivan) - 4000 m asl. @MBA, R. Berthon.*

### ORGANIZERS

Catherine Marro, Erwan Messenger, Rémi Berthon, Giulio Palumbi, François-Xavier Le Bourdonnec

PAPER ABSTRACTS  
(according to programme order)

**Monday, November 9<sup>th</sup>**

Introduction

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*Main facts and features about the sites of Ovçular Tepesi, Kültepe I, Uçan Agil and Duzdagi (Nakhchivan, Azerbaijan).*

**Catherine Marro**

Archéorient (UMR 5133), Université Lumière Lyon 2, CNRS

**Abstract**

This paper will present the main characteristics of the Nakhchivani sites that will be discussed during the workshop.

Theme 1 : the beginnings of vertical pastoralism in the South Caucasus.

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*Human diets in highland settlements*

**Estelle Herrscher**

LAMPEA (UMR 7269), Aix Marseille Université, CNRS

**Abstract** (coming soon)

Isotopic evidence for the appearance of vertical herd mobility in the Southern Caucasus

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**Rémi Berthon, Marjan Mashkour, Adeline Vautrin, Denis Fiorillo, Marie Balasse**

Archéozoologie, archéobotanique : sociétés, pratiques et environnements (UMR 7209) Muséum national d'Histoire naturelle, CNRS

**Abstract**

Herd mobility is a zootechnical practice used to provide better pasture to the animals or to exploit specific territories. Vertical herd mobility for instance allows for the exploitation of mountainous areas during the warm season. Highland pastures are of better quality during the summer than the ones of the plains. Vertical herd mobility is also a medium for a stronger investment of human communities into the mountainous areas. Although recent researches shed light on several settlements in the Caucasus highlands, the question of the appearance of vertical herd mobility is still a matter of debate. In this presentation we suggest that the variation of carbon and oxygen isotope ratios recorded during several months in caprines tooth enamel can be a proxy for vertical herd mobility. Using the results from isotopic analyses performed on sheep and goat teeth from several archaeological settlements in Azerbaijan and Georgia, we test whether the hypothesis of the appearance of vertical mobility during the Neolithic period in the South Caucasus can be viable.

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*A first view of high-altitude pastoralism during the Holocene in the Samsari-Javakheti region. Fungal spore analysis of White Lake record (Tetri Tba, Samsari Ridge).*

**Erwan Messager, Andréa Julien, David Etienne**

EDYTEM (UMR 5204), Université Savoie Mont Blanc, CNRS

**Abstract** (coming soon)

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*Man-animal interactions in the mountains of the South Caucasus. Pastoralism and mobility in the Neolithic and Chalcolithic periods: the case studies of Bavra (Georgia), Getahovit and Godedzor (Armenia).*

**Jwana Chahoud<sup>1</sup>, Christine Chataigner<sup>1</sup>, Giulio Palumbi<sup>2</sup>**

<sup>1</sup> Archéorient (UMR 5133), Université Lumière Lyon 2, CNRS.

<sup>2</sup> CEPAM (UMR 7264), Université Cote d'Azur, CNRS.

**Abstract**

At what moment in history and in relation to which activities (pastoralism, exploitation of obsidian outcrops or metalliferous ores) the communities of farmers and herders of the South Caucasus began to develop a constant and systematic interaction with the regions of mountains? We will try to answer to these questions by presenting archaeological and faunal data from three settlements, dating to the Neolithic and Chalcolithic periods located in different areas of the Lesser Caucasus range: the shelter of Bavra-Ablari, on the Javakheti highlands in southern Georgia, the Getahovit cave in the foothills overlooking the Kura river basin in north-eastern Armenia and the camp-site of Godedzor, on the Syunik highlands in south-eastern Armenia. These three types of settlements could stand for different ways of occupying the mountains and exploiting the resources of the highlands. In the three cases, the subsistence economy is based on an accomplished system of pastoral activities adopted overtime by the Neolithic and Chalcolithic communities.

