Mountains – limit of human activity?

Mountains are characterized by specific features of natural environment and one of the most important are vertical zones of all components. Relief, climate, hydrological conditions, types of soils, vegetation cover make difficulties for availability and human activity. Therefore the mountains were long time regard both as an aenocumene and as limits between various settlement regions (archaeological cultures). New studies have proved these areas were penetrated and settled since Paleolithic until modern and natural resources of mountain geosystems were exploited. Even subnival and nival vertical zones were in a range of human activity because mountains function as Sacrum area i.e. votive finds from Peru.

Main topic of the session will be creation of economic conditions of the society since Paleolithic till now:

- analyse of role of mountain ranges (i.e. Carpathians, Alps, Ural) in settlement processes,
- trade roads across the mountains
- human occupation and exploitation in different type of mountains (low, middle, high)
- distinguish types of mountain geosystems which have been preferred by various archaeological cultures
- recognition of Sacrum places in Euro-Asiatic mountains

Upper Palaeolithic site at Andornaktálya (Bukk Mountain, Hungary) in the light of archaeological, sedimentological and micromorphological studies

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Study area is located on southern slope of Bukk Mountain, on the left side of the Eger valley few kilometres downstream of Eger city. Three members in the profile can be distinguished: ploughing layer of present soil in the upper part (I), buried soil (II) and weathering cover of the Pannonian sandy loam (III) in the lower part.

The traces of ice wedges in the bottom of T11th profile indicated cold stage before soil formation. There were filled by secondary calcium carbonate during formation of the Interplenioglacial soil (30 180±330 BP). The micromorphological structures, especially biofeatures, channels, bow-like structures after earthworms proved of an existence of the Interplenioglacial pedogenesis. Yellow fine deposits filled channels were incorporated into older soil. They has not traces of an illuviation processes. The Interplenioglacial soil was
covered with slope deposits during maximum of last glaciation (LGM). The ploughing disturbed natural structure of these uppermost member therefore can not be studied in detail.

Two archaeological levels has been registered, both attributed to the Aurignacian tradition. Lower archaeological layer occurs in the Interpleniiglacial soil, representing relatively scarce lithic remains probably linked with Hernad (Barca) group of the Centraleuropean Aurignacian. Upper archaeological level appears above the Interpleniiglacial soil in stratigraphic unit 1. This is a rich assemblage which can be attributed to the recent phase of the Aurignacian, with analogies to the Moravian and Lower Austrian Epiaurignacian; like these industries the assemblage from Andornaktalya shows common morpho-technological features with some “aurignacoid” Epigravettian (recently distinguished as Kasovian). All mentioned units are chronologically close to the LGM; in this chronological horizon it is interesting to note the relatively high ratio of imported transcarpathian flints (23%) used in the upper level of Andornaktalya.

**Across craggy horizons: the real incidence of mountain ranges in the establishment of territories in the Cantabrian Upper Palaeolithic**

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When Karl W. Butzer tried on 1986 to determine models of spatial organization within the Upper Palaeolithic societies of the Cantabrian Region (Spain), he selected mountains as the strongest determinant in the delimitation of ancient territories, so that valleys constituted the ideal unit to explain settlement dynamics. This theory was not far from the one widespread in the core of the Prehistorical research until the last fifteen years.

Nowadays, we know that the real incidence of mountains in the delimitation of Cantabrian Upper Palaeolithic territories is not so outstanding. Recent research has showed us the existence of settlements in the south part of Cantabrian Range during certain periods of the UP, probably communicated with those of the north part by trade roads across the range. As well, and more commonly, there have been identified long-distance cultural relations between different valleys. These facts have been confirmed by many studies as the one of raw material supplying, industrial and faunal remains, the analysis of parallels in artistic or symbolic manifestations.

The present contribution will analyze the economic and cultural factors observed through the archaeological record that let us know the way in which mountains condition the setting of territories within the particular geographical context of Spanish Cantabrian Region.

**The Late Glacial occupation of the Alpine region of Northeastern Italy**

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The Alpine region of Northeastern Italy has yielded a large number of Late Upper Palaeolithic sites, as a result of intensive survey and excavation over thirty years. These include rock-
shelter and open air sites, ranging in altitude form 100m to 1500m. Following the
depopulation of the area during the Last Glacial Maximum (c. 25,000-18,000 BP), due to the
extended snow cover and deplacement of tree-line, they bear testimony to the considerable
penetration of the mountainous zone by people during the Alpine deglaciation and the late-
glacial interstadial as a consequence of the submersion of the Great Adriatic Plain.

Mountains may test the limits of human perseverance, but they provide great variability in
ecozones and resources across short distances, if traversed in altitudinal terms. It is the effect
of these conditions for past mobility and resource exploitation that will be explored through
the study of lithic and faunal remains, and settlement patterns, from various sites. The timing
and pattern of human infiltration and the effect of climatic fluctuations on resource
availability and on people’s past movements will be discussed.

It will be proposed that during deglaciation not only do we witness a large scale movement
into the mountains, as indicated by the larger number of sites discovered, but a settlement
system which involved increased mobility, greater variability in on-site activities coupled
with a less structured and patterned use of the landscape.

