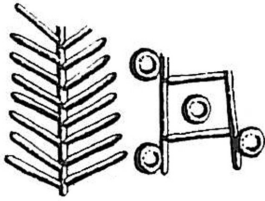


## CHAPTER ONE

# Mountain Landscapes

## The Archaeological Perspective



*Arnau Garcia-Molsosa*

**Abstract** *This introductory chapter explores mountain landscapes as a subject of study within the archaeological disciplines. Mountains are part of the geography of human societies: places to transit and to inhabit, and sources of sustaining resources and symbolic meanings. In that perspective, present mountain landscapes contain the material traces of long-term human–environment interactions.*

*The vision of archaeologists over mountain landscapes is in a radical process of change, due to the incorporation of archaeological fieldwork in multidisciplinary research programs carried out in mountain environments. Research assembled at the tenth IEMA conference represents a significant sample of studies that are changing our perspective of mountain landscapes as archaeological documents, resulting in critical contributions for the understanding of the history of mountain environments and creating new archaeological datasets to use in the interpretation of human societies.*

### MOUNTAINS: AN ARCHAEOLOGICAL SUBJECT

This volume dedicated to archaeology of mountain landscapes is the result of the tenth convening of the international conference organized by the Institute for European and Mediterranean Archaeology at the University at Buffalo. The main aim of IEMA conferences is to offer to the participants a comprehensive perspective on how the research on a subject is currently developing, including research questions, methodological approaches, and final results. The same objectives apply to this book, whose chapters have been elaborated from the presentations given by the authors, incorporating the results of the debates held during the two days of the meeting in April 2017.

With the word “mountain” we define primarily topographical features on Earth’s surface. To choose an element of the physical geography as a central topic is not strange in archaeological practice, although it takes a different perspective than most common and traditional geographical and chronological compartmentalization of the archaeological research. In the ensemble of the archaeological discipline, the perspective adopted in this book can be grouped together with other archaeologies of environments (e.g., archaeology of islands, rainforests, deserts, rivers). The interest of archaeologists in this type of focus departs from the fact that the processes involved in the different stages of the formation of the archaeological record, including its documentation, occur in the context of a local and regional environment, and, in consequence, cannot be understood outside of it. On the other hand, the different categories for environmental and topographical units are based on shared characteristics, which might comprise human interactions.

Those factors have established the framework for comparative approaches about how societies separated by time, space, and cultural background have related to their environment in broadly equivalent circumstances, and, at the same time, to test how different techniques and methodological approaches perform in similar conditions. It has also been a framework exploited by multidisciplinary teams to establish research questions and integrate data from different sources in a common subject of interest. Besides that, it directs the research to the analysis of the archaeological record as a part of the present, which is critical in the conception of archaeology as a live heritage and a tool to help to understand the present world, in opposition to a subject of interest only for antiquarianism.

The results of the intertwined human–environment relationships are often conceptualized in academic and nonacademic practice through the term “landscape.” In the use of this concept, there is always implicit the idea of environment as it is modified by humans. It can include all sorts of actions, and, among them, how it is thought, represented, and perceived. From this point of view, landscapes can be understood within the archaeological disciplines as a cultural production, shaped through long-term socioenvironmental interactions. It is from that perspective that mountain landscapes are conceptualized as the topic of this volume.

The case made for the Scandinavian mountains by Christopher Prescott and Lene Melheim (Prescott and Melheim in this volume) illustrates how the study of mountain landscapes has contributed to the development of Scandinavian archaeology beyond the specific case of high-altitude areas. New ideas on methods and theoretical approaches and on heritage conceptualization and management accompanied new data that transformed previous ideas about past societies and present landscapes. The long tradition of studies in Scandinavian uplands provides the authors of that chapter with the necessary historical perspective, but the same ideas can be extended to the other case studies analyzed here.

The assemblage of works on mountain archaeology collected in the present volume has the intention of providing the broader archaeological community with an introduction to new sets of archaeological data. Those are significant for the geographic areas presented here, but also for the understanding of historical processes in the near lowlands and, in a larger perspective, as an example of the potential information that mountain areas around the world can provide for the study of past societies and present landscapes and heritage. Con-

nected to that, a second specific objective of this volume is to present how these new data sets have been created in each case, through sources and methods that have been adapted to the constraints of mountain environments. In that sense, the collected case studies can be used as a guide to undertake new research in mountain areas but, at the same time, the theoretical and methodological approaches of the different projects have elements of interest for the study of other environments.

### MOUNTAINS NOWADAYS: PHYSICAL AND CULTURAL LANDSCAPES

Mountains are a consequence of the long-term geological forces that shape earth surface. In Figure 1.1 it is possible to observe that most of the case studies addressed in this book are situated in one area of convergence of tectonic plates: in a series of ranges aligned east to west in southern Eurasia. However, in a global perspective, irregularities on earth surface defined as mountains can be found in almost every part of the planet. The idea of “moun-

