

EAA

2021 Kiel, 6-11 Sept.

Widening Horizons

Virtual Meeting



EAA
2021 Kiel, 6-11 Sept.
Widening Horizons

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27th EAA Annual Meeting (Kiel Virtual, 2021)

ABSTRACT BOOK

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8 FRESH INSIGHTS INTO THE CONSUMPTION OF PRESERVED MOLLUSKS IN THE BYZANTINE AND EARLY ISLAMIC PERIODS OF THE SOUTHERN LEVANT

Abstract author(s): Ktalav, Inbar (Zinman Institute of Archaeology, University of Haifa) - Lehnig, Sina (Johannes Gutenberg Universität Mainz)

Abstract format: Oral

Mollusk shells originating from the Mediterranean, the Red Sea and the Nile River, were uncovered in Byzantine and Early Islamic sites in the southern Levant.

Two widely spread shellfish taxa are the small clam, *Donax trunculus*, commonly found in the exposed sandy wash zones of the Eastern Mediterranean coast; and the large freshwater mussel, *Chambardia rubens*, whose habitat stretches from the Nile River to western Africa. A third species is less common, the large conch, *Lambis truncata*, commonly found in the shallow waters of the Red Sea. The breakage and abrasion patterns of the shell fragments of these species suggest that they were collected as live specimens intended for consumption, and not as empty shells washed ashore. The shellfish were desired for their nutritional value and medicinal purposes. Their occurrence at inland sites in the southern Levant indicates that these species had been preserved to survive long distance transport. Some of the sites were central trade centers, like Jerusalem, but others were humble monasteries or farms, and do not fit the common conception of luxury food. The mollusks from the southern Levant offer a prime example of the transportation of food derived from seas and rivers to distant inland locations and provide important new insights on the nutritional importance of shellfish and its availability to a wide range of population during the Byzantine and Early Islamic periods.

9 EXPLORING THE MULTI-DIMENSIONAL SYNTHESIS OF FISHING ACTIVITY: THE CASE STUDY OF CYPRUS

Abstract author(s): Michael, Maria (University of Southampton; Honor Frost Scholar)

Abstract format: Oral

The current paper highlights fishing as an activity and life-style involving interdependent economic, cultural, technological and environmental aspects. It strives to present the tradition of fishing activity on the island of Cyprus from Neolithic to Early Christian periods. The research presented here is based on the results developed during my PhD research project, which is the first attempt to gather all the available evidence for fishing activity in Cyprus in a single body of evidence.

Thus, my research attempts to examine the main indicators of fishing activity, which are the archaeological finds of fishing technology (e.g. harpoons or spears, hooks, traps, stone, clay and lead weights for the net or line weirs, fish-tanks) and fishbone assemblages recovered in a variety of archaeological sites in Cyprus. The iconographic and written sources, the environmental and ethnographic data are a supporting class of evidence.

This examination does not lead only to the creation of diachronic catalogues or typological arrays of archaeological finds, but it also demonstrates how cultural and physical contexts of Cyprus determined the presence or absence of fishing activity in Cypriot maritime landscape. In addition, this examination contributes towards a more holistic understanding of the relationship between fishers and their maritime cultural landscape.

According to available evidence, Cypriots have been involved in fishing activities diachronically. The systematic mapping of the archaeological sites, where finds of fishing gear and fish remains have been recovered, demonstrates regional and chronological patterns. Neolithic, Late Bronze Age and Hellenistic-Roman periods yielded more prominent evidence. Consequently, the results of the examination of these chronological periods will be discussed further in this paper.

10 UNDERREPRESENTED RICHES FROM THE SEA

Abstract author(s): Yamasaki, Mari (GRK 1876 "Early Concepts of Man and Nature", Johannes Gutenberg-Universität Mainz)

Abstract format: Oral

In the Late Bronze Age, fish and molluscs have played an important role in the diet and in the economy of Eastern Mediterranean coastal societies. Fish-roe cakes and dried splits feature in the list of goods traded over long distances, whilst textiles coloured with the purple dye obtained from murex shells were considered among the most luxurious items of their time and would continue to be so for centuries to come. Accordingly, the ancient textual and iconographic sources deal with these final products as objects of value, in terms of international gift exchanges and temple donations. However, despite their undeniable importance, marine faunal resources, the raw materials from which these valued products were obtained, rarely surface in the discourse of those who profited from them. Surprisingly few ancient sources explicitly deal with either fish or molluscs, nor are the activities related to their procurement and processing described in much detail, if at all. This paper aims at investigating the ancient conceptualization of these resources by combining the analysis of the archaeological remains with the textual and iconographical evidence, and addresses the question as to why these riches from the sea were consistently underrepresented in the sources.

11 "PONTON ICHTHYOENTA". MARINE CREATURES ON AEGEAN AND CYPRIOT PICTORIAL POTTERY AT THE END OF LATE BRONZE AGE

Abstract author(s): Lekka, Anna (Greek Ministry of Culture)

Abstract format: Oral

The figurative motifs of Aegean and Cypriot Pictorial Pottery at the end of Late Bronze Age derived mainly from the animal kingdom and includes marine creatures such as fish, octopuses, seahorses.