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*Prehistoric pastoralism at the high mountain site of Karmir Sar, Armenia.*

**Pavol Hnila**

Freie Universität Berlin, Fachbereich Geschichts- und Kulturwissenschaften, Institut für Altorientalistik.

**Abstract**

Excavations at Karmir Sar, a site located at 2850 masl on Mount Aragats, produced evidence of frequentation, settlement, cult, and burial activities spanning over seven millennia. Currently, the site is a favorite summer camp for pastoralists coming from the Ararat plain. Our research suggests that the origins of its pastoralist use go back to at least the first half of the 3<sup>rd</sup> Millennium BCE and possibly considerably earlier, around the end of the 5<sup>th</sup> Millennium. It also appears that pastoralists did not use the high mountains continuously throughout prehistory, but in long-term cycles alternating pastoralist presence with times when pastures were abandoned. The present talk will discuss the extant evidence and sketch how our research is planning to tackle these cycles' possible correlation with socio-economic changes in the plain and with climate changes.

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*Vertical mobility in the Late Bronze Age Tsaghkahovit Plain: A simple question with complicated answers.*

**Hannah Chazin**

Department of Anthropology, Columbia University

**Abstract**

Incremental analysis of carbon and oxygen isotopes in the tooth enamel of herd animals is a powerful method that can identify vertical mobility in archaeological contexts. For archaeologists studying the Late Bronze Age in the South Caucasus, vertical mobility is of interest because it is one possible element of the (potentially new) forms of pastoralist practices that emerged alongside the changes in political and social life in the latter half of the 2<sup>nd</sup> millennium BCE. Isotopic analysis of teeth from sheep, goats, and cattle from Late Bronze Age sites in the Tsaghkahovit Plain, Armenia reveal a wealth of information about the organization of pastoralist practices, even as they fail to provide clear-cut evidence for vertical mobility. The results of the study illuminate a complex set of factors organizing pastoralist production – shaped by both the environmental parameters of mountainous areas and the social and political dynamics of Late Bronze Age societies.

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*Agriculture and plant economy at high altitude sites in Georgia: three sites from Samtskhe-Javakheti.*

**Catherine Longford<sup>1</sup>, Alexia Decaix<sup>2</sup>, Lucie Martin<sup>3</sup>**

<sup>1</sup>Department of Archaeology, The University of Sheffield

<sup>2</sup> Archéozoologie, archéobotanique : sociétés, pratiques et environnements (UMR 7209) Muséum national d'Histoire naturelle, CNRS

<sup>3</sup> Laboratoire d'archéologie préhistorique et anthropologie, Université de Genève

**Abstract**

The presentation will focus on recent archaeobotanical analyses (charcoal fragments and seeds/fruits) from 3 sites : Bavra Ablari, a rock shelter, and Chobareti and Rabati, two nearby open-air settlement sites. These sites are all located in southern Georgia, on the Djavakheti plateau, between 1660 and 1480m asl. Bavra Ablari is dated to the Chalcolithic (4700-3800 BC), Chobareti represents terraced Kura-Araxes (3400-3100 BC) dwellings and pits and Rabati is a multiperiod settlement with Kura-Araxes and Bedeni occupation (3400-2000 BC).

The aim of this presentation is to provide initial insights into these mountainous communities and to discuss the type of agriculture they practiced throughout the Chalcolithic and Early Bronze Age.

We will present elements on the surrounding vegetation and wood management, the plant economy (crop cultivation, gathering, agrarian practices) and try to illuminate how these communities adapted to life in a mountainous region.