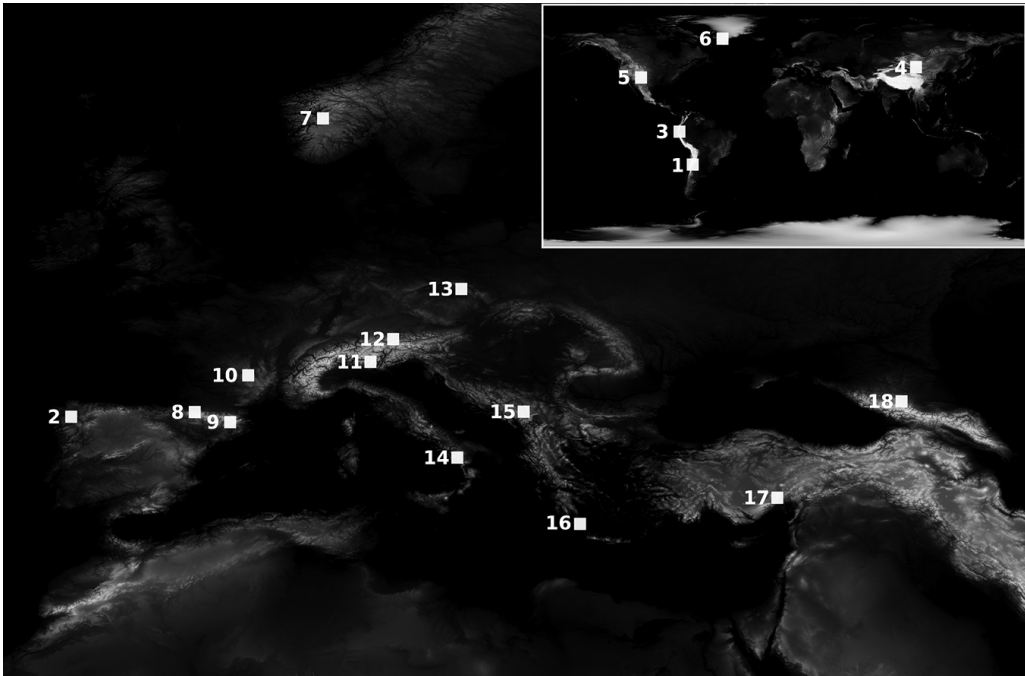


Figure 1.1. Location of the mountain areas addressed in the different chapters of this book: 1 Central Andes and 2 Galician Massif (Criado-Boado); 3 Northern Andes (Beltran-Caballero and Mar); 4 Eastern Altai (Dal Zovo); Rocky Mountains (Brunswig and Valde-Nowak); 6 Greenland (Gauthier); 7 Scandinavia (Prescott and Melheim); 8 Western Pyrenees (Coughlan et al.); 9 Eastern Pyrenees (Palet et al.); 10 French Massif Central (Miras et al.); 11 Central Alps (Nicolis); 12 Eastern Alps (Oeggli et al.); 13 Carpathians (Brunswig and Valde-Nowak, Valde-Nowak); 14 Southern Apennines (Van Leusen et al.); 15 Northern Albania (Galaty); 16 Kythera (Georgiadis); 17 Western Taurus (Vandam); 18 North Caucasus (Reinhold et al.)

tain” then evokes a general recognizable object, although it is more difficult to summarize it in a universal definition. Mountain in the singular can refer to an individuality, represented through the iconic image of the lonely peak appearing isolated from its surroundings. But when we speak of mountain landscapes, the focus is on the diverse composition of both biogeographical and cultural features.

Both as individuals or as a landscape, mountains are defined by a combination of characteristics based on local relief, slope, steepness, geology, and vegetation; but—since the relationship between these elements depends on local combinations—there are no universal criteria to differentiate mountains from other elevated landforms (Price 1986:1–5). The definitory elements of a mountain depends on the context (height from the surrounding area), the perception (conspicuousness), and comparison (larger than a hill, steeper than a plateau).<sup>1</sup> Geographers also point to the importance of cultural and social values in the definition of mountains. As is illustrated in the plot of “The Englishman who went up a hill but came down a mountain,” the definition of a singular feature as mountain can be relative.

Distinctive parts of the mountain are the foot, slope, and summit. Environmental conditions define alpine, subalpine, and montane zones as characteristic mountain ecosystems, but not all mountain landscapes are defined by them. It is very common to distinguish between high, middle, and low mountains, depending on the character of the topography and environment analyzed, although the limits between them are not clearly delimited. Finally, the concept of mountain landscapes embraces a much larger set of landforms than the singular mountain: ranges and massifs are formed by groups of mountains. Uplands or highlands are often used as a synonym for mountainous areas, although they have a less precise meaning and could contain any mountain, narrowly speaking. Plateaus and valleys are in a literal sense antonyms of mountains, but they are essential parts of mountain landscapes.

Figure 1.2 provides an example of the main characteristic of a mountain landscape: its vertical specialization that results in the formation of niches or zones that are cultural and biologic at the same time. Being shaped by complex interactions between climate, geology, biology, and human uses and ideas, the resulting landscapes can vary a lot between different mountain ranges and, also, between neighboring valleys.

The diversity of environments that mountain areas play host to are recognized by the UN in Agenda 21 (Agenda 21, Chapter 13). The inclusion of a chapter entitled “Managing Fragile Ecosystems: Sustainable Mountain Development” recognized mountains as a global subject of political attention (Debarbieux and Price 2008; Messerli and Ives 1997). Sustainability of mountain environments is considered in that document as essential for preserving the planet’s biodiversity and improving human welfare. Biological diversity and key resources (with water and energy in the forefront) are mentioned as the main contributions of mountain ecosystems in a global perspective. The document also states the value of indigenous knowledge and traditional practices in the maintenance of mountain ecosystems and identifies poverty as one of the main problems of mountain communities. A key aspect of the document is the admission that there is “a lack of knowledge of mountain ecosystems,” encouraging the development of regional studies. One example is the report elabo-