Fish represents one of the most common themes of Mycenaean IIC pottery and Pictorial White Painted Wheelmade III ware. Fish and octopuses decorate a great number of vases from the Greek mainland and the Aegean, mostly of the Octopus Style. Eastern traditions, Mycenaean pictorial motifs, and local practices contributed to the establishment of a fish iconography in Cyprus. The motifs most usually appear isolated, while there is also an attempt for narration, as can be seen in examples of fishing scenes. Both in the Cypriot examples and in the Aegean ones the bodies of the animals are decorated in a similar manner with various types of linear motifs.

A symbol of life and rebirth, with chthonic, apotropaic, and purifying properties, the fish has a long tradition and it is associated with religious beliefs. Although, the interpretation of the images starts from the environment and its relation to human activity and the dietary habits, images visualize ideas. The study of a vast number of myths and traditions leads to interesting conclusions concerning the religious syncretism.

12 FISHING IN VERGINA. FISHING GEAR AND BURIAL RITUAL FISH REMAINS FROM THE MACEDONIAN HINTERLAND

Abstract author(s): Stamatopoulou, Vasiliki (The Greek Ministry of Culture /Ephorate of Antiquities of Thessaloniki City; Aristotle University of Thessaloniki Vergina Excavation Project; The Hellenic Open University)

Abstract format: Oral

This paper presents recent excavation finds that document fishing activity in the ancient city excavated in Vergina illuminating an unknown to date aspect of daily life, diet, and interaction with the natural environment. The closest fish habitat to Vergina is the lower reaches of Haliakmon River, located about 5 km north of the ancient city. The finds examined here are, on the one hand, fishing gear of the second half of the 2nd century BC. found next to the city-wall and on the acropolis of Vergina and on the other hand, fish fauna remains found among the other remains of animals and birds that were offered to the funeral pyre for the occupant of the main chamber of the famous tomb II of the Vergina Great Tumulus, a burial ensemble considered by many as royal. The fishing gear from the excavations of the fortification of Vergina comes from well-dated layers and is an archaeological testimony that fills a gap in our knowledge of fishing in inland sites of northern Greece located in the vicinity of rivers or lakes. This set of data is co-examined with information from written sources as well as fishing finds from the wider region of Northern Greece, so that in addition to revealing fishing practices and ritual, to investigate the social status of fishing and fishers as well as the human-environment relations. The importance of fishing in the economy and nutrition of the local inhabitants and the role of river and lake resources of Macedonia in everyday life are topics that this paper will also address.

528 SHIFTING THE FOCUS: MOUNTAINS AS CENTRAL PLACES IN (PRE-)HISTORY

Theme: 1. Widening horizons through human-environment interconnections

Organisers: Brisset, Elodie (Institut Méditerranéen de Biodiversité et d'Ecologie; CNRS, University Aix-Marseille, Inuiversity Avignon, IRD) - Ricci, Andrea (Cluster of Excellence ROOTS, Kiel University) - Balatti, Silvia (Institut of Classical Studies, Kiel University) - Djamali, Morteza (Institut Méditerranéen de Biodiversité et d'Ecologie; CNRS, University Aix-Marseille, Inuiversity Avignon, IRD)

Format: Regular session

Mountainous regions, sometimes considered remote and marginal areas, have always hosted a variety of human activities. Indeed, the importance of altitudinal gradients, climatic conditions and repartition of the ecosystem resources create different constraints and opportunities. This session aims to bridge an interdisciplinary community (i.e. Archaeologists, Historians, Ethnographers, Palaeoecologists and Palaeoclimatologists) in order to discuss the diversity of Human-Environmental interactions and perceptions associated with mountain environments during prehistorical and historical periods. In particular, we will welcome highly interdisciplinary approaches, time-transgressive investigations, and comparisons of studies of different mountain areas that will look at:

- Perceptions and experiences amongst human groups (e.g. sedentary farmers, hunter-gatherers, mobile pastoralists, urban citizens);
- Mobility (e.g. vertical, horizontal, migrations, invasions);
- Cultural niche construction (impacts of human activities on landscapes and ecosystems);
- Socio-economic activities (e.g. agriculture, arboriculture, pastoralism, transhumance, mining, way of life, including ritual practices);
- Interaction with geomorphic and climate hazards (e.g. erosion, snow cover duration, drought, river flood).