**Tuesday, November 10<sup>th</sup>**

*Theme 2 : Mountain communities and networks in the South Caucasus*

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*Archaeology at the Frontiers: An Overview of the Settlement, Stratigraphy and Architecture at Rabati and its Regional Setting.*

**Giorgi Bedianashvili<sup>1</sup>, Andrew Jamieson<sup>2</sup>, Claudia Sagona<sup>3</sup>**

<sup>1</sup> Georgian National Museum, Georgia

<sup>2</sup> School of Historical and Philosophical Studies (Classics and Archaeology), The University of Melbourne

<sup>3</sup> School of Historical and Philosophical Studies (Classics and Archaeology), The University of Melbourne

**Abstract**

This paper reports on recent archaeological investigations at the ancient frontier fortress of Rabati, in south west Georgia, a collaborative research project involving archaeologists from the University of Melbourne and the Georgian National Museum. Rabati was continuously occupied for millennia (from the Chalcolithic onwards). From the first three seasons (2016, 2018 and 2019), it has become clear that significant Middle Bronze Age remains capped most of the summit of the site. Levels with distinctive Bedeni vessels and a range of contemporary local domestic wares, pits and some traces of architecture seal underlying Early Bronze Age levels. The Early Bronze Age levels themselves include massive architecture rarely seen in Kura-Araxes settlements. Some finds can only be described as unique and extraordinary while others suggest that the core population was stable with long-held traditions, yet open to new influences infiltrating this highland site. We will present the key discoveries at the settlement of Rabati – stratigraphy, architecture, ceramics – with reference to its regional setting in the Southern Caucasus.

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*The date and meaning of the vishaps at Karmir Sar, Armenia.*

**Alessandra Gilibert**

Università Ca' Foscari, Venezia.

**Abstract**

The high-altitude site of Karmir Sar on Mt. Aragats is a vast summer pasture studded with prehistoric traces, including tombs, agglomerated cells, and petroglyphs. An exceptional concentration of at least 12 stone steles of a kind conventionally known as "vishaps" stands out among them. Vishaps are imposing prehistoric monuments decorated with animal reliefs. Although they are relatively widespread across Southern Caucasus mountains, their date and meaning have long eluded the scientific community. This talk offers a review of the archaeological evidence from Karmir Sar, proposing to date them to c. 4200-4000 BCE. Further, it introduces preliminary considerations on their possible meaning and function.

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*Ancient mountain communities in the Lesser Caucasus: contribution of rock art studies from Syunik highlands in southeastern Armenia.*

**Ani Danielyan**

ArScAn (UMR 7041), Université Paris I Panthéon Sorbonne, Université de Nanterre, CNRS

**Abstract**

The Lesser Caucasus, and particularly its Armenian part, is repository of a rich pre-protolithic rock art heritage, the petroglyph sites, which are mostly located beyond the archaeological settlements in the volcanic highlands of Aragats, Gegham, Vardenis, Syunik, etc. Documented *in situ*, the open-air rock carvings are very valuable to identify the ancient mountain trails. Marked by its quantity (many thousands) and variety (anthropomorphic, zoomorphic motifs, geometrical signs, vehicles, etc.), this rock imagery also reflects various aspects of the lives and worldviews of past populations and broadens the understanding derived from archaeological record. This paper proposes to examine the ancient mountain communities of the Lesser Caucasus from the point of view of rock art, in the light of recent systematic researches carried out in Armenia, focusing particularly on the case study of Ughtasar petroglyphic complex (in Syunik highlands), which has been documented in its entirety in the frame of a British-Armenian collaboration (Ughtasar Rock Art Project – Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia with Landscape Research Centre (UK).

According to the multi-scalar approach, the rock art of Ughtasar will be discussed at various scales (local, regional, interregional) and considered in its geographical, archaeological and artistic contexts. Marked by its rich concentration of petroglyphs (about 3000) distributed in a spectacular mountainous landscape and by large grasslands indicating its reception capacity, Ughtasar appears to have been a special gathering place for ancient communities who were practicing various activities – economic (pastoralism, hunting, etc.) and ritual ones (petroglyphs). This “public” rock art could have acted as an element of social cohesion and served as a territorial symbolic mark, probably related to the control of natural resources. Moreover, the present rock art study suggests intriguing patterns of iconographic and stylistic diffusion on trans-regional level.