Figure 1.2. Picture taken during early spring in the Catalan Pyrenees (Northeastern Spain). From this image it is possible to do a first sketch of the different landscape zones: The alpine and subalpine zones situated over the timberline (1) are dominated by extensions of grass historically exploited on a seasonal basis as summer pastures. Slopes are mainly covered by forests (2), which were the principal source of energy but also complemented the pastures, and they might be subject to the construction of terraces where forage could be grown. Permanent settlements (3) are founded in different altitudes through the southern slopes but never above the timberline, usually taking advantage of small plains and accompanied by areas dedicated to agriculture. The village in the image, at 1,400 m, is the highest permanent settlement in a valley where the highest peak is 2,900 m high. Down the valley, the landscape is characterized by narrow mountain rivers (4). Settlements in the junctions of different rivers act as small regional centers, while the hydraulic power of the watercourses have played a major role powering protoindustrial and early industrial facilities.

rated at the request of the European Commission to first delimit and then obtain specific data of European mountains (Schuler et al. 2004). This document, largely based on Agenda 21 principles, points out four main aspects for why mountains are of vital importance to the European continent: “1) as ‘water towers’ supplying much of the continent’s water, especially in summer, and as sources of hydroelectric power; 2) as centers of diversity, both biological and cultural; 3) for providing opportunities for recreation and tourism, based on natural attributes and cultural heritage; and 4) because of their sensitivity to environmental change, as manifest in the melting of glaciers” (Schuler et al. 2004:2). Another significant statement in the same document observes, “In the context of European cohesion and

enlargement, mountain regions are considered as having permanent natural handicaps, due to topographic and climatic restrictions on economic activity and/or peripherality” (Schuler et al. 2004:2). At the same time, the results of this report point to the diversity of European mountain regions, with no common trends regarding demography, economic activities, or access to services.

The conceptualization of mountain landscapes outlined in these documents, and particularly in Agenda 21 for its worldwide scope, has an important impact on fixing the ideas of how we understand mountains. As a guide for designing polities, it has a strong influence in funding calls for research projects or regional and local economic development initiatives. It also influences political and environmental activism seeking the attention of global actors over local conflicts. At the same time, the writing of these documents is a product of a particular historical moment (Debarbieux and Price 2008). For instance, the apparent contradiction between high biodiversity and key resources on one side and “natural handicaps” on the other has to be understood in the context of the debates of late twentieth-century society trying to address how environmental and cultural diversity should be integrated into a global economic system, which the available data show as particularly destructive toward both sides.

In that sense, in the analysis of mountain landscapes it is important to consider how the subject is influenced by the perspective of modern Western societies. In 1936, in the introduction of his book dedicated to mountain geography, Roderick Peattie (1936:5–7) distinguished between two contemporary approaches to the mountains: the climber and the scientist (identified basically as a naturalist). This vision is very representative of how mountain landscapes have been perceived by nineteenth- and twentieth-century urban societies. Even nowadays, mountains are largely imagined and promoted as unlimited, free, and wild spaces where people participate in sports and activities in contact with pristine nature. It is important to note that this modern “nature tourism” is practiced in social contexts and needs a well-established and controlled network of infrastructures: from roads and parking lots to apartments, hotels, restaurants, stores, or ski lifts. This economic activity can be very intensive in some areas and requires a reshaping of the environment, creating new landscapes associated to that type of tourism. The impact on the inherited landscape is important, sometimes quite disruptive, but perceived as a necessary toll for the economic sustainment of mountain communities.

On another side, people working in the primary sector tend to see the landscape as a mosaic of limited spaces where nature is manipulated through agropastoral activities to obtain resources. Mountains are not different in that sense. From the perspective of the agropastoral and industrial activities, mountains are territories delimited by social, political, and economic interactions, which regulate the access to the resources and define the identity of the inhabitants. The contrast between the visions from the service sector on one side and the primary sector on the other is in conflict within contemporary mountain region societies. This is especially true because services are increasingly dominant in mountain economies. Responses to this background conflict vary from direct confrontation to different degrees of coexistence and compatibility, since in many mountain areas the inhabitants usually combine the two activities.

The idea of “natural handicaps” that caused “poverty” to populations is commonly applied to mountain areas and it has a long history since antiquity (Price 1986; Walsh 2005). This idea is based on less productivity of cereals and that main communication nodes tend to concentrate in coasts and alluvial plains. However, it can be misleading, since mountains can provide high-value products, precisely thanks to their “natural handicaps.” The poverty among mountain communities, historically and today, must be understood from the perspective of the inequality in the access to the resources and its role within socio-economic structures.

In fact, mountain economies are integrated into superregional contexts through differentiation and specialization, as historians have noticed (see, e.g., Braudel 1972). It takes advantage of the environmental diversity, directing mountain economy to the exploitation of resources not available in lowlands and cities: selected agropastoral productions, forestry, extraction of minerals, industrial processes related to those products, and tourism are examples of both traditional and modern fields of specialization for mountain communities in local products. Several chapters in this book analyze the role of those products in the development of past economies, which have gone unnoticed in many models about past economies.

In a different perspective, this differentiation also has an impact on the social and political identity of mountain communities. More than isolation, it is the combination of the involvement in specific and differentiated economic activities together with historical processes and geopolitical circumstances that are the factors that influenced the development of different sorts of alternative identities in mountain regions, embodied through language, distinctive cultural features, and particular institutions or political positioning.

In that aspect, mountain communities are often represented and/or self-represented either as a sort of uncontaminated version of lowland and urban populations or as alien, often a menace, to the main national identities. One way or the other, they have shaped an image of rebellious populations and areas difficult to control from the perspective of central states. These ideas have been analyzed through anthropological narratives (Scott 2009), fueled romanticized visions of mountain communities (Fermor 1966), and have also been present in archaeological literature (Prescott and Melheim in this volume; Orenge in this volume).