ABSTRACTS:

1 WHOSE PASTURE IS IT? OVERLAPPING ETHNOLOGICAL AND ARCHAEOLOGICAL RECORDS FROM PREHISTORIC LANDSCAPE OF SOUTHERN VELEBIT MOUNTAIN, CROATIA

Abstract author(s): Grguric, Maja (University of Zadar)

Abstract format: Oral

Velebit mountain is a part of Dinaric Alps and the largest mountain range in Croatia. Stretching along the eastern Adriatic coast it forms a natural border between the Mediterranean and continental regions, as well as climates. A distinctive karst topography, harsh climate, sparse vegetation and water resources of the southern coastal area of Velebit make it a marginal landscape today, attractive only to hikers and tourists. But up until a few decades ago scattered highland summer pastures provided for transhumant pastoralists from surrounding coastal areas as well as for those from the inland. In this paper ethnographic records as well as archaeological field survey and limited data sets collected from rare archaeological excavations conducted in this area are combined in attempt to explain the presence and placement of prehistoric hillforts in southern Velebit region. This paper provides arguments that ethnographically recorded seasonal migratory routes might correlate with economically interdependent prehistoric communities in the coastal, highland and inland region of Velebit mountain.

2 PATHWAYS AND MOBILITY IN UPLAND LANDSCAPES. THE RELATIONSHIP BETWEEN TRANSHUMANT ROUTES AND SETTLEMENT POSITION IN MOUNTAIN AREAS OF WESTERN EUROPE

Abstract author(s): Garcia Casas, David (Institute of Heritage Sciences - Incipit-CSIC; Centre Camille Jullian, Aix Marseille University, CNRS) - Cesarini, Roxanne (Aix Marseille University, CNRS, LA3M) - Mocci, Florence (Hors-Classe CNRS - Centre Camille Jullian, Aix Marseille University, CNRS) - Walsh, Kevin (University of York)

Abstract format: Oral

This study aims to investigate the role of human mobility in the construction of pastoral landscapes in two areas in the French Alps, the Byaisse and Fournel valleys in the Parc National des Ecrins and the Ubaye Valley. The approach is informed by previous research in Parc Nacional d'Aigüestortes (Central Pyrenees, Spain). The new investigation is part of the PATHWAY project which investigated the emergence and development of long-distance transhumance in the Western Alps from the Iron Age to the Middle Ages.

In this context, we are conducting research on the ancient routes taken by shepherds and their flocks and herds. We employ several data types in the reconstruction of ancient pathways. Some of these clues are topographic, such as elevation, slope or insolation, the others are linked to the, social and economic contexts or to the physical conditions of humans and animals. Consequently, we collect different data in a multidisciplinary approach. We first collect ethnographic and historical data by studying ancient cadastres and review studies undertaken by ethnographers since the 20th century. These data facilitate the visualisation of ancient pathways. These pathways are integrated to a GIS. We then compare the location of archaeological sites with the layouts of pathways to verify possible connections. Thanks to this regressive approach, we try to select the most relevant elements which determine pathways according to the chronological period. The next step is the integration of environmental data like hydrography, and forest clearance. Finally, we test these elements using spatial analysis to postulate the networks of ancient pathways. In summary, we aim to determine ancient transhumant routes derived from topographical, historical, ethnographic and environmental data. The results of this study will be used to improve the knowledge about the long-term evolution of pastoral activities in mountain landscapes.

3 CENTRALITY, MARGINALISATION AND MOBILITIES IN EASTERN TIGRAY (ETHIOPIA): MODERN AND CONTEMPORARY PERIODS AS ANALOGUES TO HELP UNDERSTAND THE PAST

Abstract author(s): Blond, Ninon (Université Lumière Lyon 2, Archéorient - UMR 5133; École Normale Supérieure de Lyon - ENSL, EVS - UMR 5600) - Benoist, Anne (CNRS, Archéorient - UMR 5133) - Callot, Yann (Université Lumière Lyon 2, Archéorient - UMR 5133) - Gajda, Iwona (CNRS, Orient & Méditerranée - UMR 8167) - Jacob-Rousseau, Nicolas (Université Lumière Lyon 2, Archéorient - UMR 5133) - Schiettecatte, Jérémie (CNRS, Orient & Méditerranée - UMR 8167) - Barge, Olivier (CNRS, Archéorient - UMR 5133)

Abstract format: Oral

In northern Ethiopia, the villages of Sewne and Wolwalo form the centre of two areas surveyed by the French archaeological mission in the Eastern Tigray which revealed pre-Aksumite, Aksumite and post-Aksumite settlements. Around Wolwalo, the study zone is on the Tigray plateau, at an altitude of 2700 m. Around Sewne, the site of Wakarida and the surveyed area extend on a topographic spur at the altitude of 2400 m, forming a transition zone between the plateau and the valleys plunging towards the Danakil Depression. The relations maintained by the sites of the two regions with the central powers during pre-Aksumite, Aksumite and post-Aksumite periods are still unclear, as well as the relationship between the two spaces (spur/plateau), and ancient agricultural practices.

Geographically, it is a margin area with a shifting relationship to political centrality, which can be apprehended on various spatio-temporal scales, thanks to an interdisciplinary approach, combining archaeology, geoarchaeology, geohistory and ethnogeomorphology. Our geographical analysis relies on the concepts of centrality, marginalization and mobility and is part of a diachronic reflection, essentially based on the modern and contemporary periods.