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*Vertical pastoralism in the North Caucasus? On the dynamics of lowlands and uplands in the economic systems of Bronze Age populations at the northern flank of the Caucasus mountains.*

**Sabine Reinhold**

Deutsches Archäologisches Institut, Eurasien Abteilungen

**Abstract**

High mountain massifs at the interface to grassland lowlands invariably tend to assume that they were used as grazing areas within vertical pastoral systems. Not only since the picturesque description of the Bakhtiari migration in Iran by Vita Sackville-West, or the ground-breaking work of the mountain geographer Wolf-Dieter Hütteroth, have the mountain ranges of Southwest Asia and the Caucasus been suspected to be the home of most ancient highland pastoralists. But what is the archaeological reality? Many of the 'mountain nomads' studied in the 19<sup>th</sup> and early 20<sup>th</sup> centuries only became so in these times, under the influence of colonialism, growing market economies and industrialisation in the neighbouring lowlands.

I will discuss in a diachronic scenario in a landscape- and bioarchaeological perspective the vectors along which the Caucasian high mountains were economically opened up from the 5<sup>th</sup> millennium BC onwards. It is the story of subsistence, but likewise of the social, cultural and ritual appropriation of a habitat in which livestock husbandry played a central role. It culminated a combined mountain

agriculture (or Yayla economy) since the middle of the 2<sup>nd</sup> millennium B.C., for which herd sizes can be reconstructed as reported in the Russian census surveys of the late 19<sup>th</sup> century. From the 14<sup>th</sup> century B.C. onwards, a highly efficient pastoral system determined the entire lifescape of the settlers at the northern flank of the Great Caucasus - from the plans of the multifunctional houses, via the spatial organisation of the settlements with large central plazas to the configuration of the landscape with standardised distances between settlements, economic architecture and land division walls.

Wednesday, November 11<sup>th</sup>

Theme 3 Mobility and the exploitation of natural resources

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*Obsidian consumption at the salt mine of Duzdağı (Babek district, Nakhchivan, Azerbaijan).*

**Marie Orange<sup>123</sup>, François-Xavier Le Bourdonnec<sup>2</sup>**

<sup>1</sup> Archaeology and Palaeoanthropology, University of New England, Australia

<sup>2</sup> Université Bordeaux Montaigne, IRAMAT-CRP2A UMR 5060, France

<sup>3</sup> Southern Cross GeoScience, Southern Cross University, Australia

**Abstract**

The salt mine of Duzdağı, located in the Babek district in Nakhchivan (Azerbaijan), was surveyed between 2008 and 2011, and excavated between 2011 and 2016. These operations have yielded an exceptional density and variety of archaeological remains dating as far back as the second half of the 5<sup>th</sup> millennium BCE. Among these materials, more than 200 obsidian artefacts were found, and geochemically characterised to retrieve their provenance.

Our analyses reveal the use of at least ten different obsidian outcrops located in the Southern Caucasus and in Eastern Anatolia. If we consider the obsidian procurement patterns within a restricted regional context (Nakhchivan), this high diversity is not entirely surprising, as we observe it on the large contemporary settlement of Ovçular Tepesi (Late Chalcolithic). However, it is in stark contrast to the consumption patterns of the smaller sites located in higher altitude, such as Uçan Ağıl or Bülov Qayası. Whilst this contrast can generally be explained—in Nakhchivan at least—by the different nature of the sites (mobile campsite vs. large settlement), what could be the reason behind the high variety of obsidian sources in use at Duzdağı? Our hypothesis, which we will explore here, is that this diversity is a consequence of the attraction that the salt mine exerted upon the populations of the wider region during the Late Chalcolithic-Kura Araxes period.

