WHY ALL THE WAY UP THERE?

MOUNTAIN AND HIGH-ALTITUDE ARCHAEOLOGY

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Mountains and high-altitude landscapes have often been interpreted as marginal and generally inhospitable environments. When explaining my research in the mountains of Wyoming to both professionals and the public, I am often met with the question, "Why would people *live* all the way up there?" Because of this mindset, in addition to the fact that research at high altitudes is logistically demanding, the archaeological potential of mountains has long been overlooked. During the last 20 to 30 years, particularly in the European Alps and western United States, occasional research projects (e.g., Benedict 1992; Husted 1965; Walsh et al. 2006) ventured into the alpine zone and discovered that, in contrast to past beliefs, mountains can offer a rich and chronologically deep archaeological record that is often equally dense and better preserved than that of the surrounding lowland areas. While these projects were not the first of their kind (e.g., research in the Peruvian Andes and Swiss Alps), they did catalyze an interest in alpine paleoecology, human adaptations, and technological innovations developed to survive in high-altitude landscapes.

In addition to a heightened interest in the prehistory of alpine landscapes, the accessibility and ease of research in mountainous areas has greatly increased with advances in lightweight equipment and remote-sensing technologies. In recent years, the popularity of mountain archaeology has skyrocketed and is now the focus of symposia, conferences, and field projects across the globe. By exploring the practice of archaeology in the mountains, investigating current debates within the field, and introducing a variety of new and exciting projects, this special issue of *The SAA Archaeological Record* sheds light on the fascinating and ever-changing world of mountain and high-altitude archaeology.

What is Mountain and High-Altitude Archaeology?

In 1984, F.G. Fedele proposed a distinct human ecology of the mountains. Fedele suggested that, because mountains represent a unique landscape, they should be approached with an equally unique theoretical and methodological framework, preferably specific to individual ranges. However, Fedele also warned that mountains should not be studied in isolation from surrounding landscapes simply because they are topographically and environmentally "different" (c.f. Schroeder, this issue). While the alpine ecotone presents a unique research context for archaeological research, it is often easy to trick ourselves into thinking that occupants of mountains and high altitudes were prehistorically independent from those in lower elevation landscapes. So how, then, should we approach mountains in archaeology?

Exploring the dichotomous nature of mountain and high-altitude archaeology first requires some definitions. Fedele (1984) pointed out that high elevations and rugged terrain are not ubiquitous across all mountain ranges. As such, the terms "mountain" and "high-altitude" archaeology are used independently because they often focus on different topographical environments. "Mountain archaeology," in this case, refers to the study of mountainous landscapes that have considerable topographical relief and rugged terrain in comparison to surrounding lowlands, but may or may not break into the alpine ecotone (generally > 10,000 ft or 3,000 m). "High-altitude archaeology," on the other hand, focuses exclusively on past groups that resided above 3,000 m. Unlike mountain archaeology, high-altitude studies do not necessitate rigorous terrain and in some instances (e.g., the Tibetan Plateau or Central Asian Steppe) can occur on grassy plains or relatively flat valleys that happen to be located at high elevations. Because of the high environment in which it occurs, high-altitude archaeology often focuses on past alpine-specific human adaptations to physiological (Aldenderfer 2006) or resource (Bettinger 1991) stresses.

Conducting Archaeological Research in the Mountains

Conducting research in mountainous areas is expensive and

often logistically and physically demanding. Throughout our fieldwork in Wyoming's Wind River Range, we were preoccupied with planning personnel, food, and equipment transportation to a backcountry base-camp that was located two days hike from the nearest road. Once all of those tasks were completed, less than half of the field schedule (generally 8-day sessions) was available for conducting research. In addition to logistical struggles, we faced several unmanageable risks (e.g., unpredictable weather, animal encounters, dangerous terrain, etc.) that had an amplified impact because of the little time we had available in the field. Given these obstacles, it seems that successful projects are often guided equally by luck (e.g., good weather, no grizzly bears, low forest fire danger, etc.) as they are careful planning. To compensate for these unique requirements, many projects have developed custom strategies to maximize gain.

The articles in this issue introduce mountain archaeology through an exploration of research methods, obstacles, and rewards that make conducting research in the alpine zone a unique experience. Adams et al. recap several years of remote, high-elevation research in the Wind River Range of Wyoming. Adams and his team have developed a mountain-specific research strategy focused on simplicity and efficiency. Lee et al. highlight the unique aspects and dilemmas of conducting ice-patch archaeological research in North America. The article explores the costs and rewards associated with searching for thawing organic artifacts and looks at field techniques, including remote sensing, that have increased rates of success in recovering archaeological materials. A consistent theme between Adams et al. and Lee et al. is a preference for simplicity in mountain research. In both cases, consumer grade technologies (e.g., GPS and Google Earth) have proven to be less costly and more time- and energy-efficient than professional-grade options such as total stations, GPR, or LIDAR. The potential cost of lower resolution data obtained from these technologies is outweighed by the ability both to transport the equipment into the mountains by foot and to cover more ground with highly reliable equipment performance.