During the modern period, this space is subject to erosion caused by anthropogenic activities from the 14th century onwards but is nevertheless absent from travellers' accounts and early cartographies. Marginalised at the regional scale and away from the main itineraries, the studied space remains locally active and continues developing. Today, the Sewne spur constitutes a central margin: its marginal location makes it a contact zone, an interface area, where the distance from the centre leads to the creation of a new centre. This area becomes a porous and dynamic borderland between sedentary agricultural practices and nomadic or semi-nomadic agro-pastoral practices of the neighbouring Afar populations. These contemporary data provide analogues allowing to question past periods through a regressive approach.

4 IMPACT OF PREHISTORIC PASTORALISM ON ALPINE ECOSYSTEMS AT DIFFERENT SPATIAL AND TEMPORAL SCALES: A CASE-STUDY FROM VAL DI SOLE (ITALY)

Abstract author(s): Carrer, Francesco (Newcastle University) - Angelucci, Diego (University of Trento)

Abstract format: Oral

Archaeological and palaeoecological research in mountain environments has long shown that the impact of pastoralism on alpine and subalpine ecosystems dates back to prehistoric times. Forest clearances have permanently changed the vegetational composition of the montane uplands. Thousands of years of intense animal grazing has changed the local soilscape and contributed to soil erosion. Different proxies enable these dynamics to be investigated at different spatial and temporal scales. Pollen data and the analysis of soil profiles reveal the slow transformation of vegetation and soil, associated to the growing human pressure on local environments. On the other hand, archaeological contexts at high altitude provide unique 'snapshots' of the impact of pastoral activities at local scale and within the lifetime of the investigated site. The analysis of archaeological contexts has the potential to unravel how and why pastoral strategies contributed to the long-term landscape transformations disclosed by palaeoecology and soil science.

In this paper we discuss the case of MZ051S, a Bronze Age (ca. 1900-1400 BC cal) pastoral site at 2250 m asl in Val di Sole (Italian Alps). Evidence of the activation of slope processes in the site following its first occupation might indicate an early human impact on alpine ecosystem in the area. In order to validate this hypothesis, the analysis of the archaeological context have been compared/contrasted with palaeoecological and geoarchaeological data from the area (and surrounding areas). A computer modelling framework has been used to integrate and examine data with different spatial and temporal resolutions. Preliminary results highlight the benefits (and challenges) of using multi-proxy approaches and working across scales to assess human impact on mountain environments.

5 ARCHAEOLOGY IN THE CANTABRIAN MOUNTAINS (NW IBERIA): AN INTERDISCIPLINARY EXPERIENCE TO DELVE INTO THE CULTURAL BIOGRAPHIES OF UPLAND LANDSCAPES

Abstract author(s): Gonzalez Alvarez, David (Institute of Heritage Sciences - Incipit, Spanish National Research Council - CSIC)

Abstract format: Oral

Mountainous landscapes constitute an exciting meeting point for archaeologists aiming to engage with other academic disciplines, such as Geography, Anthropology, Earth Sciences, History, or GIScience. Interdisciplinary research developed on the uplands has grown substantially within the last few decades, deconstructing traditional views on the mountains as barely anthropized and peripheral landscapes through history. Since 2017, we have conducted archaeological research in the upland region of Babia (León, Spain), in the Cantabrian Mountains (NW Iberia). Aiming to fill the voids in the archaeological knowledge about the diachronic occupation of these mountains, we have carried out extensive remote sensing surveys, field-walking and geophysics prospections, and archaeological excavations. The data gathered flagship the relevance of the anthropogenic impact in these considered 'remote' or 'marginal' areas, in addition to the complexity of the anthropization processes. In this paper, we will reflect on how interdisciplinary research on upland landscapes driven by archaeological questions can widen our horizons on relevant debates for Iberian history such as the earliest spread of agriculture and pastoralism in Late Prehistory, the Roman conquest, the economic basis for the Medieval and Modern expansion of the Spanish cities, the impact of globalized contemporary markets in the decline of rural Spanish areas, or the recent climate crisis.

6 LIVING AND DYING IN THE MOUNTAIN : INTERDISCIPLINARY APPROACH OF HUMAN-ENVIRONMENTAL INTERACTIONS IN THE FRENCH ALPS (SAINT-PIERRE 2, THORAME-BASSE)

Abstract author(s): Lattard, Alexia - Isoardi, Delphine - Mocci, Florence (Aix Marseille Univ, CNRS, CCJ) - Huguet, Céline (Direction Archéologie et Muséum de la Ville d'Aix-en-Provence) - Cençon-Salvayre, Carine (Independent Researcher) - Talon, Brigitte (Aix Marseille Univ, Avignon Université, CNRS, IRD, IMBE) - Ollivier, Vincent (Aix Marseille Univ, CNRS, Minist Culture, LAMPEA) - Martin, Lucie (Laboratoire d'Archéologie préhistorique et anthropologie, Université de Genève, Suisse / Edytem UMR 5204) - Sirdeys, Nais (Aix Marseille Univ, CNRS, Minist Culture, LAMPEA; Aix Marseille Univ, CNRS, IRD, INRAE, Coll France, CEREGE) - Veyron, Robin (Aix Marseille Univ, CNRS, CCJ)