### ARCHAEOLOGISTS AND MOUNTAINS

Mountains have provided some iconic archaeological finds: the mummy of Ötzi, the necropolis of Hallstatt, or the city of Machu Pichu are three examples of high-impact discoveries in mountain environments. Although the discovery of sites has triggered questions regarding their local and regional contexts, the general perception among archaeologists remained that mountains are areas of secondary interest, less occupied and without an interesting archaeological record to address big questions such as the adoption of agriculture or the development of complex societies. In that sense, archaeology is influenced by the more general ideas about mountains commented on in the previous section. Another factor to consider is that

the important contribution of rescue excavations in some countries has been concentrated in urban centers and around big infrastructures going through lower valleys. Thus, a general overview results in the strong correlation between blank areas in archaeological maps and mountain areas.

Before the 1990s there were few archaeological programs directed to understanding how elevated areas were settled by past human populations. We previously mentioned the case of the Scandinavian mountains that have been the object of surveys since the 1950s (Prescott and Melheim in this volume). In North America there is a long tradition of studies in the Rocky Mountains (Bender and Wright 1988; Benedict 1992; Brunswig 2004).

Regional surveys have been one of the traditional gateways to the study of mountains since the late 1980s. Initially, those surveys were concentrated in the plains. In the case of classical studies, the central role of the city in antiquity literature pushed the initial questions toward the immediate hinterland of well-known ancient settlements. Also, for prehistoric and, in fewer cases, medieval archaeology, the departing point was the immediate context of well-known lowland settlement systems. On the other hand, that research focused on the documentation of surface pottery made visible by the plowing of agricultural fields, concentrating the surveys on this type of land cover. In a second stage, archaeologists observed the high integration of urban, lowland, and highland rural economies, considering that mountain areas should be integrated in the regional economic models and proposing the implementation of regional survey approaches in upland areas. The interest in pastoral practices was a key aspect of this approach. Some significant examples that had a large impact on further research were the works directed by Graham Barker in the Italian Apennines in the late 1980s (Barker et al. 1991) or the research that has been developed since the early 1990s by researchers based in the *Maison Méditerranéenne des Sciences de l'Homme* (Aix-en-Provence) in the lower and high Provençal mountains (Leveau 2014; Leveau and Segard 2004; Mocci et al. 2005). Ethnoarchaeology was another field explored in this context (Halstead 1998).

In some cases external factors have had a definitive influence in the initiation of mountain archaeological surveys. This is the case in the hydroelectrical reservoirs flooding Norwegian valleys. Forest fires in Southern Europe have been, in singular occasions, the starting point of intensive research programs (D'Anna et al. 1992; Passarrius et al. 2009).

A second main contribution to the interest in the mountainous archaeological record comes from paleobotanical studies. In the context of the studies about mountain vegetation niches the role of human activities has been acknowledged as a factor crucial to understanding the ecological dynamics. Moreover, some mountain areas host a rich paleoenvironmental record. That's particularly true for high mountain subalpine zones, where the existence of glacial lakes and peat bogs can provide good sequences to address questions such as the evolution of timberland, the creation and evolution of pastures, and the impact of fire, grazing, and climate change. Pollinic diagrams of mountain sites have been produced during the twentieth century and integrated in early regional approaches (Beaulieu et al. 1990; Biagi and Nandris 1994; Galop 1998; Moe et al. 1988; Richard 1997). Initial works in this field focused mainly on natural history and progressively integrated human activity both as a



research interest and a proxy to study vegetation changes. The confluence with archaeological teams working on regional surveys has been very productive since the 1990s and early 2000s. The incorporation of archaeological data has been accompanied by the development of multiproxy approaches and the increase of spatial and chronological resolution (Oeggl et al.; Palet et al.; Gauthier; Miras et al. in this volume). It defines an “archaeology of pasturelands,” which has been often used as a synonym of “mountain archaeology,” and in which the research focus is the environmental and cultural history of subalpine pastures.

Works from the 1990s have been consolidated and extended during the decades of the twenty-first century. The proliferation of published research can be observed through the bibliographical references included in the different chapters. This scientific activity has also been the ground for continued academic exchanges. Sessions about mountain areas have been organized in many major international conferences, and specific meetings gathered research groups on international and regional bases. That resulted in the publication of several collective works and monographs that can be used as gateways to the subject (Collis et al. 2016; Della Casa 1999; Della Casa and Walsh 2007; Gerling et al. 2018; Leveau and Rémy 2008; Lozny 2013; Pelisiak, Nowak, and Astaloş 2018; Rendu 2003; Stirn 2014; Tzortzis and Delestre 2010; Walsh 2013).

The ensemble of subtopics that emerges from the present-day researches places the study of mountain environments in the middle of conceptual and methodological debates concerning the archaeological disciplines. From the archaeologist point of view, knowing the ongoing researches in mountain areas and embarking in new investigations cannot be dismissed anymore, since it is an area where the research is active and is providing significant contributions in the ambits of new data, methodological innovation, interpretative tools, and case studies for comparative analysis. Moreover, the role that mountain areas, seen by contemporary societies as potentially protected ecosystems, has to be critically addressed from a historical perspective. In that context the long-term perspective is important, in which the interpretation of archaeological data is a key aspect. Those questions have been important in the historical development of archaeological research in and about mountain environments and they are among the main aspects that justify the present interest on the topic.

## **MOUNTAIN ARCHAEOLOGIES: OVERVIEW OF CHAPTERS**

### THE SYMBOLIC AND SACRED CHARACTER OF MOUNTAINS

The first chapters of this book address the integration of mountainous topographies in human cultural systems through its ideological dimension. The concept of “sacred mountain” is at the center of the discussion here. Mountains are prominent landmarks, and the sacred character of individual mountains is documented in different cultural contexts around the world. In that perspective, sacred mountains are an excellent case study for the symbolic, ideological, and spiritual uses of landscapes.