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*Duzdağı during the Kura-Araxes period: a pastoralist hub? A preliminary cross-analysis of ceramic and obsidian data.*

**Catherine Marro<sup>1</sup>, Marie Orange<sup>23</sup>**

<sup>1</sup> Archéorient (UMR 5133), Université Lumière Lyon 2, CNRS

<sup>2</sup> Archaeology and Palaeoanthropology, University of New England, Australia

<sup>3</sup> Southern Cross GeoScience, Southern Cross University, Australia

**Abstract**

Recent geo-chemical analyses carried out on the obsidian assemblage from the salt mine of Duzdağı between 2008 and 2016 have shown that a great diversity of obsidian beds have been sourced to produce the artefacts in use at Duzdağı during late Prehistory. A cross-comparison between the obsidian and ceramic assemblages of Duzdağı and those of neighboring contemporary sites suggest that most of the obsidian from Duzdağı dates back to the 4<sup>th</sup> and the 3<sup>rd</sup> millennium BC. The obsidian multi-source pattern attested at Duzdağı is here interpreted with reference to the Kura-Araxes ceramic assemblage collected over the slopes of the mine, which displays a striking variety of clay treatment and temper. We argue that the diversity observed in obsidian bed-sourcing, as well as in clay preparation, reflects the activities of a number of independent work-groups, which exploited the salt from Duzdağı during the Kura-Araxes period. Judging by the simple mining works set up by Kura-Araxes groups to exploit salt - mostly isolated mining-cells -, as well as by the presence of a few mining tools collected on the pastoral camp of Uçan Ağıl, we suggest that the salt mine of Duzdağı might have been used as a hub by nomadic herders.



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*Mapping herd mobilities and evaluating their role in exchange networks, a preliminary view from Ovçular Tepesi (Nakhchivan, Azerbaijan).*

**Rémi Berthon<sup>1</sup>, Christelle Claude<sup>2</sup>, Guillaume Gadebois<sup>3</sup>, Sofiane Bouzid<sup>4</sup>, Julia Giblin<sup>5</sup>**

<sup>1</sup> Archéozoologie, archéobotanique : sociétés, pratiques et environnements (UMR 7209)

Muséum national d'Histoire naturelle, CNRS

<sup>2</sup> Centre Européen de Recherche et d'Enseignement de Géosciences de l'Environnement (UMR 7330) Université Aix-Marseille, CNRS, IRD, Collège de France, INRAE

<sup>3</sup> Institut national de recherches archéologiques préventives

<sup>4</sup> Archéorient (UMR 5133) Université Lumière Lyon 2, CNRS

<sup>5</sup> Quinnipiac University

### **Abstract**

Variations in strontium isotope ratio of bone and teeth are commonly used in anthropology and zooarchaeology to infer mobility from a geological area to another. In sequentially-sampled tooth enamel, variations of the  $^{87}\text{Sr}/^{86}\text{Sr}$  can be used to evidence intra-annual mobility. Performing these analyses on cattle, sheep and goat teeth can potentially reveal pastoral routes. We present here our attempts to map the mobility of Chalcolithic herds from Ovçular Tepesi (Nakhchivan, Azerbaijan) and we will discuss the potential impact of herds mobility on the trade networks of natural resources such as obsidian and copper.

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*The Chalcolithic and Kura-Araxes Metallurgy of Ovçular Tepesi and Kültepe I: Change or Continuity ?*

**Nicolas Gailhard**

Arkeoservice

### **Abstract**

In this presentation, we will focus on the data recently obtained from the study of the Late Chalcolithic and Bronze Age metallurgical remains collected on the settlements of Ovçular Tepesi and Kültepe I in Nakhchivan. The first study we carried out at Ovçular Tepesi demonstrated the existence of true extractive metallurgy in the South Caucasus from the second half of the 5th millennium BC onwards (Gailhard et al. 2017). In a second step, we examined the relationship between extractive metallurgy and the emergence of pastoral nomadism (« COMINAK » project - Gailhard et al. in press). Our next move will be to compare the metallurgical evidence from two major settlements where numerous metallurgical artefacts belonging to two different periods have been analysed or re-assessed: The differences between the Late Chalcolithic and the Kura-Araxes metallurgical know-how will be addressed through the description of metal artefacts, archeometallurgical evidence, and the results of the archaeometric studies.