Abstract format: Oral

In the Southern Alps, in the heart of the upper Verdon valley (Alpes-de-Haute-Provence, Thorame-Basse), an interdisciplinary research program has led to the discovery of an unpublished site located on the Saint-Pierre Plateau (alt. 1300 m). Since 2019, the archaeological operations have revealed protohistoric and ancient built structures, and a funerary space from the High Empire and a

second one dating from late Antiquity. During Antiquity, the site took place in the civitas of Etramina extended in the Issole Valley. Mentioned as the diocese's chief town in the year 442 AD., this locality nevertheless disappears from the texts although we know of the existence of an ephemeral bishopric that existed for a short time during the 5th century. No remains relating to this ancient city have been clearly identified in the valley, raising questions about the forms of the human occupation and the settlement dynamics over time in this sector.

This project aims to maximise our understanding of the site in mountain, through interdisciplinary research: paleoenvironmental approaches (anthracology, archéobotany, pedo-anthracology, geomorphology, geoarchaeology), as well as geophysical survey in order to discuss the diversity of Human-Environmental interactions and perceptions associated in alpine valley. Our approach will study the forms and evolution of human settlement and the natural environment's management. The geomorphological approach revealed the existence of a paleovallon and an interfluvium which conditioned the first settlement (774-480 cal. BC), in a dominant position and, then, developed toward the paleovallon which was gradually filled during Antiquity. The first paleoenvironmental results confirm landscape opening and offer the first markers for the reconstruction of the species, wild and cultivated, exploited locally by these communities.

The diachronic occupation suggests that this vast plateau may have been an essential settlement point for the valley due to its topographical configuration and dominant position during Protohistoric time and Antiquity.

7 AN INTERDISCIPLINARY INVESTIGATION OF THE LONG-TERM PROVENÇAL AND ALPINE LIVESTOCK MANAGEMENT: THE INTERSECTION OF BIOARCHAEOLOGY, PALAEOECOLOGY AND CULTURAL ARCHAEOLOGY

Abstract author(s): Knockaert, Juliette - Dulias, Katharina (Department of Archaeology, University of York) - Giguet-Covex, Charline (Laboratoire EDYTEM, CNRS, Université de Savoie) - Isoardi, Delphine (Centre Camille Jullian, Aix Marseille Univ, CNRS, CCJ) - Pike, Alistair W.G. (Department of Archaeology, University of Southampton) - Suméra, Franck (Aix Marseille Univ, CNRS, Minist Culture, CCJ) - Unsain, Dianne (Centre Camille Jullian, A*MIDEX, Aix Marseille Univ, CNRS, CCJ; LA3M, Aix Marseille Univ, CNRS) - Magniez, Pierre (Aix Marseille Univ, CNRS, Minist Culture, LAMPEA) - Mocchi, Florence (Centre Camille Jullian, Aix Marseille Univ, CNRS, CCJ) - Walsh, Kevin (Department of Archaeology, University of York)

Abstract format: Oral

From ritual, commercial to pastoral activities, domestic animals have played a major role in the use and trajectories of mountain landscapes over the last seven millennia in the Alps. However, for two decades, alpine archaeological research has rarely moved beyond the simple identification of past human activities, rather than their characterisation and the concomitant assessment of practices and techniques. The reasons for this are many; perhaps most significant is the relative dearth of archaeological and zooarchaeological evidence in the high-altitude zones.

The European research project PATHWAY (A*MIDEX-France and ARHC-UK) focuses on studying the diversity of past livestock management strategies and their impacts on landscapes from the Iron Age to medieval times, from the Western Alps to the Provençal plains. In this interdisciplinary study, the intersection of bioarchaeological (studies of fauna, isotope analyses) and paleoenvironmental (sedDNA, palynology) methods, combined with cultural archaeology, aims to highlight: (1) the animal resources exploited, (2) the mobility patterns of domesticated species (3) the high altitude areas exploited as mountain pastures and the responses (e.g. degradation, resilience, resistance, adaptation) of the vegetation communities and erosion dynamics in these grazing areas and finally, (4) the farming techniques and practices of the agro-pastoral communities of transalpine Gaul to the societies of Medieval times. This communication will present our analytical and integrative frameworks and the first results obtained, with a view to contributing to the history of Alpine pastoralism; a productive strategy that is a significant keystone agricultural undertaking of central importance not only for the Alps but for abutting European regions.