In addition to technology, the collective knowledge of modern-day mountain communities marks a crucial resource for many alpine archaeological projects. Frachetti's article looks back on several seasons of research on the Central Asian Steppe and explores parallels between Bronze Age and modern-day nomads. In addition to identifying a several-thousand-year-old nomadic mountain tradition, Frachetti explores the implications and biases behind modern political borders and mindsets regarding mountainous regions and how these affect archaeological research. Much like Adams et al's observations in the Rocky Mountains, Frachetti's research shows that new sites "discovered" by archaeologists are often already known to locals who are willing to share their knowledge.

Nurturing a positive relationship with modern-day mountain communities can play a significant role in promoting and preserving cultural heritage. Saul's article highlights a growing relationship between archaeologists and indigenous communities in the Nepalese Himalaya. In addition to exploring the high mountains for new archaeological sites, Saul's team works with local groups and organizations to preserve culturally historic sites that might otherwise be endangered by a lack of resources. This work shows that by maintaining a positive, constructive, and transparent relationship with mountain communities it is possible both to utilize their knowledge and to promote a relationship founded upon protecting cultural heritage.

Beyond locating and accessing alpine archaeological sites, a final dilemma that mountain researchers face is the excavation process. The alpine ecotone presents an incredibly fragile environment that recovers poorly and slowly from human disturbances. Additionally, in North America, many mountain ranges are located in federally protected wilderness areas that limit subsurface testing and prohibit the use of any mechanized equipment. Thus, it is often required that archaeologists hike into the study area on foot and carry their excavation/camp equipment in backpacks or via pack animals. Given these constraints, it is often very difficult or impossible to excavate large blocks or trenches that would be standard in more durable environments at lower elevations.

Morgan's article retraces a decade of high-altitude archaeology and illustrates that digging any site above treeline is no simple process. Recounting challenges such as blizzards and health problems, such as pulmonary edema, unique to high altitude environments, Morgan weighs the costs and benefits of conducting archaeology in remote and high-altitude regions. The other papers in this special issue present a variety of other mountain-specific research projects that further illustrate the intricacies of planning and executing archaeological research above the treeline.

Approaching the Mountains

In his book *Mountains of the Mind*, Robert Macfarlane (2004) traces the modern history of European perceptions towards mountainous regions. Macfarlane argues that the way in which people perceive mountainous environments is almost entirely cultural and little guided by economics or subsistence (see Walsh et al. 2006 for a similar discussion of

ancient Roman perceptions towards the Italian Alps). Placing causality and the related debates aside, an interesting point that Macfarlane highlights is that our interpretation of mountains routinely shifts between seeing them as marginal environments and seeing them as hospitable. These shifts come and go at different intervals and are not ubiquitous across regions, cultures, or populations. Archaeologists are not exempt from this cycle, and as we enter the twenty-first century, the perception within the field appears to be transitioning from "alpine-ophobic" to "alpine-ophilic" (see also Morgan et al. 2012:38–40).

Generally, modern perceptions do not incorporate mountains into the realm of "home." Instead, these high and rugged landscapes offer places to hide, barriers to circumvent, and isolated havens to "get away from it all." Even in my hometown of Jackson, Wyoming, bordering Grand Teton National Park, the mountains are where we go to play (or work in the case of archaeology), not where we go to live. Given this bias, it becomes understandable why archaeology in the mountains was widely ignored until the past few decades. However, now that the archaeological potential of high altitudes is more widely recognized, research projects above the treeline are becoming common in most large mountain ranges around the world. Considering that our understanding of prehistoric alpine adaptations is in its infancy, it remains uncertain what drove early mountain settlements and how difficult (or easy) it was to colonize high altitudes. Archaeological thought is currently divided over whether alpine environments should be viewed as marginal or as hospitable to human groups.

The marginal-mountains perspective can be summed up with a quote from Aldenderfer (2006:358), which, alluding to factors such as physiological stress (e.g., hypoxia) and an assumed low productivity of alpine resources, states that, "With its litany of woes, it is a wonder that high-elevation environments were ever inhabited at all." This viewpoint highlights resource opportunities of high- and low-elevation landscapes and considers mountains and high altitudes to be ranked lower in terms of potential net foraging returns than lower-elevation environments. Furthermore, the marginal-mountains standpoint suggests that early use of alpine regions commenced after less hostile environments were occupied and were likely induced by a push of external forces, such as population pressure and resource imbalance (Bettinger and Baumhoff 1982).