The conference’s keynote lecture delivered by Felipe Criado-Boado introduces these central concepts and offers specific examples to approach this ideological dimension of

mountains within prehistoric cultural landscapes. Phillips Stevens presents in his chapter a comprehensive overview of the key concepts used by cultural anthropology to define and study the sacred character of mountains and to conceptualize it in the framework of religious beliefs.

The other two chapters in the first group in the volume are dedicated to case studies in which material culture is used to address the sacred dimension of singular mountain landscapes. Long-term cultural uses in Ikh Bogd Uul in the Eastern Altai Mountains (Mongolia) are addressed in the case study by Cecilia Dal Zovo. The case study presented by Mercurios Georgiadis focuses on Mount Leska on the Aegean island of Kythera (Greece), interpreted as a Bronze Age peak sanctuary, with parallels within the Minoan world.

#### GLOBAL WARMING AND ARCHAEOLOGY OF MOUNTAIN SNOW LINE

The snow line has only recently attracted the attention of archaeologists. The retreat of mountain glaciers and the melting of ice patches, a phenomenon in expansion due to actual climate change, is revealing material culture long trapped in the ice. In those conditions, organic materials are well preserved, sometimes for thousands of years. It offers extraordinary insight on past material culture, but it is also a fragile record that disappears soon after it is revealed on the surface. The challenges associated with this unexpected snow line archaeology are addressed through the case of World War I battlefields in the high Alps (Nicolis) and the newly defined “ice patch archaeology” in the Scandinavian Mountains (Prescott and Melheim).

#### SUBALPINE PASTURES AS HIGH-ALTITUDE ARCHAEOLOGICAL SITES

Subalpine pastures are one of the most characteristic ecocultural landscapes of mountain areas. The research developed has taken advantage of the characteristics of the environment to develop specific methodological approaches, adapted to those environments. That includes the analysis of a multitemporal dry-stone architecture, often visible through high-resolution aerial images. Although surface material assemblages are scarce, the incorporation of test excavations and C14 dating allows for a chronostratigraphic approach to those elements. Integration of archaeological with high-resolution multiproxy paleoenvironmental studies of lake sediments and peat bogs is a common practice in those projects that tend to have a strong multidisciplinary character.

Early human presence in higher altitudes is documented since the Paleolithic (Efstatiou et al. 2006). It is interpreted as part of the seasonal movements of hunter-gatherer groups first and, beginning in the Neolithic, later incorporating domestic animals. The prehistoric seasonal movement in the high Tatras (Western Carpathians, Poland) since the Late Paleolithic to the Bronze Age is analyzed by Robert Brunswig and Pawel Valde-Nowak in this volume.

There is a consensus that points to a prehistoric onset of the practices that led to the development of high-altitude pasturelands in the long term. The identification of the

chronology and process of creation of extensive grasslands and its subsequent maintenance and/or abandonment have been an important focus of the research in mountain areas. Beyond prehistory, the analysis of antiquity and medieval periods in those areas has provided insight about the diversification of activities, documenting minero-metallurgical activities and forestry activities alongside pastoralism.

The case studies included in this volume introduce examples from the main European subalpine environments and are based on projects that combine archaeological and paleoenvironmental analysis. The chapters include research in the Eastern Alps (Oeggel et al.; Nicolis), the North Caucasus (Reinhold et al.), and the Eastern Pyrenees (Palet et al.).

A part of altitude, latitude also determines the extension of alpine conditions. Northern and circumpolar regions share characteristics with environments that, in other latitudes, are exclusive of high mountain valleys. Moreover, they also document similar agricultural practices (seasonal grazing) and similar archaeological and paleoenvironmental archives. They represent outstanding case studies to explore the relationship between climate, grasslands, and human activities. In this volume they are illustrated by research programs in Norwegian mountains (Prescott and Melheim) and Greenland (Gauthier).

#### EURO-MEDITERRANEAN MIDDLE AND LOW MOUNTAIN LANDSCAPES

The next group of chapters address the archaeological context of the middle and lower altitude mountain landscapes. In temperate areas of the northern hemisphere, it defines slopes and mountain formations where the highest points rarely surpass 2,000 masl. It defines extensive areas of the European subcontinent and the circum-Mediterranean regions. Those landscapes are characterized by a higher anthropization, represented by patched landscapes combining montane forests and deforested areas of eroded soils occupied by grasslands and shrubs. Cultivation, usually in terraces, is also present. Lower mountains have historically been a source of building material for nearby urban centers, charcoal and other forestry products, metallurgical materials, and many other resources. Permanent settlements can be present in those areas, and, in some contexts, they have been historically favored locations for settlements that prioritize defensive, strategic, and symbolic functions.

Middle and lower elevations represent a complicated challenge for archaeological research. High slopes and dense vegetation cover make the archaeological record less perceptible. At the same time, high-quality, long-term paleoenvironmental archives are less available than in high-mountain contexts, especially as the latitude increases. On the other hand, those areas can present a historical mix of uses combining cultivation, grazing, forestry, and mining, providing different specialization and complementarity of uses during overlapping time frames. Despite the interest in those environments as historical landscapes, they are complex and difficult to interpret. The development of specific survey techniques to understand the archaeological and paleoenvironmental records, together with analysis of this area in regional perspective, is the focus of the chapters included in this volume.

Representative examples of European mid-mountain contexts are the focus of the chapters dedicated to the Carpathian (Valde-Nowak), the Massif Central (Miras et al.), and

the middle slopes of the Atlantic Pyrenees (Coughlan et al.). The development of archaeological surveys in Mediterranean uplands is a subject addressed through case studies in the Taurus Mountains (Vandam et al.) and in the Southern Apennines (Van Leusen et al.).