8 HUMAN SETTLEMENT IN THE HIGHLANDS OF SOUTHERN CAUCASUS DURING CHALCOLITHIC AND BRONZE AGE THROUGH ARCHAEOZOOLOGY, STABLE ISOTOPES AND CEMENTOCHRONOLOGY

Abstract author(s): Vautrin, Adeline - Balasse, Marie - Berthon, Rémi - Fiorillo, Denis (AASPE UMR 7209, Muséum national d'Histoire naturelle, CNRS, Paris) - Gambashidze, Irina - Gogochuri, Giorgi (Georgian National Museum, Tbilisi) - Gourichon, Lionel (CE-PAM UMR 7264, Université Côte d'Azur, CNRS, Nice) - Lemoine, Michel (AASPE UMR 7209, Muséum national d'Histoire naturelle, CNRS, Paris) - Stöllner, Thomas (Ruhr-Universität, Bochum) - Mashkour, Marjan (AASPE UMR 7209, Muséum national d'Histoire naturelle, CNRS, Paris)

Abstract format: Oral

The exploitation of montane ecosystems by agro-pastoral communities has played an important role in the development of these societies in the Caucasus. Mountains can be constraining in winter as snow prevents access to pastures and constrains animal husbandry, but they also provide access to natural resources such as copper ores, obsidian and pastures. As human occupation in the Caucasus mountains is still very little studied, the archaeozoological approach makes it possible to test the hypothesis that zoot-echanical innovations have led to a more substantial implementation of human communities in the montane ecosystems. The study of faunal remains makes it possible to account for the species that has been exploited (domestic or wild). Cementochronological analyses of herbivores teeth will allow us to determine the seasons of occupation of the sites. Finally, it will be possible to investigate pastoral mobility (horizontal, vertical, etc.), herd feeding (use of fodder) and births seasonality with isotopic ratio analyses in

bioapatite (carbon, oxygen, strontium) and collagen (nitrogen, carbon). The first results from various Georgian Chalcolithic and Early Bronze Age archaeological sites will be discussed in this presentation.

9 PASTORAL LANDSCAPES OF THE NURATAU MOUNTAINS IN CENTRAL ASIA

Abstract author(s): Luneau, Elise (Deutsches Archäologisches Institut, Eurasien-Abteilung) - Avanesova, Nona Armaisovna (Samarkand State University)

Abstract format: Oral

Mountains, while accounting for a large proportion of the territory, have been neglected in Central Asian archaeological research for a long time. Growing research in the recent past decades in these areas showed that mountains have been however essential in the acquisition of resources and exchange networks. At the far western point of the Pamir-Alay system, the Nuratau Mountains, located in the Samarkand province of the present day Republic of Uzbekistan, has also been largely unexplored up to now. Mostly covered by mountain steppe, the Nuratau ridge does not reach very high altitudes and, thus, was particularly suitable for the occupation by pastoralists.

Recent investigations in the region, through a collaboration between the German Archaeological Institute, Eurasia Department and the Samarkand State University, aims at better defining population movements and cultural evolution in prehistory. The surveys have revealed a dense occupation through time and showed that the area is strategically placed for the study of the movements of people through Central Asia. Various archaeological features attest cultural links with remote areas and highlight the specificity of cultural and socioeconomic practices in the mountainous areas over a long period. Preliminary outputs drawn from patterns of distribution of the various sites and structures in the area participate in highlighting diverse cultural topographies and interactions with the environmental setting. The research contributes to define various aspects of the pastoral landscape, and ultimately, to reconsider these areas, previously viewed as peripheral or marginal areas, as fully integrated within complex societies with various communities over time.

10 THE ROLE OF GOATS IN THE DEVELOPMENT OF PREHISTORIC AND PROTOHISTORIC SOCIETIES IN THE ZAGROS. A VIEW FROM THE ARCHAEOZOOLOGY

Abstract author(s): Mashkour, Marjan (CNRS-UMR 7209 AASPE- MNHN- Paris)

Abstract format: Oral

This paper aims at presenting an overview of archaeozoological studies in the highlands of western Iran and the importance of goats, wild or domestic, in the past subsistence economies of the Zagros, a strategic region in South West Asia.

The development of archaeological studies from the 1960s in the Zagros region and the intensification of archaeological investigations during the last decades have highly contributed to shifting the role of the Zagros mountains in the narrative of plant and animal domestication, from a marginal area to one of the centers of Neolithisation. In this frame, goats have had a crucial role from the Paleolithic to the dawn of Neolithic and beyond within the mobile or sedentary communities that inhabited these highlands and adjacent regions.

We will present a selection of sites where goat hunting and herding were important in the subsistence and discuss morphological features and demographic structure of goat populations regarding their wild or domestic status. Finally, we will address the articulation of this archaeozoological information and the evidence for the integration of the goat figure into the symbolic sphere and human artistic production on the Iranian Plateau.