After synthesizing the data from these two sites, together with a number of other references, we will show that some technical continuity is perceptible from the second half of the fifth through the third millennium BC, in spite of changing copper-sourcing strategies. The latter can have an impact on the evolution of techniques with the more frequent use of arsenic.

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*The role of the pastoral lifestyle in the formation of the Early Chalcolithic Age culture of Nakhchivan (Nakhchivan, Azerbaijan).*

**Veli Bakhshaliyev**

Nakhchivan Branch of Azerbaijan National Academy of Sciences

**Abstract**

During the archaeological excavations of 2017-2019 material and cultural remains characteristic of the culture of Dalma Tepe at the Nakhchivan Tepe settlement were revealed. During excavations, four cultural layers were identified, dating back to the end of the VI and the first half of the V millennium BC. Archaeological studies show that the area of the formation of the Dalma Tepe culture also covered the territories of Nakhchivan and the basin of Lake Urmia. Based on these studies, it can be said that the cultures of the Mill Steppe and Karabakh, which are characterized by impressed ornaments, contributed to the formation of the Dalma Tepe culture. In the formation of this culture, pastoral tribes of Lowland Karabakh and Nakhchivan occupied a certain place. The settlers of Nakhchivan mainly bred cattle and small cattle, which is to say about the settled and pastoral nature of animal husbandry. Analyses of obsidians from Nakhchivan Tepe (Obsidian analyses were conducted by Marie Orange) show that they are brought from Zangezur and Gekce (current Sevan), which also speaks of the importance of a pastoral lifestyle in the formation of the Nakhchivan Tepe culture. A study of the archaeological sites of Iranian Azerbaijan claims that the tribes of the Dalma Tepe culture conducted a sedentary and pastoral lifestyle. Archaeological research of 2019-2020 on the highlands of Nakhchivan, which are located at an altitude of 2400 m above sea level, revealed seasonal settlements, which is to say that the tribes of the ancient Nakhchivan already mastered pastoral lifestyle in the Neolithic and Early Chalcolithic Age.

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*Pastoral activities and the search for mineral resources: Insights and new approaches from Late Chalcolithic and Early Bronze Age Transcaucasus*

**Thomas Stöllner<sup>1</sup>, Irina Gambaschidze<sup>2</sup>, Rémi Berthon<sup>3</sup>, Giorgi Gogotchuri<sup>2</sup>, Felix Klein<sup>4</sup>, Adeline Vautrin<sup>3</sup>**

<sup>1</sup> Institute of Archaeological Studies, Ruhr-Universität Bochum

<sup>2</sup> Georgian National Museum, Georgia

<sup>3</sup> Archéozoologie, archéobotanique : sociétés, pratiques et environnements (UMR 7209) Muséum national d'Histoire naturelle, CNRS

<sup>4</sup> Deutsches Bergbau-Museum, Bochum

**Abstract**

The Caucasus, and especially the areas of the Transcaucasus south of the main ridge, are very resource-rich areas: numerous deposits, not only metal ores, but also obsidian and other lithic materials, were attractive to the first arable farmers who had lived here since the 6th millennium BC. In the late 5th and the 4th millennium B.C.E. the use of high pastures and high plateaus is recognizable by the increase in raw materials such as obsidian and metal coming from there, as well as by the increased importance of sheep and goats in the settlements. During this time, strategies of resource use (pastures and mineral raw materials) are gradually established, as they are then recognizable as specialized branches of social activity, especially in the Early Bronze Age Kura-Araxes period. Settlements played an important role, especially when they were at an intermediary position between primary agrarian zones and the montane zones focused on pasture and mineral resources. One such settlement is located on the settlement plateau of Balitschi-Dzedzvebi in the Maschawera valley. It is one of those settlements that have existed since the 5th millennium B.C.E. relatively close to the high-altitude montane zone and the ore deposits in the vicinity. Another example was

investigated in 2020 in the high mountain region of Khevshureti above the Aragvi Valley in the North Caucasus. As early as the late Chalcolithic period, the first solid settlements were able to establish themselves in the high mountain areas. This speaks for an initially sporadic and seasonal access, which later gradually changed into a permanent settlement. New data on husbandry and mobility are currently being collected. The technical and social development is dynamic, especially in the 4th millennium and the earlier 3rd millennium, and is in close contact with numerous areas of the region within the Kura-Araxes culture phenomenon.