#### VALLEY ARCHITECTURE

In the context of mountain regions, valleys can have an important structuring role. They concentrate the arable land available in mountain contexts. At the same time, they can function as socioeconomic units and network nodes. The next two chapters explore the relationship between social structures and the formation of settlements in mountain valleys in two very different case studies: in one case, the tribal community of a valley enclaved in the Northern Albanian mountains (Galaty); the second case focuses on the valley of Cuzco (Beltrán-Caballero and Mar). Probably more than any other ancient state, the Inka territory exemplified the incorporated control of diversified landscapes, here defined by the steep slopes of the Andean range.

The volume closes with a review that addresses a series of modern preconceptions of mountain communities and economies (Orengo). The author analyzes how these ideas, although much more critically considered than in the past, are still influential when we interpret the archaeological record in high altitudes.

#### FINAL REMARKS: BASE CAMPS AND NEW QUESTIONS FOR THE ARCHAEOLOGY OF MOUNTAIN LANDSCAPES

As with any other part of the Earth's surface, human societies have been part of the history of mountain regions: moving through, settling, fighting, exploiting their resources, incorporating them into social ideological and belief systems and, as is underlined by this volume, doing archaeological research.

Surveys conducted in different mountain environments have seen a quantitative and qualitative increase since the beginning of the twenty-first century, expanding the results obtained by sparser previous work and making mountain archaeology a relatively new dataset in the context of archaeological disciplines. There is currently strong consensus among archaeologists that have developed projects in mountain areas since the 1980s to reject or nuance the image of upland regions as empty areas in terms of archaeological interest. On the other hand, combined paleobotanical, geomorphological, and archaeological approaches underline that mountain landscapes have an undoubted cultural character and human actions are part of the historic ecology of montane environments.

In that sense, a series of consensual points must be considered in light of the research developed up to this point and exemplified by the different chapters collected here: First, mountain areas harbor a large and singular archaeological record. It represents an archive that archaeologists can identify, register, and interpret using the appropriate conceptual and methodological tools. Secondly, human activities have been documented since prehistory in all sorts of mountain environments. Those activities represented a significant factor in landscape shaping and landscape conceptualization that integrated archaeological, anthro-

pological, and paleoenvironmental studies can explore. Third, mountain environments provide outstanding case studies to address highly spatialized and specialized exploitation of resources. In that sense seasonal transhumance, intensive and extensive pastoral practices, forestry, and metallurgy could be considered the formation of symbolic topographies and landscape narratives. Finally, it emerges that the idea of a natural isolation of mountain communities must be critically reconsidered. Economic practices and social structures of past communities inferred from material traces in mountain environments need to consider its multiscale regional connections. In that sense, the assumption that mountains are “secondary” areas or “archaic strongholds” can obscure key aspects of historical processes such as the emergence of complex societies and diversified economies.

Those points, as well as other ideas that can be extracted from the combined lectures of the different chapters of this volume and other similar works, represent features of what we can define, using alpinist vocabulary, as “base camps” for archaeological research in mountain areas. In our current state, archaeologists have at our disposal a basic infrastructure developed and systematized by recent research: an ensemble of tested methodological approaches, developed conceptual frameworks, and models to explore in comparative perspectives.

Those base camps, among them those we consider in this volume, provide a preliminary guide to approaching the archaeology of mountain areas and offer support from which to develop new questions. Among those new questions we can consider a multitude of perspectives: new specifically directed projects could provide data to study the still-not-very-well-known traces of Paleolithic hunter-gatherer societies in high altitudes. Why, how, when, and in what extension prehistoric societies change mountain environments to adapt them to specific productions such as herding are questions currently open, particularly in light of the studies conducted in subalpine pastures. Settlement dynamics have a decided micro-regional character, but some trends can be documented in different areas. In that sense, the Bronze Age appears as a moment of intensification in grazing proxies in high altitudes, while in some cases there is an apparent reduction in the archaeological record available for different moments of the Iron Age.

Mountain products, specialization, and landscape diversification have an intense relationship with the emergence of complex societies and state formation that can be explored in many different contexts. Pastoralism emerges as a key factor in landscape dynamics and, thus, the study of the complexity of herding practices appears as a challenge for future researches. The absence of zooarchaeology in the following chapters is not an intentional omission but a consequence of the absence of consumption contexts in the grazing areas. In that respect there is great potential if effective interdisciplinary strategies can be established between high-mountain archaeology, ethnographical research, zooarchaeology, and the application of isotope analysis.

Other activities that have defined the largest areas of mountain landscapes, such as forestry, are much less well known and specific methodological approaches to those areas have yet to be developed. Multidisciplinary, multiproxy analysis has been a key aspect used to understand upland landscape dynamics. Its potential as well as its limits and obstacles are questions addressed in several of the following chapters. On the other hand, multiproxy

studies in mountain areas have focused on the advancement and retreat of high-mountain grasslands and have been less effective addressing other aspects like prehistoric and historic woodland management or the environmental and cultural processes involved in the history of mixed cultivation and herding practices in lower altitudes. The continued discussion among multidisciplinary teams stands, as it has been through the history of the discipline, as a foundation stone in the archaeological studies of mountain landscapes.