11 THE EARLY BRONZE AGE ZAGROS INTERACTION SPHERE (CA. 3100-2500 BCE): ORGANIZING ACCESS TO DISPERSED RESOURCES IN A FRAGMENTED LANDSCAPE

Abstract author(s): Renette, Steve (University of British Columbia)

Abstract format: Oral

Relying on a combination of ethnographic accounts and Mesopotamian cuneiform records, archaeologists have characterized prehistoric and early historical Zagros societies as pastoral nomadic tribes. Such mobile peoples are credited with facilitating the circulation of goods and long-distance exchange of resources through their annual migration between high-altitude valleys and low-land plains. However, archaeological data supporting such a reconstruction of ancient Zagros mountain peoples is largely lacking. Instead, absence of evidence attributed to methodological difficulties in identifying temporary, ephemeral habitation away from mounded sites is often used to support the existence of nomadic tribes. This is particularly the case for the Early Bronze Age, which archaeologists persistently failed to detect in surveys of Zagros valleys and plains.

In this paper, I will present new evidence from the Mahidasht Survey Project in Kermanshah Province (1975-78) and the site of Kani Shaie in Sulaymaniyah, excavated between 2013-16, that demonstrates continued settled occupation within the central Zagros during the Early Bronze Age. This forces a reconsideration of local strategies to obtain non-locally available resources in this mountainous landscape and the formation of shared cultural practices between dispersed communities. I will argue that following the degradation of Late Chalcolithic directional exchange networks, Early Bronze Age communities reorganized into cultural constellations based on ecological-latitude zones as a risk-buffering strategy. In order to obtain non-locally available resources, periodic gatherings structured through feasting events provided the opportunity for exchange and the fostering of social ties with distant

communities. I propose that this Zagros Interaction Sphere produced a gradual ethnogenesis, based on a close relationship between communal identity and the inhabited environment, that gave rise to the peoples and polities attested in Mesopotamian cuneiform records of the later third millennium BCE.

12 LIVING THE MOUNTAIN LIFE: THE PASTORAL SOCIETIES OF THE SOUTHERN ZAGROS AND THEIR ENVIRONMENT IN ANTIQUITY

Abstract author(s): Balatti, Silvia (Institute for Classical Studies, Kiel University) - Brisset, Elodie - Djamali, Morteza (Institut Méditerranéen de Biodiversité et d'Ecologie; CNRS, University Aix-Marseille, University Avignon, IRD) - Ricci, Andrea (Cluster of Excellence ROOTS, Kiel University)

Abstract format: Oral

Pastoral societies have inhabited the Southern Zagros Mountains since at least the early 1st millennium BCE. Their lifestyle and its transformation through time offer us a vivid example of the engagement of people with the surrounding mountainous environment in a semi-arid region of Southwest Asia.

Based on a synthesis of the ethno-historical knowledge that has been gathered over the last decades (Balatti, 2017) and how this evidence interrelates with the paleoecological and archaeological data, this presentation will:

1. characterize what were the traditional socio-political structures and ways of life of the mountain peoples of the Zagros (e.g. pastoralism, hunting, arboriculture, agriculture, craft production, religion) in antiquity, with a special focus on the 1st millennium BCE;
2. discuss the various resources of this specific mountainous environment (opportunity/risk) and people ecology-driven stereotypes amongst the different groups (e.g. lowland authorities versus autonomous mountain dwellers).

We will finally use the ethno-historical evidence to provide some insights into the on-going interdisciplinary research carried out in the Southern Zagros in the framework of the project "HighStepLands" (DFG-SPP "Iranian Highlands"), that aims to investigate how human occupation strategies and subsistence patterns have interacted with the surrounding environment at the different altitudes, and how it has interplayed with the lowland socio-cultural-political organizations.

Reference:

- Balatti, S. 2017. Mountain Peoples in the Ancient Near East: The Case of the Zagros in the First Millennium BCE (Cléo 18), Wiesbaden.

13 COMPLEXITY BEYOND NEO-EVOLUTIONISM: SOCIAL ORGANIZATION IN "MARGINAL" ENVIRONMENTS AS SEEN FROM THE RIM OF THE TIBETAN PLATEAU

Abstract author(s): Hein, Anke (University of Oxford)

Abstract format: Oral

In spite of decades of criticism on the teleological, and colonialist-western-centric nature of neo-evolutionist models, these ideas still loom large in archaeological debates of social organization. Such debates tend to concentrate on early centers of "civilizations" and "states" located in fertile low-elevation plains and river valleys lending themselves to agricultural modes of subsistence. When high-altitude and rugged terrains are discussed, they are usually referred to as "marginal" and explained in relation to so-called "centers" within center-periphery frameworks or more recently zomia, places of retreat for people escaping the reach of nation states. Within grand narratives of human societal development, these areas are usually described as hampered by their geographic locations, forced to remain in a "less-developed", non-complex state of development.

Being seemingly inaccessible and "marginal", the rim of the Tibetan Plateau is particularly suited as a case study and starting point to help shake these old narratives. The aim is not merely to deconstruct them but to place them on their head and argue that social organization in mountainous regions can be highly complex, albeit in a dispersed manner that does not fit with traditional lowland agrarian narratives of power built on centralization. Based on archaeological material combined with ethnographic and to a lesser extent textual evidence from the Hengduan Mountain range, this paper shows how social networks extending over long distances and seemingly inhospitable terrain can provide a framework and basis of power expressed on a local level. Instead of trying to control the behavior of everyone in the network directly through administration, laws, and sanctioned violence as a nation-state would, local communities and individuals tap into the framework of knowledge, material resources, and behavioral codes to establish and maintain their claim to power and control.