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*Hunting with desert kites on the foothills of Mount Aragats (Armenia).*

**Olivier Barge**

Archéorient (UMR 5133), Université Lumière Lyon 2, CNRS

**Abstract**

The astonishing discovery of desert kites in the early 2010s on the foothills of Mount Aragats led to several fieldworks in order to characterize and date them. This work also led to the definition of a research program on these then enigmatic objects, on the scale of their distribution area which extends from the Aralo-Caspian zone to central western Arabia. An approach that combines the observation of satellite images and field work in five different regions, including Armenia, has provided proof of a hunting function for these very large constructions. Dating, established for Armenia, is still rare elsewhere and new questions are being asked today: the identity of the hunting populations, their economic and ecological impacts, as well as the spatio-temporal framework of the diffusion of this hunting technique.

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*Of men and houses: vertical stratification in NW-Iran in the 6-5th millennium*

**Judith Thomalsky**

Deutsches Archäologisches Institut, Eurasien Abteilungen

**Abstract**

New data sets provide us a denser picture of prehistoric occupation in NW-Iran which requires further reading in terms of contexts and connectivity. In this specific region, sedentism and cultivation appear during the second half of the 7th millennium BC in the vicinity of Lake Urmia, on an average height between 1200-1500m asl and in heavy-watered areas, while higher elevated regions of the hilly, mountainous landscape especially East of Lake Urmia were entered apparently later, at least during the Middle and Late Chalcolithic period, respectively from the 5th millennium onwards. Moreover, though limited in proper data, we can illustrate the existence of base sites and camp sites that indicate an advanced progress of horizontal (and vertical) segregation of the operating range of prehistoric communities, also in terms of social organization. It therefore seems that this kind of settlement system can be regarded as a specific adoption to distinctive requirements of the chalcolithic pastoralist's society, which focuses the resource "grasslands" animal management. However, the question remains whether other aspects of all-day-life can be determined as a marker for "mobility" and "resource agent", and to which level mobility of neolithic and chalcolithic communities differ from each other.

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# The exploitation of natural resources and land-use by semi-nomadic groups in contemporary South-Eastern Anatolia

**Savaş Sarıaltun**

Çanakkale Onsekiz Mart Üniversitesi

## **Abstract**

This study deals with semi-nomadic pastoral groups in the present, but also opens a window to the past, by questioning the differences in space usage and the life ways of mobile groups. Generally, socio-economic studies attempt to examine formation processes and the development of a settlement by examining the cultural dynamics and modes of movement through the link between the settlement and social organization models. This study focuses on the movements of more than twelve mobile groups in Upper Mesopotamia, a close neighbor to the South Caucasus, with a view to comparing their economic goals. More specifically, we will concentrate on the settlement strategy and the movements of the semi-nomadic Alikan tribe, which uses the Upper Tigris Basin and its vicinity as its winter quarters. During winter, the Alikan tribe favors the steppes of the Upper Tigris Basin: Beşiri, Kurtalan, Kozluk, Silvan, İdil, Cizre districts, and their surroundings. During summer, they head towards the high-altitude summer pastures, principally those located around Aveberdan, Kariz, Nemrut Dağ, Süphan Dağ, Düav, Çatak, Zövaser, as well as the southeastern part of Lake Van, in the region of Çatak. Pastoral ecosystems may be described through three main elements: people, herds and environment. The seasonal campsite selection in nomadic communities is directly related to the topography, the climate, and the vegetation. Seasonal locations and the density of campsites may vary according to the environment. In this study, the itinerary and the motivations of semi-nomadic groups, especially those of the Alikan Tribe, are discussed by trying to present all these data.

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