In another focus, acknowledgment of the cultural character of mountain landscapes poses the question of its heritage dimension. That aspect is addressed in the following chapters from the experience and point of view of different research programs. In that sense, a commonly expressed idea in the final discussion of the conference pointed to the challenge to reach the agents involved in heritagization processes (authorities, local communities, and visitors). In fact, most of the archaeological record presented in the following chapters is largely unnoticed as historic cultural heritage, not only by nonspecialists but also by the archaeological discipline and, as a consequence, by the public bodies in charge of maintaining and promoting historic cultural heritage. Mountain archaeological records contain, in a general perspective, few remains that are likely to be perceived as archaeological monuments. That doesn't imply that mountain material cultural heritage lacks interest or explanatory potential, even those beyond local aspects. Perhaps the most illustrative case included in this volume is the intervention in the alpine during World War I, 3,629 masl, at the Austro-Hungarian post of "Punta Linke" (Nicolis in this volume). The (re)materialization of the place where soldiers would guard and fight in the highest landscapes of Western Europe is an outstanding testimony to the geopolitics, technology, human costs, and consequences of the Great War. Its value is, in that aspect, the same as the fortifications of Verdun or the monuments erected throughout European geography.

In considering a heritage perspective, the long-term human–environment relationship is as much a part of the present of mountain landscapes as it was part of its past. As will be developed in the next chapter (Criado-Boado), mountains can be considered agents participating in human lives. That character can be traced in different cultural systems, both historical and contemporary, including contemporary Western societies, as described, for example, by the characters of the novel *The Eight Mountains* (Cognetti 2018). In a general perspective, therefore, mountain landscapes are a present issue. As discussed in a previous section, this notion is underlined by the inclusion of mountain landscapes as a subject of global, regional, and local politics.

Consequences of climate change, sustainability of economic activities, or the resilience of local cultures in the context of globalized societies are among the central points that will define the future of mountain landscapes and their inhabitants. The long-term historical dimension of these phenomena makes them an area in which the research included in this volume can present a necessary and critical contribution.

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#### NOTE

1. As reflected in the dictionaries: “A high area of land that rises steeply above its surroundings, usually has a sharply pointed top, and is larger than a hill” (Park and Allaby, mountain); “A landmass that projects conspicuously above its surroundings and is higher than a hill. b: an elongated ridge” (Merriam-Webster); “A raised part of the earth’s surface, much larger than a hill, the top of which might be covered in snow” (Cambridge Dictionary Online).

#### REFERENCES

- Barker, G., A. Grant, P. Beavitt, N. Christie, J. Giorgi, P. Hoare, T. Leggio, and M. Migliavacca 1991 Ancient and Modern Pastoralism in Central Italy: An Interdisciplinary Study in the Cicolano Mountains. *Papers of the British School at Rome* 59:15–88.
- Beaulieu, J. L. D., J. L. Edouard, P. Ponel, C. Roando, L. Tessier, M. Thinon, and A. Thomas 1990 Timber Line and Human Impact in the French Alps: The State of the Art and Research Programs. *Pact* 31:63–80.
- Bender, S. J., and G. A. Wright 1988 High-Altitude Occupations, Cultural Process, and High Plains Prehistory: Retrospect and Prospect. *American Anthropologist* 90(3):619–639. DOI: <https://doi.org/10.1525/aa.1988.90.3.02a00060>.
- Benedict, J. B. 1992 Footprints in the Snow: High-Altitude Cultural Ecology of the Colorado Front Range, U.S.A. *Arctic and Alpine Research* 24(1):1. DOI:<https://doi.org/10.2307/1551315>.
- Biagi, P., and J. Nandris (eds.) 1994 *Highland Zone Exploitation in Southern Europe*. Monografie di “Natura bresciana”; no. 20. Museo Civico di scienze naturali di Brescia, Brescia, Italy.
- Braudel, F. 1972 *The Mediterranean and the Mediterranean World in the Age of Philip II*, vol. 1. University of California Press, Berkeley.
- Brunswig, R. H. 2004 Paleoindian Colonization of Colorado’s Southern Rockies: New Evidence from Rocky Mountain National Park and Adjacent Areas. In *Ancient and Historic Lifeways of North America’s Rocky Mountains: Proceedings of the 2003 Rocky Mountain Anthropological Conference*, 264–281. Department of Anthropology, University of Northern Colorado, Greeley, Colorado.