In contrast, the hospitable-mountains stance focuses on landscape familiarity and adaptability by suggesting that, once they settled in the mountains, prehistoric humans would have had little difficulty moving and living at high altitudes. This perspective further suggests that mountains and high-altitude environments were no less hospitable than others and that past alpine populations were likely not inhibited by problems such as physiological stress or resource uncertainty (see Adams 2010; Stirn 2014a). While this debate generally revolves around quantifiable variables (e.g., resource return rates, least-cost modeling, cost/benefit ratios, etc.) its foundation lies in how mountains should be approached in comparison with other environments.

Successfully incorporating alpine studies into wider archaeological research can be tricky. In many cases, especially in the mountains of western North America, several alpine archaeological sites that are strikingly similar in appearance and in material culture have been interpreted as culturally linked (see Stirn 2014b). Schroeder's article in this issue explores the relationship between low- and high-elevation sites in Wyoming and argues that, while it is tempting to connect similar and contemporaneous sites at altitude, such an association cannot be made without considering low-elevation corollaries. Schroeder further emphasizes that, even if mountain and lowland sites can be linked within a local network, expanding the geographic range of interpretation much further should be carried out with caution and precision (see also Thomas 2014).

Whereas Schroeder warns of interpreting prehistoric mountain cultures beyond their local regions, Frachetti (this issue) suggests that mountains (particularly those inhabited by mobile societies) can provide excellent evidence of multicultural interaction and the spread of ideas, technology, and material items. On this perspective, mountains that either overlap or are within close proximity to several cultural regions can be treated as a thoroughfare, rather than as a boundary. Schroeder and Frachetti highlight the importance of interpreting the alpine archaeological record within regional cultural frameworks.

Why [Work] All the Way Up There?

Conducting archaeological research in the mountains is logistically difficult, expensive, and tiring. Thus, after hiking 20 miles uphill carrying excavation equipment in a backpack, one might be tempted to ask—is it still worth it? Without a doubt. Mountains offer aesthetically stunning surroundings. Where else can one work beneath alpenglow, travel across a glacier, and camp next to a lake with enough trout to feed an entire field school? In addition to aesthetics and pleasing scenery, mountainous regions offer several other distinctive perks.

Thomas (2014) explores a highly preserved prehistoric alpine village perched at 3,600 m in Central Nevada and depicts his

astonishment at the exciting nature and unanticipated level of preservation of archaeological sites at the higher elevations. The Alta Toquima site, having never been looted and barely impacted by post-depositional processes, permits detailed interpretations to be made regarding ancient alpine adaptations. Originally considered to be anomalous, the astonishingly well-preserved architecture and material culture found at Alta Toquima has been complemented by the discovery of similar alpine villages across the Great Basin (Bettinger 1991). As it turns out, the preservation of these villages is not unique to archaeological sites at high altitudes. Lee et al. recognize that few other environments allow for the high state of preservation that has been observed in alpine regions. Efstratiou et al.'s (2014) article on Paleolithic exploitation of the Pindus Range in Greece demonstrates that archaeologically untapped alpine environments have the potential to exhibit rare material in excellent states of preservation. The fieldwork conducted in the Pindus identified a surprising record of Neanderthal occupations that the authors believe would have been destroyed at lower elevations by environmental conditions, agricultural activities, and looting.

Only a small proportion of the world's mountain ranges have been intensively surveyed for archaeological sites. As such, the dataset of worldwide alpine archaeology is far from complete. However, this gap in the alpine archaeological record presents exciting opportunities for future research. Because many mountain ranges have not been archaeologically explored, the probability of new and potentially significant results is high. Many of the authors within this issue describe their surprise at the often-unexpected results of conducting research at high elevations. Whether it be frozen organic artifacts, preserved villages, or Neanderthal material culture, mountainous regions never fail to alter longstanding impressions or to help formulate new ones.

In Conclusion—Bridging the Crevasse

Up until the past 10 to 15 years, alpine archaeological research remained somewhat stunted due to the general lack of projects around the world. However, now that research is increasingly being conducted in mountainous regions, it is becoming easier to share methodological innovations and research results regionally and internationally. Current research in alpine archaeology spans a wide range of questions, methods, and contributions. Despite the variety of approaches, alpine projects seek to unravel a common range of problems, including chronology, settlement and subsistence patterns, travel and exchange relations, and ethnic identities. Now, with expanded interest and enhanced technologies, mountain and high-altitude archaeology can expect an exciting future with significant potential to impact the general field.

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