Use of caves in the mountains: a view from the sheepfold

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Učka mountain (1401 m a.s.l.) stands out between the interior of the Istrian peninsula and
both its North-Eastern continental hinterland and the Adriatic coast, and at least since the
Roman period this clearly defined frontier served as an administrative border. Recent work by
the Pupićina Cave Project (1995–2002) has extended our understanding of the human use of
this mountain back into the Late Glacial period. This paper presents a case study of Vela
Cave, a deeply stratified rockshelter site, located in the immediate vicinity of Pupićina Cave,
the main focus of the project (Miracle and Forenbaher 2005, 2006). Vela Cave was
periodically visited ever since the Late Pleistocene, occupation becoming more intensive in
more recent prehistoric periods. The recovered evidence suggests that Vela Cave was a
“satellite site” of Pupićina, and that it was used by Neolithic and Bronze Age herders
primarily as a pen for keeping herds of sheep and goats. This case study provides one window
onto the changing human use of mountain landscapes in the Northern Adriatic region.

Carpathian Neolithic and the salt

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This paper contains preliminary results of research on the Neolithic settlements on the area of
the Carpathians and North Carpathians Forelands (south-east Poland, north-west Ukraine).
During the last two decades an archaeological, palynological and geomorphological research
were carried out on this area. Systematic archaeological surface surveys resulted in
discoveries of more than 4 thousand Neolithic and Early Bronze Age sites: settlements,
camps, stone processing sites, single finds of stone (including flint) artefacts and cemetery
(mostly barrows and groups of barrows). Several sites were excavated. First palynological
analysis of organic deposits from north Carpathians were published already 40 years ago (eg. palynological diagram from Tarnawa Wyzna). During the last years several new palynological diagrams from SE Poland and NW Ukraine were analysed and published. Archaeological data and results of palynological analysis as well as geomorphological information are a strong base for reconstruction of settlement preferences, study on various aspects of human activity (e.g. economy), interactions between Neolithic man and natural environment, and anthropogenic changes of environment first of all of natural vegetation.

Results of archaeological studies suggest that the subsistence strategies of the Late Neolithic people in SE Poland and NW Ukraine have been based, to large extent, on breeding. Palynological studies confirm it. Livestock (cattle and sheep) needs a salt. Results of spatial analysis of Funnel Beaker and Corded Ware cultures sites and analysis of settlements in relation to the natural environment on the area of North Carpathians and North Carpathians Forelands suggests that the salt and salt water springs may have attracted a special attention of communities of these cultures.

Salt springs in Moldavian Pre-Carpathian prehistoric life: analyses and spatial models

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This French-Romanian project, established at the end of 2003, aims to study the dynamics and interactions between human settlements and occurrence of salt springs. The Oriental Carpathians in Moldavia offers a primary research site for studying the continued exploitations of salt springs from Neolithic times to the present day. In this paper, the focus is on the nature of the prehistoric occupation –from Neolithic to Chalcolithic (6000-3500 BC), in the region of Neamt.

Aiming at understanding the social impact of salt as a resource on environmental changes, our approach includes social science perspectives (archaeology and ethnology) and natural science perspectives (geoarchaeology, palinology and anthracology). Choosing spatial performance, such as GIS, as an analytical tool, involves doing fieldwork and multiple GPS readings. Our approach benefits from satellite images and a high resolution digital model of the terrain (25 m) conceptualised by our Slovenian colleagues (Centre for Spatial Studies – ZRC). Refining the inventory of archaeological sites, notably our mapping of salt fountains, has enabled us to establish archaeological geo-referential indicators (255 sites) and mineral springs (75 which 54 are salty).

Our application of a multi-perspective analytical model has enabled us to approach the spatial dynamism of prehistoric human settlements: mapping the fields of vision visible from the point of view of the archaeological sites allows us to understand the dynamics of these settlements. Based on numerous examples, notably within the chronological framework of the Cucuteni culture (4600-3500 BC) within the Chalcolithic period, we underline the voluntary control of the territories at the foot of the mountains. Before this period, the Neolithic archaeological sites had inscribed the main lines that were further developed during the Chalcolithic demographic development. It is this latter development that is used to explain the powerful link between the hierarchical human settlements and the salt springs.
Settlement of Crete mountains in Bronze Age and the phenomenon of fortified sites

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Crete is very mountainous island with four main mountain systems. Since the beginning of human occupation here the people settled and exploited mountains and high-situated places (often in almost inaccessible locations). There are three types of sites with traces of any kind of human activity - 1) sites with traces of habitation (defensible and/or fortified sites), 2) sites with traces of economy/agriculture/exploitation (farmsteads, small sites or structures for shepherds and wood exploitation) and 3) sites with traces of religious activity (sacred caves, enclosures and so-called peak sanctuaries). Some examples of these sites will be presented.

During my PhD-studies I collected more than 200 sites with more or less probable examples of defensive architecture; most of them is situated in the mountains, often in locations that were very difficult to access. The focus of my paper is the following of the phenomenon of “highland” fortified sites/sites with defensive architecture. The “colonization” and settlement of Cretan mountains due to defensive reasons dates back to the Final Neolithic/Early Bronze (Minoan) Age and is continuous throughout the whole Bronze Age - many sites were settled repeatedly in dangerous or crucial periods of island's history. In the end, one very interesting fact will be shown - defensive function of Cretan prehistoric sites situated in the mountains is often doubled: many sites or structures served for religious (peak sanctuaries) and/or economic/exploitation (e.g. so-called guard houses) purposes at the same time.