- Cambridge Dictionary Online. Mountain. <https://dictionary.cambridge.org/dictionary/english/mountain>.
- Cognetti, P. 2018 *The Eight Mountains*. Harvill Secker, London.
- Collis, J., M. Pearce, and F. Nicolis 2016 *Summer Farms: Seasonal Exploitation of the Uplands from Prehistory to the Present*. JR Collis and Equinox, Sheffield.
- D'Anna, A., P. Leveau, and F. Mocchi 1992 La montagne Sainte-Victoire de la Préhistoire à la fin de l'Antiquité: Les rythmes de l'occupation humaine (prospection-inventaire 1989–1992). *Revue archéologique de Narbonnaise* 25:265–299.
- Debarbieux, B., and M. F. Price 2008 Representing Mountains: From Local and National to Global Common Good. *Geopolitics* 13(1):148–168. DOI:<https://doi.org/10.1080/14650040701783375>.
- Della Casa, P. 1999 *Prehistoric Alpine Environment, Society and Economy: Papers of the International Colloquium PAESE'97 in Zurich*. R. Habelt, Bonn, Germany.
- Della Casa, P., and K. Walsh (eds.) 2007 Interpretation of Sites and Material Culture from Mid-High Altitude Mountain Environments. Proceedings of the 10th annual meeting of the European Association of Archaeologists 2004. *Preistoria Alpina* 42:5–8. Museo delle Scienze, Trento.
- Efstratiou, N., P. Biagi, P. Elefanti, P. Karkanis, and M. Ntinou 2006 Prehistoric Exploitation of Grevena Highland Zones: Hunters and Herders along the Pindus Chain of Western Macedonia (Greece). *World Archaeology* 38(3):415–435.
- Fermor, P. L. 1966 *Roumeli: Travels in Northern Greece*. New York Review of Books, New York.
- Galop, D. 1998 *La forêt, l'homme et le troupeau dans les Pyrénées: 6000 ans d'histoire de l'environnement entre Garonne et Méditerranée—contribution palynologique*. Geode, Toulouse.
- Gerling, C., C. Knipper, L. Martin, and T. Doppler 2018 Editorial: Casting a Glance over the Mountain—Multi-proxy Approaches to the Understanding of Vertical Mobility. *Quaternary International* 484:1–2. DOI:<https://doi.org/10.1016/j.quaint.2018.05.030>.
- Halstead, P. 1998 Ask the Fellows Who Lop the Hay: Leaf-Fodder in the Mountains of Northwest Greece. *Rural History* 9:211–234.
- Leveau, P. 2014 Occupation et modes d'exploitation de la montagne dans les cités romaines de Gaule Narbonnaise orientale. *Atti del IV Convegno Internazionale di Studi Veleiati: Veleia-Lugagnano Val d'Arda, 20–21 Settembre 2013*:471–486.
- Leveau, P., and B. Rémy (eds.) 2008 *La ville des Alpes occidentales à l'époque romaine*. Les Cahiers du CRHIPA 13, CRHIPA, Grenoble.
- Leveau, P., and M. Segard 2004 Le pastoralisme en Gaule du sud entre plaine et montagne: de la Crau aux Alpes du sud. *Pallas* 64:99–113.
- Lozny, L. R., ed. 2013 *Continuity and Change in Cultural Adaptation to Mountain Environments: From Prehistory to Contemporary Threats*. Springer.
- Merriam-Webster. n.d. Mountain. Merriam-Webster.com; accessed March 22, 2018.
- Messerli, B., and J. D. Ives 1997 *Mountains of the World: A Global Priority—A Contribution to Chapter 13 of Agenda 21*, edited by B. Messerli and J. D. Ives; editorial advisory committee, Jayanta Bandyopadhyay . . . [et al.]. Parthenon, New York.
- Mocchi, F., J. M. P. Martinez, M. Segard, S. Tzortzis, and K. Walsh 2005 Peuplement, pastoralisme et modes d'exploitation de la moyenne et haute montagne depuis la Préhistoire dans le Parc National des Écrins. In *Territoires et paysages de l'âge du Fer au Moyen Âge. Mélanges offerts à Philippe Leveau*, edited by A. Bouet and F. Verdin, 197–212. Presses universitaires de Bordeaux, Bordeaux.



- Moe, D., S. Indrelid, and A. Fasteland 1988 The Halne Area, Hardangervidda: Use of a High-Mountain Area during 5000 Years—An Interdisciplinary Case Study. In *The Cultural Landscape: Past, Present and Future*, 429–444. Cambridge University Press, Cambridge.
- Park, C., and M. Allaby 2013 Mountain. In *A Dictionary of Environment and Conservation*. Oxford University Press, Oxford. <http://www.oxfordreference.com/view/10.1093/acref/9780199641666.001.0001/acref-9780199641666-e-5165>.
- Passarrius, O., A. Catafau, and M. Martzluff 2009 *Archéologie d'une montagne brûlée: Massif de Rodès, Pyrénées-Orientales*. Trabucaire, Perpignan.
- Peattie, R. 1936 *Mountain Geography: A Critique and Field Study*. Harvard University Press, Cambridge.
- Pelisiak, A., M. Nowak, and C. Astaloş (eds.) 2018 *People in the Mountains: Current Approaches to the Archaeology of Mountainous Landscapes*. Archaeopress, Oxford.
- Price, L. W. 1986 *Mountains and Man: A Study of Process and Environment*. University of California Press, Berkeley.
- Rendu, C., ed. 2003 Avant-propos au dossier spécial: La montagne—Habitats et systèmes pastoraux d'altitude (Pyrénées, Massif Central, Alpes)—L'occupation de la haute montagne, premiers acquis et perspectives. *Archéologie du Midi médiéval* 21:142–145. Association Centre d'Archéologie Médiévale du Languedoc (C.A.M.L.), Carcassonne.
- Richard, H. 1997 Indices polliniques de néolithisation du massif jurassien aux VI<sup>ème</sup> et V<sup>ème</sup> millénaires [Pollen evidence of an early Neolithic presence on the Jura range at the sixth and fifth millenia]. *Quaternaire* 8(1):55–62.
- Schuler, M., E. Stucki, O. Roque, and M. Perlik 2004 *Mountain Areas in Europe: Analysis of Mountain Areas in EU Member States, Acceding and Other European Countries*. European Commission contract No. 2002.CE.16.0.AT.136.
- Scott, J. C. 2009 *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. Yale University Press, New Haven.
- Stirn, M. 2014 Why All the Way Up There? Mountain and High-Altitude Archaeology. *SAA Archaeological Record* 14:7–10.
- Tzortzis, S., and X. Delestre 2010 *Archéologie de la Montagne européenne*. Actes Table Ronde Internat (Gap, 29 sept.–1<sup>er</sup> oct. 2008), coll. Biama.
- Walsh, K. 2005 Risk and Marginality at High Altitudes: New Interpretations from Fieldwork on the Faravel Plateau, Hautes-Alpes. *Antiquity* 79(304):289–305. DOI:<https://doi.org/10.1017/S0003598X00114097>.
- Walsh, K. 2013 Mountain Economies and Environmental Change. In *The Archaeology of Mediterranean Landscapes: Human-Environment Interaction from the Neolithic to the Roman Period*. Cambridge University Press, Cambridge. DOI:<https://doi.org/10.1017/CBO9781139024921>.