529 ADDING FLESH TO THE BONES: THE INTEGRATION OF BIOCHEMICAL AND BIOMOLECULAR TECHNIQUES IN THE STUDY OF HUMAN-ANIMAL RELATIONSHIPS

Theme: 5. Assembling archaeological theory and the archaeological sciences

Organisers: Brusgaard, Nathalie (University of Groningen) - Mannermaa, Kristiina (University of Helsinki; University of Tartu) - Çakırlar, Canan - Raemaekers, Daan (University of Groningen)

Format: Regular session

Understanding past human-animal relationships has been advanced by the development of new methods and techniques in archaeology, the so-called third science revolution. In particular, the study of interactions between humans and animals in hunter-gatherer and early farming and pastoral communities has been revolutionized by the application of new biochemical and biomolecular analyses. The current challenge is to how bring together both theoretically and methodologically a widening array of complex data (e.g. aDNA, eDNA, isotopes, lipids on ceramics, material culture patterns) with models from cultural anthropology to refine our narratives and ask nuanced questions.

This session brings together case studies from various regions and periods to discuss the ways in which these broad ranges of sources and methods can be integrated to study human-animal relationships in hunter-gather and early and pastoral farming communities. The session welcomes papers on these narratives and the theoretical implications of new techniques, as well as papers on the methodological challenges of interdisciplinary research, such as questions of big data, data representation, and ethical sampling.

ABSTRACTS:

1 EXPLORING THE RELATIONSHIP BETWEEN HUMAN ANTIQUITY AND PLEISTOCENE MEGAFUNA EXTINCTIONS IN NORTHWESTERN SOUTH AMERICA

Abstract author(s): Ziegler, Michael - Roberts, Patrick (Max Planck Institute for the Science of Human History)

Abstract format: Oral

South America was the last continental landmass to be colonized by Homo sapiens during the Pleistocene and their spatio-temporal presence on the landscape overlaps with one of the largest regional megafaunal extinctions of the Quaternary. As the gateway between North and South America, the northwestern region of South America facilitated an intercontinental dispersal of early human settlers as well as fossil taxa and represents an important area for exploring initial human-animal interactions. Moreover, this region is composed of a diverse environmental gradient (i.e., coasts, savannahs and lowland, Sub Andean and Andean tropical forests) which provides an important proving ground for exploring the capacity of our species to adapt to varied environments and their impacts on resident large mammals. Although the palaeontological record at archaeological sites across South America is growing, direct evidence of human-animal interactions remains fairly limited. Nevertheless, as demonstrated elsewhere in the Late Pleistocene archaeological record, advances in stable isotope analysis and a developing chronology at select localities can help to identify changes in megafaunal diet from these shared environments as well as provide insights into ecological and anthropogenic pressures. Here, I introduce the multidisciplinary approach of the ERC-funded LASTJOURNEY project, to show how palaeontology, ecological modelling, and biomolecular processes can add 'flesh' to the bones of our current knowledge of human dispersals and megafauna population dynamics in the region.

2 RECONSTRUCTING HUNTER-GATHERER PREY-SPECIES BEHAVIOUR: IMPLICATIONS FOR HOMININ ECOLOGICAL PLASTICITY DURING THE CENTRAL EUROPEAN PALAEOOLITHIC

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Abstract format: Oral

Comparisons between Homo sapiens and our nearest hominin relatives have largely focused on high impact presentations of fossil morphologies, material evidence for technological and social complexity, symbolism, and genetic data. However, taphonomic limitations, non-linear appearances of 'modern' cultural traits, and increasing evidence for genetic admixture continue to complicate interpretations of our species' evolutionary narrative. In other regions, a growing response to these challenges has been to focus on exploring the varying adaptive flexibility exhibited by different hominin populations as they entered new environments or faced climate stresses. However, hominin palaeoecological adaptations across the Middle-Upper Palaeolithic transition in mid-latitude Western-Central Europe have yet to be integrated in these discussions. This avenue of research presents an exciting opportunity to test hypotheses of Homo sapiens' unique ecological plasticity. This is becoming increasingly urgent given the growing evidence for variety and flexibility in Neanderthal subsistence behaviour. Increasingly, a developing suite of biochemical techniques are enabling in-depth investigations into the ecological niche of H. sapiens and Homo neanderthalensis. This paper provides a critical discussion of 'on-site' archaeological scientific methods alongside more traditional approaches utilised in determining hominin subsistence and behaviours ecological tolerances. Focus is placed on the application of these techniques to reconstructions of prey-species palaeoecology as a largely underutilised line of investigation. Establishing plasticity in dietary and ranging behaviours of these fauna in response to broader climate and environmental shifts is key to interpreting flexibility in hominin hunting adaptations. We provide